

DRAFT

**INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION**

**LAMPSON AVENUE RESIDENTIAL PROJECT
GARDEN GROVE, CALIFORNIA**

LSA

October 2022

This page intentionally left blank

DRAFT

**INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION**

**LAMPSON AVENUE RESIDENTIAL PROJECT
GARDEN GROVE, CALIFORNIA**

Submitted to:

City of Garden Grove
11222 Acacia Parkway
Garden Grove, California 92840

Prepared by:

LSA
20 Executive Park, Suite 200
Irvine, California 92614
(949) 553-0666

Project No. CGG2201

LSA

October 2022

This page intentionally left blank

TABLE OF CONTENTS

TABLE OF CONTENTS	i
FIGURES AND TABLES	ii
1.0 PROJECT INFORMATION	1-1
2.0 PROJECT DESCRIPTION	2-1
2.1 Project Location and Site Description	2-1
2.2 Proposed Project Characteristics	2-11
2.3 Project Construction	2-19
2.4 Required Permits and Approvals.....	2-19
3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED.....	3-1
4.0 CEQA ENVIRONMENTAL CHECKLIST	4-1
4.1 Aesthetics	4.1-1
4.2 Agriculture and Forestry Resources	4.2-1
4.3 Air Quality	4.3-1
4.4 Biological Resources.....	4.4-1
4.5 Cultural Resources	4.5-1
4.6 Energy.....	4.6-1
4.7 Geology and Soils	4.7-1
4.8 Greenhouse Gas Emissions	4.8-1
4.9 Hazards and Hazardous Materials	4.9-1
4.10 Hydrology and Water Quality	4.10-1
4.11 Land Use and Planning	4.11-1
4.12 Mineral Resources.....	4.12-1
4.13 Noise.....	4.13-1
4.14 Population and Housing	4.14-1
4.15 Public Services.....	4.15-1
4.16 Recreation	4.16-1
4.17 Transportation	4.17-1
4.18 Tribal Cultural Resources	4.18-1
4.19 Utilities and Service Systems.....	4.19-1
4.20 Wildfire.....	4.20-1
4.21 Mandatory Findings of Significance	4.21-1
5.0 LIST OF PREPARERS	5-1
5.1 Agency Reviewers	5-1
5.2 IS/MND Preparers	5-1
5.3 Technical Report Preparers.....	5-1
6.0 REFERENCES	6-1

FIGURES AND TABLES

FIGURES

Figure 2-1: Project Location and Vicinity	2-3
Figure 2-2: Zoning in the Project Vicinity	2-5
Figure 2-3: General Plan Land Uses	2-7
Figure 2-4: Project Area	2-9
Figure 2-5: Conceptual Site Plan	2-13
Figure 2-6: Conceptual Landscaping Plan	2-15

TABLES

Table 4.3.A: Short-Term Regional Construction Emissions.....	4.3-3
Table 4.3.B: Project Operational Emissions	4.3-4
Table 4.3.C: Project Localized Construction Emissions.....	4.3-5
Table 4.3.D: Project Localized Operational Emissions.....	4.3-5
Table 4.7.A: Estimated Settlement Due to Liquefaction Potential	4.7-4
Table 4.8.A: Construction Greenhouse Gas Emissions	4.8-2
Table 4.8.B: Greenhouse Gas Emissions	4.8-3
Table 4.13.A: Typical Construction Equipment Noise Levels.....	4.13-3
Table 4.13.B: Construction Noise Levels by Phase	4.13-4
Table 4.13.C: Summary of HVAC Noise Levels.....	4.13-5
Table 4.13.D: Vibration Source Amplitudes for Construction Equipment.....	4.13-7
Table 4.17.A: Construction Trip Generation	4.17-3
Table 4.17.B: Project Trip Generation.....	4.17-5

APPENDICES

- A: AIR QUALITY AND GREENHOUSE GAS TECHNICAL MEMORANDUM
- B: PRELIMINARY GEOTECHNICAL REPORT
- C: PRELIMINARY WATER QUALITY MANAGEMENT PLAN (WQMP)
- D: PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)
- E: NOISE AND VIBRATION IMPACT MEMORANDUM

1.0 PROJECT INFORMATION

1. Project Title:

Lampson Avenue Residential Project

2. Lead Agency Name and Address:

City of Garden Grove
11222 Acacia Parkway
Garden Grove, California 92840

3. Contact Person and Phone Number:

Mary Martinez, Associate Planner, (714) 741-5315

4. Project Location:

The 1.6-acre project (Assessor's Parcel Numbers [APN] 133-183-55, 133-183-56, 133-183-57, and 133-183-58) site located at 9071, 9081, and 9091 Lampson Avenue in Garden Grove is currently developed with three single-family homes and is surrounded by single-family and multifamily residential units (the surrounding uses are further described below). As shown on Figure 2-1, Project Location and Vicinity, regional access to the project site is provided by State Route 22 (SR-22), which is approximately 1 mile south of the project site and State Route 39 (SR-39), which is 1.1 mile west of the project site.

5. Project Sponsor's Name and Address:

Bill Holman, PLC Communities
888 San Clemente Drive, Suite 200
Newport Beach, California 92660

6. General Plan Designation:

According to the City of Garden Grove's (City) General Plan Land Use Map (2008), the project is designated Low Density Residential (LDR). Figure 2-3, General Plan Land Uses (provided in Chapter 2.0) shows the existing land use designations for the proposed project area.

7. Zoning:

According to the City's Zoning Map, the site is zoned R-1-7, single-family residential (City of Garden Grove 2008). Figure 2-2, Zoning in the Project Vicinity, shows the existing zoning map for the proposed Project area.

8. Description of Project:

The proposed project would consist of the development of 13 residential lots with private recreational areas, an open space parcel, and two private streets. Access to the project site would be provided by Lampson Avenue, and internal access would be provided by the two newly constructed private streets. See the detailed discussion below in Chapter 2.0, Project Description.

9. Surrounding Land Uses and Setting:

The project site is located at 9071, 9081, and 9091 Lampson Avenue in a highly urbanized and residential area of Garden Grove. Surrounding land uses include single-family residential uses to the north, south, and east and multifamily residential uses to the west. There are office uses farther to the west on the northwest corner of Magnolia Street and Lampson Avenue, and there is a church to the east past Barbara Avenue; however, the uses immediately surrounding the project site are residential.

10. Other Public Agencies Whose Approval is Required (e.g., permits, financial approval, or participation agreements):

- a) **City of Garden Grove:** Adoption of the Initial Study/Mitigated Negative Declaration (IS/MND) and approval of: a Site Plan to construct the 13 two-story homes along with associated site improvements, zone change from R-1-7 to Planned Unit Development (PUD), and variance to deviate from the minimum 3-acre requirement to allow a zone change to PUD, and a Vesting Tentative Tract Map to subdivide the subject properties.

11. California Native American Consultation: Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resource Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Letters were sent to the list of tribal contacts provided by the Native American Heritage Commission (NAHC) via certified mail on August 3, 2022, notifying them of their opportunity to consult for this Project.

On August 10, 2022, the representative from the Gabrieleno Tribe – Kizh Nation responded with a list of construction monitoring measures that were requested to be included as part of project implementation. These mitigation measures are included in Section 4.18, Tribal Cultural Resources. With implementation of mitigation measures MM-TCR-1 through MM-TCR-3, the proposed project would avoid any impacts on any unforeseen resources encountered during grading activities.

2.0 PROJECT DESCRIPTION

This section describes the Lampson Avenue Residential Project (project) evaluated in this Initial Study/Mitigated Negative Declaration (IS/MND). It provides a description of the proposed project's location, objectives, and required approvals.

2.1 PROJECT LOCATION AND SITE DESCRIPTION

2.1.1 Regional Setting

The 1.6-acre project (Assessor's Parcel Numbers [APNs] 133-183-55, 133-183-56, 133-183-57, and 133-183-58) site, located in Garden Grove, California, is currently developed with three single-family homes and is surrounded by single-family and multifamily residential units. As shown on Figure 2-1, Project Location and Vicinity, regional access to the project site is provided by State Route 22 (SR-22), which is approximately 1.0 mile south of the project site and State Route 39 (SR-39), which is 1.1 miles west of the project site.

2.1.2 Project Vicinity and Surrounding Land Uses

The project site is located at 9071, 9081, and 9091 Lampson Avenue in a highly urbanized and residential area of Garden Grove. Surrounding land uses include single-family residential uses to the north, south, and east and multifamily residential uses to the west. There are office uses farther to the west on the northwest corner of Magnolia Street and Lampson Avenue and there is a church to the east past Barbara Avenue, however, the uses immediately surrounding the project site are residential.

2.1.3 Current Land Use and Zoning Designations

According to the City of Garden Grove's (City) General Plan Land Use Map (2008), the project is designated Low Density Residential (LDR). According to the City's Zoning Map, the site is zoned R-1-7, single-family residential (City of Garden Grove 2022). Figure 2-2, Zoning in the Project Vicinity, shows the existing zoning map for the proposed project area, and Figure 2-3, General Plan Land Uses, shows the existing land use designations for the proposed project area.

2.1.4 Existing Project Site

As illustrated by Figure 2-4, Project Area, the project site is currently developed with three unoccupied single-family homes and a small accessory building that was previously used as an office. Additional features on the site include open space areas and landscape/hardscape, including several large trees. The project would demolish all existing on-site structures and remove all landscaping.

The topography of the project site is relatively flat with a very gently downwards slope from the northern boundary of the project site to the southern boundary. In the existing condition, stormwater and urban runoff drain south towards the existing storm drain at the southern boundary of the project site on the north side of Lampson Avenue.

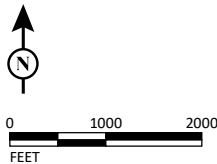
This page intentionally left blank



FIGURE 2.1

LSA

LEGEND
 Project Location



This page intentionally left blank

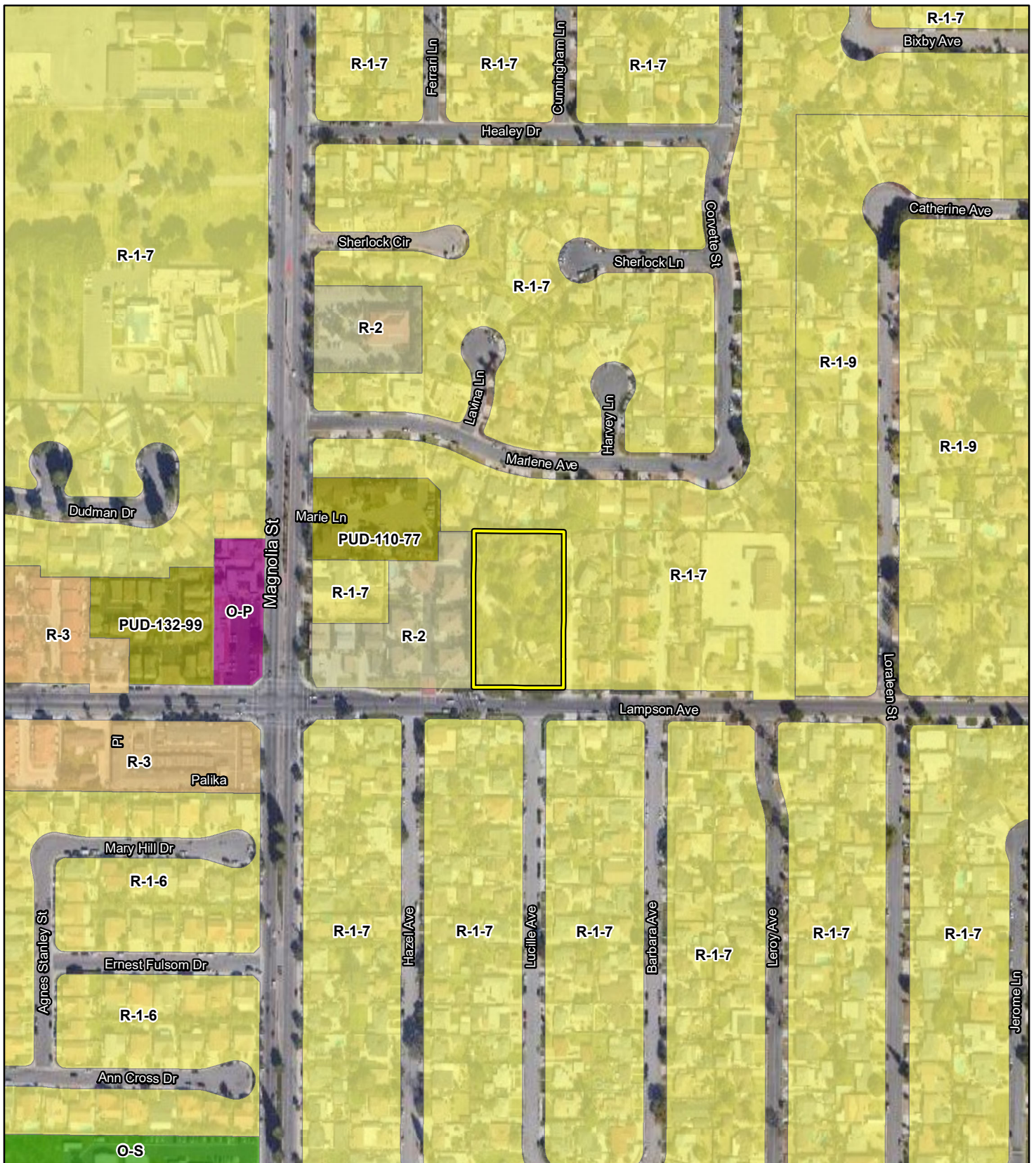






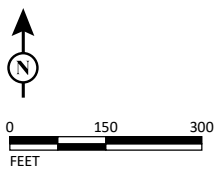


FIGURE 2.2

LSA

LEGEND

-  Project Location
-  Office Professional Zone
-  Open Space Zone
-  Limited Multiple Residential Zone
-  Planned Unit Development
-  Multiple-Family Residential Zone
-  Single-Family Residential Zone



Lampson Avenue Residential Project
Zoning in the Project Vicinity

SOURCE: Google (2021), Orange County (2022)

I:\CGG2201\GIS\MXD\ProjectDescription\Zoning.mxd (5/17/2022)

This page intentionally left blank

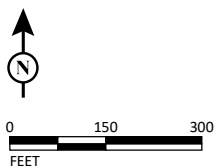


FIGURE 2.3

LSA

LEGEND

- Project Location
- General Plan Land Use
- Single Family Residential
- Multi-Family Residential
- Commercial and Services
- Facilities
- Education
- Open Space and Recreation
- Vacant
- General Office



SOURCE: Google (2021), Orange County (2016)

I:\CGG2201\GIS\MXD\ProjectDescription\GPLU.mxd (5/18/2022)

Lampson Avenue Residential Project
General Plan Land Uses

This page intentionally left blank



FIGURE 2.4

LSA

LEGEND

 Project Location



0 50 100
FEET

SOURCE: Google (2021)

I:\CGG2201\GIS\MXD\ProjectDescription\ProjectArea.mxd (5/18/2022)

Lampson Avenue Residential Project
Project Area

This page intentionally left blank

2.2 PROPOSED PROJECT CHARACTERISTICS

The Applicant is requesting approval of the following discretionary actions and entitlements as part of the proposed project: (1) a zone change from R-1-7 to a Planned Unit Development (PUD), (2) variance to deviate from the minimum 3-acre requirement to allow a zone change to a PUD, (3) approval of a Vesting Tentative Tract Map to subdivide the subject properties, (3) approval of a Site Plan to construct the 13 two-story homes along with associated site improvements, and (4) adoption of the IS/MND.

2.2.1 Site Plan

The proposed project would result in the development of 13 residential lots with private recreational areas, an open space parcel, and two private streets (see Figure 2-5, Conceptual Site Plan). Of the 1.6-acre property, 1.17 acres would be reserved for the 13 single-family homes that would be constructed as a part of the project, 0.32 acre would be reserved to provide access and circulation throughout the project site by way of sidewalks and private streets, and 0.11 acre would be reserved for the open space lot.

All residential units would be constructed along the eastern, western, and northern boundaries of the project site, with private streets "A" and "B" forming a T through the center of the property. The residential lot areas would vary between 3,427 square feet (sf) and 4,414 sf. Each residential lot would include a 300 sf private recreational area.

2.2.2 Residential Units

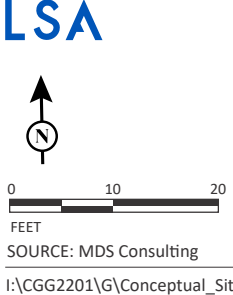
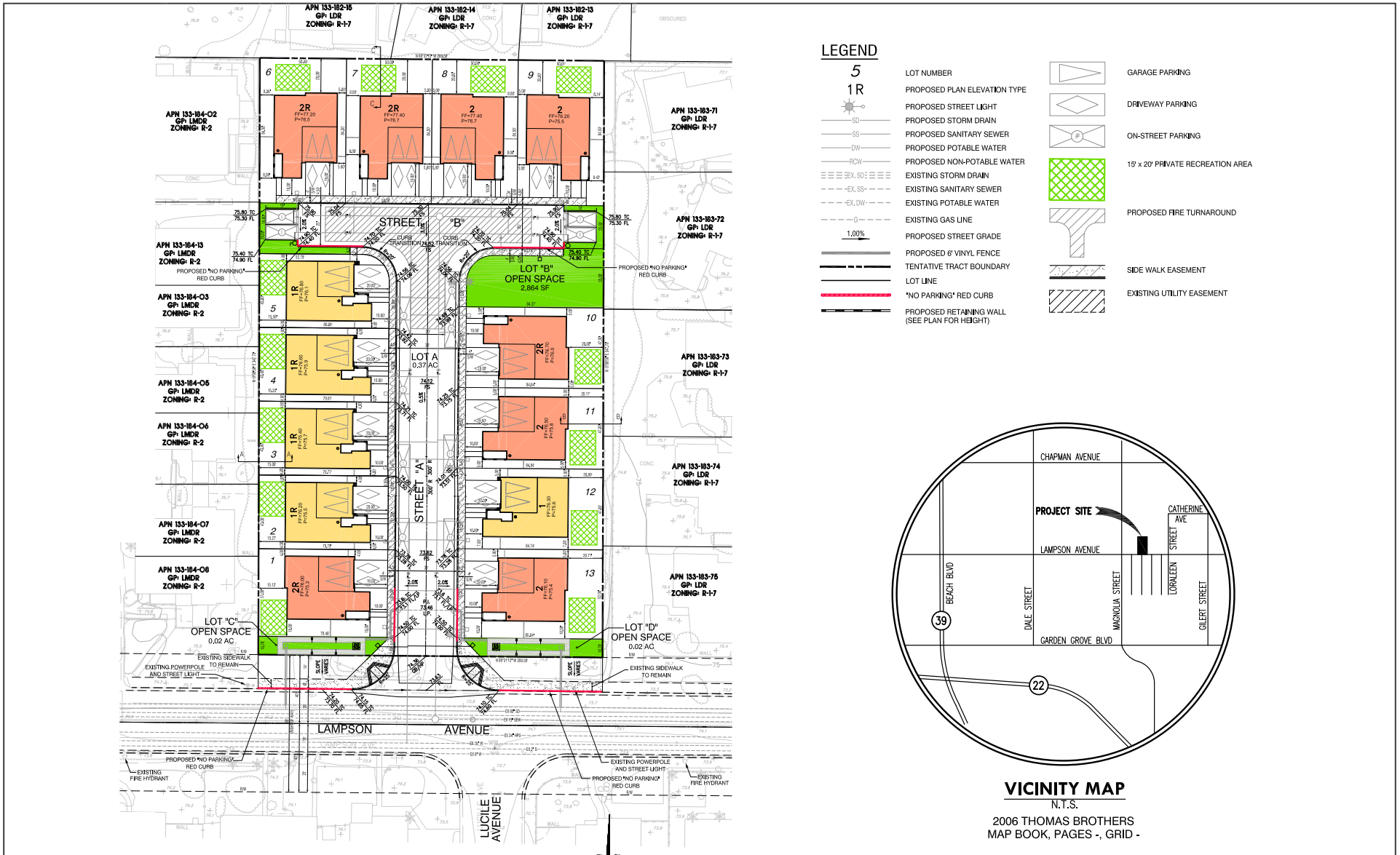
The project proposes to subdivide the 1.6-acre property into 13 single-family residential lots and construct a single-family home on each lot. Five of the units would be 2,524 sf (Plan 1), and the remaining eight units would be 2,807 sf (Plan 2). All units would be two stories and would include a two-car garage, covered entryways, associated front yard landscaped areas, and private backyards. The proposed homes would be designed to reflect Spanish or Contemporary Spanish aesthetics.

The elevations of the various units would vary depending on the architectural style and the square footage of the home. All units that are constructed in Contemporary Spanish style, regardless of whether they follow Plan 1 or Plan 2, would reach a maximum height of 27 feet (ft), 4 inches. The Plan 1 units that would be constructed in Spanish style would reach a maximum height of 28 ft, 4 inches, and the Plan 2 units that would be constructed in Spanish style would reach a maximum height of 29 ft, 3 inches.

2.2.3 Landscaping

The project site and the surrounding vicinity is generally flat in elevation. The landscaping plans would comply with all applicable codes of the Garden Grove Municipal Code. Landscaping would include a variety of plants that are native and indigenous to California's climatic conditions and require low and medium water use. The proposed trees include three, 36-inch, box canopy shade trees (Chinese elms) which would be in the open space area on the northeastern portion of the project site, four 24-inch street trees (Brisbane boxes) lining Lampson Avenue, and thirteen 24-inch box street trees (strawberry trees and carrotwood trees) lining the interior of Street "A" and Street "B." All proposed trees have moderate or low water use classifications. Figure 2-6, Conceptual Landscaping Plan, details

the types and locations of shrubbery, trees, and groundcover that would be present on the project site.



SOURCE: MDS Consulting
I:\CGG2201\G\Conceptual_Site_Plan.ai (5/18/2022)

FIGURE 2.5

Lampion Avenue Residential Project
Conceptual Site Plan

This page intentionally left blank

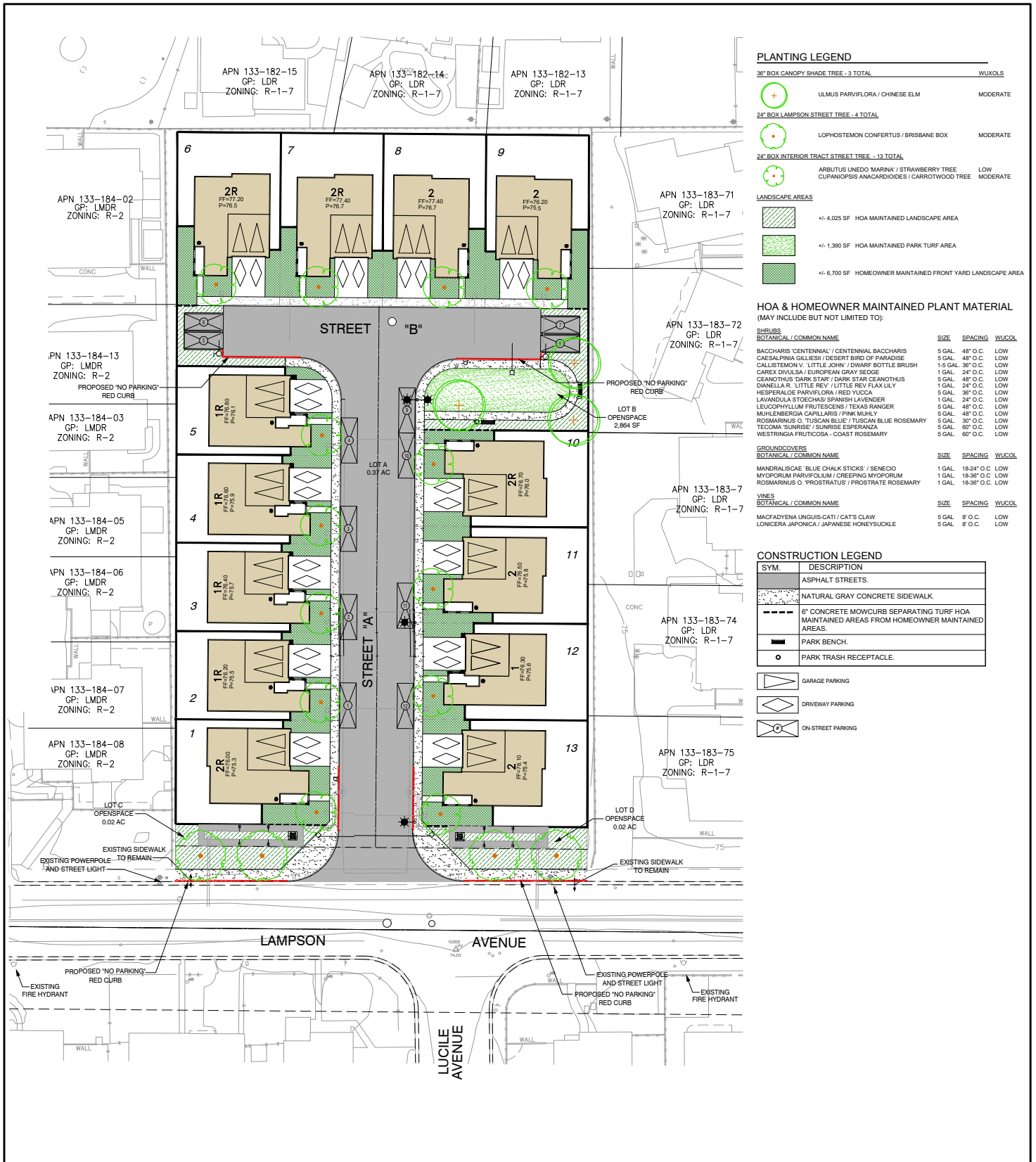


FIGURE 2.6

LSA



0 30 60
FEET

SOURCE: RHA Landscape Architects Planners, Inc.

I:\CGG2201\G\Conceptual_Landscaping_Plan.ai (5/16/2022)

Lampson Avenue Residential Project
Conceptual Landscaping Plan

This page intentionally left blank

The proposed project would incorporate smart irrigation technologies and high-efficiency irrigation methods, which would include sub-surface drip, stream bubblers with pressure-compensating screens that would be installed on separate valves, rotary nozzles, and smart irrigation controllers that shut off automatically when it rains. Bark mulch would be used to retain moisture and reduce the amount of evaporation.

Additionally, the proposed project includes the formation of a homeowners association (HOA), which would be in charge of maintaining the landscaped areas in the open space in the northeastern portion of the project site as well as along Lampson Avenue on the southern boundary of the project site. Individual homeowners would maintain all other landscaping of each proposed single-family home.

2.2.4 Access, Circulation, and Parking

Access to the project site would be provided by Lampson Avenue. The proposed "Street A" would be extended from Lampson Avenue and would terminate as it reaches Street "B" and forms a T-intersection at the northern portion of the project site. These proposed streets would be private and be maintained by the HOA. The project also includes sidewalks on both sides of Street "A" and Street "B." The proposed sidewalk along the eastern and western sides of Street "A" would connect to the existing sidewalk on Lampson Avenue. These sidewalks would extend farther north into the project site until they reach Street "B," where they would continue extending east and west into the project site. Another proposed sidewalk would be constructed in front of the front yards for Units 6, 7, 8, and 9.

Parking for residents would be provided with attached two-car parking garages with additional space for two cars on the driveway of each home. Parking for residents or visitors would also be provided along the Streets "A" and "B" and would include four spaces on each side of Street "A," and four spaces on Street "B", for a total of 12 on-street spaces for visitors/residents.

2.2.5 Lighting

There are two existing power poles and streetlights along the northern side of Lampson Avenue at the project site boundary that would be protected in place. Four additional streetlights are proposed along Street "A."

2.2.6 Infrastructure

2.2.6.1 Water

The Water Services Division of the City's Public Works Department currently provides potable water service to the project site. The water supply comes from two sources; imported water from the Metropolitan Water District of Southern California and local groundwater. The Water Services Division is responsible for maintaining the wells, reservoirs, import water connections, and the distribution systems that would deliver water to the project area. There are two existing water lines: an 8-inch water line and an 18-inch water line along the southern boundary of the project site on the south of Lampson Avenue. The proposed project would extend an 8-inch water line through Street "A" north towards Street "B", where it would connect to another proposed 8-inch water line that would extend along Street "B." These proposed water lines would connect to the existing 18-inch water line at the southern boundary of the project site along the south side of Lampson Avenue.

2.2.6.2 Sewer

Sewer operations are maintained by the City's Water Services Division of the Public Works Department. The Orange County Sanitation District (OCSD) treats the wastewater that passes through the City's sewer system. There is an existing 18-inch sewer line along the southern boundary of the project site on the north side of Lampson Avenue. The proposed project would extend an 8-inch sewer line through Street "A" north towards Street "B", where it would connect to another proposed 8-inch sewer line that would extend along Street "B." These proposed sewer lines would connect to the existing 15-inch sewer line at the southern boundary of the project site along the south side of Lampson Avenue.

2.2.6.3 Drainage and Stormwater

The City of Garden Grove Environmental Compliance Division is responsible for maintaining and protecting public health and the environment in the Garden Grove, including the street and storm drain system. There is an existing 60-inch storm drain that runs along the southern boundary of the project site on the north side of Lampson Avenue. The proposed project would install a 6-inch curb and gutter along the proposed Street "B" that would drain toward Street "A". Street "A" would consist of rolled curbs and a 2 percent street grade that would direct all runoff from the street to the two catch basins that are proposed along both sides of Street "A" near Lampson Avenue. There would also be two catch basins along the two proposed open space asphalted areas adjacent to the landscaped areas near Lampson Avenue. These proposed gutters and catch basins would connect to the existing 60-inch storm drain at the southern boundary of the project site along the north side of Lampson Avenue.

2.2.6.4 Utilities and Service Systems

The project site is served by Southern California Edison (SCE) for electrical services, Southern California Gas Company (SoCalGas) for natural gas services, Time Warner/Spectrum for cable services, and Verizon for telecommunication facilities, including telephone and fiber optic lines. There is an existing 2-inch natural gas line that runs along the southern boundary of the project site on the north side of Lampson Avenue.

2.2.7 Zone Change to PUD

The proposed project involves a zone change from Single-Family Residential (R-1-7) to PUD in order to utilize the Special Requirements for Small Lot Subdivisions per Code section 9.12.040.060. The zoning regulations and development standards for the proposed project would be required to comply with the regulations and standards established for Small Lot Subdivisions in Section 9.12.040.060 of the City of Garden Grove Municipal Code.

The small lot subdivision requires that setbacks be provided with a minimum of 10 ft from the property line. These setbacks are required to **provide** landscaping along the perimeter in the form of screening or canopy trees staggered along the property lines. Rear yard setbacks are determined by the zoning on the adjacent parcels. Therefore, the proposed project would provide 15 ft setbacks to the R-2 zoned property to the west of the project site and 20 ft setbacks to the R-1-7 zoned properties to the north and east of the project site. Additionally, a 6 to 8 ft perimeter block wall is required to be constructed around the proposed project site. Maximum heights for the proposed dwelling units are

determined by the zoning on the adjacent parcels. Developments adjacent to R-1 zoned parcels may not exceed heights of 30 ft, and developments adjacent to R-2 zoned parcels may not exceed heights of 35 ft. The units for the proposed project would not exceed 29 ft, 3 inches, and would therefore comply with the height regulations.

2.2.8 Variance to Deviate from the Minimum 3-Acre Requirement

The proposed project involves a variance from the requirement that a PUD for a residential development must be a minimum of 3 acres. Per Section 9.12.030.020 of the Garden Grove Municipal Code, “planned unit development procedures shall apply only to those individual sites having a net area of... three acres for residential developments.” Because the proposed project site is a net of 1.6 acres, a variance from this requirement would allow for the proposed residential development to be constructed.

2.2.9 Adoption of the IS/MND

Per *California Environmental Quality Act (CEQA) Statutes and Guidelines* Section 15070(b)(1), a Mitigated Negative Declaration may be prepared for a project when the Initial Study has identified potentially significant effects on the environment but revisions in the project plans would void the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment. The project is anticipated to result in the preparation and eventual adoption of an IS/MND.

2.3 PROJECT CONSTRUCTION

2.3.1 Grading and Earthwork

The proposed site elevations would be similar to the existing conditions on the project site. There would be no manufactured slopes or retaining walls proposed by the grading plan. Grading activity would result in 11,770 cubic yards of cut (including 10,253 cubic yards of over excavation) and 9,743 cubic yards of fill. The grading elevations would vary from approximately 76.5 to 76.7 ft above mean sea level along the northern boundary of the project site and 75.3 to 75.4 ft above mean sea level along the southern boundary of the project site.

2.4 REQUIRED PERMITS AND APPROVALS

In accordance with Sections 15050 and 15367 of the *State CEQA Guidelines*, the City is the designated Lead Agency for the proposed project and has principal authority and jurisdiction for CEQA actions and project approval. Responsible Agencies are those agencies that have jurisdiction or authority over one or more aspects associated with the development of a proposed project and/or mitigation. Trustee Agencies are State agencies that have jurisdiction by law over natural resources affected by a proposed project.

The discretionary actions to be considered by the City as a part of the proposed project include:

- Adoption of the IS/MND
- Zone change from R-1-7 to PUD
- Site Plan approval to construct the 13 two-story homes along with associated site improvements
- Vesting Tract Map approval to subdivide the subject properties
- Variance to deviate from the minimum 3-acre requirement to allow a zone change to PUD

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED


The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist in Chapter 3.0.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a “Potentially Significant Impact” or “Potentially Significant Unless Mitigated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.


Mary Martinez
Associate Planner

October 11, 2022
Date

This page intentionally left blank

4.0 CEQA ENVIRONMENTAL CHECKLIST

4.1 AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.1.1 Impact Analysis

a. Would the project have a substantial effect on a scenic vista?

No Impact. The City of Garden Grove is largely urban by nature. The proposed project area and the surrounding vicinity are developed with residential, commercial, and institutional uses. There are no undeveloped or vacant lands or areas in the proposed project area or within 0.5 mile of the proposed project area. Additionally, the City’s General Plan does not indicate any scenic vistas that must be preserved (City of Garden Grove 2008). Rather, the City has included a Parks, Recreation, and Open Space Element in its General Plan because providing adequate parkland, recreation opportunities, and management and conservation of limited open space resources is a priority to the urbanized City.

The current use of the project site is residential, with three single-family units developed on the project site. The approximately 1.6-acre project site consists of four separate parcels, which are bounded by Lampson Avenue to the south, and residential uses to the north, east, and west. The surrounding views comprise a developed suburban environment that is built out. No scenic vistas are visible from or through the project site. Additionally, no public parks are located on or adjacent to the project site. The park closest to the project site is Hare School Park which is located approximately 0.3 mile north of the project site at 12012 Magnolia Street.

The proposed project would be located in a fully urbanized area of the City. The proposed project includes the construction of 13 two-story residential units which would have a maximum height of 29 ft and 3 inches, which would be consistent with the City’s height standards in the Municipal Code. Additionally, the project site is surrounded by a mix of low-density and medium low-density residential uses. While no designated scenic vistas are visible from the project site or surrounding

properties, the proposed project would not block views of scenic vistas because it would not be substantially taller than the existing surrounding uses. Therefore, because the proposed project constitutes an expansion to existing buildings in an already built-out area of the City and no identified scenic vistas are within its proximity, the proposed project would not have the potential to damage scenic vistas, and no mitigation would be required.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no officially designated or eligible State scenic highways within the proposed project area or in City of Garden Grove. The nearest eligible listing for State scenic highways to the proposed project area according to the California Department of Transportation (Caltrans) is a portion of State Route 1 (SR-1), which is approximately 7.1 miles southwest of the proposed project area. The nearest officially designated State scenic highway is a portion of State Route 91 (SR-91) that is located approximately 9.5 miles northeast of the proposed project area (Caltrans 2018).

Additionally, the proposed project includes the demolition of four structures on the proposed project site, none of which are designated historic buildings. The proposed project does not include changes to any designated historic buildings and would not result in impacts to scenic trees or rock outcroppings within a State-designated scenic highway. Therefore, the proposed project would not result in damage to any scenic resources, and no impact within a State scenic highway would occur.

c. In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact. As described above, the proposed project is located in a largely urbanized area, surrounded by residential, commercial, and institutional land uses. The area surrounding the proposed project limits is zoned for the following zoning designations: single-family residential (R-1-7), limited multiple residential (R-2), planned unit development (PUD (R-2)), office professional (O-P), and multiple-family residential (R-3). General plan land use designations for the area surrounding the proposed project limits include low-density residential, low medium density residential, and office professional. Lampson Avenue is designated as a four-lane undivided highway (secondary arterial) in the City of Garden Grove General Plan Circulation Element.

No structures are being proposed that would diminish the existing visual character of the area or quality of public views of the site and its surroundings. Although the proposed project includes the removal of all existing trees on the project site, the landscaping plan for the proposed project would offset this loss by proposing to plant 20 new trees, by adding approximately 10,700 sf of landscaped area and approximately 1,300 sf of park turf area, and by complying with all applicable codes of the Garden Grove Municipal Code as required. The proposed trees to be planted include 3 Chinese elms, 4 Brisbane boxes, and 13 strawberry trees and carrotwood trees which would reach 40–50 ft, 30–35 ft, 15–30 ft, and approximately 35 ft at maturity, respectively. The 4 Brisbane box trees (24-inch box) would be planted as street trees within the public right-of-way frontage of Lampson Avenue, where no street trees exist.

Other proposed improvements include the development of 13 residential lots with private recreational areas, an open space parcel, and two private streets. The residential units would be designed to reflect Spanish or Contemporary Spanish aesthetics. The proposed units would be consistent with the current urban character of the proposed project area and would reinforce the existing residential development patterns in the area. Because the zoning regulations and development standards for the proposed project would comply with the regulations and standards established for Small Lot Subdivisions in Section 9.12.040.060 of the City of Garden Grove Municipal Code, any regulations governing scenic quality from this section of the Municipal Code would apply to the proposed project. According to the Municipal Code, however, in R-1, R-2, and R-3 zones, there are no regulations specifically governing scenic quality. The project would be compliant with general provisions and requirements for landscaping, trees on the project site, open space, recreation and leisure areas, and building design such as those articulated in Sections 9.12.040.

Due to the residential, commercial, and institutional land uses and developed nature of the surrounding area, the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings. Impacts would be less than significant, and no mitigation is required.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. Existing sources of night lighting attributed to nearby residential and commercial developments include streetlamps, accent lighting, parking lot lighting, and vehicle headlights. There are two existing power poles and streetlights along the north side of Lampson Avenue that would be protected in place. The proposed project would also include additional street lighting along the proposed internal street, Street "A." Four streetlights would be constructed along the east side of Street "A" to illuminate the interior of the development. All streetlights would direct the light away from adjoining premises and would comply with City regulations for outdoor lighting, including but not limited to Section 9.08.040 of the Garden Grove Municipal Code. Additionally, the proposed project would comply with the City's General Plan Community Design Element, which states that street lighting along collector and residential streets should reflect the smaller scale and traditional character of the residential neighborhood by replacing cobra-head style with a smaller pedestrian scaled thematic streetlight.

Sources of glare during the day result primarily from parked cars and from sunlight reflected from window glazing on buildings. The proposed project provides 12 parking spaces along internal Street "A" and Street "B," and 26 driveway parking spaces. The proposed project also includes 13 new residential units with windows that are typical of residential uses and are unlikely to introduce a significant source of daytime glare. Lighting associated with the 13 residential units would conform to the City's lighting regulations and would be typical of safety and security lighting associated with residential developments, including those in the project vicinity. Based on the above considerations, any source of glare caused by the proposed project would be incremental. The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area, and impacts would be less than significant.

This page intentionally left blank

4.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.2.1 Impact Analysis

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The California Natural Resources Agency’s Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California’s agricultural resources. According to the California Important Farmland Finder, the proposed project is in an area classified as Urban and Built-Up Land and is not designated as farmland (California DOC, Important Farmland Finder, 2017a). Additionally, no agricultural uses exist on the site. Because the proposed project area is not designated as farmland pursuant to the FMMP, the proposed project would not result in the conversion of farmland to a non-agricultural use. Therefore, no impacts related to farmland conversion would occur, and no mitigation is required.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The area surrounding the proposed project is zoned for single-family residential (R-1-7), limited multiple residential (R-2), planned unit development (PUD (R-2)), office professional (O-P), and multiple family residential (R-3), and therefore it is not zoned for agricultural use. According to the California Department of Conservation's most recently published Williamson Act Contracted Land Map, there are no Williamson Act agricultural preserves located within the City boundaries (California DOC Williamson Act Contract Land, 2017). Therefore, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract. No impact would occur.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. Public Resources Code Section 12220(g) identifies forest land as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

The area surrounding the proposed project area is zoned for residential and office professional uses. There is no land zoned for forest land, timberland, or timberland production within the City's zoning code. The proposed project area is not currently being managed or used for forest land or timberland. No impact would occur.

d. Would the project result in the loss of forest land or conversion of forestland to non-forest use?

No Impact. As discussed in the section above, the proposed project does not support forests, nor is there any forest land adjacent to the proposed project. Further, there is no land zoned for forest land, timberland, or timberland production in the City's zoning code. The proposed project would not result in the loss of forest land or the conversion of forest land to non-forest uses. No impact would occur.

e. Would the project 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?

No Impact. There are no agricultural operations or timberland production operations within the proposed project area (DOC 2017a); therefore, the proposed project would not result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

4.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The impact analysis below is based on the *Air Quality and Greenhouse Gas Technical Memorandum* (2022), prepared by LSA for the proposed project, which is provided in Appendix A of this document.

4.3.1 Impact Analysis

a. *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

Less Than Significant Impact. The proposed project would construct 13 single-family residences. The proposed project is not considered a project of statewide, regional, or area-wide significance (e.g., large-scale projects such as airports, electrical generating facilities, petroleum and gas refineries, residential developments of more than 500 dwelling units, shopping centers, or business establishments employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space) as defined in the California Code of Regulations (Title 14, Division 6, Chapter 3, Article 13, Section 15206(b)). Because the proposed project would not be defined as a regionally significant project under the California Environmental Quality Act (CEQA), it does not meet the Southern California Association of Governments’ (SCAG) Intergovernmental Review criteria.

The City’s General Plan is consistent with the SCAG Regional Comprehensive Plan Guidelines and the Southern California Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP). Pursuant to the methodology provided in SCAQMD’s 1993 *CEQA Air Quality Handbook* and its associated updates, consistency with the Basin’s 2016 AQMP is affirmed when a project (1) would not increase the frequency or severity of an air quality standards violation or cause a new violation, and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented as follows:

1. The project would not result in short-term construction and long-term operational pollutant emissions that exceed any emissions thresholds established by SCAQMD, as demonstrated under

Threshold 4.3 (b), below; therefore, the project would not result in an increase in the frequency or severity of an air quality standards violation or cause a new air quality standards violation. Therefore, the proposed project would be consistent with the first criterion.

2. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, the proposed project is not defined as significant. In addition, the project does not require a General Plan or Specific Plan Amendment. Therefore, the proposed project would be consistent with the second criterion.

Based on the consistency analysis presented above, the proposed project would be consistent with the regional AQMP, and impacts would be less than significant. No mitigation is necessary.

- b. 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?*

Less Than Significant Impact. The proposed project is a part of the South Coast Air Basin. The South Coast Air Basin includes portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County. In total, the South Coast Air Basin covers an area of 6,745 square miles with a population of 14.6 million. The Basin is currently designated as non-attainment for the federal and State standards for ozone (O₃) and particulate matter less than 2.5 microns in size (PM_{2.5}). In addition, the Basin is in non-attainment for the particulate matter less than 10 microns in size (PM₁₀) standard. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by grading, building construction, paving, and other activities. Emissions from construction equipment are also anticipated and would include carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs), directly emitted PM_{2.5} or PM₁₀, and toxic air contaminants such as diesel exhaust particulate matter.

Construction. Project construction activities would include demolition, grading, site preparation, building construction, architectural coating, and paving activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emissions reductions of 50 percent or more. SCAQMD has established Rule 403: Fugitive Dust, which would require the Applicant to implement measures that would reduce the amount of particulate matter generated

during the construction period. In addition to dust-related PM₁₀ emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur oxides (SO_x), NO_x, VOCs, and some soot particulate (PM_{2.5} and PM₁₀) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using California Emissions Estimator Model (CalEEMod) and summarized in Table 4.3.A. Attachment B of the *Air Quality and Greenhouse Gas Technical Memorandum* located in Appendix A provides CalEEMod output sheets.

Table 4.3.A: Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOC	NO _x	CO	SO _x	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Demolition	1.2	26.4	19.7	<0.1	0.3	0.9	0.1	0.9
Site Preparation	0.7	19.4	14.0	<0.1	2.9	0.5	1.4	0.5
Grading	0.7	19.2	12.7	<0.1	3.4	0.5	1.6	0.5
Building Construction	1.1	20.7	16.8	<0.1	0.4	0.9	0.1	0.9
Paving	0.6	11.8	10.5	<0.1	0.3	0.4	0.1	0.4
Architectural Coating	1.9	2.4	2.5	<0.1	0.3	0.1	0.1	0.1
Peak Daily Emissions	3.0	26.4	19.7	<0.1	3.9		2.1	
SCAQMD Threshold	75.0	100.0	550.0	150.0	150.0		55.0	
Significant?	No	No	No	No	No		No	

Source: Compiled by LSA (May 2022).

Note = Maximum emissions of VOC occurred during the overlapping building construction and architectural coating phases.

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOC = volatile organic compounds

Based on the analysis results, the proposed project would not exceed daily emissions thresholds for any criteria pollutant. Therefore, the proposed project would not lead to cumulatively considerable increases in construction emissions, and impacts would be less than significant. No mitigation is required.

Operation. Long-term air pollutant emissions associated with operation of the proposed project include emissions from area, energy, and mobile sources. Area-source emissions include architectural coatings, consumer products, and use of landscape maintenance equipment. Energy-source emissions result from activities in buildings that use electricity and natural gas. Mobile-source emissions are from vehicle trips associated with operation of the project.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. Table 4.3.B provides the proposed project’s estimated operational emissions.

Table 4.3.B: Project Operational Emissions

Emission Type	Pollutant Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Sources	0.6	0.2	1.2	<0.1	<0.1	<0.1
Energy Sources	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Mobile Sources	0.3	0.3	2.6	<0.1	0.7	0.2
Total Project Emissions	0.9	0.6	3.8	<0.1	0.7	0.2
SCAQMD Threshold	55.0	55.0	550.0	150.0	150.0	55.0
Exceeds Threshold?	No	No	No	No	No	No

Source: Compiled by LSA (May 2022).

Note: Some values may not appear to add correctly due to rounding.

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOC = volatile organic compounds

The results shown in Table 4.3.B indicate the proposed project would not exceed the daily significance criteria for VOCs, NO_x, CO, SO_x, PM₁₀, or PM_{2.5} emissions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard, and impacts would be less than significant. No mitigation is required.

Vehicular trips associated with the proposed project could contribute to congestion at intersections and along roadway segments in the vicinity of the proposed project site. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project’s effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. The proposed project is expected to generate 95 net new average daily trips, with 7 trips occurring in the AM peak hour and 10 trips occurring in the PM peak hour. As the proposed project would not generate 100 or more AM or PM peak hour trips, CO concentrations are not expected to significantly increase as a result of the proposed project.

Therefore, given the extremely low level of CO concentrations in the project area and the lack of unacceptable operating conditions at any intersections, project-related vehicles are not expected to result in CO concentrations exceeding the State or federal CO standards. No CO hot spots would occur, and the project would not result in any project-related impacts on CO concentrations. Therefore, the project would not 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, and impacts would be less than significant. No mitigation is required.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptors are defined as people who have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. The closest sensitive receptors include single-family residential uses adjacent to the north and east of the site, multifamily residential uses adjacent to the west of the site, and single-family uses across Lampson Avenue to the south of the site. A localized significance threshold (LST) analysis was completed to show the construction and operational impacts at 25 meters (82 ft) to the nearest sensitive receptors to the project site in Source Receptor Area 17, based on the 1.6-acre project size. Tables 4.3.C and 4.3.D show the results of the LST analysis during project construction and operation, respectively.

Table 4.3.C: Project Localized Construction Emissions

Source	Pollutant Emissions			
	NO _x (lbs/day)	CO (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
On-Site Emissions	26.2	19.3	3.7	2.0
Localized Significance Threshold	98.0	600.0	5.0	3.5
Significant?	No	No	No	No

Source: Compiled by LSA (May 2022).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

Table 4.3.D: Project Localized Operational Emissions

Source	Pollutant Emissions			
	NO _x (lbs/day)	CO (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
On-Site Emissions	<1.0	1.3	<1.0	<1.0
Localized Significance Thresholds	98.0	600.0	1.5	1.0
Significant?	No	No	No	No

Source: Compiled by LSA (May 2022).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

As detailed in Tables 4.3.C and 4.3.D, the emissions levels indicate that the project would not exceed SCAQMD LSTs during project construction or operation. On a regional scale, the quantity of emissions from the project is incrementally minor. Because the SCAQMD has not identified any other methods to quantify health impacts from small projects, and due to the size of the project, it is speculative to assign any specific health effects to small project-related emissions. However, based on this localized analysis, the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, the project would not expose sensitive receptors to substantial levels of pollutant concentrations, and impacts would be less than significant. No mitigation is required.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. Heavy-duty equipment on the project site during construction would emit odors, primarily from equipment exhaust. However, the construction activity would cease after construction is completed. The nature of the proposed residential uses are not anticipated to emit any objectionable odors. No other sources of objectionable odors have been identified for the proposed project. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. No mitigation is required.

4.4 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.4.1 Impact Analysis

a. Would the project 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?

No Impact. In its existing condition, there are four buildings on the project site including three single-family residential homes and a small accessory building. Additional features include open space areas, hardscape, and ornamental landscaping, including mature trees. The project site is entirely developed with residential uses and located in an urban area and surrounded by developed single-family and multi-family residential neighborhoods. The United States Fish and Wildlife Service (USFWS) Critical Habitat for Threatened & Endangered Species map does not identify any locations of critical habitat within the project site or within the City of Garden Grove. The closest known critical habitat is located approximately 6.6 miles southwest of the project site at the Bolsa Chica Ecological Reserve. Due to the developed character of the project site and its surroundings, no special-status species are anticipated to be directly affected by the project due to the lack of suitable habitat on the project site.

Therefore, no impacts to sensitive or special-status species would result from implementation of the proposed project, and no mitigation is required.

b. Would the project 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?

No Impact. The project site is located in an urban area and is previously disturbed and developed with four buildings, a paved driveway that traverses the project site, and ornamental landscaping. It does not support any special-status or sensitive riparian habitat as identified in regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or USFWS (Orange County 2013). Therefore, no impacts related to riparian habitat or other sensitive natural communities identified in a local or regional plan would result from project implementation, and no mitigation is required.

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. According to the National Wetlands Inventory managed by the USFWS, the project site does not contain federally protected wetlands (USFWS n.d.). The project site is located entirely outside of streambeds, banks, and riparian habitat. No potential waters of the United States or CDFW jurisdictional areas are located on the project site, which is entirely developed with single-family residential uses and surrounded by development consisting of similar urban uses.

Although construction activities have the potential to result in temporary indirect effects to water quality, including a potential increase in erosion and sediment transport into downstream aquatic areas and the contamination of waters from construction equipment, these potential indirect effects to hydrology and water quality would be avoided or substantially minimized through the implementation of Best Management Practices (BMPs) and the Stormwater Pollution Prevention Plan (SWPPP) as discussed in Section 4.10, Hydrology and Water Quality. Specifically, adherence to Regulatory Compliance Measure RC-WQ-1 and RC-WQ-4, provided in Section 4.10, Hydrology and Water Quality, would address erosion-related impacts during construction through implementation of construction site BMPs which would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on-site and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. As specified in RC-WQ-1, the proposed project would comply with the requirements of the Construction General Permit and the City of Garden Grove Municipal Code. With compliance with the requirements in the Construction General Permit and implementation of the construction BMPs as specified in RC-WQ-1, construction impacts related to on- or off-site erosion would be less than significant. Therefore, there would be no impacts on State or federally protected wetlands, and no mitigation is required.

- d. *Would the project 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?*

Less Than Significant Impact with Mitigation Incorporated. Due to the lack of sensitive or special-status species or their habitats on the project site, the project would not result in impacts on candidate, sensitive, or special-status animal species. However, the proposed project would involve the removal or demolition of all existing site features, including removal of existing mature trees within the project site. These trees have the potential to provide suitable nesting habitat for migratory bird species. In compliance with the federal Migratory Bird Treaty Act, which protects the active nests of migratory bird species, the proposed project would be required to avoid impacts on nesting resident and/or migratory birds by avoiding vegetation removal during the avian nesting season (February 1 through August 31) as outlined in Mitigation Measure MM-BIO-1. The proposed project has the potential to impact active migratory bird nests if and to the extent that those trees are removed during the avian nesting season and they contain nests. Mitigation Measure MM-BIO-1 would address any impacts to nesting resident and/or migratory birds should it be necessary to conduct vegetation removal during the nesting season and nests are present. With implementation of MM-BIO-1, the proposed project's potential impacts on nesting migratory birds would be reduced to a less than significant level.

Mitigation Measure

MM-BIO-1 Nesting Bird Survey and Avoidance. If vegetation removal, construction, or grading activities are planned to occur within the active nesting bird season (February 1 through August 31), the City of Garden Grove Director of Community and Economic Development, or designee, shall confirm that the Applicant has retained a qualified biologist who shall conduct a preconstruction nesting bird survey no more than 3 days prior to the start of such activities. The nesting bird survey shall include the work area and areas adjacent to the site (within 500 feet, as feasible) that could potentially be affected by project-related activities such as noise, vibration, increased human activity, and dust. For any active nest(s) identified, the qualified biologist shall establish an appropriate buffer zone around the active nest(s). The appropriate buffer shall be determined by the qualified biologist based on species, location, and the nature of the proposed activities. If active nests are present at the time of survey, the buffer shall be deemed effective by the qualified biologist if nesting birds do not appear to be affected by construction activities and young birds successfully fledge from the nest. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active, as determined by the qualified biologist.

- e. *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

No Impact. The City's Conservation Element in the General Plan acknowledges that biological resources in Garden Grove are almost non-existent due to the urban nature of the City and surrounding area. Therefore, the Conservation Element does not provide specific policies for the protection of biological resources. However, the City of Garden Grove adopted Tree Ordinance

Number 552 in 1961, which codified Garden Grove Municipal Code Chapter 11.32, Trees. Chapter 11.32 of the City's Municipal Code is intended to preserve, protect, and promote the health, safety, and general welfare of the public by providing for the regulation of trees located in thoroughfares, parks, and public areas owned or controlled by the City. The Municipal Code regulates the planting, maintenance, and removal of trees within public property and establishes tree planting standards to ensure that newly planted trees thrive.

The proposed project is located in an urbanized area and is bordered on all sides by development and has been previously disturbed. Although there are no biologically significant resources within the project site, there are mature trees on the project site that would be removed. However, the on-site trees are located on private property and none are located within the public right-of-way. Therefore, project implementation would not conflict with the City's Tree Ordinance. As discussed above in Section 2.3.3, of Chapter 2.0, Project Description, the project would implement the planting of four street trees (24-inch box) in the Lampson Avenue right-of way where no trees currently exist. Overall, the proposed project would have no impact related to a conflict with local policies or ordinances protecting biological resources, and no mitigation is required.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The project site is located in a residential area which is surrounded by single- and multi-family land uses, and it is not located in an environmentally sensitive area. The project site is not located within or otherwise affected by a Habitat Conservation Plan or Natural Community Conservation Plan. The proposed project does not propose or require development or activities that would conflict with the provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan. Therefore, the proposed project would have no impact related to a conflict with an adopted Habitat Conservation Plan or Natural Community Conservation Plan. No mitigation is required.

4.5 CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.5.1 Impact Analysis

- a. *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

Less Than Significant Impact. As described earlier, the project site is currently developed with three unoccupied single-family homes and a small accessory building used as an office. Additional features on the site include open space areas and landscape/hardscape, including several large trees. The record search conducted for the site did not identify any historic resources. Additionally, the on-site structures are not locally designated as historic or listed on the state’s register. However, a review of building permits available online indicate that in 1979 a building was demolished and new buildings were constructed in 1979 and later on 9091 Lampson Avenue and 9071 Lampson Avenue. A survey was also conducted as a part of the Cultural Resources Assessment, which concluded that the residence located at 9081 Lampson Avenue on the northwestern corner of the project site was at least 70 years old, and the garage structures on the west were built at about the same time that the house was constructed. However, over the years alterations have been made to the structures; the City has a Code Enforcement case on record from 2002 stating that the dwelling was altered without permits. Therefore, due to lack of any historic resources being identified in the records search and none locally designated as historic or listed on the state’s register, impacts are considered less than significant.

- b. *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

Less Than Significant Impact with Mitigation Incorporated. A record search to identify previously recorded prehistoric and historic cultural resources and prior cultural resource surveys within 0.25 mile of the project area as well as a pedestrian survey of the project area was conducted for the proposed project. The record search indicated that only one cultural resource study which included the project area was conducted. This study identified no previously recorded cultural resources within the project area. The record search also indicated that another study which included but did not survey the project area was also conducted. Therefore, the report prepared for the proposed project is the first instance in which an archaeological survey was conducted within the project area.

No known archaeological resources were identified in the proposed project area during the survey. The survey found visible sediment everywhere across the property except where gravel, asphalt, concrete, buildings, or vegetation existed. However, there is a potential to encounter unknown archaeological resources during construction excavation activities that extend five to eight feet below ground surface. With implementation of MM-TCR-1 through MM-TCR-3 (see section 4.18), which require archeological monitoring during construction, potential impacts to unknown archaeological resources are reduced to less than significant.

c. Would the project disturb any humans remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. As indicated above, the record search and survey conducted for the proposed project did not identify any archaeological resources on the project site. If human remains are encountered at the project areas, California Health and Safety Code Section 7050.5 and *State CEQA Guidelines* Section 15064.5(e)(1) state that no further disturbance may occur to the area of the find until the County Coroner has made a determination of origin and disposition of the human bone pursuant to Public Resources Code Section 5097.98. The County Coroner would be required to be notified of the find immediately and shall make a determination within two working days of being notified. If the remains were determined to be Native American, the County Coroner would notify the NAHC by phone within 24 hours, and the NAHC would then immediately determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD would complete the inspection and make recommendations or preferences for treatment of the remains within 48 hours of being granted access to the site. The MLD's recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials, preservation of Native American human remains and associated items in place, relinquishment of Native American human remains and associated items to the descendants for treatment, or any other culturally appropriate treatment. The required adherence to state law would ensure that potential impacts to unknown human remains during construction are less than significant.

4.6 ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The *Air Quality and Greenhouse Gas Technical Memorandum* (2022), prepared by LSA for the proposed project, is provided in Appendix A of this document. A portion of the section below is based on the results of the Air Quality and Greenhouse Gas Technical Memorandum.

4.6.1 Impact Analysis

a. *Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?*

Less Than Significant Impact. The proposed project would require demolition, site preparation, grading/utility improvements, construction, paving, and architectural coating activities during construction. Construction activities require energy for the manufacture and transportation of construction materials, preparation of the site for grading activities, and construction. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities. Construction activities are not anticipated to result in an inefficient use of energy because gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the project. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State’s available energy sources. Therefore, construction energy impacts would be less than significant.

Operational energy-source emissions would result from activities in buildings that use electricity and natural gas. As identified above, the proposed project would comply with the 2019 California Green Building Standards Code (CALGreen Code) for energy conservation and green building standards. The proposed project would also be constructed to Title 24 standards, which would help to reduce energy and natural gas consumption. The project would be required to adhere to all federal, State, and local requirements for energy efficiency, which would substantially reduce energy usage. In addition, the proposed project would be designed to include a 3-megawatt solar system. Overall, the proposed project would be subject to renewable energy or energy efficiency measures for building design, equipment uses, and transportation. Therefore, the project would have a less than significant impact related to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. No mitigation is required.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. In 2002, the Legislature passed Senate Bill 1389, which required the California Energy Commission (CEC) to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels for the Integrated Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles (ZEVs) and their infrastructure needs, and encourages urban designs that reduce vehicle miles traveled (VMT) and accommodate pedestrian and bicycle access.

The CEC recently adopted the *2020 Integrated Energy Policy Report*. The Integrated Energy Policy Report provides the results of the CEC assessments of a variety of energy issues facing California. The City relies on the State integrated energy plan and does not have its own local plan to address renewable energy or energy efficiency.

Energy usage on the project site during construction would be temporary in nature and would represent a negligible fraction of the overall use in Orange County. In addition, energy usage associated with operation of the proposed 13-unit residential subdivision would also be a negligible fraction in comparison to the overall use in Orange County, and the State's available energy resources. Therefore, energy impacts at the regional level would be negligible. Because California's energy conservation planning actions are conducted at a regional level, and because the proposed project's total impact on regional energy supplies would be negligible, the proposed project would not conflict with or obstruct California's energy conservation plans as described in the CEC Integrated Energy Policy Report. Additionally, as demonstrated above, the proposed project would not result in the inefficient, wasteful, and unnecessary consumption of energy. Potential impacts related to conflict with or obstruction of a State or local plan for renewable energy or energy efficiency would be less than significant, and no mitigation is required.

4.7 GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The *Preliminary Geotechnical Report* (2022), prepared by LGC Geotechnical, Inc., and the *Preliminary Water Quality Assessment Report* (WQAR) prepared by MDS Consulting for the proposed project, are available in Appendices B and C, respectively. A portion of the section below is based on the results of the *Preliminary Geotechnical Report* and the WQAR.

4.7.1 Impact Analysis

- a. *Would the project directly or indirectly cause 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.*

Less Than Significant Impact. According to the California Department of Conservation, there are no known active or potentially active faults or fault traces crossing the site, nor is the site located within a currently designated Alquist-Priolo Earthquake Fault Zone (DOC 2022). The closest mapped active

fault to the project site is the Newport-Inglewood Fault, which is located approximately 6.9 miles southwest of the site.

The State of California establishes minimum standards for building design and construction through the California Building Code (CBC) (California Code of Regulations, Title 24). The CBC is based on the Uniform Building Code, which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for conditions in California. State regulations and engineering standards related to geology, soils, and seismic activity in the Uniform Building Code are reflected in the CBC requirements.

The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control. Although no active faults traverse the project site, the project would be required to comply with the requirements of the Alquist-Priolo Fault Zoning Act and the CBC. CBC requirements address structural seismic safety and include design criteria for seismic loading and other geologic hazards, including design criteria for geologically induced loading that govern sizing of structural members, building supports, and materials and provide calculation methods to assist in the design process. The CBC includes provisions for buildings to structurally survive an earthquake without collapsing and measures such as anchoring to the foundation and structural frame design. Furthermore, the proposed project would be required to prepare a Final Geotechnical Report that would provide site-specific geotechnical recommendations for proposed residential buildings, including pad compaction levels, foundation requirements, wall footing design parameters, and myriad other recommendations to ensure all buildings are constructed to appropriate engineering requirements. Following these requirements would further minimize or reduce potential safety risks to project residents and guests.

Because of the distance to the nearest fault and the magnitude of past seismic activity, the proposed project would neither negate nor supersede the requirements of the Alquist-Priolo Earthquake Fault Zoning Act, nor would the proposed project expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault as delineated on the current Alquist-Priolo Earthquake Fault Zoning Map. Therefore, impacts would be less than significant, and no mitigation is required.

ii. Strong seismic ground shaking?

Less Than Significant Impact. As with all of Southern California, the project site is subject to groundshaking resulting from earthquakes on nearby faults. Secondary effects of seismic shaking resulting from large earthquakes on the major faults in the Southern California region, which may affect the site, include ground lurching and shallow ground rupture, soil liquefaction, and dynamic settlement. As discussed previously, the site is not located within an Alquist-Priolo Earthquake Fault Zone. However, the Newport-Inglewood Fault is located approximately 6.9 miles southwest of the site and is capable of producing strong ground motion.

Seismic activity poses two types of potential hazards for people and structures, categorized as either primary or secondary hazards. Primary hazards include ground rupture, ground shaking, ground displacement, subsidence, and uplift from earth movement. Secondary hazards include ground failure

(lurch cracking, lateral spreading, and slope failure), liquefaction, water waves (seiches), movement on nearby faults (sympathetic fault movement), dam failure, and fires.

The project site is in a seismically active region and could experience ground shaking associated with an earthquake along faults in the region, including the Newport-Inglewood Fault Zone. The project site is likely to be subjected to strong ground motion from seismic activity, similar to that of the rest of Orange County and Southern California, due to seismic activity in the region as a whole. Regardless of seismic activity anticipated to occur on-site, the proposed project would be designed in accordance with CBC requirements that address structural seismic safety.

The project would be required to comply with the CBC, which includes design criteria for seismic loading and other geologic hazards. These measures include design criteria for geologically induced loading that govern sizing of structural members and provide calculation methods to assist in the design process. Thus, while shaking impacts would be potentially damaging, they would also tend to be reduced in their structural effects due to CBC criteria that recognize this potential. The CBC includes provisions for buildings to structurally survive an earthquake without collapsing and measures such as anchoring to the foundation and structural frame design. Project conformance with CBC and local requirements relative to grading and construction would ensure that the proposed project does not result in exposure of people or structures to potentially substantial adverse effects involving strong seismic ground shaking. Therefore, impacts would be less than significant, and no mitigation is required.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant with Mitigation Incorporated. Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions coexist: (1) shallow groundwater; (2) low density non-cohesive (granular) soils; and (3) high-intensity ground motion. Studies indicate that saturated, loose near-surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. In general, cohesive soils are not considered susceptible to liquefaction, depending on their plasticity and moisture content. Effects of liquefaction on level ground include settlement, sand boils, and bearing capacity failures below structures. Dynamic settlement of dry loose sands can occur as the sand particles tend to settle and densify as a result of a seismic event.

According to the California Department of Conservation and the City's General Plan, the project site is within an area prone to liquefaction (DOC 2022). The Geotechnical Evaluation Report prepared for the proposed project also indicated the potential for liquefaction, and the data obtained from field evaluations indicates that the project site contains sandy layers susceptible to liquefaction within the upper 50 feet. Table 4.7.A below depicts the estimated total and differential seismic settlement due to liquefaction potential.

Table 4.7.A: Estimated Settlement Due to Liquefaction Potential

Approximate Total Seismic Settlement	Differential Seismic Settlement
1 ½ inches	¾ inch over 40 feet

Source: *Geotechnical Evaluation Report* (LGC Geotechnical, Inc. 2022).

In order to address the liquefaction potential, proposed building foundations would be designed in accordance with engineering design standards and recommendations of the project's geotechnical reports. With implementation of Mitigation Measure MM-GEO-1 below, impacts related to potential liquefaction effects would be reduced to less than significant.

Mitigation Measures

MM-GEO-1 Geotechnical Plan Review. Prior to grading and building permit issuance, project construction plans shall be reviewed by the City of Garden Grove's (City) Land Development Section in order to verify that all geotechnical recommendations provided in the project's *Preliminary Geotechnical Report* (LGC Geotechnical, Inc. 2022) and the final geotechnical report are implemented to address on-site geotechnical constraints, including recommendations to address liquefaction, subsidence, and importation of expansive fill material. Recommendations outlined in the *Preliminary Geotechnical Report* to address liquefaction, subsidence, and importation of expansive material include designing post-tensioned foundations for the conservative seismic settlement due to liquefaction, as moisture conditioning of the subgrade soils prior to trenching the foundation, interconnecting any isolated structural pad footings with grade beams, evaluating foundation plans of required infiltration systems that are adjacent to foundations, and importing soils that consist of "very low" expansion potential with an expansion index of 20 or less per ASTM S4829 for general fill. The geotechnical recommendations shall be included on the grading and building plans to the satisfaction of the City.

Geotechnical observation and/or testing should be performed by the project engineer at the following stages:

- During grading (removal bottoms, fill placement, etc.);
- During utility trench backfill and compaction;
- After presoaking building pads and other concrete-flatwork subgrades, and prior to placement of aggregate base or concrete;
- Preparation of pavement subgrade and placement of aggregate base;
- After building and wall footing excavation and prior to placing steel reinforcement and/or concrete; and
- When any unusual soil conditions are encountered during any construction operation subsequent to issuance of this report.

iv. Landslides?

No Impact. Seismically induced landslides and other slope failures are common occurrences during or soon after earthquakes in areas with significant ground slopes. The project site is relatively flat, and there are no substantial hillsides or unstable slopes immediately adjacent to the site boundary. According to the California Department of Conservation, the project site is not within an area prone to landslides (DOC 2022). Therefore, the project would have no impacts related to landslides, and no mitigation is required.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Soil erosion occurs when topsoil is carried away by the physical forces of water and is relocated to an area where it builds up over time. During the construction activities of the proposed project, bare soil would be exposed, and there would be an increased potential for soil erosion compared to existing conditions. Additionally, during a storm event, soil erosion could occur at an accelerated rate. During construction, approximately 1.7 acres of area would be disturbed, and soil would be exposed during grading and other construction activities that would increase the potential for soil erosion compared to existing conditions.

The project Applicant would be required to adhere to the requirements of the General Construction Permit, which requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) to identify construction Best Management Practices (BMPs) to be implemented as part of the proposed project to reduce impacts on water quality during construction, including those impacts associated with soil erosion and siltation (e.g., dust control, fiber rolls, and storm drain inlet protection). As specified in Regulatory Compliance Measure RC-WQ-1 in Section 4.10, Hydrology and Water Quality, and in accordance with City Municipal Code, the proposed project would comply with the requirements of the Construction General Permit. With compliance with the requirements in the Construction General Permit, implementation of the construction BMPs as specified in RC-WQ-1, and in compliance with the City Municipal Code, construction impacts related to soil erosion or loss of topsoil would be less than significant. Additionally, with future landscaping and hardscape conditions on site, operation of the proposed project after construction would not result in substantial soil erosion or the substantial loss of topsoil. Therefore, the proposed project would have a less than significant impact related to substantial soil erosion or the loss of topsoil, and no mitigation is required.

c. Would the project 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?

Less Than Significant with Mitigation Incorporated. Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips, occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall or seismic shaking. Because the project site is in a relatively flat area, landslides or other forms of natural slope instability do not represent a significant hazard to the project site or the surrounding area. Moreover, the proposed project does not include any physical improvements that would increase risks associated with landslides on the site.

Lateral spreading is a type of liquefaction-induced ground failure associated with the lateral displacement of surficial blocks of sediment resulting from liquefaction in a subsurface layer. Once liquefaction transforms the subsurface layer into a fluid mass, gravity plus the earthquake inertial forces may cause the mass to move downslope towards a free face (such as a river channel or an embankment). Lateral spreading may cause large horizontal displacements and such movement typically damages pipelines, utilities, bridges, and structures. The analysis in the Preliminary Geotechnical Report determined that due to the site being relatively level and the lack of an adjacent free face to drive lateral spreading, the potential for lateral spreading is considered low. The project is not located on a geologic unit or soil that is anticipated to be unstable as a result of lateral spreading. Therefore, impacts related to lateral spreading would be less than significant, and mitigation is not required.

Subsidence, the sinking of the land surface due to excessive groundwater pumping in Orange County, causes loss of pore pressure as the weight of the overburden compacts the underlying sediments. As over half of the City's water supply comes from local groundwater wells accessing the Santa Ana River groundwater basin, subsidence relating to excessive groundwater withdrawal is a potential hazard. According to the Preliminary Geotechnical Report, subsidence due to earthwork operations is expected to be on the order of 0.1 foot, which excludes losses due to removal of any vegetation or debris. Although the preliminary geotechnical evaluation did not identify hazardous conditions related to the effects of any on-site subsidence, any potential significant effects related to subsidence would be avoided with implementation of Mitigation Measure MM-GEO-1.

As noted in Response 4.7 (a) (iii) above, the project is located in an area that contains liquefiable soils. In order to address the liquefaction potential, proposed building foundations would be designed in consideration of the liquefaction potential on site and dynamic seismic settlement, and Mitigation Measure MM-GEO-1 would be implemented to avoid any significant impacts related to liquefaction.

Overall, impacts related to a geologic unit or soil that is unstable or would become unstable are considered less than significant with implementation of MM-GEO-1.

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less Than Significant with Mitigation Incorporated. Expansive soils contain types of clay minerals that occupy considerably more volume when they are wet or hydrated than when they are dry or dehydrated. Volume changes associated with changes in the moisture content of near-surface expansive soils can cause uplift or heave of the ground when they become wet or, less commonly, cause settlement when they dry out. Soils with an expansion index (EI) of greater than 20 are classified as expansive for building purposes and, therefore, have a potentially significant impact.

Based on findings of the Preliminary Geotechnical Report, on-site soils are anticipated to have "Very Low" expansion potential (EI of 20 or less per ASTM D4829). However, imported fill material may include expansive soils if not tested prior to placement. With implementation of MM-GEO-1, direct or indirect risks to life or property due to expansive soil from imported fill material would be less significant.

- e. *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

No Impact. The proposed project would not involve the use of septic tanks. Wastewater from the project site would continue to discharge into the City sewer following project approval. Therefore, the proposed project would have no impact related to use of septic tanks or use of alternative wastewater disposal systems. No mitigation would be required.

- f. *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Less than Significant with Mitigation Incorporated. According to the City's Focused General Plan Update and Zoning Amendments EIR (2021), the City contains predominantly younger alluvial deposits from geologically recent flood plain deposits. These younger alluvial deposits are from the Holocene Epoch (11,700 years ago to modern day). The project site is entirely developed, and the geotechnical analysis does not reveal the presence of, or potential for, unique geological features.

According to the project's *Preliminary Geotechnical Report*, the project site is located more specifically within the Santa Ana River drainage basin, approximately 4 miles northwest of the current channelized location of the river. In general, the site is underlain at depth by poorly consolidated alluvial sediments mapped as a sandy member of Quaternary Young Alluvial Fan deposits, ("Qyf-sand"). The Holocene to late Pleistocene aged materials are described as gravel, sand, and silt layers, deposited over broad river floodplain areas prior to channelization of the Santa Ana River. Generally, younger alluvial fan deposits are considered to have Low Paleontological sensitivity because not enough time has passed for plant and animal species to become fossilized. The potential for paleontological resources on the project site is therefore considered low due to the character of subsurface soils (Young Alluvial Fan Deposits) and because of the amount of disturbance associated with the previous development that has occurred on site. Although it is unlikely that paleontological resources would be encountered during ground-disturbing project construction activities, in order to ensure protection of unknown resources, Mitigation Measure MM-GEO-2 below requires that construction activities be halted and a qualified paleontologist be contacted in the event that unknown paleontological resources are encountered during ground-disturbing activities. With implementation of this condition, the project would ensure that significant effects to a paleontological resource or site are avoided.

Mitigation Measure

MM-GEO-2 Paleontological Resources. Prior to grading permit issuance, grading plans shall indicate that in the event that paleontological resources are encountered during project construction, work in the immediate area of the find shall be redirected. Subsequently, the Applicant shall retain, with the approval of the City of Garden Grove's (City) Community Development Director, or designee, a qualified paleontologist from the Orange County List of Qualified Paleontologists to assess the findings for scientific significance. If any fossil remains are discovered in sediments with a low paleontological sensitivity rating (Young Alluvial Fan Deposits), the

paleontologist shall make recommendations as to whether monitoring shall be required in these sediments on a full-time basis.

4.8 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The impact analysis below is based on the results of the Air Quality and Greenhouse Gas Technical Memorandum (2022), prepared by LSA for the proposed project, and included as Appendix A.

4.8.1 Impact Analysis

- a. *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less Than Significant Impact. Construction activities associated with the proposed project would produce combustion emissions from various sources. Construction would emit greenhouse gases (GHGs) through the operation of construction equipment and from worker and builder supply vendor vehicles for the duration of the approximately 15-month construction period. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The Southern California Air Quality Management District (SCAQMD) does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires the construction GHG emissions to be amortized over the life of the project, defined as 30 years, added to the operational emissions, and compared to the applicable interim GHG significance threshold. Table 4.8.A shows CO₂e emissions calculations for each respective construction phase of the proposed project.

As indicated in Table 4.8.A, it is estimated that the project would generate 437.9 MT CO₂e during construction of the project. When amortized over the 30-year life of the project, annual emissions would be 14.6 MT CO₂e.

Table 4.8.A: Construction Greenhouse Gas Emissions

Construction Phase	Greenhouse Gas Emissions, CO ₂ e (metric tons per year)
Demolition	41.9
Site Preparation	94.7
Grading	36.1
Building Construction	223.9
Paving	20.8
Architectural Coating	20.5
Total Project Emissions	437.9
Total Construction Emissions Amortized over 30 years	14.6

Source: Compiled by LSA (May 2022).

Note: Numbers may not appear to add correctly due to rounding.

CO₂e = carbon dioxide equivalent

Long-term operation of the proposed project would generate GHG emissions from area, mobile, waste, and water sources as well as indirect emissions from sources associated with energy consumption. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site and other sources. Mobile-source GHG emissions would include project-generated vehicle trips associated with trips to the proposed project. Waste source emissions generated by the proposed project include energy generated by landfilling and other methods of disposal related to transporting and managing project-generated waste. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

Because the project would begin operations in the post-2020 timeframe, the SCAQMD's 2020 numerical screening threshold of 3,000 MT CO₂e per year would need to be adjusted to reflect the State's post-2020 GHG reduction goals for the 2030 target. A scaled threshold consistent with State goals, detailed in Senate Bill (SB) 32, Executive Order (EO) B-30-15, and EO S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, respectively, was developed for 2023, when construction of the proposed project would be completed. Though the SCAQMD has not published a quantified threshold beyond 2020, this assessment uses a threshold of 2,640 MT CO₂e per year or 4.2 MT CO₂e per year per service population, which was calculated for the project operational year of 2023 based on the GHG reduction goals of SB 32 and EO B-30-15.

GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod). Table 4.8.B shows the estimated operational GHG emissions for the proposed project. Motor vehicle emissions, which are included as mobile source emissions, are the largest source of GHG emissions for the project at approximately 68 percent of the project total. Energy sources are the next largest category at approximately 23 percent. Waste sources are approximately 5 percent of the total emissions, and area and water sources are each 2 percent of the total emissions.

The project would have less than significant GHG emissions if it would result in operational-related GHG emissions of less than the scaled SCAQMD threshold of 2,640 MT CO₂e per year. Based on the analysis results, the proposed project would result in 169.0 MT CO₂e per year, which would be below

the scaled numeric threshold of 2,640 MT CO₂e per year. Therefore, operation of the proposed project would result in less than significant impacts related to generating GHG emissions, and no mitigation is required.

Table 4.8.B: Greenhouse Gas Emissions

Emission Type	Operational Emissions (metric tons per year)				
	CO ₂	CH ₄	N ₂ O	CO ₂ e	Percentage of Total
Area Source	3.0	<1	<1	3.1	2
Energy Source	34.6	<1	<1	34.8	23
Mobile Source	103.7	<1	<1	105.2	68
Waste Source	3.1	<1	0	7.6	5
Water Source	3.0	<1	<1	3.7	2
Total Operational Emissions				154.4	100.0
Amortized Construction Emissions				14.6	—
Total Annual Emissions				169.0	—
SCAQMD Tier 3 GHG Numerical Screening Threshold for 2023				2,640.0	
Exceedance?				No	

Source: LSA (May 2022).

CH₄ = methane

CO₂ = carbon dioxide

CO₂e = carbon dioxide equivalent

GHG = greenhouse gas

N₂O = nitrous oxide

SCAQMD = South Coast Air Quality Management District

b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. The City of Garden Grove does not have an adopted climate action plan or GHG reduction plan. Therefore, the proposed project was analyzed for consistency with the goals of Assembly Bill (AB) 32, the AB 32 Scoping Plan, B-30-15, 32, and AB 197 and Southern California Association of Governments’ (SCAG) 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

CARB Scoping Plan. AB 32 is aimed at reducing GHG emissions to 1990 levels by 2020. AB 32 requires CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The 2017 Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, market-based mechanisms (e.g., cap-and-trade system), and an AB 32 implementation fee to fund the program.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reduction target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State’s 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. As identified above, the 2017 Scoping Plan contains GHG

reduction measures that work towards reducing GHG emissions, consistent with the targets set by AB 32 and EO B-30-15, and codified by SB 32 and AB 197.

In addition, the Draft 2022 Scoping Plan Update¹ assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below. The proposed project would comply with the 2019 California Green Building Standards Code (CALGreen Code) standards, regarding energy conservation and green building standards. In addition, the proposed project would be designed to include a 3-megawatt solar system. Therefore, the proposed project would comply with applicable energy measures. In addition to the requirement for the project to be compliant with the 2019 CALGreen Code standards, which include measures related to the reduction of wastewater and water use, the proposed project would be required to comply with the California Model Water Efficient Landscape Ordinance and would include low-flow plumbing fixtures, and drip irrigation systems. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. However, vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. The second phase of Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020. Therefore, the proposed project would not conflict with the identified transportation and motor vehicle measures.

The proposed project would comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197.

SCAG's RTP/SCS. SCAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) identifies that land use strategies that focus on new housing and job growth in areas served by high-quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The core vision in the 2020–2045 RTP/SCS is to better manage the existing transportation system through design management strategies, integrate land use decisions and technological advancements, create complete streets that are safe to all roadway users, preserve the transportation system, and expand transit and foster development in transit-oriented communities. The 2020–2045 RTP/SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the 2020–2045 RTP/SCS but provides incentives for consistency for governments and developers.

¹ CARB. 2021. *Draft 2022 Scoping Plan Update*. May 10. Website: <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf> (accessed September 2022).

The proposed project would not conflict with the stated goals of the RTP/SCS; therefore, the proposed project would not interfere with SCAG's ability to achieve the region's GHG reduction targets at 8 percent below 2005 per capita emissions levels by 2020 and 19 percent below 2005 per capita emissions levels by 2035, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS. Furthermore, the proposed project is not regionally significant per *State CEQA Guidelines* Section 15206, and, as such, it would not conflict with the SCAG RTP/SCS targets since those targets were established and are applicable on a regional level. Therefore, the proposed project would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions, and there would be no impact. No mitigation is required.

This page intentionally left blank

4.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The impact analysis below is based on the results of the *Phase I Environmental Site Assessment (ESA)* (2022), prepared by Ardent Environmental Group for the proposed project, and included as Appendix D.

4.9.1 Impact Analysis

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

No Impact. A Phase I ESA was prepared for the proposed project to evaluate whether hazardous substances or petroleum products were being used or stored on the project site. Hazardous substances include substances defined by the CERCLA as hazardous as well as substances that occur naturally or through biological digestion, and substances about which human understanding is evolving such as “emerging contaminants”. The project site is entirely developed with single-family residential uses. According to the Phase I ESA, no use, storage, or disposal of hazardous substances, hazardous wastes, or petroleum products were observed. The proposed project is a single-family residential development consisting of 13 homes and associated improvements. These residential uses would not create a significant hazard to the public or environment through the routine transport, use,

or disposal of hazardous materials. Therefore, no related impact is anticipated, and no mitigation is necessary.

b. Would the project 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?

No Impact. The proposed project would involve construction activities including removal of existing pavement, grading, site preparation, and landscaping associated with existing single-family residential uses. During construction activities that would redevelop the project site, the Applicant would be required to comply with relevant applicable federal, state, and local laws and regulations that pertain to hazardous materials and waste during construction and operation of the proposed project.

According to the Phase I ESA, there is no evidence of releases (i.e., stained soil or surfaces or stressed vegetation) or threatened releases of hazardous substances on, at, in, or to the project site. Therefore, the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and there would be no impacts. No mitigation is required.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The two nearest existing schools to the project site are Stanford Elementary School and Hare High School, located approximately 0.3 mile south and north of the project site, respectively. Additionally, there are no proposed schools within 0.25 mile of the proposed project area. Therefore, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. Would the project 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?

No Impact. Government Code Section 65962.5 refers to the Hazardous Waste and Substances Site List, commonly known as the Cortese List, maintained by the State of California Department of Toxic Substances Control (DTSC). The Cortese List identifies hazardous waste and substance sites including public drinking water wells with detectable levels of contamination; sites with known USTs having a reportable release; and solid waste disposal facilities from which there is a known migration. The Cortese List also includes hazardous substance sites selected for remedial action; historic Cortese sites; and sites with known toxic material identified through the abandoned site assessment program. Review of the EnviroStor database indicates that the project site is not on a list of hazardous materials sites compiled pursuant to Government Code §65962.5.

However, former operations in several properties in the proposed project vicinity indicate that there may potentially be residual contaminants in the proposed project area. One property, located approximately 0.9 mile west of the site at 8141 Lampson Avenue, Stanton, was listed on the Clandestine Drug Labs (CDL) database as a location where an illegal drug lab was operated and/or

drug lab equipment/materials were stored. The second facility, located approximately 2-miles north of the site at 10502 Magnolia Avenue South, Stanton, was listed on the Leaking Underground Storage Tanks (LUST) database due to methyl-tert-butyl-ether (MTBE) contamination released from a piping run, with a discovery date of January 15, 1992. Based on the distance, direction, and/or type of facility, these listings would not be considered an environmental concern to the site. Therefore, the proposed project would not have an impact and would not create a significant hazard to the public or the environment as it relates to being located on a site which is included in a list of hazardous materials sites. No mitigation is necessary.

e. Would the project be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The proposed project is not within an airport land use plan or within 2 miles of a public airport or public use airport, and therefore would not result in impacts to safety or excessive noise for people residing or working in the project area. No mitigation is required.

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The proposed project is served by the Garden Grove Police Department, which implements the Emergency Operations Plan (EOP) (City of Garden Grove 2021a). The proposed project consists of the demolition of all existing structures and landscaping on the project site and the development of 13 residential units with private recreational areas, an open space parcel, and two private streets. Although Lampson Avenue is a designated emergency evacuation route as articulated in the City's General Plan Safety Element, no roadway closures or lane closures are anticipated as part of Project construction, and traffic volumes resulting from construction vehicles would not impede traffic flow. Therefore, implementation of the proposed project would not impair or physically interfere with an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant. No mitigation is required.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact. According to the California Department of Forestry and Fire Protection's (CAL FIRE) Fire and Resource Assessment Program (FRAP), the proposed project is not located within or near a High or Very High Fire Hazard Severity Zone in either a State Responsibility Area or a Local Responsibility Area (CAL FIRE 2020). Therefore, the proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. There would be no potential impacts associated with wildland fires, and no mitigation is necessary.

This page intentionally left blank

4.10 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. 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; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The analysis in this section is based on the Preliminary Water Quality Assessment Report (MDS Consulting May 2022) and the Preliminary Drainage Study (MDS Consulting May 2022) prepared for the proposed project. These reports are provided in Appendix C.

4.10.1 Impact Analysis

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less Than Significant Impact. The proposed project involves the demolition of three single-family residential homes and a small accessory building and construction of 13 single-family residential lots with private recreational areas, an open space parcel, and two private streets. Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the

potential to be transported via stormwater runoff into receiving waters (i.e., Bolsa Chica Channel and Anaheim Bay) (MDS Consulting, 2022).

During construction, the disturbed soil area would be approximately 1.7 acres. Because construction of the proposed project would disturb greater than 1 acre of soil, as specified in Regulatory Compliance Measure RC-WQ-1, the Project is subject to the requirements of the SWRCB's NPDES permit *Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities* (Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Orders No. 2010-0014-DWQ and 2012-0006-DWQ) (Construction General Permit). The Construction General Permit (CGP) requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and implementation of BMPs during construction activities. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on-site and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. In addition, as specified in Regulatory Compliance Measure RC-WQ-2, the proposed project must comply with the City's Municipal Code (Title 6 Section 6.40.05 Controls for Water Quality Management) which requires compliance with the DAMP (Drainage Area Management Plan).² Compliance with the DAMP requires compliance with the CGP and the preparation of a SWPPP to implement BMPs that can significantly control pollution from construction sites. As required by RC-WQ-1 and RC-WQ-2, prior to approval of a grading or building permit, the proposed project would be required to obtain coverage under the CGP, including preparation of a SWPPP, which will specify construction BMPs to be implemented during construction to target pollutants of concern. Therefore, implementation of RC-WQ-1 and RC-WQ-2 would ensure construction impacts related to surface water quality standards and waste discharge requirements would be less than significant. No mitigation is required.

According to the Geotechnical Evaluation Report prepared for the project (LGC 2022), groundwater was encountered during exploratory borings at depths at 14 feet (ft) below ground surface (bgs). Excavation associated with the proposed project is anticipated to reach a maximum depth of 8 ft bgs. Therefore, groundwater dewatering is not anticipated to be required during construction. However, due to the relatively shallow site groundwater, construction activities may require groundwater dewatering. As specified in Regulatory Compliance Measure WQ-3, If dewatering is required, the Applicant would be required to seek cover under the *General Waste Discharge Requirements For Discharges To Surface Waters That Pose An Insignificant (De Minimis) Threat To Water Quality (Groundwater Discharge Permit)*, Order No. R8-2020-0006, NPDES No. CAG998001. This order requires water sampling, analysis, treatment (if required), and reporting of dewatering related discharges of groundwater extracted during construction prior to its release into surface waters to ensure that effluent limitations for constituents are not exceeded. As a result, groundwater dewatering during project construction would not introduce pollutants into receiving waters or violate water quality standards or waste discharge requirements. Therefore, if groundwater dewatering is required, adherence to the Groundwater Discharge Permit as outlined in RC-WQ-3

² The Drainage Area Management Plan is a cooperative project of the County of Orange, the cities of Orange County and the Orange County Flood Control District. It is a policy, programmatic guidance, and planning document for the Orange County Stormwater Program for the management and protection of Orange County's streams, rivers, creeks, and coastal waters. (2007 Orange County Drainage Area Management Plan).

would ensure that the proposed project would not violate any water quality standards or waste discharge requirements and impacts to water quality would be less than significant. No mitigation is required.

Pollutants of concern from long-term operations include pathogens (bacteria/viruses), metals, nutrients, toxic organic compounds, pesticides/herbicides, sediments/total suspended solids, trash and debris, and oil and grease (MDS Consulting 2022). The proposed project involves removing 3 existing residential units and constructing 13 new residential units on an approximately 1.6-acre project site. The project also includes the construction of private streets and driveways, sidewalks, and open space. The proposed project would increase the amount of impervious surface area on site by approximately 11,500 sf (approximately 40 percent increase) over existing conditions.

As specified in Regulatory Compliance Measure WQ-4, the project would comply with the requirements of the California Regional Water Quality Control Board, Santa Ana Region, *Waste Discharge Requirements for The County of Orange, Orange County Flood Control District and The Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff* (Orange County MS4 Permit), Order No. R8-2009-0030, NPDES Permit No. CAS618030, as amended by Order No. R8-2010-0062. The Orange County Flood Control District, the County of Orange, and incorporated cities, including the City of Garden Grove, are subject to the Orange County MS4 permit. The Orange County MS4 permit requires that a WQMP be prepared for priority new development and redevelopment projects. The proposed project is considered a priority new development project because it adds more than 10,000 sf of new impervious surface.

WQMPs specify the Site Design, Source Control, Low Impact Development (LID), and Treatment Control BMPs that would be implemented to capture, treat, and reduce pollutants of concern in stormwater runoff. Site Design BMPs are stormwater management strategies that emphasize conservation and use of existing site features to reduce the amount of runoff and pollutant loading generated from a project site. Source Control BMPs are preventative measures that are implemented to prevent the introduction of pollutants into stormwater. LID BMPs mimic a project site's natural hydrology by using design measures that capture, filter, store, evaporate, detain, and infiltrate runoff rather than allowing runoff to flow directly to piped or impervious storm drains. Treatment Control BMPs are structural BMPs designed to treat and reduce pollutants in stormwater runoff prior to releasing it to receiving waters. In compliance with the Orange County MS4 Permit, MDS Consulting prepared a Preliminary WQMP, which provides details regarding the proposed project's stormwater management program, including proposed BMPs to reduce or eliminate pollutants of concerns in stormwater runoff and on-site water infiltration basins. According to the Preliminary WQMP, stormwater runoff will be conveyed as surface flow southerly down the proposed drive aisle until it is captured by the curb and gutter on the easterly and westerly sides of the proposed drive aisle. From there, it will continue flowing south until it is captured by an on-site catch basin. Runoff from the catch basin will flow through pipes to infiltration basins for treatment. The on-site infiltration basins will infiltrate treated stormwater on site and the stormwater overflow would be conveyed to a 60-inch public storm drain under Lampson Avenue and then to Bolsa Chica Channel where stormwater outlets to Anaheim Bay and ultimately the Pacific Ocean. According to the Preliminary WQMP, the proposed project will include the following site design principles, structural and non-structural controls, and

stormwater quality control measures to reduce and/or eliminate pollution from entering the storm drain system:

- Infiltration basins;
- Education for property owners, tenants, and occupants;
- Activity restrictions;
- Common area landscape management;
- BMP maintenance;
- Title 22 CCR compliance;
- Spill Contingency Plan;
- Uniform Fire Code implementation;
- Common Area litter control;
- Common area catch basin inspection;
- Street sweeping for private streets and parking lots;
- Provide storm drain system stenciling and signage;
- Use efficient irrigation systems and landscape design, water conservation, smart controllers, and source control;
- Incorporate requirements applicable to individual priority project categories.

As discussed above and specified in RC-WQ-4, the proposed project would comply with the Orange County MS4 Permit which requires the preparation of a Final WQMP and implementation of operational BMPs to target and reduce pollutants of concern in stormwater runoff from the project site. Compliance with the Orange County MS4 Permit would reduce operational impacts related to surface water quality standards, waste discharge requirements, and/or degradation of water quality to a less than significant level, and no mitigation is required.

Infiltration of stormwater has the potential to affect groundwater quality in areas of shallow groundwater. As discussed above, groundwater could occur at depths below 14 ft bgs. According to the *Preliminary WQMP* the majority of on-site soils are in Soil Group A and favorable for infiltration. Under current conditions approximately 63 percent of the project site is pervious surface area. The proposed project would increase the amount of impervious surface area by 40 percent (approximately 11,500 sf) compared to existing conditions. Increasing the total impervious surface area decreases the ability for stormwater to infiltrate into the groundwater. The proposed project would implement BMPs to capture and treat stormwater from impervious surfaces, direct it to an infiltration basin where it would be treated before percolating into the soil and thereby prevent potentially contaminated stormwater runoff from reaching groundwater. Any stormwater that exceeds the capacity of the infiltration basins would be conveyed to the public storm drain system via curbs, gutters and catch basins and would not infiltrate the soil. Therefore, untreated overflow stormwater would not infiltrate onsite and would be conveyed to the City storm drain system. According to the

Preliminary Drainage Study (MDS Consulting 2022), the proposed drainage plan, including the streets, storm drain system, and basins, was designed using the methodology outlined in the Orange County Hydrology Manual and are sized to handle the increase in flows in the post-project condition. Therefore, implementation of the proposed project would not violate groundwater quality standards, waste discharge requirements, and/or degradation of groundwater quality, impacts would be less than significant, and no mitigation would be required.

Standard Conditions and Regulatory Compliance Measures

- RC-WQ-1 Construction General Permit.** Prior to issuance of a grading permit, the Applicant or designee shall obtain coverage under the *State Water Resources Control Board National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System No. CAS000002, as amended by Orders No. 2010-0014-DWQ and 2012-0006-DWQ)* (Construction General Permit). This shall include the submission of Permit Registration Documents (PRDs), including a Notice of Intent (NOI) for coverage under the permit to the State Water Resources Control Board (SWRCB) via the Stormwater Multiple Application and Report Tracking System (SMARTS). The Applicant shall provide the Waste Discharge Identification Number (WDID) to the City of Garden Grove (City) to demonstrate proof of coverage under the Construction General Permit. A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared and implemented for the proposed project in compliance with the requirements of the Construction General Permit. The SWPPP shall identify construction best management practices (BMPs) to be implemented to ensure that the potential for soil erosion and sedimentation is minimized and to control the discharge of pollutants in stormwater runoff as a result of construction activities (e.g., dust control, fiber rolls, and storm drain inlet protection). Construction Site BMPs shall also conform to the requirements specified in the latest edition of the Orange County Stormwater Program *Construction Runoff Guidance Manual for Contractors, Project Owners, and Developers* to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed. Upon completion of construction and stabilization of the site, a Notice of Termination will be submitted via SMARTS.
- RC-WQ-2 City of Garden Grove Municipal Code.** Prior to issuance of grading or building permits or prior to recordation upon subdivision of land, the Applicant or designee shall submit final project plans to the City for review and approval, which address compliance with the water quality management requirements of Title 6 Section 6.40.05 Controls for Water Quality Management of the City of Garden Grove Municipal Code.
- RC-WQ-3 Orange County Groundwater Discharge Permit.** At least 45 days prior to groundwater dewatering activities, the Applicant or designee shall submit an NOI to the Santa Ana Regional Water Quality Control Board (RWQCB) to obtain coverage under the *General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (De Minimis) Threat to Water Quality* (Groundwater

Discharge Permit), Order No. R8-2020-0006, NPDES No. CAG998001. The construction contractor shall comply with the requirements of Order No. R8-2020-0006, NPDES No. CAG998001. Groundwater dewatering activities shall comply with all applicable provisions in the Groundwater Discharge Permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a Notice of Termination (NOT) shall be submitted to the Santa Ana RWQCB.

RC-WQ-4 Orange County MS4 Permit. Prior to issuance of grading or building permits or prior to recordation upon subdivision of land, the Applicant or designee shall submit a Final Water Quality Management Plan (WQMP) to the City of Garden Grove, for review and approval, in compliance with the *Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff Orange County*, (Orange County MS4 Permit) Order No. R8-2009-0030, NPDES No. CAS618030, as amended by Order No. R8-2010-0062. The Final WQMP shall be prepared consistent with the requirements of the *Model Water Quality Management Plan (WQMP)* (County of Orange 2011), *Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs)* or subsequent guidance manuals. The Final WQMP shall specify the BMPs to be incorporated into the project design to target pollutants of concern in runoff from the project site. The Director of the City of Garden Grove Public Works Department, or designee, shall ensure that the BMPs specified in the Final WQMP are incorporated into the final project design.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. According to the Geotechnical Evaluation Report prepared for the Project (LGC 2022), groundwater was encountered during exploratory borings at depths at 14 feet (ft) below ground surface (bgs). Excavation associated with the proposed project is anticipated to reach a maximum depth of 8 ft bgs. Although not anticipated, if dewatering is required it would be conducted in accordance with the requirements of the Groundwater Discharge Permit, Order No. R8-2020-0006, NPDES No. CAG998001, as specified in Regulatory Compliance Measure RC-WQ-3 Groundwater dewatering would be localized and temporary, and the volume of groundwater removed would not be substantial. In addition, any volume of water removed during groundwater dewatering would be minimal compared to the size of the Coastal Plain of the Orange County Groundwater Basin, which has a surface area of 350 square miles and a storage capacity of 38,000,000 acre-feet (af) (California DWR 2004). Groundwater dewatering would not interfere with the sustainable management of the groundwater basin because the groundwater basin has been sustainably managed over the last 10 years and will continue to be sustainably managed (refer to Response 4.10 (a) for additional discussion on sustainable groundwater management). Therefore, construction impacts related to depletion of groundwater supplies or interference with groundwater recharge would be less than significant, and no mitigation would be required.

In its existing condition, the project site includes three single-family residential homes and a small accessory building. According to the Preliminary WQMP, development of the project would increase impervious surface area on the project site by approximately 11,500 sf (approximately 40 percent increase), which would decrease opportunities for infiltration and groundwater recharge. Impervious surfaces preclude groundwater infiltration and thereby interfere with groundwater recharge. However, the proposed project includes two infiltration basins that would treat runoff from impervious surface areas and allow it to infiltrate back into the soil, which would allow for continued groundwater recharge and partially offset the reduction in infiltration from new impervious surface areas. Therefore, the proposed project would not substantially interfere with groundwater recharge. Project operations would not require groundwater extraction. While the project would increase water use, which may be obtained from groundwater, the Orange County Water District ensures that sufficient water supplies are available so that groundwater overdraft does not occur.³ For these reasons, impacts related to depletion of groundwater supplies or interference with groundwater recharge in a manner that may impede sustainable groundwater management would be less than significant, and no mitigation would be required

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site;

Less Than Significant Impact. During construction activities, approximately 1.7 acres of area would be disturbed. Soil would be exposed and drainage patterns would be temporarily altered during grading and other construction activities, and there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate. As discussed above under Response 4.10 (a), the Construction General Permit requires the preparation of a SWPPP to identify construction BMPs to be implemented as part of the proposed project to reduce impacts on water quality during construction, including those impacts associated with soil erosion and siltation. As specified in RC-WQ-1 and RC-WQ-2, the proposed project would comply with the requirements of the Construction General Permit and the City of Garden Grove Municipal Code. With compliance with the requirements in the Construction General Permit and implementation of the construction BMPs as specified in RC-WQ-1 and RC-WQ-2, construction impacts related to on- or off-site erosion or siltation would be less than significant, and no mitigation is required.

In the proposed condition, 40,603 sf (58.2 percent) of the project site would be impervious surface area and not prone to on-site erosion or siltation because no soil would be included in these areas. The remaining 41.9 percent of the site would consist of pervious area, which would contain landscaping that would minimize on-site erosion and siltation by stabilizing the soil. Therefore, on-site erosion and siltation impacts would be minimal. However, the proposed project would increase impervious area on the project site, which would result in a net increase in stormwater runoff that can lead to downstream erosion in receiving waters (Bolsa Chica Channel). The Bolsa Chica Channel, however, is a completely stabilized concrete channel and therefore not susceptible to

³ Orange County Water District. 2017. *Basin 8-1 Alternative – OCWD Management Area*.

hydromodification. Therefore, the project is not required to implement hydromodification performance measures. Additionally, as specified in RC-WQ-4, in compliance with the Orange County MS4 Permit requirements and the Orange County DAMP, infiltration basins would remove debris and sediment prior to stormwater runoff entering the project's storm drain system. Therefore, operation impacts related to substantial on- or off-site erosion or siltation would be less than significant, and no mitigation is required.

- ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;*

Less Than Significant Impact. As discussed under Response 4.10 (a), project construction would comply with the requirements of the Construction General Permit and would include the preparation and implementation of a SWPPP. The SWPPP would include construction BMPs to control and direct on-site surface runoff to ensure that stormwater runoff from the construction site does not exceed the capacity of the stormwater drainage systems. With implementation of BMPs, construction impacts related to a substantial increase in the rate or amount of surface runoff that would result in flooding would be less than significant, and no mitigation is required.

In the existing condition approximately 63 percent of the project site is pervious surface area and utilizes natural infiltration. For the remaining portion of the project site, stormwater runoff sheet flows from north to south, where it is eventually captured by the public curb and gutter along the north side of Lampson Avenue.

The proposed project would increase the amount of impervious surface from 29,188 sf to 40,603 sf (16.3 percent), which would increase the stormwater runoff generated by the project site. The proposed stormwater drainage plan would divide the project site into two almost equal-sized drainage areas. Drainage Management Area (DMA)-1 would collect stormwater from the western half of the project site and DMA-2 would collect stormwater from the eastern half of the project site. Stormwater runoff from each of the DMAs would flow south until captured by the curb and gutter on the easterly (DMA-2) and westerly (DMA-1) sides of the proposed drive aisle. Once captured by the curb and gutter, drainage would continue to flow south until captured by on site catch basins and to infiltration basins for treatment. Overflow would be conveyed south to the public curb and gutter on Lampson Avenue and then west to the public catch basin located near the Magnolia and Lampson Avenue intersection. The infiltration basins would allow treated stormwater to be infiltrated and the overflow that is sent to the public storm drain system would ultimately be conveyed to the Bolsa Chica Channel and eventually to Anaheim Bay. The proposed project would increase flows in DMA-1 by 0.11 cubic feet per second (cfs), 0.13 cfs, and 0.15 cfs for the 10-year, 25-year, and 100-year storm events, respectively. DMA-2 flows would be increased by 0.15 cfs, 0.18 cfs, and 0.23 cfs, for the 10-year, 25-year, and 100-year storm events, respectively.

According to the Preliminary Drainage Study (MDS Consulting 2022), the proposed drainage plan, including the streets, storm drain system, and basins, was designed using the methodology outlined in the Orange County Hydrology Manual are sized to handle the increase in flows in the post-project condition. Because the on-site drainage systems and stormwater BMPs would be sized to collect and convey stormwater

runoff on the project site, proposed project impacts related to on- or off-site flooding from an increase in surface runoff would be less than significant, and no mitigation is required.

iii. 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; or

Less Than Significant Impact. As discussed under Response 4.10 (a), pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. Drainage patterns would be temporarily altered during grading and other construction activities, and construction-related pollutants could be spilled, leaked, or transported via storm runoff into adjacent drainages and downstream receiving waters. However, as specified in RC-WQ-1, the proposed project would be required to comply with the requirements set forth by the Construction General Permit and SWPPP, which would specify BMPs to be implemented to control the discharge of pollutants in stormwater runoff as a result of construction activities. Additionally, as discussed under Response 4.10 (c)(ii), the SWPPP would include construction BMPs to control and direct surface runoff on site to ensure that stormwater runoff from the construction site does not exceed the capacity of the stormwater drainage systems. Furthermore, any groundwater extracted during groundwater dewatering activities that is discharged to surface waters must meet the water quality limits specified in the applicable NPDES permit, as specified in RC-WQ-3.

For these reasons, with implementation of RC-WQ-1 and RC-WQ-3, construction impacts related to creation or contribution of runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would be less than significant, and no mitigation is required. The operation of the proposed project has the potential to introduce pollutants to the storm drain system from the proposed on-site uses. As discussed under Response 4.10 (a), expected pollutants of concern from long-term operations include pathogens (bacteria/viruses), metals, nutrients, toxic organic compounds, pesticides/herbicides, sediments/total suspended solids, trash and debris, and oil and grease. As required by RC-WQ-2 and RC-WQ-4, the WQMP would require the implementation of operational BMPs to reduce pollutants of concern in stormwater runoff. With implementation of operational BMPs, no substantial additional sources of polluted runoff would be discharged to the storm drain system.

Development of the proposed project would increase impervious surface area on the project site by a total of approximately 11,500 sf, which would increase stormwater runoff generated during project operation. The proposed project would install new storm drains, catch basins, and utilize onsite infiltration. As discussed in the Preliminary WQMP, on-site drainage facilities would be adequately sized to convey and reduce runoff, such that on-site and off-site drainage facility capacity would not be exceeded during a design storm. Therefore, the proposed project would not result in an exceedance of planned or existing stormwater drainage systems.

For the reasons discussed above, with adherence to Regulatory Compliance Measures RCM-WQ-2 and RCM-WQ-4, operational project impacts associated with the introduction of substantial sources of

polluted runoff or additional runoff would be less than significant and would not result in an exceedance in capacity of existing or planned stormwater drainage systems. No mitigation is required.

iv. Impede or redirect flood flows?

Less Than Significant Impact. The project site is not located within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain. According to the FEMA Flood Insurance Rate Map (FIRM) No. 06059C0136J, the project site is located within Zone X (FEMA 2009). Zone X is designated as an area determined to be outside the 500-year floodplain. As the proposed project would not place improvements and structures directly within a 100-year floodplain, the proposed project would not impede or redirect flood flows. Therefore, impacts related to impeding or redirecting of flood flows would be less than significant, and no mitigation would be required.

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

No Impact. Tsunamis are ocean waves generated by tectonic displacement of the seafloor associated with shallow earthquakes, seafloor landslides, rock falls, and exploding volcanic islands. Tsunamis can have wavelengths of up to 120 miles and travel as fast as 500 miles per hour across hundreds of miles of deep ocean. Upon reaching shallow coastal waters, the waves can reach up to 50 ft in height, causing great devastation to near-shore structures. The project site is located approximately 7.25 miles from the Pacific Ocean shoreline. According to the Department of Conservation Orange County Tsunami Hazard Areas Map (DOC 2021), the project site is located outside of the tsunami hazard area. Therefore, the project site would not be not subject to inundation from tsunamis, and there would be no risk of release of pollutants due to inundation from tsunami.

Seiching occurs when seismic ground shaking induces standing waves (seiches) inside water retention facilities (e.g., reservoirs and lakes). Such waves can cause retention structures to fail and flood downstream properties. The closest water retention facility to the project site is the West Street Basin located approximately 2.9 miles east of the project site. This water retention facility is quite small and distant from the project site and therefore does not cause a risk of inundation from seiche. Therefore, the project site would not be subject to inundation from seiche waves, and there would be no risk of release of pollutants due to inundation from seiche.

As discussed under Response 4.10 (c)(iv), the project site is located within Zone X (designated as an area determined to be outside the 500-year floodplain). The project would not change existing land uses on the project site compared to existing conditions. The proposed project would increase the number of residential units and include a small portion of open space; however, existing pollutants of concern are not anticipated to change due to land use changes. As discussed under Response 4.10 (a), BMPs would be implemented to target and reduce pollutants of concern on the project site. In addition, as previously discussed in Section 4.9, Hazards and Hazardous Materials, hazardous substances associated with residential uses would be limited in both amount and use. The materials used on site would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. There are no levees within the vicinity of the project site and as discussed above there are no water bodies within the vicinity of the project site that would pose a risk of flooding. Furthermore, because BMPs would reduce the

introduction of pollutants on the site and any hazardous materials used on site would be properly stored and contained, there would be a low potential for pollutants to be released from the project site in the unlikely event of inundation of the project site. Therefore, there would be no impacts related to release of pollutants in the event of inundation from flooding. No mitigation is required.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. The project is within the jurisdiction of the Santa Ana RWQCB. The Santa Ana RWQCB adopted a Water Quality Control Plan (i.e., Basin Plan) (1995, last updated February 2016) which designates beneficial uses for all surface and groundwater within its jurisdiction and establishes the water quality objectives and standards necessary to protect those beneficial uses. As summarized below, the project would comply with the applicable NPDES permits and would implement construction and operational BMPs to reduce pollutants of concern in stormwater runoff.

As discussed under Response 4.10 (a), during construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters. As specified in Regulatory Compliance Measure RC-WQ-1, the proposed project would be required to comply with the requirements set forth by the Construction General Permit, which requires the preparation of a SWPPP and implementation of construction BMPs to control stormwater runoff and discharge of pollutants.

As discussed under Response 4.10 (a), the primary pollutants of concern during project operations are pathogens (bacteria/viruses), metals, nutrients, toxic organic compounds, pesticides/herbicides, sediments/total suspended solids, trash and debris, and oil and grease. As stated under Response 4.10 (a), a final WQMP would be prepared for the project in compliance with the Orange County MS4 Permit and the DAMP. The Final WQMP would detail the Site Design, Source Control, and/or Treatment Control BMPs that would be implemented to treat stormwater runoff and reduce impacts to water quality during operation. The proposed BMPs would capture and treat stormwater runoff and reduce pollutants of concern in stormwater runoff.

The proposed project would comply with the applicable NPDES permits, which require the preparation of a SWPPP, preparation of a Final WQMP, and implementation of construction and operational BMPs to reduce pollutants of concern in stormwater runoff. As such, the project would not result in water quality impacts that would conflict with Santa Ana RWQCB's Water Quality Control Plan (Basin Plan). Impacts related to conflict with a water quality control plan would be less than significant, and no mitigation is required.

The Sustainable Groundwater Management Act (SGMA) was enacted in September 2014. SGMA requires governments and water agencies of high- and medium-priority basins to halt overdraft of groundwater basins. SGMA requires the formation of local Groundwater Sustainability Agencies (GSAs), which are required to adopt Groundwater Sustainability Plans to manage the sustainability of the groundwater basins. The project site is located within the Coastal Plain of Orange County Groundwater Basin, which is managed by the Orange County Water District (OCWD) (DWR 2004). The

Coastal Plain of Orange County Groundwater Basin is identified by the Department of Water Resources as a medium priority basin; therefore, development of a Groundwater Sustainability Plan is required. In compliance with this requirement, OCWD prepared and submitted the *Basin 8-1 Alternative – OCWD Management Area* (OCWD 2017) to the California DWR as an alternative to a Groundwater Sustainability Plan (California DWR 2019). The *Basin 8-1 Alternative – OCWD Management Area* demonstrates that the groundwater basin has been sustainably managed over the last 11 years and will continue to be sustainably managed. As discussed under Responses 5.10.1 a. and b., the proposed project does not have the potential to impact groundwater quality, interfere with groundwater recharge, or decrease groundwater supplies. Any groundwater extracted during groundwater dewatering during construction would be minimal and would not interfere with the sustainable management of the groundwater basin. Additionally, project operation would not require groundwater extraction. Although the project would increase water use, which may be obtained from groundwater, the OCWD, ensures that sufficient water supplies are available so that groundwater overdraft does not occur. For these reasons, the proposed project would not conflict with or obstruct the implementation of a sustainable groundwater management plan. Therefore, no impact would occur related to conflict with or obstruction of water quality control plans or sustainable groundwater management plans, and no mitigation is required.

4.11 LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.11.1 Impact Analysis

a. *Would the project physically divide an established community?*

No Impact. The proposed project consists of Assessor’s Parcel Numbers (APNs) 133-183-55, 133-183-56, 133-183-57, and 133-183-58 that, when combined, are approximately 1.6 acres. The project site is primarily surrounded by single-family residential uses to the north, south, and east and multifamily residential uses to the west. The proposed project consists of the demolition of four existing structures (three single-family residential units and one accessory building) on the project site and the development of 13 residential lots with private recreational areas, an open space parcel, and two private streets. The proposed project area is located in a highly urbanized area and is surrounded by residential, commercial, and institutional uses. The proposed project would be a relatively small infill development that would not add any new roadways or structures that would divide or disrupt neighborhoods or communities, and it would not physically divide an established community. No impacts would occur. No mitigation is required.

b. *Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

No Impact. The proposed project area has a General Plan land use designation of low density residential. General Plan land use designations surrounding the project site include low density residential, low medium density residential, and office professional. The proposed project is consistent with the General Plan land use designations for the project site. Implementation program LU-IMP-2B of the City’s General Plan Land Use Element states that, “New development shall be similar in scale to the adjoining residential neighborhood to preserve its character.”

The proposed project includes the demolition of four existing structures (three single-family residential units and one accessory building) and the construction of 13 single-family homes. The project site is currently designated as low-density residential. The low-density residential designation is intended to create, maintain, and enhance residential areas characterized by detached, single unit structures, and single-family residential neighborhoods. There would be no change in use of the project site, which would continue to operate in a low-density residential capacity. Therefore, the proposed project would be consistent the LU-IMP-2B implementation program, would comply with

the intent of the City's General Plan land use designation, and would be similar in scale to the surrounding residential neighborhood in the project area.

The proposed project would not conflict with any applicable land use plans, policies, or regulations that have been adopted for the purpose of avoiding or mitigating environmental effects. As indicated in Section 4.8, the proposed project would comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197. The project would also be compliant with the SCAG Connect SoCal 2020-2045 RTP/SCS. Further, the proposed project would be consistent with City policies related to construction hours specified in the Noise Ordinance in the City of Garden Grove's Municipal Code Section 8.47.040 and Policy N – 1.1 of the City's General Plan Noise Element policies related to minimizing the noise impacts on residences from construction activities that take place in or near residential neighborhoods. The proposed project would also be consistent with City policies specified in the General Plan Circulation Element related to reduced vehicle trips (Goal CIR-4), alternative forms of transportation (Goal CIR-5), access and traffic flow in parking areas (Goal CIR-7), attractive streetscapes (Goal CIR-9), and traffic operations (Goal CIR-1). No impacts related to conflicts with land use plans or policies would occur, and no mitigation is required.

4.12 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.12.1 Impact Analysis

a. *Would the project 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?*

No Impact. In 1975, the California Legislature enacted the Surface Mining and Reclamation Act (SMARA), which, among other things, provided guidelines for the classification and designation of mineral lands. Areas are classified on the basis of geologic factors without regard to existing land use and land ownership. The areas are categorized into four Mineral Resource Zones (MRZs):

- **MRZ-1:** An area where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2:** An area where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- **MRZ-3:** An area containing mineral deposits, the significance of which cannot be evaluated.
- **MRZ-4:** An area where available information is inadequate for assignment to any other MRZ

Of the four categories, lands classified as MRZ-2 are of the greatest importance. Such areas are underlain by demonstrated mineral resources or are located where geologic data indicate that significant measured or indicated resources are present. MRZ-2 areas are designated by the Mining and Geology Board as being “regionally significant” (California Surface Mining and Reclamation Policies and Procedures 2000). Such designations require that a Lead Agency’s land use decisions involving designated areas be made in accordance with its mineral resource management policies and that it consider the importance of the mineral resource to the region or the State as a whole, not just to the Lead Agency’s jurisdiction.

No known mineral resources exist within the City of Garden Grove (City of Garden Grove General Plan Conservation Element, 2008). The proposed project would not result in the loss of a known commercially valuable or locally important mineral resource. No impacts to known mineral resources would occur as a result of the proposed project, and therefore, no mitigation would be required.

b. Would the project 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?

No Impact. As stated in Response 4.12 (a), there are no known mineral resources within the City of Garden Grove. The project site is currently developed with four structures including three single-family residential units and one accessory building. No mineral extraction activities occur on the project site, and it is not located within an area known to contain locally important mineral resources. Therefore, the project would not result in the loss of availability of a locally important mineral resource recovery site as delineated on a local general plan, specific plan, or other land use plan as a result of project implementation. No mitigation would be required.

4.13 NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The impact analysis below is based on the results of the *Noise and Vibration Impact Memorandum* (2022), prepared by LSA Associates, Inc. for the proposed project, and included as Appendix E.

4.13.1 Impact Analysis

- a. *Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less Than Significant with Mitigation Incorporated. The proposed project would result in short-term construction noise impacts on adjacent land uses and long-term noise impacts related to mobile sources.

Short-Term Construction Noise Impacts

Construction noise impacts would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of impacts generally would be from 1 day to several weeks depending on the phase of construction. Two types of short-term noise impacts would occur during project construction: (1) equipment delivery and construction worker commutes, and (2) project construction operations. The first type of short-term construction noise would result from transport of construction equipment and materials to the project site and construction worker commutes. These transportation activities would incrementally raise noise levels on access roads leading to the site. It is expected that larger trucks used in equipment delivery would generate higher noise impacts than trucks associated with worker commutes. The single-event noise from equipment trucks passing at a distance of 50 ft from a sensitive noise receptor would reach a maximum level of 84 A-weighted decibel maximum instantaneous sound level (dBA L_{max}). However, the pieces of heavy equipment for grading and construction activities would be moved on site one time and would remain on site for the duration of all construction phases. This one-time trip, when heavy construction equipment is moved on and off site, would not add to the daily traffic noise in the project vicinity. The total number of daily vehicle

trips would be minimal when compared to existing traffic volumes on the affected streets, and the long-term noise level changes associated with these trips would not be perceptible. Therefore, equipment transport noise and construction-related worker commute impacts would be short-term and would not result in a significant off-site noise impact.

The second type of short-term noise impact is related to noise generated during demolition, site preparation, grading, building construction, paving, and architectural coating on the project site. Construction is undertaken in discrete steps, each of which has its own mix of equipment and its own noise characteristics. These various sequential phases would change the character of the noise generated on the project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 4.13.A lists the maximum noise levels for typical construction equipment based on a distance of 50 ft between the construction equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1–2 minutes of full power operation followed by 3–4 minutes at lower power settings.

In addition to the reference maximum noise level, the usage factor provided in Table 4.13.B is used to calculate the hourly noise level impact for each piece of equipment. Each piece of construction equipment is operated as an individual point source. Table 4.13.A shows the composite noise levels of the pieces of equipment for each construction phase at a distance of 50 ft from the construction area.

As presented above, Table 4.13.B shows the construction phases, the expected duration of each phase, the equipment expected to be used during each phase, the composite noise levels of the equipment at 50 ft, the distance of the nearest residential building from the average location of construction activities (a distance of 110 ft from the center of the project site), and noise levels expected during each phase of construction. These noise level projections do not take into account intervening topography or barriers. It is expected that average noise levels during construction at the nearest residences to the west would approach 80 dBA L_{eq} during the demolition phase, which would take place for a duration of approximately 6 weeks. Average noise levels during other construction phases would range from 74 dBA L_{eq} to 79 dBA L_{eq} . The elevated noise levels would cease once project construction is completed. The proposed project would be required to comply with the construction hours specified in the City's Noise Ordinance which states that construction activities on sites within 500 ft of a residentially zoned property are allowed between 7:00 a.m. and 10:00 p.m. Emergency work is excluded from these restrictions. Additionally, Policy N – 1.1 of the City's General Plan Noise Element requires the proposed project to develop techniques to minimize the noise impacts on residences from construction activities in or near residential neighborhoods. With adherence to the City's Noise Ordinance, as summarized in Regulatory Compliance Measure RC-NOI-1, below, and the City's General Plan Policy N – 1.1, as summarized in RC-NOI-2, noise levels during construction would be reduced to the greatest extent feasible. While construction operations have the potential to generate audible noise at surrounding uses, construction noise levels generated during the permitted hours are exempt from compliance with City noise standards, would be temporary and mobile, and would be less than significant. No mitigation is required.

Table 4.13.A: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%) ¹	Maximum Noise Level (L _{max}) at 50 Ft ²
Auger Drill Rig	20	84
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Paver	50	77
Pickup Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Trencher	50	80
Welder	40	73

Source: FHWA Roadway Construction Noise Model User's Guide, Table 1 (FHWA 2006).

Note: Noise levels reported in this table are rounded to the nearest whole number.

¹ Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

² Maximum noise levels were developed based on Specification 721.560 from the Central Artery/Tunnel program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

FHWA = Federal Highway Administration

ft = foot/feet

L_{max} = maximum instantaneous sound level

Table 4.13.B: Construction Noise Levels by Phase

Phase	Duration (days)	Equipment	Composite Noise Level at 50 ft (dBA L _{eq})	Distance to Sensitive Receptor (ft) ¹	Noise Level at Receptor (dBA L _{eq})
Demolition	30	2 dumpers/tenders, 2 excavators, 1 dozer, 3 tractors/loaders/backhoes	87	110	80
Site Preparation	90	1 dumper/tender, 1 excavator, 1 grader, 1 dozer, 1 tractor/loader/backhoe	86	110	79
Grading	30	1 grader, 1 dozer, 2 tractors/loaders/backhoes	86	110	79
Building Construction	180	1 air compressor, 1 crane, 1 forklift, 1 generator, 1 tractor/loader/backhoe, 3 welders	84	110	77
Paving	90	1 cement and mortar mixer, 1 paver, 1 paving equipment, 1 roller, 1 tractor/loader/backhoe	85	110	78
Architectural Coating	30	1 air compressor	74	110	74

Source: Compiled by LSA (2022).

¹ Distances are from the average location of construction activity for each phase, center of project site. Residential zoned properties would be within 300 ft of the edge of construction activity
dBA L_{eq} = average A-weighted hourly noise level
ft = foot/feet

Long-Term Off-Site Traffic and Operational Noise and Ground-Borne Noise from Vehicular Traffic Impacts

The proposed project is estimated to generate an average daily traffic (ADT) volume of 95 based on 13 single-family residential units. The existing ADT volume on Lampson Avenue is 13,853 (City of Garden Grove, Circulation Element 2008). While the existing volume is likely higher today, the project-related traffic would increase traffic noise along Lampson Avenue by up to 0.1 dBA. This noise level increase would not be perceptible to the human ear in an outdoor environment. Therefore, traffic noise impacts from project-related traffic on off-site sensitive receptors would be less than significant, and no mitigation is required.

Potential long-term noise impacts would be associated with stationary sources proposed on the project site. Stationary noise sources from the proposed project would include noise generated from on-site heating, ventilation, and air conditioning (HVAC) noise. Based on previous measurements that LSA has conducted, the HVAC equipment would generate noise levels of 66.6 dBA L_{eq} at 5 ft per HVAC unit. The closest off-site residential use during operation of the proposed project would be the existing single-family residences surrounding the project site. Because the exact location of HVAC equipment and the specifications are unknown at this time, operations could potentially result in a significant impact. Table 4.13.C provides a summary of HVAC noise levels for the proposed project that potentially may reach properties adjacent to the project site.

Table 4.13.C: Summary of HVAC Noise Levels

Off-Site Land Use	Direction	Description	Distance from HVAC Units (ft)	Reference Noise Level (dBA L_{eq}) at 5 ft	Distance Attenuation (dBA)	Average Noise Level (dBA L_{eq})
Residential	East	Single-Family House	35	66.6	16.9	49.7

Source: Compiled by LSA (2021).

dBA = A-weighted decibels

ft = foot/feet

HVAC = heating, ventilation, and air conditioning

L_{eq} = equivalent continuous sound level

By providing quieter HVAC equipment or by keeping HVAC equipment 35 ft or more from the adjacent property lines the City’s exterior noise level standard would be met as described in Mitigation Measure MM-NOI-1. With implementation of MM NOI-1 that requires distance attenuation, noise generated from on-site HVAC equipment 35 ft from the project property line would potentially reach up to 49.7 dBA L_{eq} at the nearest residences, which would not exceed the City’s exterior daytime (7:00 a.m. to 9:00 p.m.) and nighttime (9:00 p.m. to 7:00 a.m.) noise standards of 55 dBA L_{eq} and 50 dBA L_{eq} , respectively, for residential uses. Therefore, noise associated with the on-site HVAC equipment would be less than significant with incorporation of Mitigation Measure NOI-1.

On-Site Traffic Noise Impacts

Existing traffic noise levels at the project site are expected to reach 61 dBA community noise equivalent level (CNEL) at the building setbacks. To estimate noise levels along Lampson Avenue between Magnolia Street and Gilbert Street for future traffic conditions, the project trips are added to existing volumes. The existing ADT volume for the adjacent segment of Lampson Avenue is 13,853. Future capacity ADT volume for the segment of Lampson Avenue between Magnolia Street and Gilbert Street, based on the City’s General Plan Circulation Element, is estimated to be 25,000. Taking into account the future volume adjustment of 2.6 dBA CNEL, future noise levels are expected to approach 63.6 dBA CNEL at the private exterior living area of the single-family homes closest to Lampson Avenue. Therefore, noise levels at outdoor noise-sensitive uses would be less than significant since the levels would not exceed the City’s exterior allowable noise exposure level of 65 dBA CNEL. No mitigation is required.

In addition to the exterior noise level standards, the project must demonstrate compliance with the interior noise standard of 45 dBA CNEL. Based on the Environmental Protection Agency’s *Protective Noise Levels*, with windows and doors open, interior noise levels would be 52.0 dBA (i.e., 64.0 dBA–12 dBA = 52.0 dBA), which would exceed the 45 dBA CNEL interior noise standard. The proposed project includes an HVAC system that would allow windows to remain closed. With the incorporation of standard building construction which assumes a wall rating of Sound Transmission Class (STC) 46 along with a window rating of STC-25 with a windows closed condition, interior noise levels would be 39 dBA (i.e., 64 dBA–25 dBA = 39 dBA), which is below the 45 dBA CNEL interior noise standard with windows closed for noise-sensitive land uses. Therefore, with standard building construction and the proposed HVAC system, the interior noise levels would be less than significant, and no mitigation is required.

4.13.2 Regulatory Compliance and Mitigation Measures

The following Regulatory Compliance Measures are required to reduce construction noise and vibration impacts to the extent feasible:

RC-NOI-1 The proposed project shall be required to comply with the construction hours specified in the City of Garden Grove's (City) Noise Ordinance, which states that construction activities on sites within 500 feet (ft) of a residentially zoned property are allowed between the hours of 7:00 a.m. and 10:00 p.m.

RC-NOI-2 As required by the policies of the City's General Plan Noise Element, the proposed project must implement techniques to minimize the noise impacts on residences from construction activities that take place in or near residential neighborhoods. The following are measures that shall be implemented:

- Noise and ground-borne vibration construction activities whose specific location on the project site may be flexible (e.g., operation of compressors and generators, cement mixing, and general truck idling) shall be conducted as far as possible from the nearest off-site land uses.
- When possible, construction activities shall be scheduled to avoid operating several pieces of equipment simultaneously, which causes high noise levels.
- The project contractor shall use power construction equipment with state-of-the-art noise shielding and muffling devices.
- Barriers such as flexible sound control curtains shall be erected around heavy equipment to minimize the amount of noise on the surrounding land uses to the maximum extent feasible during construction.
- All construction truck traffic shall be restricted to truck routes approved by the City, which shall avoid residential areas and other sensitive receptors to the extent feasible.
- A construction notice shall be prepared and shall include the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public and approved by the City.

The following Mitigation Measure (MM) is required to reduce operational noise impacts to a less than significant level.

MM-NOI-1 HVAC Equipment. Prior to issuance of building permits, the City’s Community Development Director, or designee, shall verify that building plans indicate that mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC]) shall have a sound rating of less than 66.6 A-weighted decibels (dBA) when measured at more than 35 feet from the project property line to assure compliance with the City’s Noise Ordinance. Should HVAC equipment be louder or closer than those details provided above, the applicant would be required to retain an acoustical engineer to model noise levels and confirm that noise levels would comply with City exterior noise standards, prior to issuance of a certificate of occupancy. In this circumstance, a follow-up noise memorandum shall be prepared by the acoustical engineer and submitted to the City’s Community Development Director, or designee, for approval.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant with Mitigation Incorporated. Project construction would result in short-term vibration impacts on adjacent land uses as detailed in the analysis below. Construction impacts would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction. The duration of impacts generally would be from 1 day to several weeks depending on the phase of construction.

Ground-borne noise and vibration from construction activity would be mostly low. Table 4.13.D provides reference peak particle velocity (PPV) values and vibration levels (in terms of vibration velocity in decibels [VdB]) from typical construction vibration sources at 25 ft. Although the specific pieces of equipment that would be used on the site are unknown at this time, to provide an analysis of potential vibration levels expected for a project of this size, a large bulldozer would generate 0.089 PPV (in/sec) of ground-borne vibration when measured at 25 ft, based on the Federal Transit Administration’s (FTA) *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual). It would take a minimum of 0.20 PPV (in/sec) to cause any potential building damage to non-engineered timber and masonry buildings.

Table 4.13.D: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L _v at 25 ft	
	PPV (in/sec)	L _v (VdB) ¹
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

¹ RMS VdB re 1 μin/sec.

μin/sec = micro-inches per second

ft = foot/feet

FTA = Federal Transit Administration

in/sec = inches per second

L_v = velocity in decibels

PPV = peak particle velocity

RMS = root-mean-square

VdB = vibration velocity in decibels

The closest structure to the project site is the residence to the north of the site, approximately 5 ft from the limits of construction activity. Using the reference data from Table 4.13.E, it is expected that vibration levels generated by dump trucks and other large equipment that would be as close as 10 ft from the property line would generate ground-borne vibration levels of up to 0.192 PPV (in/sec) at the closest structure to the project site. This vibration level would not exceed the 0.2 PPV (in/sec) threshold considered safe for non-engineered timber and masonry buildings. It is expected that construction activities utilizing heavy equipment would generate vibration levels greater than 0.2 in/sec in PPV when operating within 10 ft of the property line, which would result in a potentially significant impact. Vibration levels at all other buildings would be lower. In order to mitigate impacts, Mitigation Measure MM-NOI-2 is required to ensure that damage to surrounding structures does not occur. Therefore, construction would not result in any vibration damage, and impacts would be less than significant with the incorporation of MM-NOI-2.

Additionally, analysis was conducted to determine whether the construction vibration could cause annoyance to humans. The existing residence, located approximately 110 ft to the west from the center of the project site, is the nearest sensitive receptor and would experience vibration levels approaching 68 VdB. This level of ground-borne vibration is below the threshold of distinctly perceptible, which is approximately 72 VdB for frequent events at locations where people sleep and would not exceed the FTA vibration threshold for human annoyance at the nearest sensitive use. Project construction would not result in vibration levels that would typically result in human annoyance.

Lastly, long-term ground-borne vibration from vehicular traffic was analyzed for the proposed project. Because the rubber tires and suspension systems of buses and other on-road vehicles provide vibration isolation and reduce noise, it is unusual for on-road vehicles to cause ground-borne noise or vibration. When on-road vehicles cause such effects as the rattling of windows, the source is almost always airborne noise. Most problems with on-road vehicle-related noise and vibration can be directly related to a pothole, bump, expansion joint, or other discontinuity in the road surface. Smoothing the bump or filling the pothole will usually solve the problem. The proposed project would be accessed from roads with smooth pavement and would not result in significant ground-borne noise or vibration impacts from vehicular traffic. Overall, potential impacts related to the generation of excessive ground-borne vibration or ground-borne noise levels would be reduced to less than significant with the incorporation of MM-NOI-2.

4.13.3 Mitigation Measures

The following mitigation measure is required to reduce noise and vibration impacts to a less than significant level:

MM-NOI-2 Construction Vibration Damage. Due to the close proximity to surrounding structures, the City's Community Development Director, or designee, shall verify prior to issuance of demolition and grading permits, that demolition and grading plans shall require the construction contractor to implement the following mitigation measures

during project construction activities to ensure that damage does not occur at surrounding structures:

- Identify structures that are located within 5 feet (ft) of heavy construction activities and that have the potential to be affected by ground-borne vibration. This task shall be conducted by a qualified structural engineer as approved by the City's Community Development Director, or designee.
- Develop a vibration monitoring and construction contingency plan for approval by the City's Community Development Director, or designee, to identify structures where monitoring would be conducted; set up a vibration monitoring schedule; define structure-specific vibration limits to avoid damage; and address the need to conduct photo, elevation, and crack surveys to document before and after construction conditions. Construction contingencies would be identified for when vibration levels approached the limits. The contingencies may include, but are not limited to use of smaller equipment, increased distance requirements, and alternative construction methods.
- At a minimum, monitor vibration during initial demolition activities. Monitoring results may indicate the need for more or less intensive measurements.
- When vibration levels approach limits, suspend construction and implement contingencies as identified in the approved vibration monitoring and construction contingency plan to either lower vibration levels or secure the affected structures.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 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?

No Impact. The project site is approximately 6.25 miles south of Fullerton Municipal Airport and approximately 3.85 miles west of Joint Forces Training Base in Los Alamitos. Based on a review of the Airport Influence Area Map for the Fullerton Municipal Airport (Los Angeles County Airport Land Use Commission 2003), noise impacts related to aircraft operations may contribute to the aircraft noise in the project area; however, the project site is well outside of the 60 dBA CNEL contours. Additionally, the project site is not in a flight pattern area (i.e., takeoff or landing) for either airport. Therefore, the proposed project would not expose people residing or working in the proposed project vicinity to excessive noise levels from aircraft noise. No noise impacts would occur, and no mitigation is required.

This page intentionally left blank

4.14 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.14.1 Impact Analysis

- a. *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

Less Than Significant Impact. The project site is currently developed and located within an urban area of the City of Garden Grove (City). Approval of the project involves a zone change to a Planned Unit Development (PUD), a variance to deviate from the minimum 3-acre requirement to allow a zone change to a PUD, approval of a Vesting Tentative Tract Map and Site Plan, and construction of 13 single-family units with private recreational areas, an open space parcel, and two private streets.

According to the United States Census Bureau 2020 Decennial Census data, the population in the City of Garden Grove is approximately 171,949. As articulated in Section 4.15, Public Services, below, the proposed project would result in an increase of approximately 47 residents.⁴ This increase in population would incrementally increase the City’s population by 0.03 percent to 171,996 residents. Southern California Association of Governments’ (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) forecasts that the population for the City of Garden Grove would increase from 176,000 in 2016 to approximately 185,800 people by the year 2045 (SCAG 2020). The projected increase of 47 residents from the proposed project represents approximately 0.5 percent of the forecasted projected growth for the City, and therefore, the proposed project would be consistent with the SCAG growth projections.⁵ Additionally, the City’s Regional Housing Needs Assessment (RHNA) for the 2021–2029 planning period identifies that the City’s future housing need is 19,168 units for very-low income, low income, moderate income, and above moderate income

⁴ Proposed project residents: 13 single-family residential units x 3.57 persons/household (according to United States Census Bureau 2020 Decennial Census Data) = 46.4 persons.
Net increase of residents: 47 additional persons – (3 existing single-family residential units x 3.57 persons/household) = 36 persons.

⁵ SCAG’s forecasted growth from 2016 to 2045 in the City is 176,000 to 185,800 (addition of 9,800 residents). (47 new residents from proposed project)/(population growth of 9,800) = 0.5 percent.

households (City of Garden Grove 2021). The project would contribute toward the City's future housing need for the 2021–2029 planning period.

The proposed project's forecasted population growth accounts for less than one percent of the City's overall population and is within the City's population forecast, and it would also contribute to the City's future housing needs. Therefore, the project would not induce substantial unplanned population growth, and the effects would be less than significant. No mitigation is required.

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Less Than Significant Impact. In its existing condition, the project site is developed with three single-family residential homes and a small accessory building currently used as an office. Project construction would include the removal of those three single-family units in order to construct 13 single-family homes on the project site. Although there would be permanent displacement of the residents currently living at the project site, the proposed project includes the construction of replacement housing that would accommodate ten more units than the current conditions on the project site. The project would not result in the displacement of substantial numbers of existing people or housing that would necessitate the construction of replacement housing elsewhere. Impacts would be less than significant, and no mitigation is required.

4.15 PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
i. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.15.1 Impact Analysis

a. *Would the project 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:*

i. *Fire protection?*

Less Than Significant Impact. Fire prevention, fire protection, and emergency medical services in the Project area are provided by the Orange County Fire Authority (OCFA). OCFA is a regional service agency that provides fire suppression, emergency medical services, hazardous materials response, wildland firefighting, technical rescue, and airport rescue firefighting services, and a variety of other public services to its service area of approximately two million residents that includes 24 cities in Orange County and all unincorporated areas in the County. Currently, OCFA has a total of 77 stations located throughout Orange County (OCFA Fiscal Year 2020–2021 Adopted Budget, 2021). OCFA Fire Station No. 82 is located approximately 0.7-mile northeast of the project site at 11805 Gilbert Street and is the station that would be the first to serve the project area in the event of an emergency.

In Fiscal Year 2020–2021, OCFA responded to emergency calls within 9 minutes and 15 seconds 90 percent of the time across all service areas (OCFA Fiscal Year 2020–2021 Adopted Budget, 2021). Although the ratio of firefighters per 10,000 residents increased slightly in the last two fiscal years from 5.39 to 5.86 firefighters for every 10,000 residents, during the past 10-year time frame, emergency call load has increased by 83 percent, due in part to the City of Santa Ana joining the OCFA in April of 2012 and the City of Garden Grove joining in August 2019 (OCFA Fiscal Year 2020–2021 Adopted Budget, 2021).

The proposed project would adhere to the public safety-related development standards described in Chapter 9.32.180 of the City's Municipal Code which addresses public nuisances and Chapter 9.32.030 of the City's Municipal Code, which addresses land use actions that are approved by the Planning Commission, Zoning Administrator, and City Council. The proposed project would also be designed to comply with all OCFA requirements, including providing adequate fire flow/structure protection to the proposed project area and providing adequate access for emergency vehicles. The project would be required to obtain City Fire Department approval of building plans prior to issuance of building permits. Although the proposed project would result in approximately 47 additional residents and a net increase of 36 residents⁶, it is not anticipated that the development would substantially increase the need for fire protection services, or adversely affect the City's Fire Department's ability to provide service to the site via existing equipment and personnel because of the small number of additional residents. Therefore, a less than significant impact would occur, and no mitigation is required.

ii. Police protection?

Less Than Significant Impact. The Garden Grove Police Department (GGPD) provides police services within the City of Garden Grove. The proposed project would result in the development of 13 residential lots with private recreational areas, an open space parcel, and two private streets. The GGPD station and headquarters are located at 11301 Acacia Parkway, approximately 2.2 miles southeast of the project site. As described above, the proposed project would result in an increase of approximately 47 residents. However, this slight increase in the City's population would not substantially increase the demand for police protection services or facilities. No long-term road closures or closures during peak travel hours are anticipated through the proposed project area during construction of the proposed development project. Additionally, the proposed project would adhere to all applicable policies and codes related to the provision of police services. Therefore, impacts on police services would be less than significant, and no mitigation is required.

iii. Schools?

Less Than Significant Impact. The Garden Grove Unified School District (GGUSD) consists of 71 schools including preschool and elementary schools, intermediate schools, high schools, and alternative schools, and provides education services to nearly 40,500 students in the cities of Garden Grove, Anaheim, Cypress, Fountain Valley, Santa Ana, Stanton, and Westminster. GGUSD schools within the vicinity of the project site include Louis G. Zeyen Elementary School located at 12081 Magnolia Street, Brookhurst Elementary School located at 9821 William Dalton Way, Stanford Elementary School located at 12721 Magnolia Street, and Hare High School located at 12012 Magnolia Street. The closest GGUSD schools to the project site are Stanford Elementary School and Louis G. Zeyen Elementary School, which are located approximately 0.2 mile southwest and 0.5 mile northwest of the project site, respectively. As described above, the proposed project would result in an increase of about 47 residents, and pursuant to California Government Code Section 17620, the governing board of GGUSD is authorized to levy a fee, charge, dedication, or other requirement against the proposed

⁶ Proposed project residents: 13 single-family residential units x 3.57 persons/household (according to United States Census Bureau 2020 Decennial Census Data) = 46.4 persons.
Net increase of residents: 47 additional persons – (3 existing single-family residential units x 3.57 persons/household) = 36 persons.

project which lies within the boundaries of the district, for the purpose of funding the construction or reconstruction of school facilities to accommodate future student enrollment. Additionally, the proposed project would be required to pay mitigation school fees which are applied to new development projects in the City by GGUSD (City of Garden Grove 2021c). Therefore, impacts related to student generation and the potential need for additional school facilities would be less than significant, and no mitigation is required. Therefore, the proposed project would have a less than significant impact related to demand for school facilities. No mitigation is required.

iv. Parks?

Less Than Significant Impact. According to the City's General Plan Parks, Recreation, and Open Space Element (2008), the City maintains approximately 157.1 acres of parkland. The Parks, Recreation, and Open Space Element established a standard of 2.0 acres of parkland per 1,000 residents. According to the United States Census Bureau 2020 Decennial Census data, the population in the City of Garden Grove is approximately 171,949. Based on this population, this target is not currently met, with approximately 0.9 acre of parkland available per 1,000 residents.⁷ As described above, the proposed project would result in an increase of approximately 47 residents, which would not lead to a substantial increase in the population or visitors to the project area. The proposed project would also include on-site grass areas and recreational facilities for residents. Therefore, the proposed project would have a less than significant impact related to the demand for parks. No mitigation is required.

v. Other public facilities?

Less Than Significant Impact. Other public facilities, not previously mentioned above, may include, but are not limited to, libraries, recreational facilities that are not parks (parks are addressed above in 15(a)(iv)), and public works/maintenance services (trash, street sweeping, sewers, storm drains, transit, etc.). There is one library within 1 mile of the project site. The Orange County Public Library – Chapman Branch is located approximately 0.5 mile northeast of the project site at 9182 Chapman Avenue. As described above, the proposed project would result in an increase of approximately 47 residents. However, this slight increase in the City's population would not substantially increase the demand for public facilities in the proposed project area. Additionally, according to Section 9.44.010 of the City's Municipal Code, payment of in-lieu fees and development impact fees would be required to offset impacts to City infrastructure created by the proposed project. These fees include traffic impact mitigation fees (pursuant to Chapter 10.110 of the Municipal Code), a water assessment fee (pursuant to Chapter 14.24 of the Municipal Code), a drainage facilities fee and park fees for subdivisions (which is noted in Section 15 (a)(iv)) (pursuant to chapter 9.44), and a parkway tree fee (pursuant to Chapter 9.40 of the Municipal Code). Payment of applicable development fees would ensure that impacts to other public facilities would remain less than significant. No mitigation is required.

⁷ 157.1 acres / (171,949/1,000 residents) = 0.9 acre / 1,000 residents

This page intentionally left blank

4.16 RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.16.1 Impact Analysis

- a. *Would the project 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?*

Less Than Significant Impact. The proposed project The City of Garden Grove (City) Municipal Code Section 9.44.030 and General Plan Parks, Recreation, and Open Space Element states a goal of providing 2 acres of parks per 1,000 residents. The proposed project includes the construction of 13 single-family homes, which may lead to an increase of approximately 47 persons.⁸ According to the United States Census Bureau Decennial Census data, the population in the City of Garden Grove is approximately 171,949. Therefore, the City aims to provide approximately 344 acres of parks for the entirety of the City.⁹ With the additional 47 people that the proposed project may introduce, the city would still aim to provide approximately 344 acres of parks.

The addition of 47 persons would also amount to an approximately 0.03 percent increase in the total population, of the City of Garden Grove, which is a relatively small amount that would not substantially alter the use of existing recreational facilities. Additionally, although the project provides approximately 2,864 sf of open space uses, it would still comply with City codes requiring payment of impact fees for parks. Therefore, the residential development project would not affect the number of acres of parkland that the city aims to provide in its General Plan. Impacts related to this topic would be less than significant and no mitigation is required.

- b. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Less Than Significant Impact. According to the Garden Grove General Plan Parks, Recreation, and Open Space Element, there are currently approximately 157 acres of parks in the City. The closest City park facility is Hare School Park located at 12012 Magnolia Street, approximately 0.3 mile north of the project site. As specified in the Garden Grove Section 9.44, Mitigation Fees, the City collects park dedication and in-lieu fees for every residential subdivision. These park fees are to be used for

⁸ 13 single-family residential units x 3.57 persons/household = 46.4 persons

⁹ 171,949 persons x (2 acres/1,000 persons) = 344 acres

providing park and recreational facilities to serve future residents of the subdivision. The proposed project would be required to comply with Garden Grove Municipal Code Chapter 9.44. In addition to the payment of park dedication and in-lieu fees, the proposed project would include a 2,864 sf open space lot with grass (Lot "B") in the northeastern corner of the project on the corner of Street "A" and Street "B," as well as two open space lots bordering Lampson Avenue on the southern boundary of the project site. These lots will be landscaped and maintained by the homeowner's association. There will also be a total of 6,700 sf of landscaped area in the front yards of the residential units which would be maintained by the individual homeowners. Each residential unit will have backyard areas ranging in size from approximately 645 to 1,092 sf in addition to the front yard landscaped areas that they are responsible for maintaining. Additionally, the project does not propose, and would not create a need for, new or physically altered recreational facilities. Therefore, impacts would be less than significant, and no mitigation is required.

4.17 TRANSPORTATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.17.1 Impact Analysis

- a. *Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*

Less Than Significant Impact. The proposed project would be required to comply with the Circulation Element policies of the City of Garden Grove’s (City) General Plan (2008), as well as regulations outlined in the Municipal Code. The Circulation Element identifies and establishes the City’s policies governing the system of roadways, intersections, bicycle paths, pedestrian ways, and other components of the circulation system, which collectively provide for the movement of people and goods throughout the City. The Circulation Element establishes official City policy that:

- Identifies the transportation facilities that will be required to serve both present and future vehicular and non-vehicular travel demand in the City;
- Identifies classifications and design standards for circulation facilities; and
- Identifies strategies to implement the City’s circulation system.

Due to State legislation and the Orange County Congestion Management Program (CMP) requirements, a CMP highway network has been adopted in the City. The CMP arterials in the City of Garden Grove are the SR-22 Freeway, Valley View Street, Katella Avenue, Harbor Boulevard, and Westminster Avenue.

Most of the City’s Circulation Element goals and policies pertain to implementation programs that would be carried out by the City. However, some of the Circulation Element goals are applicable to the project. These consist of goals related to reduced vehicle trips (Goal CIR-4), alternative forms of transportation (Goal CIR-5), access and traffic flow in parking areas (Goal CIR-7), attractive streetscapes (Goal CIR-9), and traffic operations (Goal CIR-1). Project implementation would not conflict with these goals because, as discussed in Section 4.17 (b) below, the relatively small size of the project would not result in significant effects related to vehicle miles traveled (VMT). The project

would not impede the City's goal to provide increased awareness and use of alternate forms of transportation generated in, and traveling through, the City. The future residents of the project would have adequate access to appropriate parking in accordance with residential parking standards required by the City's Municipal Code. Project landscaping would provide street trees and landscaped areas along street frontages internal to the project and along Lampson Avenue. With respect to traffic operations, due to the relatively small size of the 13-unit residential subdivision, it would not inhibit the City's goal of providing a transportation system that maximizes freedom of movement and maintains a balance between mobility, safety, cost efficiency of maintenance, and the quality of the City's environment. As described below, the proposed project would not generate a substantial number of daily or peak-hour vehicle trips to warrant modifications to any other transportation facilities. The overall project design would provide and/or maintain required access for transit, roadway, bicycle, and pedestrian facilities and such facilities would be designed in a manner that is consistent with the City's transportation policies and street design standards.

With Senate Bill (SB) 743 becoming effective statewide in July 2020, automobile delay (level of service) is no longer considered to be a significant environmental effect under the California Environmental Quality Act (CEQA). Pursuant to SB 743, CEQA requires the evaluation of VMT when analyzing a project's environmental effects on transportation.

In order to assess the projected distribution of project traffic volumes on the surrounding circulation system, LSA calculated the project trips that would be generated for temporary construction activities based on the estimated number of construction trucks and workers, as well as the project trips once operational.

Based on the Project Description and construction information provided by the Applicant (email correspondence dated May 2022), construction of the project would include the following six phases (with phase durations and daily worker and truck estimates) over approximately 16.5 months, assuming some overlap between the phases:

1. Demolition (6 weeks): 12 workers and 2 haul trucks per day
2. Site Preparation (17 weeks): 8 workers per day
3. Grading (6 weeks): 8 workers and 9 haul trucks per day
4. Building Construction (36 weeks): 30 workers and 4 vendor trucks per day
5. Architectural Coating (18 weeks): 24 workers per day
6. Paving (6 weeks): 24 workers per day

A passenger car equivalent (PCE) factor of 2.0 has been applied to the trucks. Truck trips would occur throughout the day, including both peak hours. It is assumed that workers would arrive at the site prior to the a.m. peak hour and depart the site during the p.m. peak hour.

Tables 4.17.A and 4.17.B below present the construction and operational trip generation for the project.

Table 4.17.A: Construction Trip Generation

Construction Phase		Daily Vehicles					Vehicle Trip Generation						PCE Trip Generation								
							AM Peak Hour			PM Peak Hour			ADT	AM Peak Hour			PM Peak Hour				
Description	Duration ¹	Description	No.	Type	PCE	ADT	In	Out	Total	In	Out	Total		ADT	In	Out	Total	In	Out	Total	
1.	Demolition	6 weeks	Workers ²	12	Passenger	1	24	0	0	0	0	12	12	24	0	0	0	0	12	12	
			Haul Trucks ²	2	Truck	2	4	0	0	0	0	0	0	0	8	0	0	0	0	0	0
			Total				28	0	0	0	0	12	12	24	32	0	0	0	0	12	12
2.	Site Preparation	17 weeks	Workers ²	8	Passenger	1	16	0	0	0	0	8	8	16	0	0	0	0	8	8	
3.	Grading	6 weeks	Workers ²	8	Passenger	1	16	0	0	0	0	8	8	16	0	0	0	0	8	8	
			Haul Trucks ²	9	Truck	2	18	1	1	2	1	1	2	36	2	2	4	2	2	4	
			Total				34	1	1	2	1	9	10	52	2	2	4	2	10	12	
4.	Building Construction	36 weeks	Workers ²	30	Passenger	1	60	0	0	0	0	30	30	60	0	0	0	0	30	30	
			Vendor Trucks ²	4	Truck	2	8	0	0	0	0	0	0	16	0	0	0	0	0	0	
			Total				68	0	0	0	0	30	30	76	0	0	0	0	30	30	
5.	Architectural Coating	18 weeks	Workers ²	24	Passenger	1	48	0	0	0	0	24	24	48	0	0	0	0	24	24	
6.	Paving	6 weeks	Workers ²	24	Passenger	1	48	0	0	0	0	24	24	48	0	0	0	0	24	24	
Overlapping Phases 4 and 5	18 weeks	Workers ²	54	Passenger	1	108	0	0	0	0	54	54	108	0	0	0	0	54	54		
		Vendor Trucks ²	4	Truck	2	8	0	0	0	0	0	0	16	0	0	0	0	0	0		
		Total				116	0	0	0	0	54	54	124	0	0	0	0	54	54		

Source: PLC Communities (2022).

¹ Construction is anticipated to occur from June 2023 to October 2024.

² Workers are assumed to arrive prior to the a.m. peak hour and depart during the p.m. peak hour.

Truck trips are assumed to occur throughout the day.

ADT = average daily trips

PCE = passenger car equivalent. A worker vehicle has a PCE of 1 and a truck has a PCE of 2.

This page intentionally left blank

Table 4.17.B: Project Trip Generation

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates¹									
Single-Family Detached		du	9.43	0.18	0.52	0.70	0.59	0.35	0.94
Project Trip Generation									
Single-Family Detached	13	du	123	2	7	9	8	5	13
Existing Trip Generation									
Single-Family Detached	3	du	28	0	2	2	2	1	3
Net Trip Generation (Project - Existing)									
Single-Family Detached	10	du	95	2	5	7	6	4	10

Source: PLC Communities (2022).

¹ Trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition (2021).

Land Use Code 210 - Single-Family Detached Housing

ADT = average daily trip

DU = dwelling unit

As shown in Table 4.17.A, overlapping Phases 4 and 5 (Building Construction and Architectural Coating) is the most intense period of construction (i.e., the period with the highest construction trip generation). Phases 4 and 5 are anticipated to overlap with a duration of 18 weeks and generate 124 average daily trips (ADT), including zero trips in the a.m. peak hour and 54 outbound trips in the p.m. peak hour, in PCEs. All other phases of construction would generate 76 or fewer ADT, including 30 or fewer peak-hour trips, in PCEs.

As shown in Table 4.17.B, based on trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition (ITE 2021), for Land Use 210 (Single-Family Detached Housing), typical operations of the project (e.g., net increase of 10 homes) are expected to generate a maximum of 95 ADT, including 7 trips (2 inbound and 5 outbound) in the a.m. peak hour and 10 trips (6 inbound and 4 outbound) in the p.m. peak hour.

Based on the low daily and peak-hour trip generation for temporary construction activities and typical operations, the project is not anticipated to result in any operational deficiencies to the surrounding circulation system, including CMP street arterials.

The Project would not generate a substantial number of daily or peak-hour vehicle trips for construction or typical operations to warrant modifications to any transportation facilities (e.g., vehicular, transit, bicycle, or pedestrian). In addition, the project would not result in a significant conflict with goals and policies of the City’s Circulation Element nor would the project impede the City’s ability to carry out related transportation implementation programs. Furthermore, the project would not create operational deficiencies to street arterials that are part of the City’s CMP. Therefore, the proposed project would not result in a significant conflict with the City’s plans or policies addressing the circulation system, and no mitigation is required.

b. Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?

Less Than Significant Impact. State CEQA Guidelines Section 15064.3, Subdivision (b), states that for land use projects, transportation impacts are to be measured by evaluating the project's vehicle miles traveled (VMT), as outlined in the following:

Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

VMT is the amount and distance of automobile travel attributable to a project. According to the 2018 Office of Planning and Research's (OPR) Technical Advisory, "automobile" refers to "on-road passenger vehicles, specifically cars and light trucks." Thus, project construction trucks are not included in the project VMT assessment.

The OPR Technical Advisory recommends VMT screening thresholds for smaller projects by stating the following:

Screening Thresholds for Small Projects

Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact.

The OPR Technical Advisory recommends that a land use project generating 110 ADT or less be screened out of a VMT analysis due to the presumption of a less than significant impact. Similarly, the *City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment* has VMT analysis screening criteria of 110 ADT for the presumption of a less than significant impact.

The project would generate temporary construction trips over 16.5 months. During overlapping Phases 4 and 5 (Building Construction and Architectural Coating) over 18 weeks, the project would generate a maximum of 124 ADT (16 truck and 108 worker ADT) in PCEs. However, as previously described, construction trucks do not need to be included in the VMT assessment. All other phases of construction would generate 60 or fewer ADT for workers. Once built and occupied, the project would generate 95 ADT.

The project is estimated to generate a maximum of 108 worker ADT for temporary construction (excluding truck ADT), and it would generate 95 ADT once built and occupied. As such, the project is considered a small project for the purposes of this analysis and would not conflict or be inconsistent

with *State CEQA Guidelines* Section 15064.3(b). Potential impacts would be less than significant, and no mitigation is required.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. Lampson Avenue would provide direct access to the project site. Street improvements are not required to accommodate construction or operational traffic along this roadway. The sidewalk along Lampson Avenue would be improved to City standards to provide safe pedestrian access. In addition, the internal private streets (Streets “A” and “B”) and sidewalks proposed by the project would be designed to meet City standards. Based on the temporary nature of the construction activities and trips, and the low trip generation for daily operations, project vehicles would not create operational deficiencies or related hazards to the public roadways (e.g., Lampson Avenue and Magnolia Street) when accessing the project site. In addition, adequate visibility (without any sight obstructions) would be provided along Lampson Avenue for all vehicles to safely access the project site, as parking would be prohibited along the project frontage of Lampson Avenue and internally along proposed Street “A” near its intersection with Lampson Avenue. Given the street characteristics of Lampson Avenue and the traffic volumes for the surrounding residential uses in the project vicinity, the proposed project would not substantially increase hazards for vehicles due to a geometric design feature or incompatible uses. Therefore, impacts related to this issue are less than significant, and no mitigation is required.

d. Would the project result in inadequate emergency access?

Less Than Significant Impact. The project would not require improvements to Lampson Avenue for temporary construction or typical operational traffic as described above. All emergency access routes to the project site and adjacent areas would be kept clear and unobstructed during all phases of construction and operations. No roadway closures or lane closures are anticipated as part of project construction, and traffic volumes resulting from construction vehicles would not impede traffic flow on the surrounding circulation system. Streets “A” and “B” would be constructed consistent with City design standards and Project plans would be reviewed by the City’s Fire Department to ensure compliance with emergency standards. Therefore, the project would not result in inadequate emergency access, and no mitigation is required.

This page intentionally left blank

4.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.18.1 Impact Analysis

- a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*
- i. *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or*
 - ii. *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

Less Than Significant Impact with Mitigation Incorporated. A letter and location map describing the proposed project was sent to the Native American Heritage Commission (NAHC), requesting a list of tribes eligible to consult with the City, pursuant to Public Resources Code section 21080.3.1. On June 29, 2022, the NAHC responded in a letter with a list of tribal contacts. The City sent letters to these individuals via certified mail on August 3, 2022, notifying them of their opportunity to consult for this Project.

On August 10, 2022, the representative from the Gabrieleno Tribe – Kizh Nation responded with a list of construction monitoring measures that were requested to be included as part of project implementation. These mitigation measures are listed below. With implementation of mitigation measures MM-TCR-1 through MM-TCR-3, the proposed project would avoid any impacts on any unforeseen resources encountered during grading activities.

4.18.2 Mitigation Measures

The following mitigation measure is required to reduce tribal cultural resource impacts to a less than significant level:

MM-TCR-1 Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities.

The project applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any “ground-disturbing activity” for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). “Ground-disturbing activity” shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.

A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity.

The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or “TCR”), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the project applicant/lead agency upon written request to the Tribe.

On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the project applicant/lead agency that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact Kizh TCRs.

On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the project applicant/lead agency that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact Kizh TCRs.

MM-TCR-2 Unanticipated Discovery of Human Remains and Associated Funerary Objects.

Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute.

If Native American human remains and/or grave goods discovered or recognized on the project site, then all construction activities shall immediately cease. Health and Safety Code Section 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and all ground-disturbing activities shall immediately halt and shall remain halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe they are Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission, and Public Resources Code Section 5097.98 shall be followed.

Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).

Construction activities may resume in other parts of the project site at a minimum of 200 feet away from discovered human remains and/or burial goods, if the Kizh determines in its sole discretion that resuming construction activities at that distance is acceptable and provides the project manager express consent of that determination (along with any other mitigation measures the Kizh monitor and/or archaeologist deems necessary). (CEQA Guidelines Section 15064.5(f).)

Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods. Any historic archaeological material that is not Native American in origin (non-TCR) shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.

Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.

MM-TCR-3 Procedures for Burials and Funerary Remains.

As the Most Likely Descendant (“MLD”), the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term “human remains” encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains.

If the discovery of human remains includes four or more burials, the discovery location shall be treated as a cemetery and a separate treatment plan shall be created.

The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all sacred materials.

In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed.

In the event preservation in place is not possible despite good faith efforts by the project applicant/developer and/or landowner, before ground-disturbing activities may resume on the project site, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects.

Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

The Tribe will work closely with the project’s qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be prepared and shall include (at a minimum) detailed descriptive notes and sketches. All data recovery data recovery-

related forms of documentation shall be approved in advance by the Tribe. If any data recovery is performed, once complete, a final report shall be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.

This page intentionally left blank

4.19 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.19.1 Impact Analysis

- a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

Water

Less Than Significant Impact. The City of Garden Grove's main sources of water supply are groundwater from the Orange County Groundwater Basin (OC Basin) and imported potable water from the Metropolitan Water District of Southern California (MET) provided by the Municipal Water District of Orange County. In fiscal year 2019–2020, the City relied on approximately 50 percent groundwater and 50 percent imported water (City of Garden Grove 2020). It is projected that by 2045, the water supply mix will shift to 85 percent groundwater and 15 percent imported water. The imported water is treated at the Robert B. Diemer Filtration Plant located north of Yorba Linda.

Delivery of domestic water service in the City is provided by the Water Services Division of the City's Public Works Department. The Water Services Division is responsible for maintaining the wells, reservoirs, import water connections, and the distribution systems that deliver water throughout the City. To meet its infrastructure needs, the Water Services Division collaborates with other jurisdictions, agencies, and service providers, as required.

The proposed project would remain consistent with the City's General Plan and zoning requirements for residential uses. Projects that meet the requirements articulated in the General Plan and zoning

are considered planned for by the City's *2020 Urban Water Management Plan*, and therefore, capacity is assumed to be available. Additionally, the proposed project would implement a number of water conservation measures, including irrigation technologies such as smart irrigation technologies and high-efficiency irrigation methods, which would include sub-surface drip, stream bubblers with pressure-compensating screens that would be installed on separate valves, rotary nozzles, and smart irrigation controllers that shut off automatically when it rains. The proposed project would also be required to pay a water assessment fee (pursuant to Chapter 14.24 of the Municipal Code) for water facilities. Therefore, project impacts associated with an increase in potable water demand are considered less than significant, and no mitigation would be required.

Wastewater Treatment/Stormwater Drainage

Less Than Significant Impact. The Garden Grove Sanitary District is the primary agency responsible for the wastewater facilities in the City. The Garden Grove Sanitary District maintains wastewater treatment and collection operations via the City's Water Services Division of the Public Works Division. The Sanitation District maintains over 312 miles of sewer lines, 9,700 manholes, and four lift stations throughout the City. Once wastewater passes through the City's wastewater system, the Orange County Sanitation District (OCSD) is responsible for its treatment (City of Garden Grove 2022a).

OCSD is responsible for the collection, treatment, and disposal of domestic, commercial, and industrial wastewater generated by over 2.6 million people living and working in the central and northwestern County of Orange. OCSD facilities would receive wastewater generated from the proposed project. Wastewater from the proposed project would be treated at OCSD's Reclamation Plant No. 1 in Fountain Valley or at Treatment Plant No. 2 in Huntington Beach. Through these facilities, OCSD successfully collects, conveys, and treats wastewater generated daily in its service area before discharging the treated water into the Pacific Ocean. Average flows for Reclamation Plant No. 1 and Treatment Plant No. 2 are 119 million gallons per day (mgd) and 64 mgd, respectively. The combined average flow at both plants is 183 mgd (OCSD 2022).

As described in Chapter 2.0, Project Description, the proposed project intends to utilize the existing 18-inch sewer line located along the southern boundary of the project site and also extend two new 8-inch sewer lines within the project site. The proposed project would connect to the existing sanitary sewer line through the installation of a new 8-inch sewer line that would extend north along the proposed Street "A" to connect to another proposed 8-inch sewer line that would run along the proposed Street "B." The project site is currently developed with three single-family residential units and is adequately served by the existing wastewater conveyance system. The installation on the two new sanitary sewer lines along the proposed Street "A" and Street "B" would ensure that there is sufficient capacity in the local lines to accommodate the project's wastewater flows. The proposed project would also pay any required sewer connection fees.

As articulated in Section 4.10, Hydrology and Water Quality, the proposed project construction would comply with the requirements of the Construction General Permit and would include the preparation and implementation of a SWPPP. The SWPPP would include construction BMPs to control and direct on-site surface runoff and would include detention facilities, if required to ensure that stormwater runoff from the construction site does not exceed the capacity of the stormwater drainage systems. Further, the project proposes the installation of a 6-inch curb and gutter along the proposed Street

“B” that would drain towards Street “A”, which consists of rolled curbs and a 2-percent grade that would direct all runoff from the street to the two catch basins that are proposed along both sides of Street “A” where it approaches Lampson Avenue. There would also be two catch basins along the two proposed open space asphalted areas adjacent to the landscaped areas near Lampson Avenue. These proposed gutters and catch basins would connect to an existing 60-inch storm drain at the southern boundary of the project site along the north side of Lampson Avenue. Therefore, the proposed drainage facilities and best management practices (BMPs) needed to accommodate stormwater runoff would be appropriately implemented so that on-site flooding would not occur, and the facilities would be sufficient for the proposed project. In addition, as discussed in Section 4.10, the existing stormwater drainage facilities would provide sufficient capacity for surface runoff from the proposed project. Impacts would be less than significant because no expansion of existing facilities would be required, and no mitigation would be required.

Electric Power

Less Than Significant Impact. Electrical power would be supplied to the project site by Southern California Edison (SCE). SCE provides electricity to more than 15 million people in a 50,000-square mile area of central, coastal, and southern California. According to the California Energy Commission (CEC), total electricity consumption in the SCE service area in 2020 was 83,533 gigawatt-hours (GWh) (CEC 2020a). Total electricity consumption in Orange County in 2020 was approximately 19,733 GWh (CEC 2020b).

Short-term construction activities would be limited to providing power to the staging area and portable construction equipment and would not substantially increase the demand for electricity. All power on the project site during construction would be provided through temporary SCE power poles. After construction is complete, the temporary power poles would no longer be used, and there would not be a need to alter existing electric transmission facilities. Impacts to local regional supplies of electricity would be less than significant during construction, and no mitigation is required.

The proposed project includes onsite connections to the existing electric facilities adjacent to the project site. Operation of the proposed project would increase onsite electricity demand. As identified in Section 4.6, Energy, the proposed project would comply with the 2019 California Green Building Standards Code (CALGreen Code) for energy conservation and green building standards. The proposed project would also be constructed to meet Title 24 standards, which would help to reduce energy and natural gas consumption. The project would be required to adhere to all federal, State, and local requirements for energy efficiency, which would substantially reduce energy usage. In addition, the proposed project would be designed to include a 3-megawatt solar system. Overall, the proposed project would be subject to renewable energy or energy efficiency measures for building design, equipment use, and transportation. Based on the California Emissions Estimator Model (CalEEMod) outputs for the proposed project, the estimated potential increase in electricity demand associated with the operation of the proposed project is 101,635 kilowatt-hours (kWh) per year. Total electricity demand in Orange County in 2020 was approximately 19,733 GWh (19,733,139,603 kWh). Therefore, operation of the proposed project would increase annual consumption in Orange County by approximately 0.0005 percent. Because the proposed project would only represent a small fraction of electricity demand in Orange County, and because it would meet Title 24 requirements, there

would be sufficient electricity supplies available, and energy demand for the proposed project would be less than significant. No mitigation is required.

The supply and distribution network within the area surrounding the project site would remain essentially the same as exists currently, with the exception of on-site improvements to serve the proposed project. These on-site improvements would connect to the existing infrastructure and provide electrical service to the proposed residential uses. The proposed project would not increase electrical demand beyond existing projections from the local electricity provider, and the project site is within a developed service area. Therefore, the proposed project would not require the construction of any physical improvements related to the provision of electricity service that would result in significant environmental impacts, and the proposed project's impacts would be less than significant. No mitigation is required.

Natural Gas

Less Than Significant Impact. Southern California Gas Company (SoCalGas) is the natural gas service provider for the project site. SoCalGas provides natural gas to approximately 21.8 million people in a 24,000-square-mile service area throughout Central and Southern California, from Visalia to the Mexican border. According to the CEC, total natural gas consumption in the SoCalGas service area in 2020 was 5,231 million therms (CEC 2020c). Total natural gas consumption in Orange County in 2020 was 595 million therms (CEC 2020d). CalEEMod was used to calculate the approximate annual natural gas associated with the proposed project. The estimated potential increase in natural gas demand associated with the proposed project is 310,671 British thermal units (BTU) per year (3.11 therms per year). Because total natural gas consumption in Orange County in 2020 was 595 million therms (594,632,076 therms), the proposed project would negligibly increase the annual natural gas consumption in Orange County. As stated in Section 4.6 above, the proposed project would comply with the 2019 CALGreen Code for energy conservation and green building standards. The proposed project would also be constructed to Title 24 standards, which would help to reduce energy and natural gas consumption. Therefore, the proposed project would not require the construction of any physical improvements related to the provision of natural gas service that would result in significant environmental impact, and the proposed project's potential impacts would be less than significant. No mitigation is required.

Telecommunications Facilities

Less Than Significant Impact. Time Warner/Spectrum and Verizon are the telecommunications providers for the project site. Existing telephone, cable, and internet service lines in the vicinity would continue to serve the project site. The project Applicant would be responsible for constructing adequate telecommunication facility extensions on site for the proposed project. Therefore, the proposed project impacts associated with the relocation or construction of new or expanded telecommunication facilities and impacts would be less than significant. No mitigation is required.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact. As stated in Response 3.19 (a) above, the City's main sources of water supply are groundwater from the Orange County Groundwater Basin (OC Basin) and imported potable water from the Metropolitan Water District of Southern California provided by the Municipal Water District of Orange County. In fiscal year 2019–2020, the City relied on approximately 50 percent groundwater and 50 percent imported water (City of Garden Grove 2020). It is projected that by 2045, the water supply mix will shift to 85 percent groundwater and 15 percent imported water. The imported water is treated at the Robert B. Diemer Filtration Plant located north of Yorba Linda.

The City's water supply system provides service to a population of nearly 176,635 within the service area (City of Garden Grove 2020). According to the City's *2020 Urban Water Management Plan*, the total average water demand for the customers served by the City is approximately 23,717 acre-feet (af) annually over the last decade (2010 to 2020). The City consumed approximately 21,979 af in the fiscal year 2019–2020, and the projected water demand for 2045 is 22,792 af. According to the *2020 Urban Water Management Plan*, the City's water supplies are projected to increase by 3.7 percent between 2020 and 2045. However, single- and multi-family residential usage is expected to decrease in this timeframe.

According to water demand factors included in the CalEEMod emissions model, the proposed project is estimated to demand approximately 1,031,500 gallons per year (847,000 gallons for indoor use and 185,500 gallons for outdoor use) or 3.17 acre-feet per year (afy) of potable water.¹⁰ Therefore, the estimated increase in water demand associated with the new development proposed as part of the project would represent approximately 0.01 percent of the City of Garden Grove's current annual water demand, based on the system's projected demand of 21,979 af in 2020. The project-generated increase in water demand would be negligible and would fall within the Municipal Water District of Orange County's existing capacity and available supply.

According to the City's *2020 Urban Water Management Plan*, the City's available water supply would meet the future projected demand for normal year demands from 2025 through 2045 because of the diversified supply and conservation measures put in place. Should the need arise, the City can purchase more water from the Municipal Water District of Orange County. For single dry years, a 6 percent increase in demand is expected for the OC Basin area. However, the City would be able to meet the future projected demand in these conditions from 2025 to 2045 with significant reserved from the Municipal Water District, local groundwater supplies, and conservation. For multiple dry years, a 6 percent increase in demand is expected for the OC Basin area compounded over the multiple years. Even with the demand increase of 6 percent each year (for a five consecutive year scenario), the City would be capable of meeting all customers' demands from 2025 to 2045 with significant reserves by the Municipal Water District and conservation. Therefore, the proposed project would not result in insufficient water supplies during normal, dry, and multiple dry years, and impacts related to water supply would be less than significant. No mitigation is required.

¹⁰ 1,031,500 gallons x (1 af / 325851 gallons) = 3.17 af

- c. *Would the project 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?*

Less Than Significant Impact. Although the proposed project would increase wastewater generation on the project site, the increased wastewater flows from the project site would be accommodated within the existing design capacity of OCSD's wastewater treatment plants, Reclamation Plant No. 1 and Treatment Plant No. 2.

The proposed project's wastewater generation would equate to approximately 90 percent of the indoor water use. According to water demand factors included in the CalEEMod emissions model, the proposed project is estimated to demand approximately 1,031,500 gallons per year (847,000 gallons for indoor use and 185,500 gallons for outdoor use) or 3.17 afy of potable water.¹¹ Therefore, the project would generate approximately 928,350 gallons of wastewater per year, or approximately 2.85 afy. The estimated increase in wastewater associated with the new development proposed as part of the project would represent approximately 0.002 percent and 0.004 percent of the design capacity of OCSD's wastewater treatment plants Reclamation Plant No. 1 and Treatment Plant No. 2, respectively. The project-generated increase in wastewater demand would be negligible and would fall within the Municipal Water District of Orange County's existing capacity and available supply. Therefore, impacts related to wastewater treatment would be less than significant, and no mitigation would be required.

- d. *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Less Than Significant Impact. The project currently generates solid waste from the existing residential units on the project site and is served by the Garden Grove Sanitary District which contracts with Republic Services for solid waste services. The proposed project would be required to comply with State and local solid waste reduction, diversion, and recycling policies and regulations. According to CalEEMod calculations, the proposed project would generate 15.18 tons of solid waste per year. Waste from the proposed project would be processed at Olinda Alpha Landfill or Prima Deshecha Landfill. Currently, the Olinda Alpha Landfill permits up to 8,000 tons of waste per day, and the Prima Deshecha Landfill permits up to 4,000 tons of waste per day. According to the most recent inspection, the Olinda Alpha Landfill daily tonnage log indicated that the maximum tonnage accepted since the most recent inspection at the landfill (June 6, 2022) was 7,925 tons. Similarly, the Prima Deshecha Landfill daily tonnage log indicated that the maximum tonnage accepted since the most recent inspection at the landfill (June 1, 2022) was 2,618.94 tons. Therefore, the proposed project would add a small amount of waste for the two landfills which would have adequate capacity to serve the proposed project. Additionally, the project proposes residential uses and would not generate volumes or types of waste not already considered under the General Plan and zoning for the project site, and as addressed under existing policies and regulations. Impacts to solid waste disposal would be less than significant, and no mitigation measures would be required.

¹¹ 1,031,500 gallons x (1 af /325851 gallons) = 3.17 af

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. The California Integrated Waste Management Act (AB 939) changed the focus of solid waste management from landfill to diversion strategies (e.g., source reduction, recycling, and composting). The purpose of the diversion strategies is to reduce dependence on landfills for solid waste disposal. AB 939 established mandatory diversion goals of 25 percent by 1995 and 50 percent by 2000. According to the City's General Plan Conservation Element, in 2005, approximately 199,737 tons of waste produced by the City was disposed in a landfill while 64 tons were burned at a waste-to-energy facility. Of this, household disposal consisted of 52 percent of waste disposal while business disposal consisted of 48 percent.

The proposed project would comply with existing and future statutes and regulations, including waste diversion programs mandated by City, State, or federal law. In addition, as discussed above, the proposed project would not result in an excessive production of solid waste that would exceed the capacity of the existing landfill serving the project site, as the proposed project is consistent with residential uses planned for the site under the City's General Plan and zoning. Therefore, the proposed project would not result in an impact related to federal, State, and local statutes and regulations related to solid waste, and no mitigation would be required.

This page intentionally left blank

4.20 WILDFIRE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.20.1 Impact Analysis

a. *Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

No Impact. According to the California Department of Forestry and Fire Protection’s (CAL FIRE) Fire and Resource Assessment Program (FRAP), the proposed project is not located within or near a High or Very High Fire Hazard Severity Zone in either a State Responsibility Area or a Local Responsibility Area (CAL FIRE 2020). Therefore, with respect to wildfire potential, the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. No mitigation is required.

b. *Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

No Impact. As discussed in Response 4.20 (a), the proposed project is not located within or near a High or a Very High Fire Hazard Severity Zone in either a State Responsibility Area or a Local Responsibility Area (CAL FIRE 2020). The project site and its surrounding areas are relatively flat and located within an urban area. Therefore, the proposed project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. No mitigation is required.

- c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

No Impact. As discussed in Response 4.20 (a), the proposed project is not located within or near a High or a Very High Fire Hazard Severity Zone in either a State Responsibility Area or a Local Responsibility Area (CAL FIRE 2020). The project site and surrounding areas are developed with urban uses and the proposed residential development would maintain this character on site. The proposed project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. No mitigation is required.

- d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

No Impact. As discussed in Response 4.20 (a), the proposed project is not located within or near a High or a Very High Fire Hazard Severity Zone in either a State Responsibility Area or a Local Responsibility Area (CAL FIRE 2020). The topography of the surrounding areas and entire project site is relatively flat. Therefore, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. No mitigation is required.

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have 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, substantially 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.21.1 Impact Analysis

- a. *Does the project have 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, substantially 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?*

Less Than Significant with Mitigation Incorporated. As articulated in Section 4.4, Biological Resources, no special-status or endangered species are expected to occur within the project area or to be affected by the proposed project.

Because the vegetation communities and other land cover types on the project site may provide nesting habitats for a wide variety of bird species, the proposed project would be required to avoid impacts on nesting resident and/or migratory birds either by avoiding vegetation removal during the avian nesting season (February 1 through August 31) or by implementing Mitigation Measure (MM) MM-BIO-1.

There is no temporary or permanent removal of riparian or wetland vegetation that may be caused by the proposed project. Temporary indirect impacts to the quality of the environment during project construction activities include the potential for water quality-related impacts such as loose soil or pollutants inadvertently entering the drainage features located within and adjacent to the project area. The proposed project would obtain permits to reduce impacts to less than significant include the NPDES Construction General Permit, the Orange County MS4 Permit, and the Orange County Groundwater Permit. Such impacts would be avoided or minimized with implementation of the

Construction BMPs and Water Quality BMPs as outlined in RC-WQ-1. Additionally, the proposed project would not eliminate a plant or animal community, substantially 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)?

Less Than Significant Impact. The proposed project would result in potentially significant impacts specific to the proposed project for noise. However, with the implementation of the identified mitigation (MM-NOI-1 and MM-NOI-2) and regulatory compliance measures, those impacts would be reduced to a less than significant level. No cumulative noise impacts would occur. The air quality and greenhouse gas analyses included an analysis of cumulative impacts and determined that no cumulatively significant impacts would occur. All other analyses reviewed impacts which were either less than significant, or reduced to less than significant, and would not contribute to cumulative impacts. There are no further mitigation measures that would be required to reduce any cumulative impacts to less than significant levels for the proposed project.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact. The following sections in this Initial Study reviewed the potential for adverse impacts on human beings, either directly or indirectly: (4.1) Aesthetics; (4.3) Air Quality; (4.7) Geology and Soils; (4.8) Greenhouse Gas Emissions; (4.9) Hazards and Hazardous Materials; (4.10) Hydrology and Water Quality; (4.13) Noise; (4.14) Population and Housing; (4.15) Public Services; (4.17) Transportation; and (4.20) Wildfire. After analyzing all potential impacts, it has been determined that there would be no adverse effects on human beings associated with implementation of the proposed project. With the implementation of Mitigation Measures MM-GEO-1, MM-GEO-2, MM-NOI-1, and MM-NOI-2 impacts on humans would be less than significant.

5.0 LIST OF PREPARERS

5.1 AGENCY REVIEWERS

5.1.1 City of Garden Grove

The following individuals reviewed and provided input on the Draft Initial Study/Mitigated Negative Declaration (IS/MND) and Technical Reports:

- Mary Martinez, Associate Planner
- Lee Marino, Planning Services Manager

5.2 IS/MND PREPARERS

5.2.1 LSA

The following individuals were involved in the preparation of this Draft IS/MND:

- Ashley Davis, Principal in Charge
- Scott Vurbeff, Senior Environmental Planner/Project Manager
- Amy Fischer, Executive Vice President
- Cara Carlucci, Senior Environmental Planner
- J.T. Stephens, Principal, Noise and Vibration Group
- Moe Abushanab, Mechanical Noise Engineer
- Dean Arizabal, Principal, Transportation Group
- Ivan H. Strudwick, Associate/Archaeologist
- Kerrie Collison, Senior Cultural Resources Manager
- Giana Gurrera, Assistant Environmental Planner
- Tamar Gharibian, Assistant Environmental Planner
- Jason Thomas, Graphics Technician
- Lauren Johnson, Technical Editor
- Chantik Virgil, Senior Word Processor

5.3 TECHNICAL REPORT PREPARERS

The following individuals were involved in the preparation of the technical reports in support of this Draft IS/MND. The nature of their involvement is summarized below.

5.3.1 LGC Geotechnical, Inc.

The following individuals were involved in the preparation of the *Preliminary Geotechnical Report for the Proposed Residential Development at 9071 Lampson Avenue, Garden Grove, California* (May 6, 2022):

- Dennis Boratyne, GE 2770
- Katie Maes, CEG 2216

5.3.2 MDS Consulting

The following individual was involved in the preparation of the *Preliminary Water Quality Management Plan (PWQMP)* (May 14, 2022):

- Ed Lenth, Engineer

5.3.3 Ardent Environmental Group, Inc.

The following individuals were involved in the preparation of the *Phase I Environmental Site Assessment* (May 17, 2022):

- Matthew Pensaw, Senior Staff Scientist
- Craig A. Metheny, C.A.C.

5.3.4 LSA

The following individuals were involved in the preparation of the *Noise and Vibration Impact Memorandum* (June 6, 2022):

- J.T. Stephens, Principal
- Moe Abushanab, Mechanical Noise Engineer

The following individuals were involved in the preparation of the *Air Quality and Greenhouse Gas Technical Memorandum* (June 3, 2022):

- Amy Fischer, Executive Vice President
- Cara Carlucci, Senior Environmental Planner

6.0 REFERENCES

- Airport Land Use Commission (ALUC). 2007. Airport Planning Areas. Website: https://files.ocair.com/media/2021-02/airportlu_20200604.pdf?VersionId=cMd6uGpbgOWGd3jMOS6TPJF3y5nMyA7F (accessed June 22, 2022).
- California Department of Conservation (DOC). 2000. California Surface Mining and Reclamation Policies and Procedures – Guidelines for Classification and Designation of Mineral Lands. Website: <https://www.conservation.ca.gov/smbg/Guidelines/Documents/ClassDesig.pdf> (accessed May 26, 2022).
- _____. 2017a. California Important Farmland Finder. Website: <https://maps.conservation.ca.gov/dlrp/ciff/> (accessed May 24, 2022).
- _____. 2017b. State of California Williamson Act Contract Land. Website: [https://planning.lacity.org/eir/HollywoodCenter/Deir/ELDP/\(E\)%20Initial%20Study/Initial%20Study/Attachment%20B%20References/California%20Department%20of%20Conservation%20Williamson%20Map%202016.pdf](https://planning.lacity.org/eir/HollywoodCenter/Deir/ELDP/(E)%20Initial%20Study/Initial%20Study/Attachment%20B%20References/California%20Department%20of%20Conservation%20Williamson%20Map%202016.pdf) (accessed May 24, 2022).
- _____. 2022. Earthquake Zones of Required Investigation. Website: <https://maps.conservation.ca.gov/cgs/EQZApp/app/> (accessed June 20, 2022).
- California Department of Forestry and Fire Protection (CAL FIRE). 2020. Fire Hazard Safety Zone Viewer. Website: <https://egis.fire.ca.gov/FHSZ/> (accessed May 27, 2022).
- California Department of Toxic Substances Control (2022). EnviroStore Database. Website: <https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=9071+lampson> (accessed June 22, 2022).
- California Department of Transportation (Caltrans). 2018. California State Scenic Highway Map. Website: <https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca> (accessed May 23, 2022).
- California Division of Mines and Geology (CDMG), 1998, State of California Seismic Hazard Zones, Anaheim Quadrangle, Revised Official Map Released: April 15, 1998.
- California Energy Commission (CEC). 2020a. Electricity Consumption by Entity. Website: <http://www.ecdms.energy.ca.gov/elecbyutil.aspx> (accessed June 27, 2022).
- _____. 2020b. Electricity Consumption by County. Website: <http://www.ecdms.energy.ca.gov/elecbycounty.aspx> (accessed June 27, 2022).
- _____. 2020c. Gas Consumption by Entity. Website: <http://www.ecdms.energy.ca.gov/gasbyutil.aspx> (accessed June 27, 2022).

-
- _____. 2020d. Gas Consumption by County. Website: <http://www.ecdms.energy.ca.gov/gasbycounty.aspx> (accessed June 27, 2022).
- _____. 2020e. *Integrated Energy Policy Report*.
- City of Garden Grove. 2005. Municipal Code. Codified through Ordinance 2802 Section 1 and Ordinance 2660 Section 2. Website: https://library.qcode.us/lib/garden_grove_ca/pub/municipal_code/item/title_8-chapter_8_47-8_47_060 (accessed June 24, 2022).
- _____. 2008. General Plan, Circulation Element. Website: https://ggcity.org/internet/pdf/planning/chapter05_circulationelement.pdf (accessed May 23, 2022).
- _____. 2008. General Plan, Community Design Element. Website: https://ggcity.org/internet/pdf/planning/chapter03_communitydesignelement.pdf (accessed May 23, 2022).
- _____. 2008. General Plan, Conservation Element. Website: https://ggcity.org/internet/pdf/planning/chapter10_conservation.pdf (accessed May 23, 2022).
- _____. 2008. General Plan, Land Use Element. Website: https://ggcity.org/internet/pdf/planning/chapter02_landuseelement.pdf (accessed May 23, 2022).
- _____. 2008. General Plan, Parks, Recreation, and Open Space Element. Website: https://ggcity.org/internet/pdf/planning/chapter09_parksrecoelement.pdf (accessed May 23, 2022).
- _____. 2008. General Plan, Safety Element. Website: https://ggcity.org/internet/pdf/planning/chapter11_safetylement.pdf (accessed June 20, 2022).
- _____. 2008. Zoning and Land Use Map. Website: <https://ggcity.org/maps/zoning-land-use/> (accessed May 23, 2022).
- _____. 2010. Municipal Code. Codified through Ordinance 2770 Section 2. Chapter 9.12. Website: http://www.qcode.us/codes/gardengrove/view.php?topic=9-9_12-9_12_040&showAll=1&frames=on (accessed June 10, 2022).
- _____. 2010. Municipal Code. Codified through Ordinance 2769 Section 1. Chapter 9.08. Website: http://www.qcode.us/codes/gardengrove/view.php?topic=9-9_08-9_08_040&showAll=1&frames=on (accessed June 10, 2022).
- _____. 2017. Municipal Code. Codified through Ordinance 2877 Section 1. Chapter 9.44. Website: http://www.qcode.us/codes/gardengrove/view.php?topic=9-9_44-9_44_040&highlightWords=park+fee (accessed June 10, 2022).
- _____. 2019. Police Department 2018-2019 Biennial Report. Website: <https://ggcity.org/sites/default/files/2018-19-Biennial-Report-Police.pdf> (accessed June 8, 2022).
- _____. 2020. Final Urban Water Management Plan. Website: <https://ggcity.org/sites/default/files/Garden%20Grove%202020%20UWMP%20FINAL-2021.06.29.pdf> (accessed June 23, 2022).
-

-
- _____. 2021. Municipal Code. Codified through Ordinance 2922, Section 1. Chapter 11.32. Website: https://library.qcode.us/lib/garden_grove_ca/pub/municipal_code/item/title_11-chapter_11_32?view=all (accessed June 27, 2022).
- _____. 2021. Focused General Plan Update And Zoning Amendments Final Environmental Impact Report (State Clearinghouse # 2021060714), October 29, 2021.
- _____. 2021a. General Plan, Draft Safety Element. Website: https://ggcity.org/sites/default/files/2021-09/Chapter11GG_SafetyElement_PublicReview_08-2021.pdf (accessed June 22, 2022).
- _____. 2021b. General Plan, Public Hearing Draft 2021-2029 Housing Element Update. Website: https://ggcity.org/sites/default/files/2021-10/dhe10_2021.pdf (accessed June 21, 2022).
- _____. 2021c. Section 4.12 Public Services, City of Garden Grove Focused General Plan Update and Zoning Amendments Draft EIR. Website: <https://ggcity.org/sites/default/files/2021-08/FGPUZA%20DEIR.pdf> (accessed June 24, 2022).
- _____. 2022a. Sewers. Website: <https://ggcity.org/sewers> (accessed June 24, 2022).
- _____. 2022b. Schools. Website: <https://www.ggusd.us/schools> (accessed June 8, 2022).
- County of Los Angeles Airport Land Use Commission. 2003. *Airport Influence Area Map for the Fullerton Municipal Airport*.
- County of Orange. 2013. General Plan Resources Element. Website: <https://ocds.ocpublicworks.com/sites/ocpwoocds/files/import/data/files/40235.pdf> (accessed June 27, 2022).
- LSA Associates, Inc. (LSA). 2022. Air Quality and Greenhouse Gas Technical Memorandum.
- Orange County Fire Authority (OCFA). 2008. Inspection Roadmap. Website: <https://ocfa.org/Uploads/CommunityRiskReduction/OCFA%20Inspection%20Sequence.pdf> (accessed June 8, 2022).
- _____. 2021. Fiscal Year 2020–2021 Adopted Budget. Website: <https://ocfa.org/Uploads/Transparency/OCFA%202020-2021%20Adopted%20Budget.pdf> (accessed June 7, 2022).
- Orange County Sanitation District (OCSD). 2022. Facts and Key Statistics. Website: <https://www.ocsan.gov/home/showpublisheddocument/29768/637625490758870000> (accessed June 24, 2022)
- Orange County Waste and Recycling. 2019. Olinda Alpha Landfill Fact Sheet. Website: <https://www.oclandfills.com/sites/ocwr/files/import/data/files/30447.pdf> (accessed June 27, 2022).
- _____. 2019. Prima Deshecha Landfill Fact Sheet. Website: <https://www.oclandfills.com/sites/ocwr/files/import/data/files/30447.pdf> (accessed June 27, 2022).
- South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*.
-

Southern California Association of Governments (SCAG). 2020. Connect SoCal Demographics and Growth Forecast. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579 (accessed June 21, 2022).

United States Census Bureau. 2020. Table DP02 Selected Social Characteristics in the United States (2020 American Community Survey 5-Year Estimates Data). Website: <https://data.census.gov/cedsci/table?q=dp02&g=1600000US0629000&tid=ACSDP5Y2020.DP02&moe=false> (accessed June 7, 2022).

_____. 2020. Table P1 Race (2020 Decennial Census Data). Website: <https://data.census.gov/cedsci/table?q=garden%20grove&tid=DECENNIALPL2020.P1> (accessed June 7, 2022).

United States Fish and Wildlife Service (USFWS). 2022. USFWS Critical Habitat – Feature Service. Website: https://www.arcgis.com/home/webmap/viewer.html?url=https://services.arcgis.com/QVENGdaPbd4LUkLV/ArcGIS/rest/services/USFWS_Critical_Habitat/FeatureServer&source=sd (accessed June 27, 2022).

_____. National Wetlands Inventory. Website: <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/> (accessed June 27, 2022).

APPENDIX A

AIR QUALITY AND GREENHOUSE GAS TECHNICAL MEMORANDUM

MEMORANDUM

DATE: June 3, 2022

To: Mary Martinez, Associate Planner, City of Garden Grove

FROM: Amy Fischer, Principal
 Cara Carlucci, Senior Planner

SUBJECT: Air Quality and Greenhouse Gas Technical Memorandum for the Lampson Avenue Residential Project in the City of Garden Grove, Orange County, California

INTRODUCTION

LSA has prepared this Air Quality and Greenhouse Gas Technical Memorandum to evaluate the impacts associated with construction and operation of the proposed Lampson Avenue Residential Project (project) in the City of Garden Grove (City), Orange County, California. This analysis was prepared using methods and assumptions recommended in the air quality impact assessment guidelines of the South Coast Air Quality Management District (SCAQMD) in its *CEQA Air Quality Handbook* (1993) and associated updates. This analysis includes an assessment of criteria pollutant emissions, an assessment of carbon monoxide (CO) hot-spot impacts, and an assessment of the project’s greenhouse gas (GHG) emissions.

PROJECT LOCATION AND DESCRIPTION

The 1.6-acre project (Assessor’s Parcel Numbers [APN] 133-183-55, 133-183-56, 133-183-57, and 133-183-58) site is located at 9071 Lampson Avenue in the City of Garden Grove. The project site is currently developed with three single-family homes and is located in a highly urbanized and residential area of Garden Grove. Surrounding land uses include single-family residential uses to the north, south, and east and multifamily residential uses to the west. There are commercial and institutional uses farther to the west past Magnolia Street and to the east past Barbara Avenue, but the uses immediately surrounding the project site are residential. The project location is shown in Figure 1. All figures are provided in Attachment A of this memorandum.

The proposed project would result in the development of 13 residential lots with private recreational areas, an open space parcel, and two private streets (see Figure 2, Conceptual Site Plan). Of the 1.6-acre property, 1.17 acres would be reserved for the 13 single-family residences that would be constructed as a part of the project, 0.32 acre would be reserved to provide access and circulation throughout the project site by way of sidewalks and private streets, and 0.11 acre would be reserved for the open space lot. The proposed residences would be designed to include a 3-megawatt solar system, low-flow plumbing fixtures, and drip irrigation systems. The proposed

project is expected to generate approximately 95 net new daily vehicle trips, including 7 AM peak-hour trips and 10 PM peak-hour trips.

Construction is expected to begin June 1, 2023, and would last for approximately 15 months. The proposed project would demolish the existing on-site residential units and would require the cut of 11,770 cubic yards of earthwork and the fill of 9,743 cubic yards of earthwork, for a net cut of 2,027 cubic yards of exported earthwork. It is assumed that there would be up to 15 construction workers during construction.

EXISTING LAND USES IN THE PROJECT AREA

For the purposes of this analysis, sensitive receptors are areas of the population that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include residences, schools, daycare centers, hospitals, parks, and similar uses that are sensitive to air quality. Impacts on sensitive receptors are of particular concern because those receptors are the population most vulnerable to the effects of air pollution. The closest sensitive receptors include the adjacent single-family residential uses to the north, south, and east and multifamily residential uses to the west.

ENVIRONMENTAL SETTING

Air Quality Background

Air quality is primarily a function of local climate, local sources of air pollution, and regional pollution transport. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain and, for photochemical pollutants, sunshine.

A region's topographic features have a direct correlation with air pollution flow and therefore are used to determine the boundary of air basins. The proposed project is in Garden Grove, Orange County, and is within the jurisdiction of SCAQMD, which regulates air quality in the South Coast Air Basin (Basin).

The Basin comprises approximately 10,000 square miles and covers all of Orange County and the urban parts of Los Angeles, Riverside, and San Bernardino Counties. The Basin is on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east, forming the inland perimeter.

Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants: CO, ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants, O₃ and NO₂, are considered regional pollutants because they (or their precursors) affect air quality on a

regional scale. Pollutants such as CO, SO₂, and Pb are considered local pollutants that tend to accumulate in the air locally.

Air quality monitoring stations are located throughout the nation and are maintained by the local air districts and State air quality regulating agencies. Data collected at permanent monitoring stations are used by the United States Environmental Protection Agency (EPA) to identify regions as “attainment” or “nonattainment” depending on whether the regions meet the requirements stated in the applicable National Ambient Air Quality Standards (NAAQS). Nonattainment areas are imposed with additional restrictions as required by the EPA. In addition, different classifications of attainment (e.g., marginal, moderate, serious, severe, and extreme) are used to classify each air basin in the State on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and to comply with the NAAQS. As shown in Table A, the Basin is designated as nonattainment by federal standards for O₃ and particulate matter less than 2.5 microns in diameter (PM_{2.5}) and nonattainment by State standards for O₃, particulate matter less than 10 microns in diameter (PM₁₀), and PM_{2.5}.

Table A: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O ₃ 1-hour	Nonattainment	N/A
O ₃ 8-hour	Nonattainment	Extreme Nonattainment
PM ₁₀	Nonattainment	Attainment/Maintenance
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO ₂	Attainment	Unclassified/Attainment (1-hour) Attainment/Maintenance (Annual)
SO ₂	Attainment	Unclassified/Attainment
Lead	Attainment ¹	Unclassified/Attainment ¹
All Others	Attainment/Unclassified	Attainment/Unclassified

Source 1: NAAQS and CAAQS Attainment Status for South Coast Air Basin (SCAQMD 2016). Website: www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf (accessed May 2022).

Source 2: Nonattainment Areas for Criteria Pollutants (Green Book) (EPA 2019). Website: <https://www.epa.gov/green-book> (accessed May 2022).

¹ Only the Los Angeles County portion of the South Coast Air Basin is in nonattainment for lead.

CAAQS = California ambient air quality standards

CO = carbon monoxide

EPA = United States Environmental Protection Agency

N/A = not applicable

NAAQS = national ambient air quality standards

NO₂ = nitrogen dioxide

O₃ = ozone

PM₁₀ = particulate matter less than 10 microns in diameter

PM_{2.5} = particulate matter less than 2.5 microns in diameter

SCAQMD = South Coast Air Quality Management District

SO₂ = sulfur dioxide

Greenhouse Gas and Global Climate Change Background

GHGs are present in the atmosphere naturally, are released by natural sources, or form from secondary reactions taking place in the atmosphere. Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. Although manmade GHGs include naturally

occurring GHGs such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), some gases like hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF₃), and sulfur hexafluoride (SF₆) are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to CO₂, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO₂ over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO₂ equivalents” (CO₂e).

REGULATORY SETTING

This section provides regulatory background information for air quality, GHGs, and energy.

Air Quality

Applicable federal, State, regional, and local air quality regulations are discussed below.

Federal Regulations

The 1970 Federal Clean Air Act (CAA) authorized the establishment of national health-based air quality standards and set deadlines for their attainment. The CAA Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required for areas of the nation that exceed the standards. Under the CAA, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

State Regulations

In 1988, the California Clean Air Act (CCAA) required that all air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for CO, O₃, SO₂, and NO₂ by the earliest practical date. The CCAA provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

The California Air Resources Board (CARB) is the State’s “clean air agency.” The CARB’s goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

Regional Regulations

The proposed project would be required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures, so the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. SCAQMD Rule 1113 limits the volatile organic compound (VOC) content of architectural coatings. Applicable dust suppression techniques from SCAQMD Rule 403 and low VOC content in paints under SCAQMD Rule 1113 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM₁₀ component). Compliance with these rules would reduce impacts on nearby sensitive receptors.

South Coast Air Quality Management District Rule 403 Measures.

- Water active sites at least twice daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
- Traffic speeds on all unpaved roads shall be reduced to 15 miles per hour or less.

South Coast Air Quality Management District Rule 1113 Measures. SCAQMD Rule 1113 governs the sale, use, and manufacture of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction and operation of the proposed project. Therefore, all paints and solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1113.

Local Regulations

City of Garden Grove General Plan Air Quality Element. The City of Garden Grove General Plan addresses air quality in the Air Quality Element and contains goals, policies, and implementation programs that work to improve air quality. The following policies and implementation programs are presented in the Air Quality Element¹ and are applicable to the proposed project:

¹ Garden Grove, City of. 2008. Garden Grove General Plan. May. Website: https://ggcity.org/internet/pdf/planning/chapter08_airqualityelement.pdf (accessed May 2022).

- **Policy AQ-2.5:** Separate, buffer, and protect sensitive receptors from significant sources of pollution to the greatest extent possible.
- **AQ-IMP-2B:** Require new development or redevelopment projects to provide pedestrian and bicycle trails access to nearby shopping and employment centers.
- **Policy AQ-3.1:** Cooperate and participate with regional and local efforts to develop an efficient transportation system that reduces vehicle trips and vehicle miles traveled.
- **Policy AQ-4.1:** Review site developments to ensure pedestrian safety and promote nonautomotive users.
- **Policy AQ-4.3:** Encourage “walkable” neighborhoods with pedestrian walkways and bicycle paths in residential and other types of developments to encourage pedestrian rather than vehicular travel.
- **Policy AQ-5.2:** Encourage infill development projects within urbanized areas that include jobs centers and transportation nodes.
- **AQ-IMP-6D:** Require new development to comply with the energy use guidelines in Title 24 of the California Administrative Code.
- **Policy AQ-7.4:** Continue to enforce procedures that control dust from building demolition, grading, and construction activities.
- **Policy AQ-7.5:** Reduce reactive organic compounds and particulate emissions.
- **AQ-IMP-7B:** Continue to enforce rules and measures of the South Coast Air Quality Management District.

Greenhouse Gas Emissions

This section describes regulations related to global climate change at the federal, State, and local level.

Federal Regulations

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO₂ emissions under the CAA.

Although there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 to implement a regulatory approach to global climate change, including the 2009 EPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the EPA Administrator signed an endangerment finding action in 2009 under the CAA, finding that seven GHGs (CO₂, CH₄, N₂O, HFCs,

NF₃, PFCs, and SF₆) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

State Regulations

CARB is the lead agency for implementing climate change regulations in the State. Since its formation, CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing GHG emissions is Assembly Bill (AB) 32, passed by the State legislature on August 31, 2006. This effort set a GHG emission reduction target to reduce GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) of CO₂e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The CARB approved the Scoping Plan on December 11, 2008. It contains the main strategies California will implement to achieve the reduction of approximately 169 MMT of CO₂e, or approximately 30 percent, from the State's projected 2020 emission level of 596 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 42 MMT CO₂e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reduction of 31.7 MMT CO₂e);
- The Low-Carbon Fuel Standard (15.0 MMT CO₂e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO₂e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO₂e).

The Scoping Plan identifies 18 emissions reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high-speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT of CO₂e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust California Environmental Quality Act (CEQA) equivalent

document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emissions reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020 and sets the groundwork to reach long-term goals set forth in Executive Orders (EOs) S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,¹ to reflect the 2030 target set by EO B-30-15 and codified by Senate Bill (SB) 32.

Senate Bill 375 (2008). Signed into law on October 1, 2008, SB 375 supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, the CARB approved GHG reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). The CARB may update the targets every 4 years and must update them every 8 years. MPOs, in turn, must demonstrate how their plans, policies, and transportation investments meet the targets set by the CARB through Sustainable Community Strategies (SCS). The SCSs are included with the Regional Transportation Plan, a report required by State law. However, if an MPO finds that its SCS will not meet the GHG reduction target, it may prepare an Alternative Planning Strategy. The Alternative Planning Strategy identifies the impediments to achieving the targets.

Executive Order B-30-15 (2015). Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and, therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act. SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

¹ California Air Resources Board (CARB). 2017. *California's 2017 Climate Change Scoping Plan*. November.

- Raise California’s renewable portfolio standard from 33 percent to 50 percent; and
- Increase energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the California Public Utilities Commission (CPUC) for the private utilities and by the California Energy Commission (CEC) for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other nonrenewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to State energy agencies under existing law. The addition made by this legislation requires State energy agencies to plan for and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197. In summer 2016, the Legislature passed, and the Governor signed, SB 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown’s April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State’s 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change analysis of the emission trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million (ppm) CO₂e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

Senate Bill 100. On September 10, 2018, Governor Brown signed SB 100, which raises California’s renewable portfolio standard requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the Western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18. EO B-55-18, signed September 10, 2018, sets a goal “to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.” EO B-55-18 directs CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of CO₂e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Title 24, Building Efficiencies Standards, and the California Green Building Standards Code. In November 2008, the California Building Standards Commission established the California Green

Building Standards Code (CALGreen Code) (California Code of Regulations, Title 24, Part 11), which sets performance standards for residential and nonresidential development to reduce environmental impacts and to encourage sustainable construction practices. The CALGreen Code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2019 to include new mandatory measures for residential and nonresidential uses. The new measures took effect January 1, 2020.

Regional Regulations

Southern California Association of Governments. The Southern California Association of Governments (SCAG) is a regional council consisting of the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In total, the SCAG region encompasses 191 cities and over 38,000 square miles within Southern California. SCAG is the MPO serving the region under federal law and serves as the Joint Powers Authority, the Regional Transportation Planning Agency, and the Council of Governments under State law. As the Regional Transportation Planning Agency, SCAG prepares long-range transportation plans for the Southern California region, including the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the 2008 Regional Comprehensive Plan (RCP).

On September 3, 2020, SCAG adopted Connect SoCal—The 2020–2045 RTP/SCS.¹ In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled (VMT) from automobiles and light-duty trucks and thereby reduce GHG emissions from these sources. For the SCAG region, CARB has set GHG reduction targets at 8 percent below 2005 per capita emissions levels by 2020, and 19 percent below 2005 per capita emissions levels by 2035. The RTP/SCS lays out a strategy for the region to meet these targets. Overall, the SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Land use strategies to achieve the region’s targets include planning for new growth around high-quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles.² However, the SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

South Coast Air Quality Management District. In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the Basin. The Working Group developed several different options that are contained in the

¹ Southern California Association of Governments (SCAG). 2020. Connect SoCal: The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) of the Southern California Association of Governments. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176 (accessed November 2021).

² SCAG. 2020. Connect SoCal: The 2020–2045 RTP/SCS of the Southern California Association of Governments. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176 (accessed May 2022).

SCAQMD 2008 draft guidance document titled *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* (2008) that could be applied by lead agencies. On September 28, 2010, SCAQMD Working Group Meeting No. 15 provided further guidance, including a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency. SCAQMD has not presented a finalized version of these thresholds to the governing board.

SCAQMD identifies the emissions level for which a project would not be expected to substantially conflict with any State legislation adopted to reduce statewide GHG emissions. As such, the utilization of a service population represents the rates of emissions needed to achieve a fair share of the State's mandated emissions reductions. Overall, SCAQMD identifies a GHG efficiency level that, when applied statewide or to a defined geographic area, would meet the 2020 and post-2020 emission targets as required by AB 32 and SB 32. If projects are able to achieve targeted rates of emissions per the service population, the State would be able to accommodate expected population growth and achieve economic development objectives while also abiding by AB 32's emissions targets and future post-2020 targets. The SCAQMD has established a flow chart for evaluating GHG significance and indicates that when a project is exempt from CEQA, no further analysis is required.

Local Regulations

The City of Garden Grove does not have an adopted climate action plan or GHG reduction plan.

METHODOLOGY

Construction Emissions

Construction activities can generate a substantial amount of air pollution. Construction activities are considered temporary; however, short-term impacts can contribute to exceedances of air quality standards. Construction activities include site preparation, earthmoving, and general construction. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty, diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips.

The California Emissions Estimator Model version 2020.4.0 (CalEEMod) computer program was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site. This analysis assumes that construction would begin June 1, 2023, and would last approximately 15 months. This analysis also assumes the use of Tier 2 construction equipment and that the proposed project would comply with SCAQMD Rule 403 measures. The proposed project would demolish the existing on-site residential units and would require the net cut of 2,027 cubic yards of exported earthwork, which was included in CalEEMod. It is assumed that there would be up to 15 construction workers during construction, which was also included in CalEEMod. All other construction details are not yet known; therefore, default assumptions (e.g., construction worker and truck trips and fleet activities) from CalEEMod were used.

Operational Emissions

This air quality analysis includes estimating emissions associated with long-term operation of the project. Indirect emissions of criteria pollutants with regional impacts would be emitted by project-

generated vehicle trips. In addition, localized air quality impacts (i.e., higher carbon monoxide concentrations or “hot-spots”) near intersections or roadway segments in the project vicinity would also potentially occur due to project-generated vehicle trips.

Consistent with SCAQMD guidance for estimating emissions associated with land use development projects, the CalEEMod computer program was used to calculate the long-term operational emissions associated with the project. As discussed previously in the Project Location and Description section, the proposed project would result in the development of 13 residential lots with private recreational areas, an open space parcel, and two private streets. The analysis was conducted using land use codes *Single Family Residential*, *City Park*, and *Other Asphalt Surfaces*. The proposed residences would be designed to include a 3-megawatt solar system, low-flow plumbing fixtures, and drip irrigation systems, which were included in CalEEMod. Trip generation rates used in CalEEMod for the project were based on the project’s estimated trip generation of 95 net new average daily trips.

Greenhouse Gas Emissions

GHG emissions associated with the project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term GHG emissions associated with project-related vehicular trips. Recognizing that the field of global climate change analysis is rapidly evolving, the approaches advocated most recently indicate that, for determining a project’s contribution to GHG emissions, lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, construction activities, and any other significant source of emissions within the project area. The CalEEMod results were used to quantify GHG emissions generated by the project.

THRESHOLDS OF SIGNIFICANCE

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would do any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under applicable federal or State ambient air quality standards;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) affecting a substantial number of people.

Certain air districts (e.g., SCAQMD) have created guidelines and requirements to conduct air quality analysis. The SCAQMD’s current guidelines, the *CEQA Air Quality Handbook*¹ with associated updates, were followed in this assessment of air quality impacts for the proposed project.

Regional Emissions Thresholds

SCAQMD has established daily emission thresholds for construction and operation of a proposed project in the Basin. The emission thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emission thresholds are regarded as conservative and would overstate an individual project’s contribution to health risks. Table B lists the CEQA significance thresholds for construction and operational emissions established for the Basin.

Table B: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Threshold (lbs/day)					
	VOCs	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: Air Quality Significance Thresholds (SCAQMD, April 2019). Website: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2> (accessed May 2021).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOCs = volatile organic compounds

Projects in the Basin with construction- or operation-related emissions that exceed any of their respective emissions thresholds would be considered significant under SCAQMD guidelines. These thresholds, which the SCAQMD developed and that apply throughout the Basin, apply as both project and cumulative thresholds. If a project exceeds these standards, it is considered to have a project-specific and cumulative impact.

Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. Because ambient CO levels are below the standards throughout the Basin, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emissions concentration standards for CO:

¹ South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*. Website: [http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-\(1993\)](http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993)) (accessed May 2022).

- California State 1-hour CO standard of 20 ppm
- California State 8-hour CO standard of 9 ppm

Localized Impacts Analysis

SCAQMD published its *Final Localized Significance Threshold Methodology* in July 2008, recommending that all air quality analyses include an assessment of air quality impacts to nearby sensitive receptors.¹ This guidance was used to analyze potential localized air quality impacts associated with construction of the proposed project. Localized significance thresholds (LSTs) are developed based on the size or total area of the emissions source, the ambient air quality in the source receptor area, and the distance to the project. Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality.

LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For the proposed project, the appropriate SRA for the LST is the Central Orange County area (SRA 17). SCAQMD provides LST screening tables for 25, 50, 100, 200, and 500-meter source-receptor distances. In cases where receptors may be closer than 82 feet (25 meters), any distances within the 82-foot (25-meter) buffer zone can be used to assess potential impacts on nearby sensitive receptors. The closest sensitive receptors include the adjacent single-family residential uses to the north, south, and east and multifamily residential uses to the west. Because these sensitive receptors abut the project site, the minimum distance of 82 feet was used. Based on the anticipated construction equipment, it is assumed that the maximum daily disturbed acreage for the proposed project would be 1.5 acres. Table C lists the emissions thresholds that will apply during project construction and operation.

Table C: SCAQMD Localized Significance Thresholds

Emissions Source	Pollutant Emissions Threshold (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Construction (2-acres, 82-foot distance)	98.0	600.0	5.0	3.5
Operations (2-acres, 82-foot distance)	98.0	600.0	1.5	1.0

Source: *Final Localized Significance Threshold Methodology* (SCAQMD, July 2008).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM₁₀ = particulate matter less than 10 microns in size

PM_{2.5} = particulate matter less than 2.5 microns in size

SCAQMD = South Coast Air Quality Management District

Global Climate Change

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse GHG emission impact if the project would:

¹ South Coast Air Quality Management District (SCAQMD). 2008. *Final Localized Significance Threshold Methodology*. July.

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reduction the emissions of greenhouse gases.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting held in September 2010 (Meeting No. 15), SCAQMD proposed to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

- **Tier 1. Exemptions:** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2. Consistency with a Locally Adopted GHG Reduction Plan:** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.
- **Tier 3. Numerical Screening Threshold:** If GHG emissions are less than the numerical screening-level threshold, project-level and cumulative GHG emissions are less than significant.
- **Tier 4. Performance Standards:** If emissions exceed the numerical screening threshold, a more detailed review of the project's GHG emissions is warranted. The SCAQMD has proposed an efficiency target for projects that exceed the bright-line threshold. The current recommended approach is per-capita efficiency targets. The SCAQMD is not recommending use of a percentage emissions reduction target. Instead, the SCAQMD proposed a 2020 efficiency target of 4.8 MT CO₂e per year per service population for project-level analyses and 6.6 MT CO₂e per year per service population for plan-level projects (e.g., program-level projects such as General Plans).

Because the project would begin operations in the post-2020 timeframe, the 2020 numerical screening threshold of 3,000 MT CO₂e and the efficiency target of 4.8 MT CO₂e per year per service population would need to be adjusted to reflect the State's post-2020 GHG reduction goals.

SCAQMD has yet to publish a quantified GHG efficiency threshold for the 2030 target. A scaled threshold consistent with State goals, detailed in SB 32, EO B-30-15, and EO S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, respectively, was developed for 2023, when construction of the proposed project would be completed. Though the SCAQMD has not published a quantified threshold beyond 2020, this assessment uses a threshold of 2,640 MT CO₂e per year or 4.2 MT CO₂e per year per service population, which was calculated for the project operational year of 2023 based on the GHG reduction goals of SB 32 and EO B-30-15.

For the purpose of this analysis, the proposed project will be compared to the adjusted screening-level Tier 3 Numerical Screening Threshold of 2,640 MT of CO₂e per year.

IMPACT ANALYSIS

This section identifies potential air quality and GHG impacts associated with implementation of the proposed project.

Air Quality Impacts

Air pollutant emissions associated with the project would occur over the short term from construction activities and over the long term from project-related vehicular trips and due to energy consumption (e.g., electricity and natural gas usage) by the proposed land uses.

Consistency with Applicable Air Quality Plans

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

The proposed project would construct 13 single-family residences. The proposed project is not considered a project of statewide, regional, or area-wide significance (e.g., large-scale projects such as airports, electrical generating facilities, petroleum and gas refineries, residential developments of more than 500 dwelling units, shopping centers, or business establishments employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space) as defined in the California Code of Regulations (Title 14, Division 6, Chapter 3, Article 13, §15206(b)). Because the proposed project would not be defined as a regionally significant project under CEQA, it does not meet SCAG's Intergovernmental Review criteria.

The City's General Plan is consistent with the SCAG Regional Comprehensive Plan Guidelines and the SCAQMD Air Quality Management Plan (AQMP). Pursuant to the methodology provided in the SCAQMD's *CEQA Air Quality Handbook*, consistency with the Basin 2016 AQMP is affirmed when a project (1) would not increase the frequency or severity of an air quality standards violation or cause a new violation, and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented as follows:

1. The project would result in short-term construction and long-term operational pollutant emissions that are all less than the CEQA significance emissions thresholds established by SCAQMD, as demonstrated below; therefore, the project would not result in an increase in the frequency or severity of an air quality standards violation or cause a new air quality standards violation.

2. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, the proposed project is not defined as significant.

Based on the consistency analysis presented above, the proposed project would be consistent with the regional AQMP.

Criteria Pollutant Analysis

The Basin is currently designated as nonattainment for the federal and State standards for O₃ and PM_{2.5}. In addition, the Basin is in nonattainment for the PM₁₀ standard. The Basin's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of an ambient air quality standard. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. 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. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed project.

Construction Emissions. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by grading, building construction, paving, and other activities. Emissions from construction equipment are also anticipated and would include CO, nitrogen oxides (NO_x), volatile organic compounds (VOCs), directly emitted PM_{2.5} or PM₁₀, and toxic air contaminants such as diesel exhaust particulate matter.

Project construction activities would include demolition, grading, site preparation, building construction, architectural coating, and paving activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, silt content of soil, wind speed, and the

amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emissions reductions of 50 percent or more. SCAQMD has established Rule 403: Fugitive Dust, which would require the applicant to implement measures that would reduce the amount of particulate matter generated during the construction period. The Rule 403 measures that were incorporated in this analysis include:

- Water active sites at least twice daily (locations where grading is to occur shall be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour or less.

In addition to dust-related PM₁₀ emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur oxides (SO_x), NO_x, VOCs, and some soot particulate (PM_{2.5} and PM₁₀) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using CalEEMod and summarized in Table D. Attachment B provides CalEEMod output sheets.

Table D: Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOC	NO _x	CO	SO _x	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Demolition	1.2	26.4	19.7	<0.1	0.3	0.9	0.1	0.9
Site Preparation	0.7	19.4	14.0	<0.1	2.9	0.5	1.4	0.5
Grading	0.7	19.2	12.7	<0.1	3.4	0.5	1.6	0.5
Building Construction	1.1	20.7	16.8	<0.1	0.4	0.9	0.1	0.9
Paving	0.6	11.8	10.5	<0.1	0.3	0.4	0.1	0.4
Architectural Coating	1.9	2.4	2.5	<0.1	0.3	0.1	0.1	0.1
Peak Daily Emissions	3.0	26.4	19.7	<0.1	3.9		2.1	
SCAQMD Threshold	75.0	100.0	550.0	150.0	150.0		55.0	
Significant?	No	No	No	No	No		No	

Source: Compiled by LSA (May 2022).

Note = Maximum emissions of VOC occurred during the overlapping building construction and architectural coating phases.

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOC = volatile organic compounds

Operational Air Quality Impacts. Long-term air pollutant emissions associated with operation of the proposed project include emissions from area, energy, and mobile sources. Area-source emissions include architectural coatings, consumer products, and landscaping. Energy-source emissions result from activities in buildings that use electricity and natural gas. Mobile-source emissions are from vehicle trips associated with operation of the project. Area-source emissions consist of direct sources of air emissions at the project site, including architectural coatings, consumer products, and use of landscape maintenance equipment.

PM₁₀ emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM₁₀ occurs when vehicle tires pulverize small rocks and pavement, and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy-source emissions result from activities in buildings that use electricity and natural gas. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. The primary sources of energy demand for the proposed project would include building mechanical systems such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, such as renewable energy, producing fewer emissions than conventional sources.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. Table E provides the proposed project’s estimated operational emissions. Attachment B provides CalEEMod output sheets.

Table E: Project Operational Emissions

Emission Type	Pollutant Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Sources	0.6	0.2	1.2	<0.1	<0.1	<0.1
Energy Sources	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Mobile Sources	0.3	0.3	2.6	<0.1	0.7	0.2
Total Project Emissions	0.9	0.6	3.8	<0.1	0.7	0.2
SCAQMD Threshold	55.0	55.0	550.0	150.0	150.0	55.0
Exceeds Threshold?	No	No	No	No	No	No

Source: Compiled by LSA (May 2022).

Note: Some values may not appear to add correctly due to rounding.

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOC = volatile organic compounds

The results shown in Table E indicate the proposed project would not exceed the significance criteria for daily VOCs, NO_x, CO, SO_x, PM₁₀, or PM_{2.5} emissions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

Long-Term Microscale (CO Hot Spot) Analysis. Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the vicinity of the proposed project site. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. The proposed project is expected to generate 95 net new average daily trips, with 7 trips occurring in the AM peak hour and 10 trips occurring in the PM peak hour. As the proposed project would not generate 100 or more AM or PM peak hour trips, the proposed project did not meet the criteria for an evaluation of study area intersection or roadway segment level of service (LOS). Therefore, it is assumed that the addition of the proposed project traffic would not create any significant adverse impacts to nearby intersections.

Therefore, given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any intersections, project-related vehicles are not expected to result in CO concentrations exceeding the State or federal CO standards. No CO hot spots would occur, and the project would not result in any project-related impacts on CO concentrations.

Health Risk on Nearby Sensitive Receptors

Sensitive receptors are defined as people who have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. As discussed above, the closest sensitive receptors include the adjacent single-family residential uses to the north, south, and east and multifamily residential uses to the west. Because these sensitive receptors are about the project site, the minimum distance of 8 feet was used. LST analysis was completed to show the construction and operational impacts at 25 meters (82 feet) to the nearest sensitive receptors to the project site in SRA 17, based on a 1.5-acre project size. Tables F and G show the results of the LST analysis during project construction and operation, respectively.

Table F: Project Localized Construction Emissions

Source	Pollutant Emissions			
	NO _x (lbs/day)	CO (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
On-Site Emissions	26.2	19.3	3.7	2.0
Localized Significance Threshold	98.0	600.0	5.0	3.5
Significant?	No	No	No	No

Source: Compiled by LSA (May 2022).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

Table G: Project Localized Operational Emissions

Source	Pollutant Emissions			
	NO _x (lbs/day)	CO (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
On-Site Emissions	<1.0	1.3	<1.0	<1.0
Localized Significance Thresholds	98.0	600.0	1.5	1.0
Significant?	No	No	No	No

Source: Compiled by LSA (May 2022).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

As detailed in Tables F and G, the emission levels indicate that the project would not exceed SCAQMD LSTs during project construction or operation. The project’s peak operational on-site NO_x emissions are less than 1.0 pounds per day. Due to the small size of the proposed project in relation to the overall Basin, the level of emissions is not sufficiently high to use a regional modeling program to correlate health effects on a Basin-wide level. On a regional scale, the quantity of emissions from the project is incrementally minor. Because the SCAQMD has not identified any other methods to quantify health impacts from small projects and due to the size of the project, it is speculative to assign any specific health effects to small project-related emissions. However, based on this localized analysis, the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, the project would not expose sensitive receptors to substantial levels of pollutant concentrations.

Odors

Heavy-duty equipment on the project site during construction would emit odors, primarily from equipment exhaust. However, the construction activity would cease after individual construction is completed. No other sources of objectionable odors have been identified for the proposed project.

SCAQMD Rule 402 regarding nuisances states: “A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a

natural tendency to cause, injury or damage to business or property.” The proposed uses are not anticipated to emit any objectionable odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Greenhouse Gas Emission Impacts

The following sections describe the proposed project’s construction- and operation-related GHG impacts and consistency with applicable GHG reduction plans.

Generation of Greenhouse Gas Emissions

This section describes the proposed project’s construction- and operational-related GHG emissions and contribution to global climate change. SCAQMD has not addressed emission thresholds for construction in its *CEQA Air Quality Handbook*; however, SCAQMD requires quantification and disclosure. Thus, this section discusses construction emissions.

Construction Greenhouse Gas Emissions. Construction activities associated with the proposed project would produce combustion emissions from various sources. Construction would emit GHGs through the operation of construction equipment and from worker and builder supply vendor vehicles for the duration of the approximately 15-month construction period. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Furthermore, the fueling of heavy equipment emits CH₄. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As indicated above, SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires the construction GHG emissions to be amortized over the life of the project, defined as 30 years, added to the operational emissions, and compared to the applicable interim GHG significance threshold tier. Table H shows CO₂e emissions calculations for each respective construction phase of the proposed project.

Table H: Construction Greenhouse Gas Emissions

Construction Phase	Greenhouse Gas Emissions, CO ₂ e (metric tons per year)
Demolition	41.9
Site Preparation	94.7
Grading	36.1
Building Construction	223.9
Paving	20.8
Architectural Coating	20.5
Total Project Emissions	437.9
Total Construction Emissions Amortized over 30 years	14.6

Source: Compiled by LSA (May 2022).
 Note: Numbers may not appear to add correctly due to rounding.
 CO₂e = carbon dioxide equivalent

As indicated in Table H, it is estimated that the project would generate 437.9 MT CO₂e during construction of the project. When amortized over the 30-year life of the project, annual emissions would be 14.6 MT CO₂e.

Operational Greenhouse Gas Emissions. Long-term operation of the proposed project would generate GHG emissions from area, mobile, waste, and water sources as well as indirect emissions from sources associated with energy consumption. Mobile-source GHG emissions would include project-generated vehicle trips associated with trips to the proposed project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site and other sources. Waste source emissions generated by the proposed project include energy generated by landfilling and other methods of disposal related to transporting and managing project-generated waste. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

GHG emissions were estimated using CalEEMod. Table I shows the estimated operational GHG emissions for the proposed project. Motor vehicle emissions are the largest source of GHG emissions for the project at approximately 68 percent of the project total. Energy sources are the next largest category at approximately 23 percent. Waste sources are about 5 percent of the total emissions, and area and water sources are each 2 percent of the total emissions. Attachment B provides additional calculation details.

Table I: Greenhouse Gas Emissions

Emission Type	Operational Emissions (metric tons per year)				
	CO ₂	CH ₄	N ₂ O	CO ₂ e	Percentage of Total
Area Source	3.0	<1	<1	3.1	2
Energy Source	34.6	<1	<1	34.8	23
Mobile Source	103.7	<1	<1	105.2	68
Waste Source	3.1	<1	0	7.6	5
Water Source	3.0	<1	<1	3.7	2
Total Operational Emissions				154.4	100.0
Amortized Construction Emissions				14.6	—
Total Annual Emissions				169.0	—
SCAQMD Tier 3 GHG Numerical Screening Threshold for 2023				2,640.0	
Exceedance?				No	

Source: LSA (May 2022).

CH₄ = methane

CO₂ = carbon dioxide

CO₂e = carbon dioxide equivalent

GHG = greenhouse gas

N₂O = nitrous oxide

SCAQMD = South Coast Air Quality Management District

As discussed above, a project would have less than significant GHG emissions if it would result in operational-related GHG emissions of less than the scaled SCAQMD threshold of 2,640 MT CO₂e per year. Based on the analysis results, the proposed project would result in 169.0 CO₂e per year, which would be below the scaled numeric threshold of 2,640 MT CO₂e per year. Therefore, operation of the proposed project would not generate significant GHG emissions that would have a significant effect on the environment.

Consistency with Greenhouse Gas Reduction Plans

As presented above, the City of Garden Grove does not have an adopted climate action plan or GHG reduction plan. Therefore, the proposed project was analyzed for consistency with the goals of AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197 and SCAG's 2020–2045 RTP/SCS.

CARB Scoping Plan. As discussed above, California's major initiative for reducing GHG emissions is AB 32, passed by the State Legislature on August 31, 2006. AB 32 is aimed at reducing GHG emissions to 1990 levels by 2020. AB 32 requires CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The AB 32 Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, market-based mechanisms (e.g., cap-and-trade system), and an AB 32 implementation fee to fund the program.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 target set by EO B-30-15 and codified by SB 32.¹

SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reduction target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 that is intended to provide easier public access to air emission data collected by the CARB was posted in December 2016.

As identified above, the AB 32 Scoping Plan contains GHG reduction measures that work towards reducing GHG emissions, consistent with the targets set by AB 32 and EO B-30-15, and codified by SB 32 and AB 197. The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below.

Energy-efficient measures are intended to maximize energy-efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As identified above, the proposed project would comply with the 2019 CALGreen Code standards, regarding energy conservation and green building standards. In addition, the proposed project would be designed to include a 3-megawatt solar system. Therefore, the proposed project would comply with applicable energy measures.

¹ California Air Resources Board (CARB). 2017. *California's 2017 Climate Change Scoping Plan*. November.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the project would be required to comply with the 2019 CALGreen Code standards, which include a variety of different measures, including reduction of wastewater and water use. In addition, the proposed project would be required to comply with the California Model Water Efficient Landscape Ordinance and would include low-flow plumbing fixtures, and drip irrigation systems. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional GHG emission reduction targets for passenger vehicles. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. However, vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. The second phase of Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020. Therefore, the proposed project would not conflict with the identified transportation and motor vehicle measures.

The proposed project would comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy. SCAG's 2020–2045 RTP/SCS was adopted September 3, 2020. SCAG's RTP/SCS identifies that land use strategies that focus on new housing and job growth in areas served by high-quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The core vision in the 2020–2045 RTP/SCS is to better manage the existing transportation system through design management strategies, integrate land use decisions and technological advancements, create complete streets that are safe to all roadway users, preserve the transportation system, and expand transit and foster development in transit-oriented communities. The 2020–2045 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as a forecasted development pattern that is generally consistent with regional-level General Plan data. The forecasted development pattern, when integrated with the financially constrained transportation investments identified in the 2020–2045 RTP/SCS, would reach the regional target of reducing GHG emissions from autos and light-duty trucks by 8 percent per capita by 2020 and 19 percent by 2035 (compared to 2005 levels). The 2020–2045 RTP/SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the 2020–2045 RTP/SCS but provides incentives for consistency for governments and developers.

Implementing SCAG's RTP/SCS will greatly reduce the regional GHG emissions from transportation, helping to achieve statewide emission reduction targets. The proposed project would not conflict with the stated goals of the RTP/SCS; therefore, the proposed project would not interfere with SCAG's ability to achieve the region's GHG reduction targets at 8 percent below 2005 per capita

emissions levels by 2020 and 19 percent below 2005 per capita emissions levels by 2035, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS. Furthermore, the proposed project is not regionally significant per *State CEQA Guidelines* Section 15206, and, as such, it would not conflict with the SCAG RTP/SCS targets, since those targets were established and are applicable on a regional level.

The proposed project would construct 13 single-family residences in a highly urbanized and residential area of Garden Grove. Based on the nature of the proposed project, it is anticipated that implementation of the proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the RTP/SCS. Therefore, the proposed project would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions.

CONCLUSION

Based on the analysis presented above, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed SCAQMD thresholds of significance. Compliance with SCAQMD Rule 403: Fugitive Dust would further reduce construction dust impacts. The proposed project is not expected to produce significant emissions that would affect nearby sensitive receptors. The project would also be consistent with the 2016 AQMP. The project would also not result in objectionable odors affecting a substantial number of people. GHG emissions released during construction and operation of the project are estimated to be minimal and would not be cumulatively considerable. The proposed project would generally be consistent with both the CARB Scoping Plan and the SCAG's RTP/SCS.

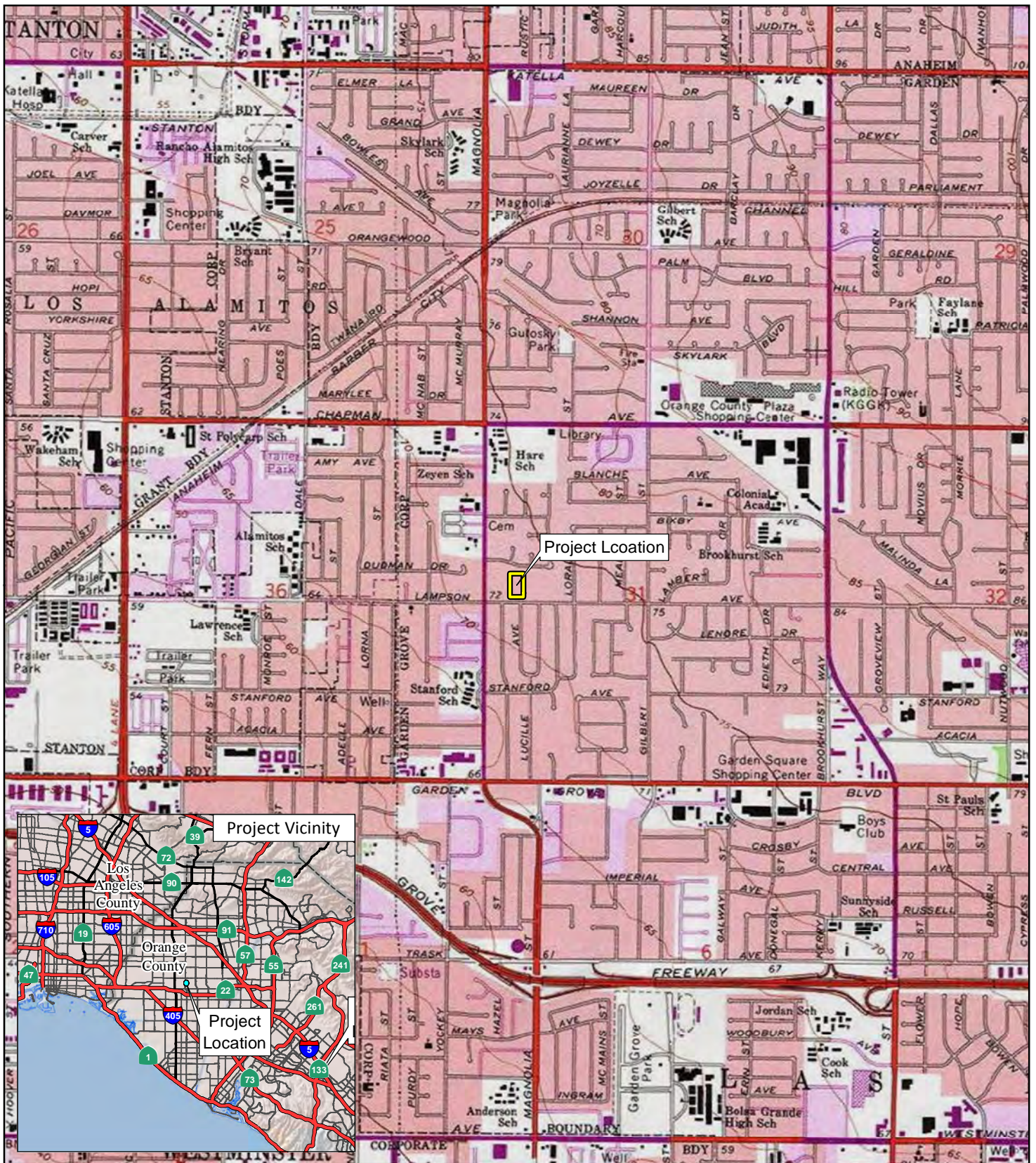
Attachments: A: Figure 1: Project Location
Figure 2: Site Plan
B: CalEEMod Output Files

ATTACHMENT A

FIGURES

Figure 1: Project Location

Figure 2: Site Plan



LSA

LEGEND

 Project Location



0 1000 2000
FEET

SOURCE: USGS 7.5' Quad - Anaheim (1981), CA

I:\CGG2201\GIS\MXD\ProjLocation_USGS.mxd (5/13/2022)

FIGURE 1

Lampsom Avenue TM Project
Project Location and Vicinity

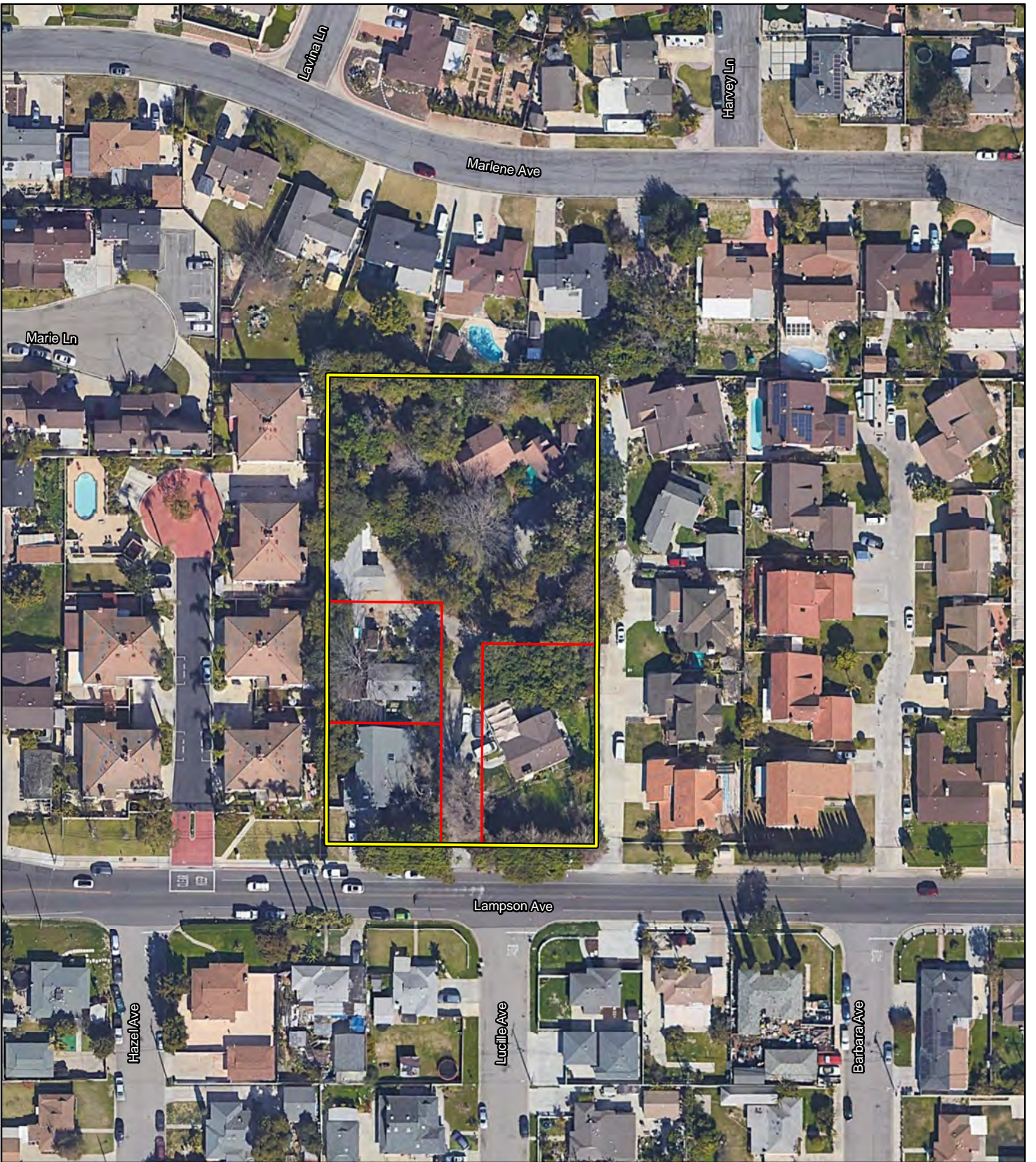


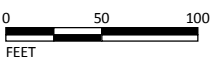


FIGURE 2

LSA

LEGEND

-  Project Location
-  Project Parcels



SOURCE: Google (2021)

I:\CGG2201\GIS\MXD\ProjectArea.mxd (5/13/2022)

Lampson Avenue TM Project
Project Area

ATTACHMENT B

CALEEMOD OUTPUT FILES

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**Lampson Avenue Residential Project
Orange County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.11	Acre	0.11	4,791.60	0
Other Asphalt Surfaces	0.32	Acre	0.32	13,939.20	0
Single Family Housing	13.00	Dwelling Unit	1.17	23,400.00	37

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site is 1.60 acres

Construction Phase - construction schedule based on the 15-month schedule provided to LSA

Off-road Equipment - default construction equipment plus 10 hp stucco mixer based on equipment list provided to LSA

Off-road Equipment - default construction equipment plus air compressors and skip loader based on equipment list provided to LSA

Off-road Equipment - default construction equipment plus excavators and dumpers based on equipment list provided to LSA

Off-road Equipment - default construction equipment based on equipment list provided to LSA

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - default construction equipment plus small yard tractor based on equipment list provided to LSA

Off-road Equipment - default construction equipment plus excavators and dumpers based on equipment list provided to LSA

Trips and VMT - Based on the list provided to LSA

Demolition - project would remove approximately 11,500 sf of existing buildings

Grading - The project would require the cut of 11,770 cubic yards and the fill of 9,743 cubic yards of earthwork, for a net cut of 2,027 cubic yards of earthwork exported.

Vehicle Trips - Based on a trip generation of 95 average daily trips

Construction Off-road Equipment Mitigation - Use of Tier 2 construction equipment

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	90.00
tblConstructionPhase	NumDays	200.00	180.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	2.00	90.00
tblGrading	MaterialExported	0.00	2,027.00
tblLandUse	LotAcreage	4.22	1.17
tblOffRoadEquipment	HorsePower	158.00	81.00
tblOffRoadEquipment	LoadFactor	0.38	0.73
tblTripsAndVMT	WorkerTripNumber	20.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	13.00	30.00
tblTripsAndVMT	WorkerTripNumber	3.00	24.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblVehicleTrips	ST_TR	1.96	0.00

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	9.54	7.30
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	8.55	7.30
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	9.44	7.30

2.0 Emissions Summary

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1115	1.1516	0.8754	1.9400e-003	0.4037	0.0486	0.4524	0.1901	0.0449	0.2349	0.0000	170.9854	170.9854	0.0508	1.5500e-003	172.7171
2024	0.2538	1.3054	1.6755	3.1100e-003	0.0477	0.0551	0.1028	0.0127	0.0533	0.0661	0.0000	263.7415	263.7415	0.0363	1.7000e-003	265.1547
Maximum	0.2538	1.3054	1.6755	3.1100e-003	0.4037	0.0551	0.4524	0.1901	0.0533	0.2349	0.0000	263.7415	263.7415	0.0508	1.7000e-003	265.1547

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0596	1.5557	1.1151	1.9400e-003	0.1871	0.0442	0.2313	0.0870	0.0442	0.1311	0.0000	170.9852	170.9852	0.0508	1.5500e-003	172.7169
2024	0.1895	2.1446	1.7811	3.1100e-003	0.0477	0.0880	0.1357	0.0127	0.0880	0.1007	0.0000	263.7412	263.7412	0.0363	1.7000e-003	265.1544
Maximum	0.1895	2.1446	1.7811	3.1100e-003	0.1871	0.0880	0.2313	0.0870	0.0880	0.1311	0.0000	263.7412	263.7412	0.0508	1.7000e-003	265.1544

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	31.80	-50.60	-13.53	0.00	47.98	-27.40	33.90	50.83	-34.57	22.97	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-5-2023	9-4-2023	0.5643	0.7523
2	9-5-2023	12-4-2023	0.5101	0.6373
3	12-5-2023	3-4-2024	0.4856	0.6742
4	3-5-2024	6-4-2024	0.5214	0.7686
5	6-5-2024	9-4-2024	0.5824	0.8502
6	9-5-2024	9-30-2024	0.0624	0.1131
		Highest	0.5824	0.8502

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1396	4.9200e-003	0.2167	2.2000e-004		0.0132	0.0132		0.0132	0.0132	1.3809	2.8725	4.2534	4.3300e-003	9.0000e-005	4.3895
Energy	1.6800e-003	0.0143	6.0900e-003	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	34.6031	34.6031	1.8400e-003	4.9000e-004	34.7946
Mobile	0.0455	0.0518	0.4729	1.1000e-003	0.1222	7.6000e-004	0.1229	0.0326	7.1000e-004	0.0333	0.0000	103.7297	103.7297	6.2000e-003	4.2800e-003	105.1594
Waste						0.0000	0.0000		0.0000	0.0000	3.0814	0.0000	3.0814	0.1821	0.0000	7.6341
Water						0.0000	0.0000		0.0000	0.0000	0.2687	3.2663	3.5350	0.0279	6.9000e-004	4.4360
Total	0.1869	0.0711	0.6956	1.4100e-003	0.1222	0.0151	0.1372	0.0326	0.0150	0.0476	4.7310	144.4716	149.2026	0.2224	5.5500e-003	156.4135

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0973	3.9700e-003	0.1351	2.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	3.0286	3.0286	2.6000e-004	5.0000e-005	3.0506
Energy	1.6800e-003	0.0143	6.0900e-003	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	34.6031	34.6031	1.8400e-003	4.9000e-004	34.7946
Mobile	0.0455	0.0518	0.4729	1.1000e-003	0.1222	7.6000e-004	0.1229	0.0326	7.1000e-004	0.0333	0.0000	103.7297	103.7297	6.2000e-003	4.2800e-003	105.1594
Waste						0.0000	0.0000		0.0000	0.0000	3.0814	0.0000	3.0814	0.1821	0.0000	7.6341
Water						0.0000	0.0000		0.0000	0.0000	0.2150	2.7951	3.0101	0.0223	5.5000e-004	3.7319
Total	0.1446	0.0701	0.6140	1.2100e-003	0.1222	2.8600e-003	0.1250	0.0326	2.8100e-003	0.0354	3.2964	144.1566	147.4530	0.2127	5.3700e-003	154.3705

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	22.64	1.34	11.73	14.18	0.00	81.03	8.90	0.00	81.30	25.66	30.32	0.22	1.17	4.33	3.24	1.31

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/5/2023	7/14/2023	5	30	
2	Site Preparation	Site Preparation	7/17/2023	11/17/2023	5	90	
3	Grading	Grading	11/20/2023	12/29/2023	5	30	

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Building Construction	Building Construction	1/1/2024	9/6/2024	5	180
5	Architectural Coating	Architectural Coating	4/30/2024	9/2/2024	5	90
6	Paving	Paving	9/9/2024	10/18/2024	5	30

Acres of Grading (Site Preparation Phase): 84.38

Acres of Grading (Grading Phase): 30

Acres of Paving: 0.32

Residential Indoor: 47,385; Residential Outdoor: 15,795; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 836 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Dumpers/Tenders	2	8.00	16	0.38
Demolition	Excavators	2	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Dumpers/Tenders	1	8.00	16	0.38
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Air Compressors	1	8.00	78	0.48
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	12.00	0.00	52.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	5	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	8.00	0.00	253.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	30.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	24.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.6600e-003	0.0000	5.6600e-003	8.6000e-004	0.0000	8.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2644	0.2626	4.4000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	38.4826	38.4826	0.0121	0.0000	38.7848
Total	0.0265	0.2644	0.2626	4.4000e-004	5.6600e-003	0.0124	0.0180	8.6000e-004	0.0114	0.0123	0.0000	38.4826	38.4826	0.0121	0.0000	38.7848

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	3.2600e-003	1.0700e-003	1.0000e-005	4.5000e-004	2.0000e-005	4.7000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.5091	1.5091	1.5000e-004	2.4000e-004	1.5850
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.6000e-004	5.2500e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.5213	1.5213	3.0000e-005	4.0000e-005	1.5329
Total	5.6000e-004	3.6200e-003	6.3200e-003	3.0000e-005	2.4300e-003	3.0000e-005	2.4600e-003	6.4000e-004	3.0000e-005	6.7000e-004	0.0000	3.0303	3.0303	1.8000e-004	2.8000e-004	3.1180

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.5500e-003	0.0000	2.5500e-003	3.9000e-004	0.0000	3.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.3924	0.2891	4.4000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	38.4825	38.4825	0.0121	0.0000	38.7847
Total	0.0169	0.3924	0.2891	4.4000e-004	2.5500e-003	0.0138	0.0163	3.9000e-004	0.0138	0.0142	0.0000	38.4825	38.4825	0.0121	0.0000	38.7847

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	3.2600e-003	1.0700e-003	1.0000e-005	4.5000e-004	2.0000e-005	4.7000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.5091	1.5091	1.5000e-004	2.4000e-004	1.5850
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.6000e-004	5.2500e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.5213	1.5213	3.0000e-005	4.0000e-005	1.5329
Total	5.6000e-004	3.6200e-003	6.3200e-003	3.0000e-005	2.4300e-003	3.0000e-005	2.4600e-003	6.4000e-004	3.0000e-005	6.7000e-004	0.0000	3.0303	3.0303	1.8000e-004	2.8000e-004	3.1180

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2819	0.0000	0.2819	0.1352	0.0000	0.1352	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0628	0.6497	0.4568	1.0400e-003		0.0270	0.0270		0.0249	0.0249	0.0000	90.9177	90.9177	0.0289	0.0000	91.6394
Total	0.0628	0.6497	0.4568	1.0400e-003	0.2819	0.0270	0.3089	0.1352	0.0249	0.1601	0.0000	90.9177	90.9177	0.0289	0.0000	91.6394

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	7.3000e-004	0.0105	3.0000e-005	3.9500e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.0425	3.0425	7.0000e-005	7.0000e-005	3.0659
Total	1.0200e-003	7.3000e-004	0.0105	3.0000e-005	3.9500e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.0425	3.0425	7.0000e-005	7.0000e-005	3.0659

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1268	0.0000	0.1268	0.0608	0.0000	0.0608	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0311	0.8713	0.6183	1.0400e-003		0.0230	0.0230		0.0230	0.0230	0.0000	90.9176	90.9176	0.0289	0.0000	91.6393
Total	0.0311	0.8713	0.6183	1.0400e-003	0.1268	0.0230	0.1498	0.0608	0.0230	0.0838	0.0000	90.9176	90.9176	0.0289	0.0000	91.6393

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	7.3000e-004	0.0105	3.0000e-005	3.9500e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.0425	3.0425	7.0000e-005	7.0000e-005	3.0659
Total	1.0200e-003	7.3000e-004	0.0105	3.0000e-005	3.9500e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.0425	3.0425	7.0000e-005	7.0000e-005	3.0659

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1064	0.0000	0.1064	0.0514	0.0000	0.0514	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0200	0.2170	0.1306	3.1000e-004		9.0700e-003	9.0700e-003		8.3400e-003	8.3400e-003	0.0000	27.1559	27.1559	8.7800e-003	0.0000	27.3754
Total	0.0200	0.2170	0.1306	3.1000e-004	0.1064	9.0700e-003	0.1154	0.0514	8.3400e-003	0.0597	0.0000	27.1559	27.1559	8.7800e-003	0.0000	27.3754

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.6000e-004	0.0159	5.1900e-003	7.0000e-005	2.1700e-003	1.0000e-004	2.2700e-003	6.0000e-004	9.0000e-005	6.9000e-004	0.0000	7.3422	7.3422	7.4000e-004	1.1800e-003	7.7117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.4000e-004	3.5000e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3200e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0142	1.0142	2.0000e-005	2.0000e-005	1.0220
Total	6.0000e-004	0.0161	8.6900e-003	8.0000e-005	3.4900e-003	1.1000e-004	3.5900e-003	9.5000e-004	1.0000e-004	1.0500e-003	0.0000	8.3564	8.3564	7.6000e-004	1.2000e-003	8.7337

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0479	0.0000	0.0479	0.0231	0.0000	0.0231	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3900e-003	0.2716	0.1822	3.1000e-004		7.2800e-003	7.2800e-003		7.2800e-003	7.2800e-003	0.0000	27.1558	27.1558	8.7800e-003	0.0000	27.3754
Total	9.3900e-003	0.2716	0.1822	3.1000e-004	0.0479	7.2800e-003	0.0551	0.0231	7.2800e-003	0.0304	0.0000	27.1558	27.1558	8.7800e-003	0.0000	27.3754

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.6000e-004	0.0159	5.1900e-003	7.0000e-005	2.1700e-003	1.0000e-004	2.2700e-003	6.0000e-004	9.0000e-005	6.9000e-004	0.0000	7.3422	7.3422	7.4000e-004	1.1800e-003	7.7117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.4000e-004	3.5000e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3200e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0142	1.0142	2.0000e-005	2.0000e-005	1.0220
Total	6.0000e-004	0.0161	8.6900e-003	8.0000e-005	3.4900e-003	1.1000e-004	3.5900e-003	9.5000e-004	1.0000e-004	1.0500e-003	0.0000	8.3564	8.3564	7.6000e-004	1.2000e-003	8.7337

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1495	1.1420	1.3438	2.3400e-003		0.0479	0.0479		0.0464	0.0464	0.0000	194.0892	194.0892	0.0290	0.0000	194.8128
Total	0.1495	1.1420	1.3438	2.3400e-003		0.0479	0.0479		0.0464	0.0464	0.0000	194.0892	194.0892	0.0290	0.0000	194.8128

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-004	0.0132	5.2700e-003	6.0000e-005	2.2700e-003	7.0000e-005	2.3400e-003	6.5000e-004	6.0000e-005	7.2000e-004	0.0000	6.3524	6.3524	3.9000e-004	9.2000e-004	6.6351
Worker	7.1800e-003	4.9000e-003	0.0735	2.4000e-004	0.0296	1.5000e-004	0.0298	7.8700e-003	1.4000e-004	8.0100e-003	0.0000	22.2712	22.2712	4.8000e-004	5.1000e-004	22.4347
Total	7.5300e-003	0.0181	0.0788	3.0000e-004	0.0319	2.2000e-004	0.0321	8.5200e-003	2.0000e-004	8.7300e-003	0.0000	28.6236	28.6236	8.7000e-004	1.4300e-003	29.0698

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0892	1.8419	1.4330	2.3400e-003		0.0773	0.0773		0.0773	0.0773	0.0000	194.0890	194.0890	0.0290	0.0000	194.8126
Total	0.0892	1.8419	1.4330	2.3400e-003		0.0773	0.0773		0.0773	0.0773	0.0000	194.0890	194.0890	0.0290	0.0000	194.8126

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-004	0.0132	5.2700e-003	6.0000e-005	2.2700e-003	7.0000e-005	2.3400e-003	6.5000e-004	6.0000e-005	7.2000e-004	0.0000	6.3524	6.3524	3.9000e-004	9.2000e-004	6.6351
Worker	7.1800e-003	4.9000e-003	0.0735	2.4000e-004	0.0296	1.5000e-004	0.0298	7.8700e-003	1.4000e-004	8.0100e-003	0.0000	22.2712	22.2712	4.8000e-004	5.1000e-004	22.4347
Total	7.5300e-003	0.0181	0.0788	3.0000e-004	0.0319	2.2000e-004	0.0321	8.5200e-003	2.0000e-004	8.7300e-003	0.0000	28.6236	28.6236	8.7000e-004	1.4300e-003	29.0698

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0752					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1300e-003	0.0549	0.0815	1.3000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	11.4896	11.4896	6.5000e-004	0.0000	11.5058
Total	0.0833	0.0549	0.0815	1.3000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003	0.0000	11.4896	11.4896	6.5000e-004	0.0000	11.5058

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	1.9600e-003	0.0294	1.0000e-004	0.0119	6.0000e-005	0.0119	3.1500e-003	5.0000e-005	3.2000e-003	0.0000	8.9085	8.9085	1.9000e-004	2.0000e-004	8.9739
Total	2.8700e-003	1.9600e-003	0.0294	1.0000e-004	0.0119	6.0000e-005	0.0119	3.1500e-003	5.0000e-005	3.2000e-003	0.0000	8.9085	8.9085	1.9000e-004	2.0000e-004	8.9739

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0752					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1300e-003	0.1059	0.0825	1.3000e-004		4.2800e-003	4.2800e-003		4.2800e-003	4.2800e-003	0.0000	11.4896	11.4896	6.5000e-004	0.0000	11.5058
Total	0.0803	0.1059	0.0825	1.3000e-004		4.2800e-003	4.2800e-003		4.2800e-003	4.2800e-003	0.0000	11.4896	11.4896	6.5000e-004	0.0000	11.5058

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	1.9600e-003	0.0294	1.0000e-004	0.0119	6.0000e-005	0.0119	3.1500e-003	5.0000e-005	3.2000e-003	0.0000	8.9085	8.9085	1.9000e-004	2.0000e-004	8.9739
Total	2.8700e-003	1.9600e-003	0.0294	1.0000e-004	0.0119	6.0000e-005	0.0119	3.1500e-003	5.0000e-005	3.2000e-003	0.0000	8.9085	8.9085	1.9000e-004	2.0000e-004	8.9739

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2700e-003	0.0879	0.1324	2.0000e-004		4.2200e-003	4.2200e-003		3.8900e-003	3.8900e-003	0.0000	17.6611	17.6611	5.6000e-003	0.0000	17.8011
Paving	4.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	9.6900e-003	0.0879	0.1324	2.0000e-004		4.2200e-003	4.2200e-003		3.8900e-003	3.8900e-003	0.0000	17.6611	17.6611	5.6000e-003	0.0000	17.8011

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	6.5000e-004	9.8000e-003	3.0000e-005	3.9500e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	2.9695	2.9695	6.0000e-005	7.0000e-005	2.9913
Total	9.6000e-004	6.5000e-004	9.8000e-003	3.0000e-005	3.9500e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	2.9695	2.9695	6.0000e-005	7.0000e-005	2.9913

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2500e-003	0.1761	0.1478	2.0000e-004		6.1700e-003	6.1700e-003		6.1700e-003	6.1700e-003	0.0000	17.6611	17.6611	5.6000e-003	0.0000	17.8011
Paving	4.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.6700e-003	0.1761	0.1478	2.0000e-004		6.1700e-003	6.1700e-003		6.1700e-003	6.1700e-003	0.0000	17.6611	17.6611	5.6000e-003	0.0000	17.8011

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	6.5000e-004	9.8000e-003	3.0000e-005	3.9500e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	2.9695	2.9695	6.0000e-005	7.0000e-005	2.9913
Total	9.6000e-004	6.5000e-004	9.8000e-003	3.0000e-005	3.9500e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	2.9695	2.9695	6.0000e-005	7.0000e-005	2.9913

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0455	0.0518	0.4729	1.1000e-003	0.1222	7.6000e-004	0.1229	0.0326	7.1000e-004	0.0333	0.0000	103.7297	103.7297	6.2000e-003	4.2800e-003	105.1594
Unmitigated	0.0455	0.0518	0.4729	1.1000e-003	0.1222	7.6000e-004	0.1229	0.0326	7.1000e-004	0.0333	0.0000	103.7297	103.7297	6.2000e-003	4.2800e-003	105.1594

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	94.90	94.90	94.90	324,288	324,288
Total	94.90	94.90	94.90	324,288	324,288

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869
Other Asphalt Surfaces	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869
Single Family Housing	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18.0245	18.0245	1.5200e-003	1.8000e-004	18.1175
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18.0245	18.0245	1.5200e-003	1.8000e-004	18.1175
NaturalGas Mitigated	1.6800e-003	0.0143	6.0900e-003	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	16.5786	16.5786	3.2000e-004	3.0000e-004	16.6771
NaturalGas Unmitigated	1.6800e-003	0.0143	6.0900e-003	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	16.5786	16.5786	3.2000e-004	3.0000e-004	16.6771

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	310671	1.6800e-003	0.0143	6.0900e-003	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	16.5786	16.5786	3.2000e-004	3.0000e-004	16.6771
Total		1.6800e-003	0.0143	6.0900e-003	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	16.5786	16.5786	3.2000e-004	3.0000e-004	16.6771

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	310671	1.6800e-003	0.0143	6.0900e-003	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	16.5786	16.5786	3.2000e-004	3.0000e-004	16.6771
Total		1.6800e-003	0.0143	6.0900e-003	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	16.5786	16.5786	3.2000e-004	3.0000e-004	16.6771

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	101635	18.0245	1.5200e-003	1.8000e-004	18.1175
Total		18.0245	1.5200e-003	1.8000e-004	18.1175

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	101635	18.0245	1.5200e-003	1.8000e-004	18.1175
Total		18.0245	1.5200e-003	1.8000e-004	18.1175

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0973	3.9700e-003	0.1351	2.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	3.0286	3.0286	2.6000e-004	5.0000e-005	3.0506
Unmitigated	0.1396	4.9200e-003	0.2167	2.2000e-004		0.0132	0.0132		0.0132	0.0132	1.3809	2.8725	4.2534	4.3300e-003	9.0000e-005	4.3895

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.5100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0855					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0426	3.3700e-003	0.0826	2.1000e-004		0.0124	0.0124		0.0124	0.0124	1.3809	2.6535	4.0344	4.1200e-003	9.0000e-005	4.1652
Landscaping	4.0300e-003	1.5400e-003	0.1340	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2190	0.2190	2.1000e-004	0.0000	0.2243
Total	0.1396	4.9100e-003	0.2167	2.2000e-004		0.0132	0.0132		0.0132	0.0132	1.3809	2.8725	4.2534	4.3300e-003	9.0000e-005	4.3895

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.5100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0855					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.8000e-004	2.4300e-003	1.0300e-003	2.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	2.8096	2.8096	5.0000e-005	5.0000e-005	2.8263
Landscaping	4.0300e-003	1.5400e-003	0.1340	1.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	0.2190	0.2190	2.1000e-004	0.0000	0.2243
Total	0.0973	3.9700e-003	0.1350	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	3.0286	3.0286	2.6000e-004	5.0000e-005	3.0506

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.0101	0.0223	5.5000e-004	3.7319
Unmitigated	3.5350	0.0279	6.9000e-004	4.4360

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.131063	0.2582	2.0000e-005	0.0000	0.2596
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.847002 / 0.53398	3.2767	0.0279	6.8000e-004	4.1764
Total		3.5350	0.0279	6.8000e-004	4.4360

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.123068	0.2425	2.0000e-005	0.0000	0.2437
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.677602 / 0.501407	2.7676	0.0223	5.5000e-004	3.4882
Total		3.0101	0.0223	5.5000e-004	3.7319

8.0 Waste Detail

8.1 Mitigation Measures Waste

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.0814	0.1821	0.0000	7.6341
Unmitigated	3.0814	0.1821	0.0000	7.6341

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	15.17	3.0794	0.1820	0.0000	7.6290
Total		3.0814	0.1821	0.0000	7.6341

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	15.17	3.0794	0.1820	0.0000	7.6290
Total		3.0814	0.1821	0.0000	7.6341

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

Lampson Avenue Residential Project - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

11.0 Vegetation

Lampson Avenue Residietial Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**Lampson Avenue Residietial Project
Orange County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.11	Acre	0.11	4,791.60	0
Other Asphalt Surfaces	0.32	Acre	0.32	13,939.20	0
Single Family Housing	13.00	Dwelling Unit	1.17	23,400.00	37

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site is 1.60 acres

Construction Phase - construction schedue based on the 15-month schedule provided to LSA

Off-road Equipment - default construction equipment plus 10 hp stucco mixer based on equipment list provided to LSA

Off-road Equipment - default construction equipment plus air compressors and skip loader based on equipment list provided to LSA

Off-road Equipment - default construction equipment plus excavators and dumpers based on equipment list provided to LSA

Off-road Equipment - default construction equipment based on equipment list provided to LSA

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - default construction equipment plus small yard tractor based on equipment list provided to LSA

Off-road Equipment - default construction equipment plus excavators and dumpers based on equipment list provided to LSA

Trips and VMT - Based on the list provided to LSA

Demolition - project would remove approximately 11,500 sf of existing buildings

Grading - The project would require the cut of 11,770 cubic yards and the fill of 9,743 cubic yards of earthwork, for a net cut of 2,027 cubic yards of earthwork exported.

Vehicle Trips - Based on a trip generation of 95 average daily trips

Construction Off-road Equipment Mitigation - Use of Tier 2 construction equipment

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	90.00
tblConstructionPhase	NumDays	200.00	180.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	2.00	90.00
tblGrading	MaterialExported	0.00	2,027.00
tblLandUse	LotAcreage	4.22	1.17
tblOffRoadEquipment	HorsePower	158.00	81.00
tblOffRoadEquipment	LoadFactor	0.38	0.73
tblTripsAndVMT	WorkerTripNumber	20.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	13.00	30.00
tblTripsAndVMT	WorkerTripNumber	3.00	24.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblVehicleTrips	ST_TR	1.96	0.00

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	9.54	7.30
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	8.55	7.30
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	9.44	7.30

2.0 Emissions Summary

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8030	17.8569	17.9437	0.0316	7.3267	0.8276	7.9380	3.4899	0.7642	4.0525	0.0000	3,054.6765	3,054.6765	0.9020	0.0882	3,083.2620
2024	3.6587	14.1350	18.3397	0.0346	0.6292	0.5964	1.2256	0.1674	0.5803	0.7478	0.0000	3,245.1157	3,245.1157	0.4160	0.0216	3,261.1885
Maximum	3.6587	17.8569	18.3397	0.0346	7.3267	0.8276	7.9380	3.4899	0.7642	4.0525	0.0000	3,245.1157	3,245.1157	0.9020	0.0882	3,261.1885

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.1630	26.3872	19.7123	0.0316	3.4271	0.9204	3.9191	1.6056	0.9203	2.0973	0.0000	3,054.6765	3,054.6765	0.9020	0.0882	3,083.2620
2024	2.9222	23.0456	19.3531	0.0346	0.6292	0.9571	1.5862	0.1674	0.9568	1.1242	0.0000	3,245.1157	3,245.1157	0.4160	0.0216	3,261.1885
Maximum	2.9222	26.3872	19.7123	0.0346	3.4271	0.9571	3.9191	1.6056	0.9568	2.0973	0.0000	3,245.1157	3,245.1157	0.9020	0.0882	3,261.1885

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	25.20	-54.52	-7.67	0.00	49.02	-31.85	39.92	51.52	-39.61	32.89	0.00	0.00	0.00	0.00	0.00	0.00

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.9484	0.2821	7.6833	0.0169		0.9990	0.9990		0.9990	0.9990	121.7699	235.9313	357.7012	0.3650	8.2600e-003	369.2890
Energy	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
Mobile	0.2573	0.2614	2.6126	6.2500e-003	0.6833	4.1700e-003	0.6875	0.1821	3.8800e-003	0.1860		647.0481	647.0481	0.0366	0.0247	655.3343
Total	4.2149	0.6220	10.3292	0.0237	0.6833	1.0095	1.6928	0.1821	1.0092	1.1913	121.7699	983.1150	1,104.8849	0.4035	0.0348	1,125.3540

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5646	0.2064	1.1547	1.3000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	249.6960	249.6960	6.6000e-003	4.5400e-003	251.2147
Energy	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
Mobile	0.2573	0.2614	2.6126	6.2500e-003	0.6833	4.1700e-003	0.6875	0.1821	3.8800e-003	0.1860		647.0481	647.0481	0.0366	0.0247	655.3343
Total	0.8311	0.5463	3.8007	8.0500e-003	0.6833	0.0321	0.7155	0.1821	0.0319	0.2140	0.0000	996.8797	996.8797	0.0451	0.0311	1,007.2796

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	80.28	12.16	63.20	65.99	0.00	96.82	57.74	0.00	96.84	82.04	100.00	-1.40	9.78	88.82	10.68	10.49

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/5/2023	7/14/2023	5	30	
2	Site Preparation	Site Preparation	7/17/2023	11/17/2023	5	90	
3	Grading	Grading	11/20/2023	12/29/2023	5	30	
4	Building Construction	Building Construction	1/1/2024	9/6/2024	5	180	
5	Architectural Coating	Architectural Coating	4/30/2024	9/2/2024	5	90	
6	Paving	Paving	9/9/2024	10/18/2024	5	30	

Acres of Grading (Site Preparation Phase): 84.38

Acres of Grading (Grading Phase): 30

Acres of Paving: 0.32

Residential Indoor: 47,385; Residential Outdoor: 15,795; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 836 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Dumpers/Tenders	2	8.00	16	0.38
Demolition	Excavators	2	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Dumpers/Tenders	1	8.00	16	0.38

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Air Compressors	1	8.00	78	0.48
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	12.00	0.00	52.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	5	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	8.00	0.00	253.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	30.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	24.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating	1	24.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
-----------------------	---	-------	------	------	-------	------	-------	--------	---------	------

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3773	0.0000	0.3773	0.0571	0.0000	0.0571			0.0000			0.0000
Off-Road	1.7656	17.6287	17.5054	0.0295		0.8256	0.8256		0.7623	0.7623		2,827.9838	2,827.9838	0.8883		2,850.1911
Total	1.7656	17.6287	17.5054	0.0295	0.3773	0.8256	1.2029	0.0571	0.7623	0.8194		2,827.9838	2,827.9838	0.8883		2,850.1911

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.6100e-003	0.2066	0.0708	9.7000e-004	0.0302	1.3300e-003	0.0316	8.2800e-003	1.2700e-003	9.5500e-003		110.8554	110.8554	0.0112	0.0178	116.4343
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0338	0.0216	0.3674	1.1300e-003	0.1341	6.9000e-004	0.1348	0.0356	6.3000e-004	0.0362		115.8373	115.8373	2.5100e-003	2.4700e-003	116.6366
Total	0.0374	0.2282	0.4383	2.1000e-003	0.1644	2.0200e-003	0.1664	0.0439	1.9000e-003	0.0458		226.6927	226.6927	0.0137	0.0203	233.0709

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1698	0.0000	0.1698	0.0257	0.0000	0.0257			0.0000			0.0000
Off-Road	1.1256	26.1590	19.2741	0.0295		0.9184	0.9184		0.9184	0.9184	0.0000	2,827.9838	2,827.9838	0.8883		2,850.1911
Total	1.1256	26.1590	19.2741	0.0295	0.1698	0.9184	1.0882	0.0257	0.9184	0.9441	0.0000	2,827.9838	2,827.9838	0.8883		2,850.1911

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.6100e-003	0.2066	0.0708	9.7000e-004	0.0302	1.3300e-003	0.0316	8.2800e-003	1.2700e-003	9.5500e-003		110.8554	110.8554	0.0112	0.0178	116.4343
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0338	0.0216	0.3674	1.1300e-003	0.1341	6.9000e-004	0.1348	0.0356	6.3000e-004	0.0362		115.8373	115.8373	2.5100e-003	2.4700e-003	116.6366
Total	0.0374	0.2282	0.4383	2.1000e-003	0.1644	2.0200e-003	0.1664	0.0439	1.9000e-003	0.0458		226.6927	226.6927	0.0137	0.0203	233.0709

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2636	0.0000	6.2636	3.0038	0.0000	3.0038			0.0000			0.0000
Off-Road	1.3960	14.4381	10.1506	0.0231		0.6006	0.6006		0.5539	0.5539		2,227.1032	2,227.1032	0.7071		2,244.7813
Total	1.3960	14.4381	10.1506	0.0231	6.2636	0.6006	6.8642	3.0038	0.5539	3.5577		2,227.1032	2,227.1032	0.7071		2,244.7813

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578
Total	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8186	0.0000	2.8186	1.3517	0.0000	1.3517			0.0000			0.0000
Off-Road	0.6920	19.3617	13.7401	0.0231		0.5103	0.5103		0.5103	0.5103	0.0000	2,227.1032	2,227.1032	0.7071		2,244.7813
Total	0.6920	19.3617	13.7401	0.0231	2.8186	0.5103	3.3289	1.3517	0.5103	1.8620	0.0000	2,227.1032	2,227.1032	0.7071		2,244.7813

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578
Total	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0902	0.0000	7.0902	3.4259	0.0000	3.4259			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.6147	1,995.6147	0.6454		2,011.7503
Total	1.3330	14.4676	8.7038	0.0206	7.0902	0.6044	7.6946	3.4259	0.5560	3.9819		1,995.6147	1,995.6147	0.6454		2,011.7503

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0176	1.0050	0.3445	4.7300e-003	0.1471	6.4700e-003	0.1536	0.0403	6.1900e-003	0.0465		539.3543	539.3543	0.0544	0.0865	566.4976
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578
Total	0.0401	1.0194	0.5895	5.4800e-003	0.2365	6.9300e-003	0.2434	0.0640	6.6100e-003	0.0706		616.5792	616.5792	0.0561	0.0882	644.2553

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1906	0.0000	3.1906	1.5417	0.0000	1.5417			0.0000			0.0000
Off-Road	0.6262	18.1050	12.1450	0.0206		0.4850	0.4850		0.4850	0.4850	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503
Total	0.6262	18.1050	12.1450	0.0206	3.1906	0.4850	3.6756	1.5417	0.4850	2.0267	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0176	1.0050	0.3445	4.7300e-003	0.1471	6.4700e-003	0.1536	0.0403	6.1900e-003	0.0465		539.3543	539.3543	0.0544	0.0865	566.4976
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578
Total	0.0401	1.0194	0.5895	5.4800e-003	0.2365	6.9300e-003	0.2434	0.0640	6.6100e-003	0.0706		616.5792	616.5792	0.0561	0.0882	644.2553

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6610	12.6889	14.9307	0.0260		0.5318	0.5318		0.5160	0.5160		2,377.1855	2,377.1855	0.3545		2,386.0486
Total	1.6610	12.6889	14.9307	0.0260		0.5318	0.5318		0.5160	0.5160		2,377.1855	2,377.1855	0.3545		2,386.0486

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9800e-003	0.1398	0.0577	7.1000e-004	0.0256	7.5000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		77.7545	77.7545	4.7500e-003	0.0112	81.2120
Worker	0.0795	0.0486	0.8562	2.7400e-003	0.3353	1.6300e-003	0.3370	0.0889	1.5000e-003	0.0904		282.6264	282.6264	5.7000e-003	5.7800e-003	284.4909
Total	0.0835	0.1884	0.9139	3.4500e-003	0.3609	2.3800e-003	0.3633	0.0963	2.2200e-003	0.0985		360.3810	360.3810	0.0105	0.0170	365.7029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9913	20.4660	15.9218	0.0260		0.8583	0.8583		0.8583	0.8583	0.0000	2,377.1855	2,377.1855	0.3545		2,386.0486
Total	0.9913	20.4660	15.9218	0.0260		0.8583	0.8583		0.8583	0.8583	0.0000	2,377.1855	2,377.1855	0.3545		2,386.0486

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9800e-003	0.1398	0.0577	7.1000e-004	0.0256	7.5000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		77.7545	77.7545	4.7500e-003	0.0112	81.2120
Worker	0.0795	0.0486	0.8562	2.7400e-003	0.3353	1.6300e-003	0.3370	0.0889	1.5000e-003	0.0904		282.6264	282.6264	5.7000e-003	5.7800e-003	284.4909
Total	0.0835	0.1884	0.9139	3.4500e-003	0.3609	2.3800e-003	0.3633	0.0963	2.2200e-003	0.0985		360.3810	360.3810	0.0105	0.0170	365.7029

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.6699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	1.8507	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0636	0.0389	0.6850	2.1900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		226.1011	226.1011	4.5600e-003	4.6200e-003	227.5927
Total	0.0636	0.0389	0.6850	2.1900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		226.1011	226.1011	4.5600e-003	4.6200e-003	227.5927

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.6699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0159		281.8443
Total	1.7839	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0159		281.8443

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0636	0.0389	0.6850	2.1900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		226.1011	226.1011	4.5600e-003	4.6200e-003	227.5927
Total	0.0636	0.0389	0.6850	2.1900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		226.1011	226.1011	4.5600e-003	4.6200e-003	227.5927

3.7 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6180	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594		1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6459	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594		1,297.8688	1,297.8688	0.4114		1,308.1547

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0636	0.0389	0.6850	2.1900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		226.1011	226.1011	4.5600e-003	4.6200e-003	227.5927
Total	0.0636	0.0389	0.6850	2.1900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		226.1011	226.1011	4.5600e-003	4.6200e-003	227.5927

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5500	11.7418	9.8512	0.0136		0.4113	0.4113		0.4113	0.4113	0.0000	1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5779	11.7418	9.8512	0.0136		0.4113	0.4113		0.4113	0.4113	0.0000	1,297.8688	1,297.8688	0.4114		1,308.1547

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0636	0.0389	0.6850	2.1900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		226.1011	226.1011	4.5600e-003	4.6200e-003	227.5927
Total	0.0636	0.0389	0.6850	2.1900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		226.1011	226.1011	4.5600e-003	4.6200e-003	227.5927

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2573	0.2614	2.6126	6.2500e-003	0.6833	4.1700e-003	0.6875	0.1821	3.8800e-003	0.1860		647.0481	647.0481	0.0366	0.0247	655.3343
Unmitigated	0.2573	0.2614	2.6126	6.2500e-003	0.6833	4.1700e-003	0.6875	0.1821	3.8800e-003	0.1860		647.0481	647.0481	0.0366	0.0247	655.3343

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	94.90	94.90	94.90	324,288	324,288
Total	94.90	94.90	94.90	324,288	324,288

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869
Other Asphalt Surfaces	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Single Family Housing	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869
-----------------------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
NaturalGas Unmitigated	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	851.153	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
Total		9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.851153	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
Total		9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5646	0.2064	1.1547	1.3000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	249.6960	249.6960	6.6000e-003	4.5400e-003	251.2147
Unmitigated	3.9484	0.2821	7.6833	0.0169		0.9990	0.9990		0.9990	0.9990	121.7699	235.9313	357.7012	0.3650	8.2600e-003	369.2890

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.4065	0.2697	6.6112	0.0169		0.9931	0.9931		0.9931	0.9931	121.7699	234.0000	355.7699	0.3631	8.2600e-003	367.3114
Landscaping	0.0322	0.0124	1.0721	6.0000e-005		5.9400e-003	5.9400e-003		5.9400e-003	5.9400e-003		1.9313	1.9313	1.8500e-003		1.9776
Total	3.9484	0.2821	7.6833	0.0169		0.9990	0.9990		0.9990	0.9990	121.7699	235.9313	357.7012	0.3650	8.2600e-003	369.2890

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0227	0.1941	0.0826	1.2400e-003		0.0157	0.0157		0.0157	0.0157	0.0000	247.7647	247.7647	4.7500e-003	4.5400e-003	249.2371
Landscaping	0.0322	0.0124	1.0721	6.0000e-005		5.9400e-003	5.9400e-003		5.9400e-003	5.9400e-003		1.9313	1.9313	1.8500e-003		1.9776
Total	0.5646	0.2064	1.1547	1.3000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	249.6960	249.6960	6.6000e-003	4.5400e-003	251.2147

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

Lampson Avenue Residential Project - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Lampson Avenue Residetal Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Lampson Avenue Residetal Project

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.11	Acre	0.11	4,791.60	0
Other Asphalt Surfaces	0.32	Acre	0.32	13,939.20	0
Single Family Housing	13.00	Dwelling Unit	1.17	23,400.00	37

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	390.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site is 1.60 acres

Construction Phase - construction schedue based on the 15-month schedule provided to LSA

Off-road Equipment - default construction equipment plus 10 hp stucco mixer based on equipment list provided to LSA

Off-road Equipment - default construction equipment plus air compressors and skip loader based on equipment list provided to LSA

Off-road Equipment - default construction equipment plus excavators and dumpers based on equipment list provided to LSA

Off-road Equipment - default construction equipment based on equipment list provided to LSA

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - default construction equipment plus small yard tractor based on equipment list provided to LSA

Off-road Equipment - default construction equipment plus excavators and dumpers based on equipment list provided to LSA

Trips and VMT - Based on the list provided to LSA

Demolition - project would remove approximately 11,500 sf of existing buildings

Grading - The project would require the cut of 11,770 cubic yards and the fill of 9,743 cubic yards of earthwork, for a net cut of 2,027 cubic yards of earthwork exported.

Vehicle Trips - Based on a trip generation of 95 average daily trips

Construction Off-road Equipment Mitigation - Use of Tier 2 construction equipment

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	90.00
tblConstructionPhase	NumDays	200.00	180.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	2.00	90.00
tblGrading	MaterialExported	0.00	2,027.00
tblLandUse	LotAcreage	4.22	1.17
tblOffRoadEquipment	HorsePower	158.00	81.00
tblOffRoadEquipment	LoadFactor	0.38	0.73
tblTripsAndVMT	WorkerTripNumber	20.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	13.00	30.00
tblTripsAndVMT	WorkerTripNumber	3.00	24.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblVehicleTrips	ST_TR	1.96	0.00

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	9.54	7.30
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	8.55	7.30
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	9.44	7.30

2.0 Emissions Summary

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8059	17.8678	17.9193	0.0315	7.3267	0.8276	7.9380	3.4899	0.7642	4.0525	0.0000	3,049.238 2	3,049.238 2	0.9020	0.0884	3,077.876 9
2024	3.6724	14.1498	18.2376	0.0344	0.6292	0.5964	1.2256	0.1674	0.5804	0.7478	0.0000	3,220.947 6	3,220.947 6	0.4161	0.0223	3,237.231 4
Maximum	3.6724	17.8678	18.2376	0.0344	7.3267	0.8276	7.9380	3.4899	0.7642	4.0525	0.0000	3,220.947 6	3,220.947 6	0.9020	0.0884	3,237.231 4

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.1659	26.3981	19.6880	0.0315	3.4271	0.9204	3.9191	1.6056	0.9203	2.0973	0.0000	3,049.238 2	3,049.238 2	0.9020	0.0884	3,077.876 9
2024	2.9359	23.0604	19.2510	0.0344	0.6292	0.9571	1.5862	0.1674	0.9568	1.1242	0.0000	3,220.947 6	3,220.947 6	0.4161	0.0223	3,237.231 4
Maximum	2.9359	26.3981	19.6880	0.0344	3.4271	0.9571	3.9191	1.6056	0.9568	2.0973	0.0000	3,220.947 6	3,220.947 6	0.9020	0.0884	3,237.231 4

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	25.13	-54.47	-7.69	0.00	49.02	-31.85	39.92	51.52	-39.61	32.89	0.00	0.00	0.00	0.00	0.00	0.00

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.9484	0.2821	7.6833	0.0169		0.9990	0.9990		0.9990	0.9990	121.7699	235.9313	357.7012	0.3650	8.2600e-003	369.2890
Energy	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
Mobile	0.2557	0.2808	2.5808	6.0100e-003	0.6833	4.1800e-003	0.6875	0.1821	3.8800e-003	0.1860		622.3255	622.3255	0.0378	0.0258	630.9460
Total	4.2133	0.6413	10.2974	0.0234	0.6833	1.0095	1.6928	0.1821	1.0092	1.1913	121.7699	958.3924	1,080.1623	0.4047	0.0359	1,100.9657

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5646	0.2064	1.1547	1.3000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	249.6960	249.6960	6.6000e-003	4.5400e-003	251.2147
Energy	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
Mobile	0.2557	0.2808	2.5808	6.0100e-003	0.6833	4.1800e-003	0.6875	0.1821	3.8800e-003	0.1860		622.3255	622.3255	0.0378	0.0258	630.9460
Total	0.8295	0.5656	3.7688	7.8100e-003	0.6833	0.0322	0.7155	0.1821	0.0319	0.2140	0.0000	972.1571	972.1571	0.0463	0.0321	982.8913

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	80.31	11.80	63.40	66.67	0.00	96.82	57.74	0.00	96.84	82.04	100.00	-1.44	10.00	88.57	10.37	10.72

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/5/2023	7/14/2023	5	30	
2	Site Preparation	Site Preparation	7/17/2023	11/17/2023	5	90	
3	Grading	Grading	11/20/2023	12/29/2023	5	30	
4	Building Construction	Building Construction	1/1/2024	9/6/2024	5	180	
5	Architectural Coating	Architectural Coating	4/30/2024	9/2/2024	5	90	
6	Paving	Paving	9/9/2024	10/18/2024	5	30	

Acres of Grading (Site Preparation Phase): 84.38

Acres of Grading (Grading Phase): 30

Acres of Paving: 0.32

Residential Indoor: 47,385; Residential Outdoor: 15,795; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 836 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Dumpers/Tenders	2	8.00	16	0.38
Demolition	Excavators	2	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Dumpers/Tenders	1	8.00	16	0.38

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Air Compressors	1	8.00	78	0.48
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	12.00	0.00	52.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	5	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	8.00	0.00	253.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	30.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	24.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating	1	24.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
-----------------------	---	-------	------	------	-------	------	-------	--------	---------	------

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3773	0.0000	0.3773	0.0571	0.0000	0.0571			0.0000			0.0000
Off-Road	1.7656	17.6287	17.5054	0.0295		0.8256	0.8256		0.7623	0.7623		2,827.9838	2,827.9838	0.8883		2,850.1911
Total	1.7656	17.6287	17.5054	0.0295	0.3773	0.8256	1.2029	0.0571	0.7623	0.8194		2,827.9838	2,827.9838	0.8883		2,850.1911

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4000e-003	0.2154	0.0716	9.7000e-004	0.0302	1.3300e-003	0.0316	8.2800e-003	1.2800e-003	9.5500e-003		110.9556	110.9556	0.0112	0.0178	116.5390
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0370	0.0238	0.3423	1.0800e-003	0.1341	6.9000e-004	0.1348	0.0356	6.3000e-004	0.0362		110.2988	110.2988	2.5800e-003	2.6300e-003	111.1467
Total	0.0404	0.2391	0.4139	2.0500e-003	0.1644	2.0200e-003	0.1664	0.0439	1.9100e-003	0.0458		221.2544	221.2544	0.0138	0.0204	227.6858

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1698	0.0000	0.1698	0.0257	0.0000	0.0257			0.0000			0.0000
Off-Road	1.1256	26.1590	19.2741	0.0295		0.9184	0.9184		0.9184	0.9184	0.0000	2,827.9838	2,827.9838	0.8883		2,850.1911
Total	1.1256	26.1590	19.2741	0.0295	0.1698	0.9184	1.0882	0.0257	0.9184	0.9441	0.0000	2,827.9838	2,827.9838	0.8883		2,850.1911

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4000e-003	0.2154	0.0716	9.7000e-004	0.0302	1.3300e-003	0.0316	8.2800e-003	1.2800e-003	9.5500e-003		110.9556	110.9556	0.0112	0.0178	116.5390
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0370	0.0238	0.3423	1.0800e-003	0.1341	6.9000e-004	0.1348	0.0356	6.3000e-004	0.0362		110.2988	110.2988	2.5800e-003	2.6300e-003	111.1467
Total	0.0404	0.2391	0.4139	2.0500e-003	0.1644	2.0200e-003	0.1664	0.0439	1.9100e-003	0.0458		221.2544	221.2544	0.0138	0.0204	227.6858

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2636	0.0000	6.2636	3.0038	0.0000	3.0038			0.0000			0.0000
Off-Road	1.3960	14.4381	10.1506	0.0231		0.6006	0.6006		0.5539	0.5539		2,227.1032	2,227.1032	0.7071		2,244.7813
Total	1.3960	14.4381	10.1506	0.0231	6.2636	0.6006	6.8642	3.0038	0.5539	3.5577		2,227.1032	2,227.1032	0.7071		2,244.7813

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978
Total	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8186	0.0000	2.8186	1.3517	0.0000	1.3517			0.0000			0.0000
Off-Road	0.6920	19.3617	13.7401	0.0231		0.5103	0.5103		0.5103	0.5103	0.0000	2,227.103 2	2,227.103 2	0.7071		2,244.781 3
Total	0.6920	19.3617	13.7401	0.0231	2.8186	0.5103	3.3289	1.3517	0.5103	1.8620	0.0000	2,227.103 2	2,227.103 2	0.7071		2,244.781 3

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978
Total	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0902	0.0000	7.0902	3.4259	0.0000	3.4259			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.6147	1,995.6147	0.6454		2,011.7503
Total	1.3330	14.4676	8.7038	0.0206	7.0902	0.6044	7.6946	3.4259	0.5560	3.9819		1,995.6147	1,995.6147	0.6454		2,011.7503

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0165	1.0478	0.3483	4.7400e-003	0.1471	6.4900e-003	0.1536	0.0403	6.2100e-003	0.0465		539.8418	539.8418	0.0544	0.0866	567.0073
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978
Total	0.0412	1.0636	0.5765	5.4600e-003	0.2365	6.9500e-003	0.2434	0.0640	6.6300e-003	0.0706		613.3744	613.3744	0.0561	0.0884	641.1051

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1906	0.0000	3.1906	1.5417	0.0000	1.5417			0.0000			0.0000
Off-Road	0.6262	18.1050	12.1450	0.0206		0.4850	0.4850		0.4850	0.4850	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503
Total	0.6262	18.1050	12.1450	0.0206	3.1906	0.4850	3.6756	1.5417	0.4850	2.0267	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0165	1.0478	0.3483	4.7400e-003	0.1471	6.4900e-003	0.1536	0.0403	6.2100e-003	0.0465		539.8418	539.8418	0.0544	0.0866	567.0073
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978
Total	0.0412	1.0636	0.5765	5.4600e-003	0.2365	6.9500e-003	0.2434	0.0640	6.6300e-003	0.0706		613.3744	613.3744	0.0561	0.0884	641.1051

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6610	12.6889	14.9307	0.0260		0.5318	0.5318		0.5160	0.5160		2,377.1855	2,377.1855	0.3545		2,386.0486
Total	1.6610	12.6889	14.9307	0.0260		0.5318	0.5318		0.5160	0.5160		2,377.1855	2,377.1855	0.3545		2,386.0486

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8400e-003	0.1460	0.0595	7.1000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		77.8717	77.8717	4.7300e-003	0.0112	81.3364
Worker	0.0871	0.0533	0.7985	2.6100e-003	0.3353	1.6300e-003	0.3370	0.0889	1.5000e-003	0.0904		269.1346	269.1346	5.8400e-003	6.1500e-003	271.1123
Total	0.0910	0.1994	0.8580	3.3200e-003	0.3609	2.3900e-003	0.3633	0.0963	2.2200e-003	0.0985		347.0064	347.0064	0.0106	0.0174	352.4487

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9913	20.4660	15.9218	0.0260		0.8583	0.8583		0.8583	0.8583	0.0000	2,377.1855	2,377.1855	0.3545		2,386.0486
Total	0.9913	20.4660	15.9218	0.0260		0.8583	0.8583		0.8583	0.8583	0.0000	2,377.1855	2,377.1855	0.3545		2,386.0486

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8400e-003	0.1460	0.0595	7.1000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		77.8717	77.8717	4.7300e-003	0.0112	81.3364
Worker	0.0871	0.0533	0.7985	2.6100e-003	0.3353	1.6300e-003	0.3370	0.0889	1.5000e-003	0.0904		269.1346	269.1346	5.8400e-003	6.1500e-003	271.1123
Total	0.0910	0.1994	0.8580	3.3200e-003	0.3609	2.3900e-003	0.3633	0.0963	2.2200e-003	0.0985		347.0064	347.0064	0.0106	0.0174	352.4487

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.6699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	1.8507	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0697	0.0427	0.6388	2.0900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		215.3077	215.3077	4.6800e-003	4.9200e-003	216.8899
Total	0.0697	0.0427	0.6388	2.0900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		215.3077	215.3077	4.6800e-003	4.9200e-003	216.8899

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.6699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0159		281.8443
Total	1.7839	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0159		281.8443

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0697	0.0427	0.6388	2.0900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		215.3077	215.3077	4.6800e-003	4.9200e-003	216.8899
Total	0.0697	0.0427	0.6388	2.0900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		215.3077	215.3077	4.6800e-003	4.9200e-003	216.8899

3.7 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6180	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594		1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6459	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594		1,297.8688	1,297.8688	0.4114		1,308.1547

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0697	0.0427	0.6388	2.0900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		215.3077	215.3077	4.6800e-003	4.9200e-003	216.8899
Total	0.0697	0.0427	0.6388	2.0900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		215.3077	215.3077	4.6800e-003	4.9200e-003	216.8899

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5500	11.7418	9.8512	0.0136		0.4113	0.4113		0.4113	0.4113	0.0000	1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5779	11.7418	9.8512	0.0136		0.4113	0.4113		0.4113	0.4113	0.0000	1,297.8688	1,297.8688	0.4114		1,308.1547

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0697	0.0427	0.6388	2.0900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		215.3077	215.3077	4.6800e-003	4.9200e-003	216.8899
Total	0.0697	0.0427	0.6388	2.0900e-003	0.2683	1.3100e-003	0.2696	0.0711	1.2000e-003	0.0724		215.3077	215.3077	4.6800e-003	4.9200e-003	216.8899

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2557	0.2808	2.5808	6.0100e-003	0.6833	4.1800e-003	0.6875	0.1821	3.8800e-003	0.1860		622.3255	622.3255	0.0378	0.0258	630.9460
Unmitigated	0.2557	0.2808	2.5808	6.0100e-003	0.6833	4.1800e-003	0.6875	0.1821	3.8800e-003	0.1860		622.3255	622.3255	0.0378	0.0258	630.9460

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	94.90	94.90	94.90	324,288	324,288
Total	94.90	94.90	94.90	324,288	324,288

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869
Other Asphalt Surfaces	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Single Family Housing	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869
-----------------------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
NaturalGas Unmitigated	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	851.153	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
Total		9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.851153	9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307
Total		9.1800e-003	0.0784	0.0334	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.1356	100.1356	1.9200e-003	1.8400e-003	100.7307

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5646	0.2064	1.1547	1.3000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	249.6960	249.6960	6.6000e-003	4.5400e-003	251.2147
Unmitigated	3.9484	0.2821	7.6833	0.0169		0.9990	0.9990		0.9990	0.9990	121.7699	235.9313	357.7012	0.3650	8.2600e-003	369.2890

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.4065	0.2697	6.6112	0.0169		0.9931	0.9931		0.9931	0.9931	121.7699	234.0000	355.7699	0.3631	8.2600e-003	367.3114
Landscaping	0.0322	0.0124	1.0721	6.0000e-005		5.9400e-003	5.9400e-003		5.9400e-003	5.9400e-003		1.9313	1.9313	1.8500e-003		1.9776
Total	3.9484	0.2821	7.6833	0.0169		0.9990	0.9990		0.9990	0.9990	121.7699	235.9313	357.7012	0.3650	8.2600e-003	369.2890

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0227	0.1941	0.0826	1.2400e-003		0.0157	0.0157		0.0157	0.0157	0.0000	247.7647	247.7647	4.7500e-003	4.5400e-003	249.2371
Landscaping	0.0322	0.0124	1.0721	6.0000e-005		5.9400e-003	5.9400e-003		5.9400e-003	5.9400e-003		1.9313	1.9313	1.8500e-003		1.9776
Total	0.5646	0.2064	1.1547	1.3000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	249.6960	249.6960	6.6000e-003	4.5400e-003	251.2147

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

Lampson Avenue Residential Project - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

APPENDIX B

PRELIMINARY GEOTECHNICAL REPORT



May 6, 2022

Project No. 22030-01

Mr. Jeff Rulon
PLC Communities
888 San Clemente Drive, Suite 200
Newport Beach, CA 92660

Subject: Preliminary Geotechnical Report for the Proposed Residential Development at 9071 Lampson Avenue, Garden Grove, California

In accordance with your request and authorization, LGC Geotechnical, Inc. has prepared this summary report of infiltration testing for the proposed residential development located at 9071 Lampson Avenue in the City of Garden Grove, California. We understand that the proposed development will consist of 13 single-family residential units and an associated street. LGC Geotechnical has recently performed a geotechnical evaluation of the site. The purpose of our study was to evaluate the existing onsite geotechnical conditions and to provide preliminary geotechnical recommendations relative to the proposed residential development.

Should you have any questions regarding this report, please do not hesitate to contact our office. We appreciate this opportunity to be of service.

Respectfully Submitted,

LGC Geotechnical, Inc.

A handwritten signature in blue ink, appearing to read "D Boratynec".

Dennis Boratynec, GE 2770
Project Engineer



A handwritten signature in blue ink, appearing to read "Katie Maes".

Katie Maes, CEG 2216
Project Geologist



DJB/KTM/klr

Distribution: (1) Addressee (electronic copy)

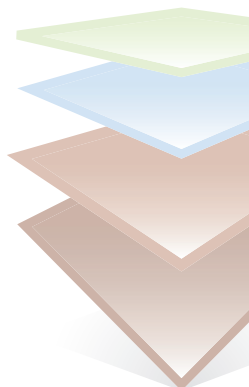


TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION.....	1
1.1 Purpose and Scope of Services	1
1.2 Project Description & Background	1
1.3 Subsurface Geotechnical Evaluation.....	4
1.4 Laboratory Testing	5
2.0 GEOTECHNICAL CONDITIONS.....	6
2.1 Geologic Conditions	6
2.2 Site Specific Geology & Generalized Subsurface Conditions	6
2.3 Groundwater	6
2.4 Field Infiltration Testing.....	7
2.5 Seismic Design Criteria	7
2.6 Faulting.....	9
2.6.1 Liquefaction and Dynamic Settlement.....	9
2.6.2 Lateral Spreading.....	10
2.7 Expansion Potential	10
3.0 CONCLUSIONS.....	11
4.0 PRELIMINARY RECOMMENDATIONS.....	13
4.1 Site Earthwork	13
4.1.1 Site Preparation	13
4.1.2 Removal and Recomaction Depths and Limits	14
4.1.3 Temporary Excavations.....	15
4.1.4 Removal Bottoms and Subgrade Preparation	15
4.1.5 Material for Fill	16
4.1.6 Placement and Compaction of Fills.....	16
4.1.7 Trench and Retaining Wall Backfill and Compaction	17
4.1.8 Shrinkage and Subsidence.....	18
4.2 Preliminary Foundation Recommendations	18
4.2.1 Preliminary Foundation Design Parameters	18
4.2.2 Post-Tensioned Foundation Subgrade Preparation and Maintenance.....	19
4.2.3 Slab Underlayment Guidelines	20
4.3 Soil Bearing and Lateral Resistance.....	20
4.4 Lateral Earth Pressures for Retaining Walls.....	21
4.5 Soil Corrosivity.....	22
4.6 Control of Surface Water and Drainage Control.....	23
4.7 Subsurface Water and Infiltration	23
4.8 Preliminary Asphalt Concrete Pavement Sections	25
4.9 Nonstructural Concrete Flatwork.....	26
4.10 Geotechnical Plan Review	27
4.11 Geotechnical Observation and Testing During Construction	27

TABLE OF CONTENTS (Cont'd)

5.0 LIMITATIONS 28

LIST OF ILLUSTRATIONS, TABLES, AND APPENDICES

Figures

- Figure 1 – Site Location Map (Page 3)
- Figure 2 – Boring Location Map (Rear of Text)
- Figure 3 – Retaining Wall Backfill Detail (Rear of Text)

Tables

- Table 1 – Summary of Field Infiltration Testing (Page 7)
- Table 2 – Seismic Design Parameters (Page 8)
- Table 3 – Estimated Settlement Due to Liquefaction Potential (Page 10)
- Table 4 – Provisional Geotechnical Parameters for Post-Tensioned Foundation Slab Design (Page 19)
- Table 5 – Lateral Earth Pressures – Sandy Backfill (Page 21)
- Table 6 – Geotechnical Factors of Safety for Design Infiltration Rate (Page 24)
- Table 7 – Preliminary Pavement Section Options (Page 25)
- Table 8 – Nonstructural Concrete Flatwork for Low Expansion Potential (Page 26)

Appendices

- Appendix A – References
- Appendix B – Boring and CPT Logs
- Appendix C – Laboratory Test Results
- Appendix D – Liquefaction Analysis
- Appendix E – Infiltration Test Data
- Appendix F – General Earthwork and Grading Specifications

1.0 INTRODUCTION

1.1 Purpose and Scope of Services

This report presents the results of our preliminary geotechnical evaluation for the proposed residential development located at 9071 Lampson Avenue in the City of Garden Grove, California. Refer to the Site Location Map (Figure 1).

The purpose of our study was to provide a preliminary geotechnical evaluation relative to the proposed residential development. As part of our scope of work, we have: 1) reviewed available geotechnical background information including in-house regional geologic maps and published geotechnical literature pertinent to the site (Appendix A); 2) performed a limited subsurface geotechnical evaluation of the site consisting of the excavation of four small-diameter borings and two Cone Penetration Test (CPT) soundings ranging in depth from approximately 5 to 50 feet below existing ground surface; 3) performed two field infiltration tests; 4) performed laboratory testing of select soil samples obtained during our subsurface evaluation; and 5) prepared this preliminary geotechnical summary report presenting our findings, preliminary conclusions and recommendations for the proposed development.

It should be noted that our evaluation and this report only address geotechnical issues associated with the site and do not address any environmental issues.

1.2 Project Description & Background

The approximately 1.6-acre site is bound to the south by Lampson Avenue, to the east, west and north by existing residential. The site is currently occupied by four residential structures, interior drives and numerous trees. The existing site has relatively minor relief, with an existing elevation of approximately 77 feet in the northern portion of the site and an elevation of approximately 75 feet in the southern portion of the site.

Review of historical aerials indicates that a structure was originally constructed in the southwestern portion of the site in 1953, with the remaining portion of the site appearing to be agricultural. The site did not have any building structures in 1963. By the year 1972, a building structure was constructed within the southwest portion of the site near Lampson Avenue, and the remainder of existing building structures are present by 1987 (Historical Aerials, 2022).

Based on the conceptual grading plan, the proposed development includes the construction of 13 single-family residential lots and associated streets and walls (MDS, 2022). Proposed design cuts and fills (not including required remedial grading) from existing grade are anticipated to be on the order of 1 to 2 feet. Relatively small retaining walls are proposed around patio areas on each lot. The proposed building structures are anticipated to be relatively light-weight at-grade structures with estimated maximum column and wall loads of approximately 30 kips and 2 kips per linear foot, respectively.

Based on review of the preliminary storm water plan, two stormwater vaults are proposed in the southern portion of the site at an elevation of approximately 69 feet. The vaults are intended to receive and infiltrate low-volume flow and are designed to overflow to a 12-inch diameter storm drain pipe that will drain to the existing 60-inch diameter storm drain pipe below Lampson

Avenue.

The recommendations given in this report are based upon the estimated structural loading, grading and preliminary layout information above. We understand that the project plans are currently being developed at this time; LGC Geotechnical should be provided with updated project plans and any changes to structural loads when they become available, in order to either confirm or modify the recommendations provided herein. Additional field work and/or laboratory testing may be necessary.

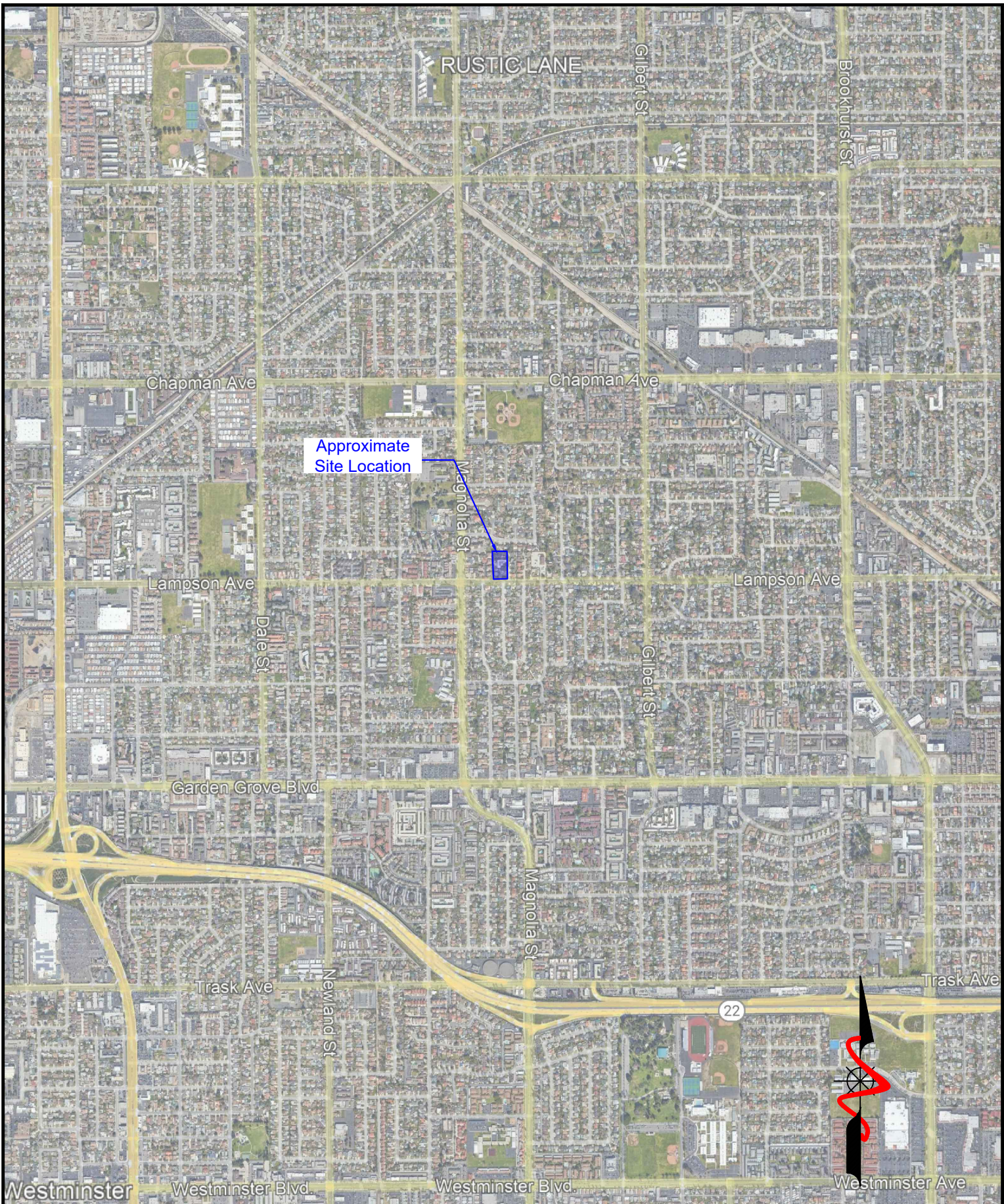


FIGURE 1
Site Location Map

PROJECT NAME	PLC - Lampson
PROJECT NO.	22030-01
ENG. / GEOL.	DJB/KTM
SCALE	Not to Scale
DATE	May 2022

1.3 Subsurface Geotechnical Evaluation

Our subsurface evaluation consisted of drilling and sampling four, small-diameter, exploratory hollow-stem borings (two were for field percolation testing) and two Cone Penetration Test (CPT) soundings.

The hollow-stem borings (HS-1, HS-2, I-1, and I-2) were drilled to depths ranging from approximately 5 to 50 feet below existing grade. An LGC Geotechnical staff engineer observed the drilling operations, logged the borings, and collected soil samples for laboratory testing. The borings were excavated by 2R Drilling, Inc. under subcontract to LGC Geotechnical using a truck-mounted drill rig equipped with 8-inch-diameter hollow-stem augers. Driven soil samples were collected by means of the Standard Penetration Test (SPT) and Modified California Drive (MCD) sampler generally obtained at 5-foot vertical increments. The MCD is a split-barrel sampler with a tapered cutting tip and lined with a series of 1-inch-tall brass rings. The SPT sampler (1.4-inch ID) and MCD sampler (2.4-inch ID, 3.0-inch OD) were driven using a 140-pound automatic hammer falling 30 inches to advance the sampler a total depth of 18 inches. The raw blow counts for each 6-inch increment of penetration were recorded on the boring logs. Bulk samples of the near-surface soils were also collected and logged at select borings for laboratory testing. At the completion of drilling, the borings were backfilled with the native soil cuttings and tamped. Some settlement of the backfill soils may occur over time.

CPT soundings were pushed in two locations (CPT-1 & CPT-2) by Kehoe Testing, Inc. under subcontract to LGC Geotechnical. The CPT soundings were pushed to depths of approximately 50 feet below existing grade. The CPT soundings were pushed using an electronic cone penetrometer in general accordance with the current ASTM standards (ASTM D5778 and ASTM D3441) using a 30-ton rig. The CPT equipment consisted of a cone penetrometer assembly mounted at the end of a series of hollow sounding rods. The interior of the cone penetrometer is instrumented with strain gauges that allow the simultaneous measurement of cone tip and friction sleeve resistance during penetration. The cone penetration assembly is continuously pushed into the soil by a set of hydraulic rams at a standard rate of 0.8 inches per second while the cone tip resistance and sleeve friction resistance are recorded at approximately every 2 inches and stored in digital form. Seismic cone (shear wave velocity) readings were performed in the CPT soundings.

Infiltration testing was performed within two of the borings (I-1 and I-2) to depths of approximately 5 feet below existing grade. An LGC Geotechnical staff engineer installed standpipes, backfilled the borings with crushed rock and pre-soaked the infiltration holes prior to testing. Infiltration testing was performed in general accordance with the County of Orange testing guidelines. Standpipes were removed and the locations were subsequently backfilled with native soils at the completion of testing. Some settlement of the backfill soils may occur over time.

The approximate locations of our subsurface explorations are provided on the Boring Location Map (Figure 2). The boring logs and CPT test results are provided in Appendix B.

1.4 Laboratory Testing

Representative bulk and driven (relatively undisturbed) samples were obtained for laboratory testing during our field evaluation. Laboratory testing included in-situ moisture content and in-situ dry density, fines content, Atterberg Limits, expansion index, laboratory compaction and corrosion (sulfate, chloride, pH and minimum resistivity).

The following is a summary of the laboratory test results:

- Dry density of the samples collected ranged from approximately 95 pounds per cubic foot (pcf) to 117 pcf, with an average of 105 pcf. Field moisture contents ranged from approximately 2 to 43 percent, with an average of 18 percent.
- Four fines content tests were performed and indicated a fines content (passing No. 200 sieve) between 5 and 63 percent. Based on the Unified Soils Classification System (USCS), three of the tested samples would be classified as “coarse-grained” and the remaining sample would be classified as fine-grained.”
- Four Atterberg Limit (liquid limit and plastic limit) tests were performed. Results indicated Plasticity Index (PI) values ranging from Non-Plastic (NP) to 10.
- One laboratory compaction test of a near surface sample indicated a maximum dry density of 111.5 pcf with an optimum moisture content of 8.0 percent.
- One Expansion potential tests were performed and indicated an expansion index value of 1, corresponding to “Very Low” expansion potential.
- Corrosion testing indicated soluble sulfate content less than approximately 0.02 percent, a chloride content of 240 parts per million (ppm), pH of 7.9, and a minimum resistivity of 2770 ohm-centimeters.

A summary of the laboratory test results is presented in Appendix C. The moisture and dry density results are presented on the boring logs in Appendix B.

2.0 GEOTECHNICAL CONDITIONS

2.1 Geologic Conditions

The subject site is located within the Orange County coastal plain, more generally located on the broad southern margin of the Los Angeles Basin. The site is located more specifically within the Santa Ana River drainage basin, approximately 4 miles northwest of the current channelized location of the river. In general, the site is underlain at depth by poorly consolidated alluvial sediments mapped as a sandy member of Quaternary Young Alluvial Fan deposits, ("Qyf-sand"). The Holocene to late Pleistocene aged materials are described as gravel, sand and silt layers, deposited over broad river floodplain areas prior to channelization of the Santa Ana River (Morton, 2004).

2.2 Site-Specific Geology & Generalized Subsurface Conditions

Based on the results of our subsurface investigation, the site is underlain by a thin veneer of topsoil over young alluvial deposits of Holocene age, per regional geologic mapping (Morton, 2004). Field exploration (CPT soundings and borings) indicates primarily medium dense silty sands in the upper approximate 28 feet, followed by finer-grained stiff silts and clays to approximately 40 feet, followed by medium dense to dense sandy soils interbedded with layers of very stiff finer-grained clayey soils to the maximum explored depth of approximately 50 feet below existing grade. The blow counts of sandy layers at greater depths (below approximately 25 feet) are likely impacted by the presence of underlying finer-grained soils. Shear wave velocity readings performed in the CPT soundings indicated average shear wave velocity values of approximately 630 feet per second corresponding to Site Class D per Chapter 20 of ASCE 7-16.

It should be noted that borings and CPT soundings are only representative of the location and time where/when they are performed, and varying subsurface conditions may exist outside of the performed location. In addition, subsurface conditions can change over time. The soil descriptions provided above should not be construed to mean that the subsurface profile is uniform, and that soil is homogeneous within the project area. For details on the stratigraphy at the exploration locations, refer to Appendix B.

2.3 Groundwater

Groundwater was encountered in the deeper borings (HS-1 and HS-2) at a depth of approximately 14 feet below existing grade. Historic high groundwater is mapped approximately halfway between the 10- and 20-foot contours (CDMG, 2001). Therefore, we conservatively used the existing groundwater depth of 14 feet below existing grades for the historic high groundwater level.

Seasonal fluctuations of groundwater elevations should be expected over time. In general, groundwater levels fluctuate with the seasons and local zones of perched groundwater may be present due to local seepage caused by irrigation and/or recent precipitation. Local perched groundwater conditions or surface seepage may develop once site development is completed.

2.4 Field Infiltration Testing

Two field percolation tests were performed (I-1 and I-2) to approximate depths of 5 feet below existing grade, refer to Appendix E for testing summaries. The approximate locations are shown on the Boring Location Map (Figure 2). Infiltration test well installation consisted of placing a 3-inch diameter perforated PVC pipe in the excavated borehole and backfilling the annulus with crushed rock including the placement of approximately 2 inches of crushed rock at the bottom of the borehole. The infiltration test was presoaked the day of installation and testing took place within 24 hours of presoaking. During the pre-test, the water level was observed to drop more than 6 inches in 25 minutes for two consecutive readings. Therefore, the test procedure for coarse-grained soils or the “fast test” was followed. Test well installation and the estimation of infiltration rates were accomplished in general accordance with the guidelines set forth by the County of Orange (2013). In general, three-dimensional flow out of the test well (*percolation*), as observed in the field, is mathematically reduced to one-dimensional flow out of the bottom of the test well (*infiltration*).

TABLE 1
Summary of Field Infiltration Testing

Infiltration Test Identification	Approx. Depth Below Existing Grade (ft)	Observed Infiltration Rate* (in./hr.)
I-1	5	5.9
I-2	5	5.7

*Observed Infiltration Rates Do Not Include Factor of Safety.

It should be emphasized that infiltration test results are only representative of the location and depth where they are performed. Varying subsurface conditions may exist outside of the test locations which could alter the calculated infiltration rates indicated above. Infiltration tests are performed using relatively clean water free of particulates, silt, etc. Refer to Section 4.8.

2.5 Seismic Design Criteria

Since the site contains soils that are susceptible to liquefaction (refer to above Section “Liquefaction and Dynamic Settlement”), ASCE 7 which has been adopted by the CBC requires that site soils be assigned Site Class “F” and a site-specific response spectrum be performed. However, in accordance with Section 20.3.1 of ASCE 7, if the fundamental periods of vibration of the planned structure are equal to or less than 0.5 second, a site-specific response spectrum is not required and ASCE 7/2019 CBC site class and seismic parameters may be used in lieu of a site-specific response spectrum. **It should be noted that the seismic parameters provided herein are not applicable for any structure having a fundamental period of vibration greater than 0.5 second.** The site seismic characteristics were evaluated per the guidelines set forth in Chapter 16, Section 1613 of the 2019 California Building Code (CBC) and applicable portions of ASCE 7-16 which has been adopted by the CBC. Please note that the following seismic parameters are only applicable for code-based acceleration response spectra and are not applicable for where site-specific ground motion procedures are required by ASCE 7-16. Representative site coordinates of latitude 33.7819 degrees north and longitude -117.9737 degrees west were utilized in our analyses. The maximum considered earthquake (MCE)

spectral response accelerations (S_{MS} and S_{M1}) and adjusted design spectral response acceleration parameters (S_{DS} and S_{D1}) for Site Class D are provided in Table 2 below. Since site soils are Site Class D, additional adjustments are required to code acceleration response spectrums as outlined below and provided in ASCE 7-16. The structural designer should contact the geotechnical consultant if structural conditions (e.g., number of stories, seismically isolated structures, etc.) require site-specific ground motions.

TABLE 2
Seismic Design Parameters

Selected Parameters from 2019 CBC, Section 1613 - Earthquake Loads	Seismic Design Values	Notes/Exceptions
Distance to applicable faults classifies the site as a "Near-Fault" site.		Section 11.4.1 of ASCE 7
Site Class	D*	Chapter 20 of ASCE 7
S_s (Risk-Targeted Spectral Acceleration for Short Periods)	1.400g	From SEAOC, 2022
S_1 (Risk-Targeted Spectral Accelerations for 1-Second Periods)	0.496g	From SEAOC, 2022
F_a (per Table 1613.2.3(1))	1.0	For Simplified Design Procedure of Section 12.14 of ASCE 7, F_a shall be taken as 1.4 (Section 12.14.8.1)
F_v (per Table 1613.2.3(2))	1.804	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
S_{MS} for Site Class D [Note: $S_{MS} = F_a S_s$]	1.400g	-
S_{M1} for Site Class D [Note: $S_{M1} = F_v S_1$]	0.895g	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
S_{DS} for Site Class D [Note: $S_{DS} = (2/3)S_{MS}$]	0.933g	-
S_{D1} for Site Class D [Note: $S_{D1} = (2/3)S_{M1}$]	0.597g	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
C_{RS} (Mapped Risk Coefficient at 0.2 sec)	0.917	ASCE 7 Chapter 22
C_{R1} (Mapped Risk Coefficient at 1 sec)	0.919	ASCE 7 Chapter 22
*Since site soils are Site Class D and S_1 is greater than or equal to 0.2, the seismic response coefficient C_s is determined by Eq. 12.8-2 for values of $T \leq 1.5T_s$ and taken equal to 1.5 times the value calculated in accordance with either Eq. 12.8-3 for $T_L \geq T > T_s$, or Eq. 12.8-4 for $T > T_L$. Refer to ASCE 7-16. Site Class F modified to Site Class D, seismic parameters only applicable for structure period ≤ 0.5 second, refer to discussion above.		

Section 1803.5.12 of the 2019 CBC (per Section 11.8.3 of ASCE 7) states that the maximum considered earthquake geometric mean (MCE_G) Peak Ground Acceleration (PGA) should be used for liquefaction potential. The PGA_M for the site is equal to 0.658g (SEAOC, 2022). The design PGA is equal to 0.439 (2/3 of PGA_M).

A deaggregation of the PGA based on a 2,475-year average return period (MCE) indicates that an earthquake magnitude of 6.71 at a distance of approximately 12.29 km from the site would contribute the most to this ground motion. A deaggregation of the PGA based on a 475-year average return period (Design Earthquake) indicates that an earthquake magnitude of 6.62 at a distance of approximately 19.16 km from the site would contribute the most to this ground motion (USGS, 2014).

2.6 Faulting

The subject site is not located within a State of California Earthquake Fault Zone (Alquist-Priolo) and no faults were identified on the site during our site evaluation (CGS, 2018). The possibility of damage due to ground rupture is considered low since no active faults are known to cross the site. The known active faults that may affect the subject site are the Newport-Inglewood Offshore, Palos Verdes, Whittier-Elsinore and San Andreas Fault Zones, among others.

Secondary effects of seismic shaking resulting from large earthquakes on the major faults in the Southern California region, which may affect the site, include ground lurching and shallow ground rupture, soil liquefaction, and dynamic settlement. These secondary effects of seismic shaking are a possibility throughout the Southern California region and are dependent on the distance between the site and causative fault and the onsite geology. A discussion of these secondary effects is provided in the following sections.

2.6.1 Liquefaction and Dynamic Settlement

Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions coexist: 1) shallow groundwater; 2) low density non-cohesive (granular) soils; and 3) high-intensity ground motion. Studies indicate that saturated, loose near-surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. In general, cohesive soils are not considered susceptible to liquefaction, depending on their plasticity and moisture content. Effects of liquefaction on level ground include settlement, sand boils, and bearing capacity failures below structures. Dynamic settlement of dry loose sands can occur as the sand particles tend to settle and densify as a result of a seismic event.

Based on our review of the State of California Seismic Hazard Zone for liquefaction potential (CDMG, 1998), the site is located within a liquefaction hazard zone. The data obtained from our field evaluation indicates that the site contains sandy layers susceptible to liquefaction within the upper 50 feet. Liquefaction potential was evaluated using the procedures outlined by Special Publication 117A (SCEC, 1999 & CGS, 2008).

Liquefaction analysis was based on the applicable seismic criteria (e.g., PGA_M from 2019 CBC) and estimated historic high groundwater depth of 14 feet below existing grade. Liquefaction analysis was performed using the program CLiq (GeoLogismiki, 2017). Estimated total and differential seismic settlement due to liquefaction potential is provided in Table 3 below. Liquefaction calculations are provided in Appendix D.

TABLE 3

Estimated Settlement Due to Liquefaction Potential

Approximate Total Seismic Settlement	Differential Seismic Settlement
1 ½-inches	¾-inch over 40 feet

2.6.2 Lateral Spreading

Lateral spreading is a type of liquefaction-induced ground failure associated with the lateral displacement of surficial blocks of sediment resulting from liquefaction in a subsurface layer. Once liquefaction transforms the subsurface layer into a fluid mass, gravity plus the earthquake inertial forces may cause the mass to move downslope towards a free face (such as a river channel or an embankment). Lateral spreading may cause large horizontal displacements and such movement typically damages pipelines, utilities, bridges, and structures.

Due to the site being relatively level and the lack of an adjacent free face to drive lateral spreading, the potential for lateral spreading is considered low.

2.7 Expansion Potential

Based on the results of our laboratory testing, site soils are anticipated to have a “Very Low” expansion potential. Final expansion potential of site soils should be determined at the completion of grading. Results of expansion testing at finish grades will be utilized to confirm final foundation design.

3.0 CONCLUSIONS

Based on the results of our geotechnical evaluation, it is our opinion that the proposed development is feasible from a geotechnical standpoint, provided the following conclusions and recommendations are implemented.

The following is a summary of the primary geotechnical factors that may affect future development of the site:

- In general, our field explorations indicate primarily medium dense silty sands in the upper approximate 28 feet followed by finer-grained stiff silts and clays to approximately 40 feet followed by medium dense to dense sandy soils interbedded with layers of very stiff finer-grained clayey soils to the maximum explored depth of approximately 50 feet below existing grade. The near-surface loose and compressible soils are not suitable for the planned improvements in their present condition (refer to Section 4.1).
- From a geotechnical perspective, onsite soils are anticipated to be suitable for use as general compacted fill (not retaining wall backfill) provided, they are screened of organic materials, construction debris and any oversized material (8 inches in greatest dimension).
- Groundwater was encountered during our subsurface evaluation at a depth of approximately 14 feet below existing grade. Historic high groundwater is estimated to be about 14 feet below existing grade (CDMG, 2001).
- The subject site is not located within a State of California Earthquake Fault Zone (Alquist-Priolo). The main seismic hazard that may affect the site is ground shaking from one of the active regional faults. The subject site will likely experience strong seismic ground shaking during its design life.
- The site is in a State of California Seismic Hazard Zone for liquefaction (CDMG, 1998). Subsurface data indicates that sandy layers are susceptible to liquefaction and liquefaction-induced settlement. Our analysis indicates approximately 1 ½-inches of seismically induced settlement may occur at the site during a significant earthquake. Differential seismic settlement may be taken as ¾-inch over a horizontal span of 40 feet.
- We recommend the drilling of several small-diameter holes through the bottom of each infiltration vault to minimum depths of approximately 15 feet below existing grade, and backfilling the holes with approved clean sand up to infiltration bottom grades. Holes drilled in the bottom of the infiltration system would reduce the potential for water becoming suspended within the upper alluvial soils by acting as a high permeability conduit, transferring surface water to the deeper sandy native materials below.
- It is our opinion that the possible impacts of liquefaction can be reasonably mitigated by use of a rigid mat slab foundation or structural pad footings interconnected with grade beams. However, as with many structures in Southern California risk does remain that the proposed structure could suffer some damage if liquefaction occurs. Repair and remedial work may be required after a liquefaction event.
- Due to the close-proximity of proposed stormwater infiltration vaults (approximately 10 feet from foundations), the two adjacent residential foundations will require additionally stiffened foundations. This should be determined once foundation plans are available.

- Based on the results of preliminary laboratory testing, site soils are anticipated to have “Very Low” expansion potential. Final design expansion potential must be determined at the completion of grading.
- The site contains some soils that are not suitable for retaining wall backfill due to their fines content; therefore, select grading and stockpiling, or import of sandy soils will be required by the contractor for obtaining suitable backfill soil for planned site retaining walls.
- Excavations into the existing site soils should be feasible with heavy construction equipment in good working order.
- Due to the relatively shallow site groundwater (about 14 feet below existing ground surface) dewatering or stabilization of subgrade for removal bottoms or deep utility trenches may be locally required, prior to subsequent fill placement.

4.0 PRELIMINARY RECOMMENDATIONS

The following recommendations are to be considered preliminary and should be confirmed upon completion of grading and earthwork operations. In addition, they should be considered minimal from a geotechnical viewpoint, as there may be more restrictive requirements from the architect, structural engineer, building codes, governing agencies, or the owner.

It should be noted that the following geotechnical recommendations are intended to provide sufficient information to develop the site in general accordance with the 2019 CBC requirements. With regard to the potential occurrence of potentially catastrophic geotechnical hazards such as fault rupture, earthquake-induced landslides, liquefaction, etc. the following geotechnical recommendations should provide adequate protection for the proposed development to the extent required to reduce seismic risk to an “acceptable level.” The “acceptable level” of risk is defined by the California Code of Regulations as “that level that provides reasonable protection of the public safety, though it does not necessarily ensure continued structural integrity and functionality of the project” [Section 3721(a)]. Therefore, repair and remedial work of the proposed improvements may be required after a significant seismic event. With regards to the potential for less significant geologic hazards to the proposed development, the recommendations contained herein are intended as a reasonable protection against the potential damaging effects of geotechnical phenomena such as expansive soils, fill settlement, groundwater seepage, etc. It should be understood, however, that although our recommendations are intended to maintain the structural integrity of the proposed development and structures given the site geotechnical conditions, they cannot preclude the potential for some cosmetic distress or nuisance issues to develop as a result of the site geotechnical conditions.

The geotechnical recommendations contained herein must be confirmed to be suitable or modified based on the actual as-graded conditions.

4.1 Site Earthwork

We anticipate that earthwork at the site will consist of demolition of the existing site improvements, required earthwork removals, subgrade preparation, precise grading and construction of the proposed new improvements, including the residential structures, neighborhood amenities, subsurface utilities, interior streets, etc.

We recommend that earthwork onsite be performed in accordance with the following recommendations, future grading plan review report(s), the 2019 CBC/City of Garden Grove grading requirements, and the General Earthwork and Grading Specifications included in Appendix F. In case of conflict, the following recommendations shall supersede those included in Appendix F. The following recommendations should be considered preliminary and may be revised based upon future evaluation and review of the project plans and/or based on the actual conditions encountered during site grading/construction.

4.1.1 Site Preparation

Prior to grading of areas to receive structural fill or engineered improvements, the areas should be cleared of existing building structures, asphalt, surface obstructions, and

demolition debris. Vegetation and debris should be removed and properly disposed of off-site. Holes resulting from the removal of buried obstructions, which extend below proposed finish grades, should be replaced with suitable compacted fill material. Any abandoned sewer or storm drain lines should be completely removed and replaced with properly placed compacted fill. Deeper demolition may be required in order to remove existing foundations. We recommend the trenches associated with demolition which extend below the remedial grading depth of 5 feet be backfilled and properly compacted prior to the demolition contractor leaving the site.

If cesspools or septic systems are encountered, they should be removed in their entirety. The resulting excavation should be backfilled with properly compacted fill soils. As an alternative, cesspools can be backfilled with lean sand-cement slurry. Any encountered wells should be properly abandoned in accordance with regulatory requirements. At the conclusion of the clearing operations, a representative of LGC Geotechnical should observe and accept the site prior to further grading.

4.1.2 Removal and Recompaction Depths and Limits

In order to provide a relatively uniform bearing condition for the planned residential building pads and improvements, we recommend the site soils be removed and recompacted according to the criteria outlined below.

Building Structures: Removals should extend a minimum depth of 5 feet below existing grade or 2 feet below proposed footings, whichever is greater. In general, the envelope for removals should extend laterally a minimum horizontal distance of 5 feet beyond the edges of the proposed building footprint. Deeper removals may be required if undocumented fill soils or otherwise unsuitable materials are encountered.

Minor Site Structures: For minor site structures such as free-standing walls, retaining walls, etc., removal and recompaction should extend at least 3 feet below existing grade or 2 feet below the base of foundations, whichever is deeper. Where space is available, the envelope for removal and recompaction should extend laterally a minimum distance of 3 feet beyond the edges of the proposed minor site structure improvements.

Pavement and Hardscape: Within pavement and hardscape areas, removal and recompaction should extend to a depth of at least 2 feet below the existing grade or 1-foot below finished subgrade (i.e., below planned aggregate base/asphalt concrete), whichever is deeper. In general, the envelope for removal and recompaction should extend laterally a minimum distance of 2 feet beyond the edges of the proposed pavement and hardscape improvements.

Local conditions may be encountered during excavation that could require additional over-excavation beyond the above noted minimum in order to obtain an acceptable subgrade. In the event removals extend to over-moist materials, additional recommendations should be provided. The actual depths and lateral extents of grading will be determined by the geotechnical consultant, based on subsurface conditions encountered during grading. Removal areas and areas to be over-excavated should be accurately staked in the field by the Project Surveyor.

4.1.3 Temporary Excavations

Temporary excavations should be performed in accordance with project plans, specifications, and all Occupational Safety and Health Administration (OSHA) requirements. Excavations should be laid back or shored in accordance with OSHA requirements before personnel or equipment are allowed to enter. Based on our field investigation, the majority of site soils are anticipated to be OSHA Type "C" soils (refer to the attached boring logs). Minor amounts of sandy soils are present and should be considered susceptible to caving. Soil conditions should be regularly evaluated during construction to verify conditions are as anticipated. The contractor shall be responsible for providing the "competent person" required by OSHA standards to evaluate soil conditions. Close coordination with the geotechnical consultant should be maintained to facilitate construction while providing safe excavations. Excavation safety is the sole responsibility of the contractor.

Vehicular traffic, stockpiles, and equipment storage should be set back from the perimeter of excavations a minimum distance equivalent to a 1:1 projection from the bottom of the excavation or 5 feet, whichever is greater, unless the cut is shored and designed for applicable surcharge load. Once an excavation has been initiated, it should be backfilled as soon as practical. Prolonged exposure of temporary excavations may result in some localized instability. Excavations should be planned so that they are not initiated without sufficient time to shore/fill them prior to weekends, holidays, or forecasted rain.

It should be noted that any excavation that extends below a 1:1 (horizontal to vertical) projection of an existing foundation will remove existing support of the structure foundation. If requested, temporary shoring parameters will be provided.

4.1.4 Removal Bottoms and Subgrade Preparation

In general, removal bottoms, over-excavation bottoms and areas to receive compacted fill should be scarified to a minimum depth of 6 inches, brought to a near-optimum moisture condition (generally within optimum and 2 percent above optimum moisture content), and re-compacted per project recommendations.

In the event removal bottoms are over-moist and pumping when equipment passes, scarification/processing of removal bottoms is generally not required. If encountered, soft and yielding removal bottoms should be evaluated on a case-by-case basis during earthwork operations. For these conditions, LGC Geotechnical should provide recommendations as needed for stabilization of the subgrade prior to placing compacted fill (e.g., placement of crushed rock, etc.).

Removal bottoms, over-excavation bottoms and areas to receive fill should be observed and accepted by the geotechnical consultant prior to subsequent fill placement. Soil subgrade for planned footings and improvements (e.g., slabs, etc.) should be firm and competent.

4.1.5 Material for Fill

From a geotechnical perspective, the onsite soils are generally considered suitable for use as general compacted fill, provided they are screened of organic materials, construction debris and oversized material (8 inches in greatest dimension).

From a geotechnical viewpoint, any required import soils for general fill (i.e., non-retaining wall backfill) should consist of soils of “Very Low” expansion potential (expansion index 20 or less based on American Society for Testing and Materials [ASTM] D 4829), and free of organic materials, construction debris and any material greater than 3 inches in maximum dimension. Import for any required retaining wall backfill should meet the criteria outlined in the following paragraph. Source samples should be provided to the geotechnical consultant for laboratory testing a minimum of four working days prior to any planned importation.

Some of the onsite soils are not suitable for retaining wall backfill due to their fines content; therefore, select grading and stockpiling, or import of select sandy soils will be required by the contractor for obtaining suitable retaining wall backfill soil. These preliminary findings will be confirmed during grading. Retaining wall backfill should consist of imported sandy soils with a maximum of 35 percent fines (passing the No. 200 sieve) per ASTM Test Method D1140 (or ASTM D6913/D422) and a “Very Low” expansion potential (EI of 20 or less per ASTM D4829). Soils should also be screened of organic materials, construction debris, and material greater than 3 inches in maximum dimension.

Aggregate base (crushed aggregate base or crushed miscellaneous base) should conform to the requirements of Section 200-2 of the most recent version of the Standard Specifications for Public Works Construction (“Greenbook”) for untreated base materials (except processed miscellaneous base) and/or City of Garden Grove requirements.

The placement of demolition materials in compacted fill is acceptable from a geotechnical viewpoint provided the demolition material is broken up into pieces not larger than typically used for aggregate base (approximately 2-inches in maximum dimension) and well blended into fill soils with essentially no resulting voids. Demolition material placed in fills must be free of construction debris (wood, organics, etc.) and reinforcing steel. If asphalt concrete fragments will be incorporated into the demolition materials, approval from an environmental viewpoint may be required and is not the purview of the geotechnical consultant. From our previous experience, we recommend that asphalt concrete fragments be limited to fill areas within planned street areas (i.e., not within building pad areas).

4.1.6 Placement and Compaction of Fills

Material to be placed as fill should be brought to near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content) and recompacted to at least 90 percent relative compaction (per ASTM D1557). Moisture conditioning of site soils will be required in order to achieve adequate compaction. Significant drying and or mixing of very moist soils will be required prior to reusing the

materials in compacted fills. In general, near surface soils present at the site will require additional moisture in order to achieve required compaction.

The optimum lift thickness to produce a uniformly compacted fill will depend on the type and size of compaction equipment used. In general, fill should be placed in uniform lifts not exceeding 8 inches in compacted thickness. Each lift should be thoroughly compacted and accepted prior to subsequent lifts. Generally, placement and compaction of fill should be performed in accordance with local grading ordinances and with observation and testing performed by the geotechnical consultant. Oversized material as previously defined should be removed from site fills.

During backfill of excavations, the fill should be properly benched into firm and competent soils of temporary backcut slopes as it is placed in lifts.

Aggregate base material should be compacted to at least 95 percent relative compaction at or slightly above optimum moisture content per ASTM D1557. Subgrade below aggregate base should be compacted to at least 90 percent relative compaction per ASTM D1557 at near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content).

If gap-graded $\frac{3}{4}$ -inch rock is used for backfill (around storm drain storage chambers, retaining wall backfill, etc.) it will require compaction. Rock shall be placed in thin lifts (typically not exceeding 6 inches) and mechanically compacted with observation by geotechnical consultant. Backfill rock shall meet the requirements of ASTM D2321. Gap-graded rock is required to be wrapped in filter fabric (Mirafi 140N or approved alternative) to prevent the migration of fines into the rock backfill.

4.1.7 Trench and Retaining Wall Backfill and Compaction

Bedding material used within the pipe zone should conform to the requirements of the current Greenbook and the pipe manufacturer. Where applicable, sand having a sand equivalent (SE) of 20 or greater (per Caltrans Test Method [CTM] 217) may be used to bed and shade the pipes within the bedding zone. Sand backfill should be densified by jetting or flooding and then tamped to ensure adequate compaction. Bedding sand should be from a natural source, manufactured sand from recycled material is not suitable for jetting. The onsite soils may generally be considered suitable as trench backfill (zone defined as 12 inches above the pipe to subgrade), provided the soils are screened of rocks greater than 6 inches in maximum dimension, construction debris and organic material. Trench backfill should be compacted in uniform lifts (as outlined above in Section "Material for Fill") by mechanical means to at least 90 percent relative compaction (per ASTM D1557). If gap-graded rock is used for trench backfill, refer to above Section 4.1.6.

Retaining wall backfill should consist of sandy soils as outlined in preceding Section 4.1.5. The limits of select sandy backfill should extend at minimum $\frac{1}{2}$ the height of the retaining wall or the width of the heel (if applicable), whichever is greater (Figure 3). Retaining wall backfill soils should be compacted in relatively uniform thin lifts to at least 90 percent relative compaction (per ASTM D1557). Jetting or flooding of retaining wall backfill materials should not be permitted. If gap-graded rock is used for retaining wall

backfill, refer to above Section 4.1.6.

In backfill areas where mechanical compaction of soil backfill is impractical due to space constraints, typically sand-cement slurry may be substituted for compacted backfill. The slurry should contain about one sack of cement per cubic yard. When set, such a mix typically has the consistency of compacted soil. Sand cement slurry placed near the surface within landscape areas should be evaluated for potential impacts on planned improvements.

A representative from LGC Geotechnical should observe, probe, and test the backfill to verify compliance with the project recommendations.

4.1.8 Shrinkage and Subsidence

Allowance in the earthwork volumes budget should be made for an estimated 0 to 10 percent reduction in volume (shrinkage) of near-surface (upper approximate 5 feet) soils. It should be stressed that these values are only estimates and that an actual shrinkage factor would be extremely difficult to predetermine. Subsidence, due to earthwork operations, is expected to be on the order of 0.1-foot. These values are estimates only and exclude losses due to removal of any vegetation or debris. The effective shrinkage of onsite soils will depend primarily on the type of compaction equipment and method of compaction used onsite by the contractor and accuracy of the topographic survey.

4.2 Preliminary Foundation Recommendations

Preliminary foundation recommendations are provided in the following sections. Proposed building foundations should be designed in consideration of site liquefaction potential and dynamic settlement as outlined below. Due to liquefaction potential and dynamic settlement any isolated structural pad footings should be interconnected with grade beams.

Site soils are anticipated to be “Very Low” expansion potential (EI of 20 or less per ASTM D4829). Please note that the following foundation recommendations are preliminary and must be confirmed by LGC Geotechnical at the completion of grading. Recommended soil bearing and estimated static settlements are provided in Section 4.3.

4.2.1 Preliminary Foundation Design Parameters

Post-tensioned foundations should be designed for the more conservative of the differential seismic settlement due to liquefaction (see Section 2.6.1), or the post-tension parameters provided in Table 4 on the following page. These parameters have been determined in general accordance with the Post-Tensioning Institute (PTI, 2012) Standard Requirements (PTI DC 10.5), referenced in Chapter 18 of the 2019 CBC. In utilizing these parameters, the foundation engineer should design the foundation system in accordance with the allowable deflection criteria of applicable codes and the requirements of the structural designer/architect. Other types of stiff slabs may be used in place of the CBC post-tensioned slab design provided that, in the opinion of the

foundation structural designer, the alternative type of slab is at least as stiff and strong as that designed by the CBC/PTI method.

TABLE 4

Preliminary Geotechnical Parameters for Post-Tensioned Foundation Slab Design

Parameter	PT Slab with Perimeter Footing	PT Mat with Thickened Edge
Center Lift Edge moisture variation distance, e_m Center lift, y_m	9.0 feet 0.5 inch	9.0 feet 0.6 inch
Edge Lift Edge moisture variation distance, e_m Edge lift, y_m	4.7 feet 1.1 inch	4.7 feet 1.3 inch
Modulus of Subgrade Reaction, k (assuming presoaking as indicated below)	150 pci	150 pci
Minimum perimeter footing/thickened edge embedment below finish grade	12 inches	6 inches
1. Moisture condition to 100% of optimum moisture content to a minimum depth of 12 inches prior to trenching.		

4.2.2 Post-Tensioned Foundation Subgrade Preparation and Maintenance

Moisture conditioning of the subgrade soils is recommended prior to trenching the foundation. The duration of this process varies greatly based on the chosen method and is also dependent on factors such as soil type and weather conditions. The recommendations specific to the anticipated site soil conditions, including recommended moisture conditioning, are presented in Table 4 above. The subgrade moisture condition of the building pad soils should be maintained at near-optimum moisture content up to the time of concrete placement. This moisture content should be maintained around the immediate perimeter of the slab during construction and up to occupancy of the homes.

The geotechnical parameters provided herein assume that if the areas adjacent to the foundation are planted and irrigated, these areas will be designed with proper drainage and adequately maintained so that ponding, which causes significant moisture changes below the foundation, does not occur. Our recommendations do not account for excessive irrigation and/or incorrect landscape design. Plants should only be provided with sufficient irrigation for life and not overwatered to saturate subgrade soils. Sunken planters placed adjacent to the foundation, should either be designed with an efficient drainage system or liners to prevent moisture infiltration below the foundation. Some lifting of the perimeter foundation beam should be expected even with properly constructed planters.

In addition to the factors mentioned above, future homeowners should be made aware of the potential negative influences of trees and/or other large vegetation. Roots that extend near the vicinity of foundations can cause distress to foundations. Future homeowners (and the owner's landscape architect) should not plant trees/large shrubs closer to the foundations than a distance equal to half the mature height of the tree or 20 feet, whichever is more conservative unless specifically provided with root barriers to prevent root growth below the house foundation.

Future homeowners should be informed and educated regarding the importance of maintaining a constant level of soil-moisture. The builder should provide these recommendations to future homeowners.

4.2.3 Slab Underlayment Guidelines

The following is for informational purposes only since slab underlayment (e.g., moisture retarder, sand or gravel layers for concrete curing and/or capillary break) is unrelated to the geotechnical performance of the foundation and thereby not the purview of the geotechnical consultant. Post-construction moisture migration should be expected below the foundation. The foundation engineer/architect should determine whether the use of a capillary break (sand or gravel layer), in conjunction with the vapor retarder, is necessary or required by code. Sand layer thickness and location (above and/or below vapor retarder) should also be determined by the foundation engineer/architect.

4.3 Soil Bearing and Lateral Resistance

Provided our earthwork recommendations are implemented, a mat foundation a minimum of 6 inches below lowest adjacent grade may be designed for an allowable soil bearing pressure of 1,000 psf. For minor structures, an allowable soil bearing pressure of 1,500 pounds per square foot (psf) may be used for the design of footings having a minimum width of 12 inches and minimum embedment of 12 inches below lowest adjacent ground surface. This value may be increased by 300 psf for each additional foot of embedment and 150 psf for each additional foot of foundation width to a maximum value of 2,500 psf. These allowable bearing pressures are applicable for level (ground slope equal to or flatter than 5H:1V) conditions only. Bearing values indicated are for total dead loads and frequently applied live loads and may be increased by $\frac{1}{3}$ for short duration loading (i.e., wind or seismic loads). Due to liquefaction potential (Site Class "F") and estimated seismic settlement any isolated structural pad footings should be interconnected with grade beams.

In utilizing the above-mentioned allowable bearing capacity and estimated structural loads, foundation settlement due to structural loads is anticipated to be 1-inch or less. Static differential settlement may be taken as half of the total settlement (i.e., $\frac{1}{2}$ -inch over a horizontal span of 40 feet). Dynamic settlement due to site liquefaction potential is presented in Section 2.6.1.

Resistance to lateral loads can be provided by friction acting at the base of foundations and by passive earth pressure. For concrete/soil frictional resistance, an allowable coefficient of friction of 0.30 may be assumed with dead-load forces. An allowable passive lateral earth pressure of 230 pcf to a maximum of 2,300 psf may be used for lateral resistance for properly compacted fill and

suitable native soils. This allowable passive pressure may be increased to 310 pcf to a maximum of 3,100 for short-duration seismic loading. This passive pressure is applicable for level (ground slope equal to or flatter than 5H:1V) conditions only. Frictional resistance and passive pressure may be used in combination without reduction. The provided allowable passive pressure is based on a static and seismic factor of safety of 1.5 and 1.1, respectively.

4.4 Lateral Earth Pressures for Retaining Walls

The following preliminary lateral earth pressures may be used for any site retaining walls 6 feet or less. Lateral earth pressures are provided as equivalent fluid unit weights, in pound per square foot (psf) per foot of depth or pcf. These values do not contain an appreciable factor of safety, so the retaining wall designer should apply the applicable factors of safety and/or load factors during design.

The following lateral earth pressures are presented on Table 5 for approved select granular soils with a maximum of 35 percent fines (passing the No. 200 sieve per ASTM D-421/422) and Very Low expansion potential (EI of 20 or less per ASTM D4829). The wall designer should clearly indicate on the retaining wall plans the required sandy soil backfill criteria.

TABLE 5
Lateral Earth Pressures – Sandy Backfill

Conditions	Equivalent Fluid Unit Weight (pcf)
	Level Backfill
	Approved Select Sandy Soils
Active	35
At-Rest	55

If the wall can yield enough to mobilize the full shear strength of the soil, it can be designed for “active” pressure. If the wall cannot yield under the applied load, the earth pressure will be higher. This would include 90-degree corners of retaining walls. Such walls should be designed for “at-rest.” The equivalent fluid pressure values assume free-draining conditions. If conditions other than those assumed above are anticipated, the equivalent fluid pressure values should be provided on an individual-case basis by the geotechnical engineer.

Retaining wall structures should be provided with appropriate drainage and appropriately waterproofed. To reduce, but not eliminate, saturation of near-surface (upper approximate 1-foot) soils in front of the retaining walls, the perforated subdrain pipe should be located as low as possible behind the retaining wall. The outlet pipe should be sloped to drain to a suitable outlet. In general, we do not recommend retaining wall outlet pipes be connected to area drains. If subdrains are connected to area drains, special care and information should be provided to homeowners to maintain these drains. Typical retaining wall drainage is illustrated

in Figure 3. It should be noted that the recommended subdrain does not provide protection against seepage through the face of the wall and/or efflorescence. Efflorescence is generally a white crystalline powder (discoloration) that results when water containing soluble salts migrates over a period of time through the face of a retaining wall and evaporates. If such seepage or efflorescence is undesirable, retaining walls should be waterproofed to reduce this potential. Waterproofing and outlet systems are not the purview of the geotechnical consultant.

Surcharge loading effects from any adjacent structures should be evaluated by the retaining wall designer. In general, structural loads within a 1:1 (horizontal to vertical) upward projection from the bottom of the proposed retaining wall footing will surcharge the proposed retaining structure. In addition to the recommended earth pressure, basement/retaining walls adjacent to streets should be designed to resist vehicular traffic if applicable. Uniform surcharges may be estimated using the applicable coefficient of lateral earth pressure using a rectangular distribution. A factor of 0.5 and 0.33 may be used for at-rest and active conditions, respectively. The vertical traffic surcharge may be determined by the structural designer. The structural designer should contact the geotechnical engineer for any required geotechnical input in estimating any applicable surcharge loads.

If a retaining wall greater than 6 feet in height is proposed, the retaining wall designer should contact the geotechnical engineer for specific seismic lateral earth pressure increments based on the configuration of the planned retaining wall structures.

Soil bearing and lateral resistance (friction coefficient and passive resistance) are provided in Section 4.3. Earthwork considerations (temporary backcuts, backfill, compaction, etc.) for retaining walls are provided in Section 4.1 (Site Earthwork) and the subsequent earthwork related sub-sections.

4.5 Soil Corrosivity

Although not corrosion engineers (LGC Geotechnical is not a corrosion consultant), several governing agencies in Southern California require the geotechnical consultant to determine the corrosion potential of soils to buried concrete and metal facilities. We therefore present the results of our testing with regard to corrosion for the use of the client and other consultants, as they determine necessary.

Corrosion testing of a near-surface bulk sample indicated a soluble sulfate content of less than approximately 0.02 percent, a chloride content of 240 ppm, pH of 7.9, and a minimum resistivity of 2770 ohm-centimeters. Based on Caltrans Corrosion Guidelines (Caltrans, 2021), soils are considered corrosive to structural elements if the pH is 5.5 or less, or the chloride concentration is 500 ppm or greater, or the sulfate concentration is 1,500 ppm (0.15 percent) or greater. Based on the preliminary test results, soils are not considered corrosive using Caltrans criteria.

Based on preliminary laboratory sulfate test results, the near surface soils are designated to a class "S0" per ACI 318, Table 19.3.1.1 with respect to sulfates. Concrete in direct contact with the onsite soils can be designed according to ACI 318, Table 19.3.2.1 using the "S0" sulfate classification.

4.6 Control of Surface Water and Drainage Control

From a geotechnical perspective, we recommend that compacted finished grade soils adjacent to proposed residences be sloped away from the proposed residence and towards an approved drainage device or unobstructed swale. Drainage swales, wherever feasible, should not be constructed within 5 feet of buildings. Where lot and building geometry necessitates that the side yard drainage swales be routed closer than 5 feet to structural foundations, we recommend the use of area drains together with drainage swales. Drainage swales used in conjunction with area drains should be designed by the project civil engineer so that a properly constructed and maintained system will prevent ponding within 5 feet of the foundation. Code compliance of grades is not the purview of the geotechnical consultant.

Planters with open bottoms adjacent to buildings should be avoided. Planters should not be designed adjacent to buildings unless provisions for drainage, such as catch basins, liners, and/or area drains, are made. Overwatering must be avoided.

4.7 Subsurface Water Infiltration

Recent regulatory changes have occurred that mandate storm water be infiltrated below grade rather than collected in a conventional storm drain system. It should be noted that collecting and concentrating surface water for the purpose of intentionally infiltrating it below grade, conflicts with the geotechnical engineering objective of directing surface water away from slopes, structures and other improvements. The geotechnical stability and integrity of a site is reliant upon appropriately handling surface water. In general, we do not recommend that surface water be intentionally infiltrated into the subsurface soils.

If it is determined that water must be infiltrated due to regulatory requirements, we recommend the absolute minimum amount of water be infiltrated and that the infiltration areas not be located near slopes or near settlement sensitive existing/proposed improvements. Contamination and environmental suitability of the site for infiltration is not the purview of the geotechnical consultant and should be evaluated by others. LGC Geotechnical only addressed the geotechnical issues associated with stormwater infiltration.

As with all systems that are designed to concentrate surface flow and direct the water into the subsurface soils, some minor settlement, nuisance type localized saturation and/or other water related issues should be expected. Due to variability in geologic and hydraulic conductivity characteristics, these effects may be experienced at the onsite location and/or potentially at other locations well beyond the physical limits of the subject site. Infiltrated water may enter underground utility pipe zones or flow along heterogeneous soil layers or geologic structure and migrate laterally, impacting other improvements that may be located far away or at an elevation much different than the infiltration source.

Based on the results of our field infiltration testing, the Observed Infiltration Rates for I-1 and I-2 (not including required factors of safety for design) were 5.9 and 5.7 inches per hour, respectively. The Design Infiltration Rate shall be determined by dividing the Observed Infiltration Rate by a series of safety factors for site suitability and design considerations that are the purview of both the geotechnical consultant and designer of the infiltration system (County of Orange, 2013). The recommended geotechnical factors of safety that are to be used

to determine the Design Infiltration Rate are provided in Table 6 below.

TABLE 6

Geotechnical Factors of Safety for Design Infiltration Rate

A: Site Suitability Considerations (From Table VII.3)*	
Consideration	Factor of Safety (F.S.)
Soil Assessment Methods	2
Texture Class	1
Site Soil Variability	2
Depth to Groundwater/Impervious Layer	1
Calculated Suitability Assessment Factor of Safety	1.5
B: Design Related Considerations (From Table VII.4)*	
Consideration	Factor of Safety (F.S.)
Tributary Size Area	Per Infiltration Designer
Level of Pretreatment	Per Infiltration Designer
Redundancy of Treatment	Per Infiltration Designer
Compaction during Construction	2
Calculated Design Factor of Safety	Per Infiltration Designer
Combined F.S.= Suitability F.S x Design F.S.	TBD

*from County of Orange, 2013

The factor of safety used to determine the Design Infiltration Rate is determined by multiplying the calculated suitability assessment factor of safety of 1.5 by the design factor of safety that is to be determined (TBD) by the infiltration system designer. The Design Infiltration Rate is thereby equal to the Observed Infiltration Rate provided in Table 1 of Section 2.4 (inches per hour) divided by the product of 1.5 times the calculated design factor of safety. The combined factor of safety must be a minimum of 2.0 but need not exceed 9.0. Results of field infiltration testing are attached to this report.

The following should be considered for design of any required infiltration system:

- Water discharge from any infiltration systems should not occur within the zone of influence of foundation footings (column and load bearing wall locations). At this time, we understand the bottom of infiltration system (~6.5 feet below grade) is proposed to be approximately 10 feet from the nearest building foundation. Based on this separation and the sites' liquefaction potential, we recommend directly adjacent foundations be provided with a minimum stiffness, to be evaluated once foundation plans are generated.
- We recommend the drilling of three small-diameter holes through the bottom of each infiltration vault to minimum depths of approximately 15 feet below existing grade and backfilling the holes with approved clean sand up to infiltration bottom grades. Holes drilled in the bottom of the infiltration system would reduce the potential for water

becoming suspended within the upper alluvial soils by acting as a high permeability conduit, transferring surface water to the deeper sandy native materials below.

- Please note that the infiltration values reported herein are for native materials only and are not for compacted fill.
- An adequate setback distance between any infiltration facility and adjacent private property should be maintained.
- We recommend the design of any infiltration system include at least one redundancy or overflow system. It may be prudent to provide an overflow system connected directly to a storm drain system in order to prevent failure of the infiltration system, either as a result of lower than anticipated infiltration with time and/or very high flow volumes.
- The infiltration values provided are based on clean water and this requires the removal of trash, debris, soil particles, etc., and on-going maintenance. Over time, siltation and plugging may reduce the infiltration rate and subsequent effectiveness of the infiltration system. It should be noted that methods to prevent this shall be the responsibility of the infiltration designer and are not the purview of the geotechnical consultant. If adequate measures cannot be incorporated into the design and maintenance of the system, then the infiltration rates may need to be further reduced. These and other factors should be considered in selecting a Design Infiltration Rate.
- Any designed infiltration system will require routine periodic maintenance.
- As with any systems that are designed to concentrate the surface flow and direct the water into the subsurface soils, some type of nuisance water and/or other water-related issues should be expected.
- Contamination and environmental suitability of the site for infiltration was not evaluated by us and should be evaluated by others (environmental consultant). We only addressed the geotechnical issues associated with stormwater infiltration.

4.8 Preliminary Asphalt Concrete Pavement Sections

The following provisional minimum asphalt concrete (AC) street sections are provided in Table 7 below for Traffic Indices (TI) of 5.0, 5.5 and 6.0. These sections are based on an estimated R-value of 25. These recommendations must be confirmed with R-value testing of representative near-surface soils at the completion of grading and after underground utilities have been installed and backfilled. Final pavement sections should be confirmed by the project civil engineer based upon the final design Traffic Index. If requested, LGC Geotechnical will provide sections for alternate TI values.

TABLE 7

Preliminary Pavement Section Options

Assumed Traffic Index	5.0	5.5	6.0
R -Value Subgrade	25	25	25
AC Thickness	4.0 inches	4.0 inches	4.0 inches
Aggregate Base Thickness	5.0 inches	6.5 inches	8.5 inches

The pavement section thicknesses provided above are considered minimum thicknesses. Increasing the thickness of any or all the above layers will reduce the likelihood of the

pavement experiencing distress during its service life. The above recommendations assume that proper maintenance and irrigation of the areas adjacent to the roadway will occur throughout the design life of the pavement. Failure to maintain a proper maintenance and/or irrigation program may jeopardize the integrity of the pavement.

Earthwork recommendations regarding aggregate base and subgrade are provided in the previous Section 4.1 (Site Earthwork) and the related sub-sections of this report.

4.9 Nonstructural Concrete Flatwork Guidelines

Nonstructural concrete flatwork (such as walkways, private drives, patio slabs, etc.) has a potential for cracking due to changes in soil volume related to soil-moisture fluctuations. To reduce the potential for excessive cracking and lifting, concrete may be designed in accordance with the minimum guidelines outlined in Table 8 below. These guidelines will reduce the potential for irregular cracking and promote cracking along control joints but will not eliminate all cracking or lifting. Thickening the concrete and/or adding additional reinforcement will further reduce cosmetic distress.

TABLE 8

Nonstructural Concrete Flatwork Guidelines for Very Low Expansion Potential

	Homeowner Sidewalks	Private Drives	Patios/ Entryways	City Sidewalk Curb and Gutters
Minimum Thickness (in.)	4 (nominal)	4 (full)	4 (full)	City/Agency Standard
Presoaking	Wet down prior to placing	Wet down prior to placing	Wet down prior to placing	City/Agency Standard
Reinforcement	—	No. 3 at 24 inches on centers	No. 3 at 24 inches on centers	City/Agency Standard
Thickened Edge (in.)	—	8 x 8	—	City/Agency Standard
Crack Control Joints	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	City/Agency Standard
Maximum Joint Spacing	5 feet	10 feet or quarter cut whichever is closer	6 feet	City/Agency Standard
Aggregate Base Thickness (in.)	—	—	—	City/Agency Standard

To reduce the potential for driveways to separate from the garage slab, the builder may elect to install dowels to tie these two elements together. Similarly, future homeowners should consider the use of dowels to connect flatwork to the foundation.

4.10 Geotechnical Plan Review

When available project plans (e.g., grading, foundation, retaining wall, etc.) should be reviewed by LGC Geotechnical in order to verify our geotechnical recommendations are implemented. Updated recommendations and/or additional field work may be necessary.

4.11 Geotechnical Observation and Testing During Construction

The recommendations provided in this report are based on limited subsurface observations and geotechnical analysis. The interpolated subsurface conditions should be checked in the field during construction by a representative of LGC Geotechnical. Geotechnical observation and testing is required per Section 1705 of the 2019 California Building Code (CBC).

Geotechnical observation and/or testing should be performed by LGC Geotechnical at the following stages:

- During grading (removal bottoms, fill placement, etc);
- During utility trench backfill and compaction;
- After presoaking building pads and other concrete-flatwork subgrades, and prior to placement of aggregate base or concrete;
- Preparation of pavement subgrade and placement of aggregate base;
- After building and wall footing excavation and prior to placing steel reinforcement and/or concrete; and
- When any unusual soil conditions are encountered during any construction operation subsequent to issuance of this report.

5.0 LIMITATIONS

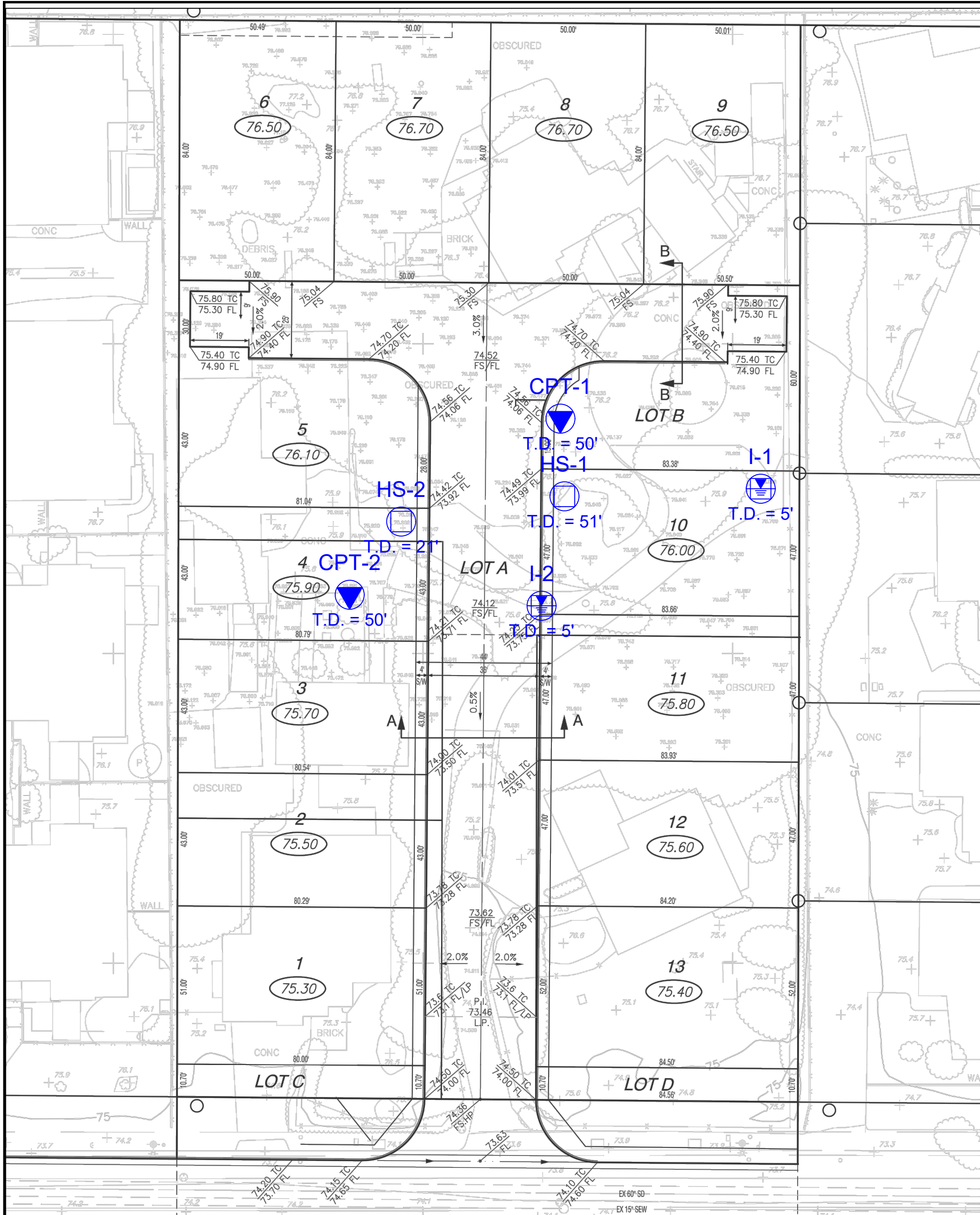
Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

This report is based on data obtained from limited observations of the site, which have been extrapolated to characterize the site. While the scope of services performed is considered suitable to adequately characterize the site geotechnical conditions relative to the proposed development, no practical evaluation can completely eliminate uncertainty regarding the anticipated geotechnical conditions in connection with a subject site. Variations may exist and conditions not observed or described in this report may be encountered during grading and construction.




This report is issued with the understanding that it is the responsibility of the owner, or of his/her representative, to ensure that the information and recommendations contained herein are brought to the attention of the other consultants (at a minimum the civil engineer, structural engineer, landscape architect) and incorporated into their plans. The contractor should properly implement the recommendations during construction and notify the owner if they consider any of the recommendations presented herein to be unsafe, or unsuitable.

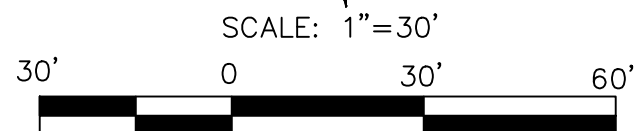
The findings of this report are valid as of the present date. However, changes in the conditions of a site can and do occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. The findings, conclusions, and recommendations presented in this report can be relied upon only if LGC Geotechnical has the opportunity to observe the subsurface conditions during grading and construction of the project, in order to confirm that our preliminary findings are representative for the site. This report is intended exclusively for use by the client, any use of or reliance on this report by a third party shall be at such party's sole risk.

In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and modification.



LEGEND

- 
HS-1
 Approximate Location of Hollow Stem Auger Boring by LGC Geotechnical, With Total Depth in Feet
- 
T.D. = 51'
CPT-2
 Approximate Location of Cone Penetration Test (CPT), Total Depth in Feet
- 
T.D. = 50'
I-1
 Approximate Location of Hollow Stem Auger Infiltration Boring by LGC Geotechnical, With Total Depth in Feet



LGC Geotechnical, Inc.
 131 Calle Iglesia, Ste. 200
 San Clemente, CA 92672
 TEL (949) 369-6141 FAX (949) 369-6142

FIGURE 2
Boring
Location Map

PROJECT NAME	PLC - Lampson
PROJECT NO.	22030-01
ENG. / GEOL.	DJB / KTM
SCALE	1" = 30'
DATE	May 2022

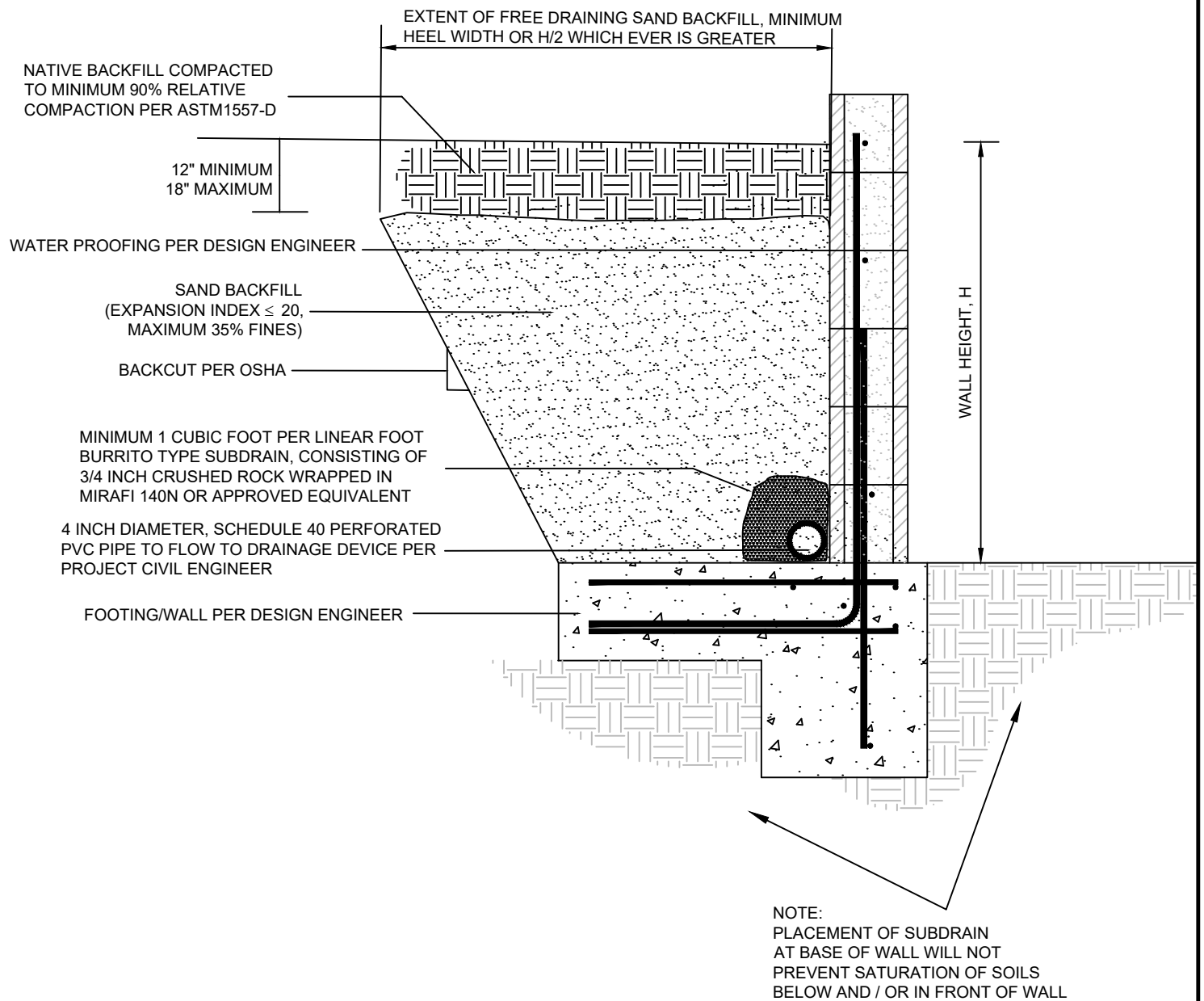


FIGURE 3
Retaining Wall
Backfill Detail

PROJECT NAME	PLC - Lampson
PROJECT NO.	22030-01
ENG. / GEOL.	DJB/KTM
SCALE	Not to Scale
DATE	May 2022

Appendix A
References

APPENDIX A

References

- American Concrete Institute, 2014, Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary (ACI 318R-14).
- American Society of Civil Engineers (ASCE), 2017, Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-16, Third Printing, 2017.
- _____, 2018, Standard 7-16, Minimum Design Loads for Buildings and Associated Criteria for Buildings and Other Structures, Supplement 1, effective: December 12, 2018.
- American Society for Testing and Materials (ASTM), Volume 04.08 Soil and Rock (I): D420 – D5876.
- Bassenian Lagoni, 2022, Conceptual Site Plan, 9071 Lampson Ave, Garden Grove, California, dated January 18, 2022.
- Bray, J.D., and Sancio, R. B., 2006, Assessment of Liquefaction Susceptibility of Fine-Grained Soils, *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, pp. 1165-1177, dated September 2006.
- California Building Standards Commission, 2019, California Building Code, California Code of Regulations Title 24, Volumes 1 and 2, dated July 2019.
- California Department of Transportation (Caltrans), 2021, Corrosion Guidelines, Version 3.2, dated May 2021.
- California Division of Mines and Geology (CDMG), 1998, State of California Seismic Hazard Zones, Anaheim Quadrangle, Revised Official Map Released: April 15, 1998.
- _____, 2001, Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-Minute Quadrangles, Orange County, California, [CDMG Open-File Report 97-08], Seismic Hazard Zone Report 003, Revised 2001.
- California Geological Survey [CGS], 2008, California Geological Society Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California.
- _____, 2018, Earthquake Fault Zones, Special Publication 42; A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California, Revised 2018.
- County of Orange, 2013, Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs), Exhibit 7.III, December 20, 2013.
- GeoLogismiki, 2021, CLiq, v.3.3.1.14, Software for Liquefaction Potential Evaluation using Cone Penetration Tests and Standard Penetration Tests.



- Historical Aerials, 2022, viewed April 28, 2022, Aerials viewed from: 1953, 1963, 1972, 1987, 1992, 2000 and 2018, <https://www.historicaerials.com/>
- LGC Geotechnical, 2022, Summary of Field Infiltration Testing for the Proposed Residential Development at 9071 Lampson Avenue, Garden Grove, California, Project No. 22030-01, dated March 17, 2022
- MDS Consulting, 2022, Conceptual Grading Drainage and Utility Plan, 9071 Lampson Avenue, City of Garden Grove, County of Orange, State of California, dated February 22, 2022.
- Morton, D.M., 2004, Preliminary Digital Geologic Map of the Santa Ana 30' X 60' Quadrangle, Southern California, U.S.G.S. Open-File Report 99-172, Scale: 1:100,000, Version 2.0, dated 2004
- NCEER, 1997, "Proceeding of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils", T.L. Youd and I. M. Idriss Editors, Technical Report NCEER-97-0022, NCEER, Buffalo, NY.
- Post-Tensioning Institute (PTI), 2012, Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils, PTI DC10.5-12.
- Robertson, P.K., 2010, Evaluation of flow liquefaction and liquefied strength using the cone penetration test, *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, pp. 842-853, dated June 2010.
- Southern California Earthquake Center (SCEC), 1999, "Recommended Procedure for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigation Liquefaction Hazards in California", Edited by Martin, G.R., and Lew, M., dated March 1999.
- Tokimatsu, K., and Seed, H. B., 1987, "Evaluation of Settlements in Sands Due to Earthquake Shaking", *Journal of Geotechnical Engineering*, ASCE, Vol. 113, No. 8, pp. 861-878.
- Structural Engineers Association of California (SEAOC), 2022, OSHPD Seismic Design Maps, Retrieved April 26, 2022, from: <https://seismicmaps.org/>.
- United States Geological Survey (USGS), 2014, Unified Hazard Tool, Dynamic: Conterminous U.S. 2014 (v4.2.0), Retrieved March 7, 2022, from: <https://earthquake.usgs.gov/hazards/interactive/>.

Appendix B
Boring & CPT Logs

Geotechnical Boring Log Borehole HS-1

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 2



Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0	B-1						@0'- Silty SAND: dark brown, slightly moist; rootlets	CR EI MD
65	5	R-1		5 9 14	103.1	7.6	SM	@5'- Silty SAND: grayish brown, moist, medium dense	
		R-2		5 11 16	102.2	13.1		@7'- Silty SAND: brown, very moist, medium dense	
60	10	R-3		11 15 15	102.6	4.1		@10'- Silty SAND: brown, slightly moist, medium dense	
55	15	SPT-1		4 7 11		18.3	SW-SM	@15'- SAND with SILT: grayish brown, wet, medium dense	
50	20	R-4		21 37 45	112.1	17.4		@20'- SAND with Silt: gray, wet, very dense	
45	25	SPT-2		7 12 16		22.2	SM	@25'- Silty SAND: gray, wet, dense	
30									

	<p style="font-size: small;">THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.</p>	<p style="font-size: x-small;">SAMPLE TYPES:</p> <p>B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE</p> <p style="text-align: center;"> GROUNDWATER TABLE</p>	<p style="font-size: x-small;">TEST TYPES:</p> <p>DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE #200 % PASSING # 200 SIEVE</p>
---	--	---	---

Geotechnical Boring Log Borehole HS-1

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 2 of 2

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		R-5	1 2 3	103.0	22.1	SC-SM	@30'- Silty/Clayey SAND: gray, wet, loose	AL -#200
	35		SPT-3	3 1 3		28.1	SC	@35'- Clayey SAND: gray, wet, loose	AL -#200
	40		R-6	8 20 31	109.5	20.0	ML	@40'- SILT: brown, wet, hard	
	45		SPT-4	3 4 11		43.1	CL-ML	@45'- Silty CLAY: gray, wet, very stiff	
	50		R-7	4 10 16	94.8	29.1	CL	@50'- Sandy CLAY: olive gray, wet, very stiff	AL -#200
	55							Total Depth = 50' Groundwater Encountered at Approximately 14' Backfilled with Cuttings on 2/28/2022	
	60								

	<p style="font-size: small;">THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.</p>	<p style="font-size: x-small;">SAMPLE TYPES:</p> <p>B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE</p> <p style="text-align: center;"> GROUNDWATER TABLE</p>	<p style="font-size: x-small;">TEST TYPES:</p> <p>DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE -#200 % PASSING # 200 SIEVE</p>
---	--	---	--

Geotechnical Boring Log Borehole HS-2

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0	B-1						@0'- Silty SAND: dark brown, slightly moist; rootlets	
65	5	█	R-1	6 8 10	94.8	1.8	SP-SM	@5'- SAND with Silt: brown, dry, medium dense	
		█	R-2	10 15 19	116.6	10.9		@7'- SAND with Silt: brown, moist, medium dense	
60	10	█	R-3	9 13 13	100.2	3.2	SP	@10'- SAND: grayish brown, slight moist, medium dense	
55	15	▽	SPT-1	3 5 5			SW-SM	@15'- SAND with Silt: grayish brown, wet, medium dense	AL #200
50	20	█	R-4	20 32 40	111.2	18.4	SM	@20'- Silty SAND: gray, wet, very dense	
45	25							Total Depth = 20' Groundwater Encountered at Approximately 14' Backfilled with Cuttings on 2/28/2022	
30									



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES:
 B BULK SAMPLE
 R RING SAMPLE (CA Modified Sampler)
 G GRAB SAMPLE
 SPT STANDARD PENETRATION TEST SAMPLE

▽ GROUNDWATER TABLE

TEST TYPES:
 DS DIRECT SHEAR
 MD MAXIMUM DENSITY
 SA SIEVE ANALYSIS
 S&H SIEVE AND HYDROMETER
 EI EXPANSION INDEX
 CN CONSOLIDATION
 CR CORROSION
 AL ATTERBERG LIMITS
 CO COLLAPSE/SWELL
 RV R-VALUE
 #200 % PASSING # 200 SIEVE

Geotechnical Boring Log Borehole I-1

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0							@0'- Silty SAND: olive brown, moist	
65	5							Total Depth = 5' Groundwater Not Encountered 3" Perforated Pipe with Filter Sock Installed, Surrounded by Gravel, and Presoaked on 2/28/2022. Pipe Removed and Boring Backfilled with Cuttings on 3/1/2022	
60	10								
55	15								
50	20								
45	25								
30									



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

<p>SAMPLE TYPES:</p> <p>B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE</p> <p> GROUNDWATER TABLE</p>	<p>TEST TYPES:</p> <p>DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE #200 % PASSING # 200 SIEVE</p>
--	---

Last Edited: 4/22/2022

Geotechnical Boring Log Borehole I-2

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

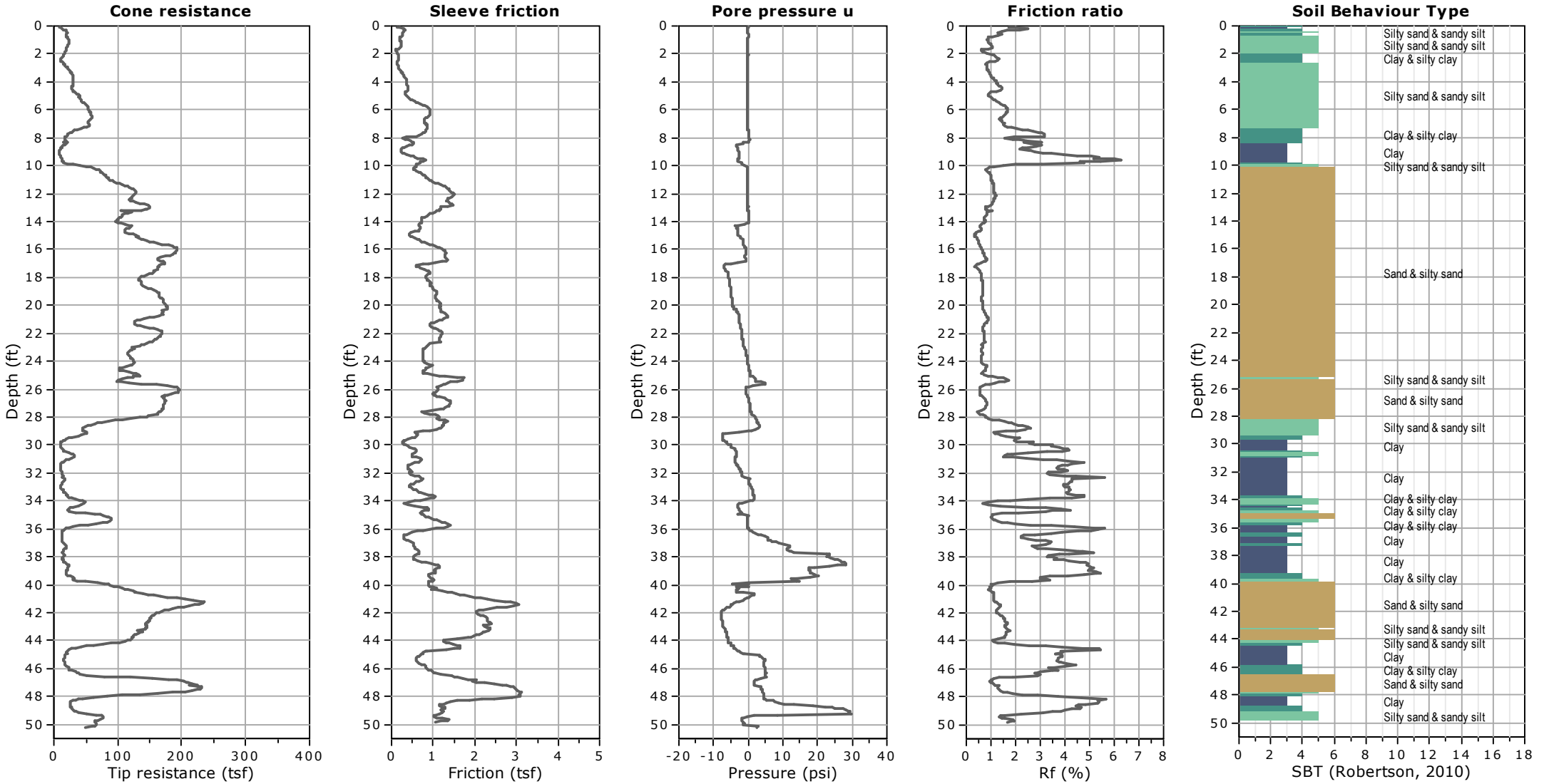
Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	Logged By CMP Sampled By CMP Checked By KTM DESCRIPTION	Type of Test
	0							@0'- Silty SAND: olive brown, moist	
65	5							Total Depth = 5' Groundwater Not Encountered 3" Perforated Pipe with Filter Sock Installed, Surrounded by Gravel, and Presoaked on 2/28/2022. Pipe removed and boring backfilled with Cuttings on 3/1/2022.	
60	10								
55	15								
50	20								
45	25								
30									

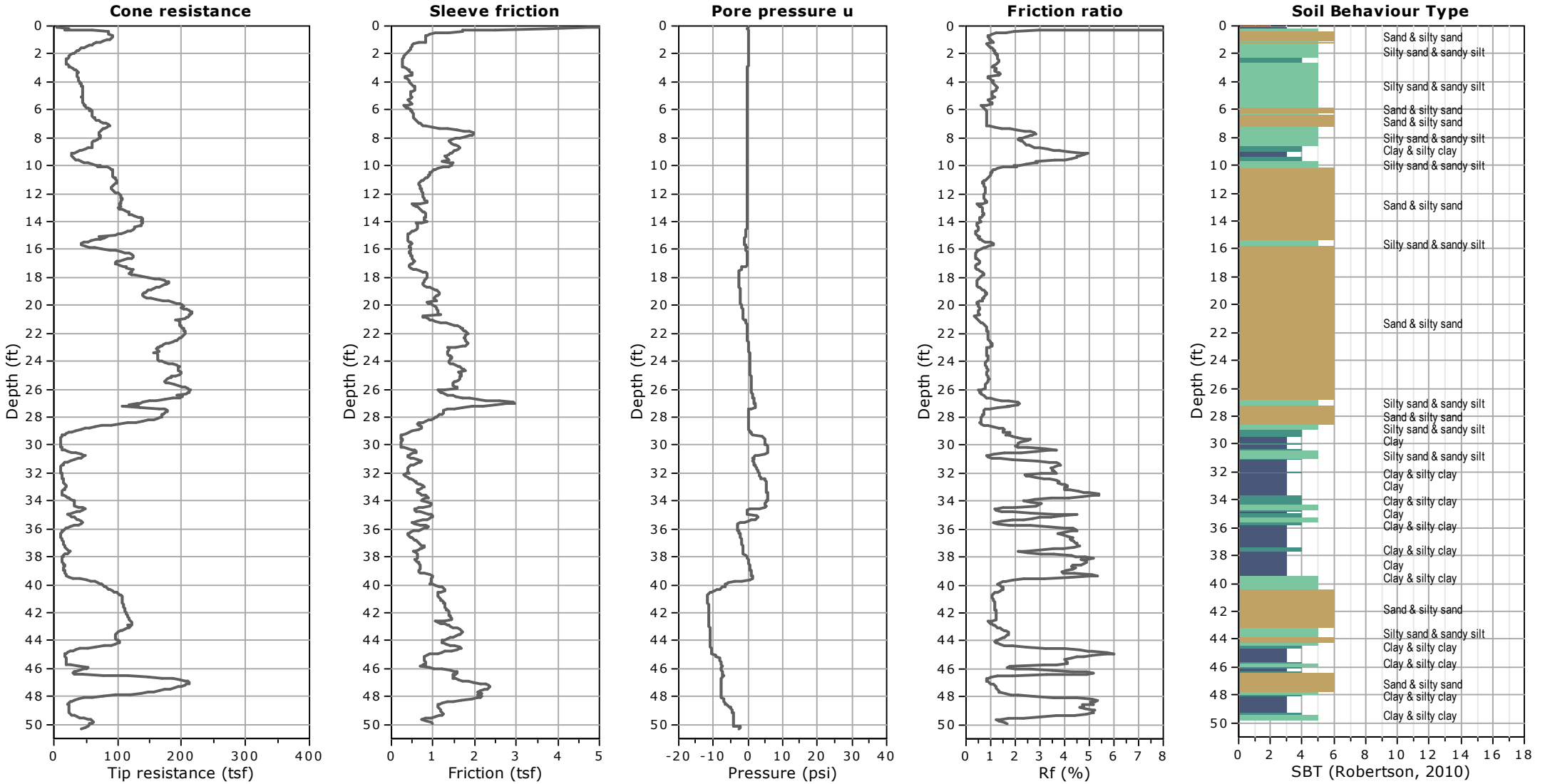


THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES: B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE GROUNDWATER TABLE	TEST TYPES: DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE #200 % PASSING # 200 SIEVE
--	--

Last Edited: 4/22/2022





LGC Geotechnical
 9071 Lampson Ave
 Garden Grove, CA

CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-1	5.02	4.02	4.49	9.40	478	
	10.04	9.04	9.26	16.12	574	710
	15.06	14.06	14.20	25.36	560	535
	20.31	19.31	19.41	33.60	578	632
	25.07	24.07	24.15	40.56	595	681
	30.02	29.02	29.09	50.40	577	502
	35.04	34.04	34.10	58.12	587	649
	40.50	39.50	39.55	66.78	592	630
	45.01	44.01	44.06	72.80	605	748
	50.03	49.03	49.07	79.64	616	733
CPT-2	5.02	4.02	4.49	8.24	545	
	10.04	9.04	9.26	16.68	555	565
	15.03	14.03	14.17	25.90	547	533
	20.05	19.05	19.15	32.76	585	726
	25.03	24.03	24.11	41.02	588	600
	30.02	29.02	29.09	49.24	591	605
	35.01	34.01	34.07	58.24	585	553
	39.99	38.99	39.04	65.68	594	668
	45.05	44.05	44.10	72.24	610	770
	50.07	49.07	49.11	79.20	620	721

Shear Wave Source Offset - 2 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
 Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

Appendix C
Laboratory Test Results

APPENDIX C

Laboratory Test Results

The laboratory testing program was directed towards providing quantitative data relating to the relevant engineering properties of the soils. Samples considered representative of site conditions were tested in general accordance with American Society for Testing and Materials (ASTM) procedure and/or California Test Methods (CTM), where applicable. The following summary is a brief outline of the test type and a table summarizing the test results.

Moisture and Density Determination Tests: Moisture content (ASTM D2216) and dry density determinations (ASTM D2937) were performed on driven samples obtained from the test borings. The results of these tests are presented in the boring logs. Where applicable, only moisture content was determined from SPT or disturbed samples.

Expansion Index: The expansion potential of selected samples was evaluated by the Expansion Index Test, Standard ASTM D4829. Specimens are molded under a given compactive energy to approximately the optimum moisture content and approximately 50 percent saturation or approximately 90 percent relative compaction. The prepared 1-inch-thick by 4-inch-diameter specimens are loaded to an equivalent 144 psf surcharge and are inundated with tap water until volumetric equilibrium is reached. The results of these tests are presented in the table below.

Sample Location	Expansion Index	Expansion Potential*
HS-1 @ 1-3 feet	1	Very Low

* ASTM D4829

Atterberg Limits: The liquid and plastic limits (“Atterberg Limits”) were determined per ASTM D4318 for engineering classification of fine-grained material and presented in the table below. The USCS soil classification indicated in the table below is based on the portion of sample passing the No. 40 sieve and may not necessarily be representative of the entire sample. The plots are provided in this Appendix.

Sample Location	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	USCS Soil Classification
HS-1 @ 15 ft	NP	NP	NP	NP
HS-1 @ 30 ft	19	13	6	CL-ML
HS-1 @ 35 ft	24	14	10	CL
HS-1 @ 50 ft	27	17	10	CL

APPENDIX C (Cont'd)

Laboratory Test Results

Grain Size Distribution/Fines Content: Representative samples were dried, weighed, and soaked in water until individual soil particles were separated (per ASTM D421) and then washed on a No. 200 sieve (ASTM D1140). Where applicable, the portion retained on the No. 200 sieve was dried and then sieved on a U.S. Standard brass sieve set in accordance with ASTM D6913 (sieve) or ASTM D422 (sieve and hydrometer).

Sample Location	Description	% Passing # 200 Sieve
HS-1 @ 30 ft	Gray Silty, Clayey Sand	13.1
HS-1 @ 35 ft	Gray Clayey Sand	46.2
HS-1 @ 50 ft	Olive Gray Sandy Lean Clay	63.1
HS-2 @ 15 ft	Grayish Brown Well-Graded Sand with Silt	4.9

Laboratory Compaction: The maximum dry density and optimum moisture content of typical materials were determined in accordance with ASTM D1557. The results are presented in the table below.

Sample Location	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
HS-1 @ 1-3 ft	Brownish Yellow Sand with Silt	111.5	8.0

Soluble Sulfates: The soluble sulfate contents of selected samples were determined by standard geochemical methods (CTM 417). The test results are presented in the table below.

Sample Location	Sulfate Content (ppm)	Sulfate Content (%)
HS-1 @ 1-3 ft	123	0.0123

Chloride Content: Chloride content was tested per CTM 422. The results are presented below.

Sample Location	Chloride Content (ppm)
HS-1 @ 1-3 ft	240

APPENDIX C (Cont'd)

Laboratory Test Results

Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed in general accordance with CTM 643 and standard geochemical methods. The results are presented in the table below.

Sample Location	pH	Minimum Resistivity (ohms-cm)
HS-1 @ 1-3 ft	7.91	2770

**TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS**

Project Name: Lampson - Garden Grove Tested By : GEB/JD Date: 03/11/22
 Project No. : 22030-01 Checked By: J. Ward Date: 03/29/22

Boring No.	HS-1			
Sample No.	B-1			
Sample Depth (ft)	1-3			
Soil Identification:	Brownish yellow SP-SM			
Wet Weight of Soil + Container (g)	0.00			
Dry Weight of Soil + Container (g)	0.00			
Weight of Container (g)	1.00			
Moisture Content (%)	0.00			
Weight of Soaked Soil (g)	100.53			

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	305			
Crucible No.	9			
Furnace Temperature (°C)	860			
Time In / Time Out	7:45/8:30			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	22.4942			
Wt. of Crucible (g)	22.4912			
Wt. of Residue (g) (A)	0.0030			
PPM of Sulfate (A) x 41150	123.45			
PPM of Sulfate, Dry Weight Basis	123			

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	15			
ml of AgNO ₃ Soln. Used in Titration (C)	1.4			
PPM of Chloride (C -0.2) * 100 * 30 / B	240			
PPM of Chloride, Dry Wt. Basis	240			

pH TEST, DOT California Test 643

pH Value	7.91			
Temperature °C	21.8			

SOIL RESISTIVITY TEST

DOT CA TEST 643

Project Name: Lampson - Garden Grove
 Project No. : 22030-01
 Boring No.: HS-1
 Sample No. : B-1

Tested By : G. Berdy Date: 03/14/22
 Checked By: J. Ward Date: 03/29/22
 Depth (ft.) : 1-3

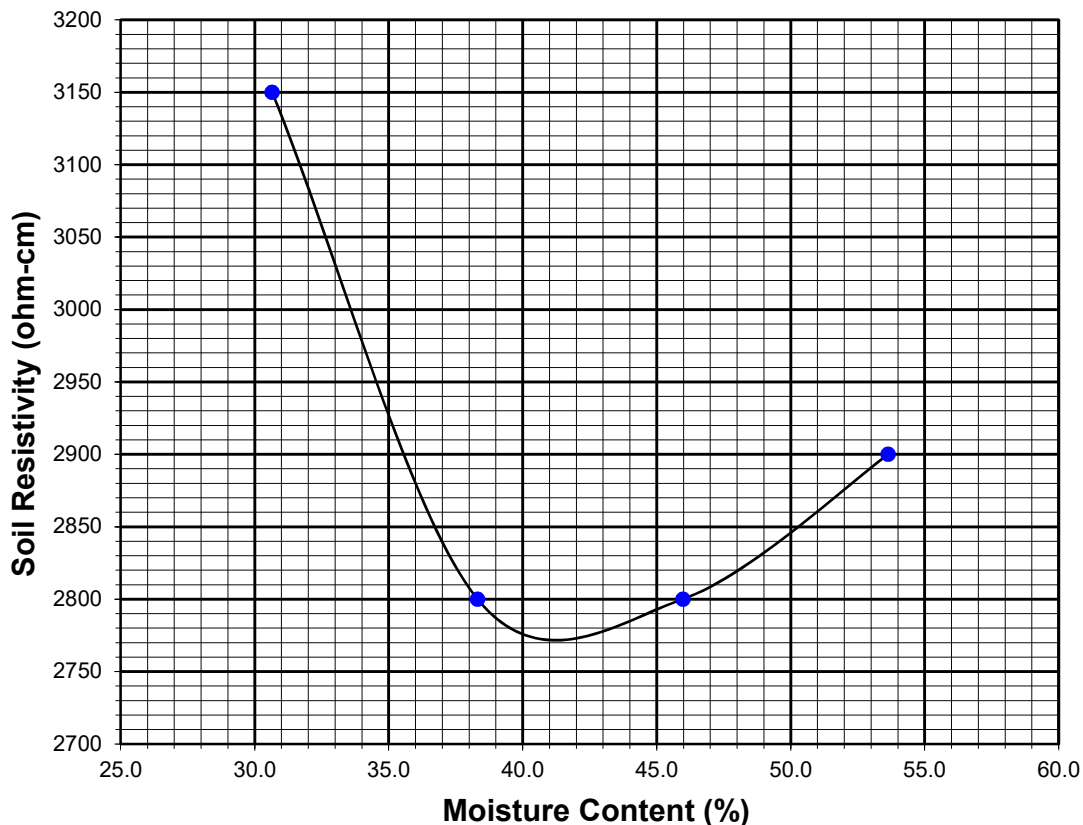
Soil Identification:* Brownish yellow SP-SM

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	40	30.65	3150	3150
2	50	38.31	2800	2800
3	60	45.98	2800	2800
4	70	53.64	2900	2900
5				

Moisture Content (%) (Mci)	0.00
Wet Wt. of Soil + Cont. (g)	0.00
Dry Wt. of Soil + Cont. (g)	0.00
Wt. of Container (g)	1.00
Container No.	
Initial Soil Wt. (g) (Wt)	130.50
Box Constant	1.000
$MC = (((1 + Mci / 100) \times (Wa / Wt + 1)) - 1) \times 100$	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II		DOT CA Test 643	
2770	41.3	123	240	7.91	21.8



MODIFIED PROCTOR COMPACTION TEST

ASTM D 1557

Project Name: Lampson - Garden Grove Tested By: J. Gonzalez Date: 03/10/22
 Project No.: 22030-01 Checked By: J. Ward Date: 03/29/22
 Boring No.: HS-1 Depth (ft.): 1-3
 Sample No.: B-1
 Soil Identification: Brownish yellow poorly-graded sand with silt (SP-SM)

Preparation Method: Moist Mechanical Ram
 Dry Manual Ram
Mold Volume (ft³) 0.03330 *Ram Weight = 10 lb.; Drop = 18 in.*

TEST NO.	1	2	3	4	5	6
Wt. Compacted Soil + Mold (g)	3582	3650	3655			
Weight of Mold (g)	1826	1826	1826			
Net Weight of Soil (g)	1756	1824	1829			
Wet Weight of Soil + Cont. (g)	462.2	482.9	452.7			
Dry Weight of Soil + Cont. (g)	439.4	448.7	412.8			
Weight of Container (g)	39.3	39.2	37.4			
Moisture Content (%)	5.70	8.35	10.63			
Wet Density (pcf)	116.3	120.8	121.1			
Dry Density (pcf)	110.0	111.4	109.5			

Maximum Dry Density (pcf) 111.5 **Optimum Moisture Content (%)** 8.0

PROCEDURE USED

Procedure A
 Soil Passing No. 4 (4.75 mm) Sieve
 Mold : 4 in. (101.6 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 25 (twenty-five)
 May be used if + #4 is 20% or less

Procedure B
 Soil Passing 3/8 in. (9.5 mm) Sieve
 Mold : 4 in. (101.6 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 25 (twenty-five)
 Use if + #4 is >20% and +3/8 in. is 20% or less

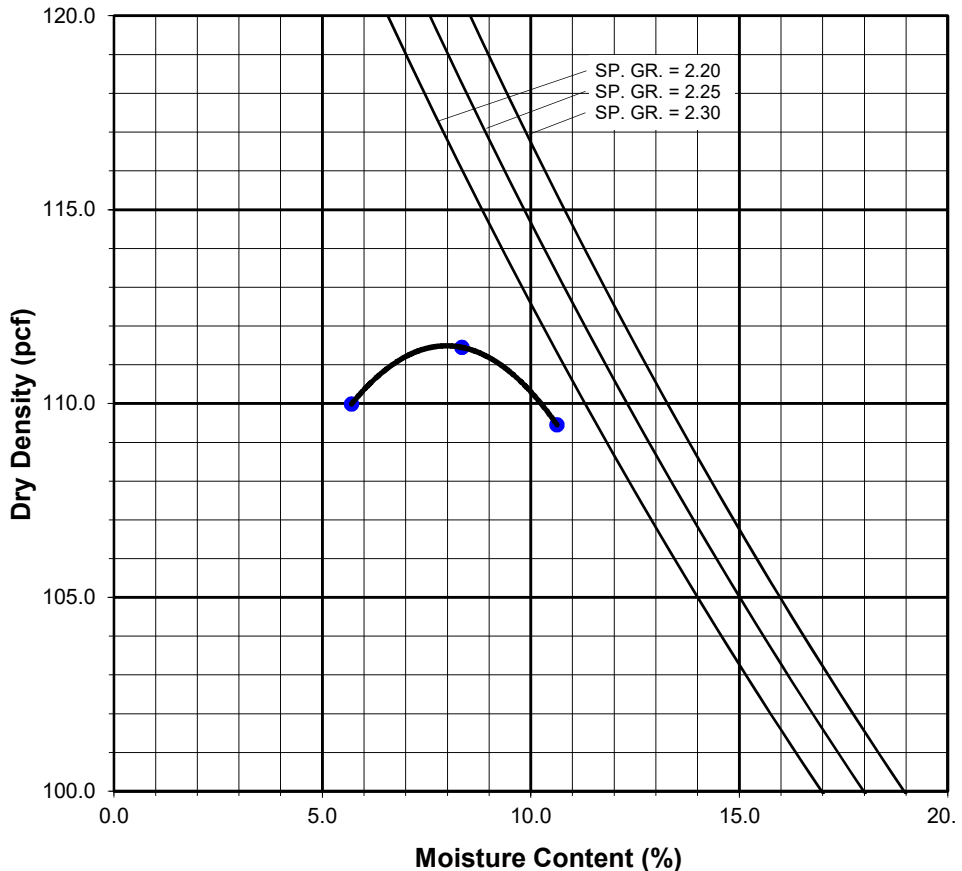
Procedure C
 Soil Passing 3/4 in. (19.0 mm) Sieve
 Mold : 6 in. (152.4 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 56 (fifty-six)
 Use if +3/8 in. is >20% and +3/4 in. is <30%

Particle-Size Distribution:

GR:SA:FI

Atterberg Limits:

LL, PL, PI



ATTERBERG LIMITS ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/10/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-1 Checked By: J. Ward
 Sample No.: R-5 Depth (ft.) 30.0
 Soil Identification: Gray silty, clayey sand (SC-SM)

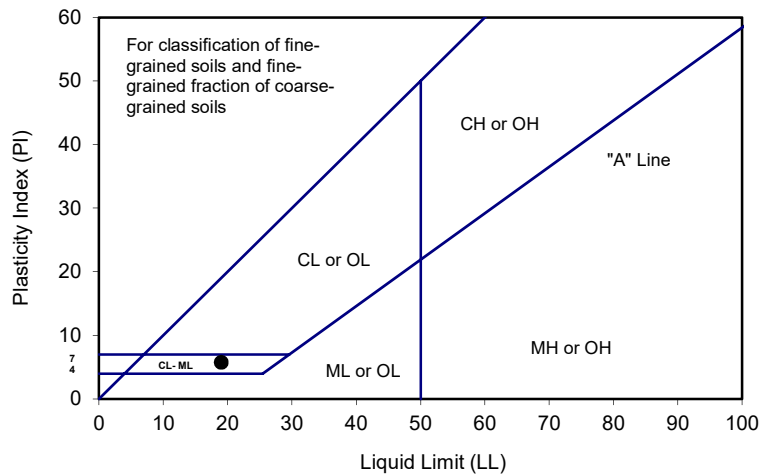
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			29	24	17	
Wet Wt. of Soil + Cont. (g)	10.18	10.15	21.20	20.43	20.71	
Dry Wt. of Soil + Cont. (g)	9.12	9.08	18.06	17.34	17.40	
Wt. of Container (g)	1.03	1.10	1.05	1.16	1.12	
Moisture Content (%) [Wn]	13.10	13.41	18.46	19.10	20.33	

Liquid Limit	19
Plastic Limit	13
Plasticity Index	6
Classification	CL-ML

PI at "A" - Line = $0.73(LL-20)$ -0.73

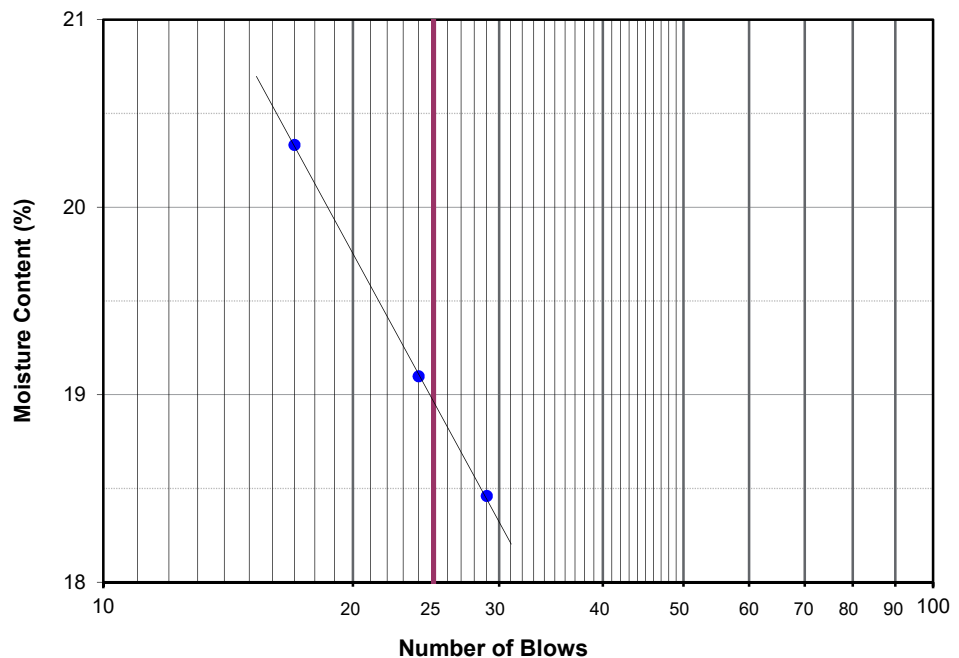
One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$



PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



ATTERBERG LIMITS ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/11/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-1 Checked By: J. Ward
 Sample No.: SP-3 Depth (ft.) 35.0
 Soil Identification: Gray clayey sand (SC)

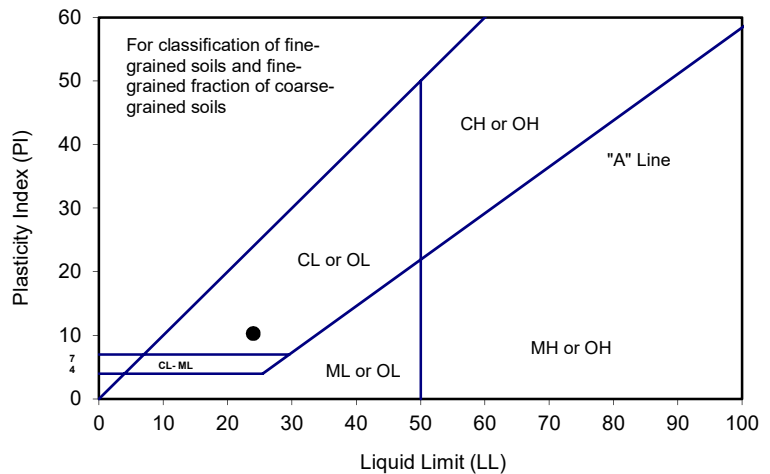
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			30	25	18	
Wet Wt. of Soil + Cont. (g)	10.23	10.15	21.30	20.17	21.89	
Dry Wt. of Soil + Cont. (g)	9.14	9.05	17.53	16.42	17.74	
Wt. of Container (g)	1.13	1.10	1.09	1.08	1.11	
Moisture Content (%) [Wn]	13.61	13.84	22.93	24.45	24.95	

Liquid Limit	24
Plastic Limit	14
Plasticity Index	10
Classification	CL

PI at "A" - Line = $0.73(LL-20)$ 2.92

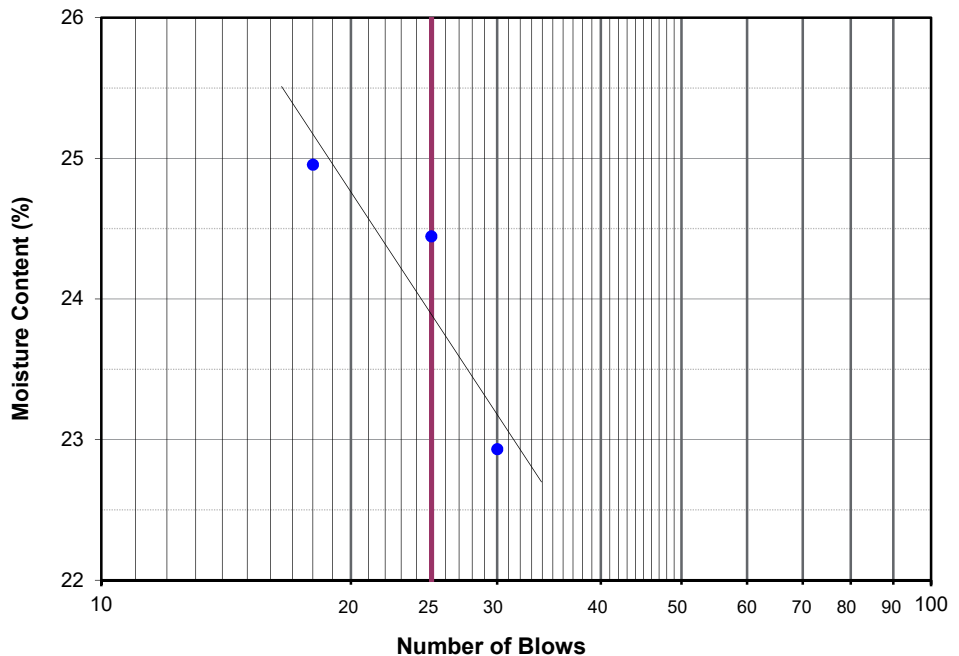
One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$



PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



ATTERBERG LIMITS ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/11/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-1 Checked By: J. Ward
 Sample No.: R-7 Depth (ft.) 50.0
 Soil Identification: Olive gray sandy lean clay s(CL)

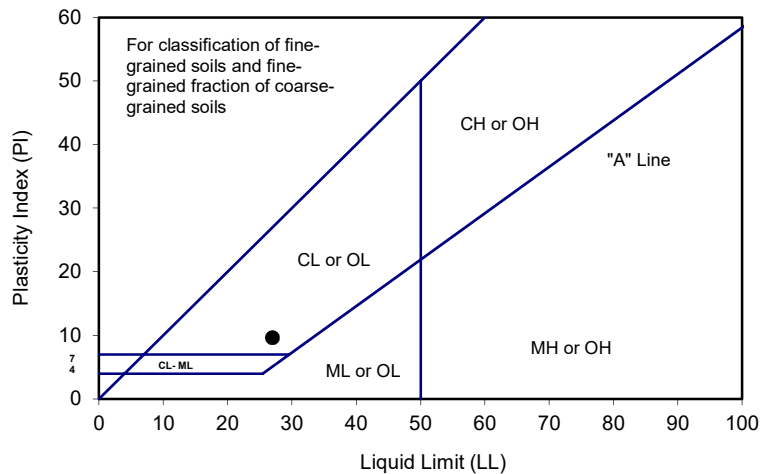
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			27	22	16	
Wet Wt. of Soil + Cont. (g)	10.31	10.32	21.42	21.18	21.58	
Dry Wt. of Soil + Cont. (g)	8.93	8.97	17.17	16.96	17.21	
Wt. of Container (g)	1.07	1.13	1.06	1.10	1.16	
Moisture Content (%) [Wn]	17.56	17.22	26.38	26.61	27.23	

Liquid Limit	27
Plastic Limit	17
Plasticity Index	10
Classification	CL

PI at "A" - Line = $0.73(LL-20)$ 5.11

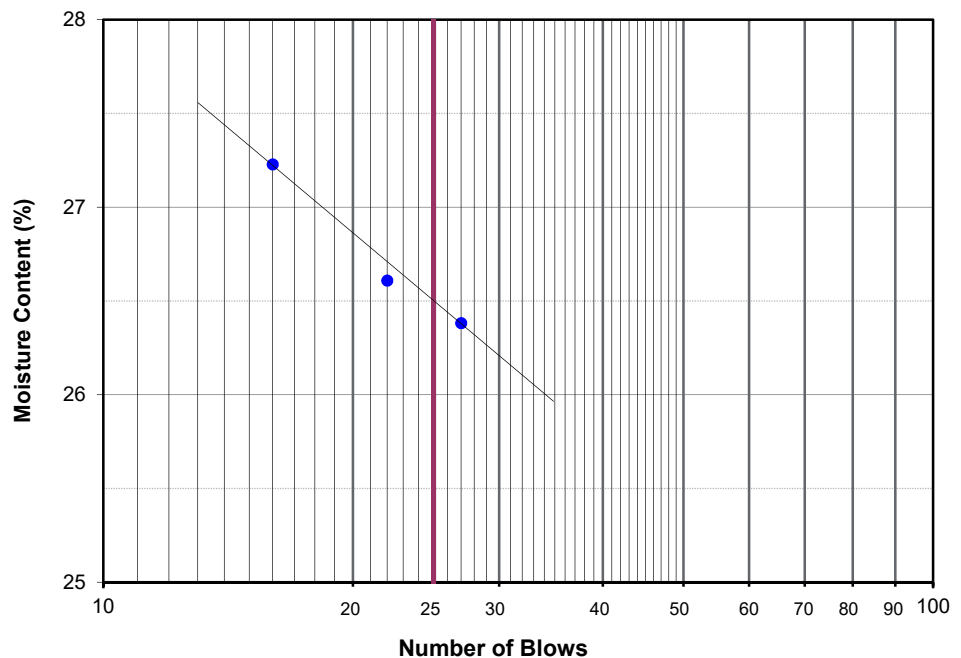
One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$



PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



ATTERBERG LIMITS

ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/11/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-2 Checked By: J. Ward
 Sample No.: SP-1 Depth (ft.) 15.0
 Soil Identification: Grayish brown well-graded sand with silt (SW-SM)

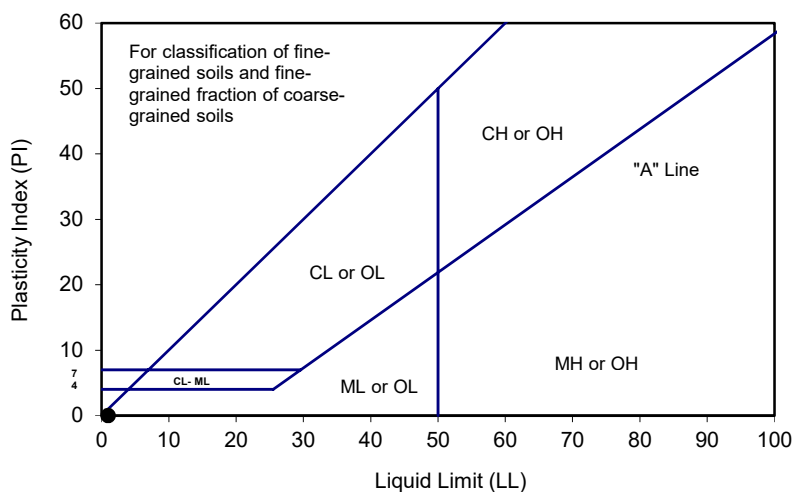
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			5			
Wet Wt. of Soil + Cont. (g)	Cannot be rolled:		Cannot get more than 5 blows:			
Dry Wt. of Soil + Cont. (g)	NonPlastic		NonPlastic			
Wt. of Container (g)			1.09			
Moisture Content (%) [Wn]			21.36			

Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP
Classification	NP

PI at "A" - Line = $0.73(LL-20)$ =

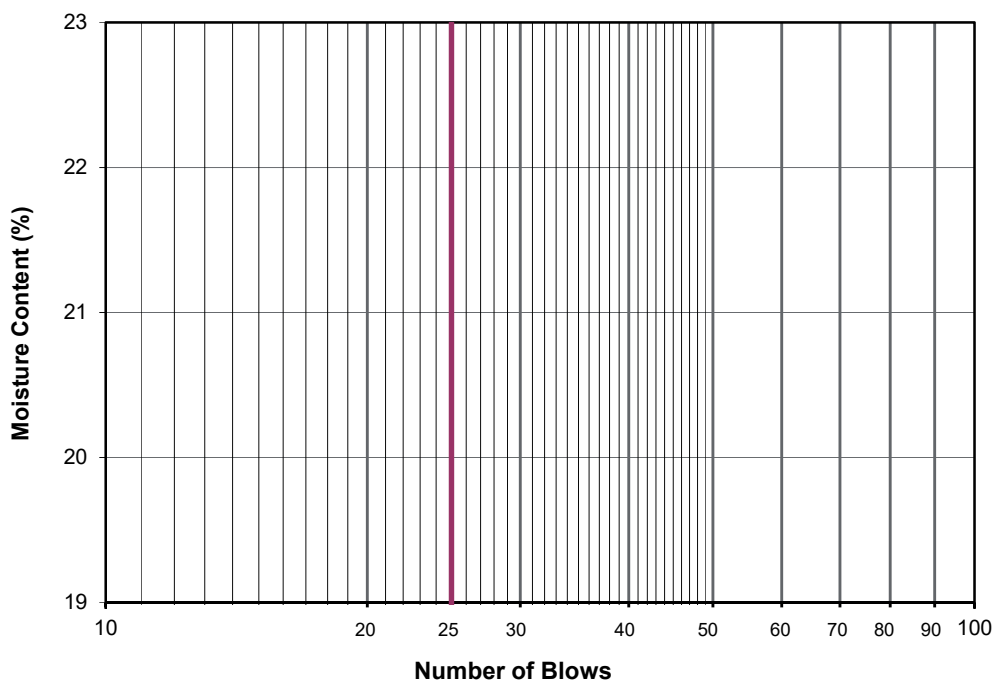
One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$



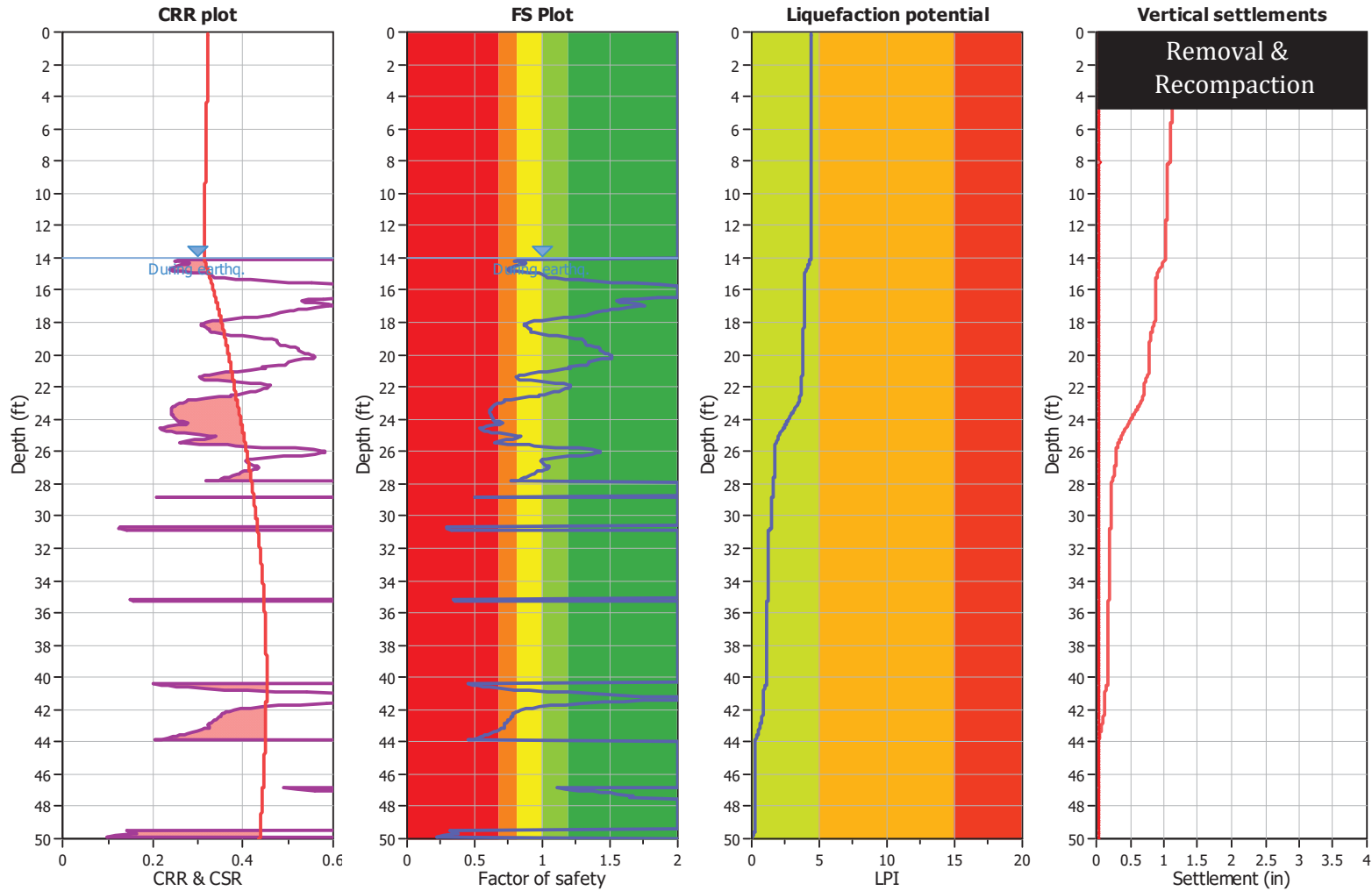
PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



Appendix D
Liquefaction Analysis

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I _c value	I _c cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

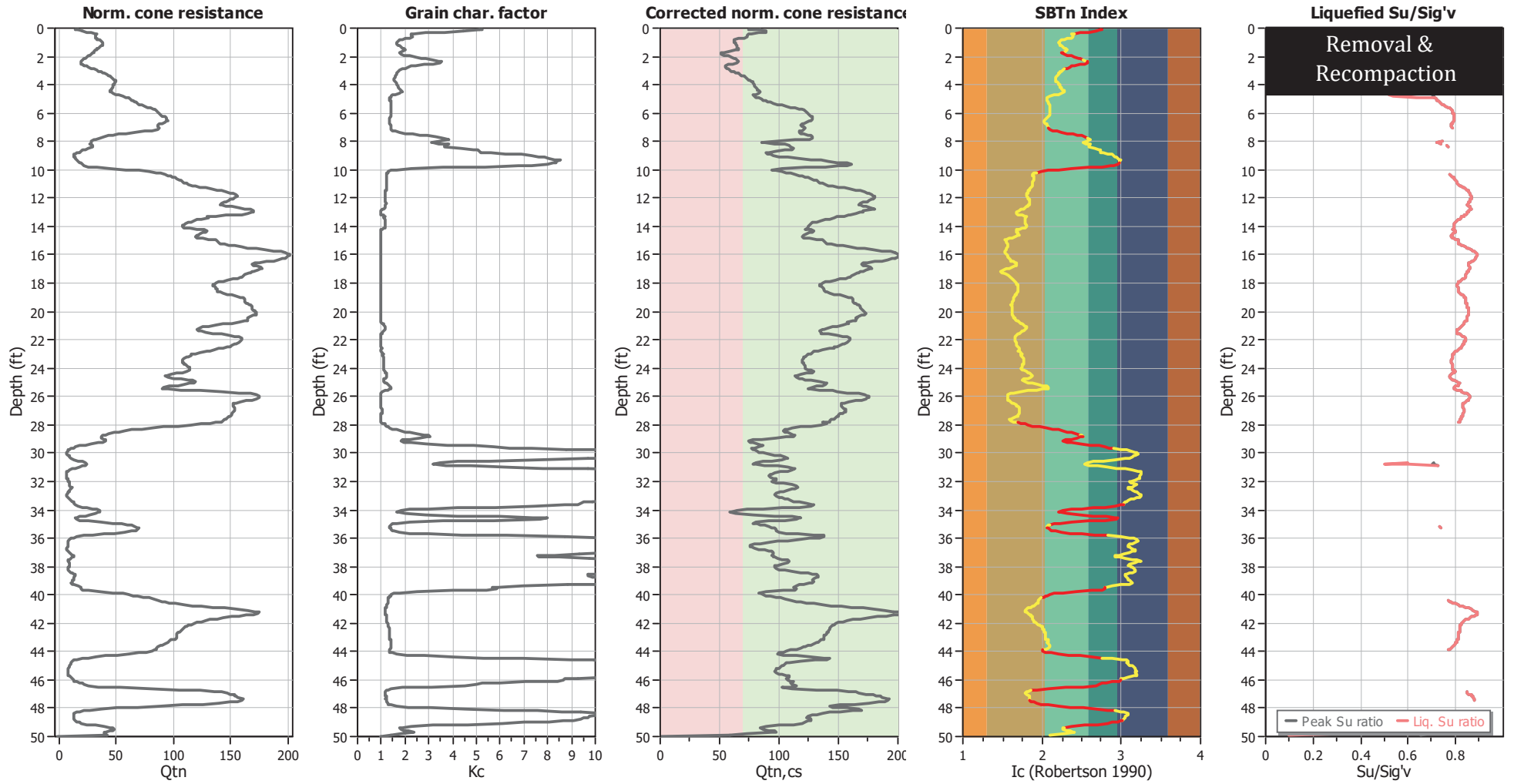
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

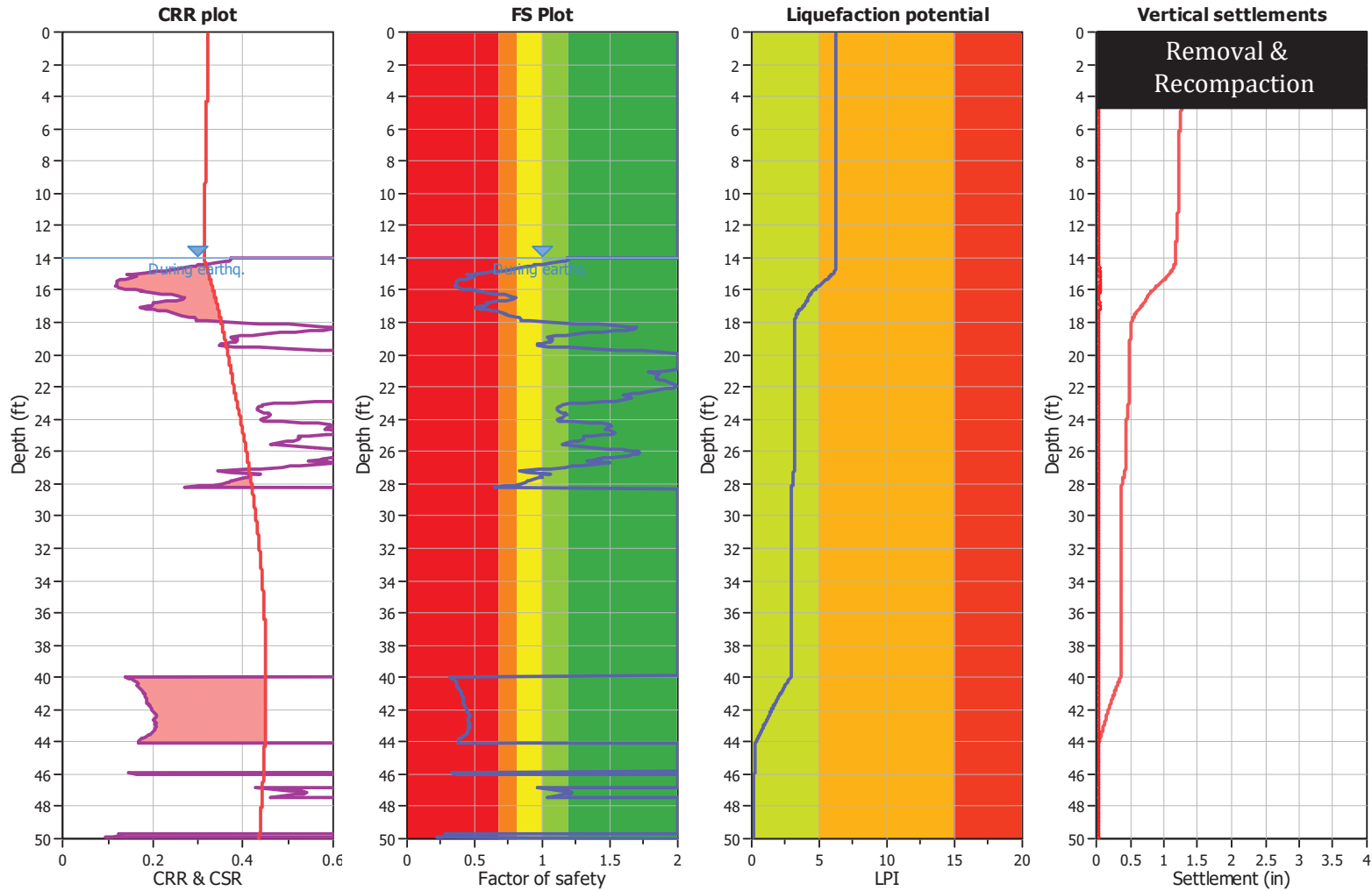
Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_{σ} applied:	Yes
Earthquake magnitude M_w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

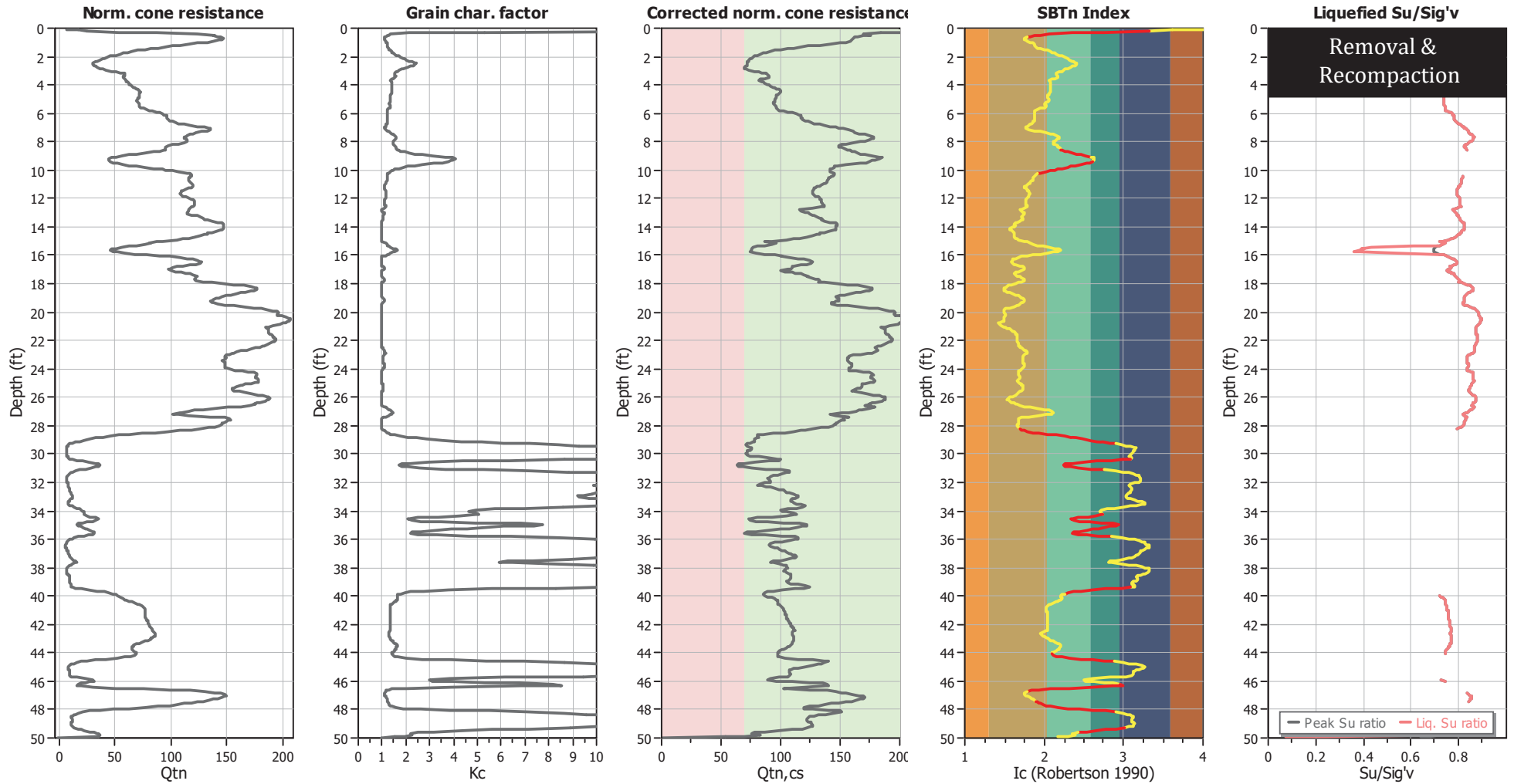
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Appendix E
Infiltration Test Data

Infiltration Test Data Sheet

LGC Geotechnical, Inc

131 Calle Iglesia Suite 200, San Clemente, CA 92672 tel. (949) 369-6141

Project Name: Lampson - Garden Grove
Project Number: 22030-01
Date: 3/1/2022
Boring Number: I-1

Test hole dimensions (if circular)

Boring Depth (feet)*: 5
 Boring Diameter (inches): 8
 Pipe Diameter (inches): 3

*measured at time of test

Test pit dimensions (if rectangular)

Pit Depth (feet): _____
 Pit Length (feet): _____
 Pit Breadth (feet): _____

Pre-Test (Sandy Soil Criteria)*

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval (min)	Initial Depth to Water (feet)	Final Depth to Water (feet)	Total Change in Water Level (feet)	Greater Than or Equal to 0.5 feet (yes/no)
1	8:35	8:38	3.0	1.60	2.25	0.65	yes
2	8:40	8:43	3.0	1.5	2.05	0.55	yes

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight, and then obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25 inches

Main Test Data

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval, Δt (min)	Initial Depth to Water, D_o (feet)	Final Depth to Water, D_f (feet)	Change in Water Level, ΔD (feet)	Observed Infiltration Rate (in/hr)
1	8:47	8:57	10.0	0.8	2.8	2	7.1
2	9:00	9:10	10.0	0.75	2.7	1.95	6.8
3	9:12	9:22	10.0	0.8	2.65	1.85	6.5
4	9:24	9:34	10.0	0.75	2.5	1.75	5.9
5	9:36	9:46	10.0	0.8	2.5	1.7	5.8
6	9:48	9:58	10.0	0.75	2.5	1.75	5.9
7							
8							
9							
10							
11							
12							
Observed Infiltration Rate (Does Not Include Any Factor of Safety)							5.9

Sketch:

Notes:



Infiltration Test Data Sheet

LGC Geotechnical, Inc

131 Calle Iglesia Suite 200, San Clemente, CA 92672 tel. (949) 369-6141

Project Name: Lampson - Garden Grove
Project Number: 22030-01
Date: 3/1/2022
Boring Number: I-2

Test hole dimensions (if circular)	
Boring Depth (feet)*:	5
Boring Diameter (inches):	8
Pipe Diameter (inches):	3

Test pit dimensions (if rectangular)	
Pit Depth (feet):	_____
Pit Length (feet):	_____
Pit Breadth (feet):	_____

*measured at time of test

Pre-Test (Sandy Soil Criteria)*

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval (min)	Initial Depth to Water (feet)	Final Depth to Water (feet)	Total Change in Water Level (feet)	Greater Than or Equal to 0.5 feet (yes/no)
1	10:05	10:09	4.0	0.75	1.85	1.1	yes
2	10:10	10:14	4.0	0.75	1.75	1	yes

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight, and then obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25 inches

Main Test Data

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval, Δt (min)	Initial Depth to Water, D_o (feet)	Final Depth to Water, D_f (feet)	Change in Water Level, ΔD (feet)	Observed Infiltration Rate (in/hr)
1	10:16	10:26	10.0	0.7	2.55	1.85	6.3
2	10:29	10:39	10.0	0.7	2.55	1.85	6.3
3	10:41	10:51	10.0	0.7	2.6	1.9	6.5
4	10:54	11:04	10.0	0.8	2.45	1.65	5.6
5	11:06	11:16	10.0	0.95	2.6	1.65	5.8
6	11:19	11:29	10.0	0.75	2.45	1.7	5.7
7							
8							
9							
10							
11							
12							
Observed Infiltration Rate (Does Not Include Any Factor of Safety)							5.7

Sketch:

Notes:



Appendix F
General Earthwork and Grading Specifications
for Rough Grading

General Earthwork and Grading Specifications for Rough Grading

1.0 General

1.1 Intent

These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 The Geotechnical Consultant of Record

Prior to commencement of work, the owner shall employ a qualified Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to confirm that the attained level of compaction is being accomplished as specified. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

1.3 The Earthwork Contractor

The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the project plans and specifications. The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "equipment" of work and the estimated quantities of daily earthwork

contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate personnel will be available for observation and testing. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified. It is the contractor's sole responsibility to provide proper fill compaction.

2.0 Preparation of Areas to be Filled

2.1 Clearing and Grubbing

Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed. The contractor is responsible for all hazardous waste relating to his work. The Geotechnical Consultant does not have expertise in this area. If hazardous waste is a concern, then the Client should acquire the services of a qualified environmental assessor.

2.2 Processing

Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be over-excavated as specified in the following section. Scarification shall continue until soils are broken down and free of oversize material and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

2.3 Over-excavation

In addition to removals and over-excavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be over-excavated to competent ground as evaluated by the Geotechnical Consultant during grading.

2.4 Benching

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. Please see the Standard Details for a graphic illustration. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise over-excavated to provide a flat subgrade for the fill.

2.5 Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

3.0 Fill Material

3.1 General

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 Oversize

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

3.3 Import

If importing of fill material is required for grading, proposed import material shall meet the requirements of the geotechnical consultant. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

4.0 Fill Placement and Compaction

4.1 Fill Layers

Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 Fill Moisture Conditioning

Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557).

4.3 Compaction of Fill

After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

4.4 Compaction of Fill Slopes

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

4.5 Compaction Testing

Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.6 Frequency of Compaction Testing

Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.7 Compaction Test Locations

The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided.

5.0 Subdrain Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and the Standard Details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

6.0 Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 Trench Backfills

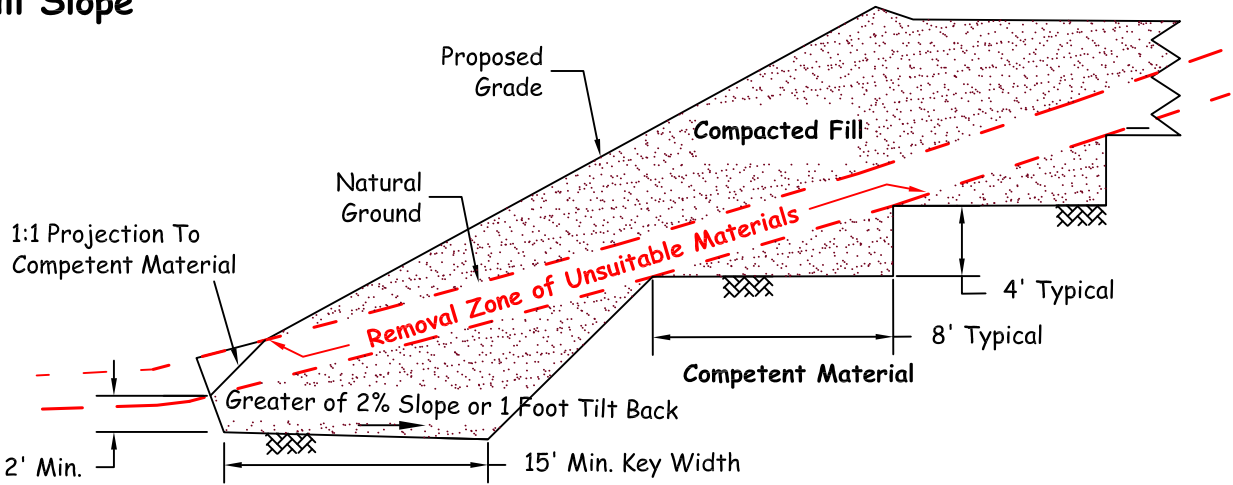
7.1 The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations.

7.2 All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over

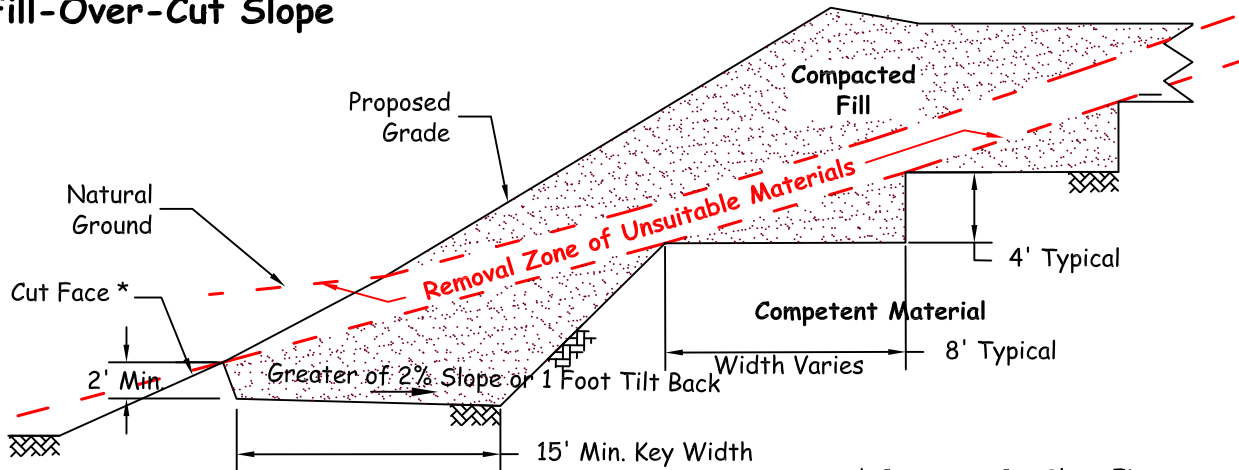
the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 90 percent of maximum from 1 foot above the top of the conduit to the surface.

- 7.3 The jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.
- 7.4 The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.
- 7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

Fill Slope

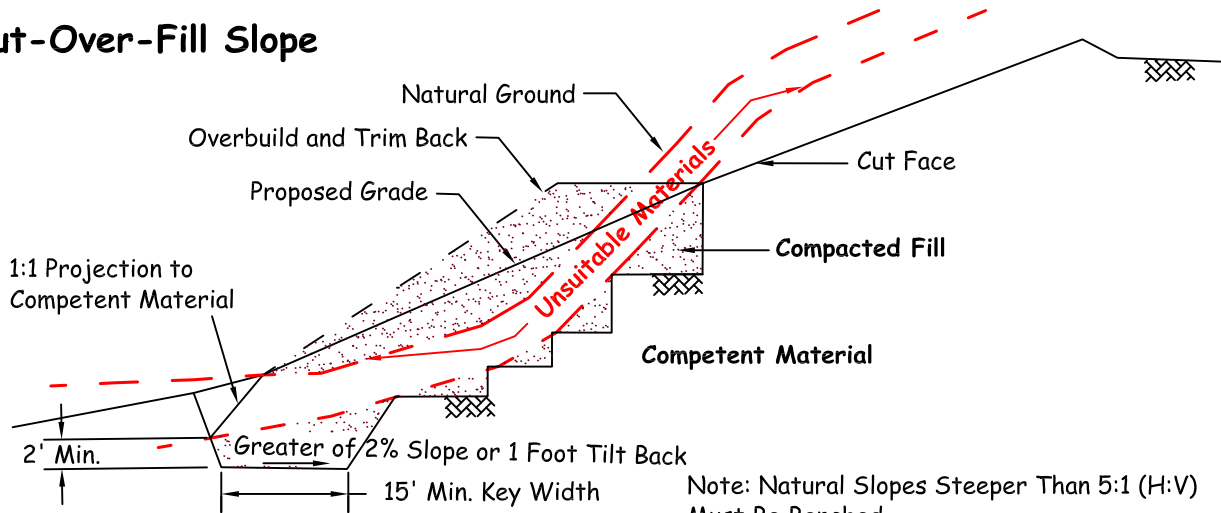


Fill-Over-Cut Slope



* Construct Cut Slope First

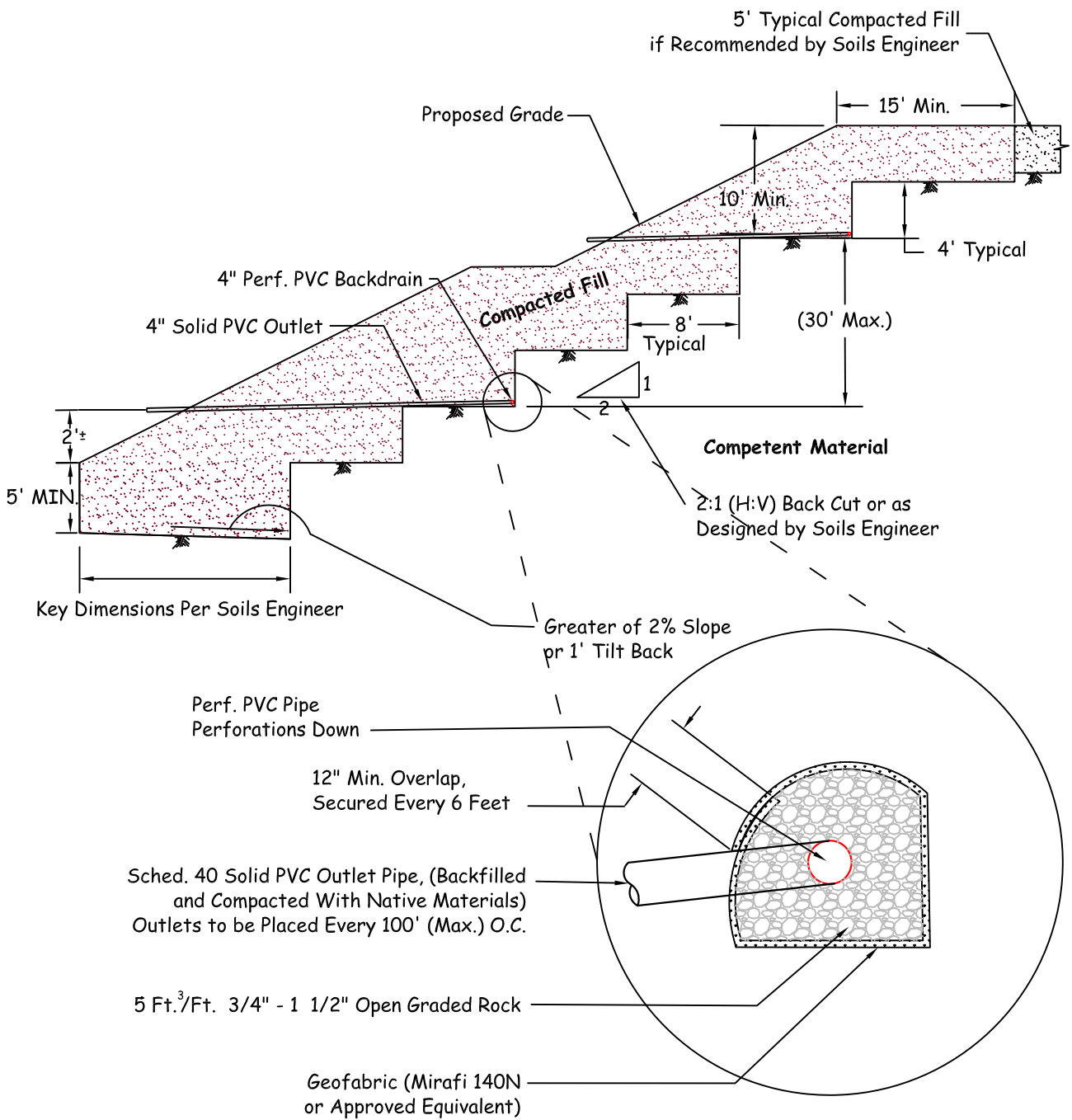
Cut-Over-Fill Slope



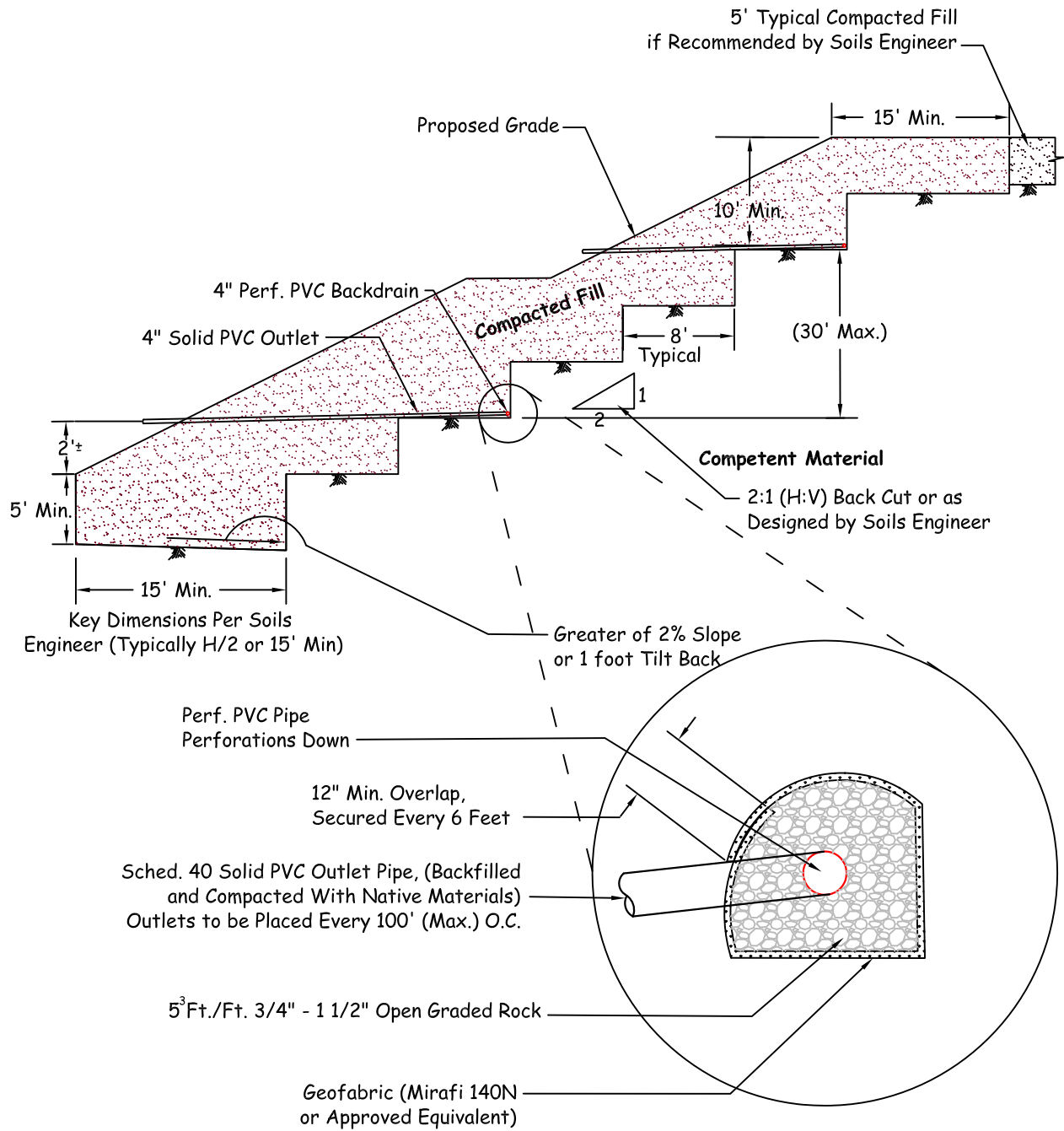
Note: Natural Slopes Steeper Than 5:1 (H:V) Must Be Benched.



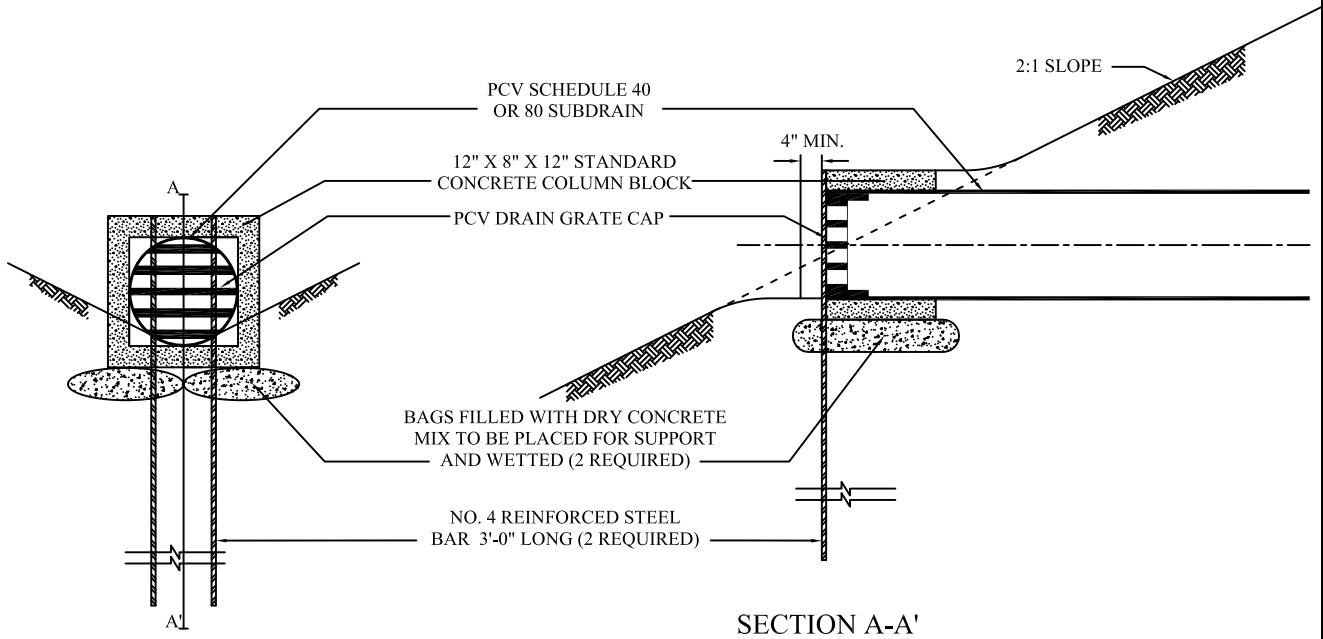
KEYING AND BENCHING



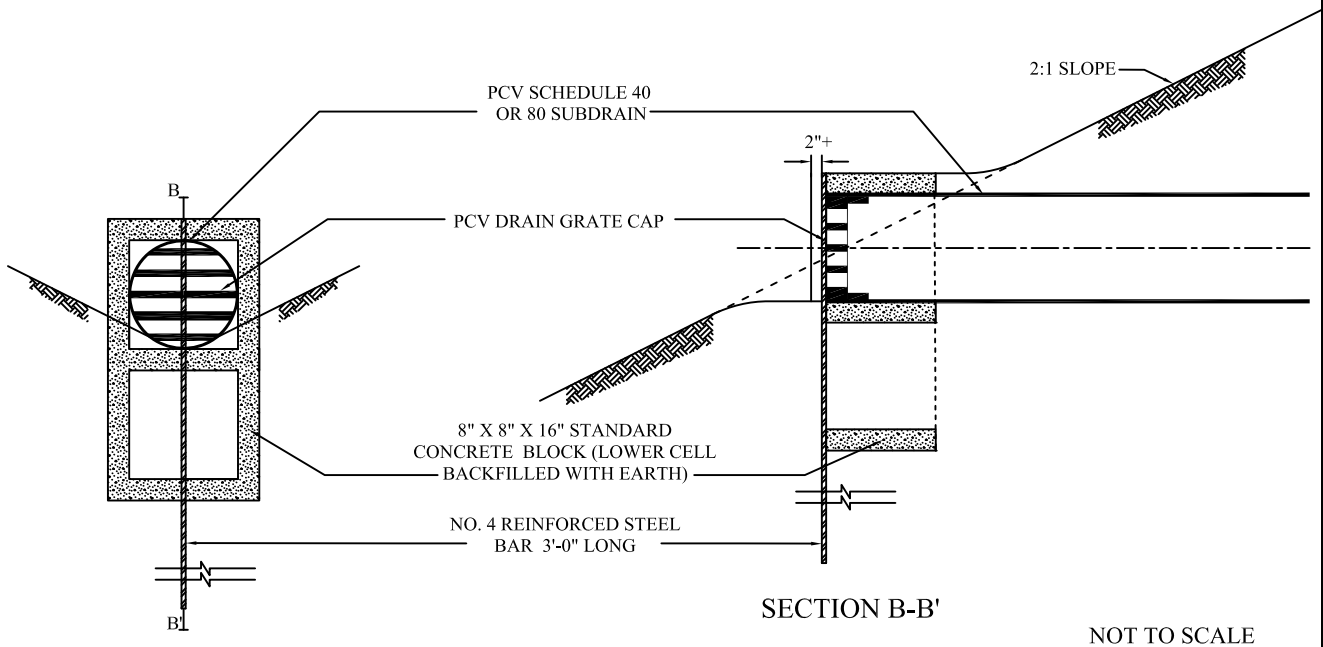
TYPICAL BUTTRESS DETAIL



SUBDRAIN OUTLET MARKER -6" & 8" PIPE

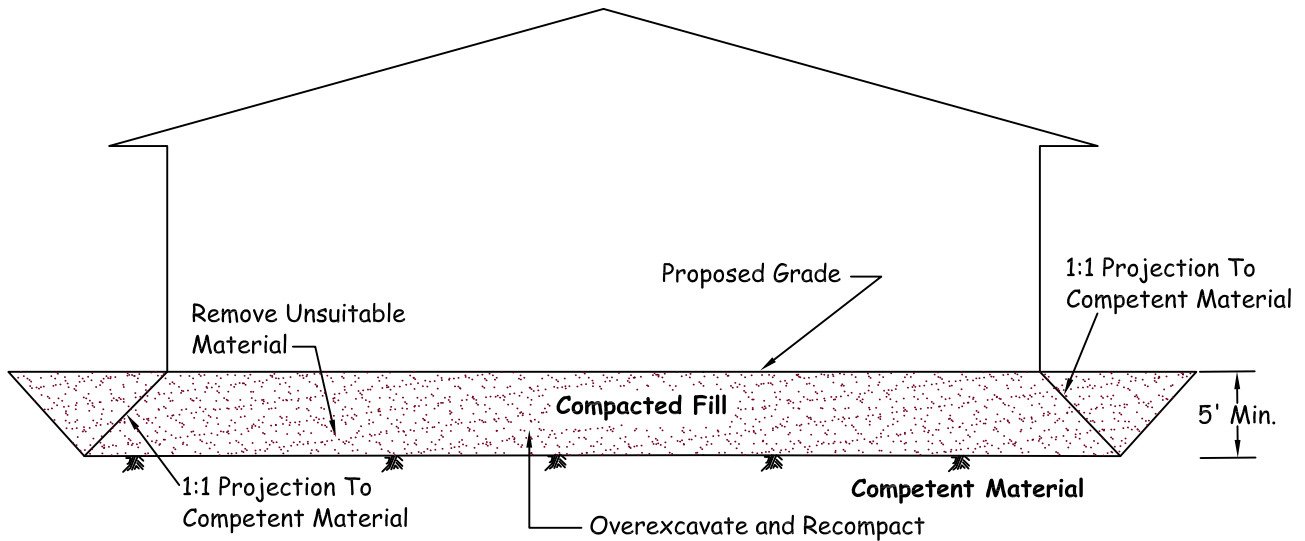


SUBDRAIN OUTLET MARKER -4" PIPE



**SUBDRAIN OUTLET
MARKER DETAIL**

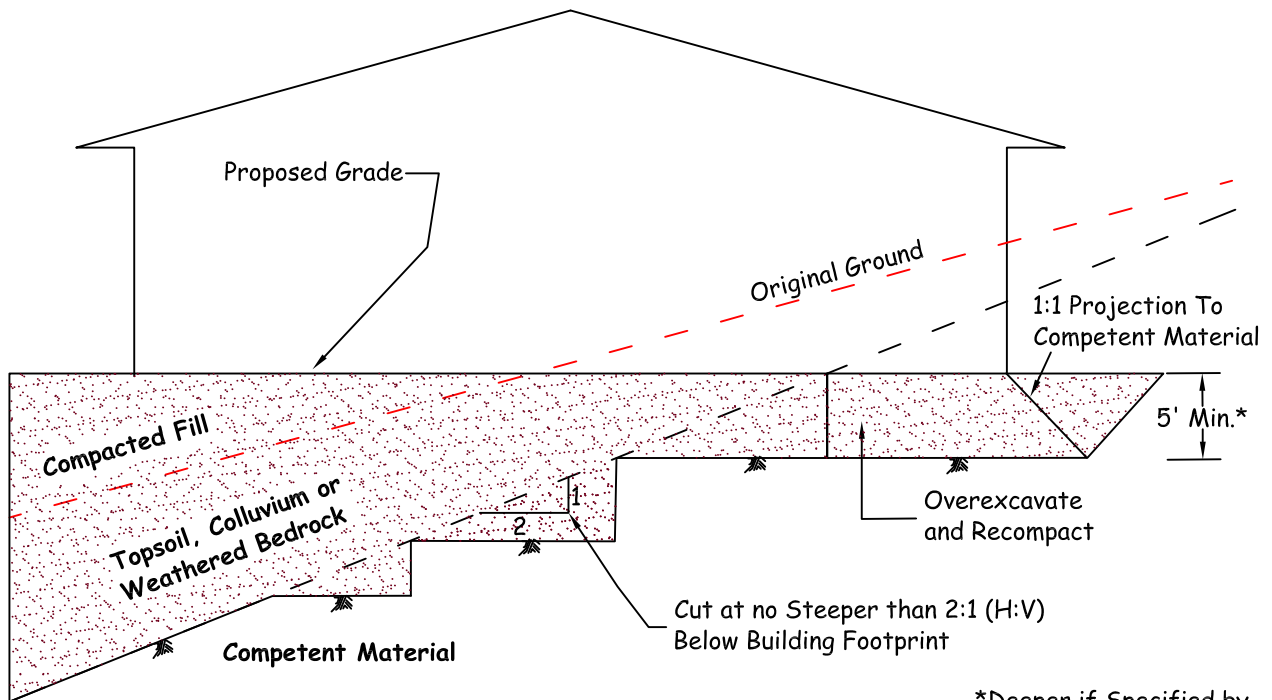
Cut Lot (Exposing Unsuitable Soils at Design Grade)



Note 1: Removal Bottom Should be Graded With Minimum 2% Fall Towards Street or Other Suitable Area (as Determined by Soils Engineer) to Avoid Ponding Below Building

Note 2: Where Design Cut Lots are Excavated Entirely Into Competent Material, Overexcavation May Still be Required for Hard-Rock Conditions or for Materials With Variable Expansion Characteristics.

Cut/Fill Transition Lot



*Deeper if Specified by Soils Engineer



CUT AND TRANSITION LOT OVEREXCAVATION DETAIL

APPENDIX C

PRELIMINARY WATER QUALITY MANAGEMENT PLAN (WQMP)



GARDEN GROVE

City of Garden Grove, California

Preliminary Water Quality Management Plan (PWQMP)

Project Name: 9071 Lampson Avenue

Tract Map No. 19232

PLC Communities

9071 Lampson Avenue

(APN: 133-183-55, 133-183-56, 133-183-57, & 133-183-58)

Prepared By: MDS Consulting



GARDEN GROVE

Preliminary Water Quality Management Plan (PWQMP)

Project Name:

9071 Lampson Avenue

Tract Map No. 19232

Prepared for:

PLC Communities

888 San Clemente Drive, Suite 200

Newport Beach, CA 92660

1-949-729-1221

Prepared by:

MDS Consulting

Engineer Ed Lenth **Registration No.** 52496 **(optional if not used)**

17320 Redhill Avenue, Suite 350

Irvine, CA 92614

949.251.8821

Initial Submittal Date: 03/23/22

1st Revision Date: 05/14/22

Project Owner's Certification			
Permit/ Application No.	N/A	Grading Permit No.	N/A
Tract/Parcel Map No.	Tentative Tract Map No. 19232	Building Permit No.	N/A
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract)			133-183-55 thru 133-183-58

This Preliminary Water Quality Management Plan (PWQMP) has been prepared for PLC Communities by MDS Consulting. The PWQMP is intended to comply with the requirements of the local NPDES Stormwater Program requiring the preparation of the plan, and the California environmental quality act (CEQA) to complete an assessment of the environmental impacts of the project and mitigation required as part of the entitlement review.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated Cities of Orange County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement and amend the Final WQMP. An appropriate number of approved and signed copies of this document shall be available on the subject site in perpetuity.

Each Project Final WQMP will be stored within the City's files, and will continue with the property after the completion of the construction phase, and the City will require that the terms, conditions and requirements be recorded with the County Recorder's office by the property owner or any successive owner as authorized by the Water Quality Ordinance. The city will also require the Project Final WQMP to include a Notice of Transfer Responsibility Form, which serves to notify the city that a change in ownership has occurred and notify the new owner of its responsibility to continue implementing the Project WQMP.

The final Project WQMP must include calculations to support the structural integrity of the selected LID or treatment control BMP as appropriate and be prepared by or under the direction of a California Registered Civil Engineer and affixed with their stamp.

Preliminary Water Quality Management Plan (PWQMP)
9071 Lampson Avenue

Owner: Bill Holman		
Title	VP Land Development	
Company	PLC Communities	
Address	888 San Clemente Drive, Newport Beach, CA 92660	
Email	Bholman@plcommunities.com	
Telephone #	(949) 729-1221	
Signature		Date

Contents

Page No.

Section I Discretionary Permit(s) and Water Quality Conditions	3
Section II Project Description	5
Section III Site Description	9
Section IV Best Management Practices (BMPs)	12
Section V Inspection/Maintenance Responsibility for BMPs.....	26
Section VI Site Plan and Drainage Plan	27
Section VII Educational Materials	28

Appendices

Attachment A	Maps & Resources
Attachment B	Plans
Attachment C	Calculations
Attachment D	Soils Report
Attachment E..	Educational Materials
Attachment F..	Preliminary Hydrology

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Section I Discretionary Permit(s) and Water Quality Conditions

Provide discretionary permit and water quality information. Refer to Section 2.1 in the Technical Guidance Document (TGD) available from the Orange County Stormwater Program (ocwatersheds.com).

Project Information			
Permit/ Application No.	N/A	Tract/Parcel Map No.	Tentative Tract Map No. 19232
Additional Information/ Comments:	The PWQMP is part of the environmental assessment of the project under CEQA. Final design will be conducted once the mitigation has been adopted and may require additional mitigation not adopted herein.		
Water Quality Conditions			
Water Quality Conditions (list verbatim)	<p>WQMP Conditions</p> <p>1. Prior to the issuance of any grading or building permits or prior to recordation upon subdivision of land if determined applicable by the City Building Official, the applicant shall submit to the City for review and approval a Water Quality Management Plan that:</p> <ul style="list-style-type: none"> - Addresses Site Design BMPs such as minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or "zero discharge" areas, and conserving natural areas. - Incorporates the applicable Routine Source Control BMPs as defined in the DAMP. - Incorporates structural and Treatment Control BMPs as defined in the DAMP. - Generally describes the long-term operation and maintenance requirements for the Treatment Control BMPs. - Identifies the entity that will be responsible for long-term operation and maintenance of the Treatment Control BMPs. - Describes the mechanism for funding the long-term operation and maintenance of the Treatment Control BMPs. 		

	<p>2. Prior to grading or building permit closeout and/or the issuance of a certificate of use or a certificate of occupancy, the applicant shall:</p> <ul style="list-style-type: none"> - Demonstrate that all structural best management practices (BMPs) described in the Project WQMP have been constructed and installed in conformance with approved plans and specifications. - Demonstrate that applicant is prepared to implement all nonstructural BMPs described in the Project WQMP. - Demonstrate that an adequate number of copies of the approved Project WQMP are available on site. - Submit for review and approval by the City an Operations and Maintenance (O&M) Plan for all structural BMPs.
--	--

Watershed-Based Plan Conditions

<p>Provide applicable conditions from watershed - based plans including WIHMPs and TMDLS.</p>	<p>Bolsa Chica Channel –</p> <p>Anaheim Bay –</p>	<p>Ammonia (Unionized)</p> <p>Indicator Bacteria</p> <p>pH</p> <p>Dieldrin (Tissue)</p> <p>Nickel</p> <p>PCBs</p> <p>Sediment Toxicity</p>
---	---	--

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Section II Project Description

II.1 Project Description

Provide a detailed project description including:

- Project areas;
- Land uses;
- Land cover;
- Design elements;
- A general description not broken down by drainage management areas (DMAs).

Include attributes relevant to determining applicable source controls. *Refer to Section 2.2 in the TGD for information that must be included in the project description.*

Description of Proposed Project				
Development Category (Verbatim from WQMP):	Low Density Residential			
Project Area (ft ²): 69711	Number of Dwelling Units: 13		SIC Code: 1521	
Narrative Project Description:	The 9071 Lampson Avenue development(project) is a 1.60-acre community that is located in the City of Garden Grove and within the Bolsa Chica Watershed. The development lies north of Lampson Avenue, northwest of the Lampson Avenue and Lucille Avenue intersection, which is north of the 22 freeway. It will consist of a residential development, an alleyway, open space, drainage features, and stormwater treatment devices.			
Project Area	Pervious		Impervious	
	Area (acres or sq ft)	Percentage	Area (acres or sq ft)	Percentage
Pre-Project Conditions	43848 sq ft	62.9	29188 sq ft	41.9
Post-Project Conditions	29139 sq ft	41.8	40603 sq ft	58.2
Drainage Patterns/Connections	Proposed drainage for the site includes sheet flow southerly down the proposed drive aisle until it is captured by the curb and gutter on the easterly and westerly sides of the proposed drive aisle. From here it flows southerly until it is captured			

by a catch basin onsite. The drainage will flow through pipes to infiltration basins for treatment. Overflow in the sump condition will be conveyed southerly to the public curb and gutter on Lampson and then westerly to the public catch basin located near the Magnolia and Lampson Avenue intersection. From here it is conveyed via public storm drain system to channel Co3Po5, and then to the public storm drain system Co3, and then to channel Co3(Bolsa Chica Channel). From here Bolsa Chica Channel outlets to Anaheim Bay and ultimately the Pacific Ocean.

This Project will be governed by the required CC&R's that are also applied to the property owners of this project. The project will also be required to comply with the new California trash amendment for water quality. Some Institutional controls required are street sweeping, sidewalk Trash bins, collection of the trash, anti-litter educational and outreach programs.

The approved Full Capture Trash Treatment Control Device used is a Bio Clean Environmental Services Curb Inlet and Grate Inlet filter (Approved 10/20/2021).

Common areas include, streets, sidewalks, and a pocket park located onsite. Common areas will be required to adhere to all regulatory requirements set forth in this document.

Low-Impact Development controls, described on page E-10 of the Trash Provision Document, are met by employing infiltration of stormwater into the ground to replenish the groundwater supplies.

II.2 Potential Stormwater Pollutants

Determine and list expected stormwater pollutants based on land uses and site activities. *Refer to Section 2.2.2 and Table 2.1 in the TGD for guidance.*

Pollutants of Concern			
Pollutant	Circle One:		Additional Information and Comments
	E=Expected to be of concern	N=Not Expected to be of concern	
Suspended-Solid/ Sediment	(E)	N	N/A
Nutrients	(E)	N	N/A
Heavy Metals	(E)	N	N/A
Pathogens (Bacteria/Virus)	(E)	N	N/A

Pesticides	(E)	N	N/A
Oil and Grease	(E)	N	N/A
Toxic Organic Compounds	(E)	N	N/A
Trash and Debris	(E)	N	N/A

II.3 Hydrologic Conditions of Concern

Determine if streams located downstream from the project area are determined to be potentially susceptible to hydromodification impacts. Refer to Section 2.2.3.1 in the TGD for NOC or Section 2.2.3.2 for <SOC>.

No – Show map

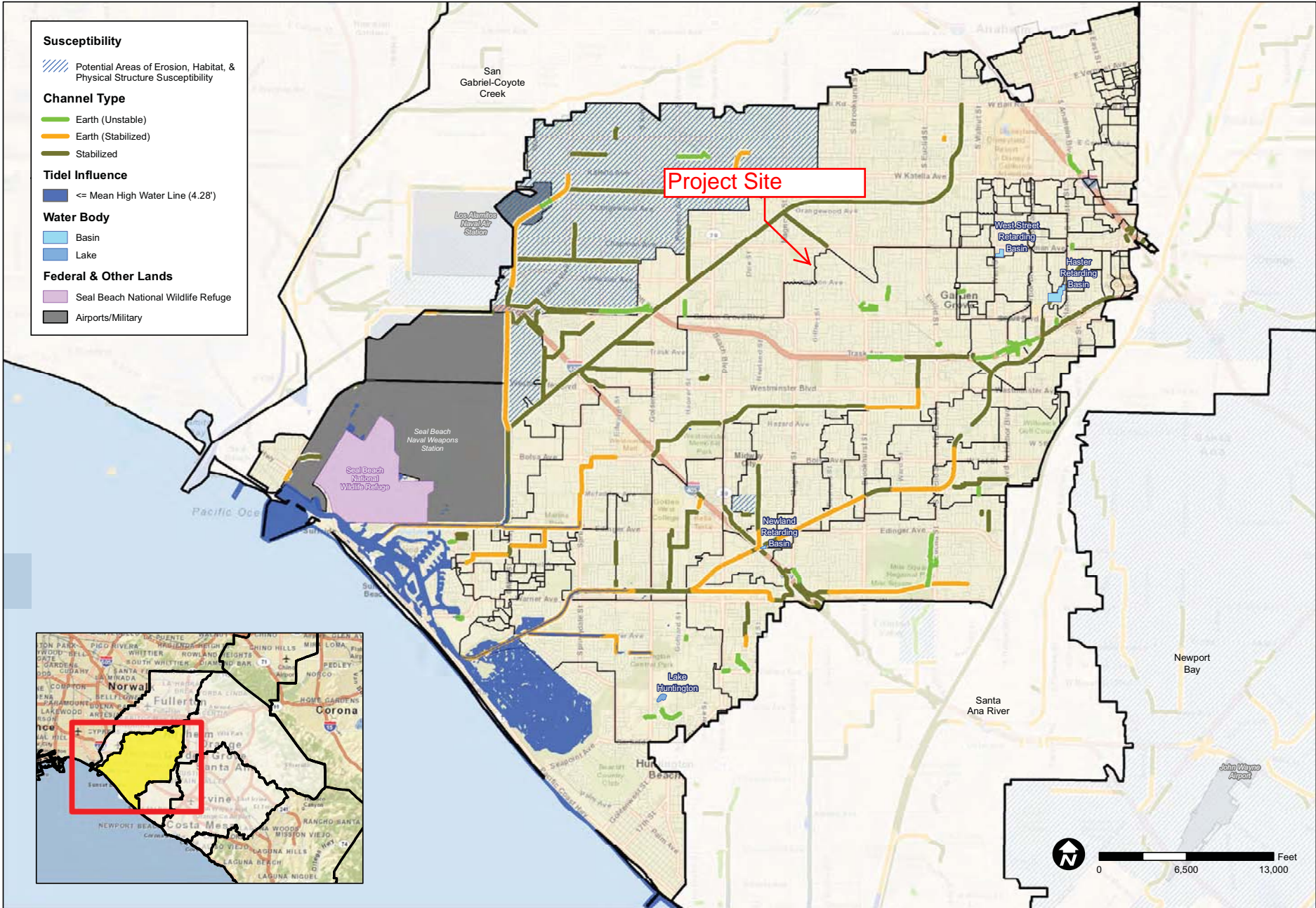
Yes – Describe applicable hydrologic conditions of concern below. Refer to Section 2.2.3 in the TGD.

“Calculation methods for determination of HCOCs in the North Orange County permit area are provided in Appendix IV. If these conditions do not exist or streams are not potentially susceptible to hydromodification impacts, an HCOC does not exist and hydromodification does not need to be considered further.

Stream susceptibility must be determined using the regional stream susceptibility maps that are provided in Appendix XVI, watershed-specific maps contained in a WIHMP” (North Orange County WQMP TGD ,2013).

Please see map attached on the next page and in the appendix. Hydromodification is the physical response of earthen stream channels to changes in catchment runoff and sediment yield. The hydrologic project drains to stabilized concrete channels and therefore is not susceptible to Hydromodification impacts.

The Project site drains to channel Co3Po5 (Concrete lined & stabilized), and then to the public storm drain system Co3(Concrete lined & stabilized), and then to the Bolsa Chica Channel (Concrete lined & stabilized). From here Bolsa Chica Channel outlets to Anaheim Bay and ultimately the Pacific Ocean.



TITLE
SUSCEPTIBILITY ANALYSIS
ANAHEIM BAY-
HUNTINGTON HARBOR

ORANGE COUNTY
WATERSHED
MASTER PLANNING

JOB
 SCALE: 1" = 2500'
 DESIGNED: TH
 DRAWING: TH
 CHECKED: JBP
 DATE: 04/22/10
 JOB NO: 8524-E



FIGURE
2

II.4 Post Development Drainage Characteristics

Describe post development drainage characteristics. Refer to Section 2.2.4 in the TGD.

Proposed drainage for the site includes sheet flow southerly down the proposed drive aisle until it is captured by the curb and gutter on the easterly and westerly sides of the proposed drive aisle. From here it flows southerly until it is captured by a catch basin onsite. The drainage will flow through pipes to infiltration basins for treatment. Overflow in the sump condition will be conveyed southerly to the public curb and gutter on Lampson and then westerly to the public catch basin located near the Magnolia and Lampson Avenue intersection. From here it is conveyed via public storm drain system to channel C03P05, and then to the public storm drain system C03, and then to channel C03(Bolsa Chica Channel). From here Bolsa Chica Channel outlets to Anaheim Bay and ultimately the Pacific Ocean.

II.5 Property Ownership/Management

Describe property ownership/management. Refer to Section 2.2.5 in the TGD.

The Owner of the development is PLC Communities until an HOA assumes responsibilities for maintenance. The city of Garden Grove will be granted an easement for access for inspection and monitoring and utility purposes, and the city will gain access to the southernly 150' of the site as well as the access driveway. An HOA will assume all responsibility for the long-term maintenance of the project's stormwater facilities.

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Section III Site Description

III.1 Physical Setting

Fill out table with relevant information. Refer to Section 2.3.1 in the TGD.

Planning Area/ Community Name	Garden Grove 13
Location/Address	9071 Lampson Avenue
	City of Garden Grove, County of Orange, CA
Land Use	Existing - Low Density Residential
	Proposed - Low Density Residential
Zoning	Existing - R1 Single Family Residential
	Proposed - R1 Single Family Residential
Acreage	1.60 ac
Predominant Soil Type	A - Fine Sandy Loam

III.2 Site Characteristics

Fill out table with relevant information and include information regarding BMP sizing, suitability, and feasibility, as applicable. Refer to Section 2.3.2 in the TGD.

Precipitation Zone	0.78 inches
Topography	<i>Existing topography has been graded for single family residential housing. Currently it is gradually sloped, with no existing hillsides. Elevations on site range from 77' on the north side of the property to 75' on the south side of the property.</i>
Drainage Patterns/Connections	<i>Existing drainage utilizes natural infiltration and the extensive amount of pervious area to help infiltrate stormwater. The site is also gradually sloped north to south to allow for runoff to sheet flow north to south until it is captured by the public curb and gutter on the north side of Lampson Avenue.</i>

	<p><i>Proposed drainage for the site includes sheet flow southerly down the proposed drive aisle until it is captured by the curb and gutter on the easterly and westerly sides of the proposed drive aisle. From here it flows southerly until it is captured by a catch basin onsite. The drainage will flow through a proposed culvert to infiltration basins for treatment. Overflow in the sump condition will be conveyed southerly to the public curb and gutter on Lampson and then westerly to the public catch basin located near the Magnolia and Lampson Avenue intersection. From here it is conveyed via public storm drain system to channel C03P05, and then to the public storm drain system C03, and then to channel C03(Bolsa Chica Channel). From here Bolsa Chica Channel outlets to Anaheim Bay and ultimately the Pacific Ocean.</i></p>
<p><i>Soil Type, Geology, and Infiltration Properties</i></p>	<p><i>Soil Type – A Sandy Loam</i></p> <p><i>The site lies in an area that has no Infiltration Constraints. The soil is not of Hydrologic Soil Group D, the site does not lie in a Landslide Hazard Zone, does not lie in a groundwater protected area, and the depth to Groundwater is greater than 5'. Infiltration testing returned results with rates in the range of 5-6 inches per hour. Due to this, Infiltration was deemed feasible.</i></p> <p><i>See Appendix for more Information</i></p>

<i>Site Characteristics (continued)</i>	
<p><i>Hydrogeologic (Groundwater) Conditions</i></p>	<p><i>Per the Orange County Infiltration Study Mapping provided in the TGD, the Project Site lies in an area where depth to groundwater is greater than 10'. Boring Tests done by a licensed Geotechnical Engineer encountered groundwater at a depth of 14'.</i></p> <p><i>The mounded historic average is mapped halfway between the 10- and 20-foot contours(CDMG,2001). Therefore the geotechnical engineer conservatively estimated the depth to be 14' below grade.</i></p> <p><i>See Appendix for more Information</i></p>
<p><i>Geotechnical Conditions (relevant to infiltration)</i></p>	<p><i>The site lies in an area that has no Infiltration Constraints. The soil is not of Hydrologic Soil Group D, the site does not lie in a Landslide Hazard Zone, does not lie in a groundwater protected area, and the depth to Groundwater is greater than 10'. Infiltration testing returned results with</i></p>

	<i>rates in the range of 5-6 inches per hour. Due to this and an extensive analysis by a geotechnical engineer, Infiltration was deemed feasible.</i>
<i>Off-Site Drainage</i>	<i>The project site will be graded accordingly to not allow for any offsite run-on. Perimeter walls and high points will be used to not allow offsite run-on onto the site.</i>
<i>Utility and Infrastructure Information</i>	<i>The Project scope of work includes the construction of two streets. Street “A” & Street “B”. Below these streets we propose underground water, storm drain, and sewer utility lines. Each lot will contain a sewer and water connection, and fire hydrants will contain water connections as well. The water quality basins will be fed by 1 storm drain line each. Each basin will have an outlet structure that leads to the public storm drain system in the case of large rain events.</i>

III.3 Watershed Description

Fill out table with relevant information and include information regarding BMP sizing, suitability, and feasibility, as applicable. Refer to Section 2.3.3 in the TGD.

Receiving Waters	Bolsa Chica Channel → Anaheim Bay → Pacific Ocean
303(d) Listed Impairments	Bolsa Chica Channel & Anaheim Bay
Applicable TMDLs	Bolsa Chica Channel – Ammonia (Unionized) Indicator Bacteria pH Anaheim Bay – Dieldrin (Tissue) Nickel PCBs Sediment Toxicity
Pollutants of Concern for the Project	Suspended-Solid / Sediment, Nutrients, Heavy Metals, Pathogens, Pesticides, Oil and Grease, Toxic Organic Compounds, & Trash and Debris.
Environmentally Sensitive and Special Biological Significant Areas	None

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Section IV Best Management Practices (BMPs)

IV. 1 Project Performance Criteria

Describe project performance criteria. Several steps must be followed in order to determine what performance criteria will apply to a project. These steps include:

- If the project has an approved WIHMP or equivalent, then any watershed specific criteria must be used and the project can evaluate participation in the approved regional or sub-regional opportunities. The local Permittee planning or NPDES staff should be consulted regarding the existence of an approved WIHMP or equivalent.
- Determine applicable hydromodification control performance criteria. Refer to Section 7.II-2.4.2.2 of the Model WQMP.
- Determine applicable LID performance criteria. Refer to Section 7.II-2.4.3 of the Model WQMP.
- Determine applicable treatment control BMP performance criteria. Refer to Section 7.II-3.2.2 of the Model WQMP.
- Calculate the LID design storm capture volume for the project. Refer to Section 7.II-2.4.3 of the Model WQMP.

(NOC Permit Area only) Is there an approved WIHMP or equivalent for the project area that includes more stringent LID feasibility criteria or if there are opportunities identified for implementing LID on regional or sub-regional basis?		YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
If yes, describe WIHMP feasibility criteria or regional/sub-regional LID opportunities.	Anaheim Bay Watershed		

Project Performance Criteria (continued)	
<p>If HCOC exists, list applicable hydromodification control performance criteria (Section 7.II-2.4.2.2 in MWQMP)</p>	<p>N/A – Downstream of site is completely stabilized concrete channel per the Susceptibility Analysis. See map in appendix for more details.</p>
<p>List applicable LID performance criteria (Section 7.II-2.4.3 from MWQMP)</p>	<p>Infiltration has been identified as the LID BMP and the DCV will be retained for each drainage area.</p>
<p>List applicable treatment control BMP performance criteria (Section 7.II-3.2.2 from MWQMP)</p>	<p>Treatment control BMPs can treat all of the remaining unmet volume and have a medium to high effectiveness for reducing the primary POCs, the project is considered to be in compliance.</p>
<p>Calculate LID design storm capture volume for Project.</p>	<p>DMA 1 – 1365 Cu. Ft. DMA 2 – 1285 Cu. Ft. See Preliminary Hydrology report for more information on the 10 & 100-year flows (10% and 1% storm return frequency) LID analysis of the Design Capture Storm (85th percentile, 24-hour) is calculated herein.</p>

IV.2. SITE DESIGN AND DRAINAGE PLAN

Describe site design and drainage plan including

- A narrative of site design practices utilized or rationale for not using practices;
- A narrative of how site is designed to allow BMPs to be incorporated to the MEP
- A table of DMA characteristics and list of LID BMPs proposed in each DMA.
- Reference to the WQMP plot plan.
- Calculation of Design Capture Volume (DCV) for each drainage area.
- A listing of GIS coordinates for LID and Treatment Control BMPs (unless not required by local jurisdiction).

Refer to Section 2.4.2 in the TGD.

Existing drainage utilizes natural infiltration and the extensive amount of pervious area to help infiltrate stormwater. The site is also gradually sloped north to south to allow for runoff to sheet flow north to south until it is captured by the public curb and gutter on the north side of Lampson Avenue.

Proposed drainage for the site includes sheet flow southerly down the proposed drive aisle until it is captured by the curb and gutter on the easterly and westerly sides of the proposed drive aisle. From here it flows southerly until it is captured by a catch basin onsite. The drainage will flow through a proposed culvert to infiltration basins for treatment. Overflow in the sump condition will be conveyed southerly to the public curb and gutter on Lampson and then westerly to the public catch basin located near the Magnolia and Lampson Avenue intersection. See the WQMP Plan in the appendix for more detail

Infiltration was deemed as feasible and therefore the project has moved forward using infiltration BMPs.

The site will be graded to the Maximum Extent Practicable to allow for the sites runoff to drain southerly until it is captured by catch basins and then conveyed to the BMPs.

	GPS Coordinates	Total Area(ac)	IMP %	DCV(Cu. Ft.)
DMA-1 BMP 1	33°46'53" N 117° 58' 25" W	0.79	61.9%	1365
DMA-2 BMP 2	33°46'53" N 117° 58' 25" W	0.81	54.9%	1285

IV.3 LID BMP SELECTION AND PROJECT CONFORMANCE ANALYSIS

Each sub-section below documents that the proposed design features conform to the applicable project performance criteria via check boxes, tables, calculations, narratives, and/or references to worksheets. Refer to Section 2.4.2.3 in the TGD for selecting LID BMPs and Section 2.4.3 in the TGD for conducting conformance analysis with project performance criteria.

IV.3.1 Hydrologic Source Controls

If required HSCs are included, fill out applicable check box forms. If the retention criteria are otherwise met with other LID BMPs, include a statement indicating HSCs not required.

Project fully conforms to LID Sizing requirements, therefore Hydrologic Source Controls are not required.

Name	Included?
Localized on-lot infiltration	<input type="checkbox"/>
Impervious area dispersion (e.g. roof top disconnection)	<input type="checkbox"/>
Street trees (canopy interception)	<input type="checkbox"/>
Residential rain barrels (not actively managed)	<input type="checkbox"/>
Green roofs/Brown roofs	<input type="checkbox"/>
Blue roofs	<input type="checkbox"/>
Impervious area reduction (e.g. permeable pavers, site design)	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

IV.3.2 Infiltration BMPs

Identify infiltration BMPs to be used in project. If design volume cannot be met state why BMPs cannot be met

Name	Included?
Bioretention without underdrains	<input type="checkbox"/>
Rain gardens	<input type="checkbox"/>
Porous landscaping	<input type="checkbox"/>
Infiltration planters	<input type="checkbox"/>
Retention swales	<input type="checkbox"/>
Infiltration trenches	<input type="checkbox"/>
Infiltration basins	<input checked="" type="checkbox"/>
Drywells	<input type="checkbox"/>
Subsurface infiltration galleries	<input type="checkbox"/>
French drains	<input type="checkbox"/>
Permeable asphalt	<input type="checkbox"/>
Permeable concrete	<input type="checkbox"/>
Permeable concrete pavers	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with infiltration BMPs. If not document how much can be met with infiltration and document why it is not feasible to meet the full volume with infiltration BMPs.

	$D_{\text{Remainder}}$	V_{Design}	K_{Design}	D_{Max}	A_{Min}	A_{Provided}
DMA-1	0.78'	1365 cf	2.58	10.3'	132.5 sf	180 sf
DMA-2	0.78'	1285 cf	2.58	10.3'	124.8 sf	180 sf

See the Worksheets in the Appendix for a more detailed breakdown of the calculations used to size the BMPs.

IV.3.3 Evapotranspiration, Rainwater Harvesting BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, describe any evapotranspiration, rainwater harvesting BMPs. <Delete or leave blank if not used>

Name	Included?
All HSCs; <i>See Section IV.3.1</i>	<input type="checkbox"/>
Surface-based infiltration BMPs	<input type="checkbox"/>
Biotreatment BMPs	<input type="checkbox"/>
Above-ground cisterns and basins	<input type="checkbox"/>
Underground detention	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with evapotranspiration, rainwater harvesting BMPs in combination with infiltration BMPs. If not document how much can be met with either infiltration BMPs, evapotranspiration, rainwater harvesting BMPs, or a combination, and document why it is not feasible to meet the full volume with either of these BMPs categories.

N/A

IV.3.4 Biotreatment BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, and/or evapotranspiration and rainwater harvesting BMPs, describe biotreatment BMPs. Include sections for selection, suitability, sizing, and infeasibility, as applicable. **<Delete or leave blank if not used>**

Name	Included?
Bioretention with underdrains	<input type="checkbox"/>
Stormwater planter boxes with underdrains	<input type="checkbox"/>
Rain gardens with underdrains	<input type="checkbox"/>
Constructed wetlands	<input type="checkbox"/>
Vegetated swales	<input type="checkbox"/>
Vegetated filter strips	<input type="checkbox"/>
Proprietary vegetated biotreatment systems	<input type="checkbox"/>
Wet extended detention basin	<input type="checkbox"/>
Dry extended detention basins	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with infiltration, evapotranspiration, rainwater harvesting and/or biotreatment BMPs. If not document how much can be met with either infiltration BMPs, evapotranspiration, rainwater harvesting BMPs, or a combination, and document why it is not feasible to meet the full volume with either of these BMPs categories.

N/A

IV.3.5 Hydromodification Control BMPs

Describe hydromodification control BMPs. See Section 5 TGD. Include sections for selection, suitability, sizing, and infeasibility, as applicable. Detail compliance with Prior Conditions of Approval. <Delete or leave blank if not used>

Hydromodification Control BMPs	
BMP Name	BMP Description
N/A	N/A

IV.3.6 Regional/Sub-Regional LID BMPs

Describe regional/sub-regional LID BMPs in which the project will participate. Refer to Section 7.II-2.4.3.2 of the Model WQMP. <Delete or leave blank if not used>

Regional/Sub-Regional LID BMPs
N/A

IV.3.7 Treatment Control BMPs

Treatment control BMPs can only be considered if the project conformance analysis indicates that it is not feasible to retain the full design capture volume with LID BMPs. Describe treatment control BMPs including sections for selection, sizing, and infeasibility, as applicable. <Delete or leave blank if not used>

Treatment Control BMPs	
BMP Name	BMP Description
N/A	N/A

IV.3.8 Non-structural Source Control BMPs

Fill out non-structural source control check box forms or provide a brief narrative explaining if non-structural source controls were not used.

Non-Structural Source Control BMPs				
Identifier	Name	Check One		If not applicable, state brief reason
		Included	Not Applicable	
N1	Education for Property Owners, Tenants and Occupants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N2	Activity Restrictions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N3	Common Area Landscape Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N4	BMP Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N5	Title 22 CCR Compliance (How development will comply)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N6	Local Industrial Permit Compliance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential.
N7	Spill Contingency Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N8	Underground Storage Tank Compliance	<input type="checkbox"/>	<input type="checkbox"/>	N/A
N9	Hazardous Materials Disclosure Compliance	<input type="checkbox"/>	<input type="checkbox"/>	N/A
N10	Uniform Fire Code Implementation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N11	Common Area Litter Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N12	Employee Training	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential.
N13	Housekeeping of Loading Docks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain loading docks.
N14	Common Area Catch Basin Inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N15	Street Sweeping Private Streets and Parking Lots	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
N16	Retail Gasoline Outlets	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain Retail Gasoline outlets.

IV.3.9 Structural Source Control BMPs

Fill out structural source control check box forms or provide a brief narrative explaining if Structural source controls were not used.

Structural Source Control BMPs				
Identifier	Name	Check One		If not applicable, state brief reason
		Included	Not Applicable	
S1	Provide storm drain system stenciling and signage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
S2	Design and construct outdoor material storage areas to reduce pollution introduction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain outdoor material storage areas.
S3	Design and construct trash and waste storage areas to reduce pollution introduction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain outdoor trash and waste storage areas.
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
S5	Protect slopes and channels and provide energy dissipation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No slopes or hillsides exist on site.
	Incorporate requirements applicable to individual priority project categories (from SDRWQCB NPDES Permit)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A
S6	Dock areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain dock areas.
S7	Maintenance bays	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain Maintenance Bays.
S8	Vehicle wash areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain Vehicle wash areas.
S9	Outdoor processing areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain outdoor processing areas.

S10	Equipment wash areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain equipment wash areas.
S11	Fueling areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain fueling areas.
S12	Hillside landscaping	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No slopes or hillsides exist on site.
S13	Wash water control for food preparation areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain food preparation areas.
S14	Community car wash racks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Development is categorized as residential and therefore the site plan does not contain community car wash racks.

IV.4 ALTERNATIVE COMPLIANCE PLAN (IF APPLICABLE)

IV.4.1 Water Quality Credits

Determine if water quality credits are applicable for the project. Refer to Section 3.1 of the Model WQMP for description of credits and Appendix VI of the TGD for calculation methods for applying water quality credits.

Description of Proposed Project				
Project Types that Qualify for Water Quality Credits (Select all that apply):				
<input type="checkbox"/> Redevelopment projects that reduce the overall impervious footprint of the project site.	<input type="checkbox"/> Brownfield redevelopment, meaning redevelopment, expansion, or reuse of real property which may be complicated by the presence or potential presence of hazardous substances, pollutants or contaminants, and which have the potential to contribute to adverse ground or surface WQ if not redeveloped.	<input type="checkbox"/> Higher density development projects which include two distinct categories (credits can only be taken for one category): those with more than seven units per acre of development (lower credit allowance); vertical density developments, for example, those with a Floor to Area Ratio (FAR) of 2 or those having more than 18 units per acre (greater credit allowance).		
<input type="checkbox"/> Mixed use development, such as a combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that can demonstrate environmental benefits that would not be realized through single use projects (e.g. reduced vehicle trip traffic with the potential to reduce sources of water or air pollution).	<input type="checkbox"/> Transit-oriented developments, such as a mixed use residential or commercial area designed to maximize access to public transportation; similar to above criterion, but where the development center is within one half mile of a mass transit center (e.g. bus, rail, light rail or commuter train station). Such projects would not be able to take credit for both categories, but may have greater credit assigned		<input type="checkbox"/> Redevelopment projects in an established historic district, historic preservation area, or similar significant city area including core City Center areas (to be defined through mapping).	
<input type="checkbox"/> Developments with dedication of undeveloped portions to parks, preservation areas and other pervious uses.	<input type="checkbox"/> Developments in a city center area.	<input type="checkbox"/> Developments in historic districts or historic preservation areas.	<input type="checkbox"/> Live-work developments, a variety of developments designed to support residential and vocational needs together – similar to criteria to mixed use development; would not be able to take credit for both categories.	<input type="checkbox"/> In-fill projects, the conversion of empty lots and other underused spaces into more beneficially used spaces, such as residential or commercial areas.
Calculation of Water Quality Credits (if applicable)	N/A			

--	--

IV.4.2 Alternative Compliance Plan Information

Describe an alternative compliance plan (if applicable). Include alternative compliance obligations (i.e., gallons, pounds) and describe proposed alternative compliance measures. *Refer to Section 7.II 3.0 in the WQMP.*

N/A

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Section V Inspection/Maintenance Responsibility for BMPs

Fill out information in table below. Prepare and attach an Operation and Maintenance Plan. Identify the mechanism through which BMPs will be maintained, including any documenting forms, required permits (if any) . Inspection and maintenance records must be kept for a minimum of five years for inspection by the regulatory agencies. *Refer to Section 7.II 4.0 in the Model WQMP.*

BMP Inspection/Maintenance			
BMP	Reponsible Party(s)	Inspection/ Maintenance Activities Required	Minimum Frequency of Activities
Infiltration Basin	Owner / HOA	Routine Inspection and Servicing.	Bi-Annually
Education for Property Owners, Tenants. & Occupants (N1)	Owner / HOA	Provide practical information materials on general good housekeeping practices that contribute to protection of stormwater quality to third party management company and tenants	Annually
Activity Restrictions (N2)	Owner / HOA	Review restricted and prohibited activities with owners and third-party management company	Annually

Common Area Landscape Management (N3)	Owner / HOA	Owner to provide for maintenance of landscaping to meet current water efficiency	Regular maintenance once a week and monthly to determine deficiencies
---------------------------------------	-------------	--	---

BMP Inspection/Maintenance			
BMP	Reponsible Party(s)	Inspection/Maintenance Activities Required	Minimum Frequency of Activities
Common Area Litter Control (N11)	Owner / HOA	Litter patrol may be included with landscaping maintenance or with waste disposal services	Regular maintenance once a week or as needed
Common Area Catch Basin Inspection (N14)	Owner / HOA	Inspect, clean, and maintain area drains, ribbon gutters, curb & gutters, swales, and other drainage systems	Annually and prior to October 1st .
Street Sweeping Private Streets & Parking Lots (N15)	Owner / HOA	Owner to provide for maintenance of private streets and parking lots	Regular street sweeping once a month
Efficient Irrigation (S4)	Owner / HOA	Owner to provide for inspection of irrigation systems and corrections for	Quarterly and as necessary

		any problems as necessary	
--	--	------------------------------	--

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Section VI Site Plan and Drainage Plan

VI.1 SITE PLAN AND DRAINAGE PLAN

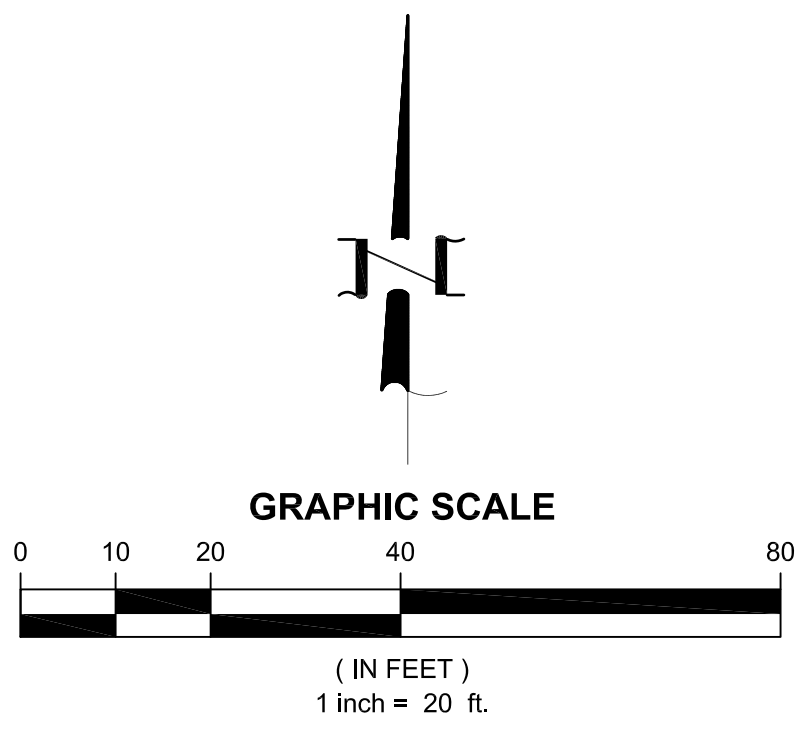
Include a site plan and drainage plan sheet set containing the following minimum information:

- Project location
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural BMP locations
- Drainage delineations and flow information
- Drainage connections
- BMP details

VI.2 ELECTRONIC DATA SUBMITTAL *<optional - delete if not used>*

The minimum requirement is to provide submittal of PDF exhibits in addition to hard copies. Format must not require specialized software to open.

If the local jurisdiction requires specialized electronic document formats (CAD, GIS) to be submitted, this section will be used to describe the contents (e.g., layering, nomenclature, georeferencing, etc.) of these documents so that they may be interpreted efficiently and accurately.



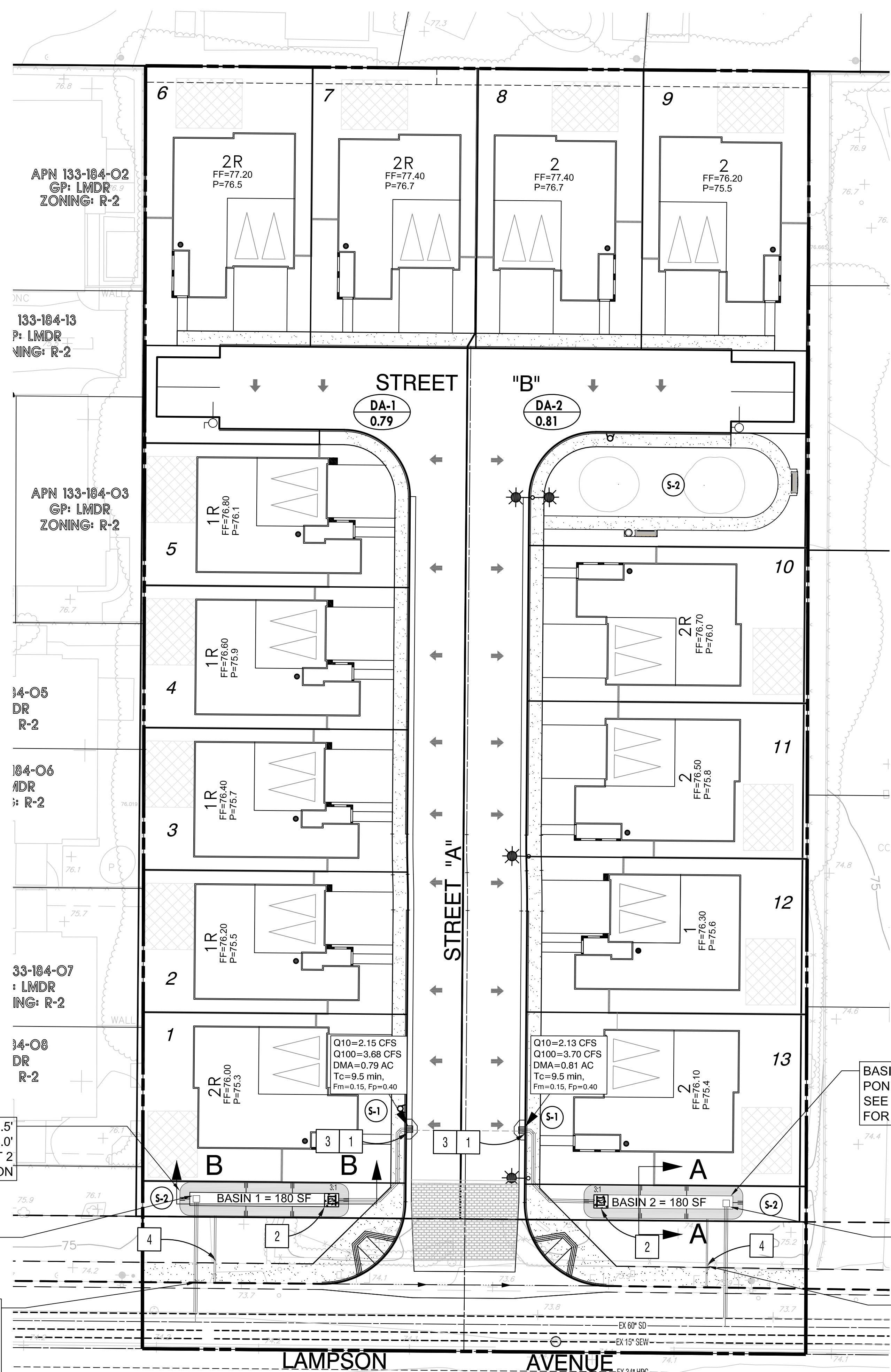
STRUCTURAL SOURCE CONTROL BMPs

- S-1 STORM DRAIN INLET STENCILING AND SIGNAGE. INSTALL BIOCLEAN ENVIRONMENTAL SERVICES GRATE INLET FILTER CERTIFIED FULL CAPTURE SYSTEM.
- S-2 LANDSCAPE AND IRRIGATION SYSTEM DESIGN

NOTE:
SEE GRADING PLAN FOR ELEVATIONS.

ASSESSORS PARCEL NUMBERS

133-183-55, 133-183-56, 133-183-57, 133-183-58,



BASIN BOTTOM = 72.5' PONDING ELEV. = 73.0' SEE DETAILS ON SHEET 2 FOR MORE INFORMATION

ALL WATER WILL BE DIRECTED TOWARDS THE OVERFLOW DEVICE. SEE DETAIL ON SHEET 2

INSTALL PARKWAY DRAIN TO INTERCEPT ANY EXCESS OVERFLOW NOT CAPTURED BY OVERFLOW DEVICE

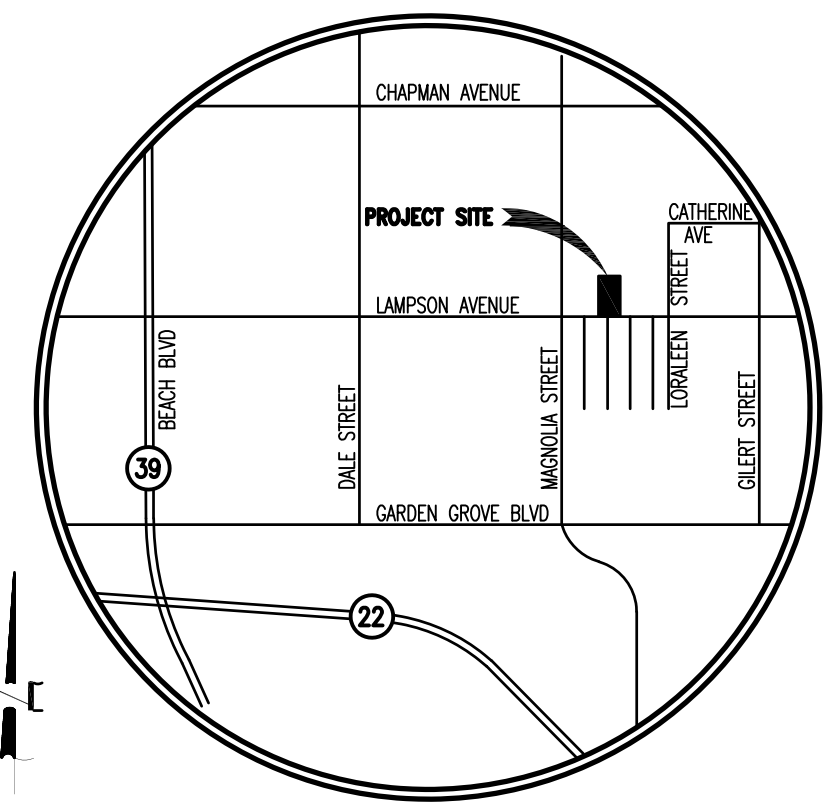
BASIN BOTTOM = 72.5' PONDING ELEV. = 73.0' SEE DETAILS ON SHEET 2 FOR MORE INFORMATION

ALL WATER WILL BE DIRECTED TOWARDS THE OVERFLOW DEVICE. SEE DETAIL ON SHEET 2

INSTALL PARKWAY DRAIN TO INTERCEPT ANY EXCESS OVERFLOW NOT CAPTURED BY OVERFLOW DEVICE

LEGEND

- 5 CONDOMINIUM UNIT NUMBER
- 1R PROPOSED PLAN ELEVATION TYPE
- SD PROPOSED STREET LIGHT
- SS PROPOSED SANITARY SEWER
- DW PROPOSED POTABLE WATER
- PCW PROPOSED NON-POTABLE WATER
- EX. SD EXISTING STORM DRAIN
- EX. SS EXISTING SANITARY SEWER
- EX. DW EXISTING POTABLE WATER
- EX. G EXISTING GAS LINE
- 1.00% PROPOSED STREET GRADE
- FENCE
- TENTATIVE TRACT BOUNDARY
- PROPOSED RETAINING WALL (SEE PLAN FOR HEIGHT)
- LOT LINE
- DA-1 1.25 DRAINAGE AREA DESIGNATION
- DRAINAGE AREA (ACRES)
- TRACT BOUNDARY
- A C SOIL TYPE BOUNDARY LINE
- DIRECTION OF FLOW
- BMP BEST MANAGEMENT PRACTICES
- C.B. CATCH BASIN
- D.I. DRAIN INLET
- PD PROPRIETARY DEVICE
- EDB EXTENDED DETENTION BASIN



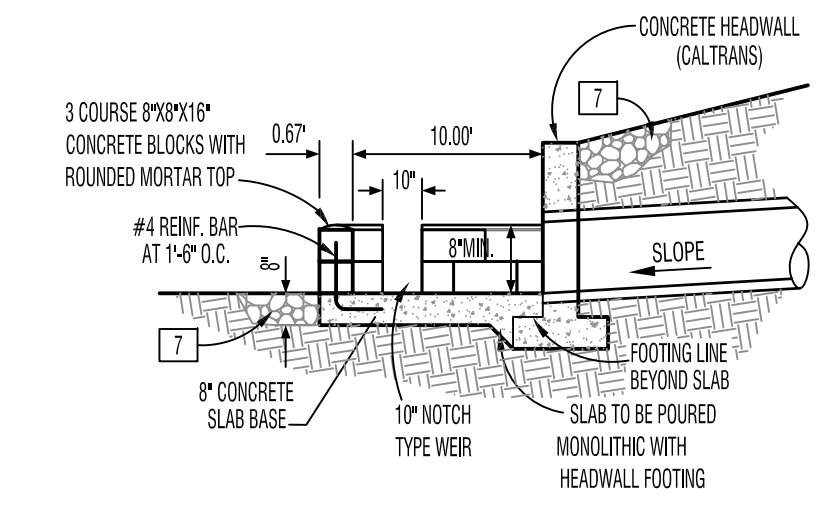
VICINITY MAP
N.T.S.
2006 THOMAS BROTHERS MAP BOOK, PAGES -, GRID -

DRAINAGE AREA AND BMP SUMMARY

DRAINAGE AREA DESIGNATION	DRAINAGE AREA ACREAGE	IMPERVIOUS PERCENTAGE	BMP DESIGNATION	BMP PROPOSED	TREATMENT VOLUME V _{mp} (CU-FT)	VOLUME PROVIDED IN BMP (CU-FT)
DA-1	0.79	61.9%	BMP 1	INFILTRATION BASIN	1365	1854
DA-2	0.81	54.9%	BMP 2	INFILTRATION BASIN	1285	1854

TOTAL SITE IMPERVIOUS/PERVIOUS POST-CONSTRUCTION SQUARE FOOTAGE

PERVIOUS		IMPERVIOUS	
AREA (SQ. FT)	PERCENTAGE	AREA (SQ. FT)	PERCENTAGE
29,139	41.8%	40,603	58.2%



SECTION



1 CATCH BASIN STENCIL DETAIL

NOT TO SCALE

2 CONCRETE FOREBAY DETAIL

NOT TO SCALE

9071 LAMPSON AVE CONCEPTUAL WQMP PLAN

CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA

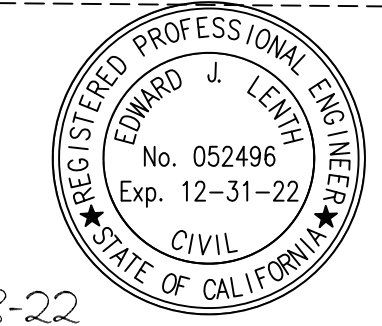
SHEET 1 OF 2

DATE	NO.	REVISIONS

PREPARED FOR:
PLC COMMUNITIES

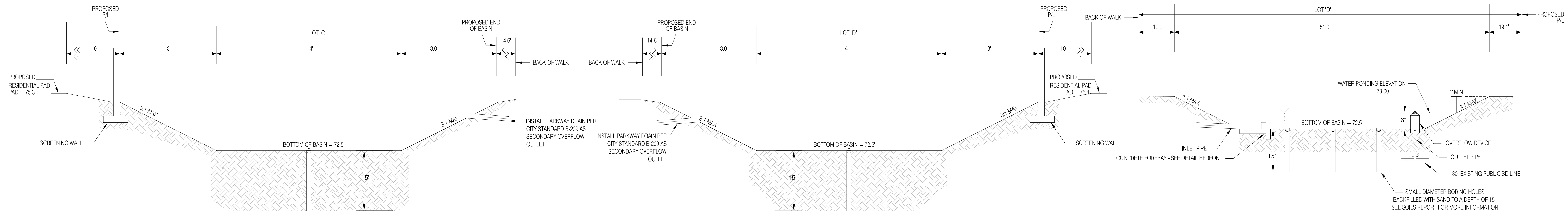
PREPARED BY:
MDS CONSULTING
MORSE SCHULTZ
PLANNERS ENGINEERS SURVEYORS

MDS CONSULTING
17320 REDHILL AVENUE, SUITE 350
IRVINE, CA 92614
PHONE: (949) 251-8821
CONTACT: EDWARD J. LENTH



EDWARD J. LENTH RCE 052496
EXP. DATE: DECEMBER 31, 2022

9071 LAMPSON AVE - CONCEPTUAL WQMP PLAN

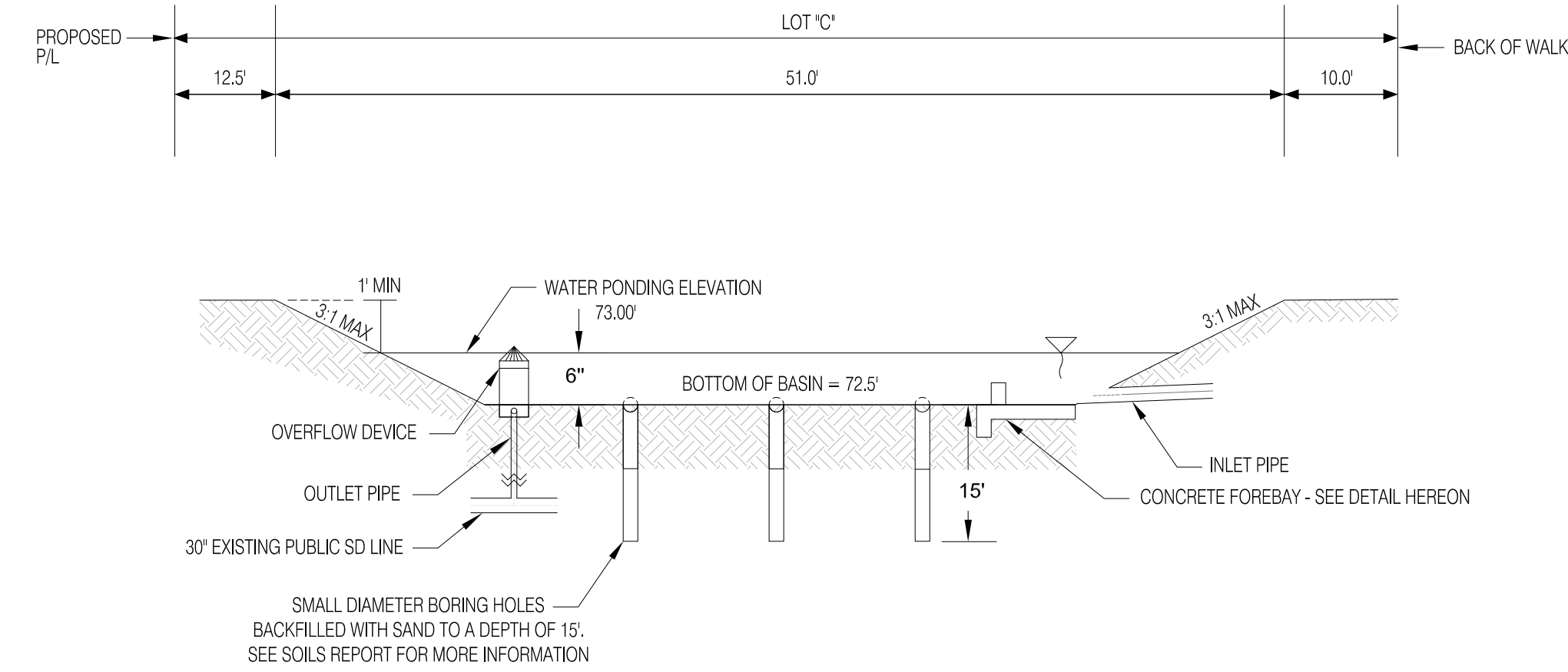


SECTION A-A
NOT TO SCALE

SECTION A-A
NOT TO SCALE

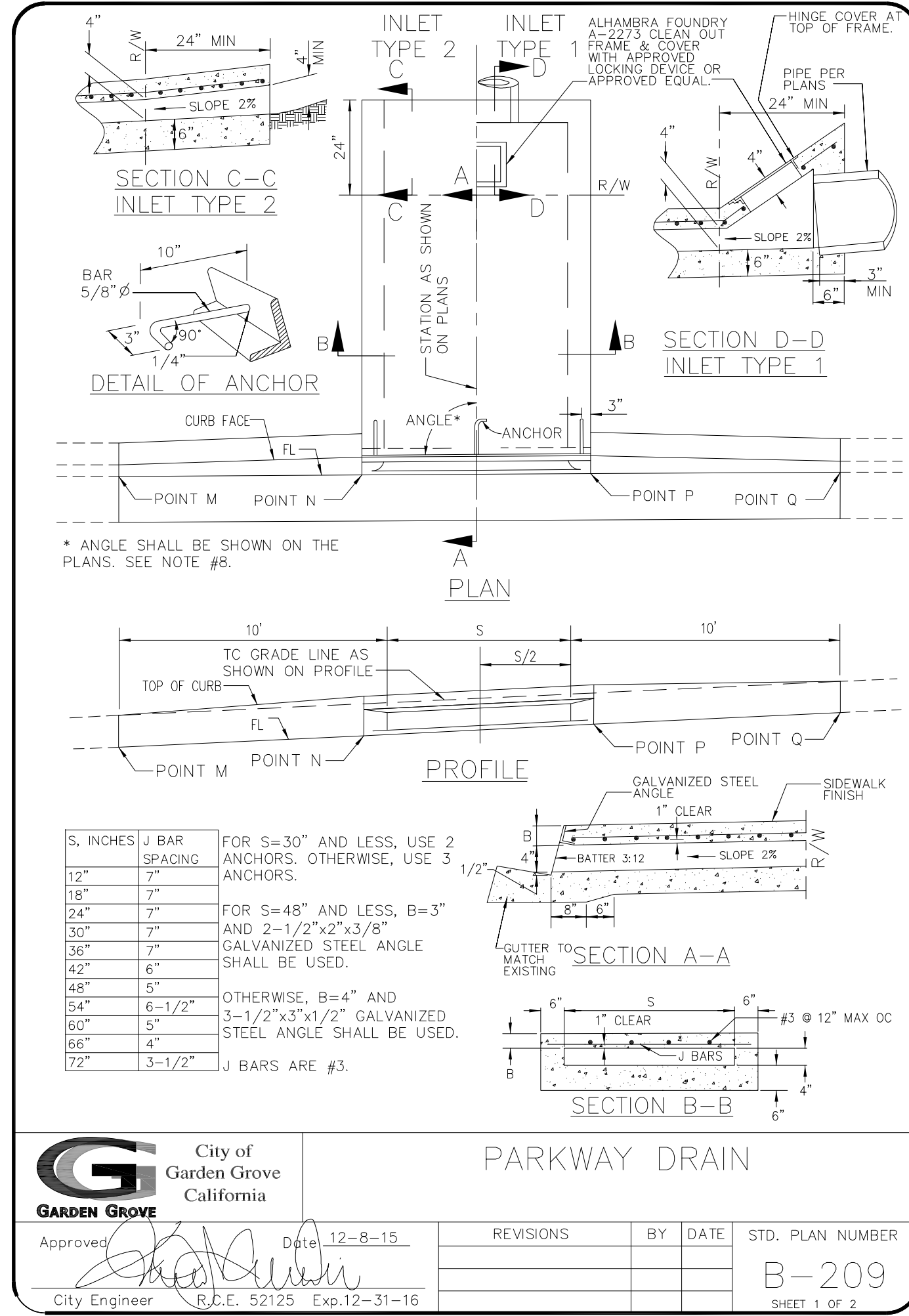
SECTION B-B
NOT TO SCALE

BASIN B

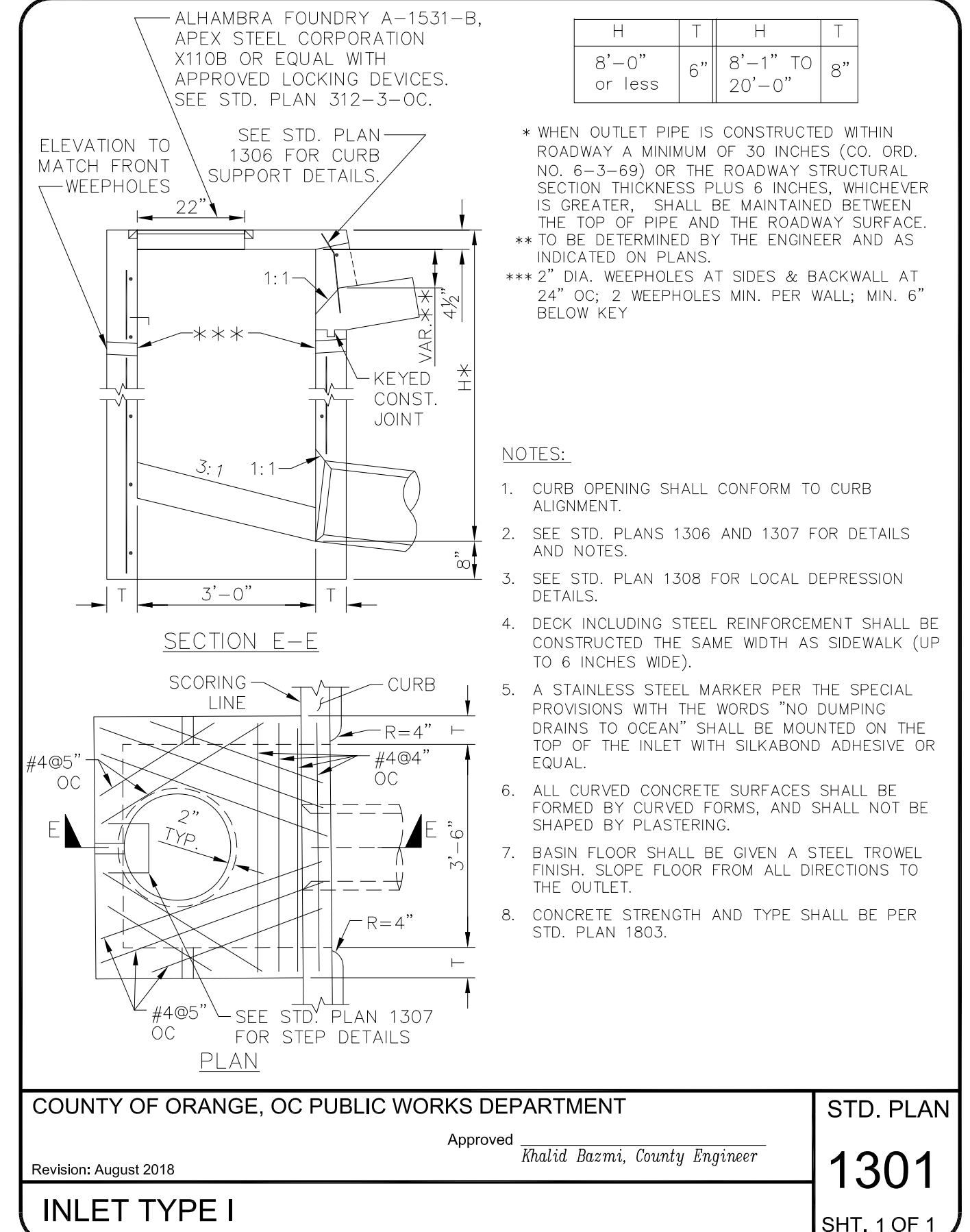


SECTION B-B
NOT TO SCALE

BASIN A



4 PARKWAY DRAIN DETAIL
NOT TO SCALE



3 CATCH BASIN INLET DETAIL
NOT TO SCALE

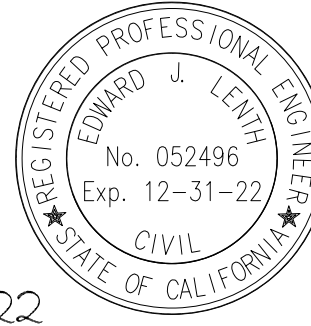
DATE	NO.	REVISIONS

PREPARED FOR:
PLC COMMUNITIES

PREPARED BY:
MDS CONSULTING
MORSE SCHULTZ
PLANNERS ENGINEERS SURVEYORS

MDS CONSULTING
17320 REDHILL AVENUE, SUITE 350
IRVINE, CA 92614
PHONE: (949) 251-8821
CONTACT: EDWARD J. LENTH

EDWARD J. LENTH PCE 052496
EXP. DATE: DECEMBER 31, 2022



CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA
SHEET 2 OF 2

9071 LAMPSON AVE
CONCEPTUAL WQMP
PLAN

9071 LAMPSON AVE - CONCEPTUAL WQMP PLAN

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

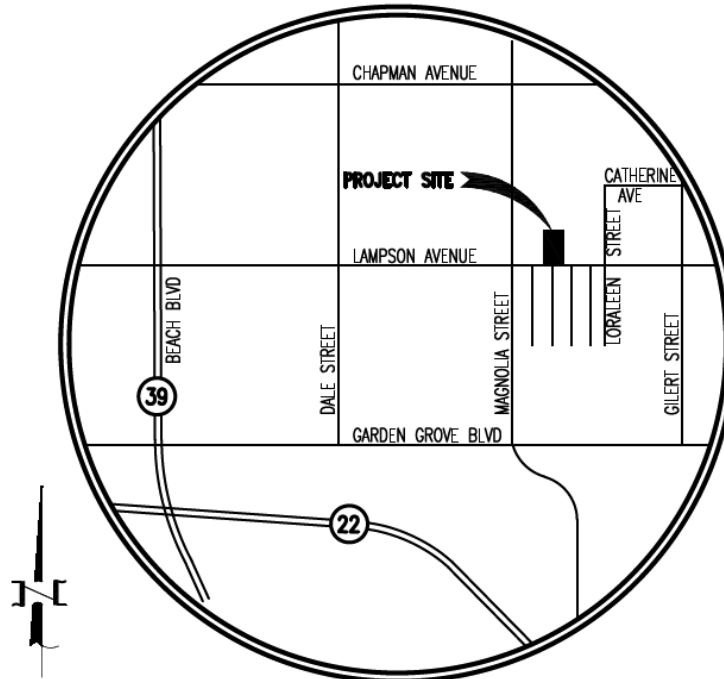
Section VII Educational Materials

Refer to the Orange County Stormwater Program (ocwatersheds.com) for a library of materials available. For the copy submitted to the Permittee, only attach the educational materials specifically applicable to the project. Other materials specific to the project may be included as well and must be attached.

Education Materials			
Residential Material (http://www.ocwatersheds.com)	Check If Applicable	Business Material (http://www.ocwatersheds.com)	Check If Applicable
The Ocean Begins at Your Front Door	<input type="checkbox"/>	Tips for the Automotive Industry	<input type="checkbox"/>
Tips for Car Wash Fund-raisers	<input type="checkbox"/>	Tips for Using Concrete and Mortar	<input type="checkbox"/>
Tips for the Home Mechanic	<input type="checkbox"/>	Tips for the Food Service Industry	<input type="checkbox"/>
Homeowners Guide for Sustainable Water Use	<input checked="" type="checkbox"/>	Proper Maintenance Practices for Your Business	<input type="checkbox"/>
Household Tips	<input type="checkbox"/>	Other Material	Check If Attached
Proper Disposal of Household Hazardous Waste	<input checked="" type="checkbox"/>		
Recycle at Your Local Used Oil Collection Center (North County)	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Recycle at Your Local Used Oil Collection Center (Central County)	<input type="checkbox"/>		<input type="checkbox"/>
Recycle at Your Local Used Oil Collection Center (South County)	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Maintaining a Septic Tank System	<input type="checkbox"/>		<input type="checkbox"/>
Responsible Pest Control	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Sewer Spill	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Tips for the Home Improvement Projects	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Horse Care	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Landscaping and Gardening	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Tips for Pet Care	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Pool Maintenance	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Residential Pool, Landscape and Hardscape Drains	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Projects Using Paint	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

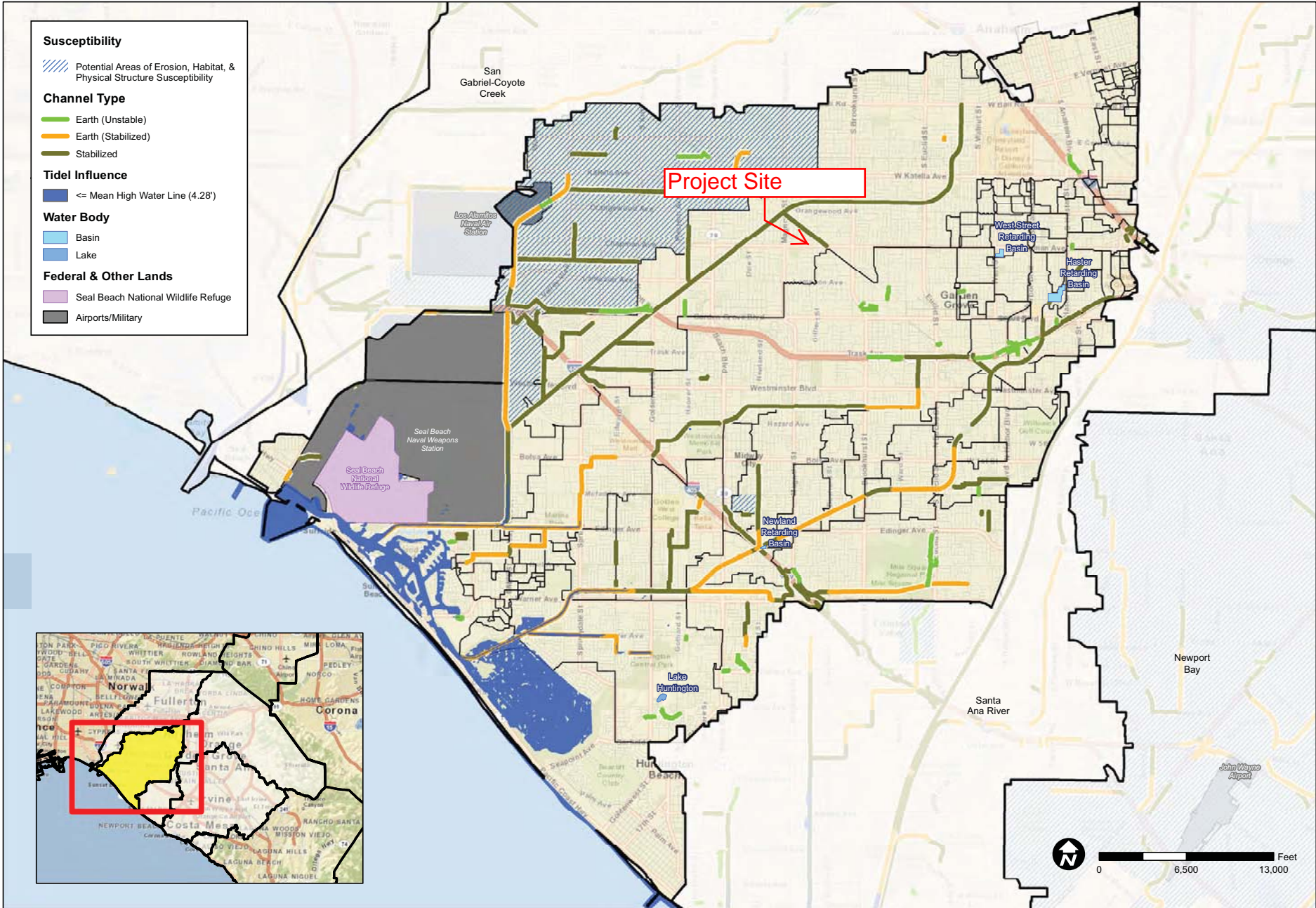
Appendix A – Maps and Resources



VICINITY MAP

N.T.S.

2006 THOMAS BROTHERS
MAP BOOK, PAGES -, GRID -



TITLE
SUSCEPTIBILITY ANALYSIS
ANAHEIM BAY-
HUNTINGTON HARBOR

JOB
ORANGE COUNTY
WATERSHED
MASTER PLANNING

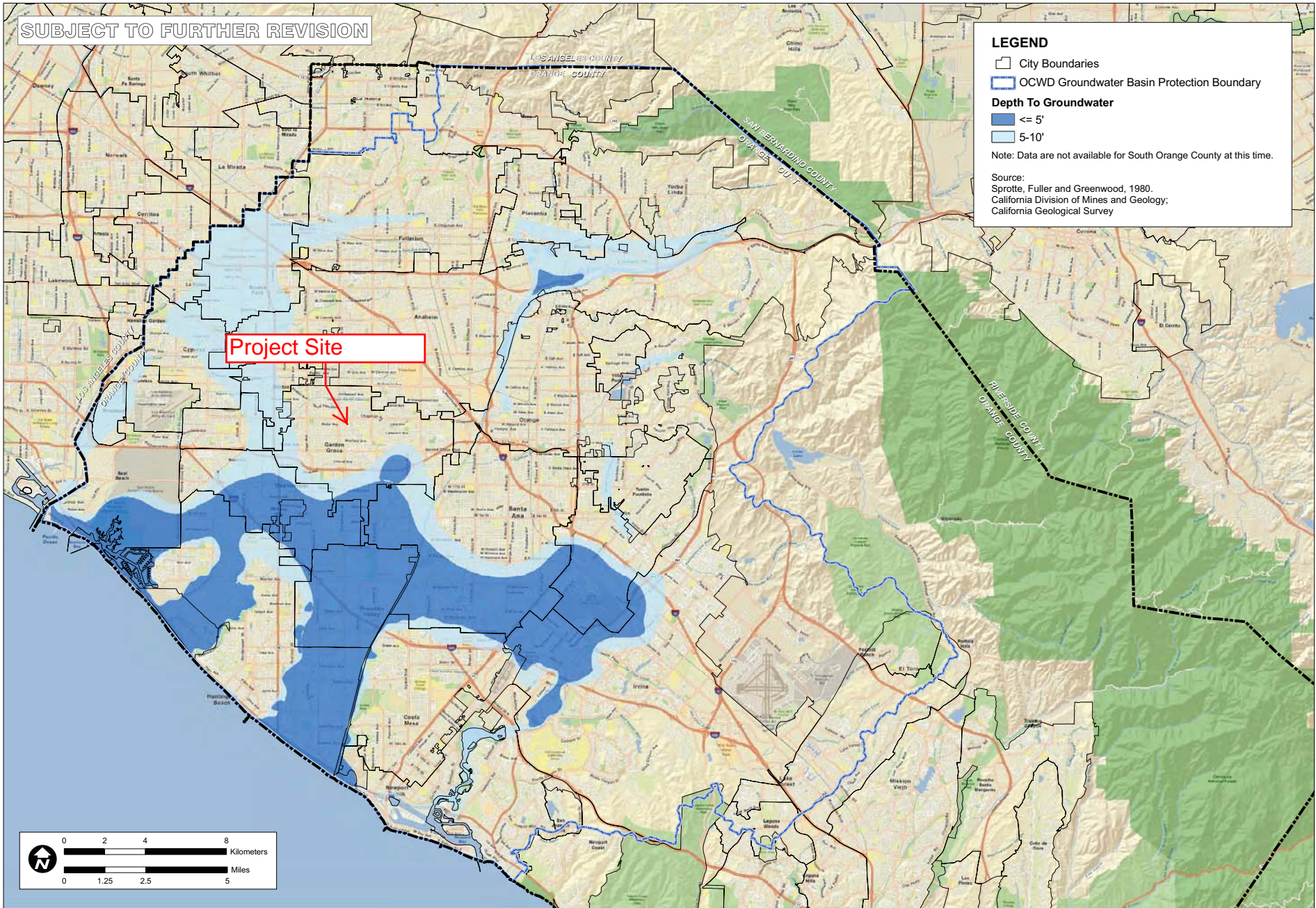
ORANGE CO. CA

SCALE	1" = 2500'
DESIGNED	TH
DRAWING	TH
CHECKED	JMP
DATE	04/22/10
JOB NO.	8524-E



FIGURE
2

SUBJECT TO FURTHER REVISION



LEGEND

- City Boundaries
- OCWD Groundwater Basin Protection Boundary

Depth To Groundwater

- <= 5'
- 5-10'

Note: Data are not available for South Orange County at this time.

Source:
Sprotte, Fuller and Greenwood, 1980.
California Division of Mines and Geology;
California Geological Survey

Project Site

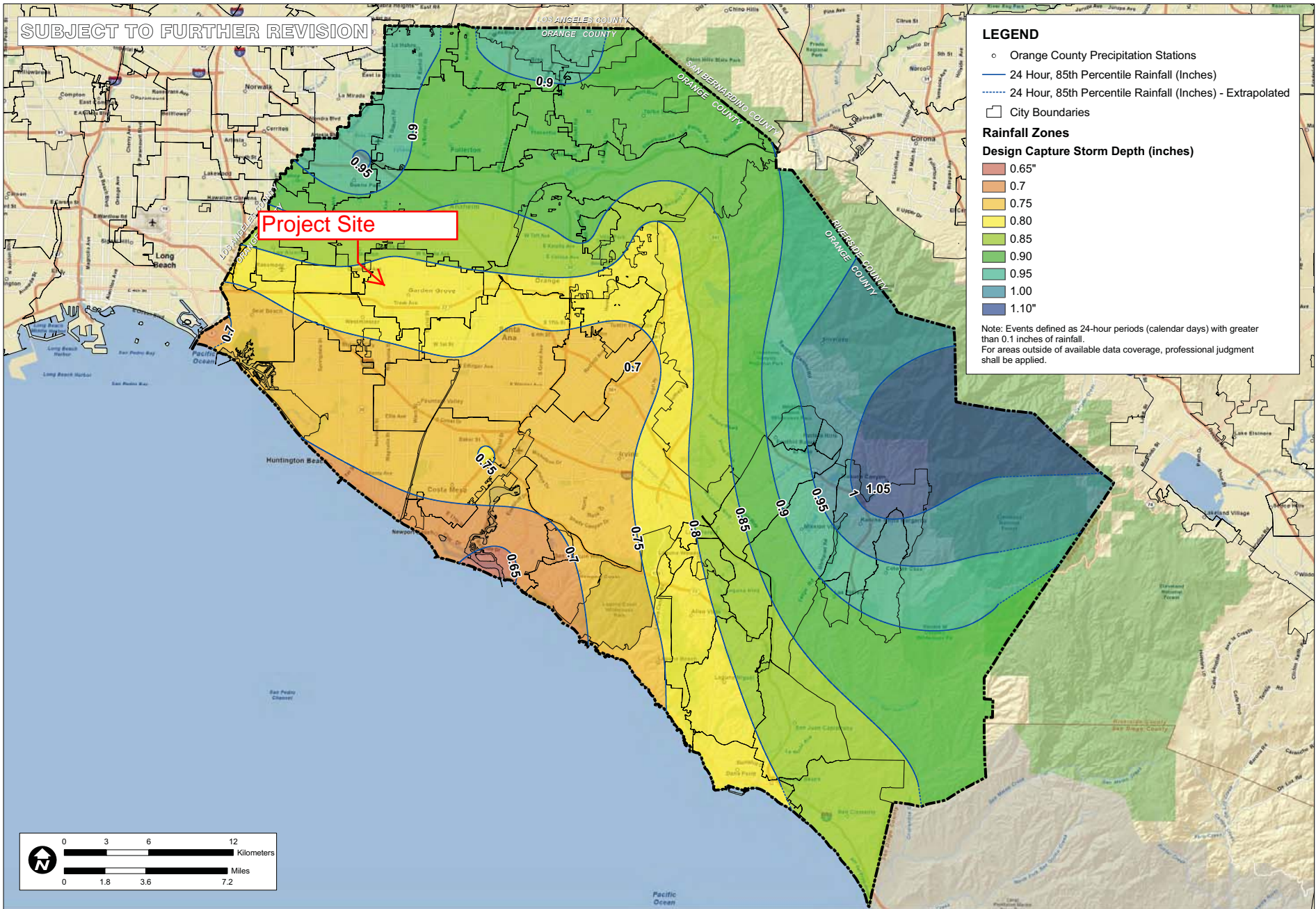


P:\9524E\GIS\Wxd\Reports\Infiltration\Feasibility_20110215\9524E_FigureXVI-2e_DepthToGroundwater191_20110215.mxd

TITLE		NORTH ORANGE COUNTY MAPPED SHALLOW GROUNDWATER	
JOB		ORANGE COUNTY INFILTRATION STUDY	
SCALE	1" = 1.25 miles	DESIGNED	TH
		DRAWN	TH
		CHECKED	BMF
		DATE	02/02/11
		JOB NO.	
		SIZE	
JOB		ORANGE CO. CA	
FIGURE		XVI-2e	



SUBJECT TO FURTHER REVISION



LEGEND

- Orange County Precipitation Stations
- 24 Hour, 85th Percentile Rainfall (Inches)
- ⋯ 24 Hour, 85th Percentile Rainfall (Inches) - Extrapolated
- City Boundaries

Rainfall Zones

Design Capture Storm Depth (inches)

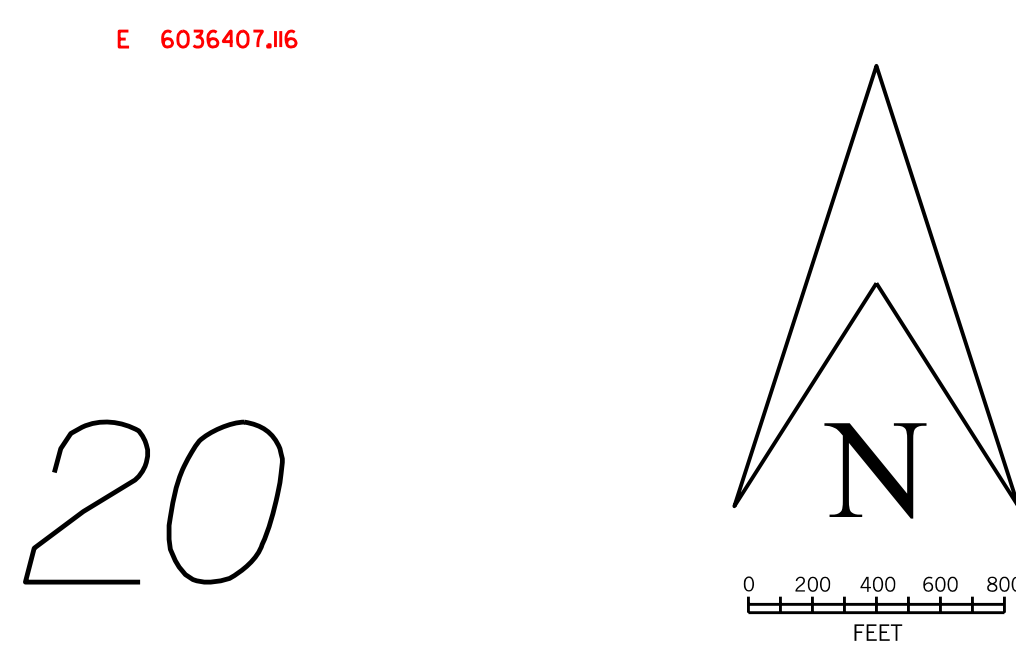
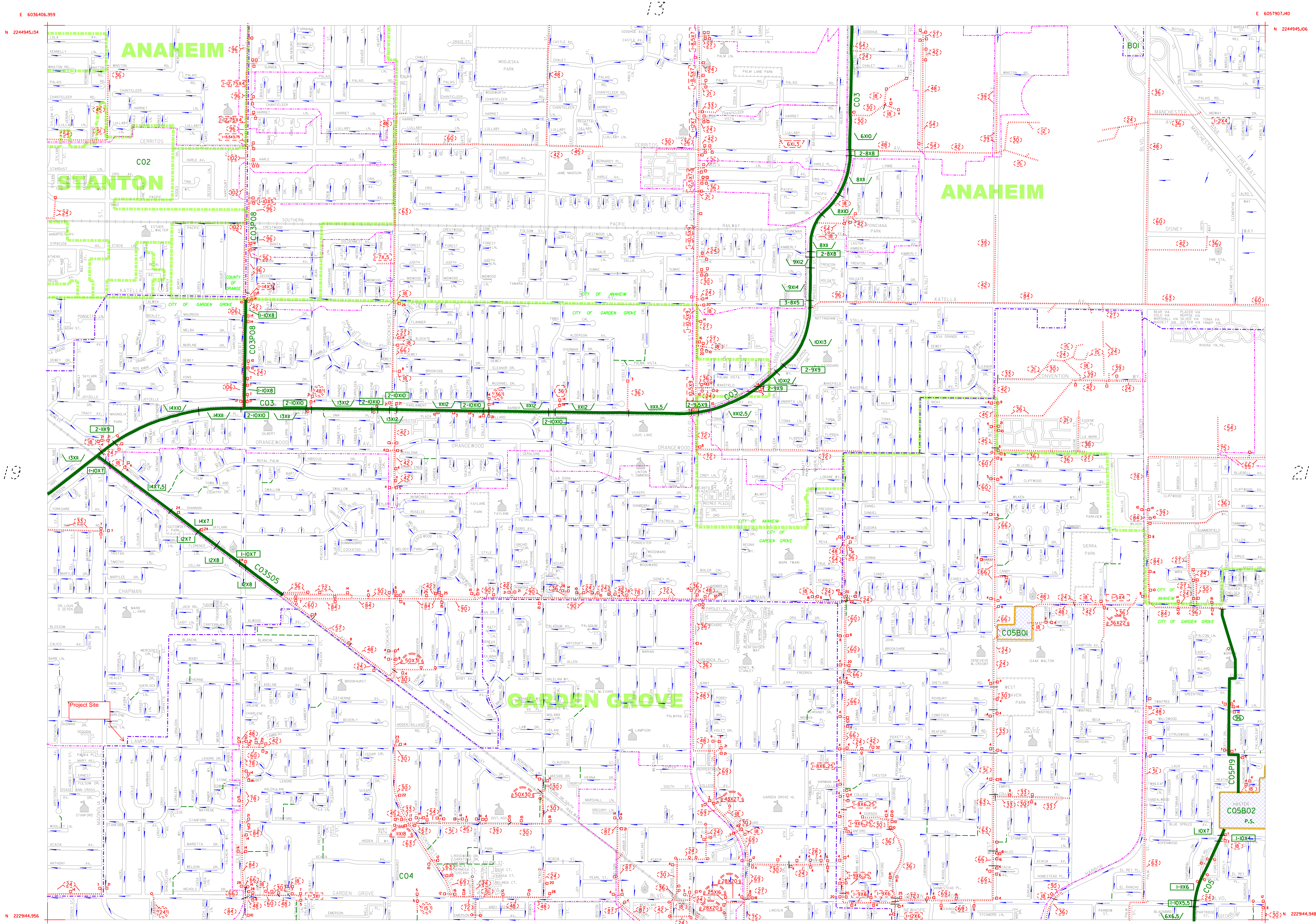
- 0.65"
- 0.7
- 0.75
- 0.80
- 0.85
- 0.90
- 0.95
- 1.00
- 1.10"

Note: Events defined as 24-hour periods (calendar days) with greater than 0.1 inches of rainfall.
For areas outside of available data coverage, professional judgment shall be applied.



RAINFALL ZONES	
TITLE	CA
ORANGE COUNTY TECHNICAL GUIDANCE DOCUMENT	ORANGE CO.
JOB	JOB NO.
SCALE: 1" = 1.8 miles	DESIGNED: TJ
DRAWING: TJ	CHECKED: BMP
DATE: 04/22/19	JOB NO.:
SIZE:	SIZE:
	
FIGURE	
XVI-1	

P:\1924EV-CIS\Wxd\Reports\Infiltration\Feeability_20110215\1924E_Figures\VI-1_RainfallZones_20110215.mxd



NOTICE

The drainage information has been prepared for information purposes only. The location, ownership, facility information and limits have been determined from available information provided by public agencies, but may not be exact, accurate, or up-to-date. The user of this information is responsible for verifying exact location, ownership, accuracy, and the regional versus local character of drainage facilities.

Additional information may be obtained from public plans and recorded deeds. Facility designations included with this information are for convenience only and do not constitute or intend to imply ownership by the County or the Orange County Flood Control District (OCFCD). The information is being provided as a courtesy and neither the County of Orange nor OCFCD assume any liability for accuracy of the information.

To notify OC Public Works (OCPW) Flood Control Division of additions or corrections, please contact Sai Gutierrez at (714) 834-5396 or by email at sai.gutierrez@rdm.dco.gov

ORANGE COUNTY FLOOD CONTROL DISTRICT

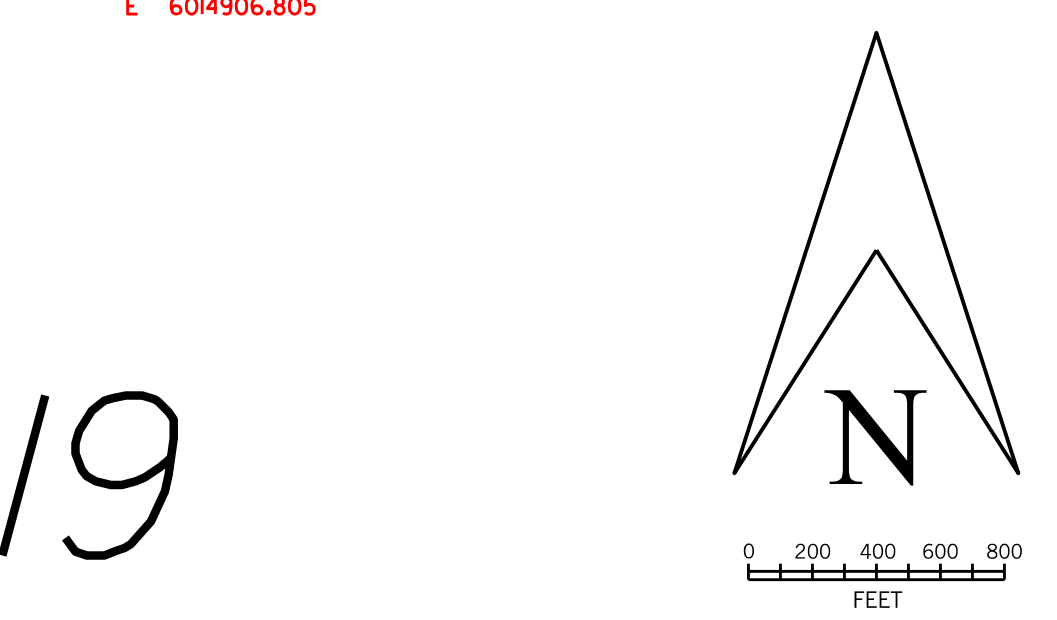
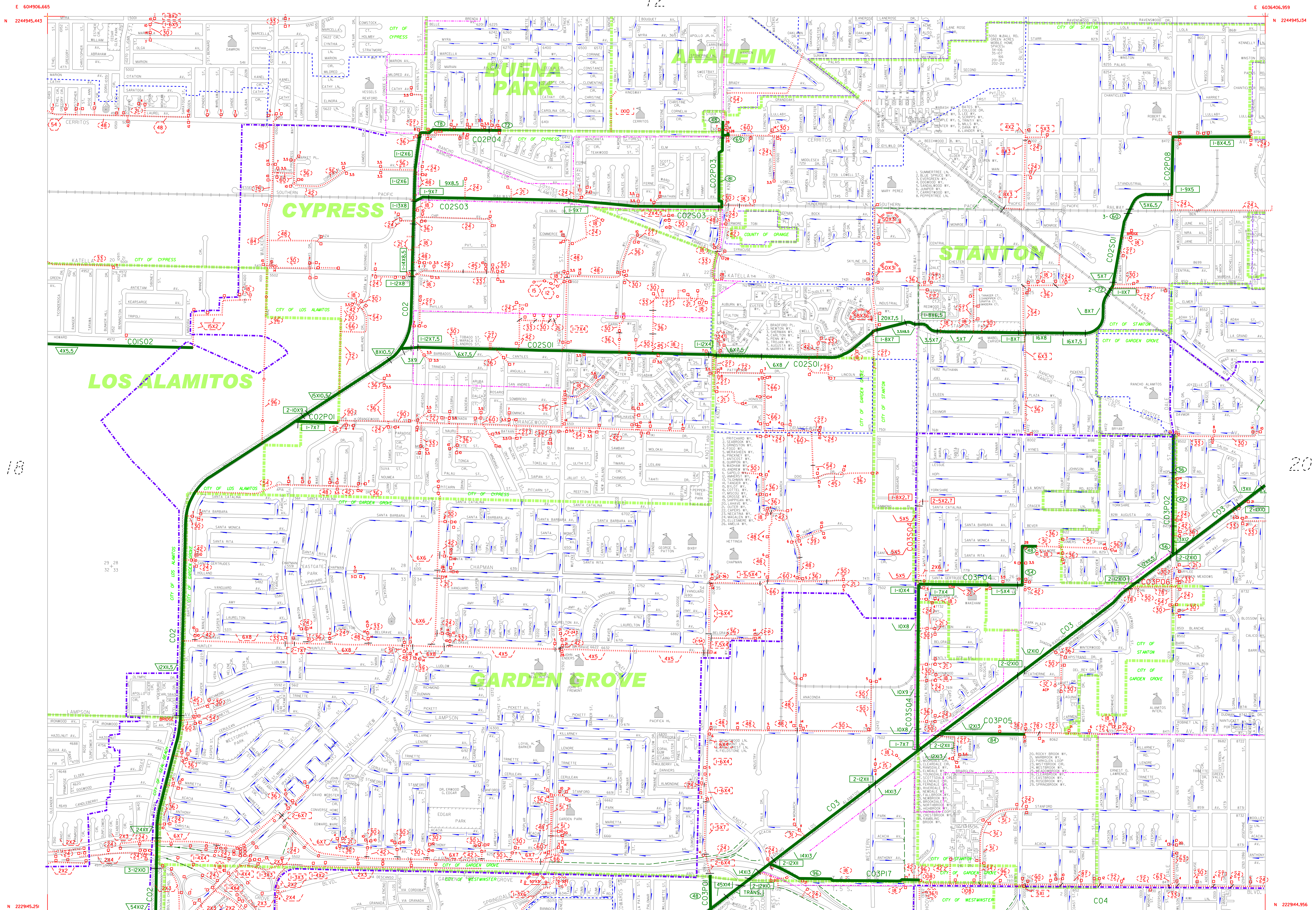
BASE MAP OF DRAINAGE FACILITIES IN ORANGE COUNTY

REVISION: S. GUTIERREZ DATE: JAN 12, 2000 SHEET NO: 20 DWG. NO: MAPS-113-3

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> --- Channel Drainage Area Boundary --- Major Sub-Area Drainage Boundary --- Minor Sub-Area Drainage Boundary --- Existing O.C.F.C.D. Facility --- Existing Local Facility --- Existing Retarding Basin or Reservoir --- Natural Watercourse --- City Limits ● Greenbelt ● Pump Station --- Catch Basin (length in feet) --- Drop Inlet or Other Entry --- OCFCD Basins or Reservoirs | <p>Ownership: If other than City or County: Private = P State = S Federal = F</p> | <p>EXISTING FACILITIES</p> <p>O.C.F.C.D. LOCAL</p> <ul style="list-style-type: none"> --- Earth Trapezoidal Channel (base width by height in feet) --- Reinforced Concrete Trapezoidal Channel (base width by height in feet) --- Reinforced Concrete Rectangular Channel (base width by height in feet) --- Reinforced Concrete Box (RCB) (number of barrels-span by height in feet) --- Reinforced Concrete Pipe (RCP) (diameter in inches) --- Metal Sheet Channel (MSC) (base width by pile height in feet/Sheet pile total length) --- Corrugated Metal Pipe (CMP) (diameter in inches) --- Concrete Pipe (diameter in inches) --- Concrete Oval Pipe (width by height in inches) --- Steel Pipe (diameter in inches) --- Reinforced Concrete Arch (base span by height in inches) --- Corrugated Metal Arch (base span by height in inches) |
|---|---|--|

20

20



NOTICE

The drainage information has been prepared for information purposes only. The location, ownership, facility information and limits have been determined from available information provided by public agencies, but may not be exact, accurate, or up-to-date. The user of this information is responsible for verifying exact location, ownership, accuracy, and the regional versus local character of drainage facilities.

Additional information may be obtained from public plans and recorded deeds. Facility designations included with this information are for convenience only and are not controlling or intended to imply ownership by the County or the Orange County Flood Control District (OCFCD). The information is being provided as a courtesy and neither the County of Orange nor OCFCD assume any liabilities for accuracy of the information.

To notify OC Public Works Flood Control Section of additions or corrections, please contact Sal Gutierrez at (714) 647-3992 or by email at sal.gutierrez@ocpw.ocgov.com

ORANGE COUNTY FLOOD CONTROL DISTRICT

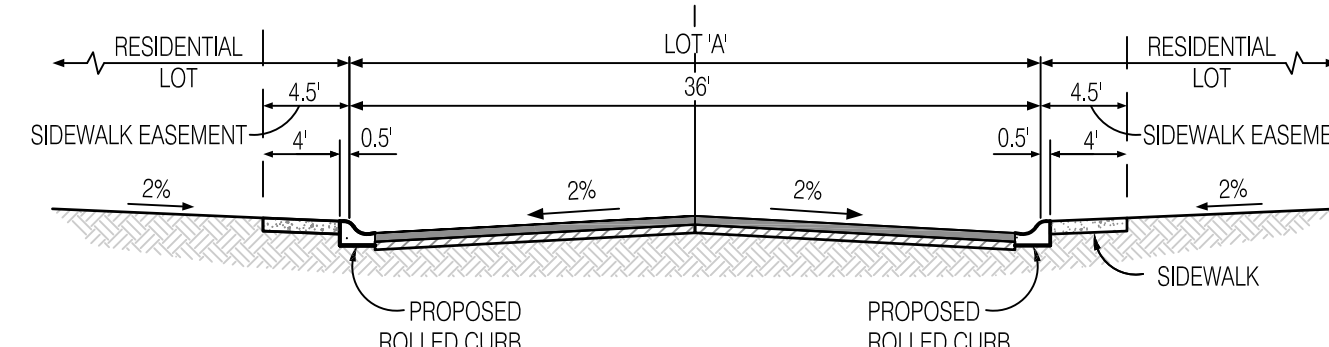
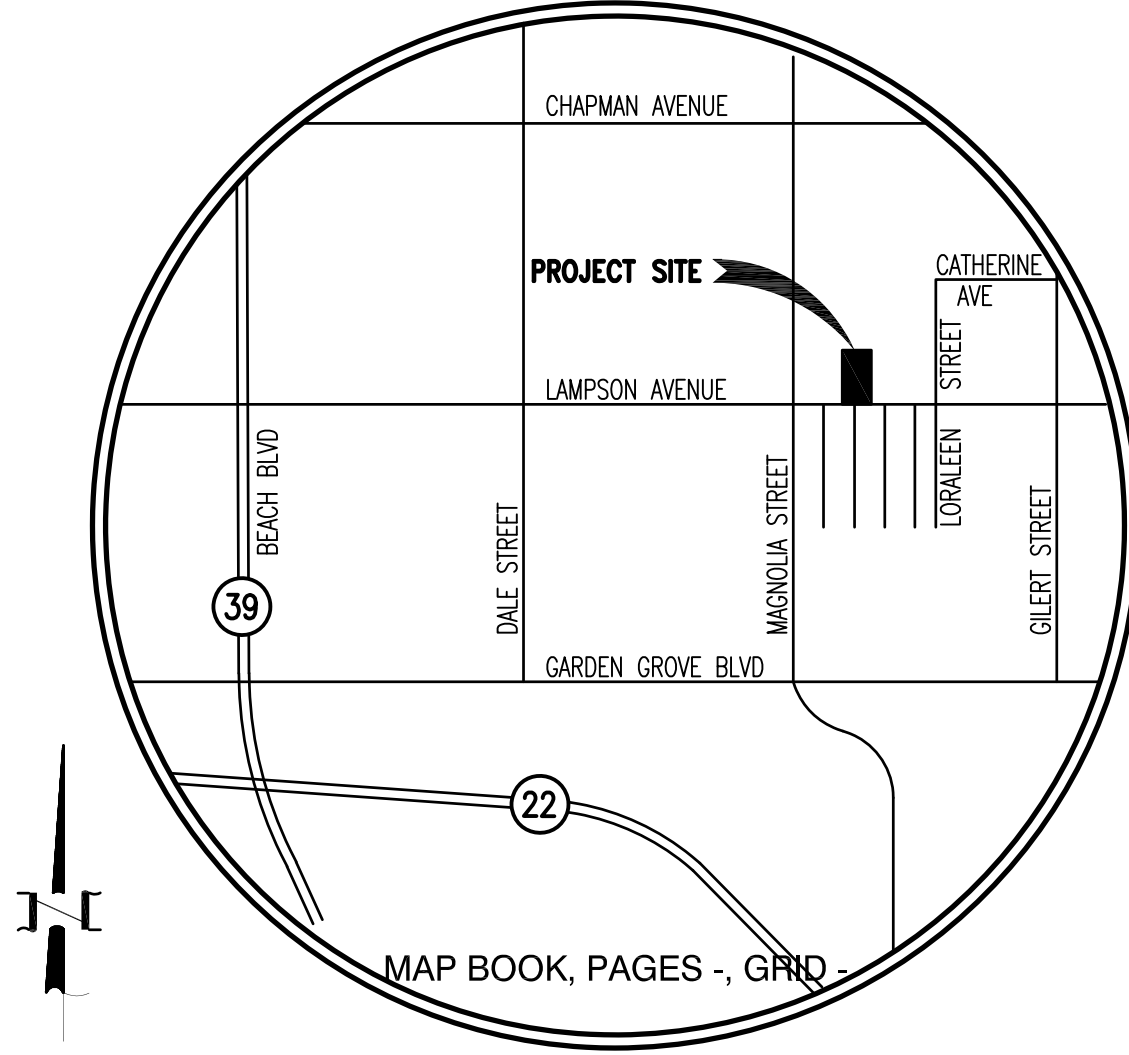
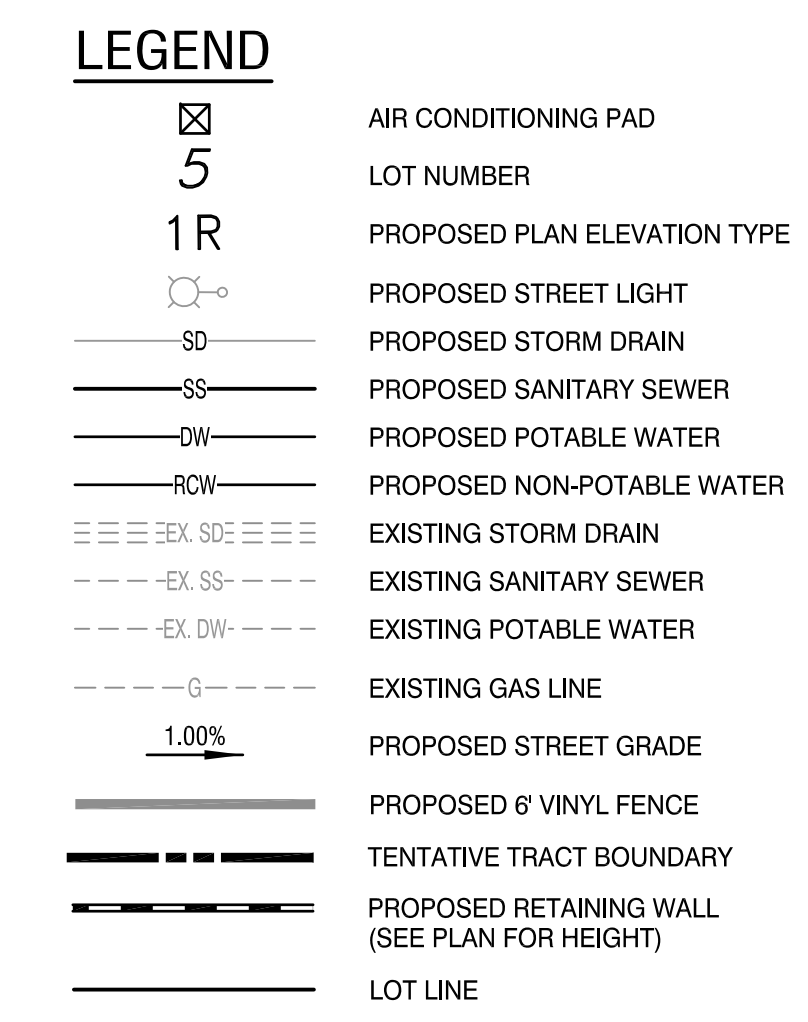
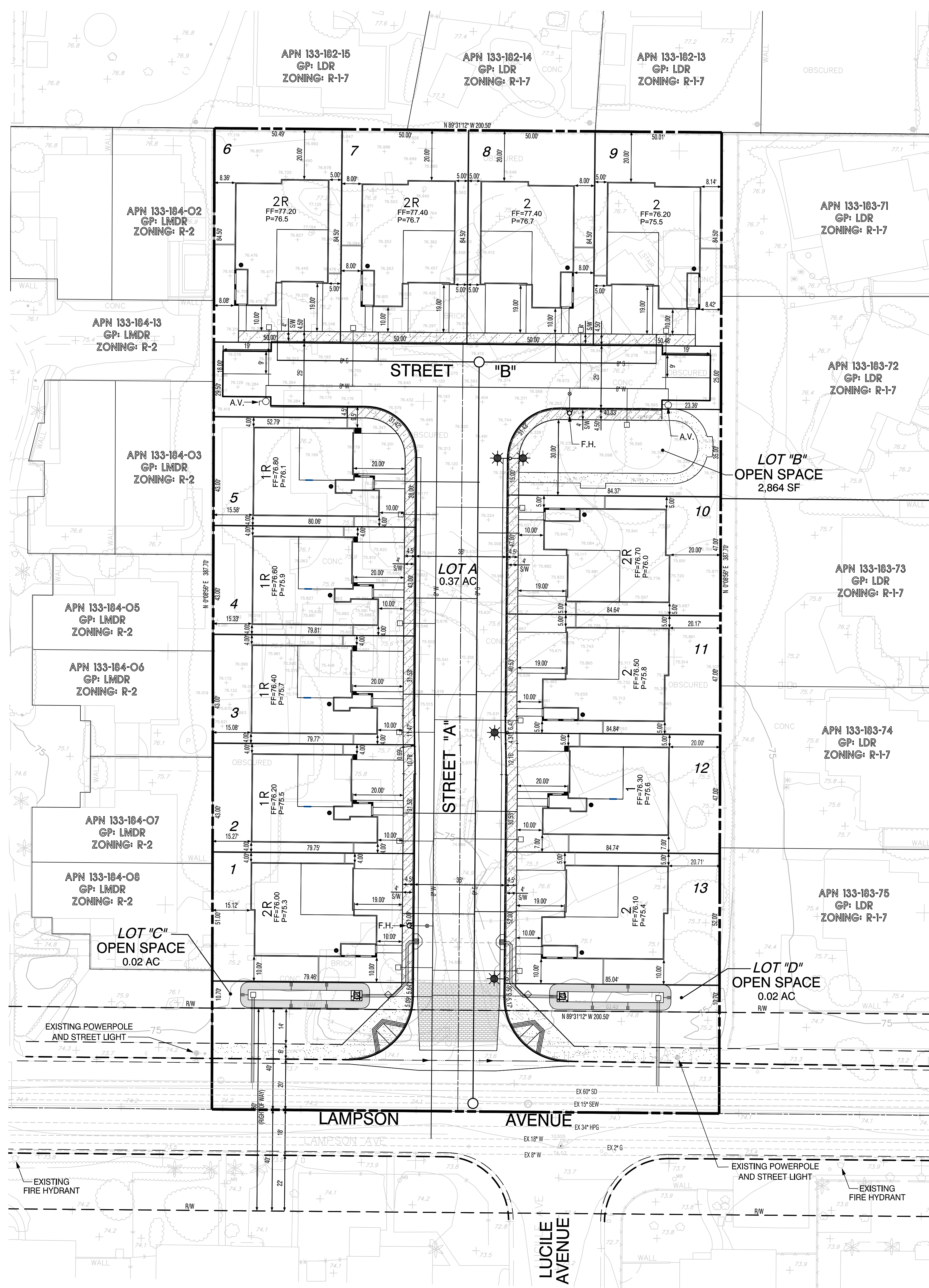
BASE MAP OF DRAINAGE FACILITIES IN ORANGE COUNTY

REVISION: S. GUTIERREZ DATE: JAN 23, 2002 SHEET NO: 19 DWG. NO: MAPS-113-3

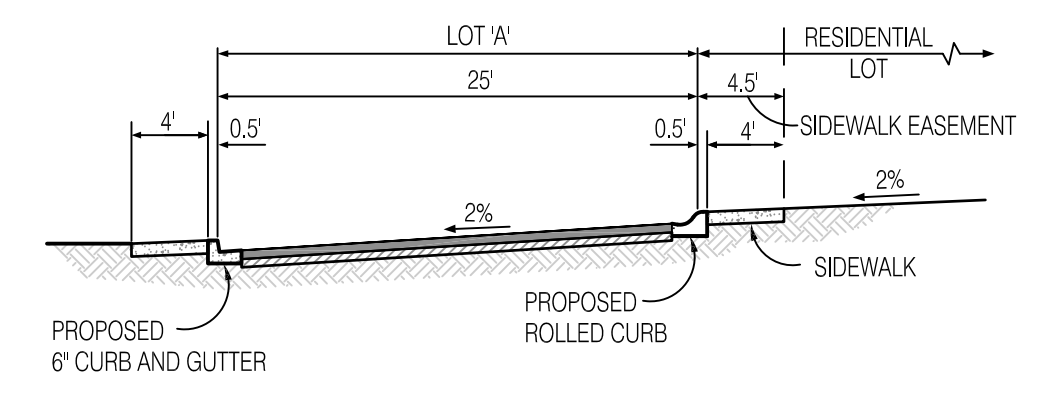
EXISTING FACILITIES	
O.C.F.C.D. LOCAL	
	Channel Drainage Area Boundary
	Major Sub-Area Drainage Boundary
	Minor Sub-Area Drainage Boundary
	Existing O.C.F.C.D. Facility
	Existing Local Facility
	Existing Retarding Basin or Reservoir
	Natural Watercourse
	City Limits
	Greenbelt
	Pump Station
	Catch Basin (length in feet)
	Drop Inlet or Other Entry
	OCFCD Basins or Reservoirs
	Earth Trapezoidal Channel (base width by height in feet)
	Reinforced Concrete Trapezoidal Channel (base width by height in feet)
	Reinforced Concrete Rectangular Channel (base width by height in feet)
	Reinforced Concrete Box (RCB) (number of barrels-span by height in feet)
	Reinforced Concrete Pipe (RCP) (diameter in inches)
	Metal Sheet Channel (MSC) (base width by pile height in feet/Sheet pile total length)
	Corrugated Metal Pipe (CMP) (diameter in inches)
	Concrete Pipe (diameter in inches)
	Concrete Oval Pipe (width by height in inches)
	Steel Pipe (diameter in inches)
	Reinforced Concrete Arch (base span by height in inches)
	Corrugated Metal Arch (base span by height in inches)

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Appendix B – Plans



STREET "A" (PRIVATE)
SCALE: 1" = 10'
*INGRESS/EGRESS AND PUBLIC UTILITY EASEMENT



STREET "B" (PRIVATE)
SCALE: 1" = 10'
*INGRESS/EGRESS AND PUBLIC UTILITY EASEMENT

VICINITY MAP
N.T.S.
2006 THOMAS BROTHERS
MAP BOOK, PAGES - GRID -

GENERAL INFORMATION:

- EXISTING LAND USE: SINGLE-FAMILY RESIDENTIAL
- EXISTING ZONE: R-17 (SINGLE-FAMILY RESIDENTIAL)
- EXISTING GENERAL PLAN: LDR (LOW DENSITY RESIDENTIAL)
- PROPOSED LAND USE: SINGLE-FAMILY RESIDENTIAL
- PROPOSED ZONING: PUD (PLANNED UNIT DEVELOPMENT)
- ADJACENT LAND USES:
 - NORTH: R-17 (SINGLE-FAMILY RESIDENTIAL)
 - EAST: R-17 (SINGLE-FAMILY RESIDENTIAL)
 - SOUTH: LAMPSON AVENUE
 - WEST: R-2 (MULTI-FAMILY RESIDENTIAL)
- PARK REQUIREMENT TO BE MET BY PARK IN LIEU FEES
- SCHOOL DISTRICTS:
 - ELEMENTARY: G.G.S.D. (BROOKHURST)
 - INTERMEDIATE: G.G.S.D. (RALSTON)
 - HIGH SCHOOL: G.G.S.D. (RANCHO ALAMITOS)
- MULTIPLE FINAL MAPS MAY BE FILED PURSUANT TO SECTION 66456.1 OF THE CALIFORNIA GOVERNMENT CODE
- ALL PROPOSED MANUFACTURED SLOPES SHALL BE CONSTRUCTED AT A MAXIMUM OF 2% UNLESS OTHERWISE NOTED ON THE PLAN
- ESTIMATED EARTHWORK QUANTITIES:
 - RAW CUT:
 - RAW FILL:
- THE PRELIMINARY GEOTECHNICAL SOILS REPORT WAS PREPARED BY INTERMEDIATE: G.G.S.D. (RALSTON)
- THERE ARE FOUR EXISTING HABITABLE STRUCTURES WITHIN THE TRACT BOUNDARIES TO BE DEMOLISHED AND REMOVED.
- PROPOSED STREETS "A" AND "B" WITHIN VESTING TENTATIVE TRACT MAP 19232 SHALL BE PRIVATE AND MAINTAINED BY AN APPROVED HOMEOWNERS ASSOCIATION.
- THE APPLICANT/DEVELOPER RESERVES THE RIGHT TO MERGE LOTS ON THE FINAL MAP.
- PROPOSED VESTING TENTATIVE TRACT MAP 19232 INCLUDES THE ENTIRE CONTIGUOUS OWNERSHIP OF LAND BEING SUBDIVIDED.
- VESTING TENTATIVE TRACT MAP 19232 LIES WITHIN FEMA FLOOD ZONE "X" SHOWN ON FIRM NO. 06090C0136J, DATED DECEMBER 3, 2009.
- PAID ELEVATIONS SHOWN ON THE VESTING TENTATIVE TRACT MAP MAY BE ADJUSTED PLUS OR MINUS 2.00 FEET.
- THERE ARE NO ACTIVE WELLS LOCATED WITHIN THE TRACT BOUNDARY.
- TOPOGRAPHIC SURVEY WAS FLOWN AND COMPILED BY DON READ AERIAL CORPORATION ON FEBRUARY 8, 2022.
- PROPOSED VESTING TENTATIVE TRACT MAP 19232 IS NOT A GATED COMMUNITY.
- ALL PROPOSED RESIDENTIAL LOTS SHALL MAINTAIN A 2% MINIMUM GRADE FROM REAR YARD TO THE PROPOSED PRIVATE STREET.
- THERE IS NO OPEN STORM DRAIN CHANNEL PROPOSED.
- PROPOSED VEHICULAR ACCESS SHALL BE RESTRICTED ON LAMPSON AVENUE.
- PROPOSED OPEN SPACE LOTS "B" AND "D" SHALL BE PRIVATE AND MAINTAINED BY AN APPROVED HOMEOWNERS ASSOCIATION.
- PROPOSED FIRE TURNAROUND DESIGNED PER THE O.C.F.A. HAMMERHEAD STANDARD.
- PROPOSED CROSS GUTTER AT LAMPSON AVENUE TO BE CONSTRUCTED PER CITY OF GARDEN GROVE STANDARD PLAN NO. B-119.

LEGAL DESCRIPTION:

PARCEL A: PARCEL 1, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN BOOK 113, PAGES 1 AND 2, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

PARCEL B: PARCEL 2, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN BOOK 113, PAGES 1 AND 2, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

PARCEL C: PARCEL 3, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN BOOK 113, PAGES 1 AND 2, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

PARCEL D: PARCEL 4, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN BOOK 113, PAGES 1 AND 2, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

VESTING TENTATIVE TRACT NO. 19232

TOTAL OF LOTS: TOTAL: 17
SINGLE FAMILY RESIDENTIAL: 13
PRIVATE STREET: 1
OPEN SPACE: 3

GROSS ACREAGE: 1.60
CONTOUR INTERVAL: 1 FOOT
SCALE: 1" = 20'
DATE: APRIL 15, 2022

APPLICANT/DEVELOPER

PLC COMMUNITIES
888 SAN CLEMENTE DRIVE, SUITE 200
NEWPORT BEACH, CA 92660
Tel: (949) 721-8200
ATTN: BILL HOLMAN

OWNER

RAY A. BICKNELL AND JO. H. BICKNELL
TRUSTEES OF THE BICKNELL FAMILY TRUST
9071, 9081 AND 9091 LAMPSON AVENUE
GARDEN GROVE, CA 92841

ENGINEER

MDS CONSULTING
17320 REDHILL AVENUE, SUITE 350
IRVINE, CA 92614
(949) 251-8821
CONTACT: ED LENTH

ASSESSORS PARCEL NUMBER

133-183-55, APN: 133-183-56, APN: 133-183-57, APN: 133-183-58

UTILITIES

WATER
CITY OF GARDEN GROVE WATER DEPT.
11391 ACACIA PARKWAY
GARDEN GROVE, CA 92840
(714) 741-5078

CABLE
TIME WARNER
11985 VALLEY VIEW STREET
GARDEN GROVE, CA 92845
(714) 903-4000

SEWER
CITY OF GARDEN GROVE SANITARY DISTRICT
13802 NEWHOPE STREET
GARDEN GROVE, CA 92843
(714) 741-5395

TRASH
GARDEN GROVE SANITARY DISTRICT
C/O REPUBLIC SERVICES
1131 NORTH BLUE GUM STREET
ANAHEIM, CA 92806
(800) 700-8610
(714) 238-3300

GAS
SOUTHERN CALIFORNIA GAS COMPANY
713 NORTH MAIN STREET
SANTA ANA, CA 92701
(800) 427-2200

PHONE
VERIZON
(800) 483-4000

ELECTRIC
SOUTHERN CALIFORNIA EDISON
7333 BOLSA
WESTMINSTER, CA 92683
(800) 655-4555

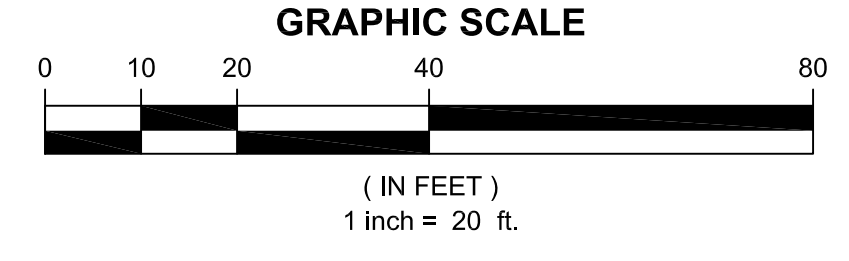
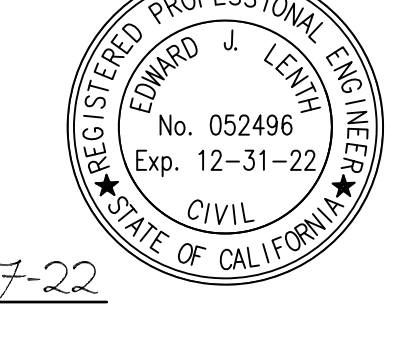
**VESTING TENTATIVE TRACT NO. 19232
PRELIMINARY UTILITIES
AND STREET LIGHTING PLAN**
CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA
SHEET 1 OF 1

DATE	NO.	REVISIONS

PREPARED FOR:
PLC COMMUNITIES

PREPARED BY:
MDS CONSULTING
MORSE SCHULTZ
PLANNERS ENGINEERS SURVEYORS

MDS CONSULTING
17320 REDHILL AVENUE, SUITE 350
IRVINE, CA 92614
PHONE: (949) 251-8821
CONTACT: EDWARD J. LENTH



TENTATIVE TRACT NO. 19232 - PRELIMINARY UTILITIES AND ST LIGHTING PLAN

MDS Proj. Date: 03/29/22; Author: JLD/EDL; Checker: SLD/EDL; Date: 04/15/22; Title: 19232 PRELIMINARY UTILITIES AND STREET LIGHTING PLAN; Scale: 1" = 20'; Plot Date: 04/15/22; 10:52:01 AM By: SLD/EDL

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Appendix C – Calculations



GARDEN GROVE

Worksheets from Orange County Technical Guidance Document (5-19-2011)

*See TGD for instructions and/or examples related to these worksheets:
www.ocwatersheds.com/WQMP.aspx*

Table 2.7: Infiltration BMP Feasibility Worksheet

	Infeasibility Criteria	Yes	No
1	Would Infiltration BMPs pose significant risk for groundwater related concerns? Refer to Appendix VII (Worksheet I) for guidance on groundwater-related infiltration feasibility criteria.		X
<p>Provide basis: The site lies in an area that has no Infiltration Constraints. The soil is not of Hydrologic Soil Group D, the site does not lie in a Landslide Hazard Zone, does not lie in a groundwater protected area, and the depth to Groundwater is greater than 5'. Infiltration testing returned results with rates in the range of 5-6 inches per hour. Due to this, Infiltration was deemed feasible.</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
2	<p>Would Infiltration BMPs pose significant risk of increasing risk of geotechnical hazards that cannot be mitigated to an acceptable level? (Yes if the answer to any of the following questions is yes, as established by a geotechnical expert):</p> <ul style="list-style-type: none"> • The BMP can only be located less than 50 feet away from slopes steeper than 15 percent • The BMP can only be located less than eight feet from building foundations or an alternative setback. • A study prepared by a geotechnical professional or an available watershed study substantiates that stormwater infiltration would potentially result in significantly increased risks of geotechnical hazards that cannot be mitigated to an acceptable level. 		X
<p>Provide basis: See WQMP Site Plan and Geotechnical Report found in appendix. There are no steep slopes located on site. The BMP is located more than 8' away from any building. The Geotechnical engineer deemed that infiltration would be feasible on site.</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
3	Would infiltration of the DCV from drainage area violate downstream water rights?		X
<p>Provide basis: See maps located in appendix. Infiltration of the DCV will not violate downstream water rights.</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			

Table 2.7: Infiltration BMP Feasibility Worksheet (continued)

	Partial Infeasibility Criteria	Yes	No
4	Is proposed infiltration facility located on HSG D soils or the site geotechnical investigation identifies presence of soil characteristics which support categorization as D soils?		X
Provide basis: See USGS soil report located in the appendix. The site sits majorly on type A soil.			
Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
5	Is measured infiltration rate below proposed facility less than 0.3 inches per hour ? This calculation shall be based on the methods described in Appendix VII.		X
Provide basis: See infiltration testing located in the geotechnical report in the appendix. Measured infiltration rates were found to be greater than 0.3 inches per hour.			
Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
6	Would reduction of over predeveloped conditions cause impairments to downstream beneficial uses, such as change of seasonality of ephemeral washes or increased discharge of contaminated groundwater to surface waters ?		X
Provide citation to applicable study and summarize findings relative to the amount of infiltration that is permissible: See infiltration feasibility maps located in appendix.			
Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
7	Would an increase in infiltration over predeveloped conditions cause impairments to downstream beneficial uses, such as change of seasonality of ephemeral washes or increased discharge of contaminated groundwater to surface waters ?		X

Table 2.7: Infiltration BMP Feasibility Worksheet (continued)

<p>Provide citation to applicable study and summarize findings relative to the amount of infiltration that is permissible: See infiltration feasibility maps located in appendix.</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>		
Infiltration Screening Results (check box corresponding to result):		
8	<p>Is there substantial evidence that infiltration from the project would result in a significant increase in I&I to the sanitary sewer that cannot be sufficiently mitigated? (See Appendix XVII)</p> <p>Provide narrative discussion and supporting evidence: See infiltration feasibility maps located in appendix.</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>	No
9	<p>If any answer from row 1-3 is yes: infiltration of any volume is not feasible within the DMA or equivalent.</p> <p>Provide basis:</p> <p>Summarize findings of infeasibility screening</p>	N/A
10	<p>If any answer from row 4-7 is yes, infiltration is permissible but is not presumed to be feasible for the entire DCV. Criteria for designing biotreatment BMPs to achieve the maximum feasible infiltration and ET shall apply.</p> <p>Provide basis:</p> <p>Summarize findings of infeasibility screening</p>	N/A
11	<p>If all answers to rows 1 through 11 are no, infiltration of the full DCV is potentially feasible, BMPs must be designed to infiltrate the full DCV to the maximum extent practicable.</p>	Infiltration is deemed feasible

Worksheet B: Simple Design Capture Volume Sizing Method

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, d (inches)	$d=$	0.78	inches
2	Enter the effect of provided HSCs, d_{HSC} (inches) (Worksheet A)	$d_{HSC}=$	0	inches
3	Calculate the remainder of the design capture storm depth, $d_{remainder}$ (inches) (Line 1 - Line 2)	$d_{remainder}=$	0.78	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), A (acres)	$A=$	0.79	acres
2	Enter Project Imperviousness, imp (unitless)	$imp=$	0.62	
3	Calculate runoff coefficient, $C= (0.75 \times imp) + 0.15$	$C=$	0.61	
4	Calculate runoff volume, $V_{design}= (C \times d_{remainder} \times A \times 43560 \times (1/12))$	$V_{design}=$	1365	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{observed}^1$ (in/hr) (Appendix VII)	$K_{observed}=$	5.8	In/hr
2	Enter combined safety factor from Worksheet H, S_{total} (unitless)	$S_{total}=$	2.25	
3	Calculate design infiltration rate, $K_{design} = K_{observed} / S_{total}$	$K_{design}=$	2.58	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, T (max 48 hours)	$T=$	48	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time (feet), $D_{max} = K_{design} \times T \times (1/12)$	$D_{max}=$	10.3	feet
6	Calculate minimum area required for BMP (sq-ft), $A_{min} = V_{design} / d_{max}$	$A_{min}=$	132.5	sq-ft

¹ $K_{observed}$ is the vertical infiltration measured in the field, before applying a factor of safety. If field testing measures a rate that is different than the vertical infiltration rate (for example, three-dimensional borehole percolation rate), then this rate must be adjusted by an acceptable method (for example, Porchet method) to yield the field estimate of vertical infiltration rate, $K_{observed}$. See Appendix VII.

Worksheet B: Simple Design Capture Volume Sizing Method

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, d (inches)	$d=$	0.78	inches
2	Enter the effect of provided HSCs, d_{HSC} (inches) (Worksheet A)	$d_{HSC}=$	0	inches
3	Calculate the remainder of the design capture storm depth, $d_{remainder}$ (inches) (Line 1 - Line 2)	$d_{remainder}=$	0.78	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), A (acres)	$A=$	0.81	acres
2	Enter Project Imperviousness, imp (unitless)	$imp=$	0.549	
3	Calculate runoff coefficient, $C= (0.75 \times imp) + 0.15$	$C=$	0.56	
4	Calculate runoff volume, $V_{design}= (C \times d_{remainder} \times A \times 43560 \times (1/12))$	$V_{design}=$	1285	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{observed}^1$ (in/hr) (Appendix VII)	$K_{observed}=$	5.8	In/hr
2	Enter combined safety factor from Worksheet H, S_{total} (unitless)	$S_{total}=$	2.25	
3	Calculate design infiltration rate, $K_{design} = K_{observed} / S_{total}$	$K_{design}=$	2.58	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, T (max 48 hours)	$T=$	48	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time (feet), $D_{max} = K_{design} \times T \times (1/12)$	$D_{max}=$	10.3	feet
6	Calculate minimum area required for BMP (sq-ft), $A_{min} = V_{design} / d_{max}$	$A_{min}=$	124.76	sq-ft

¹ $K_{observed}$ is the vertical infiltration measured in the field, before applying a factor of safety. If field testing measures a rate that is different than the vertical infiltration rate (for example, three-dimensional borehole percolation rate), then this rate must be adjusted by an acceptable method (for example, Porchet method) to yield the field estimate of vertical infiltration rate, $K_{observed}$. See Appendix VII.

Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) $p = w \times v$
A	Suitability Assessment	Soil assessment methods	0.25	2	0.5
		Predominant soil texture	0.25	1	0.25
		Site soil variability	0.25	2	0.5
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			
B	Design	Tributary area size	0.25	1	0.25
		Level of pretreatment/ expected sediment loads	0.25	1	0.25
		Redundancy	0.25	2	0.5
		Compaction during construction	0.25	2	0.5
		Design Safety Factor, $S_B = \Sigma p$			
Combined Safety Factor, $S_{Total} = S_A \times S_B$				2.25	
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)				5.8 in/hr	
Design Infiltration Rate, in/hr, $K_{DESIGN} = K_{Observed} / S_{Total}$				2.58 in/hr	
Supporting Data					
Briefly describe infiltration test and provide reference to test forms: <p style="text-align: center;">In-situ Field infiltration tests within the small-diameter borings were conducted. See Geotechnical Report in the appendix for more information.</p>					

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

48 Hour Basin DrawDown Calculations Basin A

DCV for DMA A = 1,285 cu-ft

The drawdown rate is the rate at which water discharges from a bmp, making storage volume available for subsequent storm events. Maximum drawdown time in orange county is 48 hours.

$$D_{48} = K_{\text{Design}} \times 4$$

$$D_{48} = 5.8 \text{ In/Hr} \times 4 = 23.2 \text{ feet}$$

More detailed Basin Routing calculations are provided in the Hydrology study.

The ponding depth is required to be less than D_{48} for infiltration basins. An overflow device was placed at a height of 6" above the bottom of basin. Basin will therefore pond up to the overflow device before out letting to the public storm drain system. Calculations are shown below that demonstrate how the basin ponding will drawdown in 48 hours.

$$6'' \text{ Ponding depth} / (5.8 \text{ In/Hr}) = 1.03 \text{ Hours to clear Basin.}$$

Ponding depth is set below, D_{48} with an outlet placed at an elevation of 73.0'

48 Hour Basin DrawDown Calculations Basin B

DCV for DMA A =1,365 cu-ft

The drawdown rate is the rate at which water discharges from a bmp, making storage volume available for subsequent storm events. Maximum drawdown time in orange county is 48 hours.

$$D_{48} = K_{\text{Design}} \times 4$$

$$D_{48} = 5.8 \text{ In/Hr} \times 4 = 23.2 \text{ feet}$$

More detailed Basin Routing calculations are provided in the Hydrology study.

The ponding depth is required to be less than D_{48} for infiltration basins. An overflow device was placed at a height of 6" above the bottom of basin. Basin will therefore pond up to the overflow device before out letting to the public storm drain system. Calculations are shown below that demonstrate how the basin ponding will drawdown in 48 hours.

$$6'' \text{ Ponding depth} / (5.8 \text{ In/Hr}) = 1.03 \text{ Hours to clear Basin.}$$

Ponding depth is set below, D_{48} with an outlet placed at an elevation of 73.0'

XIV.3. Infiltration BMP Fact Sheets (INF)

INF-1: Infiltration Basin Fact Sheet


An infiltration basin consists of an earthen basin constructed in naturally pervious soils (Type A or B soils) with a flat bottom. An energy dissipating inlet must be provided, along with an emergency spillway to control excess flows. An optional relief underdrain may be provided to drain the basin if standing water conditions occur. A forebay settling basin or separate treatment control measure must be provided as pretreatment. An infiltration basin retains the stormwater quality design volume in the basin and allows the retained runoff to percolate into the underlying soils in 72 hours or less. The bottom of an infiltration basin is typically vegetated with dryland grasses or irrigated turf grass; however other types of vegetation are permissible if they can survive periodic inundation and long inter-event dry periods.

Feasibility Screening Considerations

- Infiltration basins shall pass infeasibility screening criteria to be considered for use
- Infiltration basins pose a potential risk of groundwater contamination if underlying soils have very high permeability and low pollutant assimilation capacity; pretreatment should always be provided.
- Evaporation tends to be minor, therefore increases in infiltration compared to natural conditions may result.
- The potential for groundwater mounding should be evaluated if depth to seasonally high groundwater (unmounded) is less than 15 feet.

Opportunity Criteria

- Soils are adequate for infiltration or can be amended to provide an adequate infiltration rate.
- Typically need 2-5 percent of drainage area available for infiltration.
- Space available for pretreatment (biotreatment or treatment control BMP as described below).
- Potential for groundwater contamination can be mitigated through isolation of pollutant sources, pretreatment of inflow, and/or demonstration of adequate treatment capacity of underlying soils.
- Infiltration is into native soil, or
- The depth of engineered fill is ≤ 5 feet from the bottom of the facility to native material and infiltration into fill is approved by a geotechnical professional.
- Tributary area land uses include mixed-use and commercial, single-family and multi-family, roads and parking lots, and parks and open spaces. Basins can be integrated into parks and open spaces. High pollutant land uses should not be tributary to infiltration BMPs.

<i>Also known as:</i>
<ul style="list-style-type: none"> ➤ <i>Recharge basins</i> ➤ <i>Infiltration pond</i>

Infiltration Basin
<i>Source: Pennsylvania Stormwater BMP Manual</i>

OC-Specific Design Criteria and Considerations

- ☒ Placement of BMPs shall observe geotechnical recommendations with respect to geological hazards (e.g. landslides, liquefaction zones, erosion, etc.) and set-backs (e.g., foundations,

utilities, roadways, etc.)

- For facilities with tributary area less than 5 acres, minimum separation to mounded seasonally high groundwater of 5 feet shall be observed.
- For facilities with tributary area greater than 5 acres, minimum separation to mounded seasonally high groundwater of 10 feet shall be observed.
- Minimum pretreatment (settling forebay or separate BMP) should be provided upstream of the infiltration basin, and water bypassing pretreatment should not be directed to the infiltration basin.
- If a settling forebay is used, forebay should have a volume equal to 25% of facility volume and have a minimum length to width ratio of 2:1
- Infiltration basins should not be used for drainage areas with high sediment production potential unless preceded by full treatment control with a BMP effective for sediment removal.
- Side-slopes should be no steeper than 3H:1V.
- Design infiltration rate should be determined consistent with guidance contained in **Appendix VII**.
- Energy dissipators should be provided at inlet and outlet to prevent erosion.
- An overflow device must be provided if basin is on-line.
- A minimum freeboard of one foot should be provided above the overflow device (for an on-line basin) or the outlet (for an off-line basin).
- Infiltration basin bottom must be as flat as possible.
- Basin length to width ratio should be a minimum of 2:1 L:W.

Simple Sizing Method for Infiltration Basins

If the Simple DCV Sizing Method is used to size an infiltration basin, the user calculates the DCV and designs the BMP geometry required to draw down the DCV in 48 hours. The sizing steps are as follows:

Step 1: Determine Infiltration Basin DCV

Calculate the DCV using the Simple Design Capture Volume Sizing Method described in **Appendix III.3.1**.

Step 2: Determine the 48-hour Depth

The depth of water that can be drawn down in 48 hours can be calculated using the following equation:

$$d_{48} = K_{DESIGN} \times 4$$

Where:

d_{48} = basin 48-hour drawdown depth, ft

K_{DESIGN} = basin design infiltration rate, in/hr (See **Appendix VII**)

This is the maximum depth of the basin below the overflow device to achieve drawdown in 48 hours.

Step 3: Calculate the Required Infiltrating Area

The required infiltrating area (i.e. basin area at mid ponding depth) can be calculated using the following equation:

$$A = DCV / (d_p)$$

Where:

A = required basin infiltrating area, sq-ft (assumed to be the basin area at mid-ponding depth)

DCV = design capture volume, cu-ft (see Step 1)

d_p = ponding depth, ft (should be equal to or less than d_{48})

Capture Efficiency Method for Infiltration Basins

If BMP geometry has already been defined and deviates from the 48 hour drawdown time, the designer can use the Capture Efficiency Method for Volume-Based, Constant Drawdown BMPs (See [Appendix III.3.2](#)) to determine the fraction of the DCV that must be provided to manage 80 percent of average annual runoff volume. This method accounts for drawdown time different than 48 hours.

Step 1: Determine the drawdown time associated with the selected basin geometry

$$DD = (d_p / K_{DESIGN}) \times 12$$

Where:

DD = time to completely drain infiltration basin ponding depth, hours

d_p = ponding depth below overflow device, ft

K_{DESIGN} = basin design infiltration rate, in/hr (See [Appendix VII](#))

Step 2: Determine the Required Adjusted DCV for this Drawdown Time

Use the Capture Efficiency Method for Volume-Based, Constant Drawdown BMPs ([Appendix III.3.2](#)) to calculate the fraction of the DCV the basin must hold to achieve 80 percent capture of average annual stormwater runoff volume based on the basin drawdown time calculated above.

Step 3: Determine the Basin Infiltrating Area Needed

The required infiltrating area (i.e. basin bottom) can be calculated using the following equation:

$$A = DCV / ((d_p))$$

Where:

A = required basin infiltrating area, sq-ft (assumed to be the basin area at mid-ponding depth)

DCV = design capture volume, adjusted for drawdown time, cu-ft (see Step 1)

d_p = ponding depth, ft

If the area required is greater than the selected basin area, adjust surface area or adjust ponding depth and recalculate required area until the required area is achieved.

Configuration for Use in a Treatment Train

- Infiltration basins may be preceded in a treatment train by HSCs in the drainage area, which would reduce the required design volume of the basins.
- Infiltration basins must be preceded by some form of pretreatment, which may be biotreatment or a treatment control BMP; if an approved biotreatment BMP is used as pretreatment, the overflow from the infiltration basin may be considered “biotreated” for the purposes of meeting the LID requirements.
- The overflow or bypass from an infiltration basin can be routed to a downstream biotreatment BMP and/or a treatment control BMP if additional control is required to achieve LID or treatment control requirements.

Additional References for Design Guidance

- CASQA BMP Handbook for New and Redevelopment:
<http://www.cabmphandbooks.com/Documents/Development/TC-11.pdf>
- SMC LID Manual (pp 139):
http://www.lowimpactdevelopment.org/guest75/pub/All_Projects/SoCal_LID_Manual/SoCalLID_Manual_FINAL_040910.pdf
- Los Angeles County Stormwater BMP Design and Maintenance Manual, Chapter 6:
http://dpw.lacounty.gov/DES/design_manuals/StormwaterBMPDesignandMaintenance.pdf
- City of Portland Stormwater Management Manual (Basin, page 2-57)
<http://www.portlandonline.com/bes/index.cfm?c=47954&a=202883>
- San Diego County LID Handbook Appendix 4 (Factsheet 2):
<http://www.sdcountry.ca.gov/dplu/docs/LID-Appendices.pdf>

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Appendix D – Soils Report



May 6, 2022

Project No. 22030-01

Mr. Jeff Rulon
PLC Communities
888 San Clemente Drive, Suite 200
Newport Beach, CA 92660

Subject: Preliminary Geotechnical Report for the Proposed Residential Development at 9071 Lampson Avenue, Garden Grove, California

In accordance with your request and authorization, LGC Geotechnical, Inc. has prepared this summary report of infiltration testing for the proposed residential development located at 9071 Lampson Avenue in the City of Garden Grove, California. We understand that the proposed development will consist of 13 single-family residential units and an associated street. LGC Geotechnical has recently performed a geotechnical evaluation of the site. The purpose of our study was to evaluate the existing onsite geotechnical conditions and to provide preliminary geotechnical recommendations relative to the proposed residential development.

Should you have any questions regarding this report, please do not hesitate to contact our office. We appreciate this opportunity to be of service.

Respectfully Submitted,

LGC Geotechnical, Inc.

A handwritten signature in blue ink, appearing to read "D Boratynec".

Dennis Boratynec, GE 2770
Project Engineer



A handwritten signature in blue ink, appearing to read "Katie Maes".

Katie Maes, CEG 2216
Project Geologist



DJB/KTM/klr

Distribution: (1) Addressee (electronic copy)

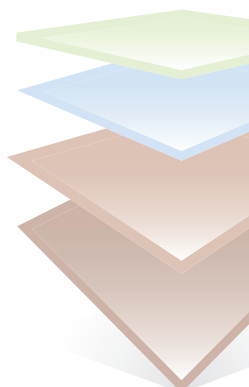


TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION.....	1
1.1 Purpose and Scope of Services	1
1.2 Project Description & Background	1
1.3 Subsurface Geotechnical Evaluation.....	4
1.4 Laboratory Testing	5
2.0 GEOTECHNICAL CONDITIONS.....	6
2.1 Geologic Conditions	6
2.2 Site Specific Geology & Generalized Subsurface Conditions	6
2.3 Groundwater	6
2.4 Field Infiltration Testing.....	7
2.5 Seismic Design Criteria	7
2.6 Faulting.....	9
2.6.1 Liquefaction and Dynamic Settlement.....	9
2.6.2 Lateral Spreading.....	10
2.7 Expansion Potential	10
3.0 CONCLUSIONS.....	11
4.0 PRELIMINARY RECOMMENDATIONS.....	13
4.1 Site Earthwork	13
4.1.1 Site Preparation	13
4.1.2 Removal and Recompeaction Depths and Limits	14
4.1.3 Temporary Excavations.....	15
4.1.4 Removal Bottoms and Subgrade Preparation	15
4.1.5 Material for Fill	16
4.1.6 Placement and Compaction of Fills.....	16
4.1.7 Trench and Retaining Wall Backfill and Compaction	17
4.1.8 Shrinkage and Subsidence.....	18
4.2 Preliminary Foundation Recommendations	18
4.2.1 Preliminary Foundation Design Parameters	18
4.2.2 Post-Tensioned Foundation Subgrade Preparation and Maintenance.....	19
4.2.3 Slab Underlayment Guidelines	20
4.3 Soil Bearing and Lateral Resistance.....	20
4.4 Lateral Earth Pressures for Retaining Walls.....	21
4.5 Soil Corrosivity.....	22
4.6 Control of Surface Water and Drainage Control.....	23
4.7 Subsurface Water and Infiltration	23
4.8 Preliminary Asphalt Concrete Pavement Sections	25
4.9 Nonstructural Concrete Flatwork.....	26
4.10 Geotechnical Plan Review	27
4.11 Geotechnical Observation and Testing During Construction	27

TABLE OF CONTENTS (Cont'd)

5.0 LIMITATIONS 28

LIST OF ILLUSTRATIONS, TABLES, AND APPENDICES

Figures

- Figure 1 – Site Location Map (Page 3)
- Figure 2 – Boring Location Map (Rear of Text)
- Figure 3 – Retaining Wall Backfill Detail (Rear of Text)

Tables

- Table 1 – Summary of Field Infiltration Testing (Page 7)
- Table 2 – Seismic Design Parameters (Page 8)
- Table 3 – Estimated Settlement Due to Liquefaction Potential (Page 10)
- Table 4 – Provisional Geotechnical Parameters for Post-Tensioned Foundation Slab Design (Page 19)
- Table 5 – Lateral Earth Pressures – Sandy Backfill (Page 21)
- Table 6 – Geotechnical Factors of Safety for Design Infiltration Rate (Page 24)
- Table 7 – Preliminary Pavement Section Options (Page 25)
- Table 8 – Nonstructural Concrete Flatwork for Low Expansion Potential (Page 26)

Appendices

- Appendix A – References
- Appendix B – Boring and CPT Logs
- Appendix C – Laboratory Test Results
- Appendix D – Liquefaction Analysis
- Appendix E – Infiltration Test Data
- Appendix F – General Earthwork and Grading Specifications

1.0 INTRODUCTION

1.1 Purpose and Scope of Services

This report presents the results of our preliminary geotechnical evaluation for the proposed residential development located at 9071 Lampson Avenue in the City of Garden Grove, California. Refer to the Site Location Map (Figure 1).

The purpose of our study was to provide a preliminary geotechnical evaluation relative to the proposed residential development. As part of our scope of work, we have: 1) reviewed available geotechnical background information including in-house regional geologic maps and published geotechnical literature pertinent to the site (Appendix A); 2) performed a limited subsurface geotechnical evaluation of the site consisting of the excavation of four small-diameter borings and two Cone Penetration Test (CPT) soundings ranging in depth from approximately 5 to 50 feet below existing ground surface; 3) performed two field infiltration tests; 4) performed laboratory testing of select soil samples obtained during our subsurface evaluation; and 5) prepared this preliminary geotechnical summary report presenting our findings, preliminary conclusions and recommendations for the proposed development.

It should be noted that our evaluation and this report only address geotechnical issues associated with the site and do not address any environmental issues.

1.2 Project Description & Background

The approximately 1.6-acre site is bound to the south by Lampson Avenue, to the east, west and north by existing residential. The site is currently occupied by four residential structures, interior drives and numerous trees. The existing site has relatively minor relief, with an existing elevation of approximately 77 feet in the northern portion of the site and an elevation of approximately 75 feet in the southern portion of the site.

Review of historical aerials indicates that a structure was originally constructed in the southwestern portion of the site in 1953, with the remaining portion of the site appearing to be agricultural. The site did not have any building structures in 1963. By the year 1972, a building structure was constructed within the southwest portion of the site near Lampson Avenue, and the remainder of existing building structures are present by 1987 (Historical Aerials, 2022).

Based on the conceptual grading plan, the proposed development includes the construction of 13 single-family residential lots and associated streets and walls (MDS, 2022). Proposed design cuts and fills (not including required remedial grading) from existing grade are anticipated to be on the order of 1 to 2 feet. Relatively small retaining walls are proposed around patio areas on each lot. The proposed building structures are anticipated to be relatively light-weight at-grade structures with estimated maximum column and wall loads of approximately 30 kips and 2 kips per linear foot, respectively.

Based on review of the preliminary storm water plan, two stormwater vaults are proposed in the southern portion of the site at an elevation of approximately 69 feet. The vaults are intended to receive and infiltrate low-volume flow and are designed to overflow to a 12-inch diameter storm drain pipe that will drain to the existing 60-inch diameter storm drain pipe below Lampson

Avenue.

The recommendations given in this report are based upon the estimated structural loading, grading and preliminary layout information above. We understand that the project plans are currently being developed at this time; LGC Geotechnical should be provided with updated project plans and any changes to structural loads when they become available, in order to either confirm or modify the recommendations provided herein. Additional field work and/or laboratory testing may be necessary.

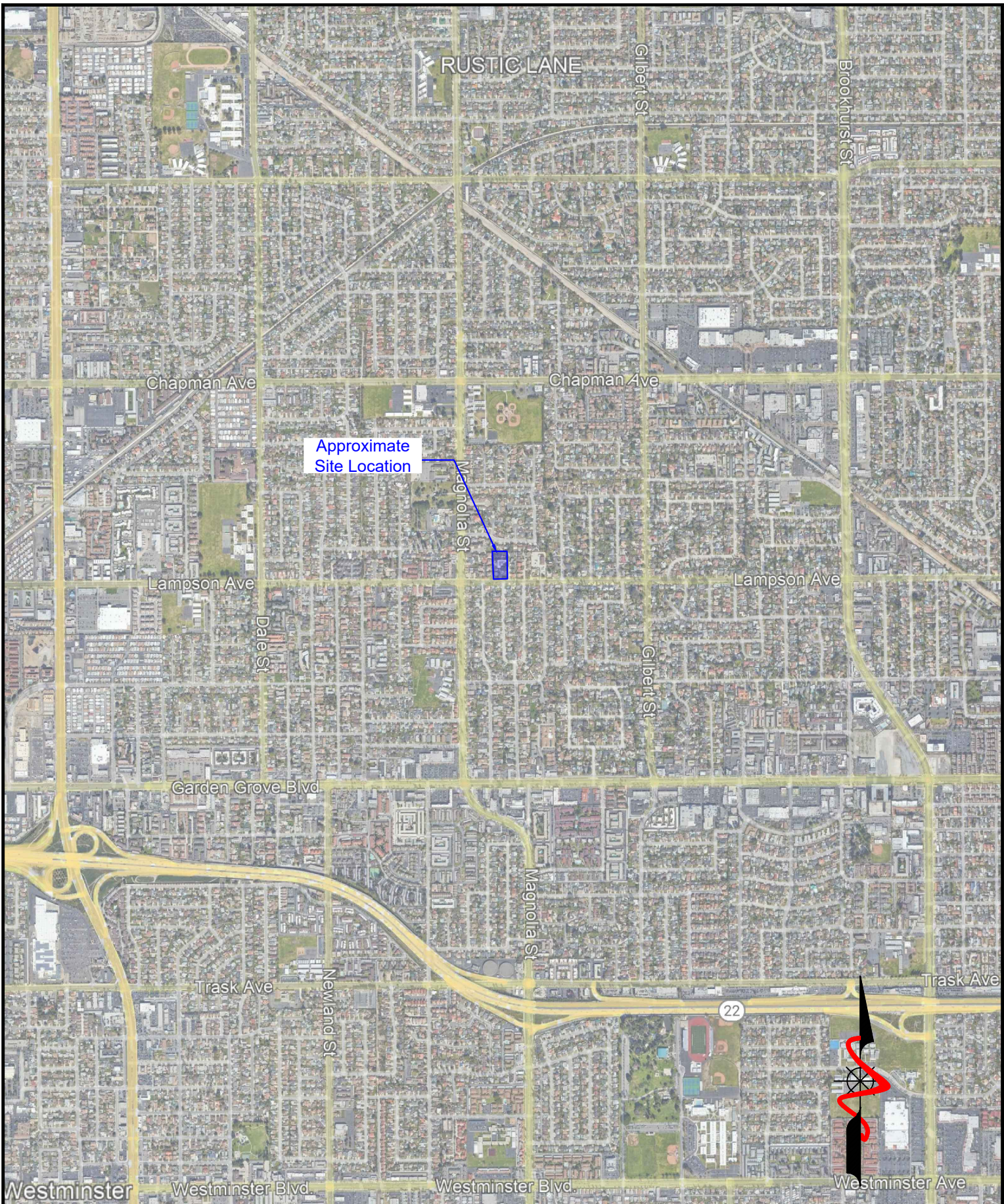


FIGURE 1
Site Location Map

PROJECT NAME	PLC - Lampson
PROJECT NO.	22030-01
ENG. / GEOL.	DJB/KTM
SCALE	Not to Scale
DATE	May 2022

1.3 Subsurface Geotechnical Evaluation

Our subsurface evaluation consisted of drilling and sampling four, small-diameter, exploratory hollow-stem borings (two were for field percolation testing) and two Cone Penetration Test (CPT) soundings.

The hollow-stem borings (HS-1, HS-2, I-1, and I-2) were drilled to depths ranging from approximately 5 to 50 feet below existing grade. An LGC Geotechnical staff engineer observed the drilling operations, logged the borings, and collected soil samples for laboratory testing. The borings were excavated by 2R Drilling, Inc. under subcontract to LGC Geotechnical using a truck-mounted drill rig equipped with 8-inch-diameter hollow-stem augers. Driven soil samples were collected by means of the Standard Penetration Test (SPT) and Modified California Drive (MCD) sampler generally obtained at 5-foot vertical increments. The MCD is a split-barrel sampler with a tapered cutting tip and lined with a series of 1-inch-tall brass rings. The SPT sampler (1.4-inch ID) and MCD sampler (2.4-inch ID, 3.0-inch OD) were driven using a 140-pound automatic hammer falling 30 inches to advance the sampler a total depth of 18 inches. The raw blow counts for each 6-inch increment of penetration were recorded on the boring logs. Bulk samples of the near-surface soils were also collected and logged at select borings for laboratory testing. At the completion of drilling, the borings were backfilled with the native soil cuttings and tamped. Some settlement of the backfill soils may occur over time.

CPT soundings were pushed in two locations (CPT-1 & CPT-2) by Kehoe Testing, Inc. under subcontract to LGC Geotechnical. The CPT soundings were pushed to depths of approximately 50 feet below existing grade. The CPT soundings were pushed using an electronic cone penetrometer in general accordance with the current ASTM standards (ASTM D5778 and ASTM D3441) using a 30-ton rig. The CPT equipment consisted of a cone penetrometer assembly mounted at the end of a series of hollow sounding rods. The interior of the cone penetrometer is instrumented with strain gauges that allow the simultaneous measurement of cone tip and friction sleeve resistance during penetration. The cone penetration assembly is continuously pushed into the soil by a set of hydraulic rams at a standard rate of 0.8 inches per second while the cone tip resistance and sleeve friction resistance are recorded at approximately every 2 inches and stored in digital form. Seismic cone (shear wave velocity) readings were performed in the CPT soundings.

Infiltration testing was performed within two of the borings (I-1 and I-2) to depths of approximately 5 feet below existing grade. An LGC Geotechnical staff engineer installed standpipes, backfilled the borings with crushed rock and pre-soaked the infiltration holes prior to testing. Infiltration testing was performed in general accordance with the County of Orange testing guidelines. Standpipes were removed and the locations were subsequently backfilled with native soils at the completion of testing. Some settlement of the backfill soils may occur over time.

The approximate locations of our subsurface explorations are provided on the Boring Location Map (Figure 2). The boring logs and CPT test results are provided in Appendix B.

1.4 Laboratory Testing

Representative bulk and driven (relatively undisturbed) samples were obtained for laboratory testing during our field evaluation. Laboratory testing included in-situ moisture content and in-situ dry density, fines content, Atterberg Limits, expansion index, laboratory compaction and corrosion (sulfate, chloride, pH and minimum resistivity).

The following is a summary of the laboratory test results:

- Dry density of the samples collected ranged from approximately 95 pounds per cubic foot (pcf) to 117 pcf, with an average of 105 pcf. Field moisture contents ranged from approximately 2 to 43 percent, with an average of 18 percent.
- Four fines content tests were performed and indicated a fines content (passing No. 200 sieve) between 5 and 63 percent. Based on the Unified Soils Classification System (USCS), three of the tested samples would be classified as “coarse-grained” and the remaining sample would be classified as fine-grained.”
- Four Atterberg Limit (liquid limit and plastic limit) tests were performed. Results indicated Plasticity Index (PI) values ranging from Non-Plastic (NP) to 10.
- One laboratory compaction test of a near surface sample indicated a maximum dry density of 111.5 pcf with an optimum moisture content of 8.0 percent.
- One Expansion potential tests were performed and indicated an expansion index value of 1, corresponding to “Very Low” expansion potential.
- Corrosion testing indicated soluble sulfate content less than approximately 0.02 percent, a chloride content of 240 parts per million (ppm), pH of 7.9, and a minimum resistivity of 2770 ohm-centimeters.

A summary of the laboratory test results is presented in Appendix C. The moisture and dry density results are presented on the boring logs in Appendix B.

2.0 GEOTECHNICAL CONDITIONS

2.1 Geologic Conditions

The subject site is located within the Orange County coastal plain, more generally located on the broad southern margin of the Los Angeles Basin. The site is located more specifically within the Santa Ana River drainage basin, approximately 4 miles northwest of the current channelized location of the river. In general, the site is underlain at depth by poorly consolidated alluvial sediments mapped as a sandy member of Quaternary Young Alluvial Fan deposits, ("Qyf-sand"). The Holocene to late Pleistocene aged materials are described as gravel, sand and silt layers, deposited over broad river floodplain areas prior to channelization of the Santa Ana River (Morton, 2004).

2.2 Site-Specific Geology & Generalized Subsurface Conditions

Based on the results of our subsurface investigation, the site is underlain by a thin veneer of topsoil over young alluvial deposits of Holocene age, per regional geologic mapping (Morton, 2004). Field exploration (CPT soundings and borings) indicates primarily medium dense silty sands in the upper approximate 28 feet, followed by finer-grained stiff silts and clays to approximately 40 feet, followed by medium dense to dense sandy soils interbedded with layers of very stiff finer-grained clayey soils to the maximum explored depth of approximately 50 feet below existing grade. The blow counts of sandy layers at greater depths (below approximately 25 feet) are likely impacted by the presence of underlying finer-grained soils. Shear wave velocity readings performed in the CPT soundings indicated average shear wave velocity values of approximately 630 feet per second corresponding to Site Class D per Chapter 20 of ASCE 7-16.

It should be noted that borings and CPT soundings are only representative of the location and time where/when they are performed, and varying subsurface conditions may exist outside of the performed location. In addition, subsurface conditions can change over time. The soil descriptions provided above should not be construed to mean that the subsurface profile is uniform, and that soil is homogeneous within the project area. For details on the stratigraphy at the exploration locations, refer to Appendix B.

2.3 Groundwater

Groundwater was encountered in the deeper borings (HS-1 and HS-2) at a depth of approximately 14 feet below existing grade. Historic high groundwater is mapped approximately halfway between the 10- and 20-foot contours (CDMG, 2001). Therefore, we conservatively used the existing groundwater depth of 14 feet below existing grades for the historic high groundwater level.

Seasonal fluctuations of groundwater elevations should be expected over time. In general, groundwater levels fluctuate with the seasons and local zones of perched groundwater may be present due to local seepage caused by irrigation and/or recent precipitation. Local perched groundwater conditions or surface seepage may develop once site development is completed.

2.4 Field Infiltration Testing

Two field percolation tests were performed (I-1 and I-2) to approximate depths of 5 feet below existing grade, refer to Appendix E for testing summaries. The approximate locations are shown on the Boring Location Map (Figure 2). Infiltration test well installation consisted of placing a 3-inch diameter perforated PVC pipe in the excavated borehole and backfilling the annulus with crushed rock including the placement of approximately 2 inches of crushed rock at the bottom of the borehole. The infiltration test was presoaked the day of installation and testing took place within 24 hours of presoaking. During the pre-test, the water level was observed to drop more than 6 inches in 25 minutes for two consecutive readings. Therefore, the test procedure for coarse-grained soils or the “fast test” was followed. Test well installation and the estimation of infiltration rates were accomplished in general accordance with the guidelines set forth by the County of Orange (2013). In general, three-dimensional flow out of the test well (*percolation*), as observed in the field, is mathematically reduced to one-dimensional flow out of the bottom of the test well (*infiltration*).

TABLE 1
Summary of Field Infiltration Testing

Infiltration Test Identification	Approx. Depth Below Existing Grade (ft)	Observed Infiltration Rate* (in./hr.)
I-1	5	5.9
I-2	5	5.7

*Observed Infiltration Rates Do Not Include Factor of Safety.

It should be emphasized that infiltration test results are only representative of the location and depth where they are performed. Varying subsurface conditions may exist outside of the test locations which could alter the calculated infiltration rates indicated above. Infiltration tests are performed using relatively clean water free of particulates, silt, etc. Refer to Section 4.8.

2.5 Seismic Design Criteria

Since the site contains soils that are susceptible to liquefaction (refer to above Section “Liquefaction and Dynamic Settlement”), ASCE 7 which has been adopted by the CBC requires that site soils be assigned Site Class “F” and a site-specific response spectrum be performed. However, in accordance with Section 20.3.1 of ASCE 7, if the fundamental periods of vibration of the planned structure are equal to or less than 0.5 second, a site-specific response spectrum is not required and ASCE 7/2019 CBC site class and seismic parameters may be used in lieu of a site-specific response spectrum. **It should be noted that the seismic parameters provided herein are not applicable for any structure having a fundamental period of vibration greater than 0.5 second.** The site seismic characteristics were evaluated per the guidelines set forth in Chapter 16, Section 1613 of the 2019 California Building Code (CBC) and applicable portions of ASCE 7-16 which has been adopted by the CBC. Please note that the following seismic parameters are only applicable for code-based acceleration response spectra and are not applicable for where site-specific ground motion procedures are required by ASCE 7-16. Representative site coordinates of latitude 33.7819 degrees north and longitude -117.9737 degrees west were utilized in our analyses. The maximum considered earthquake (MCE)

spectral response accelerations (S_{MS} and S_{M1}) and adjusted design spectral response acceleration parameters (S_{DS} and S_{D1}) for Site Class D are provided in Table 2 below. Since site soils are Site Class D, additional adjustments are required to code acceleration response spectrums as outlined below and provided in ASCE 7-16. The structural designer should contact the geotechnical consultant if structural conditions (e.g., number of stories, seismically isolated structures, etc.) require site-specific ground motions.

TABLE 2

Seismic Design Parameters

Selected Parameters from 2019 CBC, Section 1613 - Earthquake Loads	Seismic Design Values	Notes/Exceptions
Distance to applicable faults classifies the site as a "Near-Fault" site.		Section 11.4.1 of ASCE 7
Site Class	D*	Chapter 20 of ASCE 7
S_s (Risk-Targeted Spectral Acceleration for Short Periods)	1.400g	From SEAOC, 2022
S_1 (Risk-Targeted Spectral Accelerations for 1-Second Periods)	0.496g	From SEAOC, 2022
F_a (per Table 1613.2.3(1))	1.0	For Simplified Design Procedure of Section 12.14 of ASCE 7, F_a shall be taken as 1.4 (Section 12.14.8.1)
F_v (per Table 1613.2.3(2))	1.804	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
S_{MS} for Site Class D [Note: $S_{MS} = F_a S_s$]	1.400g	-
S_{M1} for Site Class D [Note: $S_{M1} = F_v S_1$]	0.895g	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
S_{DS} for Site Class D [Note: $S_{DS} = (2/3)S_{MS}$]	0.933g	-
S_{D1} for Site Class D [Note: $S_{D1} = (2/3)S_{M1}$]	0.597g	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
C_{RS} (Mapped Risk Coefficient at 0.2 sec)	0.917	ASCE 7 Chapter 22
C_{R1} (Mapped Risk Coefficient at 1 sec)	0.919	ASCE 7 Chapter 22
*Since site soils are Site Class D and S_1 is greater than or equal to 0.2, the seismic response coefficient C_s is determined by Eq. 12.8-2 for values of $T \leq 1.5T_s$ and taken equal to 1.5 times the value calculated in accordance with either Eq. 12.8-3 for $T_L \geq T > T_s$, or Eq. 12.8-4 for $T > T_L$. Refer to ASCE 7-16. Site Class F modified to Site Class D, seismic parameters only applicable for structure period ≤ 0.5 second, refer to discussion above.		

Section 1803.5.12 of the 2019 CBC (per Section 11.8.3 of ASCE 7) states that the maximum considered earthquake geometric mean (MCE_G) Peak Ground Acceleration (PGA) should be used for liquefaction potential. The PGA_M for the site is equal to 0.658g (SEAOC, 2022). The design PGA is equal to 0.439 (2/3 of PGA_M).

A deaggregation of the PGA based on a 2,475-year average return period (MCE) indicates that an earthquake magnitude of 6.71 at a distance of approximately 12.29 km from the site would contribute the most to this ground motion. A deaggregation of the PGA based on a 475-year average return period (Design Earthquake) indicates that an earthquake magnitude of 6.62 at a distance of approximately 19.16 km from the site would contribute the most to this ground motion (USGS, 2014).

2.6 Faulting

The subject site is not located within a State of California Earthquake Fault Zone (Alquist-Priolo) and no faults were identified on the site during our site evaluation (CGS, 2018). The possibility of damage due to ground rupture is considered low since no active faults are known to cross the site. The known active faults that may affect the subject site are the Newport-Inglewood Offshore, Palos Verdes, Whittier-Elsinore and San Andreas Fault Zones, among others.

Secondary effects of seismic shaking resulting from large earthquakes on the major faults in the Southern California region, which may affect the site, include ground lurching and shallow ground rupture, soil liquefaction, and dynamic settlement. These secondary effects of seismic shaking are a possibility throughout the Southern California region and are dependent on the distance between the site and causative fault and the onsite geology. A discussion of these secondary effects is provided in the following sections.

2.6.1 Liquefaction and Dynamic Settlement

Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions coexist: 1) shallow groundwater; 2) low density non-cohesive (granular) soils; and 3) high-intensity ground motion. Studies indicate that saturated, loose near-surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. In general, cohesive soils are not considered susceptible to liquefaction, depending on their plasticity and moisture content. Effects of liquefaction on level ground include settlement, sand boils, and bearing capacity failures below structures. Dynamic settlement of dry loose sands can occur as the sand particles tend to settle and densify as a result of a seismic event.

Based on our review of the State of California Seismic Hazard Zone for liquefaction potential (CDMG, 1998), the site is located within a liquefaction hazard zone. The data obtained from our field evaluation indicates that the site contains sandy layers susceptible to liquefaction within the upper 50 feet. Liquefaction potential was evaluated using the procedures outlined by Special Publication 117A (SCEC, 1999 & CGS, 2008).

Liquefaction analysis was based on the applicable seismic criteria (e.g., PGA_M from 2019 CBC) and estimated historic high groundwater depth of 14 feet below existing grade. Liquefaction analysis was performed using the program CLiq (GeoLogismiki, 2017). Estimated total and differential seismic settlement due to liquefaction potential is provided in Table 3 below. Liquefaction calculations are provided in Appendix D.

TABLE 3

Estimated Settlement Due to Liquefaction Potential

Approximate Total Seismic Settlement	Differential Seismic Settlement
1 ½-inches	¾-inch over 40 feet

2.6.2 Lateral Spreading

Lateral spreading is a type of liquefaction-induced ground failure associated with the lateral displacement of surficial blocks of sediment resulting from liquefaction in a subsurface layer. Once liquefaction transforms the subsurface layer into a fluid mass, gravity plus the earthquake inertial forces may cause the mass to move downslope towards a free face (such as a river channel or an embankment). Lateral spreading may cause large horizontal displacements and such movement typically damages pipelines, utilities, bridges, and structures.

Due to the site being relatively level and the lack of an adjacent free face to drive lateral spreading, the potential for lateral spreading is considered low.

2.7 Expansion Potential

Based on the results of our laboratory testing, site soils are anticipated to have a “Very Low” expansion potential. Final expansion potential of site soils should be determined at the completion of grading. Results of expansion testing at finish grades will be utilized to confirm final foundation design.

3.0 CONCLUSIONS

Based on the results of our geotechnical evaluation, it is our opinion that the proposed development is feasible from a geotechnical standpoint, provided the following conclusions and recommendations are implemented.

The following is a summary of the primary geotechnical factors that may affect future development of the site:

- In general, our field explorations indicate primarily medium dense silty sands in the upper approximate 28 feet followed by finer-grained stiff silts and clays to approximately 40 feet followed by medium dense to dense sandy soils interbedded with layers of very stiff finer-grained clayey soils to the maximum explored depth of approximately 50 feet below existing grade. The near-surface loose and compressible soils are not suitable for the planned improvements in their present condition (refer to Section 4.1).
- From a geotechnical perspective, onsite soils are anticipated to be suitable for use as general compacted fill (not retaining wall backfill) provided, they are screened of organic materials, construction debris and any oversized material (8 inches in greatest dimension).
- Groundwater was encountered during our subsurface evaluation at a depth of approximately 14 feet below existing grade. Historic high groundwater is estimated to be about 14 feet below existing grade (CDMG, 2001).
- The subject site is not located within a State of California Earthquake Fault Zone (Alquist-Priolo). The main seismic hazard that may affect the site is ground shaking from one of the active regional faults. The subject site will likely experience strong seismic ground shaking during its design life.
- The site is in a State of California Seismic Hazard Zone for liquefaction (CDMG, 1998). Subsurface data indicates that sandy layers are susceptible to liquefaction and liquefaction-induced settlement. Our analysis indicates approximately 1 ½-inches of seismically induced settlement may occur at the site during a significant earthquake. Differential seismic settlement may be taken as ¾-inch over a horizontal span of 40 feet.
- We recommend the drilling of several small-diameter holes through the bottom of each infiltration vault to minimum depths of approximately 15 feet below existing grade, and backfilling the holes with approved clean sand up to infiltration bottom grades. Holes drilled in the bottom of the infiltration system would reduce the potential for water becoming suspended within the upper alluvial soils by acting as a high permeability conduit, transferring surface water to the deeper sandy native materials below.
- It is our opinion that the possible impacts of liquefaction can be reasonably mitigated by use of a rigid mat slab foundation or structural pad footings interconnected with grade beams. However, as with many structures in Southern California risk does remain that the proposed structure could suffer some damage if liquefaction occurs. Repair and remedial work may be required after a liquefaction event.
- Due to the close-proximity of proposed stormwater infiltration vaults (approximately 10 feet from foundations), the two adjacent residential foundations will require additionally stiffened foundations. This should be determined once foundation plans are available.

- Based on the results of preliminary laboratory testing, site soils are anticipated to have “Very Low” expansion potential. Final design expansion potential must be determined at the completion of grading.
- The site contains some soils that are not suitable for retaining wall backfill due to their fines content; therefore, select grading and stockpiling, or import of sandy soils will be required by the contractor for obtaining suitable backfill soil for planned site retaining walls.
- Excavations into the existing site soils should be feasible with heavy construction equipment in good working order.
- Due to the relatively shallow site groundwater (about 14 feet below existing ground surface) dewatering or stabilization of subgrade for removal bottoms or deep utility trenches may be locally required, prior to subsequent fill placement.

4.0 PRELIMINARY RECOMMENDATIONS

The following recommendations are to be considered preliminary and should be confirmed upon completion of grading and earthwork operations. In addition, they should be considered minimal from a geotechnical viewpoint, as there may be more restrictive requirements from the architect, structural engineer, building codes, governing agencies, or the owner.

It should be noted that the following geotechnical recommendations are intended to provide sufficient information to develop the site in general accordance with the 2019 CBC requirements. With regard to the potential occurrence of potentially catastrophic geotechnical hazards such as fault rupture, earthquake-induced landslides, liquefaction, etc. the following geotechnical recommendations should provide adequate protection for the proposed development to the extent required to reduce seismic risk to an “acceptable level.” The “acceptable level” of risk is defined by the California Code of Regulations as “that level that provides reasonable protection of the public safety, though it does not necessarily ensure continued structural integrity and functionality of the project” [Section 3721(a)]. Therefore, repair and remedial work of the proposed improvements may be required after a significant seismic event. With regards to the potential for less significant geologic hazards to the proposed development, the recommendations contained herein are intended as a reasonable protection against the potential damaging effects of geotechnical phenomena such as expansive soils, fill settlement, groundwater seepage, etc. It should be understood, however, that although our recommendations are intended to maintain the structural integrity of the proposed development and structures given the site geotechnical conditions, they cannot preclude the potential for some cosmetic distress or nuisance issues to develop as a result of the site geotechnical conditions.

The geotechnical recommendations contained herein must be confirmed to be suitable or modified based on the actual as-graded conditions.

4.1 Site Earthwork

We anticipate that earthwork at the site will consist of demolition of the existing site improvements, required earthwork removals, subgrade preparation, precise grading and construction of the proposed new improvements, including the residential structures, neighborhood amenities, subsurface utilities, interior streets, etc.

We recommend that earthwork onsite be performed in accordance with the following recommendations, future grading plan review report(s), the 2019 CBC/City of Garden Grove grading requirements, and the General Earthwork and Grading Specifications included in Appendix F. In case of conflict, the following recommendations shall supersede those included in Appendix F. The following recommendations should be considered preliminary and may be revised based upon future evaluation and review of the project plans and/or based on the actual conditions encountered during site grading/construction.

4.1.1 Site Preparation

Prior to grading of areas to receive structural fill or engineered improvements, the areas should be cleared of existing building structures, asphalt, surface obstructions, and

demolition debris. Vegetation and debris should be removed and properly disposed of off-site. Holes resulting from the removal of buried obstructions, which extend below proposed finish grades, should be replaced with suitable compacted fill material. Any abandoned sewer or storm drain lines should be completely removed and replaced with properly placed compacted fill. Deeper demolition may be required in order to remove existing foundations. We recommend the trenches associated with demolition which extend below the remedial grading depth of 5 feet be backfilled and properly compacted prior to the demolition contractor leaving the site.

If cesspools or septic systems are encountered, they should be removed in their entirety. The resulting excavation should be backfilled with properly compacted fill soils. As an alternative, cesspools can be backfilled with lean sand-cement slurry. Any encountered wells should be properly abandoned in accordance with regulatory requirements. At the conclusion of the clearing operations, a representative of LGC Geotechnical should observe and accept the site prior to further grading.

4.1.2 Removal and Recompaction Depths and Limits

In order to provide a relatively uniform bearing condition for the planned residential building pads and improvements, we recommend the site soils be removed and recompacted according to the criteria outlined below.

Building Structures: Removals should extend a minimum depth of 5 feet below existing grade or 2 feet below proposed footings, whichever is greater. In general, the envelope for removals should extend laterally a minimum horizontal distance of 5 feet beyond the edges of the proposed building footprint. Deeper removals may be required if undocumented fill soils or otherwise unsuitable materials are encountered.

Minor Site Structures: For minor site structures such as free-standing walls, retaining walls, etc., removal and recompaction should extend at least 3 feet below existing grade or 2 feet below the base of foundations, whichever is deeper. Where space is available, the envelope for removal and recompaction should extend laterally a minimum distance of 3 feet beyond the edges of the proposed minor site structure improvements.

Pavement and Hardscape: Within pavement and hardscape areas, removal and recompaction should extend to a depth of at least 2 feet below the existing grade or 1-foot below finished subgrade (i.e., below planned aggregate base/asphalt concrete), whichever is deeper. In general, the envelope for removal and recompaction should extend laterally a minimum distance of 2 feet beyond the edges of the proposed pavement and hardscape improvements.

Local conditions may be encountered during excavation that could require additional over-excavation beyond the above noted minimum in order to obtain an acceptable subgrade. In the event removals extend to over-moist materials, additional recommendations should be provided. The actual depths and lateral extents of grading will be determined by the geotechnical consultant, based on subsurface conditions encountered during grading. Removal areas and areas to be over-excavated should be accurately staked in the field by the Project Surveyor.

4.1.3 Temporary Excavations

Temporary excavations should be performed in accordance with project plans, specifications, and all Occupational Safety and Health Administration (OSHA) requirements. Excavations should be laid back or shored in accordance with OSHA requirements before personnel or equipment are allowed to enter. Based on our field investigation, the majority of site soils are anticipated to be OSHA Type "C" soils (refer to the attached boring logs). Minor amounts of sandy soils are present and should be considered susceptible to caving. Soil conditions should be regularly evaluated during construction to verify conditions are as anticipated. The contractor shall be responsible for providing the "competent person" required by OSHA standards to evaluate soil conditions. Close coordination with the geotechnical consultant should be maintained to facilitate construction while providing safe excavations. Excavation safety is the sole responsibility of the contractor.

Vehicular traffic, stockpiles, and equipment storage should be set back from the perimeter of excavations a minimum distance equivalent to a 1:1 projection from the bottom of the excavation or 5 feet, whichever is greater, unless the cut is shored and designed for applicable surcharge load. Once an excavation has been initiated, it should be backfilled as soon as practical. Prolonged exposure of temporary excavations may result in some localized instability. Excavations should be planned so that they are not initiated without sufficient time to shore/fill them prior to weekends, holidays, or forecasted rain.

It should be noted that any excavation that extends below a 1:1 (horizontal to vertical) projection of an existing foundation will remove existing support of the structure foundation. If requested, temporary shoring parameters will be provided.

4.1.4 Removal Bottoms and Subgrade Preparation

In general, removal bottoms, over-excavation bottoms and areas to receive compacted fill should be scarified to a minimum depth of 6 inches, brought to a near-optimum moisture condition (generally within optimum and 2 percent above optimum moisture content), and re-compacted per project recommendations.

In the event removal bottoms are over-moist and pumping when equipment passes, scarification/processing of removal bottoms is generally not required. If encountered, soft and yielding removal bottoms should be evaluated on a case-by-case basis during earthwork operations. For these conditions, LGC Geotechnical should provide recommendations as needed for stabilization of the subgrade prior to placing compacted fill (e.g., placement of crushed rock, etc.).

Removal bottoms, over-excavation bottoms and areas to receive fill should be observed and accepted by the geotechnical consultant prior to subsequent fill placement. Soil subgrade for planned footings and improvements (e.g., slabs, etc.) should be firm and competent.

4.1.5 Material for Fill

From a geotechnical perspective, the onsite soils are generally considered suitable for use as general compacted fill, provided they are screened of organic materials, construction debris and oversized material (8 inches in greatest dimension).

From a geotechnical viewpoint, any required import soils for general fill (i.e., non-retaining wall backfill) should consist of soils of “Very Low” expansion potential (expansion index 20 or less based on American Society for Testing and Materials [ASTM] D 4829), and free of organic materials, construction debris and any material greater than 3 inches in maximum dimension. Import for any required retaining wall backfill should meet the criteria outlined in the following paragraph. Source samples should be provided to the geotechnical consultant for laboratory testing a minimum of four working days prior to any planned importation.

Some of the onsite soils are not suitable for retaining wall backfill due to their fines content; therefore, select grading and stockpiling, or import of select sandy soils will be required by the contractor for obtaining suitable retaining wall backfill soil. These preliminary findings will be confirmed during grading. Retaining wall backfill should consist of imported sandy soils with a maximum of 35 percent fines (passing the No. 200 sieve) per ASTM Test Method D1140 (or ASTM D6913/D422) and a “Very Low” expansion potential (EI of 20 or less per ASTM D4829). Soils should also be screened of organic materials, construction debris, and material greater than 3 inches in maximum dimension.

Aggregate base (crushed aggregate base or crushed miscellaneous base) should conform to the requirements of Section 200-2 of the most recent version of the Standard Specifications for Public Works Construction (“Greenbook”) for untreated base materials (except processed miscellaneous base) and/or City of Garden Grove requirements.

The placement of demolition materials in compacted fill is acceptable from a geotechnical viewpoint provided the demolition material is broken up into pieces not larger than typically used for aggregate base (approximately 2-inches in maximum dimension) and well blended into fill soils with essentially no resulting voids. Demolition material placed in fills must be free of construction debris (wood, organics, etc.) and reinforcing steel. If asphalt concrete fragments will be incorporated into the demolition materials, approval from an environmental viewpoint may be required and is not the purview of the geotechnical consultant. From our previous experience, we recommend that asphalt concrete fragments be limited to fill areas within planned street areas (i.e., not within building pad areas).

4.1.6 Placement and Compaction of Fills

Material to be placed as fill should be brought to near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content) and recompacted to at least 90 percent relative compaction (per ASTM D1557). Moisture conditioning of site soils will be required in order to achieve adequate compaction. Significant drying and or mixing of very moist soils will be required prior to reusing the

materials in compacted fills. In general, near surface soils present at the site will require additional moisture in order to achieve required compaction.

The optimum lift thickness to produce a uniformly compacted fill will depend on the type and size of compaction equipment used. In general, fill should be placed in uniform lifts not exceeding 8 inches in compacted thickness. Each lift should be thoroughly compacted and accepted prior to subsequent lifts. Generally, placement and compaction of fill should be performed in accordance with local grading ordinances and with observation and testing performed by the geotechnical consultant. Oversized material as previously defined should be removed from site fills.

During backfill of excavations, the fill should be properly benched into firm and competent soils of temporary backcut slopes as it is placed in lifts.

Aggregate base material should be compacted to at least 95 percent relative compaction at or slightly above optimum moisture content per ASTM D1557. Subgrade below aggregate base should be compacted to at least 90 percent relative compaction per ASTM D1557 at near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content).

If gap-graded $\frac{3}{4}$ -inch rock is used for backfill (around storm drain storage chambers, retaining wall backfill, etc.) it will require compaction. Rock shall be placed in thin lifts (typically not exceeding 6 inches) and mechanically compacted with observation by geotechnical consultant. Backfill rock shall meet the requirements of ASTM D2321. Gap-graded rock is required to be wrapped in filter fabric (Mirafi 140N or approved alternative) to prevent the migration of fines into the rock backfill.

4.1.7 Trench and Retaining Wall Backfill and Compaction

Bedding material used within the pipe zone should conform to the requirements of the current Greenbook and the pipe manufacturer. Where applicable, sand having a sand equivalent (SE) of 20 or greater (per Caltrans Test Method [CTM] 217) may be used to bed and shade the pipes within the bedding zone. Sand backfill should be densified by jetting or flooding and then tamped to ensure adequate compaction. Bedding sand should be from a natural source, manufactured sand from recycled material is not suitable for jetting. The onsite soils may generally be considered suitable as trench backfill (zone defined as 12 inches above the pipe to subgrade), provided the soils are screened of rocks greater than 6 inches in maximum dimension, construction debris and organic material. Trench backfill should be compacted in uniform lifts (as outlined above in Section "Material for Fill") by mechanical means to at least 90 percent relative compaction (per ASTM D1557). If gap-graded rock is used for trench backfill, refer to above Section 4.1.6.

Retaining wall backfill should consist of sandy soils as outlined in preceding Section 4.1.5. The limits of select sandy backfill should extend at minimum $\frac{1}{2}$ the height of the retaining wall or the width of the heel (if applicable), whichever is greater (Figure 3). Retaining wall backfill soils should be compacted in relatively uniform thin lifts to at least 90 percent relative compaction (per ASTM D1557). Jetting or flooding of retaining wall backfill materials should not be permitted. If gap-graded rock is used for retaining wall

backfill, refer to above Section 4.1.6.

In backfill areas where mechanical compaction of soil backfill is impractical due to space constraints, typically sand-cement slurry may be substituted for compacted backfill. The slurry should contain about one sack of cement per cubic yard. When set, such a mix typically has the consistency of compacted soil. Sand cement slurry placed near the surface within landscape areas should be evaluated for potential impacts on planned improvements.

A representative from LGC Geotechnical should observe, probe, and test the backfill to verify compliance with the project recommendations.

4.1.8 Shrinkage and Subsidence

Allowance in the earthwork volumes budget should be made for an estimated 0 to 10 percent reduction in volume (shrinkage) of near-surface (upper approximate 5 feet) soils. It should be stressed that these values are only estimates and that an actual shrinkage factor would be extremely difficult to predetermine. Subsidence, due to earthwork operations, is expected to be on the order of 0.1-foot. These values are estimates only and exclude losses due to removal of any vegetation or debris. The effective shrinkage of onsite soils will depend primarily on the type of compaction equipment and method of compaction used onsite by the contractor and accuracy of the topographic survey.

4.2 Preliminary Foundation Recommendations

Preliminary foundation recommendations are provided in the following sections. Proposed building foundations should be designed in consideration of site liquefaction potential and dynamic settlement as outlined below. Due to liquefaction potential and dynamic settlement any isolated structural pad footings should be interconnected with grade beams.

Site soils are anticipated to be “Very Low” expansion potential (EI of 20 or less per ASTM D4829). Please note that the following foundation recommendations are preliminary and must be confirmed by LGC Geotechnical at the completion of grading. Recommended soil bearing and estimated static settlements are provided in Section 4.3.

4.2.1 Preliminary Foundation Design Parameters

Post-tensioned foundations should be designed for the more conservative of the differential seismic settlement due to liquefaction (see Section 2.6.1), or the post-tension parameters provided in Table 4 on the following page. These parameters have been determined in general accordance with the Post-Tensioning Institute (PTI, 2012) Standard Requirements (PTI DC 10.5), referenced in Chapter 18 of the 2019 CBC. In utilizing these parameters, the foundation engineer should design the foundation system in accordance with the allowable deflection criteria of applicable codes and the requirements of the structural designer/architect. Other types of stiff slabs may be used in place of the CBC post-tensioned slab design provided that, in the opinion of the

foundation structural designer, the alternative type of slab is at least as stiff and strong as that designed by the CBC/PTI method.

TABLE 4

Preliminary Geotechnical Parameters for Post-Tensioned Foundation Slab Design

Parameter	PT Slab with Perimeter Footing	PT Mat with Thickened Edge
Center Lift Edge moisture variation distance, e_m Center lift, y_m	9.0 feet 0.5 inch	9.0 feet 0.6 inch
Edge Lift Edge moisture variation distance, e_m Edge lift, y_m	4.7 feet 1.1 inch	4.7 feet 1.3 inch
Modulus of Subgrade Reaction, k (assuming presoaking as indicated below)	150 pci	150 pci
Minimum perimeter footing/thickened edge embedment below finish grade	12 inches	6 inches
1. Moisture condition to 100% of optimum moisture content to a minimum depth of 12 inches prior to trenching.		

4.2.2 Post-Tensioned Foundation Subgrade Preparation and Maintenance

Moisture conditioning of the subgrade soils is recommended prior to trenching the foundation. The duration of this process varies greatly based on the chosen method and is also dependent on factors such as soil type and weather conditions. The recommendations specific to the anticipated site soil conditions, including recommended moisture conditioning, are presented in Table 4 above. The subgrade moisture condition of the building pad soils should be maintained at near-optimum moisture content up to the time of concrete placement. This moisture content should be maintained around the immediate perimeter of the slab during construction and up to occupancy of the homes.

The geotechnical parameters provided herein assume that if the areas adjacent to the foundation are planted and irrigated, these areas will be designed with proper drainage and adequately maintained so that ponding, which causes significant moisture changes below the foundation, does not occur. Our recommendations do not account for excessive irrigation and/or incorrect landscape design. Plants should only be provided with sufficient irrigation for life and not overwatered to saturate subgrade soils. Sunken planters placed adjacent to the foundation, should either be designed with an efficient drainage system or liners to prevent moisture infiltration below the foundation. Some lifting of the perimeter foundation beam should be expected even with properly constructed planters.

In addition to the factors mentioned above, future homeowners should be made aware of the potential negative influences of trees and/or other large vegetation. Roots that extend near the vicinity of foundations can cause distress to foundations. Future homeowners (and the owner's landscape architect) should not plant trees/large shrubs closer to the foundations than a distance equal to half the mature height of the tree or 20 feet, whichever is more conservative unless specifically provided with root barriers to prevent root growth below the house foundation.

Future homeowners should be informed and educated regarding the importance of maintaining a constant level of soil-moisture. The builder should provide these recommendations to future homeowners.

4.2.3 Slab Underlayment Guidelines

The following is for informational purposes only since slab underlayment (e.g., moisture retarder, sand or gravel layers for concrete curing and/or capillary break) is unrelated to the geotechnical performance of the foundation and thereby not the purview of the geotechnical consultant. Post-construction moisture migration should be expected below the foundation. The foundation engineer/architect should determine whether the use of a capillary break (sand or gravel layer), in conjunction with the vapor retarder, is necessary or required by code. Sand layer thickness and location (above and/or below vapor retarder) should also be determined by the foundation engineer/architect.

4.3 Soil Bearing and Lateral Resistance

Provided our earthwork recommendations are implemented, a mat foundation a minimum of 6 inches below lowest adjacent grade may be designed for an allowable soil bearing pressure of 1,000 psf. For minor structures, an allowable soil bearing pressure of 1,500 pounds per square foot (psf) may be used for the design of footings having a minimum width of 12 inches and minimum embedment of 12 inches below lowest adjacent ground surface. This value may be increased by 300 psf for each additional foot of embedment and 150 psf for each additional foot of foundation width to a maximum value of 2,500 psf. These allowable bearing pressures are applicable for level (ground slope equal to or flatter than 5H:1V) conditions only. Bearing values indicated are for total dead loads and frequently applied live loads and may be increased by $\frac{1}{3}$ for short duration loading (i.e., wind or seismic loads). Due to liquefaction potential (Site Class "F") and estimated seismic settlement any isolated structural pad footings should be interconnected with grade beams.

In utilizing the above-mentioned allowable bearing capacity and estimated structural loads, foundation settlement due to structural loads is anticipated to be 1-inch or less. Static differential settlement may be taken as half of the total settlement (i.e., $\frac{1}{2}$ -inch over a horizontal span of 40 feet). Dynamic settlement due to site liquefaction potential is presented in Section 2.6.1.

Resistance to lateral loads can be provided by friction acting at the base of foundations and by passive earth pressure. For concrete/soil frictional resistance, an allowable coefficient of friction of 0.30 may be assumed with dead-load forces. An allowable passive lateral earth pressure of 230 pcf to a maximum of 2,300 psf may be used for lateral resistance for properly compacted fill and

suitable native soils. This allowable passive pressure may be increased to 310 pcf to a maximum of 3,100 for short-duration seismic loading. This passive pressure is applicable for level (ground slope equal to or flatter than 5H:1V) conditions only. Frictional resistance and passive pressure may be used in combination without reduction. The provided allowable passive pressure is based on a static and seismic factor of safety of 1.5 and 1.1, respectively.

4.4 Lateral Earth Pressures for Retaining Walls

The following preliminary lateral earth pressures may be used for any site retaining walls 6 feet or less. Lateral earth pressures are provided as equivalent fluid unit weights, in pound per square foot (psf) per foot of depth or pcf. These values do not contain an appreciable factor of safety, so the retaining wall designer should apply the applicable factors of safety and/or load factors during design.

The following lateral earth pressures are presented on Table 5 for approved select granular soils with a maximum of 35 percent fines (passing the No. 200 sieve per ASTM D-421/422) and Very Low expansion potential (EI of 20 or less per ASTM D4829). The wall designer should clearly indicate on the retaining wall plans the required sandy soil backfill criteria.

TABLE 5

Lateral Earth Pressures – Sandy Backfill

Conditions	Equivalent Fluid Unit Weight (pcf)
	Level Backfill
	Approved Select Sandy Soils
Active	35
At-Rest	55

If the wall can yield enough to mobilize the full shear strength of the soil, it can be designed for “active” pressure. If the wall cannot yield under the applied load, the earth pressure will be higher. This would include 90-degree corners of retaining walls. Such walls should be designed for “at-rest.” The equivalent fluid pressure values assume free-draining conditions. If conditions other than those assumed above are anticipated, the equivalent fluid pressure values should be provided on an individual-case basis by the geotechnical engineer.

Retaining wall structures should be provided with appropriate drainage and appropriately waterproofed. To reduce, but not eliminate, saturation of near-surface (upper approximate 1-foot) soils in front of the retaining walls, the perforated subdrain pipe should be located as low as possible behind the retaining wall. The outlet pipe should be sloped to drain to a suitable outlet. In general, we do not recommend retaining wall outlet pipes be connected to area drains. If subdrains are connected to area drains, special care and information should be provided to homeowners to maintain these drains. Typical retaining wall drainage is illustrated

in Figure 3. It should be noted that the recommended subdrain does not provide protection against seepage through the face of the wall and/or efflorescence. Efflorescence is generally a white crystalline powder (discoloration) that results when water containing soluble salts migrates over a period of time through the face of a retaining wall and evaporates. If such seepage or efflorescence is undesirable, retaining walls should be waterproofed to reduce this potential. Waterproofing and outlet systems are not the purview of the geotechnical consultant.

Surcharge loading effects from any adjacent structures should be evaluated by the retaining wall designer. In general, structural loads within a 1:1 (horizontal to vertical) upward projection from the bottom of the proposed retaining wall footing will surcharge the proposed retaining structure. In addition to the recommended earth pressure, basement/retaining walls adjacent to streets should be designed to resist vehicular traffic if applicable. Uniform surcharges may be estimated using the applicable coefficient of lateral earth pressure using a rectangular distribution. A factor of 0.5 and 0.33 may be used for at-rest and active conditions, respectively. The vertical traffic surcharge may be determined by the structural designer. The structural designer should contact the geotechnical engineer for any required geotechnical input in estimating any applicable surcharge loads.

If a retaining wall greater than 6 feet in height is proposed, the retaining wall designer should contact the geotechnical engineer for specific seismic lateral earth pressure increments based on the configuration of the planned retaining wall structures.

Soil bearing and lateral resistance (friction coefficient and passive resistance) are provided in Section 4.3. Earthwork considerations (temporary backcuts, backfill, compaction, etc.) for retaining walls are provided in Section 4.1 (Site Earthwork) and the subsequent earthwork related sub-sections.

4.5 Soil Corrosivity

Although not corrosion engineers (LGC Geotechnical is not a corrosion consultant), several governing agencies in Southern California require the geotechnical consultant to determine the corrosion potential of soils to buried concrete and metal facilities. We therefore present the results of our testing with regard to corrosion for the use of the client and other consultants, as they determine necessary.

Corrosion testing of a near-surface bulk sample indicated a soluble sulfate content of less than approximately 0.02 percent, a chloride content of 240 ppm, pH of 7.9, and a minimum resistivity of 2770 ohm-centimeters. Based on Caltrans Corrosion Guidelines (Caltrans, 2021), soils are considered corrosive to structural elements if the pH is 5.5 or less, or the chloride concentration is 500 ppm or greater, or the sulfate concentration is 1,500 ppm (0.15 percent) or greater. Based on the preliminary test results, soils are not considered corrosive using Caltrans criteria.

Based on preliminary laboratory sulfate test results, the near surface soils are designated to a class "S0" per ACI 318, Table 19.3.1.1 with respect to sulfates. Concrete in direct contact with the onsite soils can be designed according to ACI 318, Table 19.3.2.1 using the "S0" sulfate classification.

4.6 Control of Surface Water and Drainage Control

From a geotechnical perspective, we recommend that compacted finished grade soils adjacent to proposed residences be sloped away from the proposed residence and towards an approved drainage device or unobstructed swale. Drainage swales, wherever feasible, should not be constructed within 5 feet of buildings. Where lot and building geometry necessitates that the side yard drainage swales be routed closer than 5 feet to structural foundations, we recommend the use of area drains together with drainage swales. Drainage swales used in conjunction with area drains should be designed by the project civil engineer so that a properly constructed and maintained system will prevent ponding within 5 feet of the foundation. Code compliance of grades is not the purview of the geotechnical consultant.

Planters with open bottoms adjacent to buildings should be avoided. Planters should not be designed adjacent to buildings unless provisions for drainage, such as catch basins, liners, and/or area drains, are made. Overwatering must be avoided.

4.7 Subsurface Water Infiltration

Recent regulatory changes have occurred that mandate storm water be infiltrated below grade rather than collected in a conventional storm drain system. It should be noted that collecting and concentrating surface water for the purpose of intentionally infiltrating it below grade, conflicts with the geotechnical engineering objective of directing surface water away from slopes, structures and other improvements. The geotechnical stability and integrity of a site is reliant upon appropriately handling surface water. In general, we do not recommend that surface water be intentionally infiltrated into the subsurface soils.

If it is determined that water must be infiltrated due to regulatory requirements, we recommend the absolute minimum amount of water be infiltrated and that the infiltration areas not be located near slopes or near settlement sensitive existing/proposed improvements. Contamination and environmental suitability of the site for infiltration is not the purview of the geotechnical consultant and should be evaluated by others. LGC Geotechnical only addressed the geotechnical issues associated with stormwater infiltration.

As with all systems that are designed to concentrate surface flow and direct the water into the subsurface soils, some minor settlement, nuisance type localized saturation and/or other water related issues should be expected. Due to variability in geologic and hydraulic conductivity characteristics, these effects may be experienced at the onsite location and/or potentially at other locations well beyond the physical limits of the subject site. Infiltrated water may enter underground utility pipe zones or flow along heterogeneous soil layers or geologic structure and migrate laterally, impacting other improvements that may be located far away or at an elevation much different than the infiltration source.

Based on the results of our field infiltration testing, the Observed Infiltration Rates for I-1 and I-2 (not including required factors of safety for design) were 5.9 and 5.7 inches per hour, respectively. The Design Infiltration Rate shall be determined by dividing the Observed Infiltration Rate by a series of safety factors for site suitability and design considerations that are the purview of both the geotechnical consultant and designer of the infiltration system (County of Orange, 2013). The recommended geotechnical factors of safety that are to be used

to determine the Design Infiltration Rate are provided in Table 6 below.

TABLE 6

Geotechnical Factors of Safety for Design Infiltration Rate

A: Site Suitability Considerations (From Table VII.3)*	
Consideration	Factor of Safety (F.S.)
Soil Assessment Methods	2
Texture Class	1
Site Soil Variability	2
Depth to Groundwater/Impervious Layer	1
Calculated Suitability Assessment Factor of Safety	1.5
B: Design Related Considerations (From Table VII.4)*	
Consideration	Factor of Safety (F.S.)
Tributary Size Area	Per Infiltration Designer
Level of Pretreatment	Per Infiltration Designer
Redundancy of Treatment	Per Infiltration Designer
Compaction during Construction	2
Calculated Design Factor of Safety	Per Infiltration Designer
Combined F.S.= Suitability F.S x Design F.S.	TBD

*from County of Orange, 2013

The factor of safety used to determine the Design Infiltration Rate is determined by multiplying the calculated suitability assessment factor of safety of 1.5 by the design factor of safety that is to be determined (TBD) by the infiltration system designer. The Design Infiltration Rate is thereby equal to the Observed Infiltration Rate provided in Table 1 of Section 2.4 (inches per hour) divided by the product of 1.5 times the calculated design factor of safety. The combined factor of safety must be a minimum of 2.0 but need not exceed 9.0. Results of field infiltration testing are attached to this report.

The following should be considered for design of any required infiltration system:

- Water discharge from any infiltration systems should not occur within the zone of influence of foundation footings (column and load bearing wall locations). At this time, we understand the bottom of infiltration system (~6.5 feet below grade) is proposed to be approximately 10 feet from the nearest building foundation. Based on this separation and the sites' liquefaction potential, we recommend directly adjacent foundations be provided with a minimum stiffness, to be evaluated once foundation plans are generated.
- We recommend the drilling of three small-diameter holes through the bottom of each infiltration vault to minimum depths of approximately 15 feet below existing grade and backfilling the holes with approved clean sand up to infiltration bottom grades. Holes drilled in the bottom of the infiltration system would reduce the potential for water

becoming suspended within the upper alluvial soils by acting as a high permeability conduit, transferring surface water to the deeper sandy native materials below.

- Please note that the infiltration values reported herein are for native materials only and are not for compacted fill.
- An adequate setback distance between any infiltration facility and adjacent private property should be maintained.
- We recommend the design of any infiltration system include at least one redundancy or overflow system. It may be prudent to provide an overflow system connected directly to a storm drain system in order to prevent failure of the infiltration system, either as a result of lower than anticipated infiltration with time and/or very high flow volumes.
- The infiltration values provided are based on clean water and this requires the removal of trash, debris, soil particles, etc., and on-going maintenance. Over time, siltation and plugging may reduce the infiltration rate and subsequent effectiveness of the infiltration system. It should be noted that methods to prevent this shall be the responsibility of the infiltration designer and are not the purview of the geotechnical consultant. If adequate measures cannot be incorporated into the design and maintenance of the system, then the infiltration rates may need to be further reduced. These and other factors should be considered in selecting a Design Infiltration Rate.
- Any designed infiltration system will require routine periodic maintenance.
- As with any systems that are designed to concentrate the surface flow and direct the water into the subsurface soils, some type of nuisance water and/or other water-related issues should be expected.
- Contamination and environmental suitability of the site for infiltration was not evaluated by us and should be evaluated by others (environmental consultant). We only addressed the geotechnical issues associated with stormwater infiltration.

4.8 Preliminary Asphalt Concrete Pavement Sections

The following provisional minimum asphalt concrete (AC) street sections are provided in Table 7 below for Traffic Indices (TI) of 5.0, 5.5 and 6.0. These sections are based on an estimated R-value of 25. These recommendations must be confirmed with R-value testing of representative near-surface soils at the completion of grading and after underground utilities have been installed and backfilled. Final pavement sections should be confirmed by the project civil engineer based upon the final design Traffic Index. If requested, LGC Geotechnical will provide sections for alternate TI values.

TABLE 7

Preliminary Pavement Section Options

Assumed Traffic Index	5.0	5.5	6.0
R -Value Subgrade	25	25	25
AC Thickness	4.0 inches	4.0 inches	4.0 inches
Aggregate Base Thickness	5.0 inches	6.5 inches	8.5 inches

The pavement section thicknesses provided above are considered minimum thicknesses. Increasing the thickness of any or all the above layers will reduce the likelihood of the

pavement experiencing distress during its service life. The above recommendations assume that proper maintenance and irrigation of the areas adjacent to the roadway will occur throughout the design life of the pavement. Failure to maintain a proper maintenance and/or irrigation program may jeopardize the integrity of the pavement.

Earthwork recommendations regarding aggregate base and subgrade are provided in the previous Section 4.1 (Site Earthwork) and the related sub-sections of this report.

4.9 Nonstructural Concrete Flatwork Guidelines

Nonstructural concrete flatwork (such as walkways, private drives, patio slabs, etc.) has a potential for cracking due to changes in soil volume related to soil-moisture fluctuations. To reduce the potential for excessive cracking and lifting, concrete may be designed in accordance with the minimum guidelines outlined in Table 8 below. These guidelines will reduce the potential for irregular cracking and promote cracking along control joints but will not eliminate all cracking or lifting. Thickening the concrete and/or adding additional reinforcement will further reduce cosmetic distress.

TABLE 8

Nonstructural Concrete Flatwork Guidelines for Very Low Expansion Potential

	Homeowner Sidewalks	Private Drives	Patios/ Entryways	City Sidewalk Curb and Gutters
Minimum Thickness (in.)	4 (nominal)	4 (full)	4 (full)	City/Agency Standard
Presoaking	Wet down prior to placing	Wet down prior to placing	Wet down prior to placing	City/Agency Standard
Reinforcement	—	No. 3 at 24 inches on centers	No. 3 at 24 inches on centers	City/Agency Standard
Thickened Edge (in.)	—	8 x 8	—	City/Agency Standard
Crack Control Joints	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	City/Agency Standard
Maximum Joint Spacing	5 feet	10 feet or quarter cut whichever is closer	6 feet	City/Agency Standard
Aggregate Base Thickness (in.)	—	—	—	City/Agency Standard

To reduce the potential for driveways to separate from the garage slab, the builder may elect to install dowels to tie these two elements together. Similarly, future homeowners should consider the use of dowels to connect flatwork to the foundation.

4.10 Geotechnical Plan Review

When available project plans (e.g., grading, foundation, retaining wall, etc.) should be reviewed by LGC Geotechnical in order to verify our geotechnical recommendations are implemented. Updated recommendations and/or additional field work may be necessary.

4.11 Geotechnical Observation and Testing During Construction

The recommendations provided in this report are based on limited subsurface observations and geotechnical analysis. The interpolated subsurface conditions should be checked in the field during construction by a representative of LGC Geotechnical. Geotechnical observation and testing is required per Section 1705 of the 2019 California Building Code (CBC).

Geotechnical observation and/or testing should be performed by LGC Geotechnical at the following stages:

- During grading (removal bottoms, fill placement, etc);
- During utility trench backfill and compaction;
- After presoaking building pads and other concrete-flatwork subgrades, and prior to placement of aggregate base or concrete;
- Preparation of pavement subgrade and placement of aggregate base;
- After building and wall footing excavation and prior to placing steel reinforcement and/or concrete; and
- When any unusual soil conditions are encountered during any construction operation subsequent to issuance of this report.

5.0 LIMITATIONS

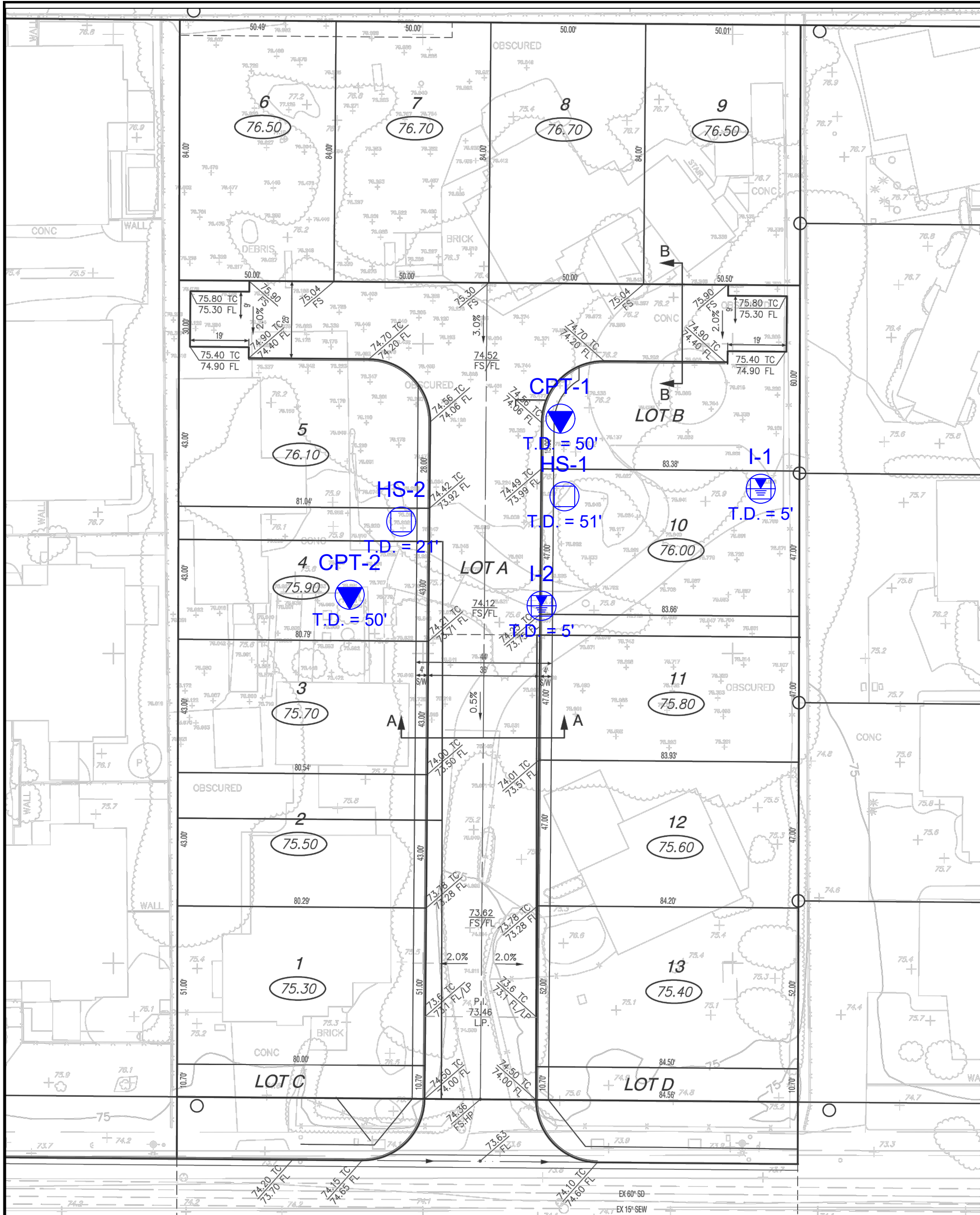
Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

This report is based on data obtained from limited observations of the site, which have been extrapolated to characterize the site. While the scope of services performed is considered suitable to adequately characterize the site geotechnical conditions relative to the proposed development, no practical evaluation can completely eliminate uncertainty regarding the anticipated geotechnical conditions in connection with a subject site. Variations may exist and conditions not observed or described in this report may be encountered during grading and construction.




This report is issued with the understanding that it is the responsibility of the owner, or of his/her representative, to ensure that the information and recommendations contained herein are brought to the attention of the other consultants (at a minimum the civil engineer, structural engineer, landscape architect) and incorporated into their plans. The contractor should properly implement the recommendations during construction and notify the owner if they consider any of the recommendations presented herein to be unsafe, or unsuitable.

The findings of this report are valid as of the present date. However, changes in the conditions of a site can and do occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. The findings, conclusions, and recommendations presented in this report can be relied upon only if LGC Geotechnical has the opportunity to observe the subsurface conditions during grading and construction of the project, in order to confirm that our preliminary findings are representative for the site. This report is intended exclusively for use by the client, any use of or reliance on this report by a third party shall be at such party's sole risk.

In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and modification.



LEGEND

- 
HS-1
 Approximate Location of Hollow Stem Auger Boring by LGC Geotechnical, With Total Depth in Feet
- 
T.D. = 51'
CPT-2
 Approximate Location of Cone Penetration Test (CPT), Total Depth in Feet
- 
T.D. = 50'
I-1
 Approximate Location of Hollow Stem Auger Infiltration Boring by LGC Geotechnical, With Total Depth in Feet



SCALE: 1" = 30'



LGC Geotechnical, Inc.
 131 Calle Iglesia, Ste. 200
 San Clemente, CA 92672
 TEL (949) 369-6141 FAX (949) 369-6142

FIGURE 2
Boring
Location Map

PROJECT NAME	PLC - Lampson
PROJECT NO.	22030-01
ENG. / GEOL.	DJB / KTM
SCALE	1" = 30'
DATE	May 2022

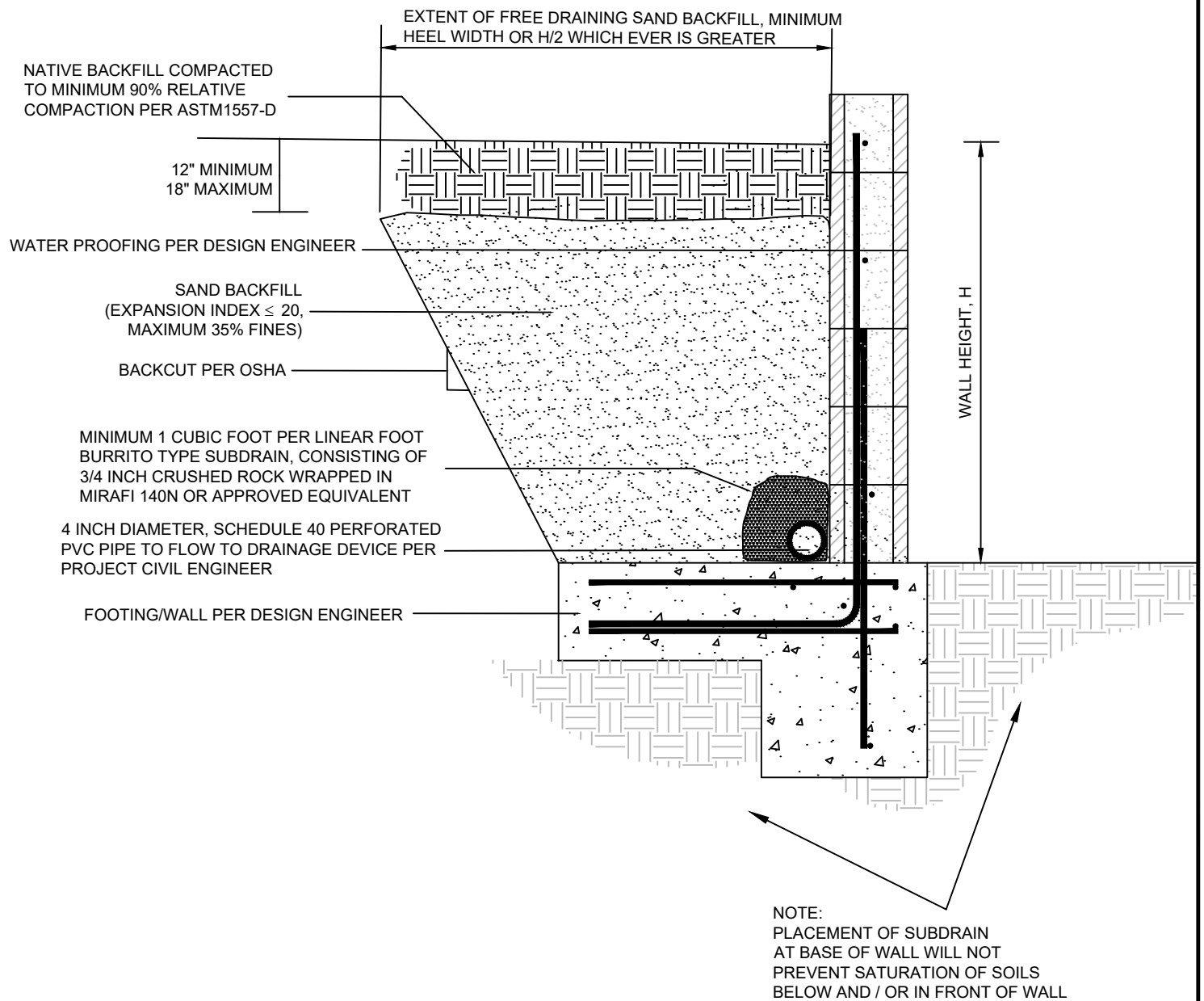


FIGURE 3
Retaining Wall
Backfill Detail

PROJECT NAME	PLC - Lampson
PROJECT NO.	22030-01
ENG. / GEOL.	DJB/KTM
SCALE	Not to Scale
DATE	May 2022

Appendix A
References

APPENDIX A

References

- American Concrete Institute, 2014, Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary (ACI 318R-14).
- American Society of Civil Engineers (ASCE), 2017, Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-16, Third Printing, 2017.
- _____, 2018, Standard 7-16, Minimum Design Loads for Buildings and Associated Criteria for Buildings and Other Structures, Supplement 1, effective: December 12, 2018.
- American Society for Testing and Materials (ASTM), Volume 04.08 Soil and Rock (I): D420 – D5876.
- Bassenian Lagoni, 2022, Conceptual Site Plan, 9071 Lampson Ave, Garden Grove, California, dated January 18, 2022.
- Bray, J.D., and Sancio, R. B., 2006, Assessment of Liquefaction Susceptibility of Fine-Grained Soils, *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, pp. 1165-1177, dated September 2006.
- California Building Standards Commission, 2019, California Building Code, California Code of Regulations Title 24, Volumes 1 and 2, dated July 2019.
- California Department of Transportation (Caltrans), 2021, Corrosion Guidelines, Version 3.2, dated May 2021.
- California Division of Mines and Geology (CDMG), 1998, State of California Seismic Hazard Zones, Anaheim Quadrangle, Revised Official Map Released: April 15, 1998.
- _____, 2001, Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-Minute Quadrangles, Orange County, California, [CDMG Open-File Report 97-08], Seismic Hazard Zone Report 003, Revised 2001.
- California Geological Survey [CGS], 2008, California Geological Society Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California.
- _____, 2018, Earthquake Fault Zones, Special Publication 42; A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California, Revised 2018.
- County of Orange, 2013, Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs), Exhibit 7.III, December 20, 2013.
- GeoLogismiki, 2021, CLiq, v.3.3.1.14, Software for Liquefaction Potential Evaluation using Cone Penetration Tests and Standard Penetration Tests.

- Historical Aerials, 2022, viewed April 28, 2022, Aerials viewed from: 1953, 1963, 1972, 1987, 1992, 2000 and 2018, <https://www.historicaerials.com/>
- LGC Geotechnical, 2022, Summary of Field Infiltration Testing for the Proposed Residential Development at 9071 Lampson Avenue, Garden Grove, California, Project No. 22030-01, dated March 17, 2022
- MDS Consulting, 2022, Conceptual Grading Drainage and Utility Plan, 9071 Lampson Avenue, City of Garden Grove, County of Orange, State of California, dated February 22, 2022.
- Morton, D.M., 2004, Preliminary Digital Geologic Map of the Santa Ana 30' X 60' Quadrangle, Southern California, U.S.G.S. Open-File Report 99-172, Scale: 1:100,000, Version 2.0, dated 2004
- NCEER, 1997, "Proceeding of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils", T.L. Youd and I. M. Idriss Editors, Technical Report NCEER-97-0022, NCEER, Buffalo, NY.
- Post-Tensioning Institute (PTI), 2012, Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils, PTI DC10.5-12.
- Robertson, P.K., 2010, Evaluation of flow liquefaction and liquefied strength using the cone penetration test, *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, pp. 842-853, dated June 2010.
- Southern California Earthquake Center (SCEC), 1999, "Recommended Procedure for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigation Liquefaction Hazards in California", Edited by Martin, G.R., and Lew, M., dated March 1999.
- Tokimatsu, K., and Seed, H. B., 1987, "Evaluation of Settlements in Sands Due to Earthquake Shaking", *Journal of Geotechnical Engineering*, ASCE, Vol. 113, No. 8, pp. 861-878.
- Structural Engineers Association of California (SEAOC), 2022, OSHPD Seismic Design Maps, Retrieved April 26, 2022, from: <https://seismicmaps.org/>.
- United States Geological Survey (USGS), 2014, Unified Hazard Tool, Dynamic: Conterminous U.S. 2014 (v4.2.0), Retrieved March 7, 2022, from: <https://earthquake.usgs.gov/hazards/interactive/>.

Appendix B
Boring & CPT Logs

Geotechnical Boring Log Borehole HS-1

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 2

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0	B-1						@0'- Silty SAND: dark brown, slightly moist; rootlets	CR EI MD
65	5	R-1		5 9 14	103.1	7.6	SM	@5'- Silty SAND: grayish brown, moist, medium dense	
		R-2		5 11 16	102.2	13.1		@7'- Silty SAND: brown, very moist, medium dense	
60	10	R-3		11 15 15	102.6	4.1		@10'- Silty SAND: brown, slightly moist, medium dense	
55	15	SPT-1		4 7 11		18.3	SW-SM	@15'- SAND with SILT: grayish brown, wet, medium dense	
50	20	R-4		21 37 45	112.1	17.4		@20'- SAND with Silt: gray, wet, very dense	
45	25	SPT-2		7 12 16		22.2	SM	@25'- Silty SAND: gray, wet, dense	
	30								



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.



SAMPLE TYPES: B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE GROUNDWATER TABLE	TEST TYPES: DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE #200 % PASSING # 200 SIEVE
--	--

Last Edited: 4/22/2022

Geotechnical Boring Log Borehole HS-1

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 2 of 2

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		R-5	1 2 3	103.0	22.1	SC-SM	@30'- Silty/Clayey SAND: gray, wet, loose	AL -#200
	35		SPT-3	3 1 3		28.1	SC	@35'- Clayey SAND: gray, wet, loose	AL -#200
	40		R-6	8 20 31	109.5	20.0	ML	@40'- SILT: brown, wet, hard	
	45		SPT-4	3 4 11		43.1	CL-ML	@45'- Silty CLAY: gray, wet, very stiff	
	50		R-7	4 10 16	94.8	29.1	CL	@50'- Sandy CLAY: olive gray, wet, very stiff	AL -#200
	55							Total Depth = 50' Groundwater Encountered at Approximately 14' Backfilled with Cuttings on 2/28/2022	
	60								

	<p>THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.</p>	<p>SAMPLE TYPES: B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE</p> <p> GROUNDWATER TABLE</p>	<p>TEST TYPES: DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE -#200 % PASSING # 200 SIEVE</p>
---	--	--	--

Geotechnical Boring Log Borehole HS-2

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0	B-1						@0'- Silty SAND: dark brown, slightly moist; rootlets	
65	5	R-1		6 8 10	94.8	1.8	SP-SM	@5'- SAND with Silt: brown, dry, medium dense	
		R-2		10 15 19	116.6	10.9		@7'- SAND with Silt: brown, moist, medium dense	
60	10	R-3		9 13 13	100.2	3.2	SP	@10'- SAND: grayish brown, slight moist, medium dense	
55	15	SPT-1		3 5 5		21.1	SW-SM	@15'- SAND with Silt: grayish brown, wet, medium dense	AL -#200
50	20	R-4		20 32 40	111.2	18.4	SM	@20'- Silty SAND: gray, wet, very dense	
45	25	Total Depth = 20' Groundwater Encountered at Approximately 14' Backfilled with Cuttings on 2/28/2022							
30									



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES: B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE GROUNDWATER TABLE	TEST TYPES: DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE -#200 % PASSING # 200 SIEVE
--	---

Geotechnical Boring Log Borehole I-1

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0							@0'- Silty SAND: olive brown, moist	
65	5							Total Depth = 5' Groundwater Not Encountered 3" Perforated Pipe with Filter Sock Installed, Surrounded by Gravel, and Presoaked on 2/28/2022. Pipe Removed and Boring Backfilled with Cuttings on 3/1/2022	
60	10								
55	15								
50	20								
45	25								
30									



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES:		TEST TYPES:	
B	BULK SAMPLE	DS	DIRECT SHEAR
R	RING SAMPLE (CA Modified Sampler)	MD	MAXIMUM DENSITY
G	GRAB SAMPLE	SA	SIEVE ANALYSIS
SPT	STANDARD PENETRATION TEST SAMPLE	S&H	SIEVE AND HYDROMETER
		EI	EXPANSION INDEX
		CN	CONSOLIDATION
		CR	CORROSION
		AL	ATTERBERG LIMITS
		CO	COLLAPSE/SWELL
		RV	R-VALUE
		#200	% PASSING # 200 SIEVE



Last Edited: 4/22/2022

Geotechnical Boring Log Borehole I-2

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	Logged By CMP Sampled By CMP Checked By KTM DESCRIPTION	Type of Test
	0							@0'- Silty SAND: olive brown, moist	
65	5							Total Depth = 5' Groundwater Not Encountered 3" Perforated Pipe with Filter Sock Installed, Surrounded by Gravel, and Presoaked on 2/28/2022. Pipe removed and boring backfilled with Cuttings on 3/1/2022.	
60	10								
55	15								
50	20								
45	25								
30									

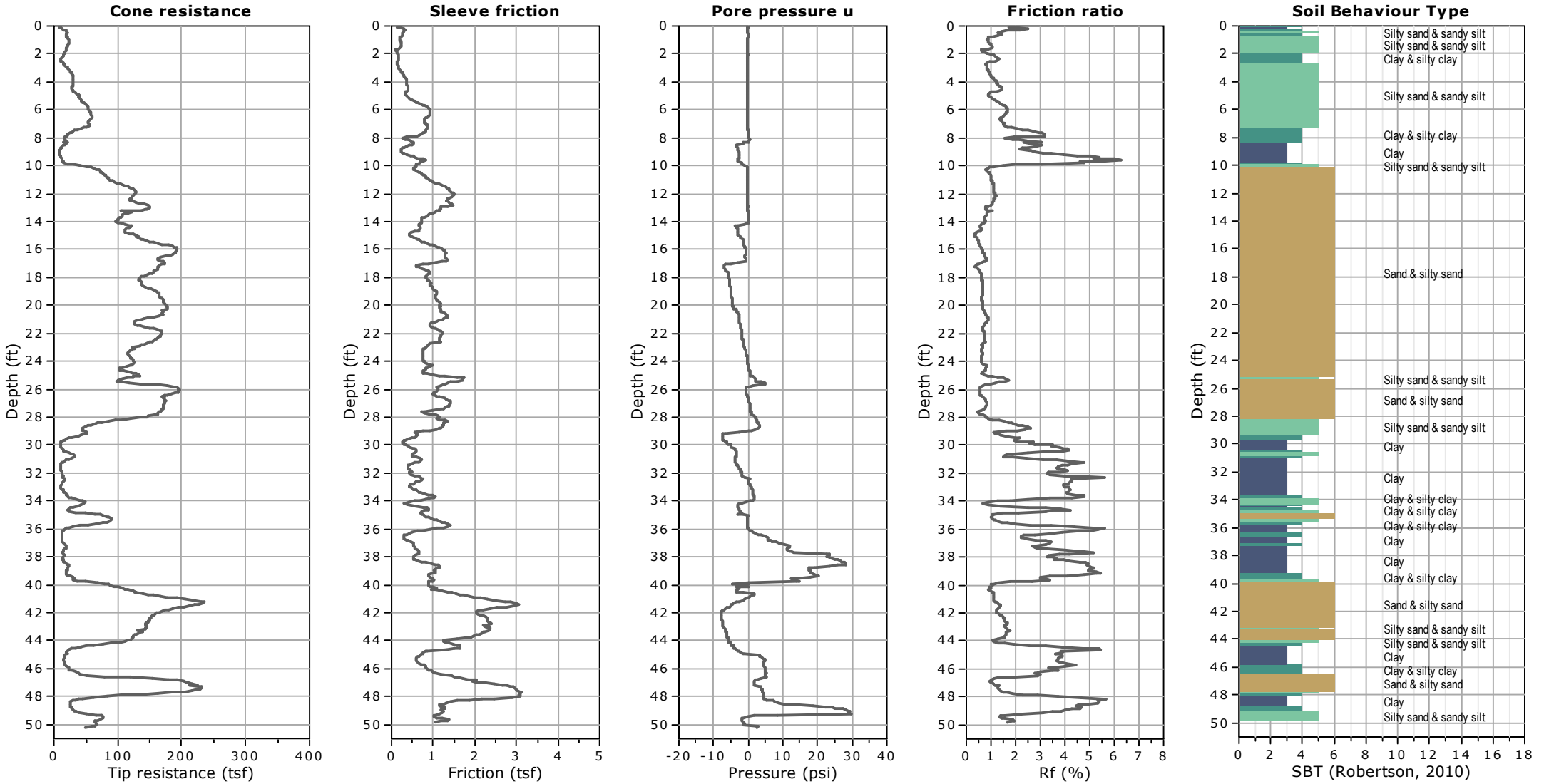


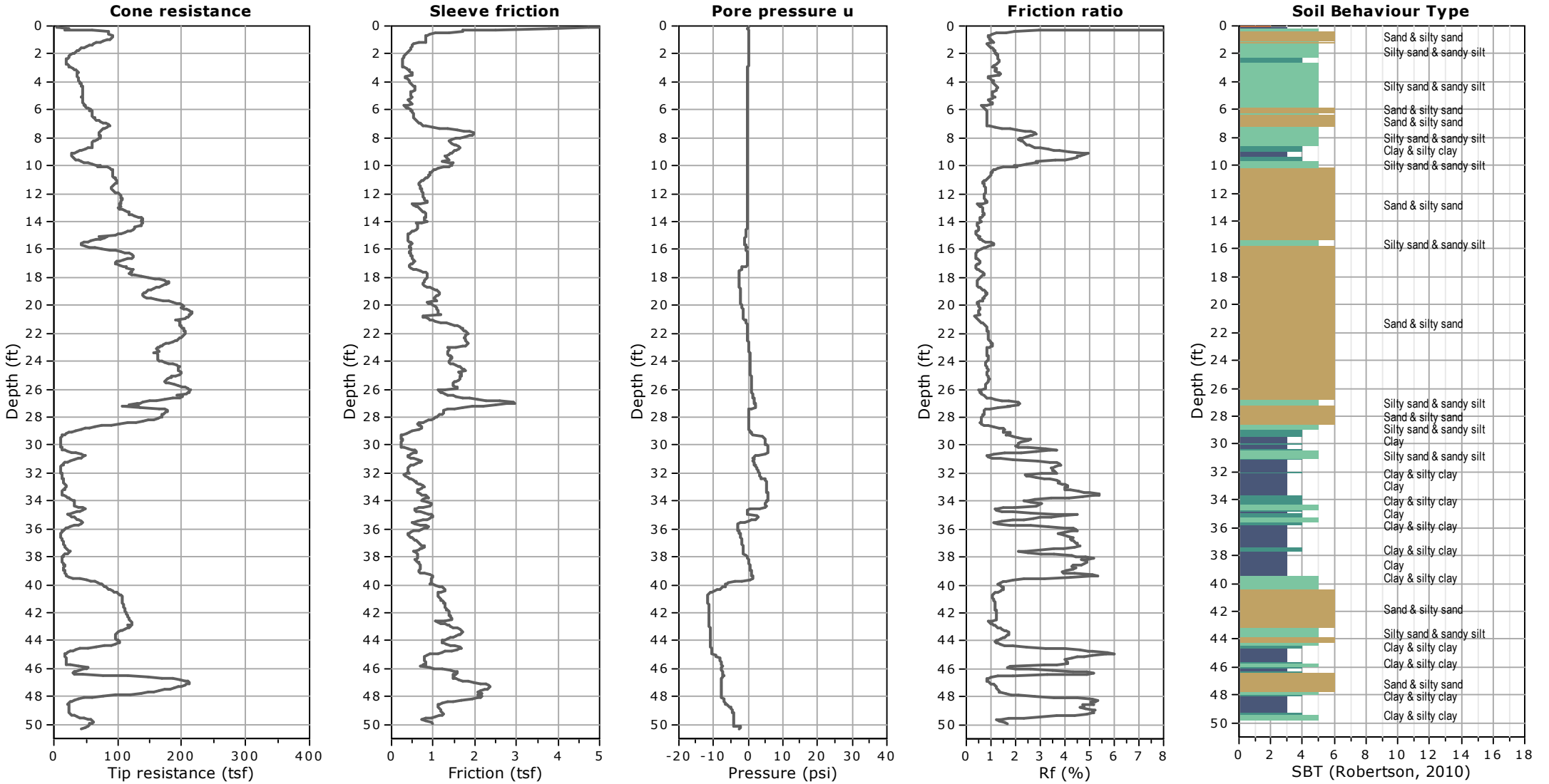
THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES:
 B BULK SAMPLE
 R RING SAMPLE (CA Modified Sampler)
 G GRAB SAMPLE
 SPT STANDARD PENETRATION TEST SAMPLE

GROUNDWATER TABLE

TEST TYPES:
 DS DIRECT SHEAR
 MD MAXIMUM DENSITY
 SA SIEVE ANALYSIS
 S&H SIEVE AND HYDROMETER
 EI EXPANSION INDEX
 CN CONSOLIDATION
 CR CORROSION
 AL ATTERBERG LIMITS
 CO COLLAPSE/SWELL
 RV R-VALUE
 #200 % PASSING # 200 SIEVE





LGC Geotechnical
 9071 Lampson Ave
 Garden Grove, CA

CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-1	5.02	4.02	4.49	9.40	478	
	10.04	9.04	9.26	16.12	574	710
	15.06	14.06	14.20	25.36	560	535
	20.31	19.31	19.41	33.60	578	632
	25.07	24.07	24.15	40.56	595	681
	30.02	29.02	29.09	50.40	577	502
	35.04	34.04	34.10	58.12	587	649
	40.50	39.50	39.55	66.78	592	630
	45.01	44.01	44.06	72.80	605	748
	50.03	49.03	49.07	79.64	616	733
CPT-2	5.02	4.02	4.49	8.24	545	
	10.04	9.04	9.26	16.68	555	565
	15.03	14.03	14.17	25.90	547	533
	20.05	19.05	19.15	32.76	585	726
	25.03	24.03	24.11	41.02	588	600
	30.02	29.02	29.09	49.24	591	605
	35.01	34.01	34.07	58.24	585	553
	39.99	38.99	39.04	65.68	594	668
	45.05	44.05	44.10	72.24	610	770
	50.07	49.07	49.11	79.20	620	721

Shear Wave Source Offset - 2 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
 Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

Appendix C
Laboratory Test Results

APPENDIX C

Laboratory Test Results

The laboratory testing program was directed towards providing quantitative data relating to the relevant engineering properties of the soils. Samples considered representative of site conditions were tested in general accordance with American Society for Testing and Materials (ASTM) procedure and/or California Test Methods (CTM), where applicable. The following summary is a brief outline of the test type and a table summarizing the test results.

Moisture and Density Determination Tests: Moisture content (ASTM D2216) and dry density determinations (ASTM D2937) were performed on driven samples obtained from the test borings. The results of these tests are presented in the boring logs. Where applicable, only moisture content was determined from SPT or disturbed samples.

Expansion Index: The expansion potential of selected samples was evaluated by the Expansion Index Test, Standard ASTM D4829. Specimens are molded under a given compactive energy to approximately the optimum moisture content and approximately 50 percent saturation or approximately 90 percent relative compaction. The prepared 1-inch-thick by 4-inch-diameter specimens are loaded to an equivalent 144 psf surcharge and are inundated with tap water until volumetric equilibrium is reached. The results of these tests are presented in the table below.

Sample Location	Expansion Index	Expansion Potential*
HS-1 @ 1-3 feet	1	Very Low

* ASTM D4829

Atterberg Limits: The liquid and plastic limits (“Atterberg Limits”) were determined per ASTM D4318 for engineering classification of fine-grained material and presented in the table below. The USCS soil classification indicated in the table below is based on the portion of sample passing the No. 40 sieve and may not necessarily be representative of the entire sample. The plots are provided in this Appendix.

Sample Location	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	USCS Soil Classification
HS-1 @ 15 ft	NP	NP	NP	NP
HS-1 @ 30 ft	19	13	6	CL-ML
HS-1 @ 35 ft	24	14	10	CL
HS-1 @ 50 ft	27	17	10	CL

APPENDIX C (Cont'd)

Laboratory Test Results

Grain Size Distribution/Fines Content: Representative samples were dried, weighed, and soaked in water until individual soil particles were separated (per ASTM D421) and then washed on a No. 200 sieve (ASTM D1140). Where applicable, the portion retained on the No. 200 sieve was dried and then sieved on a U.S. Standard brass sieve set in accordance with ASTM D6913 (sieve) or ASTM D422 (sieve and hydrometer).

Sample Location	Description	% Passing # 200 Sieve
HS-1 @ 30 ft	Gray Silty, Clayey Sand	13.1
HS-1 @ 35 ft	Gray Clayey Sand	46.2
HS-1 @ 50 ft	Olive Gray Sandy Lean Clay	63.1
HS-2 @ 15 ft	Grayish Brown Well-Graded Sand with Silt	4.9

Laboratory Compaction: The maximum dry density and optimum moisture content of typical materials were determined in accordance with ASTM D1557. The results are presented in the table below.

Sample Location	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
HS-1 @ 1-3 ft	Brownish Yellow Sand with Silt	111.5	8.0

Soluble Sulfates: The soluble sulfate contents of selected samples were determined by standard geochemical methods (CTM 417). The test results are presented in the table below.

Sample Location	Sulfate Content (ppm)	Sulfate Content (%)
HS-1 @ 1-3 ft	123	0.0123

Chloride Content: Chloride content was tested per CTM 422. The results are presented below.

Sample Location	Chloride Content (ppm)
HS-1 @ 1-3 ft	240

APPENDIX C (Cont'd)

Laboratory Test Results

Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed in general accordance with CTM 643 and standard geochemical methods. The results are presented in the table below.

Sample Location	pH	Minimum Resistivity (ohms-cm)
HS-1 @ 1-3 ft	7.91	2770

**TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS**

Project Name: Lampson - Garden Grove Tested By : GEB/JD Date: 03/11/22
 Project No. : 22030-01 Checked By: J. Ward Date: 03/29/22

Boring No.	HS-1			
Sample No.	B-1			
Sample Depth (ft)	1-3			
Soil Identification:	Brownish yellow SP-SM			
Wet Weight of Soil + Container (g)	0.00			
Dry Weight of Soil + Container (g)	0.00			
Weight of Container (g)	1.00			
Moisture Content (%)	0.00			
Weight of Soaked Soil (g)	100.53			

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	305			
Crucible No.	9			
Furnace Temperature (°C)	860			
Time In / Time Out	7:45/8:30			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	22.4942			
Wt. of Crucible (g)	22.4912			
Wt. of Residue (g) (A)	0.0030			
PPM of Sulfate (A) x 41150	123.45			
PPM of Sulfate, Dry Weight Basis	123			

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	15			
ml of AgNO ₃ Soln. Used in Titration (C)	1.4			
PPM of Chloride (C -0.2) * 100 * 30 / B	240			
PPM of Chloride, Dry Wt. Basis	240			

pH TEST, DOT California Test 643

pH Value	7.91			
Temperature °C	21.8			

SOIL RESISTIVITY TEST

DOT CA TEST 643

Project Name: Lampson - Garden Grove
 Project No. : 22030-01
 Boring No.: HS-1
 Sample No. : B-1

Tested By : G. Berdy Date: 03/14/22
 Checked By: J. Ward Date: 03/29/22
 Depth (ft.) : 1-3

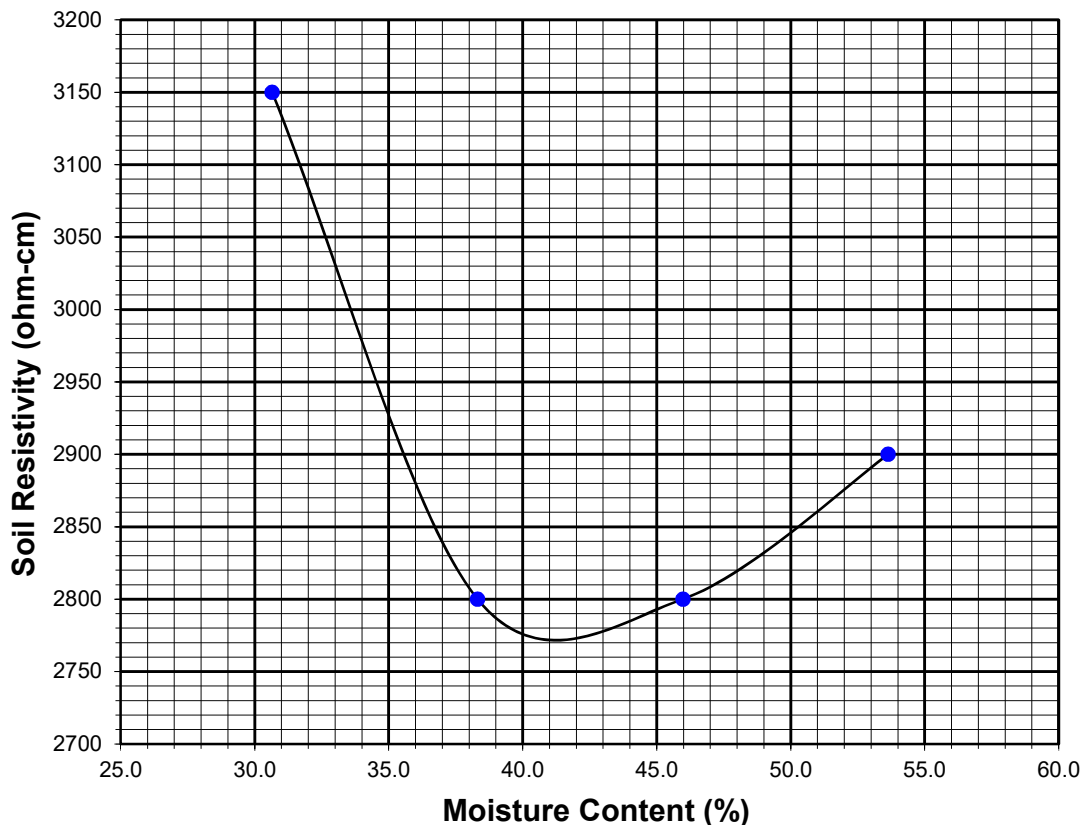
Soil Identification:* Brownish yellow SP-SM

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	40	30.65	3150	3150
2	50	38.31	2800	2800
3	60	45.98	2800	2800
4	70	53.64	2900	2900
5				

Moisture Content (%) (Mci)	0.00
Wet Wt. of Soil + Cont. (g)	0.00
Dry Wt. of Soil + Cont. (g)	0.00
Wt. of Container (g)	1.00
Container No.	
Initial Soil Wt. (g) (Wt)	130.50
Box Constant	1.000
$MC = (((1 + Mci / 100) \times (Wa / Wt + 1)) - 1) \times 100$	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II		DOT CA Test 422	
DOT CA Test 643		DOT CA Test 643		DOT CA Test 643	
2770	41.3	123	240	7.91	21.8



MODIFIED PROCTOR COMPACTION TEST

ASTM D 1557

Project Name: Lampson - Garden Grove Tested By: J. Gonzalez Date: 03/10/22
 Project No.: 22030-01 Checked By: J. Ward Date: 03/29/22
 Boring No.: HS-1 Depth (ft.): 1-3
 Sample No.: B-1
 Soil Identification: Brownish yellow poorly-graded sand with silt (SP-SM)

Preparation Method: Moist Mechanical Ram
 Dry Manual Ram
Mold Volume (ft³) 0.03330 *Ram Weight = 10 lb.; Drop = 18 in.*

TEST NO.	1	2	3	4	5	6
Wt. Compacted Soil + Mold (g)	3582	3650	3655			
Weight of Mold (g)	1826	1826	1826			
Net Weight of Soil (g)	1756	1824	1829			
Wet Weight of Soil + Cont. (g)	462.2	482.9	452.7			
Dry Weight of Soil + Cont. (g)	439.4	448.7	412.8			
Weight of Container (g)	39.3	39.2	37.4			
Moisture Content (%)	5.70	8.35	10.63			
Wet Density (pcf)	116.3	120.8	121.1			
Dry Density (pcf)	110.0	111.4	109.5			

Maximum Dry Density (pcf) 111.5 **Optimum Moisture Content (%)** 8.0

PROCEDURE USED

Procedure A
 Soil Passing No. 4 (4.75 mm) Sieve
 Mold : 4 in. (101.6 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 25 (twenty-five)
 May be used if + #4 is 20% or less

Procedure B
 Soil Passing 3/8 in. (9.5 mm) Sieve
 Mold : 4 in. (101.6 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 25 (twenty-five)
 Use if + #4 is >20% and +3/8 in. is 20% or less

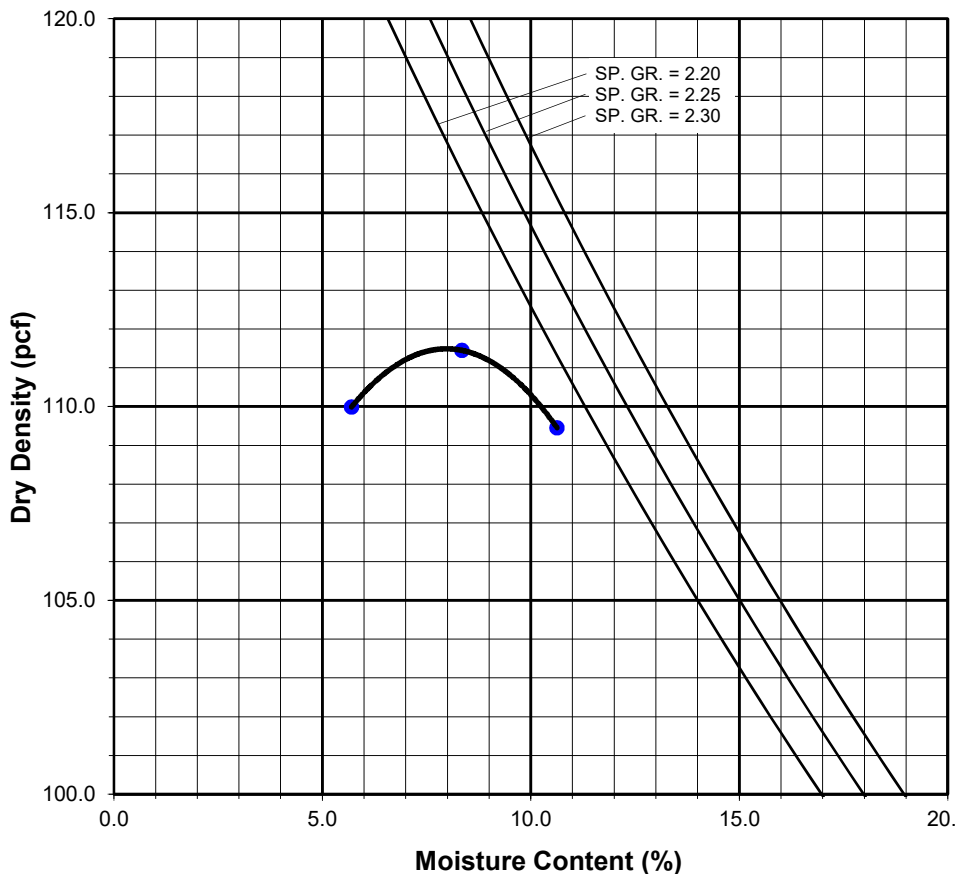
Procedure C
 Soil Passing 3/4 in. (19.0 mm) Sieve
 Mold : 6 in. (152.4 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 56 (fifty-six)
 Use if +3/8 in. is >20% and +3/4 in. is <30%

Particle-Size Distribution:

GR:SA:FI

Atterberg Limits:

LL, PL, PI



ATTERBERG LIMITS ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/10/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-1 Checked By: J. Ward
 Sample No.: R-5 Depth (ft.) 30.0
 Soil Identification: Gray silty, clayey sand (SC-SM)

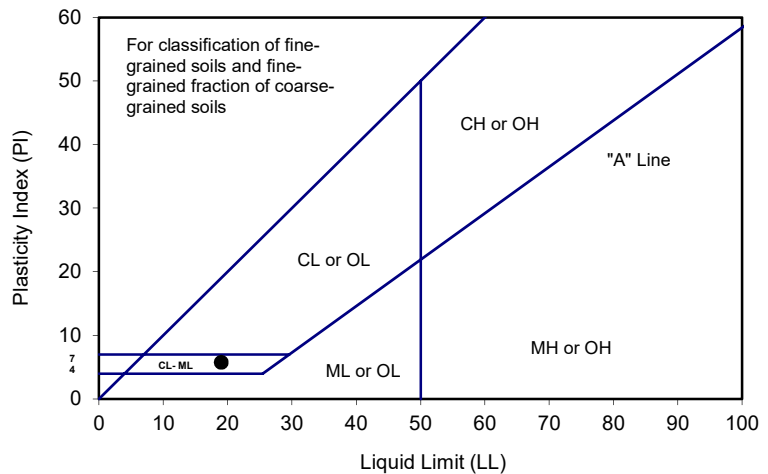
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			29	24	17	
Wet Wt. of Soil + Cont. (g)	10.18	10.15	21.20	20.43	20.71	
Dry Wt. of Soil + Cont. (g)	9.12	9.08	18.06	17.34	17.40	
Wt. of Container (g)	1.03	1.10	1.05	1.16	1.12	
Moisture Content (%) [W _n]	13.10	13.41	18.46	19.10	20.33	

Liquid Limit	19
Plastic Limit	13
Plasticity Index	6
Classification	CL-ML

PI at "A" - Line = $0.73(LL-20)$ -0.73

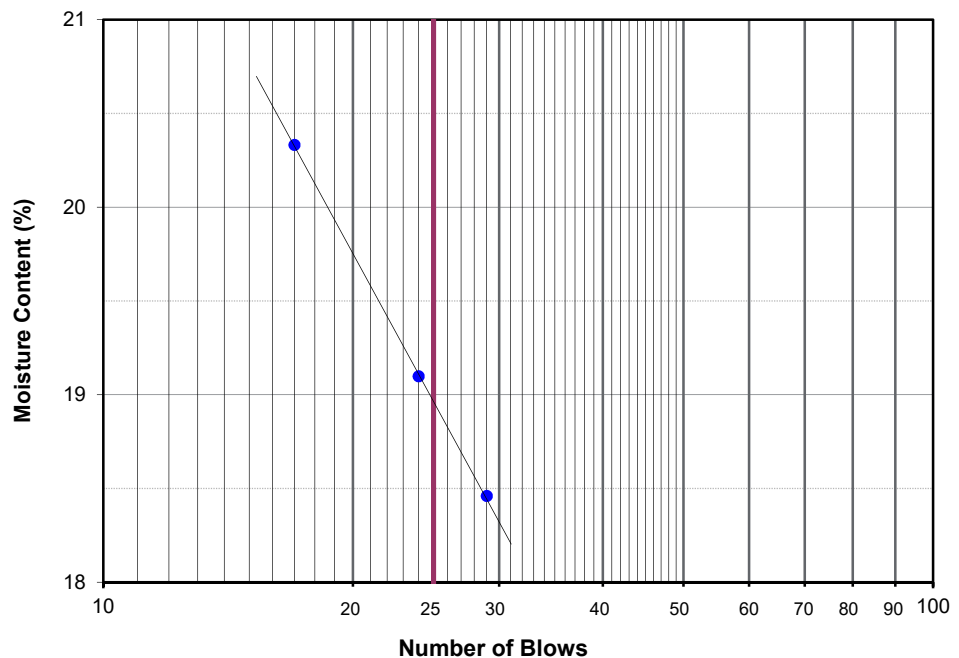
One - Point Liquid Limit Calculation

$$LL = W_n(N/25)^{0.121}$$



PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



ATTERBERG LIMITS ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/11/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-1 Checked By: J. Ward
 Sample No.: SP-3 Depth (ft.) 35.0
 Soil Identification: Gray clayey sand (SC)

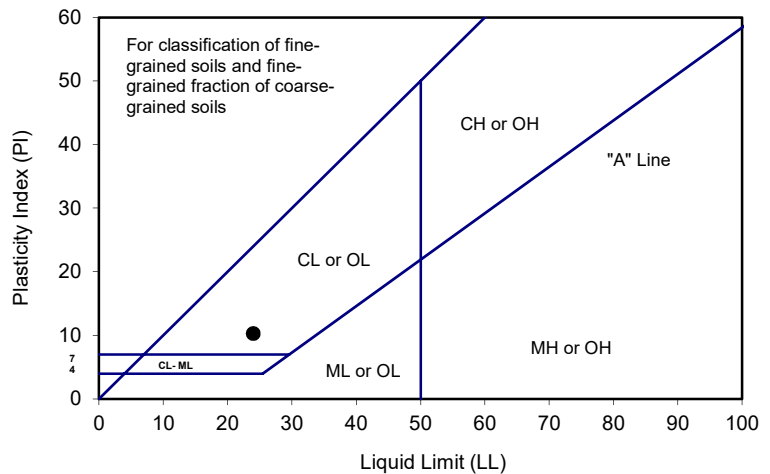
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			30	25	18	
Wet Wt. of Soil + Cont. (g)	10.23	10.15	21.30	20.17	21.89	
Dry Wt. of Soil + Cont. (g)	9.14	9.05	17.53	16.42	17.74	
Wt. of Container (g)	1.13	1.10	1.09	1.08	1.11	
Moisture Content (%) [Wn]	13.61	13.84	22.93	24.45	24.95	

Liquid Limit	24
Plastic Limit	14
Plasticity Index	10
Classification	CL

PI at "A" - Line = $0.73(LL-20)$ 2.92

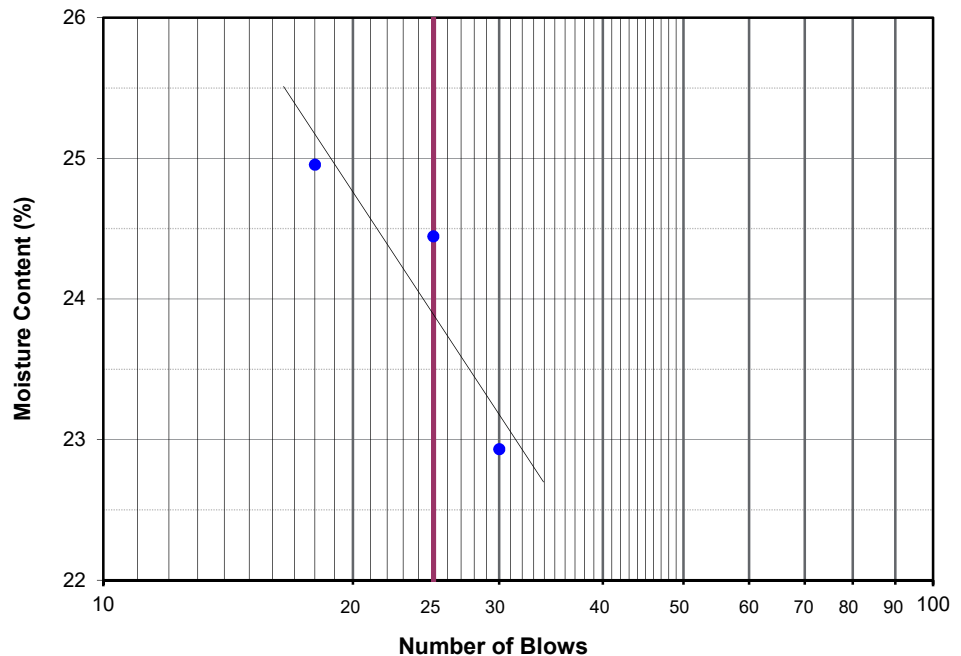
One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$



PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



ATTERBERG LIMITS ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/11/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-1 Checked By: J. Ward
 Sample No.: R-7 Depth (ft.) 50.0
 Soil Identification: Olive gray sandy lean clay s(CL)

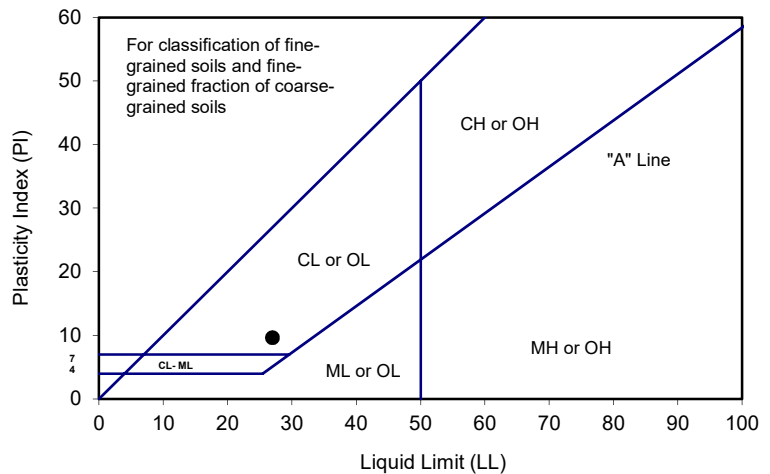
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			27	22	16	
Wet Wt. of Soil + Cont. (g)	10.31	10.32	21.42	21.18	21.58	
Dry Wt. of Soil + Cont. (g)	8.93	8.97	17.17	16.96	17.21	
Wt. of Container (g)	1.07	1.13	1.06	1.10	1.16	
Moisture Content (%) [Wn]	17.56	17.22	26.38	26.61	27.23	

Liquid Limit	27
Plastic Limit	17
Plasticity Index	10
Classification	CL

PI at "A" - Line = $0.73(LL-20)$ 5.11

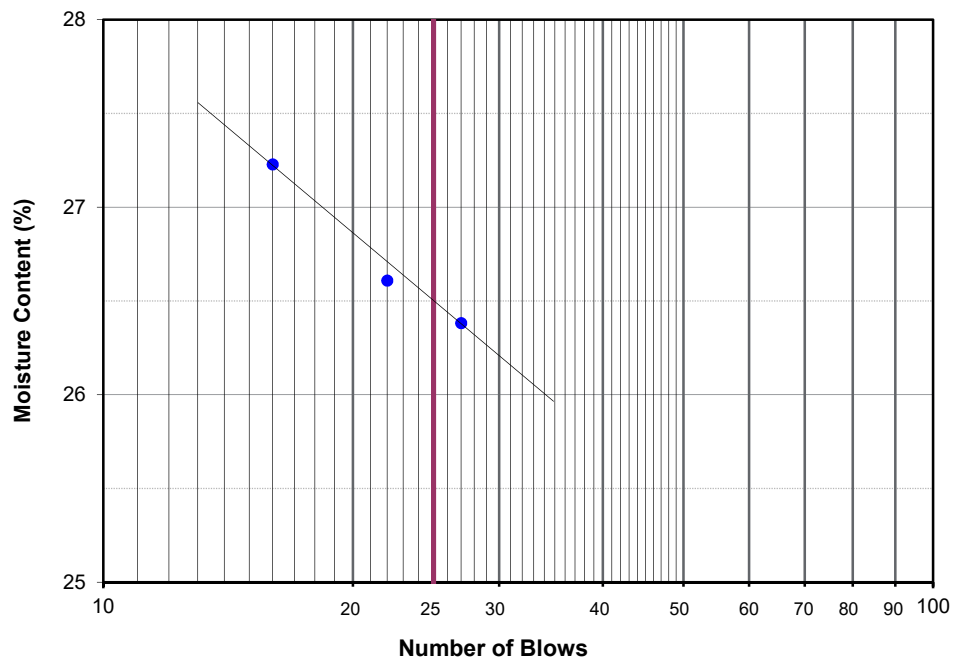
One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$



PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



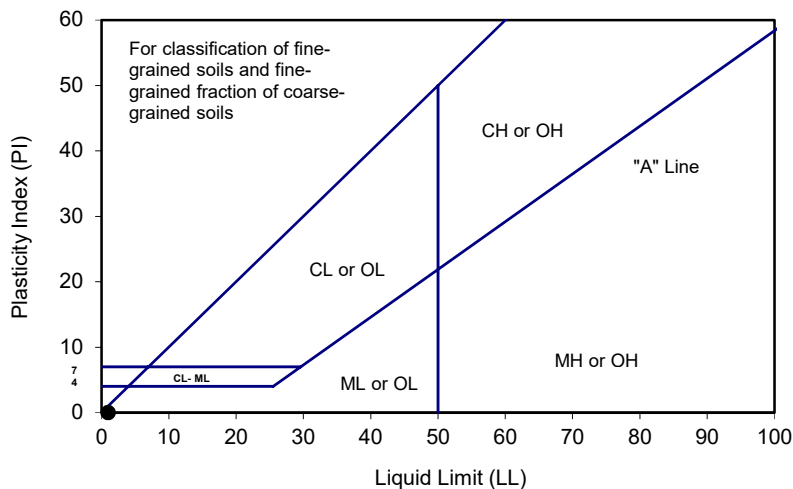
ATTERBERG LIMITS

ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/11/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-2 Checked By: J. Ward
 Sample No.: SP-1 Depth (ft.) 15.0
 Soil Identification: Grayish brown well-graded sand with silt (SW-SM)

TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			5			
Wet Wt. of Soil + Cont. (g)	Cannot be rolled:		Cannot get more than 5 blows:			
Dry Wt. of Soil + Cont. (g)	NonPlastic		NonPlastic			
Wt. of Container (g)			1.09			
Moisture Content (%) [Wn]			21.36			

Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP
Classification	NP



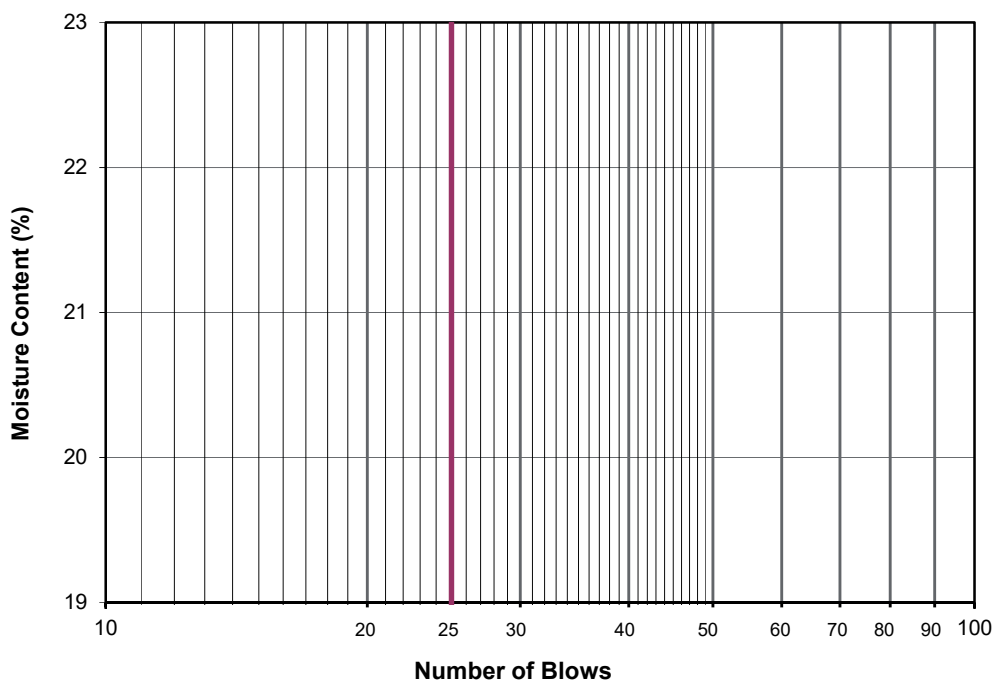
PI at "A" - Line = $0.73(LL-20)$ =

One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$

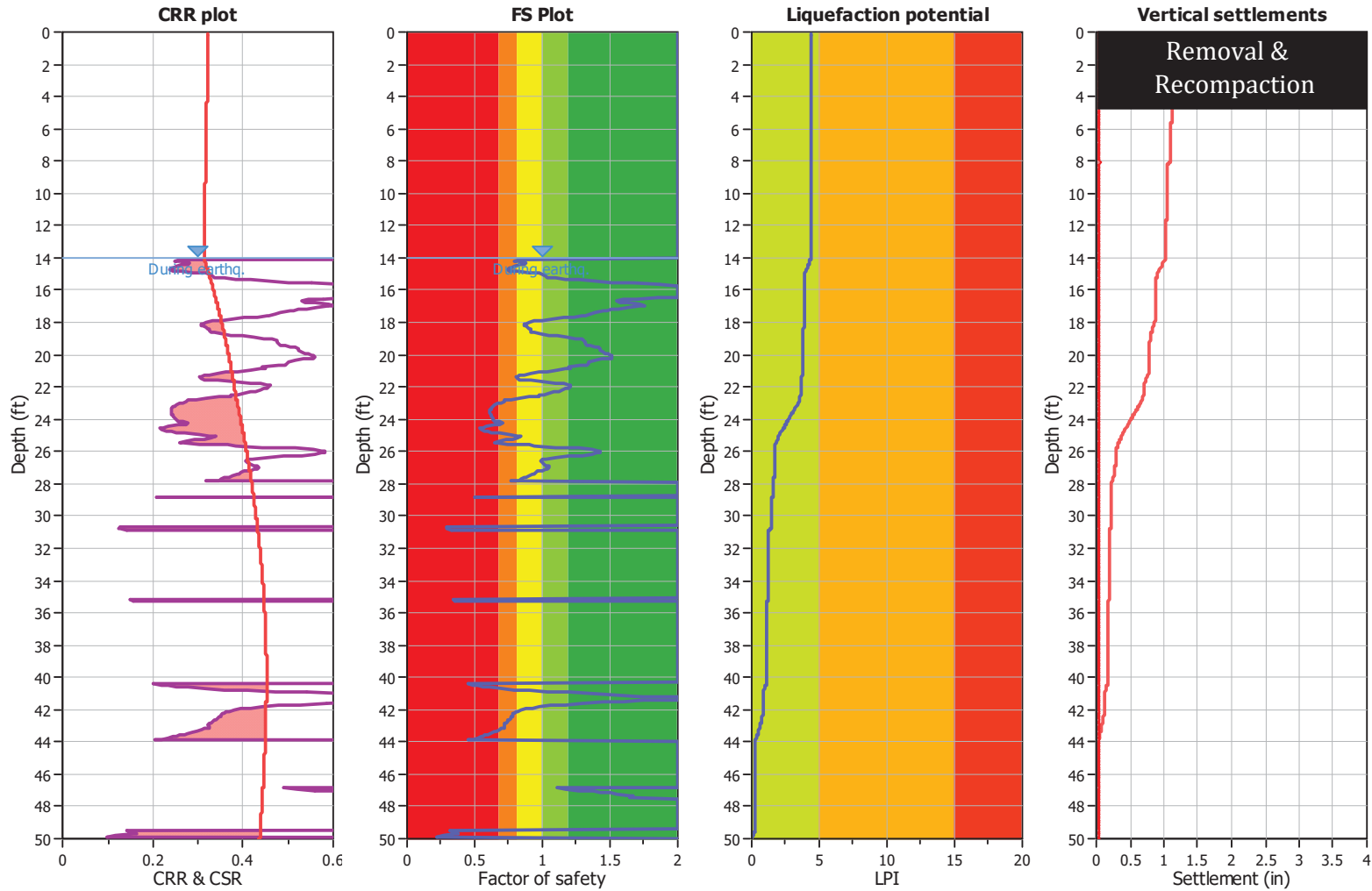
PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



Appendix D
Liquefaction Analysis

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I _c value	I _c cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

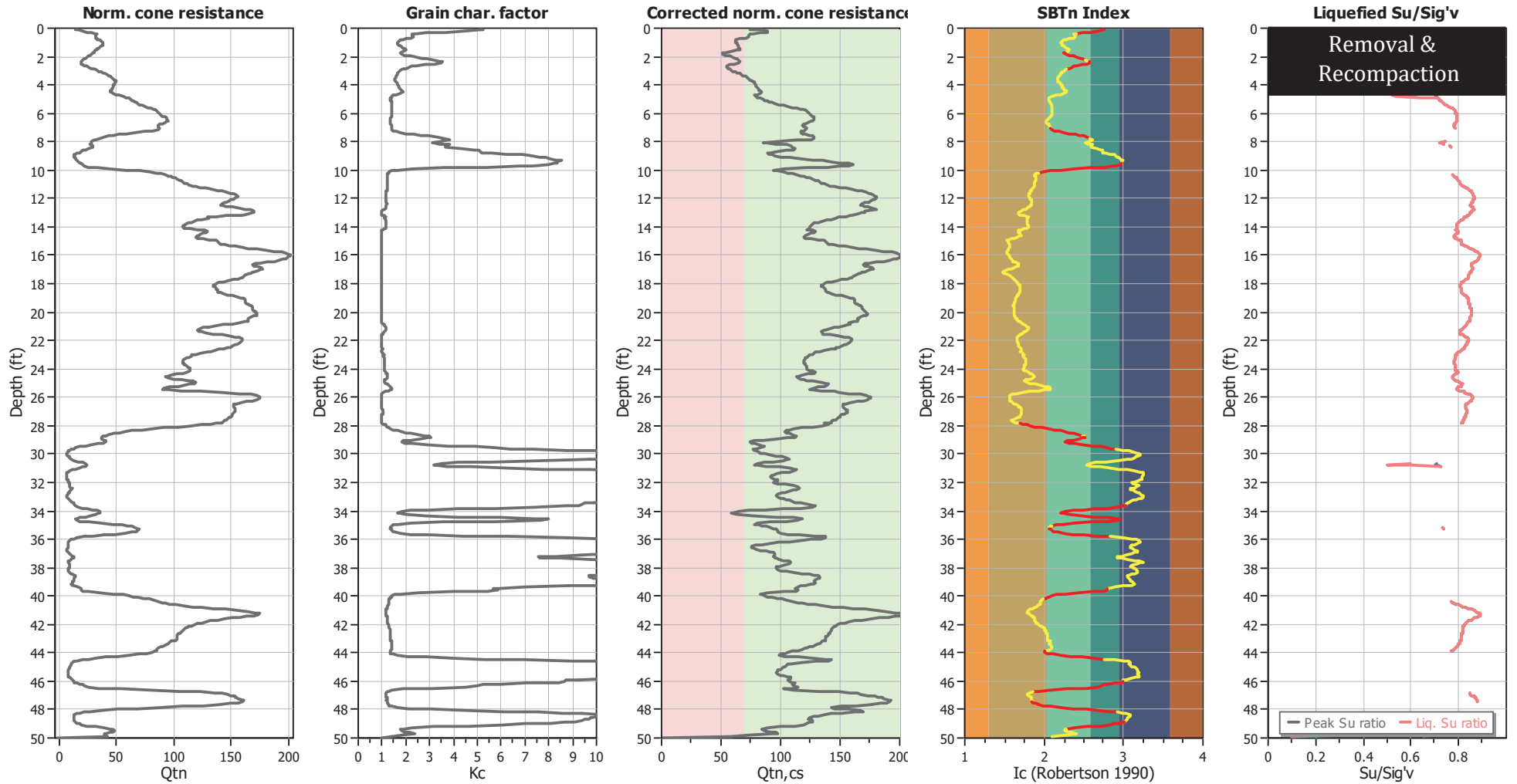
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

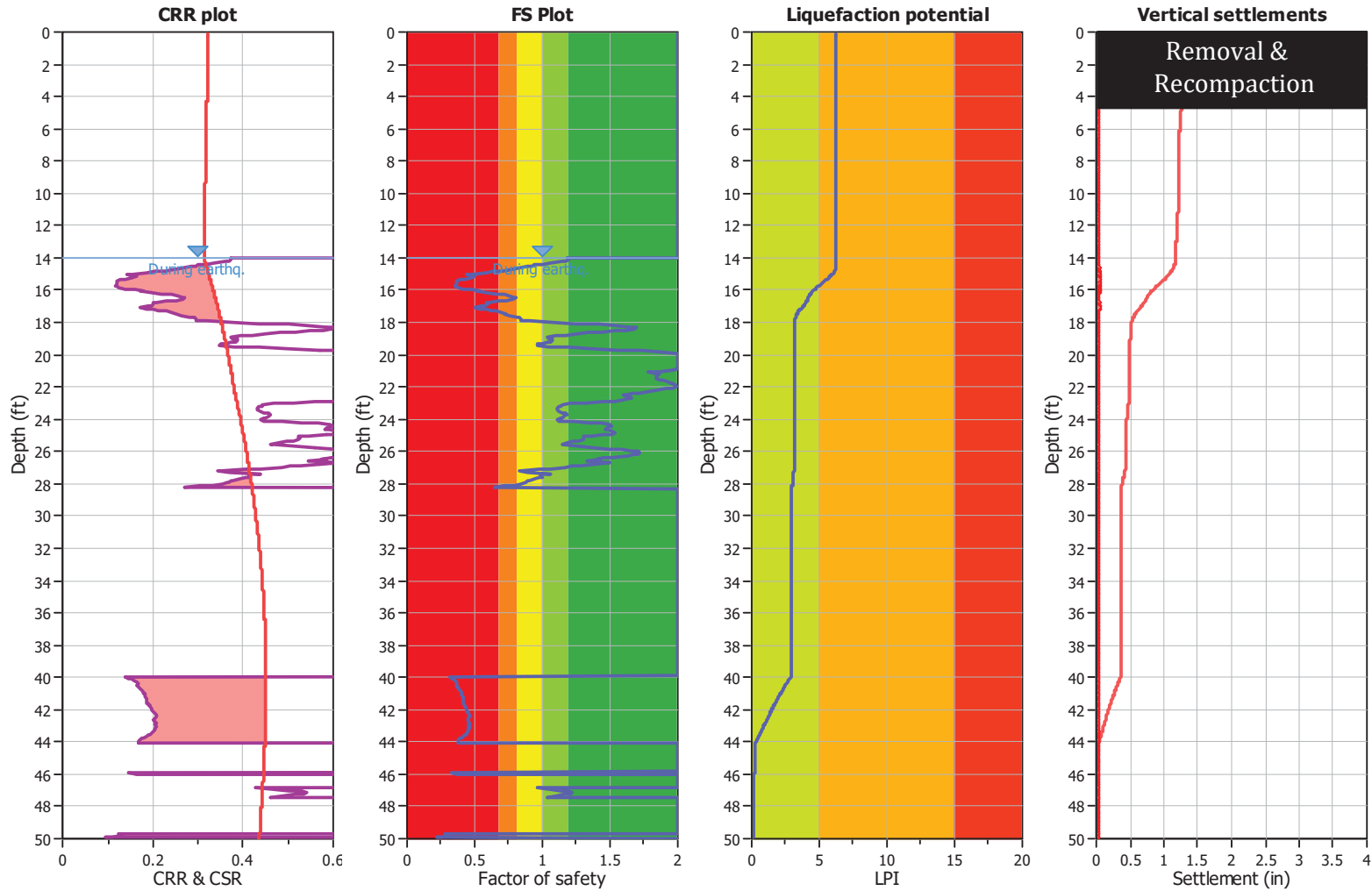
Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_{σ} applied:	Yes
Earthquake magnitude M_w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

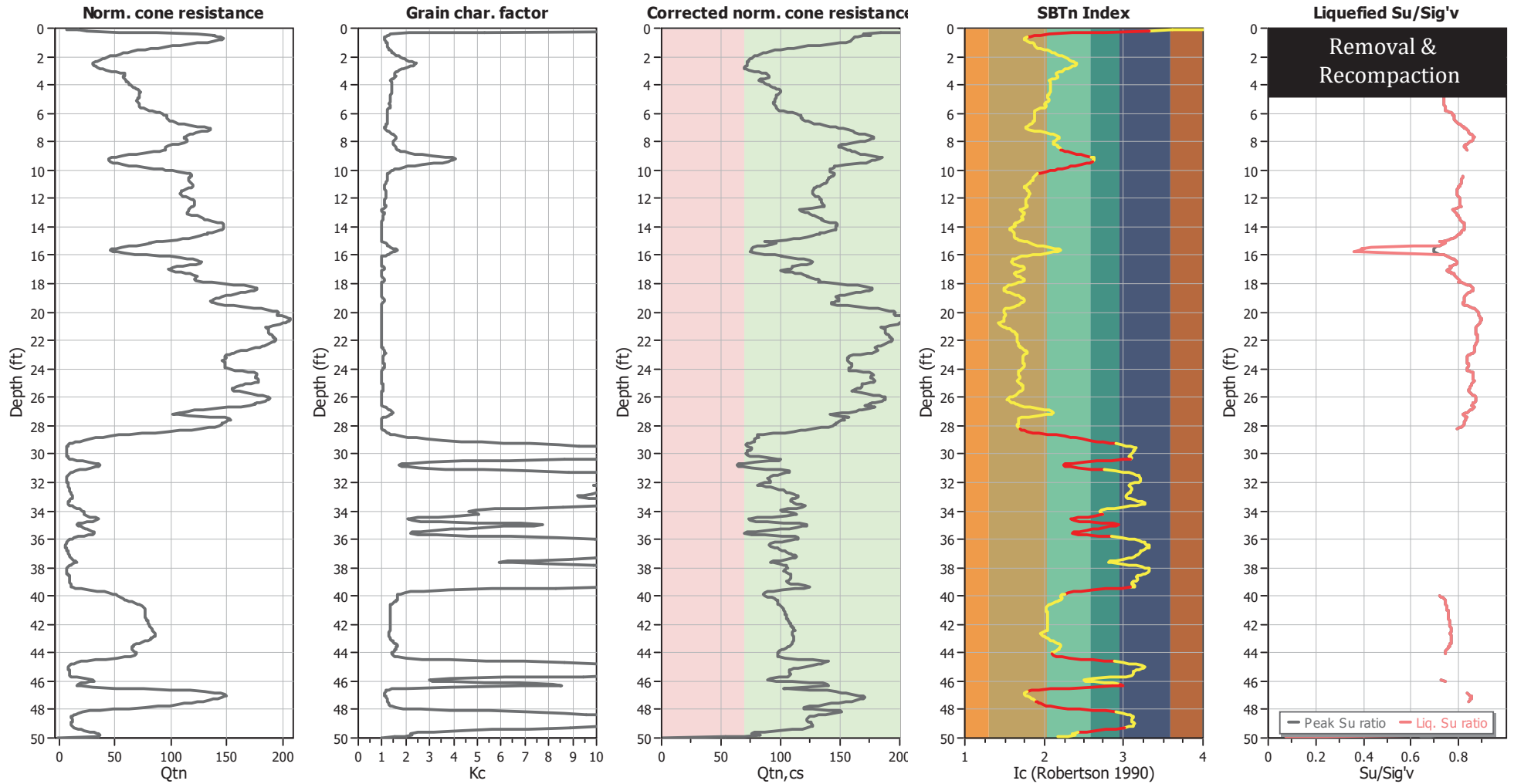
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlikely to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Appendix E
Infiltration Test Data

Infiltration Test Data Sheet

LGC Geotechnical, Inc

131 Calle Iglesia Suite 200, San Clemente, CA 92672 tel. (949) 369-6141

Project Name: Lampson - Garden Grove
Project Number: 22030-01
Date: 3/1/2022
Boring Number: I-1

Test hole dimensions (if circular)

Boring Depth (feet)*: 5
 Boring Diameter (inches): 8
 Pipe Diameter (inches): 3

*measured at time of test

Test pit dimensions (if rectangular)

Pit Depth (feet): _____
 Pit Length (feet): _____
 Pit Breadth (feet): _____

Pre-Test (Sandy Soil Criteria)*

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval (min)	Initial Depth to Water (feet)	Final Depth to Water (feet)	Total Change in Water Level (feet)	Greater Than or Equal to 0.5 feet (yes/no)
1	8:35	8:38	3.0	1.60	2.25	0.65	yes
2	8:40	8:43	3.0	1.5	2.05	0.55	yes

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight, and then obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25 inches

Main Test Data

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval, Δt (min)	Initial Depth to Water, D_o (feet)	Final Depth to Water, D_f (feet)	Change in Water Level, ΔD (feet)	Observed Infiltration Rate (in/hr)
1	8:47	8:57	10.0	0.8	2.8	2	7.1
2	9:00	9:10	10.0	0.75	2.7	1.95	6.8
3	9:12	9:22	10.0	0.8	2.65	1.85	6.5
4	9:24	9:34	10.0	0.75	2.5	1.75	5.9
5	9:36	9:46	10.0	0.8	2.5	1.7	5.8
6	9:48	9:58	10.0	0.75	2.5	1.75	5.9
7							
8							
9							
10							
11							
12							
Observed Infiltration Rate (Does Not Include Any Factor of Safety)							5.9

Sketch:

Notes:



Infiltration Test Data Sheet

LGC Geotechnical, Inc

131 Calle Iglesia Suite 200, San Clemente, CA 92672 tel. (949) 369-6141

Project Name: Lampson - Garden Grove
Project Number: 22030-01
Date: 3/1/2022
Boring Number: I-2

Test hole dimensions (if circular)	
Boring Depth (feet)*:	5
Boring Diameter (inches):	8
Pipe Diameter (inches):	3

Test pit dimensions (if rectangular)	
Pit Depth (feet):	_____
Pit Length (feet):	_____
Pit Breadth (feet):	_____

*measured at time of test

Pre-Test (Sandy Soil Criteria)*

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval (min)	Initial Depth to Water (feet)	Final Depth to Water (feet)	Total Change in Water Level (feet)	Greater Than or Equal to 0.5 feet (yes/no)
1	10:05	10:09	4.0	0.75	1.85	1.1	yes
2	10:10	10:14	4.0	0.75	1.75	1	yes

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight, and then obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25 inches

Main Test Data

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval, Δt (min)	Initial Depth to Water, D_o (feet)	Final Depth to Water, D_f (feet)	Change in Water Level, ΔD (feet)	Observed Infiltration Rate (in/hr)
1	10:16	10:26	10.0	0.7	2.55	1.85	6.3
2	10:29	10:39	10.0	0.7	2.55	1.85	6.3
3	10:41	10:51	10.0	0.7	2.6	1.9	6.5
4	10:54	11:04	10.0	0.8	2.45	1.65	5.6
5	11:06	11:16	10.0	0.95	2.6	1.65	5.8
6	11:19	11:29	10.0	0.75	2.45	1.7	5.7
7							
8							
9							
10							
11							
12							
Observed Infiltration Rate (Does Not Include Any Factor of Safety)							5.7

Sketch:

Notes:



Appendix F
General Earthwork and Grading Specifications
for Rough Grading

General Earthwork and Grading Specifications for Rough Grading

1.0 General

1.1 Intent

These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 The Geotechnical Consultant of Record

Prior to commencement of work, the owner shall employ a qualified Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to confirm that the attained level of compaction is being accomplished as specified. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

1.3 The Earthwork Contractor

The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the project plans and specifications. The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "equipment" of work and the estimated quantities of daily earthwork

contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate personnel will be available for observation and testing. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified. It is the contractor's sole responsibility to provide proper fill compaction.

2.0 Preparation of Areas to be Filled

2.1 Clearing and Grubbing

Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed. The contractor is responsible for all hazardous waste relating to his work. The Geotechnical Consultant does not have expertise in this area. If hazardous waste is a concern, then the Client should acquire the services of a qualified environmental assessor.

2.2 Processing

Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be over-excavated as specified in the following section. Scarification shall continue until soils are broken down and free of oversize material and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

2.3 Over-excavation

In addition to removals and over-excavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be over-excavated to competent ground as evaluated by the Geotechnical Consultant during grading.

2.4 Benching

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. Please see the Standard Details for a graphic illustration. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise over-excavated to provide a flat subgrade for the fill.

2.5 Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

3.0 Fill Material

3.1 General

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 Oversize

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

3.3 Import

If importing of fill material is required for grading, proposed import material shall meet the requirements of the geotechnical consultant. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

4.0 Fill Placement and Compaction

4.1 Fill Layers

Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 Fill Moisture Conditioning

Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557).

4.3 Compaction of Fill

After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

4.4 Compaction of Fill Slopes

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

4.5 Compaction Testing

Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.6 Frequency of Compaction Testing

Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.7 Compaction Test Locations

The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided.

5.0 Subdrain Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and the Standard Details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

6.0 Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 Trench Backfills

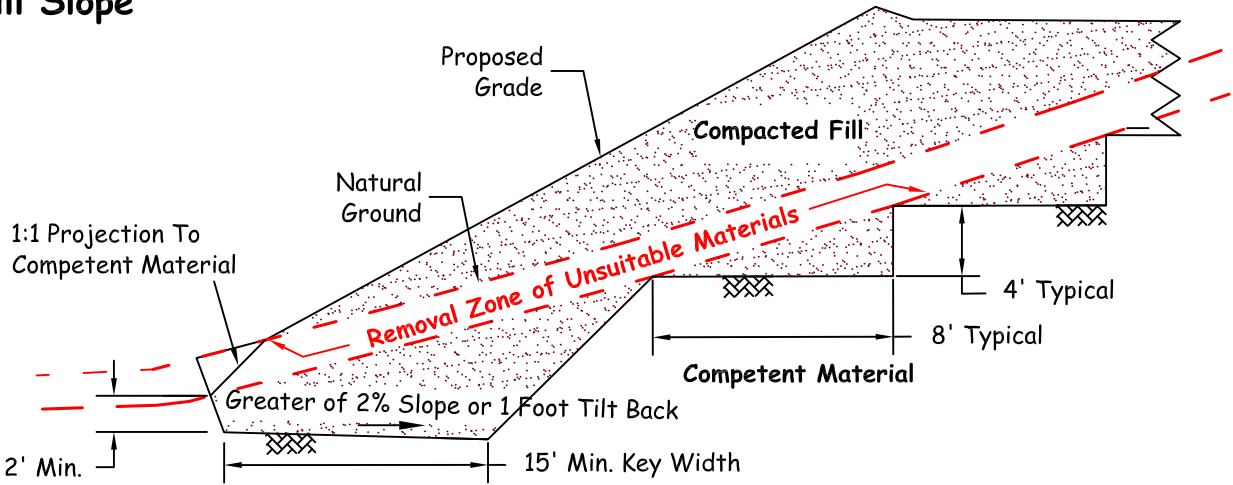
7.1 The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations.

7.2 All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over

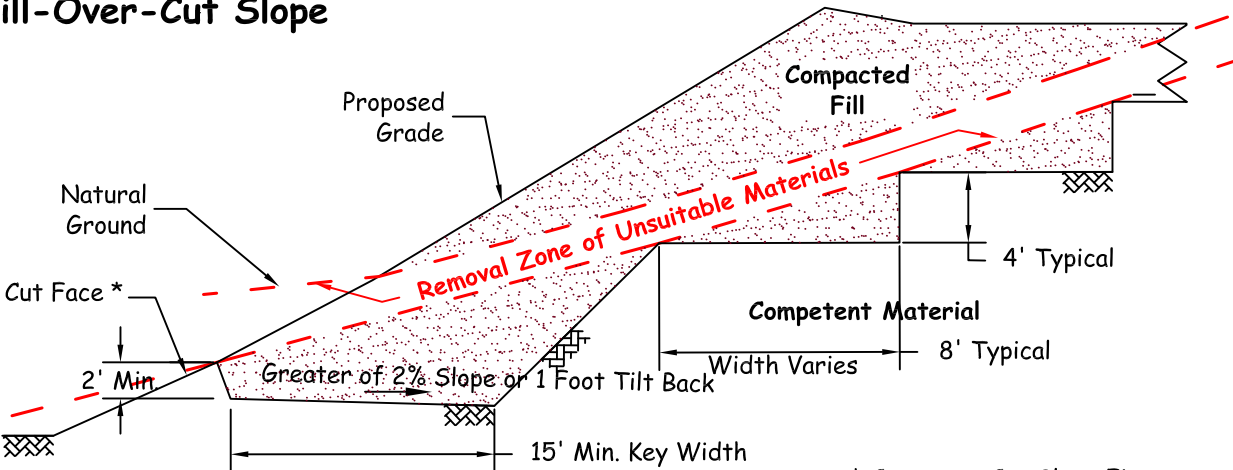
the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 90 percent of maximum from 1 foot above the top of the conduit to the surface.

- 7.3 The jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.
- 7.4 The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.
- 7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

Fill Slope

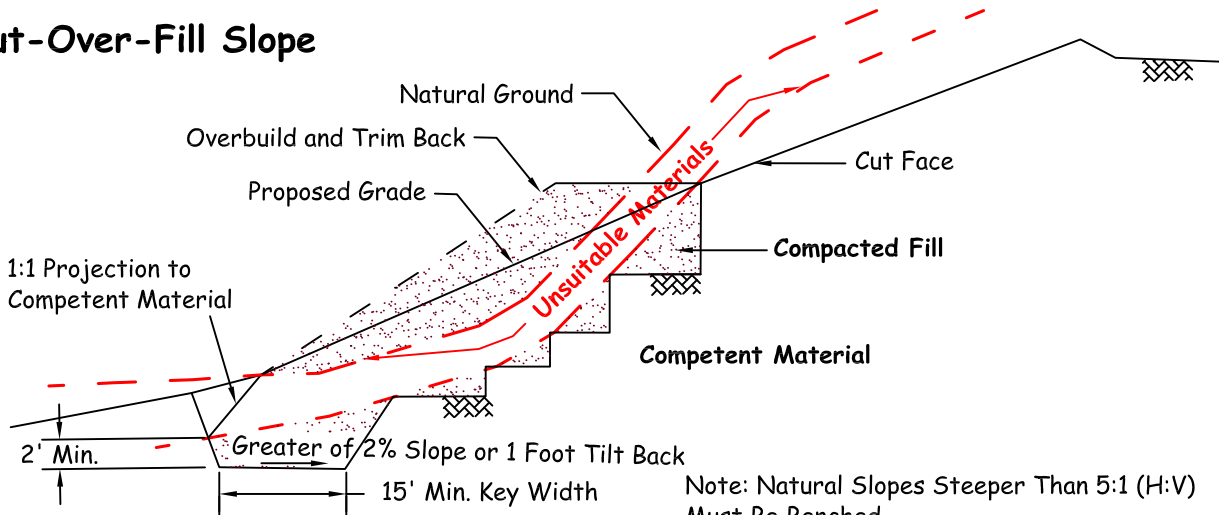


Fill-Over-Cut Slope



* Construct Cut Slope First

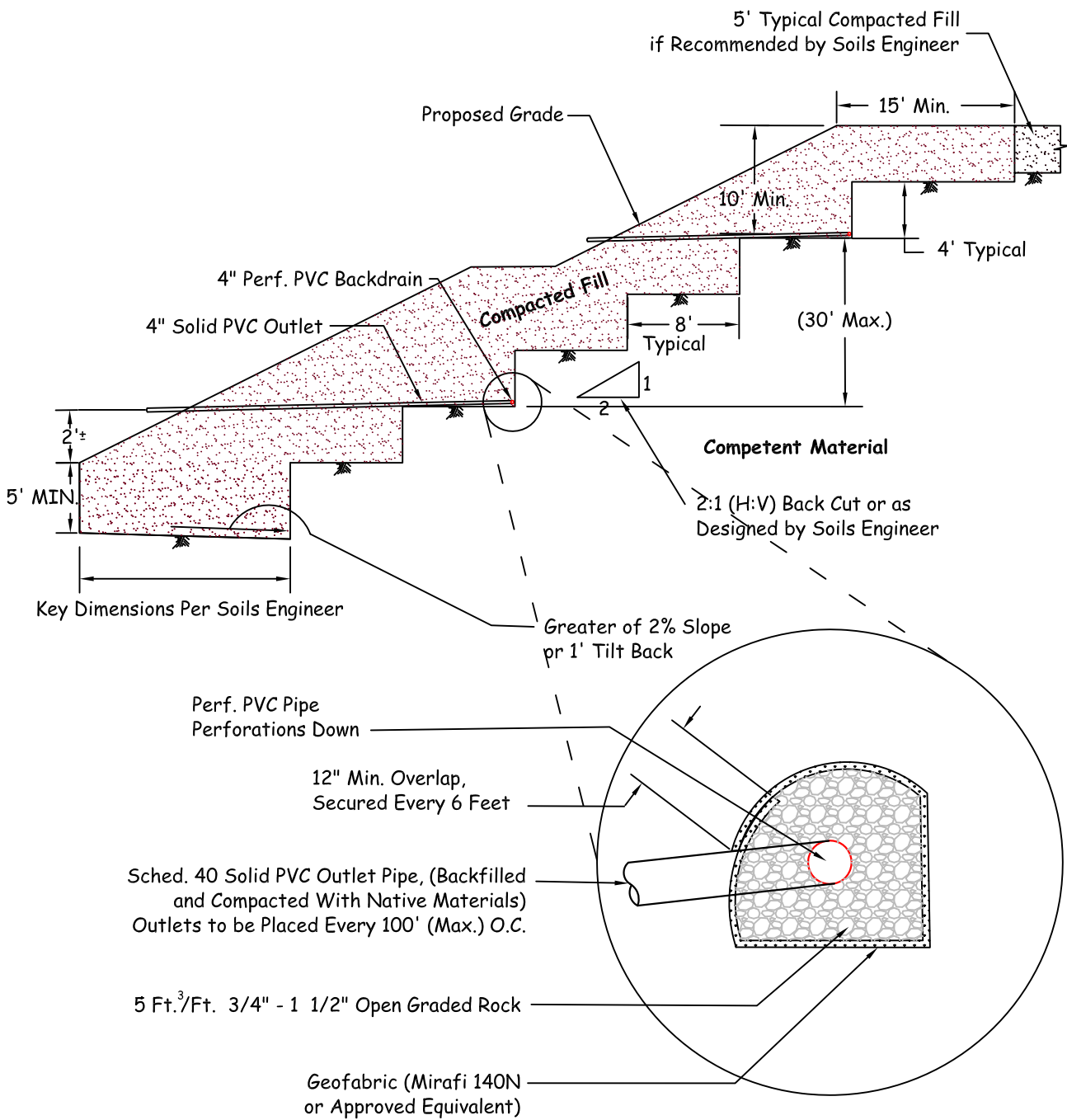
Cut-Over-Fill Slope



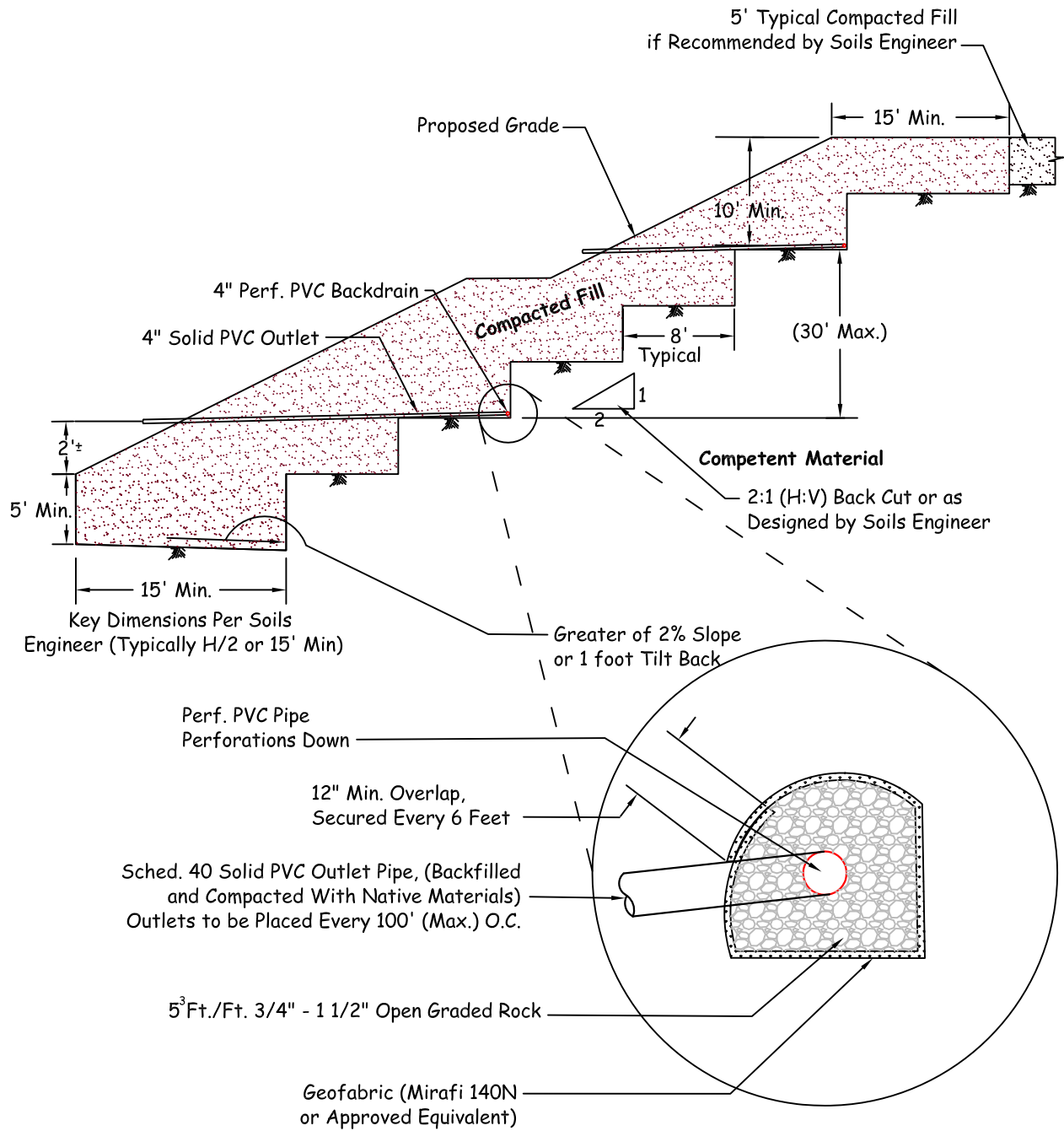
Note: Natural Slopes Steeper Than 5:1 (H:V) Must Be Benched.



KEYING AND BENCHING

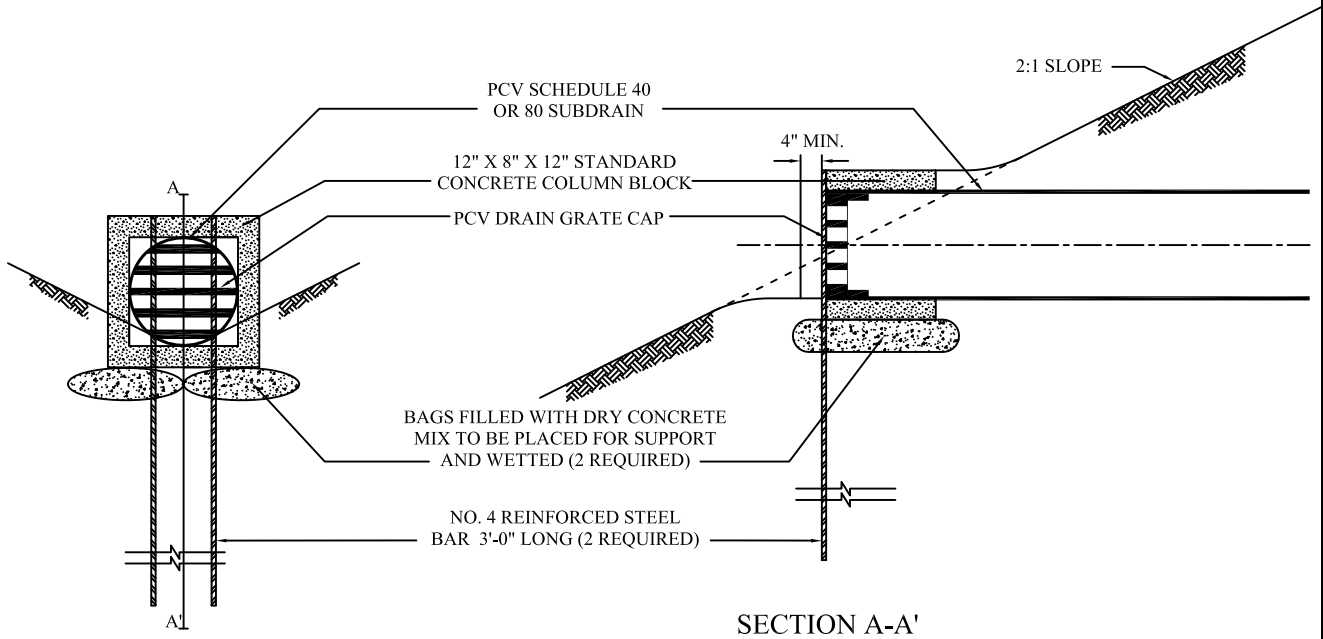


TYPICAL BUTTRESS DETAIL

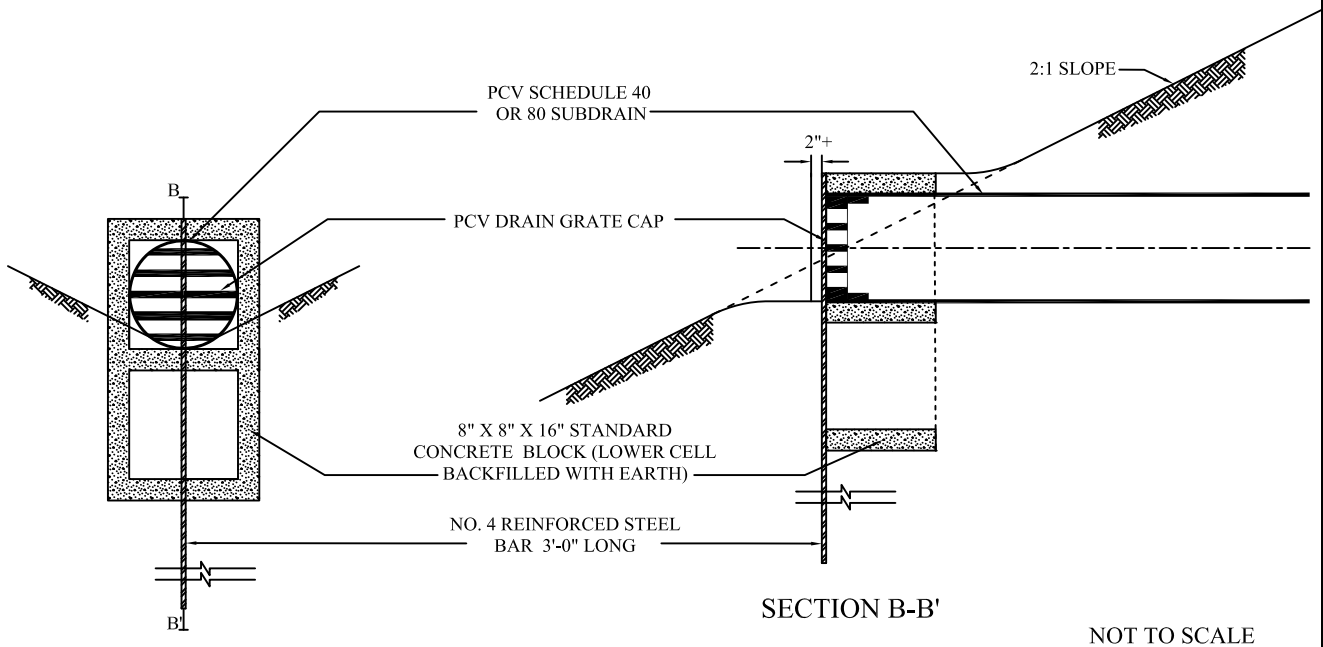


TYPICAL STABILIZATION FILL DETAIL

SUBDRAIN OUTLET MARKER -6" & 8" PIPE

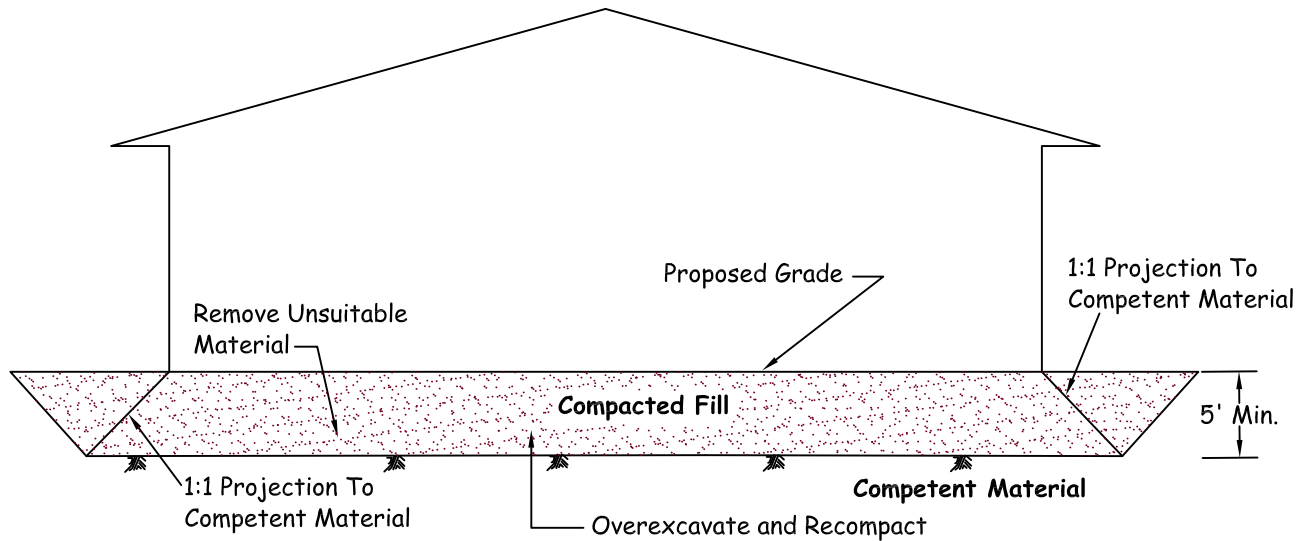


SUBDRAIN OUTLET MARKER -4" PIPE



**SUBDRAIN OUTLET
MARKER DETAIL**

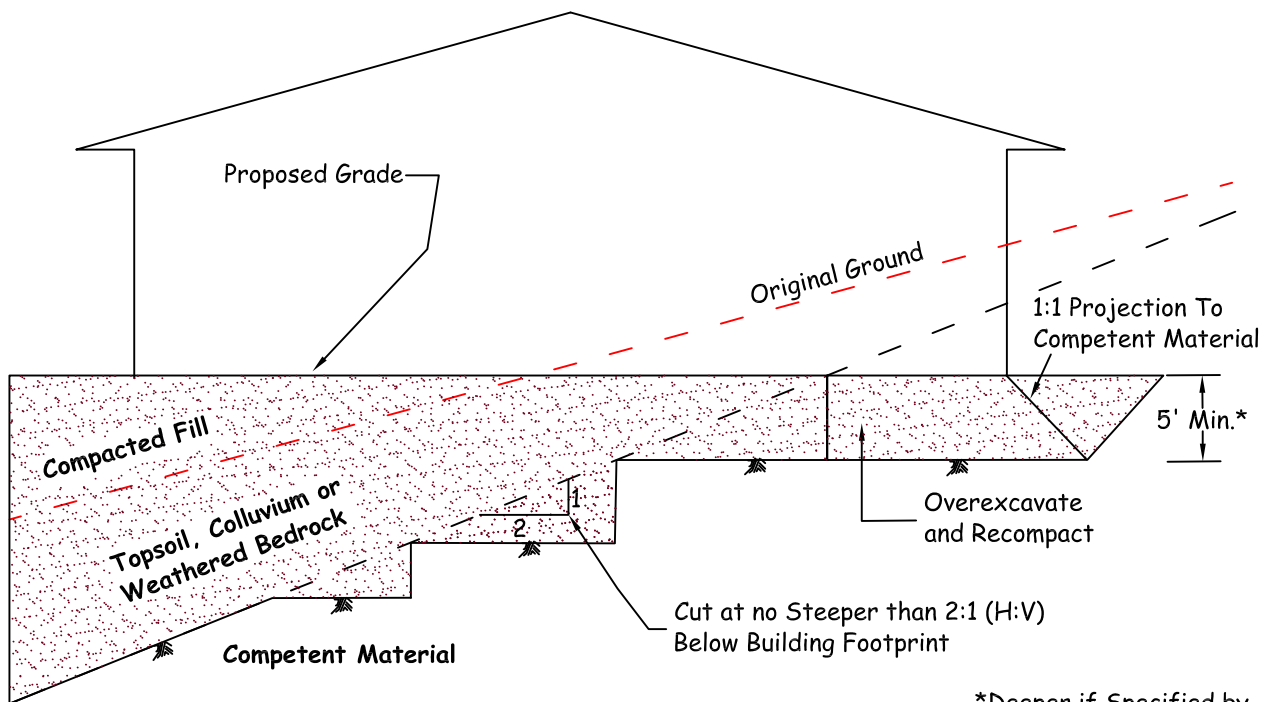
Cut Lot (Exposing Unsuitable Soils at Design Grade)



Note 1: Removal Bottom Should be Graded With Minimum 2% Fall Towards Street or Other Suitable Area (as Determined by Soils Engineer) to Avoid Ponding Below Building

Note 2: Where Design Cut Lots are Excavated Entirely Into Competent Material, Overexcavation May Still be Required for Hard-Rock Conditions or for Materials With Variable Expansion Characteristics.

Cut/Fill Transition Lot



*Deeper if Specified by Soils Engineer



CUT AND TRANSITION LOT OVEREXCAVATION DETAIL



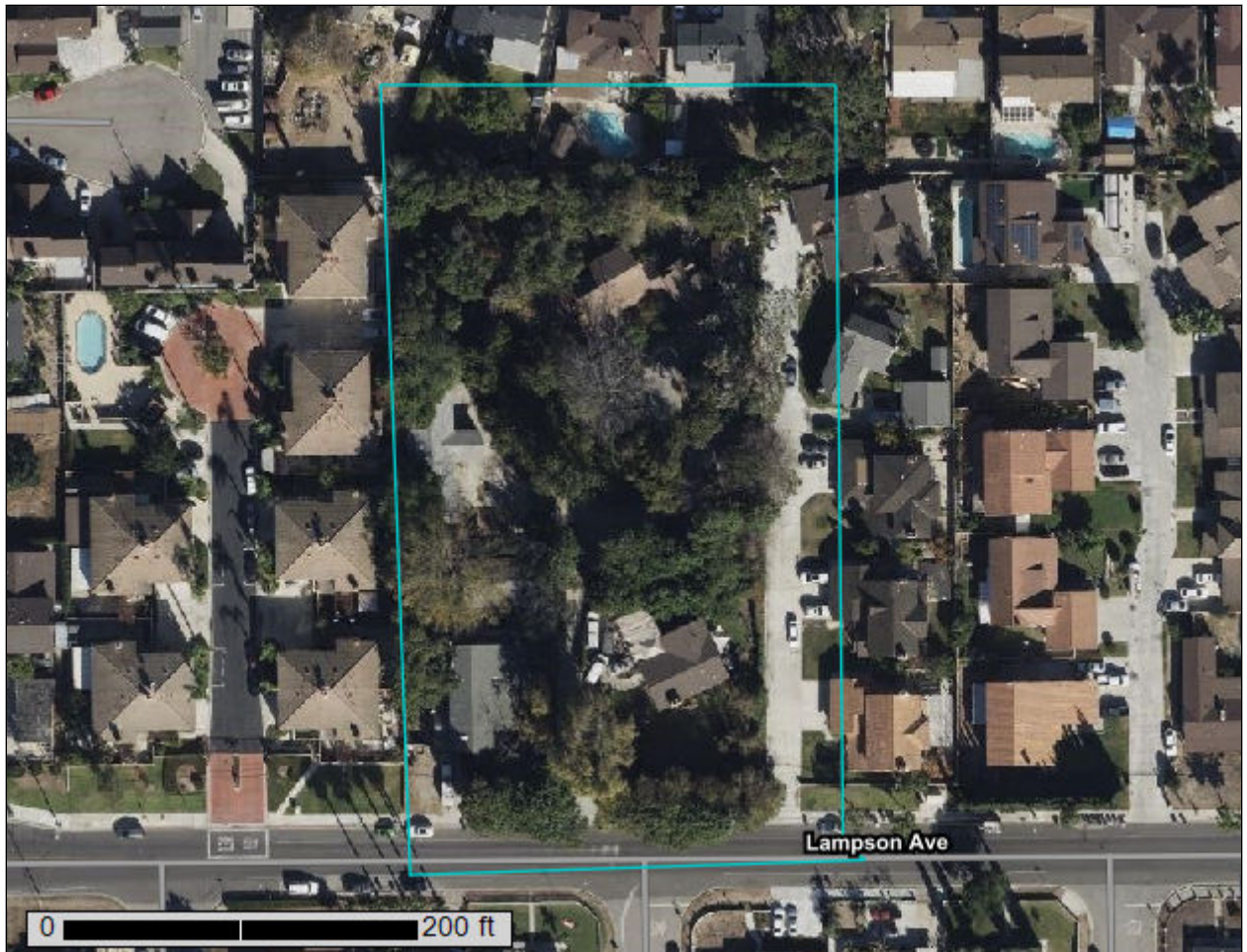
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Orange County and Part of Riverside County, California



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	12
Map Unit Descriptions.....	12
Orange County and Part of Riverside County, California.....	14
158—Hueneme fine sandy loam, drained.....	14
163—Metz loamy sand.....	15
References	17

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

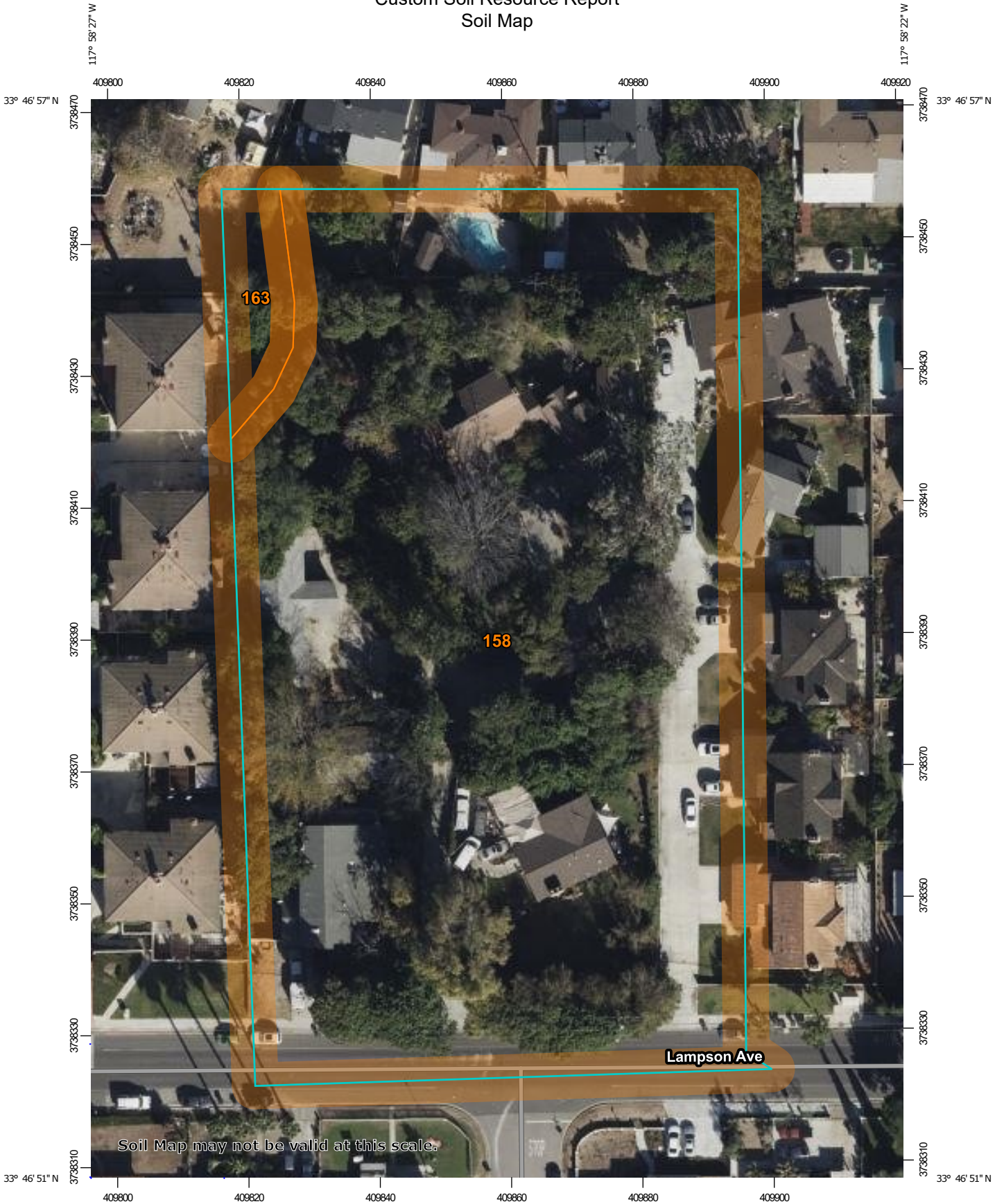
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

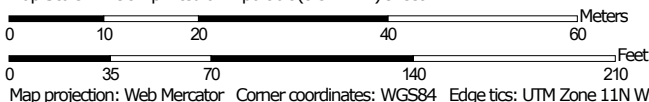
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:798 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County and Part of Riverside County, California
 Survey Area Data: Version 15, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 21, 2020—Dec 19, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
158	Hueneme fine sandy loam, drained	2.5	97.0%
163	Metz loamy sand	0.1	3.0%
Totals for Area of Interest		2.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Orange County and Part of Riverside County, California

158—Hueneme fine sandy loam, drained

Map Unit Setting

National map unit symbol: hcn3
Elevation: 0 to 430 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 64 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hueneme and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hueneme

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Stratified alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 27 inches: fine sandy loam
H2 - 27 to 60 inches: stratified sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: R019XG911CA - Loamy Fan
Hydric soil rating: Yes

Minor Components

Bolsa, silt loam, drained

Percent of map unit: 5 percent
Hydric soil rating: No

Hueneme, fine sandy loam

Percent of map unit: 5 percent
Hydric soil rating: No

San emigdio, fine sandy loam

Percent of map unit: 5 percent
Hydric soil rating: No

163—Metz loamy sand

Map Unit Setting

National map unit symbol: hcn8
Elevation: 30 to 2,500 feet
Mean annual precipitation: 20 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 200 to 340 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Metz and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Metz

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from mixed

Typical profile

H1 - 0 to 17 inches: loamy sand
H2 - 17 to 63 inches: stratified sand to fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Custom Soil Resource Report

Interpretive groups

Land capability classification (irrigated): 2s

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: R019XD035CA - SANDY (1975)

Hydric soil rating: No

Minor Components

San emigdio, fine sandy loam

Percent of map unit: 4 percent

Hydric soil rating: No

Hueneme, fine sandy loam

Percent of map unit: 4 percent

Hydric soil rating: No

Corralitos, loamy sand

Percent of map unit: 4 percent

Hydric soil rating: No

Riverwash

Percent of map unit: 4 percent

Landform: Fans

Hydric soil rating: Yes

Metz, mod fine substratum

Percent of map unit: 4 percent

Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Appendix E – Educational Materials

The Pollution Solution

Several residential activities can result in water pollution. Among these activities are car washing and hosing off driveways and sidewalks. Both activities can waste water and result in excess runoff. Water conservation methods described in this pamphlet can prevent considerable amounts of runoff and conserve water. By taking your car to a commercial car wash and by sweeping driveways and sidewalks, you can further prevent the transport of pollutants to Orange County waterways. Here are some of the common pollutants for which you can be part of the solution:

1 Pesticides and Fertilizer

- **Pollution:** The same pesticides that are designed to be toxic to pests can have an equally lethal impact on our marine life. The same fertilizer that promotes plant growth in lawns and gardens can also create nuisance algae blooms, which remove oxygen from the water and clog waterways when it decomposes.



- **Solution:** Never use pesticides or fertilizer within 48 hours of an anticipated rainstorm. Use only as much as is directed on the label and keep it off driveways and sidewalks.

2 Dirt and Sediment

- **Pollution:** Dirt or sediment can impede the flow of the stormwater and negatively impact stream habitat as it travels through waterways and deposits downstream. Pollutants can attach to sediment, which can then be transported through our waterways.

- **Solution:** Protect dirt stockpiles by covering them with tarps or secure plastic sheets to prevent wind or rain from allowing dirt or sediment to enter the storm drain system.

3 Metals

- **Pollution:** Metals and other toxins present in car wash water can harm important plankton, which forms the base of the aquatic food chain.

- **Solution:** Take your car to a commercial car wash where the wash water is captured and treated at a local wastewater treatment plant.

4 Pet Waste

- **Pollution:** Pet waste carries bacteria through our watersheds and eventually will be washed out to the ocean. This can pose a health risk to swimmers and surfers.

- **Solution:** Pick up after your pets!

5 Trash and Debris

- **Pollution:** Trash and debris can enter waterways by wind, littering and careless maintenance of trash receptacles. Street sweeping collects some of this trash; however, much of what isn't captured ends up in our storm drain system where it flows untreated out to the ocean.



- **Solution:** Don't litter and make sure trash containers are properly covered. It is far more expensive to clean up the litter and trash that ends up in our waterways than it is to prevent it in the first place. Come out to one of Orange County's many locations for Coastal and Inner-Coastal Cleanup Day, which is held in September.

6 Motor Oil / Vehicle Fluids

- **Pollution:** Oil and petroleum products from our vehicles are toxic to people, wildlife and plants.

- **Solution:** Fix any leaks from your vehicle and keep the maintenance up on your car. Use absorbent material such as cat litter on oil spills, then sweep it up and dispose of it in the trash. Recycle used motor oil at a local Household Hazardous Waste Collection Center.



A TEAM EFFORT

The Orange County Stormwater Program has teamed with the Municipal Water District of Orange County (MWDOC) and the University of California Cooperative Extension Program (UCCE) to develop this pamphlet.

Low Impact Development (LID) and sustainable water use prevents water pollution and conserves water for drinking and reuse. Reducing your water use and the amount of water flowing from your home protects the environment and saves you money.

Thank you for making water protection a priority!

For more information, please visit

Orange County Stormwater Program
www.ocwatersheds.com/publiced/

Municipal Water District of Orange County
www.mwdoc.com

University of California Master Gardeners of Orange County
www.uccemg.com

UC Cooperative Extension OC Water Quality and Water Resources
www.ucanr.org/sites/urbanwatermgmt/



To report a spill, call the Orange County 24-Hour Water Pollution Prevention Reporting Hotline at 1-877-89-SPILL \ (1-877-897-7455)

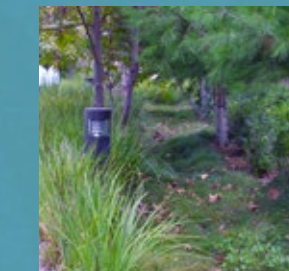
Special Thanks to
The City of Los Angeles Stormwater Program for the use of its artwork

The Metropolitan Water District of Southern California for the use of the California-Friendly Plant and Native Habitat photos



Homeowners Guide for Sustainable Water Use

Low Impact Development, Water Conservation & Pollution Prevention



The Ocean Begins at Your Front Door



DID YOU KNOW?
Did you know that most of the pollution found in our waterways is not from a single source, but from a "non-point" source meaning the accumulation of pollution from residents and businesses throughout the community.



RUNOFF, RAINWATER AND REUSE

Where Does Water Runoff Go?

Stormwater, or water from rainfall events, and runoff from outdoor water use such as sprinklers and hoses flows from homes directly into catch basins and the storm drain system. After entering the storm drain, the water flows untreated into streams, rivers, bays and ultimately the Pacific Ocean. Runoff can come from lawns, gardens, driveways, sidewalks and roofs. As it flows over hard, impervious surfaces, it picks up pollutants. Some pollutants carried by the water runoff include trash, pet waste, pesticides, fertilizer, motor oil and more.

Water Conservation

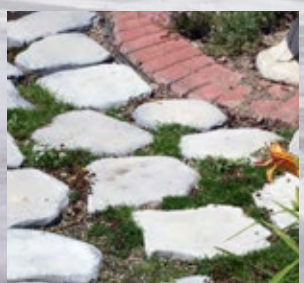
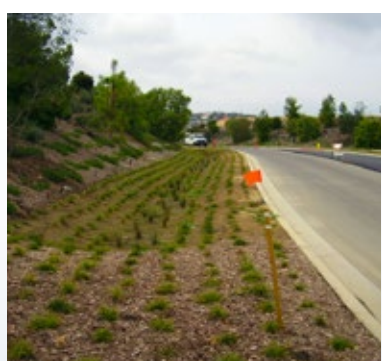
Pollution not only impairs the water quality for habitat and recreation, it can also reduce the water available for reuse. Runoff allowed to soak into the ground is cleaned as it percolates through the soil, replenishing depleted groundwater supplies. Groundwater provides at least 50% of the total water for drinking and other indoor household activities in north and central Orange County. When land is covered with roads, parking lots, homes, etc., there is less land to take in the water and more hard surfaces over which the water can flow.

In Orange County, 60-70% of water used by residents and businesses goes to irrigation and other outdoor uses. Reusing rainwater to irrigate our lawn not only reduces the impact of water pollution from runoff, but it also is a great way to conserve our precious water resources and replenish our groundwater basin.

What is Low Impact Development (LID)?

Low Impact Development (LID) is a method of development that seeks to maintain the natural hydrologic character of an area. LID provides a more sustainable and pollution-preventative approach to water management.

New water quality regulations require implementation of LID in larger new developments and encourage implementation of LID and other sustainable practices in existing residential areas. Implementing modifications to your lawn or garden can reduce pollution in our environment, conserve water and reduce your water bill.



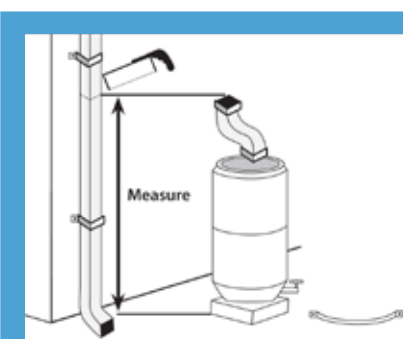
Permeable pavement allows water runoff to infiltrate through the soil and prevents most pollutants from reaching the storm drain system.

OPTIONS FOR RAINWATER HARVESTING AND REUSE

Rainwater harvesting is a great way to save money, prevent pollution and reduce potable water use. To harvest your rainwater, simply redirect the runoff from roofs and downspouts to rain barrels. Rain gardens are another option; these reduce runoff as well as encourage infiltration.

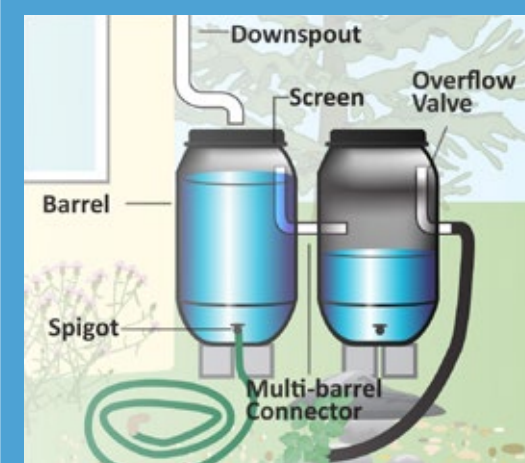
Downspout Disconnection/Redirection

Disconnecting downspouts from pipes running to the gutter prevents runoff from transporting pollutants to the storm drain. Once disconnected, downspouts can be redirected to rain gardens or other vegetated areas, or be connected to a rain barrel.



Rain Barrels

Rain barrels capture rainwater flow from roofs for reuse in landscape irrigation. Capacity of rain barrels needed for your home will depend on the amount of roof area and rainfall received. When purchasing your rain barrel, make sure it includes a screen, a spigot to siphon water for use, an overflow tube to allow for excess water to run out and a connector if you wish to connect multiple barrels to add capacity of water storage.



Mosquito growth prevention is very important when installing a rain barrel. The best way to prevent mosquito breeding is to eliminate entry points by ensuring all openings are sealed tightly. If these methods are unsuccessful, products are available to kill mosquito larvae, but that are harmless to animals and humans. Regular application of these products is essential. Please visit the Orange County Vector Control website for more information at www.ocvcd.org/mosquitoes3.php.

Rain Gardens

Rain gardens allow runoff to be directed from your roof downspout into a landscaped area. Vegetation and rocks in the garden will slow the flow of water to allow for infiltration into the soil. Plants and soil particles will absorb pollutants from the roof runoff. By utilizing a native plant palette, rain gardens can be maintained all year with minimal additional irrigation. These plants are adapted to the semi-arid climate of Southern California, require less water and can reduce your water bill.

Before modifying your yard to install a rain garden, please consult your local building and/or planning departments to ensure your garden plan follows pertinent building codes and ordinances. Besides codes and ordinances, some home owner associations also have guidelines for yard modifications. If your property is in hill areas or includes engineered slopes, please seek professional advice before proceeding with changes.



For information on how to disconnect a downspout or to install and maintain a rain barrel or rain garden at your home, please see the Los Angeles Rainwater Harvesting Program, A Homeowner's "How-To" Guide, November 2009 at www.larainwaterharvesting.org/

OTHER WATER CONSERVATION AND POLLUTION PREVENTION TECHNIQUES

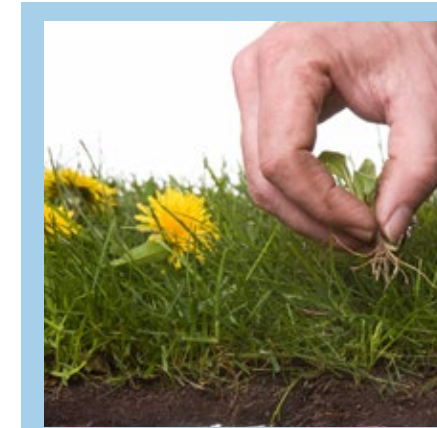
Native Vegetation and Maintenance

"California Friendly" plants or native vegetation can significantly reduce water use. These plants often require far less fertilizers and pesticides, which are two significant pollutants found in Orange County waterways. Replacing water "thirsty" plants and grass types with water efficient natives is a great way to save water and reduce the need for potentially harmful pesticides and fertilizer.

Please see the California Friendly Garden Guide produced by the Metropolitan Water District of Southern California and associated Southern California Water Agencies for a catalog of California friendly plants and other garden resources at www.bewaterwise.com/Gardensoft.

Weed Free Yards

Weeds are water thieves. They often reproduce quickly and rob your yard of both water and nutrients. Weed your yard by hand if possible. If you use herbicides to control the weeds, use only the amount recommended on the label and never use it if rain is forecast within the next 48 hours.



Soil Amendments

Soil amendments such as green waste (e.g. grass clippings, compost, etc.) can be a significant source of nutrients and can help keep the soil near the roots of plants moist. However, they can cause algal booms if they get into our waterways, which reduces the amount of oxygen in the water and impacts most aquatic organisms. It is important to apply soil amendments more than 48 hours prior to predicted rainfall.

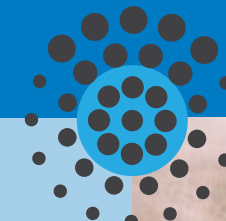
IRRIGATE EFFICIENTLY

Smart Irrigation Controllers

Smart Irrigation Controllers have internal clocks as well as sensors that will turn off the sprinklers in response to environmental changes. If it is raining, too windy or too cold, the smart irrigation control sprinklers will automatically shut off.

Check with your local water agency for available rebates on irrigation controllers and smart timers.

- Aim your sprinklers at your lawn, not the sidewalk – By simply adjusting the direction of your sprinklers you can save water, prevent water pollution from runoff, keep your lawn healthy and save money.
- Set a timer for your sprinklers – lawns absorb the water they need to stay healthy within a few minutes of turning on the sprinklers. Time your sprinklers; when water begins running off your lawn, you can turn them off. Your timer can be set to water your lawn for this duration every time.
- Water at Sunrise – Watering early in the morning will reduce water loss due to evaporation. Additionally, winds tend to die down in the early morning so the water will get to the lawn as intended.
- Water by hand – Instead of using sprinklers, consider watering your yard by hand. Hand-watering ensures that all plants get the proper amount of water and you will prevent any water runoff, which wastes water and carries pollutants into our waterways.
- Fix leaks - Nationwide, households waste one trillion gallons of water a year to leaks – that is enough water to serve the entire state of Texas for a year. If your garden hose is leaking, replace the nylon or rubber hose washer and ensure a tight connection. Fix broken sprinklers immediately.



Water runoff from sprinklers left on too long will carry pollutants into our waterways.

THE PROBLEM WITH HOUSEHOLD HAZARDOUS WASTE

Clean beaches and healthy creeks, rivers, bays, wetlands, and ocean are important to Orange County. However, when household hazardous waste is not disposed of properly, it can seep into our groundwater or wash into our storm drains and flow untreated to our waterways. Once in the water, these pollutants are not only dangerous for our local wildlife but can be harmful to human health.

Learn How to Properly Dispose of Household Hazardous Waste in Orange County




Who is H₂OC?

H₂OC is YOU. H₂OC is also a cooperative stormwater program which includes all 34 cities in Orange County, the County of Orange, and Orange County Flood Control District (OCFCD). Clean and healthy beaches, creeks, rivers, bays, wetlands, and ocean are important to Orange County. H₂OC provides resources to residents and businesses to encourage personal action and prevent polluted runoff from entering our waterways.

Join Us

Visit h2oc.org to learn more about runoff, water pollution, and how you can be the solution to runoff pollution and protect our water resources.

Contact

 **24-hour Pollution Reporting Hotline:**
1-877-89-SPILL (1-877-897-7455)

 **24-hour Reporting Website:**
myOCeServices.ocgov.com

For emergencies, dial 911

*Additional HHW services may be available through your city.

PROPER DISPOSAL OF HOUSEHOLD HAZARDOUS WASTE TO PROTECT OUR WATERWAYS



POLLUTION PREVENTION

Any household product that is flammable, corrosive, toxic, or can explode under certain circumstances is considered to be household hazardous waste (HHW). Though we may not think of things like paint, oil, pesticides, electronics, batteries, or household cleaners as hazardous, their chemical composition makes them a potential danger to our safety and our waterways.

Disposal of HHW down the drain, on the ground, into storm drains, or in the trash is illegal and unsafe. Proper disposal of HHW is actually easy. Simply drop off at a Household Hazardous Waste Collection Center (HHWCC) for free disposal and recycling. There are four primary* HHWCCs in Orange County:

Anaheim:..... 1071 N. Blue Gum St

Huntington Beach: 17121 Nichols St

Irvine:..... 6411 Oak Canyon

San Juan Capistrano:..... 32250 La Pata Ave

Centers are typically closed on rainy days and major holidays. For more information, call (714) 834-6752, visit oclandfills.com/household-hazardous-waste, or scan the QR code below.



Disposal Tips

- ✓ Use all of the product and discard the container.
- ✓ Consider non-toxic alternatives if possible.
- ✓ Only dispose of HHW at a Household Hazardous Waste Collection Center (HHWCC).
- ✓ Keep your waste in its original container. This will ensure that the container being used is safe and accepted by your HHWCC.
- ✓ Never mix different types of waste as it is potentially dangerous, and will not be accepted by your HHWCC.
- ✓ Place a lid on your container and ensure that it is intact. Cracked or leaking containers will not be accepted at your HHWCC.
- ✓ If the original container is not clearly labeled, mark it with the type of waste. For example, for pesticide sprays, write "pesticide."
- ✓ Place your HHW in a box or tub when transporting it to the HHWCC so it does not spill in your vehicle.

To report illegal dumping of household hazardous waste, call 1-800-69-TOXIC (1-800-698-6942).

Common Household Hazardous Wastes

- Adhesives
- All forms of electronic waste including computers and microwaves
- Automotive products (antifreeze, motor oil, fluids)
- Batteries
- Cleaners
- Drain openers
- Fertilizers
- Fluorescent lamps
- Fungicides/wood preservatives
- Grease and rust solvents
- Household cleaning products
- Medical needles and sharps
- Medications
- Mercury-containing lamps
- Mercury (thermometers & thermostats)
- Paint and paint products
- Pesticides
- Pool & spa chemicals
- Propane (camping & BBQ)
- Televisions & monitors (CRTs, flatscreens)
- Wood and metal cleaners and polishes

Some centers also have a "Materials Exchange Program" that lets you take partially used home, garden, and automobile products free of charge.





Did you know that just one quart of oil can pollute 250,000 gallons of water?

A clean ocean and healthy creeks, rivers, bays and beaches are important to Orange County. However, not properly disposing of used oil can lead to water pollution. If you pour or drain oil onto driveways, sidewalks or streets, it can be washed into the storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering the ocean. Help prevent water pollution by taking your used oil to a used oil collection center.

Included in this brochure is a list of locations that will accept up to five gallons of used motor oil at no cost. Many also accept used oil filters. Please contact the facility before delivering your used oil. This listing of companies is for your reference and does not constitute a recommendation or endorsement of the company.

Please note that used oil filters may not be disposed of with regular household trash. They must be taken to a household hazardous waste collection or recycling center in Anaheim, Huntington Beach, Irvine or San Juan Capistrano. For information about these centers, visit www.oilandfills.com.

Please do not mix your oil with other substances!

For more information, please call the Orange County Stormwater Program at 1-877-89-SPILL (1-877-897-7455) or visit www.watersheds.com.

For information about the proper disposal of household hazardous waste, call the Household Waste Hotline at (714) 834-6752 or visit www.oilandfills.com.



For additional information about the nearest oil recycling center, call the Used Oil Program at 1-800-CLEANUP or visit www.cleanup.org.

DTP113 Rev 8/03
printed on recycled paper 

Help Prevent Ocean Pollution:

Recycle at Your Local Used Oil Collection Center



The Ocean Begins at Your Front Door



NORTH COUNTY



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities such as pest control can lead to water pollution if you're not careful. Pesticide treatments must be planned and applied properly to ensure that pesticides do not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump pesticides into the ocean, so don't let it enter the storm drains. Pesticides can cause significant damage to our environment if used improperly. If you are thinking of using a pesticide to control a pest, there are some important things to consider.

For more information,
please call
University of California Cooperative
Extension Master Gardeners at
(714) 708-1646
or visit these Web sites:
www.uccemg.org
www.ipm.ucdavis.edu

For instructions on collecting a specimen
sample visit the Orange County
Agriculture Commissioner's website at:
http://www.ocagcomm.com/ser_lab.asp

To report a spill, call the
**Orange County 24-Hour
Water Pollution Problem
Reporting Hotline**
at 1-877-89-SPILL (1-877-897-7455).

For emergencies, dial 911.

Information From:
Cheryl Wilen, Area IPM Advisor; Darren Haver,
Watershed Management Advisor; Mary
Louise Flint, IPM Education and Publication
Director; Pamela M. Geisel, Environmental
Horticulture Advisor; Carolyn L. Unruh,
University of California Cooperative
Extension staff writer. Photos courtesy of
the UC Statewide IPM Program and
Darren Haver.

Funding for this brochure has been provided in full
or in part through an agreement with the State Water
Resources Control Board (SWRCB) pursuant to the
Costa-Machado Water Act of 2000 (Prop. 13).



Printed on Recycled Paper

Help Prevent Ocean Pollution:

Responsible Pest Control



The Ocean Begins
at Your Front Door



Tips for Pest Control

Key Steps to Follow:

Step 1: Correctly identify the pest (insect, weed, rodent, or disease) and verify that it is actually causing the problem.



This is important because beneficial insects are often mistaken for pests and sprayed with pesticides needlessly.

Consult with a Certified Nursery Professional at a local nursery or garden center or send a sample of the pest to the Orange County Agricultural Commissioner's Office.

Determine if the pest is still present – even though you see damage, the pest may have left.

Step 2: Determine how many pests are present and causing damage.



Small pest populations may be controlled more safely using non-pesticide techniques. These include removing food sources, washing off leaves with a strong stream of water, blocking entry into the home using caulking and replacing problem plants with ones less susceptible to pests.

Integrated Pest Management (IPM) usually combines several least toxic pest control methods for long-term prevention and management of pest problems without harming you, your family, or the environment.



Step 3: If a pesticide must be used, choose the least toxic chemical.

Obtain information on the least toxic pesticides that are effective at controlling the target pest from the UC Statewide Integrated Pest Management (IPM) Program's Web site at www.ipm.ucdavis.edu.

Seek out the assistance of a Certified Nursery Professional at a local nursery or garden center when selecting a pesticide. Purchase the smallest amount of pesticide available.

Apply the pesticide to the pest during its most vulnerable life stage. This information can be found on the pesticide label.

Step 4: Wear appropriate protective clothing.

Follow pesticide labels regarding specific types of protective equipment you should wear. Protective clothing should always be washed separately from other clothing.

Step 5: Continuously monitor external conditions when applying pesticides such as weather, irrigation, and the presence of children and animals.

Never apply pesticides when rain is predicted within the next 48 hours. Also, do not water after applying pesticides unless the directions say it is necessary.

Apply pesticides when the air is still; breezy conditions may cause the spray or dust to drift away from your targeted area.

In case of an emergency call 911 and/or the regional poison control number at (714) 634-5988 or (800) 544-4404 (CA only).

For general questions you may also visit www.calpoison.org.

Step 6: In the event of accidental spills, sweep up or use an absorbent agent to remove any excess pesticides. Avoid the use of water.

Be prepared. Have a broom, dust pan, or dry absorbent material, such as cat litter, newspapers or paper towels, ready to assist in cleaning up spills.

Contain and clean up the spill right away. Place contaminated materials in a doubled plastic bag. All materials used to clean up the spill should be properly disposed of according to your local Household Hazardous Waste Disposal site.

Step 7: Properly store and dispose of unused pesticides.

Purchase Ready-To-Use (RTU) products to avoid storing large concentrated quantities of pesticides.



Store unused chemicals in a locked cabinet.

Unused pesticide chemicals may be disposed of at a Household Hazardous Waste Collection Center.

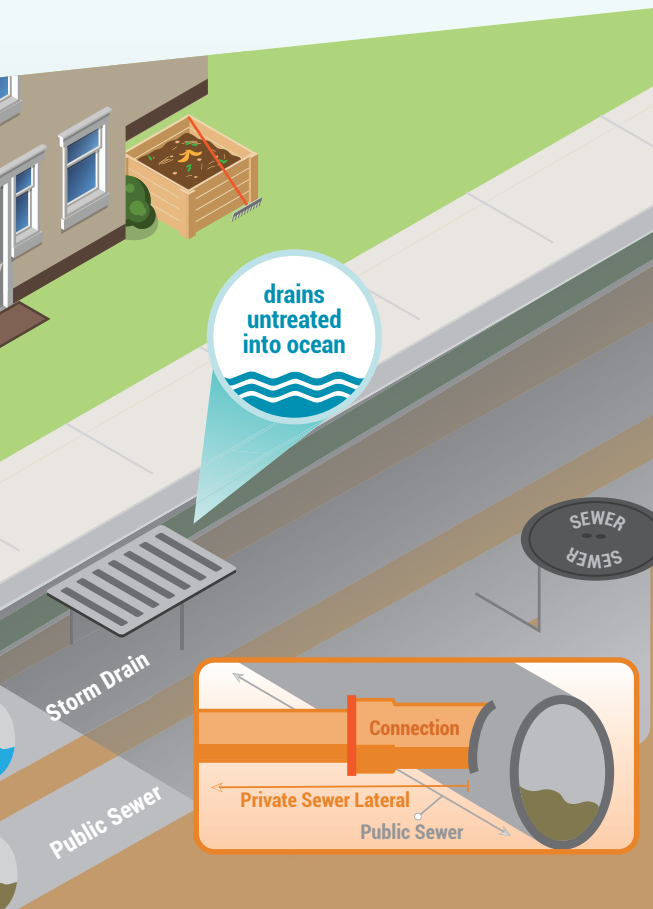
Empty pesticide containers should be triple rinsed prior to disposing of them in the trash.

Household Hazardous Waste
Collection Center
(714) 834-6752
www.oilandfills.com



Sewer System Maintenance

Property owners are responsible for maintaining their private laterals from the connection at the home or business to the connection with the public sewer; this can include areas under the sidewalk and the street. Inadequate maintenance of laterals can result in sewer backups and spills. Operation and maintenance of the local, public, and regional sewer lines, on the other hand, are the responsibility of the sewer agency.* Visit the link inside for agency contact information.



Who is H₂OC?

H₂OC is YOU! H₂OC is also a cooperative stormwater program which includes all 34 cities in Orange County, the County of Orange, and Orange County Flood Control District (OCFCD). Clean and healthy beaches, creeks, rivers, bays, wetlands, and ocean are important to Orange County. H₂OC provides resources to residents and businesses to encourage personal action and prevent polluted runoff from entering our waterways.

Join Us

Visit h2oc.org to learn more about runoff, water pollution, and how you can be the solution to runoff pollution and protect our water resources!

Contact

📞 **24-hour Pollution Reporting Hotline:**
1-877-89-SPILL (1-877-897-7455)

📱 **24-hour Reporting Website:**
myOCeServices.ocgov.com

For emergencies, dial 911

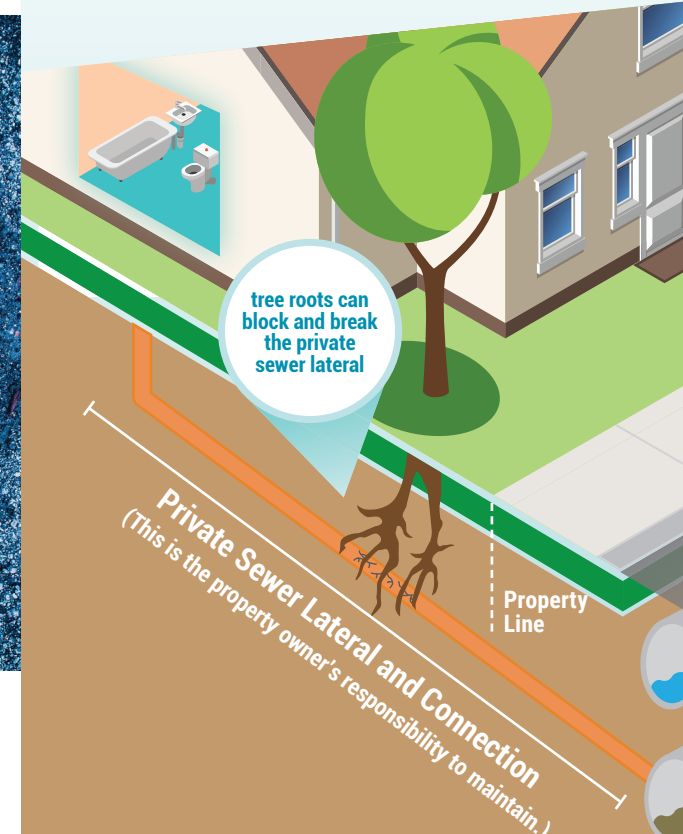
HOW TO PREVENT & REPORT SEWAGE SPILLS

A PROPERTY OWNER'S GUIDE TO PRIVATE SEWER LATERALS



The Sanitary Sewer System

Every property with sewer service owns a private sewer line, also known as a "private lateral." The private lateral carries wastewater from indoor plumbing fixtures, like toilets, sinks, and dishwashers, to the public sewer line under the street. The sewer system transports wastewater to treatment plants before being released. It is important to maintain your private laterals to prevent sewage spills that can reach our storm drains. Unlike water in sanitary sewers, water that flows into storm drains is **not treated** before entering our waterways and should never contain sewage.



Developed in Collaboration with Orange County's Sewer Agencies

Backups and Sewage Spills

Sewage spills and backups occur when the wastewater being transported is blocked and overflows or leaks out of broken pipes inside or outside of your building. Once out of the pipe, the sewage can discharge to the curb, gutter, and storm drain system, which flows to local waterways. Sewage spills can cause health hazards, beach closures, damage to homes and businesses, and threaten the quality of our local waterways. As a property owner, if sewage from your property discharges to a gutter or storm drain, you may be subject to fines, penalties, or increased rates.

Common Causes

BLOCKAGES

Common causes of blockages include

- Flushing anything other than toilet paper, including: wipes (even those advertised as “flushable”), feminine products, rags, and other items.
- Fats, oils, and grease (FOG) can get into the private lateral from household drains, as well as from poorly maintained commercial grease traps and interceptors.
- Tree roots can find their way into cracked or broken sewer laterals and cause blockages.

STRUCTURAL PROBLEMS

Common structural problems include

- Broken/cracked pipes.
- Deteriorated, missing, or broken cleanout caps.
- Aging or undersized sewers.

Keep Your Private Laterals Functioning Properly

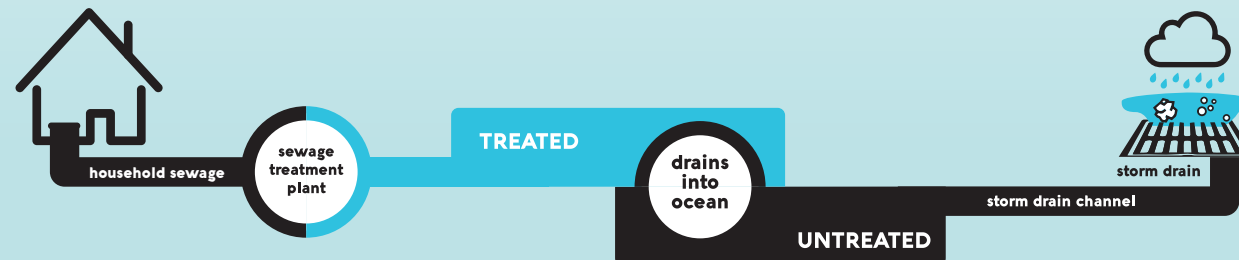
Prevent Blockages

Remember, **the drain is not a dump!**

- Only flush toilet paper down the toilet.
- Use a mesh sink strainer to catch food scraps before they go down the drain.
- Scrape food scraps into a designated food waste/organics receptacle before rinsing dishes and utensils in the sink.
- After cooking at home, let grease cool then pour or scrape it into a metal can. When the can is full, dispose of grease properly.
- For businesses, grease traps or interceptors must be serviced regularly. Have spill kits readily available for cleaning up spills.
- Do not plant trees or large shrubs above or within several feet of your sewer laterals.

Structural Maintenance

- Contact a licensed plumber to determine the optimal maintenance schedule.
- Perform periodic cleaning to eliminate grease, debris, and roots from private laterals.
- Repair or replace deteriorated or damaged private laterals as soon as possible.
- Install a backflow device to prevent sewage from ending up in your home or business.



Identify & Report Sewage Spills or Backups

Know the Signs

Sewage spills can cause damage to your property, the environment, and our local waterways. Look for potential signs of a spill, which may include:

- Drains are operating slower than normal and continuing to slow over time.
- Drains backup inside of buildings.
- Unusually wet or soggy ground in your yard that may be accompanied by odors.
- Leakage from sewer cleanouts, outside drains, or manhole lids.

Report Sewage Spills Immediately

- If you suspect a sewer backup or leak, contact a licensed plumber.
- If you observe a sewer spill from a cleanout or manhole, contact your sewer agency.*
- Plumbers should contact the sewer agency prior to pushing roots from private sewer laterals to the sewer main.

Alternatively, you can contact the **24-Hour Pollution Reporting Hotline** by calling **1-877-89-SPILL (1-877-897-7455)** or visiting myOCeServices.ocgov.com.

Spill Control & Containment

- Turn off main water supply or stop all water use.
- Have a plumbing professional clear the blockage and make necessary repairs.
- Keep people and pets away from the affected area.
- When safe, place sandbags or other material in the flow path of the spill to control, contain, and prevent sewage from entering the storm drain system.



Sewer overflow



Plumber making repairs on private lateral



* Scan for more sewage spill resources or visit <https://h2oc.org/resources/pollution-prevention-for-residents/sewage-maintenance/>



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Fertilizers, pesticides and other chemicals that are left on yards or driveways can be blown or washed into storm drains that flow to the ocean. Overwatering lawns can also send materials into storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour gardening products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit www.ocwatersheds.com

UCCE Master Gardener Hotline:
(714) 708-1646

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline** **1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

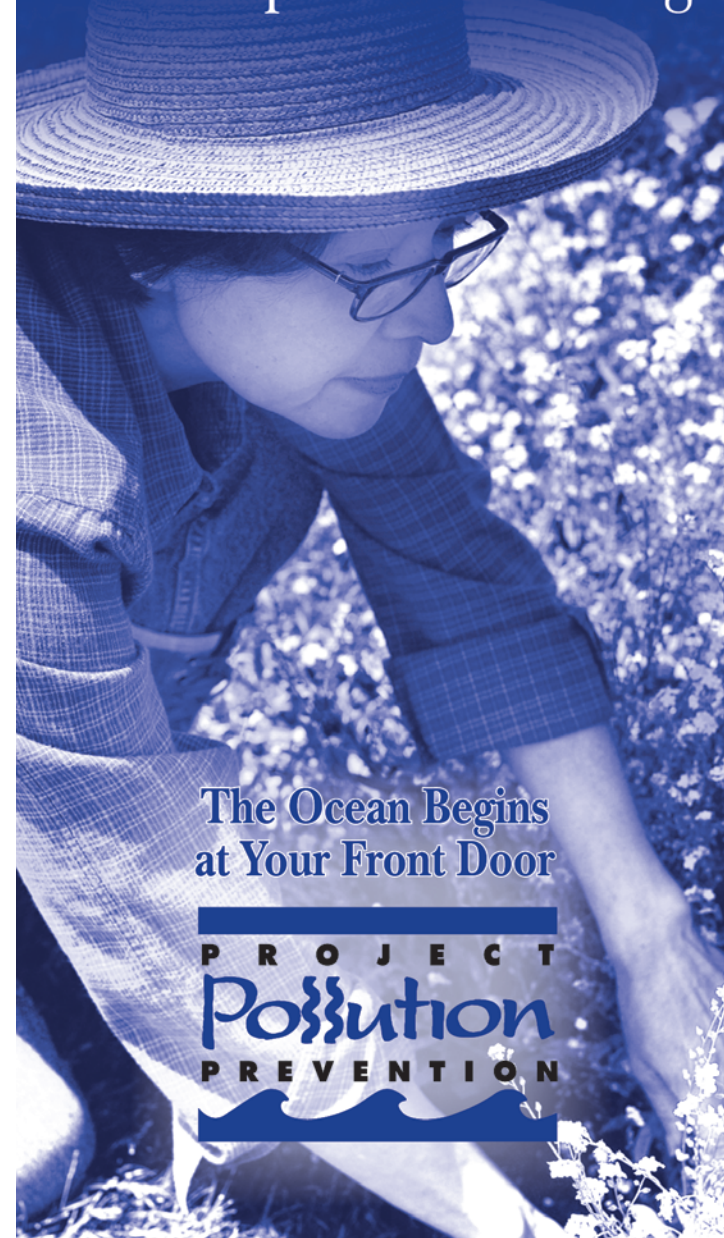
The tips contained in this brochure provide useful information to help prevent water pollution while landscaping or gardening. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.



Printed on Recycled Paper

Help Prevent Ocean Pollution:

Tips for Landscape & Gardening



The Ocean Begins
at Your Front Door



Tips for Landscape & Gardening

Never allow gardening products or polluted water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizers, and pesticide applied to the landscape.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.



Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro spray systems. Periodically inspect and fix leaks and misdirected sprinklers.

- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.



- Use slow-release fertilizers to minimize leaching, and use organic fertilizers.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.
- Rinse empty pesticide containers and re-use rinse water as you would use the



product. Do not dump rinse water down storm drains. Dispose of empty containers in the trash.

- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting. For more information, visit www.ipm.ucdavis.edu.
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. Locations are provided below.

Household Hazardous Waste Collection Centers

Anaheim:	1071 N. Blue Gum St.
Huntington Beach:	17121 Nichols St.
Irvine:	6411 Oak Canyon
San Juan Capistrano:	32250 La Pata Ave.

For more information, call (714) 834-6752 or visit www.oilandfills.com



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities such as painting can lead to water pollution if you're not careful. Paint must be used, stored and disposed of properly to ensure that it does not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump paint into the ocean, so don't let it enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit www.ocwatersheds.com

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline** at **1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while using, storing and disposing of paint. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.



Printed on Recycled Paper

Help Prevent Ocean Pollution:

Tips for Projects Using Paint



The Ocean Begins at Your Front Door

PROJECT
Pollution
PREVENTION

Tips for Projects Using Paint

Paint can cause significant damage to our environment. Whether you hire a contractor or do it yourself, it is important to follow these simple tips when purchasing, using, cleaning, storing and disposing of paint.

Purchasing Paint

- Measure the room or object to be painted, then buy only the amount needed.
- Whenever possible, use water-based paint since it usually does not require hazardous solvents such as paint thinner for cleanup.

Painting

- Use only one brush or roller per color of paint to reduce the amount of water needed for cleaning.
- Place open paint containers or trays on a stable surface and in a position that is unlikely to spill.
- Always use a tarp under the area or object being painted to collect paint drips and contain spills.

Cleaning

- Never clean brushes or rinse paint containers in the street, gutter or storm drain.
- For oil-based products, use as much of the paint on the brushes as possible. Clean brushes with thinner. To reuse thinner, pour it through a fine filter (e.g. nylon, metal gauze or filter paper) to remove solids such as leftover traces of paint.
- For water-based products, use as much of the paint on the brushes as possible, then rinse in the sink.
- Collect all paint chips and dust. Chips and dust from marine paints or paints containing lead, mercury or tributyl tin are hazardous waste. Sweep up and dispose of at a Household Hazardous Waste Collection Center (HHWCC).

Storing Paint

- Store paint in a dry location away from the elements.
- Store leftover water-based paint, oil-based paint and solvents separately in original or clearly marked containers.
- Avoid storing paint cans directly on cement floors. The bottom of the can will rust much faster on cement.
- Place the lid on firmly and store the paint can upside-down to prevent air from entering. This will keep the paint usable longer. Oil-based paint is usable for up to 15 years. Water-based paint remains usable for up to 10 years.

Alternatives to Disposal

- Use excess paint to apply another coat, for touch-ups, or to paint a closet, garage, basement or attic.
- Give extra paint to friends or family. Extra paint can also be donated to a local theatre group, low-income housing program or school.
- Take extra paint to an exchange program such as the “**Stop & Swap**” that allows you to drop off or pick up partially used home care products free of charge. “**Stop & Swap**” programs are available at most HHWCCs.
- For HHWCC locations and hours, call **1-877-897-7455** or visit **www.oilandfills.com**.



Disposing of Paint

- Never put wet paint in the trash.

For water-based paint:

- If possible, brush the leftover paint on cardboard or newspaper. Otherwise, allow the paint to dry in the can with the lid off in a well-ventilated area protected from the elements, children and pets. Stirring the paint every few days will speed up the drying.
- Large quantities of extra paint should be taken to a HHWCC.
- Once dried, paint and painted surfaces may be disposed of in the trash. When setting a dried paint can out for trash collection, leave the lid off so the collector will see that the paint has dried.

For oil-based paint:

- Oil-based paint is a household hazardous waste. All leftover paint should be taken to a HHWCC.

Aerosol paint:

- Dispose of aerosol paint cans at a HHWCC.

Spills

- Never hose down pavement or other impermeable surfaces where paint has spilled.
- Clean up spills immediately by using an absorbent material such as cat litter. Cat litter used to clean water-based paint spills can be disposed of in the trash. When cleaning oil-based paint spills with cat litter, it must be taken to a HHWCC.
- Immediately report spills that have entered the street, gutter or storm drain to the County's 24-Hour Water Pollution Problem Reporting Hotline at **1-877-897-7455** or visit **www.ocwatersheds.com** to fill out an incident reporting form.

Please Replace this Sheet with a Tabulated Section divider with
the appropriate Section/Appendix Roman Numeral and/or
Numbering

Appendix F – Hydrology Study

PRELIMINARY DRAINAGE STUDY

For

9071 Lampson Avenue

APN: 133-183-55 133-183-56 133-183-57, 133-183-58

Located in City of Garden Grove
Orange County
Anaheim Bay Watershed

Prepared Date: March 2022

Prepared For:
PLC Communities, Inc.
888 San Clemente Drive, Suite 200
Newport Beach, CA 92660
(949) 729-1221

Prepared By:

MDS CONSULTING
17320 Redhill Avenue, Suite 350
Irvine, CA 92614
(949) 251-8821





A handwritten signature in black ink, appearing to be "E. Lenth".

Edward J. Lenth RCE 52496

Date

MDS
CONSULTING

MORSE 41-865 Boardwalk
Suite 218
Palm Desert, CA 92211
SCHULTZ Voice: 760-674-5776

PLANNERS ENGINEERS SURVEYORS

APN: 133-183-55 through 133-183-58

9071 Lampson Avenue
JN 37640
March 2022

MDS
CONSULTING

PLANNERS
ENGINEERS
SURVEYORS

TABLE OF CONTENTS

- A. Site/Project Description/Discussion
 - Vicinity Map
- B. Rational Method Hydrology Calculations
 - 10-Year Storm
 - 25-Year Storm
 - 100-Year Storm
- C. Grate Ponding Calculations
- E. Pipe Sizing Calculations
- F. References and Maps
 - Existing & Proposed Hydrology Plans
 - Reference Plans
 - AES Analysis Results
 - Hydrologic Soils Group Map
 - Point Precipitation Frequency, NOAA Atlas 14, Vol. 6, Ver. 2
 - Soil Infiltration Report
 - Maps & Worksheets

Tentative Tract No. 37993

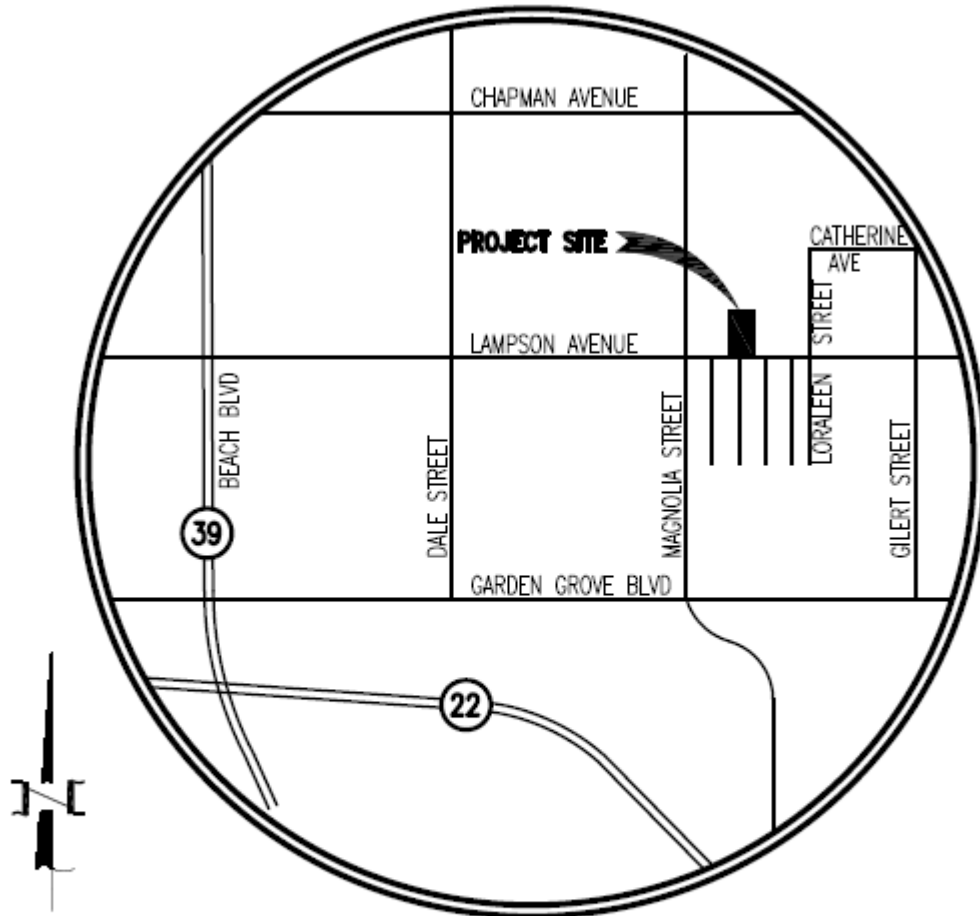
PROJECT LOCATION

The project site lies on the north side of Lampson Avenue and northeast of the Lampson and Magnolia Intersection in the city of Garden Grove, Orange County.

Latitude: 33°46'53.20"N

Longitude: 117°58'25.75"W

Watershed: Anaheim Bay Watershed



VICINITY MAP

N.T.S.

2006 THOMAS BROTHERS
MAP BOOK, PAGES -, GRID -

A. Site/Project Description/Discussion

The purpose of this Drainage Study is to calculate the storm flows, demonstrating that the proposed streets and storm drain system are capable in protecting the project from a 10-year & 100-year storm event.

The property is currently zoned as single-family housing. The project is bounded on the north, east, and west by the existing single family residential, and on the south by Lampson Avenue. The project drains storm water to the south where WQMP basins will be constructed to protect the property from the required 100-year storm event.

The proposed project is a low to medium density housing subdivision consisting of thirteen separated single family homes on approximately 1.6 acres in the City of Garden Grove. The 1.6 Acres encompasses all the lots as shown on the proposed Tentative Map.

This Hydrology Study is prepared using the methodology outlined in the Orange County Hydrology Manual. The hydrologic calculations for the Rational Method are accomplished through AES.

The Point Precipitations used are based on data from NOAA Atlas 14, Volume 6, Version 2, a copy of the data is included in this report.

B. Rational Method Hydrology Calculations

- Developed Condition 10-Year Storm
- Developed Condition 25-Year Storm
- Developed Condition 100-Year Storm

Point Precipitation Data

Below is a summary of the Point Precipitation data. The full Point Precipitations used are based on data from NOAA Atlas 14, Volume 6, Version 2, a copy of the data is included in this report.

	10-year Storm	25-year Storm	100-Year Storm
24-Hour Intensity	3.60 inches	4.43 inches	5.75 inches

Hydrogeologic Soils Group

The major factor affecting infiltration is the nature of the soil itself. The soil surface characteristics, its ability to transmit water to subsurface layers, and total storage capacity are all major factors in the infiltration capabilities of a particular soil.

Based upon the Soil Survey done by the United States Department of Agriculture, the soil type was Type A. See the USGS Soil report in the appendix for more information.

Curve Number

The Curve number for Residential landscaping and the Soil group A is 32. See Figure C-3 in the OC Hydrology Manual for more information.

The curve number must be adjusted for AMC Condition III, therefore for Condition III, the CN= 51.

Antecedent Moisture Condition

In rainfall-based Hydrology methods, it is normal to assume that a low AMC index will be used when developing short return period storms (2-5 years) while moderate to high AMC indexes will be used in developing longer return period storms.

AMC-II was used for the 10 & 25-year storm event, while AMC III was used for the 100-year storm event.

Estimation of Maximum loss Rates for Pervious Areas (Fp)

Soil Group	A	B	C	D
F(p)	0.40	0.30	0.25	0.20

Estimation of Catchment Maximum Loss Rates(Fm)

The maximum loss rate selected applies to the pervious area of a watershed. The loss rate assumed for an impervious surface is 0.0 in/hr.

$$F_m = A_p * F_p$$

Existing Condition			
	Fm	Ap	Fp
DMA - 1	0.26	0.653	0.40
DMA - 2	0.24	0.602	0.40

Proposed Condition			
	Fm	Ap	Fp
DMA - 1	0.15	0.381	0.40
DMA - 2	0.18	0.451	0.40

Design Storm Loss Rates

In design storm runoff hydrograph studies, a 24-hour duration storm pattern is used to develop the time distribution of effective rainfall over the watershed. The loss rate used for a particular catchment is Fm.

Rational Method Calculation

$$Q = C * I * A$$

Q = The runoff in cubic feet per second (CFS) from a given Area

C= A runoff coefficient representing the ratio of runoff to rainfall

I = The time averaged rainfall intensity in inches per hour corresponding to the time of concentration.

A = Drainage Area (Acres)

Below are summary tables of the AES Results for the 10-year, 25-year, and 100-year storm events for the Existing & Proposed conditions. Please see the AES calculations in the appendix for more information.

Existing Condition

10-year Storm Event

	Q (cfs)	C	A(ac)	Tc (min)
DMA - 1	1.75	0.231	0.79	10.19
DMA - 2	1.59	0.283	0.81	12.28



25-year Storm Event

	Q (cfs)	C	A(ac)	T _c (min)
DMA - 1	2.12	0.246	0.79	10.19
DMA - 2	1.94	0.297	0.81	12.28

100-year Storm Event

	Q (cfs)	C	A(ac)	T _c (min)
DMA - 1	2.75	0.261	0.79	10.19
DMA - 2	2.52	0.311	0.81	12.28

Proposed Condition

10-year Storm Event

	Q (cfs)	C	A(ac)	T _c (min)
DMA - 1	1.86	0.757	0.79	9.67
DMA - 2	1.74	0.731	0.81	10.65

25-year Storm Event

	Q (cfs)	C	A(ac)	T _c (min)
DMA - 1	2.25	0.784	0.79	9.67
DMA - 2	2.12	0.763	0.81	10.65

100-year Storm Event

	Q (cfs)	C	A(ac)	T _c (min)
DMA - 1	2.90	0.811	0.79	9.67
DMA - 2	2.75	0.794	0.81	10.65

Change in Flow



DMA-1

	10-Year Q	25-Year Q	100-Year Q
Existing Condition DMA - 1	1.75	2.12	2.75
Proposed Condition DMA – 1	1.86	2.25	2.90
Difference in Flows	0.11	0.13	0.15 (5.2% Inc.)

DMA-2

	10-Year Q	25-Year Q	100-Year Q
Existing Condition DMA - 2	1.59	1.94	2.52
Proposed Condition DMA – 2	1.74	2.12	2.75
Difference in Flows	0.15	0.18	0.23 (8.4% inc.)

The proposed development will be required to mitigate the increase in flows in the 100-year condition. Due to the existing condition already being built up, the increase in peak flows is negligible. The infiltration basin will be sized to handle the DCV calculated in the WQMP.

Runoff Coefficient

$$C = 0.90 (A_i + ((I - F_p) * A_p) / I)$$

$$= 0.90 A_i \quad \text{when } I \text{ is less than } F_p$$

C – Runoff Coefficient

I = Rainfall Intensity

F_p = Infiltration Rate (In / hr)

A_i = Ratio of impervious area to total area

A_p = Ratio of pervious area to total area

Existing Condition					
	C	I (24 hour)	F _p	A _i	A _p
DMA – 1 Q10	0.231	3.60 in	1.50 in/hr	0.347	0.653
Q25	0.246	4.43 in	1.50 in/hr	0.347	0.653
Q100	0.261	5.75 in	1.50 in/hr	0.347	0.653
DMA – 2 Q10	0.283	3.60 in	1.50 in/hr	0.398	0.602
Q25	0.297	4.43 in	1.50 in/hr	0.398	0.602
Q100	0.311	5.75 in	1.50 in/hr	0.398	0.602



Proposed Condition					
	C	I (24 hour)	Fp	Ai	Ap
DMA – 1 Q10	0.757	3.60 in	1.50 in/hr	0.619	0.381
Q25	0.784	4.43 in	1.50 in/hr	0.619	0.381
Q100	0.811	5.75 in	1.50 in/hr	0.619	0.381
DMA – 2 Q10	0.731	3.60 in	1.50 in/hr	0.549	0.451
Q25	0.763	4.43 in	1.50 in/hr	0.549	0.451
Q100	0.794	5.75 in	1.50 in/hr	0.549	0.451

D. Grate Ponding Calculations

For the grate ponding calculation, the 100-year storm event was analyzed. A clogging factor of 50% was applied to the catch basins.

$$Q = C * A * \sqrt{2 * g * h}$$

Q = Orifice Capacity of Gate

A = Clear Opening Area (2' X 2' catch basin with 50% clogging assumed)

G = 32.2 ft/s²

H = allowable Head on grate (ft)

Catch Basin Node 101-

$$2.90 = (0.67) * (2) * \sqrt{2 * 32.2 * H}$$

Ponding height = .07' or 0.9"

Ponding Elevation = 73.1+ .07 = 73.17'

With a finished floor of 75.3' the lowest building pad will be 2.1' above the catch basin ponding elevation.

Catch basin Node 201 -

$$2.75 = (0.67) * (2) * \sqrt{2 * 32.2 * H}$$

Ponding Height = .065' or 0.78"

Ponding Elevation = 73.1+ .065 = 73.17'

With a finished floor of 75.4' the lowest building pad will be 2.2' above the catch basin ponding elevation.

F. Pipe Sizing Calculations

Pipe Sizing was done Through AES. Pipes were sized for the 25-year storm event.

Pipe Network SubArea 1

>>>>PIPEFLOW HYDRAULIC INPUT INFORMATION<<<<

PIPE DIAMETER(FEET) = 1.000
PIPE SLOPE(FEET/FEET) = 0.0200
PIPEFLOW(CFS) = 2.90
MANNINGS FRICTION FACTOR = 0.015000
=====

CRITICAL-DEPTH FLOW INFORMATION:

CRITICAL DEPTH(FEET) = 0.73
CRITICAL FLOW AREA(SQUARE FEET) = 0.614
CRITICAL FLOW TOP-WIDTH(FEET) = 0.888
CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) = 39.00
CRITICAL FLOW VELOCITY(FEET/SEC.) = 4.720
CRITICAL FLOW VELOCITY HEAD(FEET) = 0.35
CRITICAL FLOW HYDRAULIC DEPTH(FEET) = 0.69
CRITICAL FLOW SPECIFIC ENERGY(FEET) = 1.08
=====

NORMAL-DEPTH FLOW INFORMATION:

NORMAL DEPTH(FEET) = 0.60
FLOW AREA(SQUARE FEET) = 0.49
FLOW TOP-WIDTH(FEET) = 0.982
FLOW PRESSURE + MOMENTUM(POUNDS) = 41.24
FLOW VELOCITY(FEET/SEC.) = 5.948
FLOW VELOCITY HEAD(FEET) = 0.549
HYDRAULIC DEPTH(FEET) = 0.50
FROUDE NUMBER = 1.487
SPECIFIC ENERGY(FEET) = 1.14
=====



Pipe Network Subarea 2

>>>>PIPEFLOW HYDRAULIC INPUT INFORMATION<<<<

PIPE DIAMETER(FEET) = 1.000
PIPE SLOPE(FEET/FEET) = 0.0200
PIPEFLOW(CFS) = 2.75
MANNINGS FRICTION FACTOR = 0.015000
=====

CRITICAL-DEPTH FLOW INFORMATION:

CRITICAL DEPTH(FEET) = 0.71
CRITICAL FLOW AREA(SQUARE FEET) = 0.597
CRITICAL FLOW TOP-WIDTH(FEET) = 0.907
CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) = 36.26
CRITICAL FLOW VELOCITY(FEET/SEC.) = 4.605
CRITICAL FLOW VELOCITY HEAD(FEET) = 0.33
CRITICAL FLOW HYDRAULIC DEPTH(FEET) = 0.66
CRITICAL FLOW SPECIFIC ENERGY(FEET) = 1.04
=====

NORMAL-DEPTH FLOW INFORMATION:

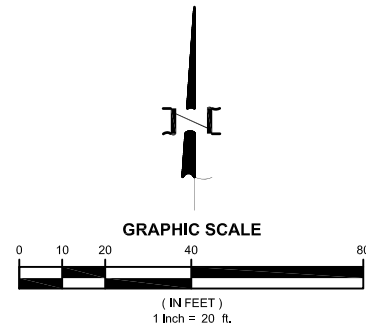
NORMAL DEPTH(FEET) = 0.58
FLOW AREA(SQUARE FEET) = 0.47
FLOW TOP-WIDTH(FEET) = 0.989
FLOW PRESSURE + MOMENTUM(POUNDS) = 38.52
FLOW VELOCITY(FEET/SEC.) = 5.877
FLOW VELOCITY HEAD(FEET) = 0.536
HYDRAULIC DEPTH(FEET) = 0.47
FROUDE NUMBER = 1.505
SPECIFIC ENERGY(FEET) = 1.11
=====

G. References and Maps

- Existing & Proposed Hydrology Plans
- Reference Plans
- AES Analysis Results
- Hydrologic Soils Group Map
- Point Precipitation Frequency, NOAA Atlas 14, Vol. 6, Ver. 2
- Soil Infiltration Report
- Maps & Worksheets

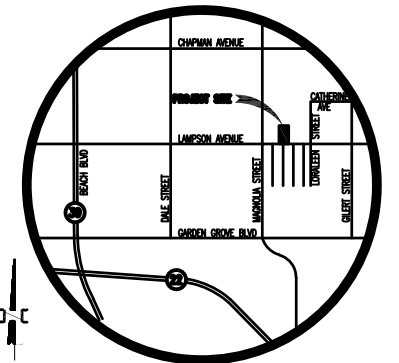
Existing & Proposed Hydrology Plans





LEGEND

- 5 AIR CONDITIONING PAD
- 1R CONDOMINIUM UNIT NUMBER
- PROPOSED PLAN ELEVATION TYPE
- PROPOSED STREET LIGHT
- PROPOSED STORM DRAIN
- PROPOSED SANITARY SEWER
- PROPOSED POTABLE WATER
- PROPOSED NON-POTABLE WATER
- EXISTING STORM DRAIN
- EXISTING SANITARY SEWER
- EXISTING POTABLE WATER
- EXISTING GAS LINE
- PROPOSED STREET GRADE
- 1.00% FENCE
- TENTATIVE TRACT BOUNDARY
- PROPOSED RETAINING WALL (SEE PLAN FOR HEIGHT)
- LOT LINE
- GARAGE PARKING
- DRIVEWAY PARKING
- ON-STREET PARKING
- DRAINAGE AREA BOUNDARY
- SUB-AREA BOUNDARY
- NODE NUMBER
- ELEVATION
- DIRECTION OF SURFACE FLOW
- SURFACE FLOW LENGTH (feet)
- PIPE FLOW LENGTH (feet)
- NODE NUMBER
- FRESH SURFACE ELEVATION
- SWIFT ELEVATION
- 10-YEAR STORM PEAK FLOW (cfs)
- 100-YEAR STORM PEAK FLOW (cfs)
- TIME OF CONCENTRATION (minutes)
- PERVIOUS SURFACE
- IMPERVIOUS SURFACE



VICINITY MAP
N.T.S.
2006 THOMAS BROTHERS
MAP BOOK, PAGES -, GRID -

DRAINAGE AREA AND BMP SUMMARY

DRAINAGE AREA DESIGNATION	DRAINAGE AREA ACREAGE	IMPERVIOUS PERCENTAGE	FLOW PATH LENGTH	SLOPE
DA-1	0.79	34.7%	235	0.60%
DA-2	0.81	39.8%	378	0.61%

ASSESSORS PARCEL NUMBERS

133-183-55, 133-183-56, 133-183-57, 133-183-58.

DATE	NO.	REVISIONS

PREPARED FOR:
pic

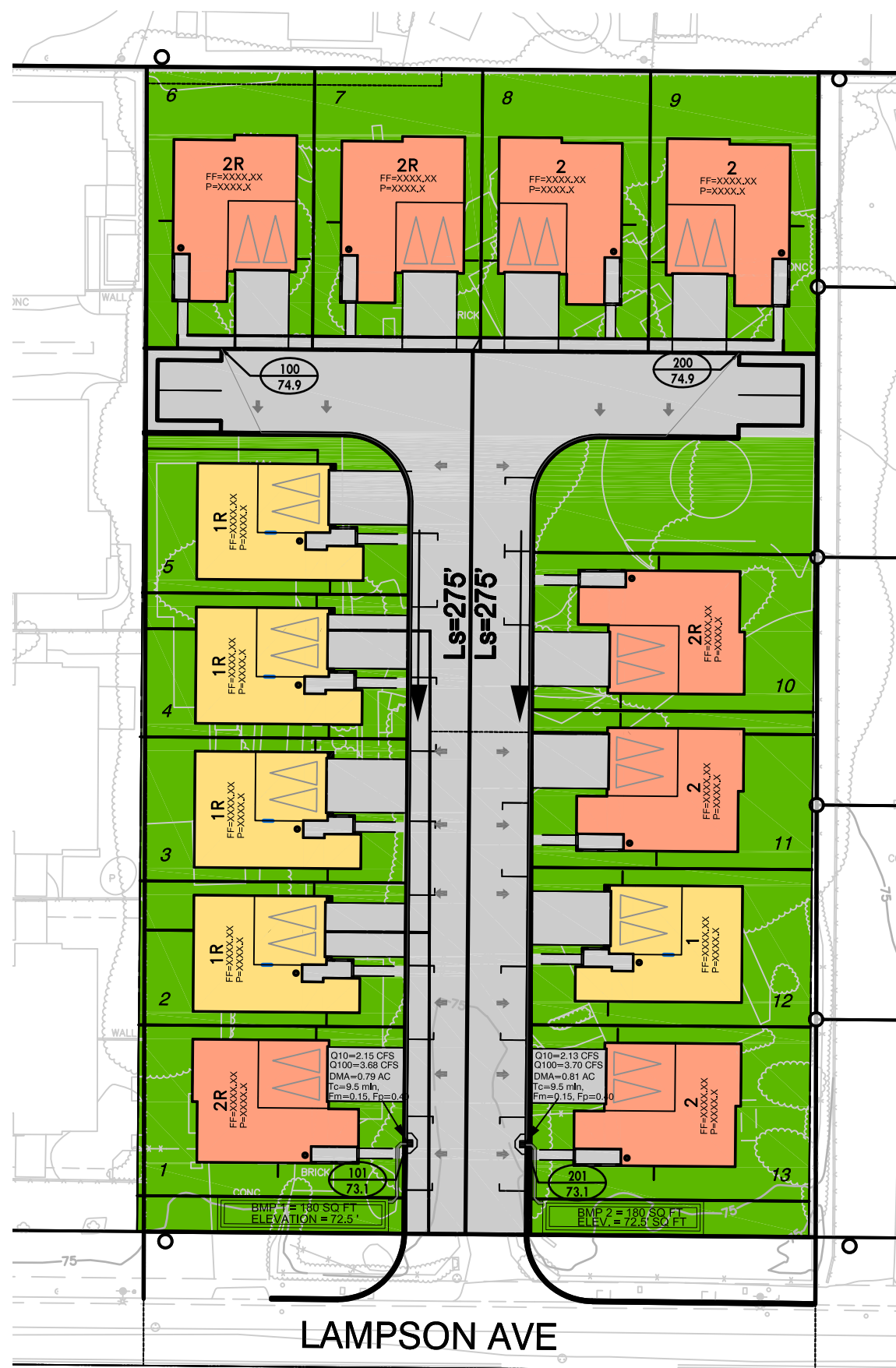
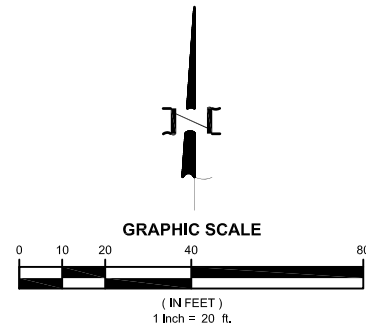
PREPARED BY:
MDS MORSE
CONSULTING INC. SCHULTZ
PLANNERS ENGINEERS SURVEYORS
17320 Redhill Avenue, Suite 350, Irvine, CA 92614
Phone: (949) 251-8821, Fax: 949-251-8821

MDS CONSULTING
17320 REDHILL AVENUE, SUITE 350
IRVINE, CA 92614
PHONE: (949) 251-8821
CONTACT: EDWARD J. LENTH
2-28-22
EDWARD J. LENTH RCE 052496
EXP. DATE: DECEMBER 31, 2022



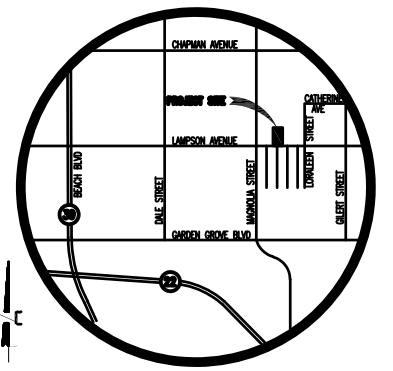
**9071 LAMPSON AVE
CONCEPTUAL DRAINAGE
PLAN EXISTING CONDITION**
CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA
SHEET 1 OF 1

9071 LAMPSON AVE - CONCEPTUAL DRAINAGE PLAN



LEGEND

- 5 AIR CONDITIONING PAD
 - 1R CONDOMINIUM UNIT NUMBER
 - PROPOSED PLAN ELEVATION TYPE
 - PROPOSED STREET LIGHT
 - PROPOSED STORM DRAIN
 - PROPOSED SANITARY SEWER
 - PROPOSED POTABLE WATER
 - PROPOSED NON-POTABLE WATER
 - EXISTING STORM DRAIN
 - EXISTING SANITARY SEWER
 - EXISTING POTABLE WATER
 - EXISTING GAS LINE
 - PROPOSED STREET GRADE
 - 1.00% FENCE
 - TENTATIVE TRACT BOUNDARY
 - PROPOSED RETAINING WALL (SEE PLAN FOR HEIGHT)
 - LOT LINE
- GARAGE PARKING
 - DRIVEWAY PARKING
 - ON-STREET PARKING
 - DRAINAGE AREA BOUNDARY
 - SUB-AREA BOUNDARY
 - NODE NUMBER
 - ELEVATION
 - DIRECTION OF SURFACE FLOW
 - SURFACE FLOW LENGTH (feet)
 - PIPE FLOW LENGTH (feet)
 - NODE NUMBER
 - FINISH SURFACE ELEVATION
 - INVERT ELEVATION
 - 10-YEAR STORM PEAK FLOW (cfs)
 - 100-YEAR STORM PEAK FLOW (cfs)
 - TIME OF CONCENTRATION (minutes)
 - PERVIOUS AREA
 - IMPERVIOUS AREA



DRAINAGE AREA AND BMP SUMMARY

DRAINAGE AREA DESIGNATION	DRAINAGE AREA ACREAGE	IMPERVIOUS PERCENTAGE	FLOW PATH LENGTH	SLOPE
DA-1	0.79	61.9%	275	0.65%
DA-2	0.81	64.9%	275	0.65%

ASSESSORS PARCEL NUMBERS

133-183-55, 133-183-56, 133-183-57, 133-183-58.

9071 LAMPSON AVE CONCEPTUAL DRAINAGE PLAN PROPOSED CONDITION

CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA
SHEET 1 OF 1

DATE	NO.	REVISIONS

PREPARED FOR: **PLC COMMUNITIES**

PREPARED BY: **MDS CONSULTING**
MORSE 17320 Redhill Avenue Suite 350 Irvine, CA 92614
SCHULTZ 949-251-8821

MDS CONSULTING
17320 REDHILL AVENUE, SUITE 350
IRVINE, CA 92614
PHONE: (949) 251-8821
CONTACT: EDWARD J. LENTH

EDWARD J. LENTH RCE 052496
EXP. DATE: DECEMBER 31, 2022

2-28-22



9071 LAMPSON AVE - CONCEPTUAL DRAINAGE PLAN

MDS Proj. Date: 12/12/2022 10:36:22 AM Author: MDS
Created: 03/10/2022 10:36:22 AM Author: MDS
Last Edit: 03/10/2022 10:36:22 AM By: 5111101010

Reference Plans

Please see Reference Plan section in the WQMP Appendix for a complete plan set.

AES Analysis Results



RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
(Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
(c) Copyright 1983-2016 Advanced Engineering Software (aes)
Ver. 23.0 Release Date: 07/01/2016 License ID 1269

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * Pre-Construction Hydrology Analysis *
 - * Garden Grove Condos *
 - * 10 - Year Storm Analysis *
- *****

FILE NAME: 376PRE10.DAT
TIME/DATE OF STUDY: 14:54 03/09/2022

=====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

=====

--*TIME-OF-CONCENTRATION MODEL*--

USER SPECIFIED STORM EVENT(YEAR) = 10.00
SPECIFIED MINIMUM PIPE SIZE(INCH) = 6.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.01
DATA BANK RAINFALL USED
ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF-WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH (FT)	LIP (FT)	HIKE (FT)	MANNING FACTOR (n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

SIZE PIPE WITH A FLOW CAPACITY GREATER THAN OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.

*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

UNIT-HYDROGRAPH MODEL SELECTIONS/PARAMETERS:

WATERSHED LAG = 0.80 * Tc

USED "VALLEY UNDEVELOPED" S-GRAPH FOR DEVELOPMENTS OF
 2 UNITS/ACRE AND LESS; AND "VALLEY DEVELOPED" S-GRAPH
 FOR DEVELOPMENTS OF 3-4 UNITS/ACRE AND MORE.
 SIERRA MADRE DEPTH-AREA FACTORS USED.

DURATION	AREA-AVERAGED RAINFALL(INCH)
5-MINUTES	0.34
30-MINUTES	0.72
1-HOUR	0.95
3-HOUR	1.59
6-HOUR	2.20
24-HOUR	3.68

ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR UNIT HYDROGRAPH METHOD

FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 235.00
 ELEVATION DATA: UPSTREAM(FEET) = 76.40 DOWNSTREAM(FEET) = 75.00

$T_c = K * [(LENGTH ** 3.00) / (ELEVATION CHANGE)] ** 0.20$
 SUBAREA ANALYSIS USED MINIMUM T_c (MIN.) = 10.193
 * 10 YEAR RAINFALL INTENSITY(INCH/HR) = 2.699
 SUBAREA T_c AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
RESIDENTIAL "3-4 DWELLINGS/ACRE"	A	0.79	0.40	0.600	32	10.19

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.40
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.600
 SUBAREA RUNOFF(CFS) = 1.75
 TOTAL AREA(ACRES) = 0.79 PEAK FLOW RATE(CFS) = 1.75

FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 378.00
 ELEVATION DATA: UPSTREAM(FEET) = 76.80 DOWNSTREAM(FEET) = 74.50

$T_c = K * [(LENGTH ** 3.00) / (ELEVATION CHANGE)] ** 0.20$
 SUBAREA ANALYSIS USED MINIMUM T_c (MIN.) = 12.276
 * 10 YEAR RAINFALL INTENSITY(INCH/HR) = 2.426
 SUBAREA T_c AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
RESIDENTIAL						
"3-4 DWELLINGS/ACRE"	A	0.81	0.40	0.600	32	12.28

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.40
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.600
 SUBAREA RUNOFF(CFS) = 1.59
 TOTAL AREA(ACRES) = 0.81 PEAK FLOW RATE(CFS) = 1.59

=====
 END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 0.8 TC(MIN.) = 12.28
 EFFECTIVE AREA(ACRES) = 0.81 AREA-AVERAGED Fm(INCH/HR)= 0.24
 AREA-AVERAGED Fp(INCH/HR) = 0.40 AREA-AVERAGED Ap = 0.600
 PEAK FLOW RATE(CFS) = 1.59

=====
 =====

END OF RATIONAL METHOD ANALYSIS

↑

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
 (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
 (c) Copyright 1983-2016 Advanced Engineering Software (aes)
 Ver. 23.0 Release Date: 07/01/2016 License ID 1269

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
 * Pre-Construction Hydrology Analysis *
 * Garden Grove Condos *
 * 25 - Year Storm Analysis *

FILE NAME: 376PRE10.DAT
 TIME/DATE OF STUDY: 15:02 03/09/2022

=====
 =====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

=====
 =====

--*TIME-OF-CONCENTRATION MODEL*--

USER SPECIFIED STORM EVENT(YEAR) = 25.00
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 6.00
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.01
 DATA BANK RAINFALL USED
 ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF-WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / SIDE / SIDE/ WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH (FT)	LIP (FT)	HIKE (FT)	MANNING FACTOR (n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

SIZE PIPE WITH A FLOW CAPACITY GREATER THAN OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.

*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

UNIT-HYDROGRAPH MODEL SELECTIONS/PARAMETERS:

WATERSHED LAG = 0.80 * Tc
USED "VALLEY UNDEVELOPED" S-GRAPH FOR DEVELOPMENTS OF 2 UNITS/ACRE AND LESS; AND "VALLEY DEVELOPED" S-GRAPH FOR DEVELOPMENTS OF 3-4 UNITS/ACRE AND MORE.
SIERRA MADRE DEPTH-AREA FACTORS USED.

DURATION	AREA-AVERAGED RAINFALL(INCH)
5-MINUTES	0.40
30-MINUTES	0.87
1-HOUR	1.15
3-HOUR	1.94
6-HOUR	2.71
24-HOUR	4.49

ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR UNIT HYDROGRAPH METHOD

FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 235.00
ELEVATION DATA: UPSTREAM(FEET) = 76.40 DOWNSTREAM(FEET) = 75.00

Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 10.193
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.223

SUBAREA Tc AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
RESIDENTIAL "3-4 DWELLINGS/ACRE"	A	0.79	0.40	0.600	32	10.19

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.40
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.600
 SUBAREA RUNOFF(CFS) = 2.12
 TOTAL AREA(ACRES) = 0.79 PEAK FLOW RATE(CFS) = 2.12

FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 378.00
 ELEVATION DATA: UPSTREAM(FEET) = 76.80 DOWNSTREAM(FEET) = 74.50

$T_c = K * [(LENGTH^{** 3.00}) / (ELEVATION CHANGE)]^{** 0.20}$

SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 12.276

* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 2.901

SUBAREA Tc AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
-------------------------------	-------------------	-----------------	-----------------	-----------------	-----------	--------------

RESIDENTIAL

"3-4 DWELLINGS/ACRE" A 0.81 0.40 0.600 32 12.28

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.40

SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.600

SUBAREA RUNOFF(CFS) = 1.94

TOTAL AREA(ACRES) = 0.81 PEAK FLOW RATE(CFS) = 1.94

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 0.8 TC(MIN.) = 12.28

EFFECTIVE AREA(ACRES) = 0.81 AREA-AVERAGED Fm(INCH/HR) = 0.24

AREA-AVERAGED Fp(INCH/HR) = 0.40 AREA-AVERAGED Ap = 0.600

PEAK FLOW RATE(CFS) = 1.94

=====

=====

END OF RATIONAL METHOD ANALYSIS

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
 (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
 (c) Copyright 1983-2016 Advanced Engineering Software (aes)
 Ver. 23.0 Release Date: 07/01/2016 License ID 1269

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

* Pre-Construction Hydrology Analysis *
 * Garden Grove Condos *
 * 100 - Year Storm Analysis *

FILE NAME: 376PRE10.DAT
 TIME/DATE OF STUDY: 15:05 03/09/2022

=====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

=====

--*TIME-OF-CONCENTRATION MODEL*--

USER SPECIFIED STORM EVENT(YEAR) = 100.00
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 6.00
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.01
 DATA BANK RAINFALL USED
 ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- CROWN TO	STREET-CROSSFALL:	CURB GUTTER-GEOMETRIES:	MANNING
	WIDTH CROSSFALL	IN- / OUT-/PARK-		
====	=====	=====	=====	=====
	(FT)	(FT)	(FT)	(FT) (FT) (FT) (n)
1	30.0	20.0	0.018/0.018/0.020	0.67 2.00 0.0313 0.167 0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

SIZE PIPE WITH A FLOW CAPACITY GREATER THAN OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.

*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

UNIT-HYDROGRAPH MODEL SELECTIONS/PARAMETERS:

WATERSHED LAG = 0.80 * T_c
 USED "VALLEY UNDEVELOPED" S-GRAPH FOR DEVELOPMENTS OF 2 UNITS/ACRE AND LESS; AND "VALLEY DEVELOPED" S-GRAPH FOR DEVELOPMENTS OF 3-4 UNITS/ACRE AND MORE.
 SIERRA MADRE DEPTH-AREA FACTORS USED.

	AREA-AVERAGED
DURATION	RAINFALL(INCH)
5-MINUTES	0.52
30-MINUTES	1.09
1-HOUR	1.45
3-HOUR	2.43
6-HOUR	3.36
24-HOUR	5.63

ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR UNIT HYDROGRAPH METHOD

FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 235.00
ELEVATION DATA: UPSTREAM(FEET) = 76.40 DOWNSTREAM(FEET) = 75.00

$T_c = K * [(LENGTH^{**} 3.00) / (ELEVATION CHANGE)]^{**0.20}$
SUBAREA ANALYSIS USED MINIMUM T_c (MIN.) = 10.193

* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 4.114

SUBAREA T_c AND LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
-------------------------------	-------------------	-----------------	-----------------	-----------------	-----------	--------------

RESIDENTIAL

"3-4 DWELLINGS/ACRE"	A	0.79	0.40	0.600	52	10.19
----------------------	---	------	------	-------	----	-------

SUBAREA AVERAGE PERVIOUS LOSS RATE, F_p (INCH/HR) = 0.40

SUBAREA AVERAGE PERVIOUS AREA FRACTION, A_p = 0.600

SUBAREA RUNOFF(CFS) = 2.75

TOTAL AREA(ACRES) = 0.79 PEAK FLOW RATE(CFS) = 2.75

FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 378.00
ELEVATION DATA: UPSTREAM(FEET) = 76.80 DOWNSTREAM(FEET) = 74.50

$T_c = K * [(LENGTH^{**} 3.00) / (ELEVATION CHANGE)]^{**0.20}$
SUBAREA ANALYSIS USED MINIMUM T_c (MIN.) = 12.276

* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 3.698

SUBAREA T_c AND LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
-------------------------------	-------------------	-----------------	-----------------	-----------------	-----------	--------------

RESIDENTIAL

"3-4 DWELLINGS/ACRE"	A	0.81	0.40	0.600	52	12.28
----------------------	---	------	------	-------	----	-------

SUBAREA AVERAGE PERVIOUS LOSS RATE, F_p (INCH/HR) = 0.40

SUBAREA AVERAGE PERVIOUS AREA FRACTION, A_p = 0.600

SUBAREA RUNOFF(CFS) = 2.52

TOTAL AREA(ACRES) = 0.81 PEAK FLOW RATE(CFS) = 2.52

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 0.8 T_c (MIN.) = 12.28

EFFECTIVE AREA(ACRES) = 0.81 AREA-AVERAGED F_m (INCH/HR) = 0.24

AREA-AVERAGED F_p (INCH/HR) = 0.40 AREA-AVERAGED A_p = 0.600

PEAK FLOW RATE(CFS) = 2.52

=====
=====

END OF RATIONAL METHOD ANALYSIS



RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
(Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
(c) Copyright 1983-2016 Advanced Engineering Software (aes)
Ver. 23.0 Release Date: 07/01/2016 License ID 1269

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* Post - Construction Hydrology Analysis *
* Garden Grove 13 *
* 10 - Year Storm *

FILE NAME: 376POS10.DAT
TIME/DATE OF STUDY: 16:10 03/09/2022

=====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

=====

--*TIME-OF-CONCENTRATION MODEL*--

USER SPECIFIED STORM EVENT(YEAR) = 10.00
SPECIFIED MINIMUM PIPE SIZE(INCH) = 6.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.01
DATA BANK RAINFALL USED
ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- CROWN TO		STREET-CROSSFALL:		CURB GUTTER-GEOMETRIES:	MANNING			
	WIDTH	CROSSFALL	IN- / OUT-	/ PARK-			HEIGHT	WIDTH	LIP
(FT)	(FT)	SIDE /	SIDE/	WAY	(FT)	(FT)	(FT)	(FT)	(n)
1	30.0	20.0	0.018/0.018/0.020		0.67	2.00	0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

SIZE PIPE WITH A FLOW CAPACITY GREATER THAN OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.

*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 275.00
ELEVATION DATA: UPSTREAM(FEET) = 74.90 DOWNSTREAM(FEET) = 73.10

$T_c = K * [(LENGTH^{**} 3.00) / (ELEVATION CHANGE)]^{**0.20}$

SUBAREA ANALYSIS USED MINIMUM T_c (MIN.) = 9.670

* 10 YEAR RAINFALL INTENSITY(INCH/HR) = 2.782

SUBAREA T_c AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
-------------------------------	-------------------	-----------------	-----------------	-----------------	-----------	--------------

RESIDENTIAL						
"8-10 DWELLINGS/ACRE"	A	0.79	0.40	0.400	32	9.67

SUBAREA AVERAGE PERVIOUS LOSS RATE, F_p (INCH/HR) = 0.40

SUBAREA AVERAGE PERVIOUS AREA FRACTION, A_p = 0.400

SUBAREA RUNOFF(CFS) = 1.86

TOTAL AREA(ACRES) = 0.79 PEAK FLOW RATE(CFS) = 1.86

FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 275.00
ELEVATION DATA: UPSTREAM(FEET) = 74.90 DOWNSTREAM(FEET) = 73.10

$T_c = K * [(LENGTH^{**} 3.00) / (ELEVATION CHANGE)]^{**0.20}$

SUBAREA ANALYSIS USED MINIMUM T_c (MIN.) = 10.652

* 10 YEAR RAINFALL INTENSITY(INCH/HR) = 2.632

SUBAREA T_c AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
-------------------------------	-------------------	-----------------	-----------------	-----------------	-----------	--------------

RESIDENTIAL						
"3-4 DWELLINGS/ACRE"	A	0.81	0.40	0.600	32	10.65

SUBAREA AVERAGE PERVIOUS LOSS RATE, F_p (INCH/HR) = 0.40

SUBAREA AVERAGE PERVIOUS AREA FRACTION, A_p = 0.600

SUBAREA RUNOFF(CFS) = 1.74

TOTAL AREA(ACRES) = 0.81 PEAK FLOW RATE(CFS) = 1.74

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 0.8 TC(MIN.) = 10.65

EFFECTIVE AREA(ACRES) = 0.81 AREA-AVERAGED F_m (INCH/HR) = 0.24

AREA-AVERAGED F_p (INCH/HR) = 0.40 AREA-AVERAGED A_p = 0.600

PEAK FLOW RATE(CFS) = 1.74
=====

END OF RATIONAL METHOD ANALYSIS



RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
(Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
(c) Copyright 1983-2016 Advanced Engineering Software (aes)
Ver. 23.0 Release Date: 07/01/2016 License ID 1269

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * Post - Construction Hydrology Analysis *
 - * Garden Grove 13 *
 - * 25 - Year Storm *
- *****

FILE NAME: 376POS10.DAT
TIME/DATE OF STUDY: 16:12 03/09/2022

=====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

=====

--*TIME-OF-CONCENTRATION MODEL*--

USER SPECIFIED STORM EVENT(YEAR) = 25.00
SPECIFIED MINIMUM PIPE SIZE(INCH) = 6.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.01
DATA BANK RAINFALL USED
ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP (FT) (FT)	HIKE (FT)	MANNING FACTOR (n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00 0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

INITIAL SUBAREA FLOW-LENGTH(FEET) = 275.00
ELEVATION DATA: UPSTREAM(FEET) = 74.90 DOWNSTREAM(FEET) = 73.10

$T_c = K * [(LENGTH ** 3.00) / (ELEVATION CHANGE)] ** 0.20$

SUBAREA ANALYSIS USED MINIMUM T_c (MIN.) = 9.670

* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.321

SUBAREA T_c AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
-------------------------------	-------------------	-----------------	-----------------	-----------------	-----------	--------------

RESIDENTIAL

"8-10 DWELLINGS/ACRE"	A	0.79	0.40	0.400	32	9.67
-----------------------	---	------	------	-------	----	------

SUBAREA AVERAGE PERVIOUS LOSS RATE, F_p (INCH/HR) = 0.40

SUBAREA AVERAGE PERVIOUS AREA FRACTION, A_p = 0.400

SUBAREA RUNOFF(CFS) = 2.25

TOTAL AREA(ACRES) = 0.79 PEAK FLOW RATE(CFS) = 2.25

FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

INITIAL SUBAREA FLOW-LENGTH(FEET) = 275.00
ELEVATION DATA: UPSTREAM(FEET) = 74.90 DOWNSTREAM(FEET) = 73.10

$T_c = K * [(LENGTH ** 3.00) / (ELEVATION CHANGE)] ** 0.20$

SUBAREA ANALYSIS USED MINIMUM T_c (MIN.) = 10.652

* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.144

SUBAREA T_c AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	Tc (MIN.)
-------------------------------	-------------------	-----------------	-----------------	-----------------	-----------	--------------

RESIDENTIAL

"3-4 DWELLINGS/ACRE"	A	0.81	0.40	0.600	32	10.65
----------------------	---	------	------	-------	----	-------

SUBAREA AVERAGE PERVIOUS LOSS RATE, F_p (INCH/HR) = 0.40

SUBAREA AVERAGE PERVIOUS AREA FRACTION, A_p = 0.600

SUBAREA RUNOFF(CFS) = 2.12

TOTAL AREA(ACRES) = 0.81 PEAK FLOW RATE(CFS) = 2.12

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 0.8 TC(MIN.) = 10.65

EFFECTIVE AREA(ACRES) = 0.81 AREA-AVERAGED F_m (INCH/HR) = 0.24

AREA-AVERAGED F_p (INCH/HR) = 0.40 AREA-AVERAGED A_p = 0.600

PEAK FLOW RATE(CFS) = 2.12

END OF RATIONAL METHOD ANALYSIS

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
(Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
(c) Copyright 1983-2016 Advanced Engineering Software (aes)
Ver. 23.0 Release Date: 07/01/2016 License ID 1269

Analysis prepared by:

***** DESCRIPTION OF STUDY *****
* Post - Construction Hydrology Analysis *
* Garden Grove 13 *
* 100 - Year Storm *

FILE NAME: 376POS10.DAT
TIME/DATE OF STUDY: 16:19 03/09/2022

=====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

--*TIME-OF-CONCENTRATION MODEL*--

USER SPECIFIED STORM EVENT(YEAR) = 100.00
SPECIFIED MINIMUM PIPE SIZE(INCH) = 6.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.01
DATA BANK RAINFALL USED
ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT-/ SIDE / SIDE/ WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH (FT)	LIP (FT)	HIKE (FT)	MANNING FACTOR (n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

INITIAL SUBAREA FLOW-LENGTH(FEET) = 275.00
ELEVATION DATA: UPSTREAM(FEET) = 74.90 DOWNSTREAM(FEET) = 73.10

Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20

SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 9.670

* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 4.240

SUBAREA Tc AND LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS Tc
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)

RESIDENTIAL

"8-10 DWELLINGS/ACRE" A 0.79 0.40 0.400 52 9.67

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.40

SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.400

SUBAREA RUNOFF(CFS) = 2.90

TOTAL AREA(ACRES) = 0.79 PEAK FLOW RATE(CFS) = 2.90

FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

INITIAL SUBAREA FLOW-LENGTH(FEET) = 275.00
ELEVATION DATA: UPSTREAM(FEET) = 74.90 DOWNSTREAM(FEET) = 73.10

Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20

SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 10.652

* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 4.011

SUBAREA Tc AND LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS Tc
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)

RESIDENTIAL

"3-4 DWELLINGS/ACRE" A 0.81 0.40 0.600 52 10.65

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.40

SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.600

SUBAREA RUNOFF(CFS) = 2.75

TOTAL AREA(ACRES) = 0.81 PEAK FLOW RATE(CFS) = 2.75

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 0.8 TC(MIN.) = 10.65

EFFECTIVE AREA(ACRES) = 0.81 AREA-AVERAGED Fm(INCH/HR)= 0.24

AREA-AVERAGED Fp(INCH/HR) = 0.40 AREA-AVERAGED Ap = 0.600

PEAK FLOW RATE(CFS) = 2.75

=====
END OF RATIONAL METHOD ANALYSIS



Hydrogeologic Soils Map





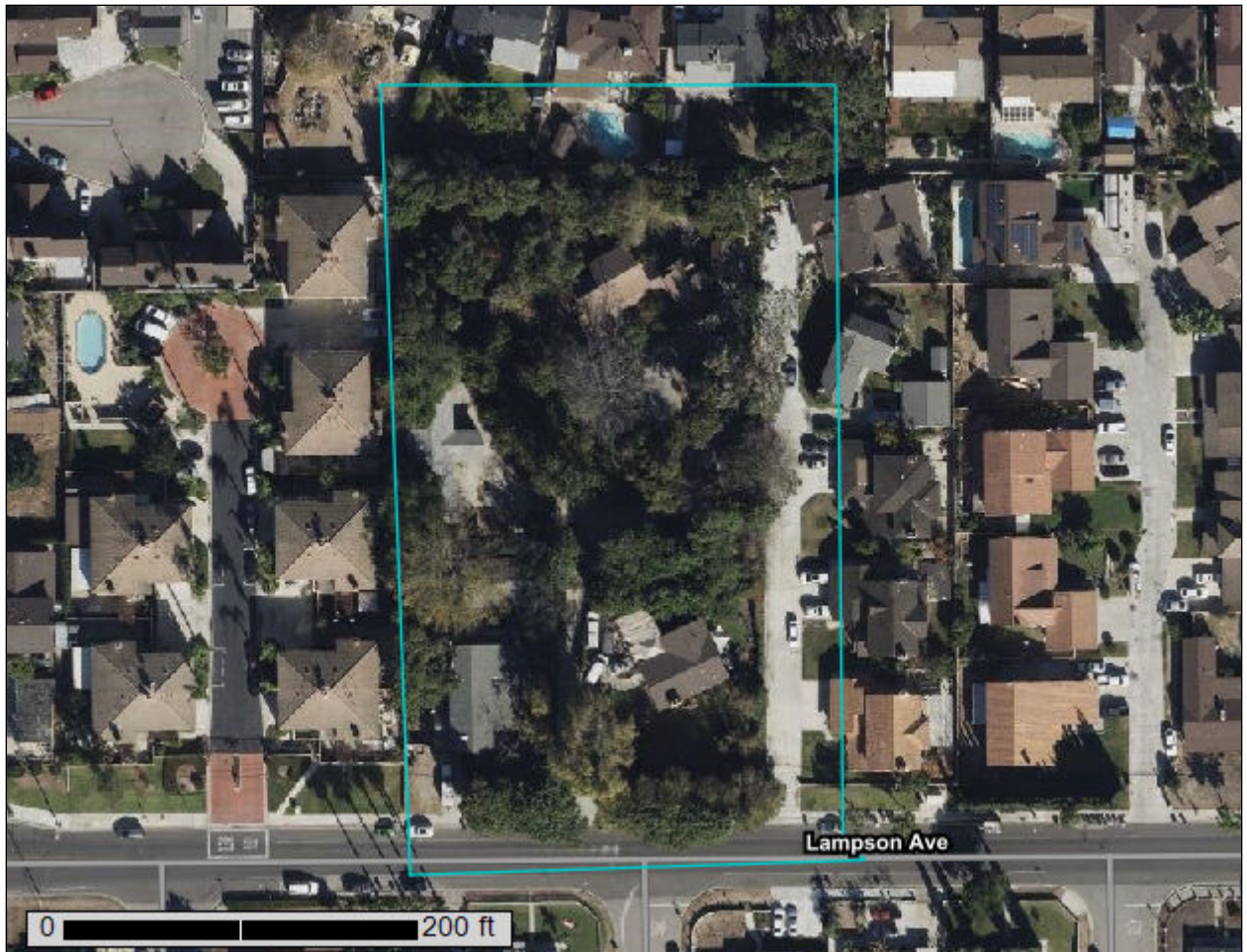
United States
Department of
Agriculture

NRCS

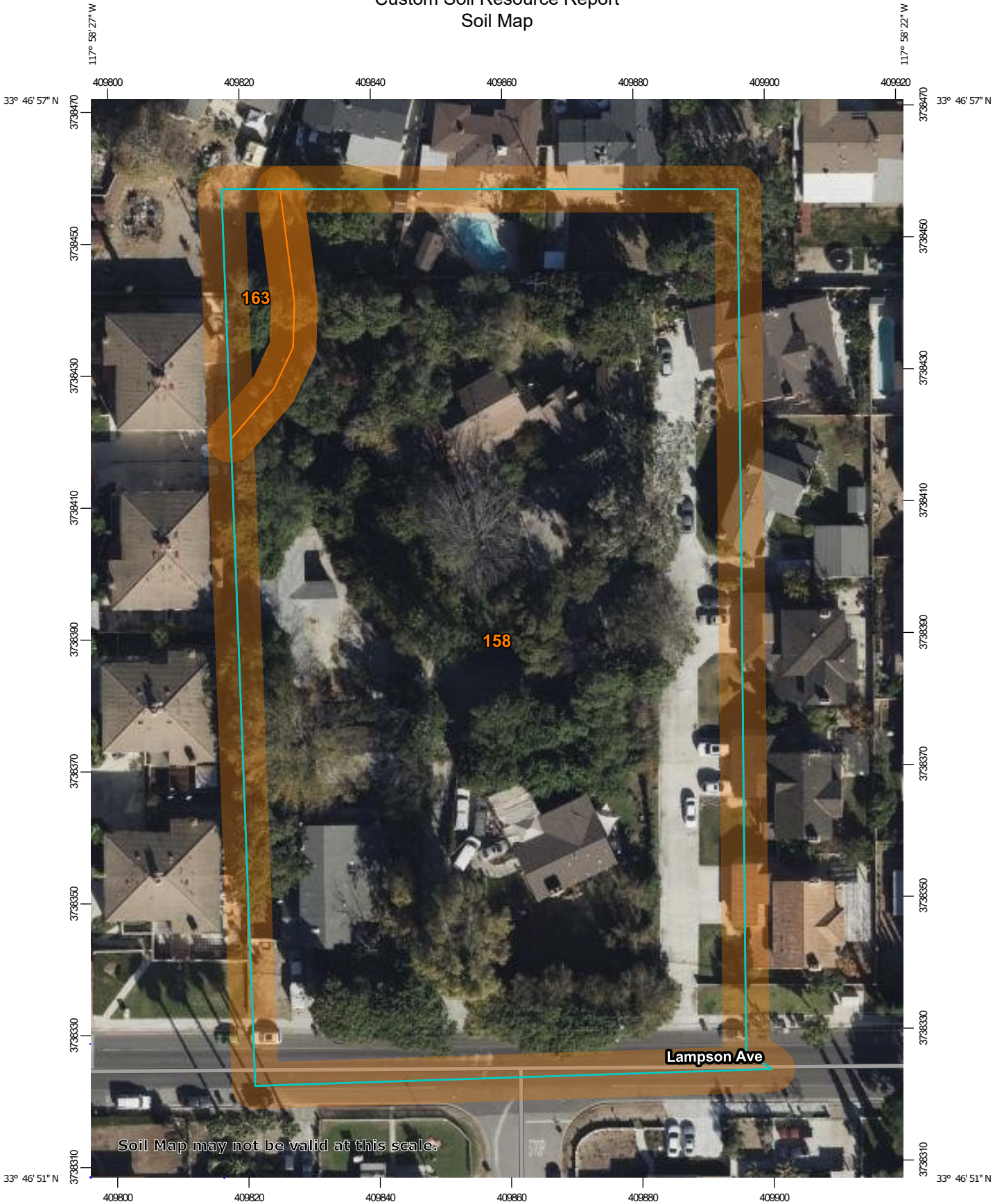
Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

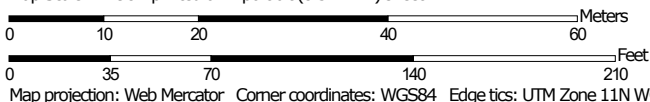
Custom Soil Resource Report for Orange County and Part of Riverside County, California



Custom Soil Resource Report Soil Map



Map Scale: 1:798 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
158	Hueneme fine sandy loam, drained	2.5	97.0%
163	Metz loamy sand	0.1	3.0%
Totals for Area of Interest		2.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

Orange County and Part of Riverside County, California

158—Hueneme fine sandy loam, drained

Map Unit Setting

National map unit symbol: hcn3
Elevation: 0 to 430 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 64 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hueneme and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hueneme

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Stratified alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 27 inches: fine sandy loam
H2 - 27 to 60 inches: stratified sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: R019XG911CA - Loamy Fan
Hydric soil rating: Yes

Minor Components

Bolsa, silt loam, drained

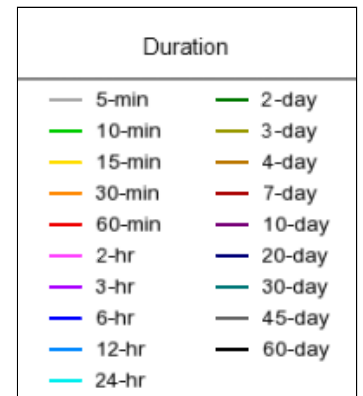
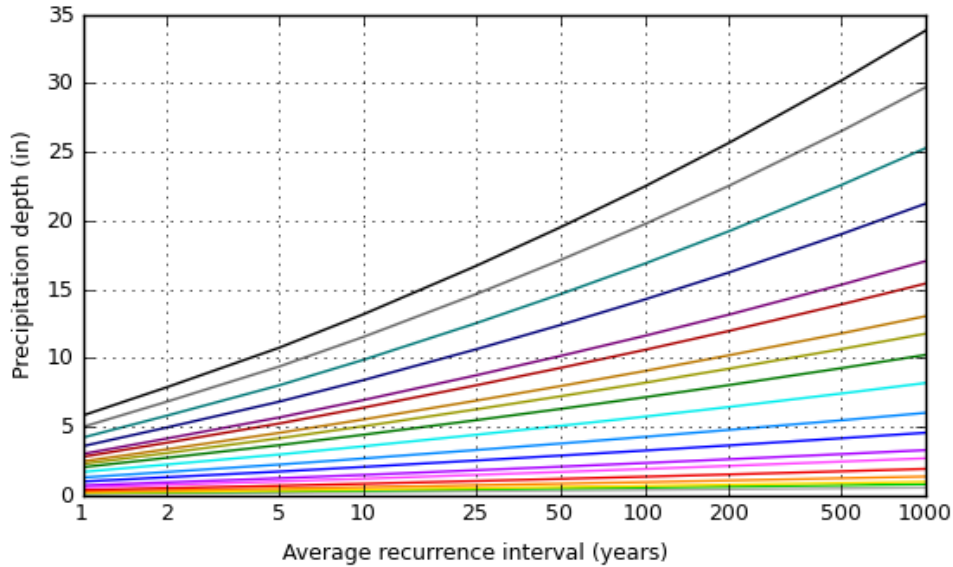
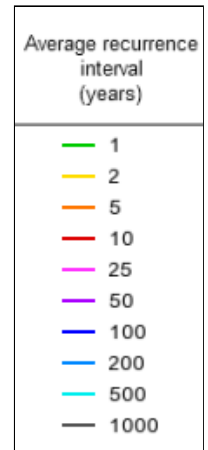
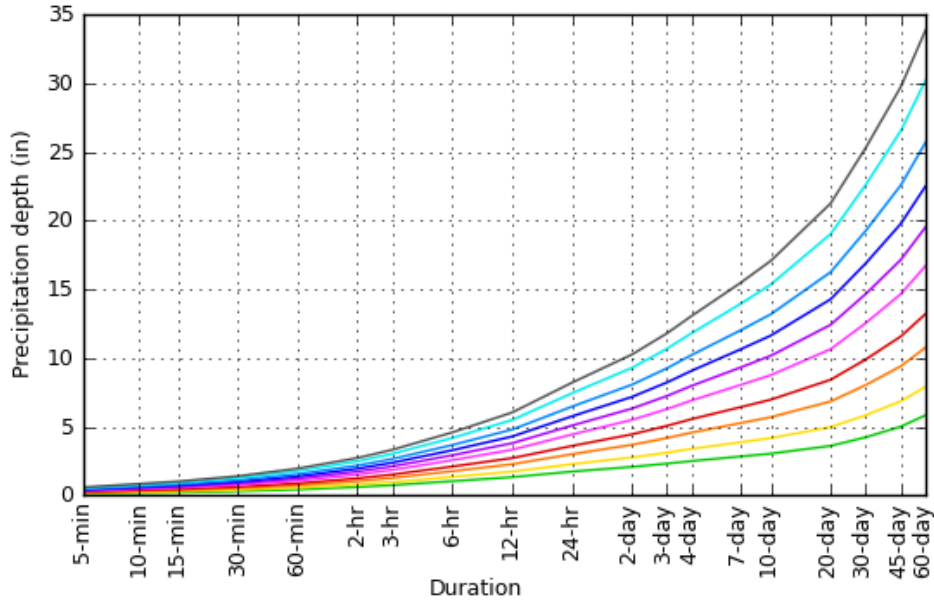
Percent of map unit: 5 percent
Hydric soil rating: No

NOAA Atlas Point Precipitation Frequency



PDS-based depth-duration-frequency (DDF) curves

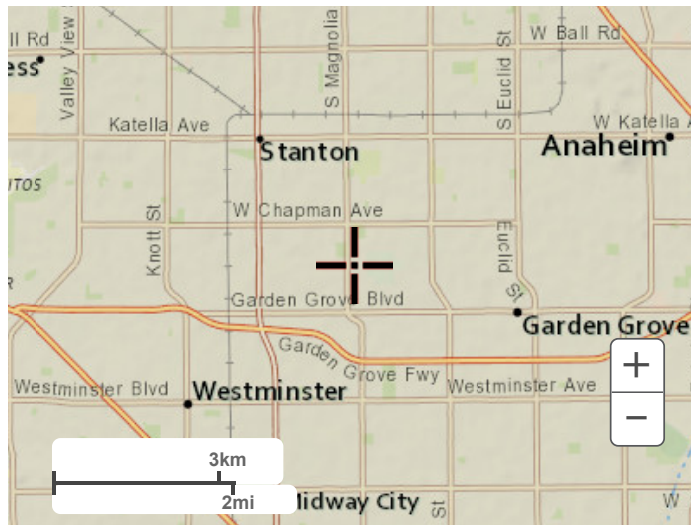
Latitude: 33.7815°, Longitude: -117.9739°



[Back to Top](#)

Maps & arials

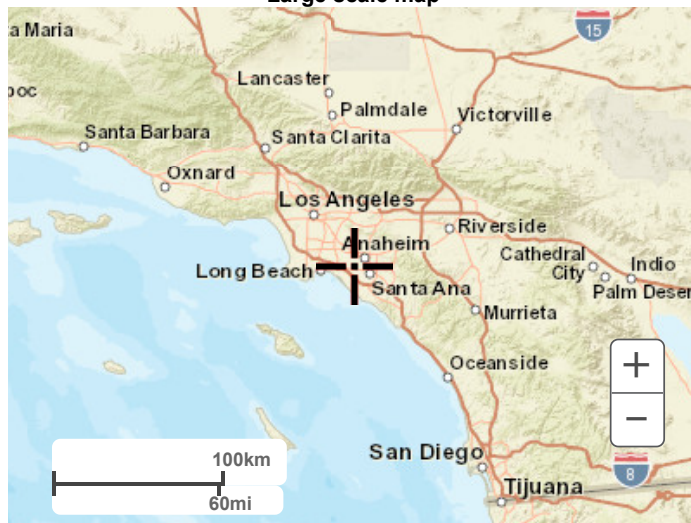
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

Soil Infiltration Report





May 6, 2022

Project No. 22030-01

Mr. Jeff Rulon
PLC Communities
888 San Clemente Drive, Suite 200
Newport Beach, CA 92660

Subject: Preliminary Geotechnical Report for the Proposed Residential Development at 9071 Lampson Avenue, Garden Grove, California

In accordance with your request and authorization, LGC Geotechnical, Inc. has prepared this summary report of infiltration testing for the proposed residential development located at 9071 Lampson Avenue in the City of Garden Grove, California. We understand that the proposed development will consist of 13 single-family residential units and an associated street. LGC Geotechnical has recently performed a geotechnical evaluation of the site. The purpose of our study was to evaluate the existing onsite geotechnical conditions and to provide preliminary geotechnical recommendations relative to the proposed residential development.

Should you have any questions regarding this report, please do not hesitate to contact our office. We appreciate this opportunity to be of service.

Respectfully Submitted,

LGC Geotechnical, Inc.

A handwritten signature in blue ink, appearing to read "D Boratynec".

Dennis Boratynec, GE 2770
Project Engineer



A handwritten signature in blue ink, appearing to read "Katie Maes".

Katie Maes, CEG 2216
Project Geologist



DJB/KTM/klr

Distribution: (1) Addressee (electronic copy)

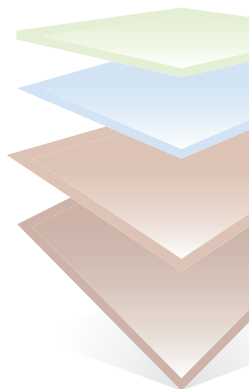


TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION.....	1
1.1 Purpose and Scope of Services	1
1.2 Project Description & Background	1
1.3 Subsurface Geotechnical Evaluation.....	4
1.4 Laboratory Testing	5
2.0 GEOTECHNICAL CONDITIONS.....	6
2.1 Geologic Conditions	6
2.2 Site Specific Geology & Generalized Subsurface Conditions	6
2.3 Groundwater	6
2.4 Field Infiltration Testing.....	7
2.5 Seismic Design Criteria	7
2.6 Faulting.....	9
2.6.1 Liquefaction and Dynamic Settlement.....	9
2.6.2 Lateral Spreading.....	10
2.7 Expansion Potential	10
3.0 CONCLUSIONS.....	11
4.0 PRELIMINARY RECOMMENDATIONS.....	13
4.1 Site Earthwork	13
4.1.1 Site Preparation	13
4.1.2 Removal and Recompanction Depths and Limits	14
4.1.3 Temporary Excavations.....	15
4.1.4 Removal Bottoms and Subgrade Preparation	15
4.1.5 Material for Fill	16
4.1.6 Placement and Compaction of Fills.....	16
4.1.7 Trench and Retaining Wall Backfill and Compaction	17
4.1.8 Shrinkage and Subsidence.....	18
4.2 Preliminary Foundation Recommendations	18
4.2.1 Preliminary Foundation Design Parameters	18
4.2.2 Post-Tensioned Foundation Subgrade Preparation and Maintenance.....	19
4.2.3 Slab Underlayment Guidelines	20
4.3 Soil Bearing and Lateral Resistance.....	20
4.4 Lateral Earth Pressures for Retaining Walls.....	21
4.5 Soil Corrosivity.....	22
4.6 Control of Surface Water and Drainage Control.....	23
4.7 Subsurface Water and Infiltration	23
4.8 Preliminary Asphalt Concrete Pavement Sections	25
4.9 Nonstructural Concrete Flatwork.....	26
4.10 Geotechnical Plan Review	27
4.11 Geotechnical Observation and Testing During Construction	27

TABLE OF CONTENTS (Cont'd)

5.0 LIMITATIONS 28

LIST OF ILLUSTRATIONS, TABLES, AND APPENDICES

Figures

- Figure 1 – Site Location Map (Page 3)
- Figure 2 – Boring Location Map (Rear of Text)
- Figure 3 – Retaining Wall Backfill Detail (Rear of Text)

Tables

- Table 1 – Summary of Field Infiltration Testing (Page 7)
- Table 2 – Seismic Design Parameters (Page 8)
- Table 3 – Estimated Settlement Due to Liquefaction Potential (Page 10)
- Table 4 – Provisional Geotechnical Parameters for Post-Tensioned Foundation Slab Design (Page 19)
- Table 5 – Lateral Earth Pressures – Sandy Backfill (Page 21)
- Table 6 – Geotechnical Factors of Safety for Design Infiltration Rate (Page 24)
- Table 7 – Preliminary Pavement Section Options (Page 25)
- Table 8 – Nonstructural Concrete Flatwork for Low Expansion Potential (Page 26)

Appendices

- Appendix A – References
- Appendix B – Boring and CPT Logs
- Appendix C – Laboratory Test Results
- Appendix D – Liquefaction Analysis
- Appendix E – Infiltration Test Data
- Appendix F – General Earthwork and Grading Specifications

1.0 INTRODUCTION

1.1 Purpose and Scope of Services

This report presents the results of our preliminary geotechnical evaluation for the proposed residential development located at 9071 Lampson Avenue in the City of Garden Grove, California. Refer to the Site Location Map (Figure 1).

The purpose of our study was to provide a preliminary geotechnical evaluation relative to the proposed residential development. As part of our scope of work, we have: 1) reviewed available geotechnical background information including in-house regional geologic maps and published geotechnical literature pertinent to the site (Appendix A); 2) performed a limited subsurface geotechnical evaluation of the site consisting of the excavation of four small-diameter borings and two Cone Penetration Test (CPT) soundings ranging in depth from approximately 5 to 50 feet below existing ground surface; 3) performed two field infiltration tests; 4) performed laboratory testing of select soil samples obtained during our subsurface evaluation; and 5) prepared this preliminary geotechnical summary report presenting our findings, preliminary conclusions and recommendations for the proposed development.

It should be noted that our evaluation and this report only address geotechnical issues associated with the site and do not address any environmental issues.

1.2 Project Description & Background

The approximately 1.6-acre site is bound to the south by Lampson Avenue, to the east, west and north by existing residential. The site is currently occupied by four residential structures, interior drives and numerous trees. The existing site has relatively minor relief, with an existing elevation of approximately 77 feet in the northern portion of the site and an elevation of approximately 75 feet in the southern portion of the site.

Review of historical aerials indicates that a structure was originally constructed in the southwestern portion of the site in 1953, with the remaining portion of the site appearing to be agricultural. The site did not have any building structures in 1963. By the year 1972, a building structure was constructed within the southwest portion of the site near Lampson Avenue, and the remainder of existing building structures are present by 1987 (Historical Aerials, 2022).

Based on the conceptual grading plan, the proposed development includes the construction of 13 single-family residential lots and associated streets and walls (MDS, 2022). Proposed design cuts and fills (not including required remedial grading) from existing grade are anticipated to be on the order of 1 to 2 feet. Relatively small retaining walls are proposed around patio areas on each lot. The proposed building structures are anticipated to be relatively light-weight at-grade structures with estimated maximum column and wall loads of approximately 30 kips and 2 kips per linear foot, respectively.

Based on review of the preliminary storm water plan, two stormwater vaults are proposed in the southern portion of the site at an elevation of approximately 69 feet. The vaults are intended to receive and infiltrate low-volume flow and are designed to overflow to a 12-inch diameter storm drain pipe that will drain to the existing 60-inch diameter storm drain pipe below Lampson

Avenue.

The recommendations given in this report are based upon the estimated structural loading, grading and preliminary layout information above. We understand that the project plans are currently being developed at this time; LGC Geotechnical should be provided with updated project plans and any changes to structural loads when they become available, in order to either confirm or modify the recommendations provided herein. Additional field work and/or laboratory testing may be necessary.

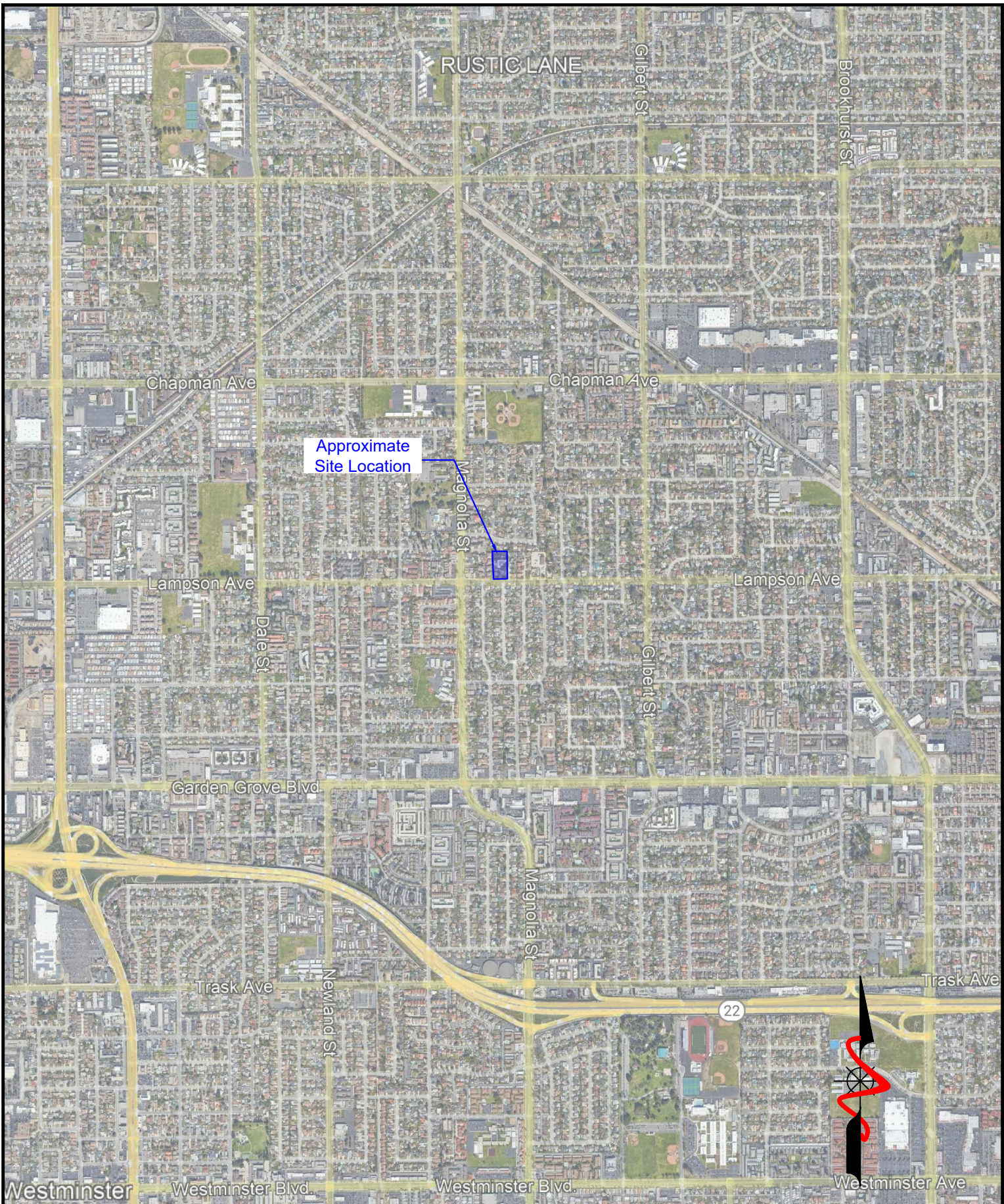


FIGURE 1
Site Location Map

PROJECT NAME	PLC - Lampson
PROJECT NO.	22030-01
ENG. / GEOL.	DJB/KTM
SCALE	Not to Scale
DATE	May 2022

1.3 Subsurface Geotechnical Evaluation

Our subsurface evaluation consisted of drilling and sampling four, small-diameter, exploratory hollow-stem borings (two were for field percolation testing) and two Cone Penetration Test (CPT) soundings.

The hollow-stem borings (HS-1, HS-2, I-1, and I-2) were drilled to depths ranging from approximately 5 to 50 feet below existing grade. An LGC Geotechnical staff engineer observed the drilling operations, logged the borings, and collected soil samples for laboratory testing. The borings were excavated by 2R Drilling, Inc. under subcontract to LGC Geotechnical using a truck-mounted drill rig equipped with 8-inch-diameter hollow-stem augers. Driven soil samples were collected by means of the Standard Penetration Test (SPT) and Modified California Drive (MCD) sampler generally obtained at 5-foot vertical increments. The MCD is a split-barrel sampler with a tapered cutting tip and lined with a series of 1-inch-tall brass rings. The SPT sampler (1.4-inch ID) and MCD sampler (2.4-inch ID, 3.0-inch OD) were driven using a 140-pound automatic hammer falling 30 inches to advance the sampler a total depth of 18 inches. The raw blow counts for each 6-inch increment of penetration were recorded on the boring logs. Bulk samples of the near-surface soils were also collected and logged at select borings for laboratory testing. At the completion of drilling, the borings were backfilled with the native soil cuttings and tamped. Some settlement of the backfill soils may occur over time.

CPT soundings were pushed in two locations (CPT-1 & CPT-2) by Kehoe Testing, Inc. under subcontract to LGC Geotechnical. The CPT soundings were pushed to depths of approximately 50 feet below existing grade. The CPT soundings were pushed using an electronic cone penetrometer in general accordance with the current ASTM standards (ASTM D5778 and ASTM D3441) using a 30-ton rig. The CPT equipment consisted of a cone penetrometer assembly mounted at the end of a series of hollow sounding rods. The interior of the cone penetrometer is instrumented with strain gauges that allow the simultaneous measurement of cone tip and friction sleeve resistance during penetration. The cone penetration assembly is continuously pushed into the soil by a set of hydraulic rams at a standard rate of 0.8 inches per second while the cone tip resistance and sleeve friction resistance are recorded at approximately every 2 inches and stored in digital form. Seismic cone (shear wave velocity) readings were performed in the CPT soundings.

Infiltration testing was performed within two of the borings (I-1 and I-2) to depths of approximately 5 feet below existing grade. An LGC Geotechnical staff engineer installed standpipes, backfilled the borings with crushed rock and pre-soaked the infiltration holes prior to testing. Infiltration testing was performed in general accordance with the County of Orange testing guidelines. Standpipes were removed and the locations were subsequently backfilled with native soils at the completion of testing. Some settlement of the backfill soils may occur over time.

The approximate locations of our subsurface explorations are provided on the Boring Location Map (Figure 2). The boring logs and CPT test results are provided in Appendix B.

1.4 Laboratory Testing

Representative bulk and driven (relatively undisturbed) samples were obtained for laboratory testing during our field evaluation. Laboratory testing included in-situ moisture content and in-situ dry density, fines content, Atterberg Limits, expansion index, laboratory compaction and corrosion (sulfate, chloride, pH and minimum resistivity).

The following is a summary of the laboratory test results:

- Dry density of the samples collected ranged from approximately 95 pounds per cubic foot (pcf) to 117 pcf, with an average of 105 pcf. Field moisture contents ranged from approximately 2 to 43 percent, with an average of 18 percent.
- Four fines content tests were performed and indicated a fines content (passing No. 200 sieve) between 5 and 63 percent. Based on the Unified Soils Classification System (USCS), three of the tested samples would be classified as “coarse-grained” and the remaining sample would be classified as fine-grained.”
- Four Atterberg Limit (liquid limit and plastic limit) tests were performed. Results indicated Plasticity Index (PI) values ranging from Non-Plastic (NP) to 10.
- One laboratory compaction test of a near surface sample indicated a maximum dry density of 111.5 pcf with an optimum moisture content of 8.0 percent.
- One Expansion potential tests were performed and indicated an expansion index value of 1, corresponding to “Very Low” expansion potential.
- Corrosion testing indicated soluble sulfate content less than approximately 0.02 percent, a chloride content of 240 parts per million (ppm), pH of 7.9, and a minimum resistivity of 2770 ohm-centimeters.

A summary of the laboratory test results is presented in Appendix C. The moisture and dry density results are presented on the boring logs in Appendix B.

2.0 GEOTECHNICAL CONDITIONS

2.1 Geologic Conditions

The subject site is located within the Orange County coastal plain, more generally located on the broad southern margin of the Los Angeles Basin. The site is located more specifically within the Santa Ana River drainage basin, approximately 4 miles northwest of the current channelized location of the river. In general, the site is underlain at depth by poorly consolidated alluvial sediments mapped as a sandy member of Quaternary Young Alluvial Fan deposits, ("Qyf-sand"). The Holocene to late Pleistocene aged materials are described as gravel, sand and silt layers, deposited over broad river floodplain areas prior to channelization of the Santa Ana River (Morton, 2004).

2.2 Site-Specific Geology & Generalized Subsurface Conditions

Based on the results of our subsurface investigation, the site is underlain by a thin veneer of topsoil over young alluvial deposits of Holocene age, per regional geologic mapping (Morton, 2004). Field exploration (CPT soundings and borings) indicates primarily medium dense silty sands in the upper approximate 28 feet, followed by finer-grained stiff silts and clays to approximately 40 feet, followed by medium dense to dense sandy soils interbedded with layers of very stiff finer-grained clayey soils to the maximum explored depth of approximately 50 feet below existing grade. The blow counts of sandy layers at greater depths (below approximately 25 feet) are likely impacted by the presence of underlying finer-grained soils. Shear wave velocity readings performed in the CPT soundings indicated average shear wave velocity values of approximately 630 feet per second corresponding to Site Class D per Chapter 20 of ASCE 7-16.

It should be noted that borings and CPT soundings are only representative of the location and time where/when they are performed, and varying subsurface conditions may exist outside of the performed location. In addition, subsurface conditions can change over time. The soil descriptions provided above should not be construed to mean that the subsurface profile is uniform, and that soil is homogeneous within the project area. For details on the stratigraphy at the exploration locations, refer to Appendix B.

2.3 Groundwater

Groundwater was encountered in the deeper borings (HS-1 and HS-2) at a depth of approximately 14 feet below existing grade. Historic high groundwater is mapped approximately halfway between the 10- and 20-foot contours (CDMG, 2001). Therefore, we conservatively used the existing groundwater depth of 14 feet below existing grades for the historic high groundwater level.

Seasonal fluctuations of groundwater elevations should be expected over time. In general, groundwater levels fluctuate with the seasons and local zones of perched groundwater may be present due to local seepage caused by irrigation and/or recent precipitation. Local perched groundwater conditions or surface seepage may develop once site development is completed.

2.4 Field Infiltration Testing

Two field percolation tests were performed (I-1 and I-2) to approximate depths of 5 feet below existing grade, refer to Appendix E for testing summaries. The approximate locations are shown on the Boring Location Map (Figure 2). Infiltration test well installation consisted of placing a 3-inch diameter perforated PVC pipe in the excavated borehole and backfilling the annulus with crushed rock including the placement of approximately 2 inches of crushed rock at the bottom of the borehole. The infiltration test was presoaked the day of installation and testing took place within 24 hours of presoaking. During the pre-test, the water level was observed to drop more than 6 inches in 25 minutes for two consecutive readings. Therefore, the test procedure for coarse-grained soils or the “fast test” was followed. Test well installation and the estimation of infiltration rates were accomplished in general accordance with the guidelines set forth by the County of Orange (2013). In general, three-dimensional flow out of the test well (*percolation*), as observed in the field, is mathematically reduced to one-dimensional flow out of the bottom of the test well (*infiltration*).

TABLE 1
Summary of Field Infiltration Testing

Infiltration Test Identification	Approx. Depth Below Existing Grade (ft)	Observed Infiltration Rate* (in./hr.)
I-1	5	5.9
I-2	5	5.7

*Observed Infiltration Rates Do Not Include Factor of Safety.

It should be emphasized that infiltration test results are only representative of the location and depth where they are performed. Varying subsurface conditions may exist outside of the test locations which could alter the calculated infiltration rates indicated above. Infiltration tests are performed using relatively clean water free of particulates, silt, etc. Refer to Section 4.8.

2.5 Seismic Design Criteria

Since the site contains soils that are susceptible to liquefaction (refer to above Section “Liquefaction and Dynamic Settlement”), ASCE 7 which has been adopted by the CBC requires that site soils be assigned Site Class “F” and a site-specific response spectrum be performed. However, in accordance with Section 20.3.1 of ASCE 7, if the fundamental periods of vibration of the planned structure are equal to or less than 0.5 second, a site-specific response spectrum is not required and ASCE 7/2019 CBC site class and seismic parameters may be used in lieu of a site-specific response spectrum. **It should be noted that the seismic parameters provided herein are not applicable for any structure having a fundamental period of vibration greater than 0.5 second.** The site seismic characteristics were evaluated per the guidelines set forth in Chapter 16, Section 1613 of the 2019 California Building Code (CBC) and applicable portions of ASCE 7-16 which has been adopted by the CBC. Please note that the following seismic parameters are only applicable for code-based acceleration response spectra and are not applicable for where site-specific ground motion procedures are required by ASCE 7-16. Representative site coordinates of latitude 33.7819 degrees north and longitude -117.9737 degrees west were utilized in our analyses. The maximum considered earthquake (MCE)

spectral response accelerations (S_{MS} and S_{M1}) and adjusted design spectral response acceleration parameters (S_{DS} and S_{D1}) for Site Class D are provided in Table 2 below. Since site soils are Site Class D, additional adjustments are required to code acceleration response spectrums as outlined below and provided in ASCE 7-16. The structural designer should contact the geotechnical consultant if structural conditions (e.g., number of stories, seismically isolated structures, etc.) require site-specific ground motions.

TABLE 2
Seismic Design Parameters

Selected Parameters from 2019 CBC, Section 1613 - Earthquake Loads	Seismic Design Values	Notes/Exceptions
Distance to applicable faults classifies the site as a "Near-Fault" site.		Section 11.4.1 of ASCE 7
Site Class	D*	Chapter 20 of ASCE 7
S_s (Risk-Targeted Spectral Acceleration for Short Periods)	1.400g	From SEAOC, 2022
S_1 (Risk-Targeted Spectral Accelerations for 1-Second Periods)	0.496g	From SEAOC, 2022
F_a (per Table 1613.2.3(1))	1.0	For Simplified Design Procedure of Section 12.14 of ASCE 7, F_a shall be taken as 1.4 (Section 12.14.8.1)
F_v (per Table 1613.2.3(2))	1.804	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
S_{MS} for Site Class D [Note: $S_{MS} = F_a S_s$]	1.400g	-
S_{M1} for Site Class D [Note: $S_{M1} = F_v S_1$]	0.895g	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
S_{DS} for Site Class D [Note: $S_{DS} = (2/3)S_{MS}$]	0.933g	-
S_{D1} for Site Class D [Note: $S_{D1} = (2/3)S_{M1}$]	0.597g	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
C_{RS} (Mapped Risk Coefficient at 0.2 sec)	0.917	ASCE 7 Chapter 22
C_{R1} (Mapped Risk Coefficient at 1 sec)	0.919	ASCE 7 Chapter 22
*Since site soils are Site Class D and S_1 is greater than or equal to 0.2, the seismic response coefficient C_s is determined by Eq. 12.8-2 for values of $T \leq 1.5T_s$ and taken equal to 1.5 times the value calculated in accordance with either Eq. 12.8-3 for $T_L \geq T > T_s$, or Eq. 12.8-4 for $T > T_L$. Refer to ASCE 7-16. Site Class F modified to Site Class D, seismic parameters only applicable for structure period ≤ 0.5 second, refer to discussion above.		

Section 1803.5.12 of the 2019 CBC (per Section 11.8.3 of ASCE 7) states that the maximum considered earthquake geometric mean (MCE_G) Peak Ground Acceleration (PGA) should be used for liquefaction potential. The PGA_M for the site is equal to 0.658g (SEAOC, 2022). The design PGA is equal to 0.439 (2/3 of PGA_M).

A deaggregation of the PGA based on a 2,475-year average return period (MCE) indicates that an earthquake magnitude of 6.71 at a distance of approximately 12.29 km from the site would contribute the most to this ground motion. A deaggregation of the PGA based on a 475-year average return period (Design Earthquake) indicates that an earthquake magnitude of 6.62 at a distance of approximately 19.16 km from the site would contribute the most to this ground motion (USGS, 2014).

2.6 Faulting

The subject site is not located within a State of California Earthquake Fault Zone (Alquist-Priolo) and no faults were identified on the site during our site evaluation (CGS, 2018). The possibility of damage due to ground rupture is considered low since no active faults are known to cross the site. The known active faults that may affect the subject site are the Newport-Inglewood Offshore, Palos Verdes, Whittier-Elsinore and San Andreas Fault Zones, among others.

Secondary effects of seismic shaking resulting from large earthquakes on the major faults in the Southern California region, which may affect the site, include ground lurching and shallow ground rupture, soil liquefaction, and dynamic settlement. These secondary effects of seismic shaking are a possibility throughout the Southern California region and are dependent on the distance between the site and causative fault and the onsite geology. A discussion of these secondary effects is provided in the following sections.

2.6.1 Liquefaction and Dynamic Settlement

Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions coexist: 1) shallow groundwater; 2) low density non-cohesive (granular) soils; and 3) high-intensity ground motion. Studies indicate that saturated, loose near-surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. In general, cohesive soils are not considered susceptible to liquefaction, depending on their plasticity and moisture content. Effects of liquefaction on level ground include settlement, sand boils, and bearing capacity failures below structures. Dynamic settlement of dry loose sands can occur as the sand particles tend to settle and densify as a result of a seismic event.

Based on our review of the State of California Seismic Hazard Zone for liquefaction potential (CDMG, 1998), the site is located within a liquefaction hazard zone. The data obtained from our field evaluation indicates that the site contains sandy layers susceptible to liquefaction within the upper 50 feet. Liquefaction potential was evaluated using the procedures outlined by Special Publication 117A (SCEC, 1999 & CGS, 2008).

Liquefaction analysis was based on the applicable seismic criteria (e.g., PGA_M from 2019 CBC) and estimated historic high groundwater depth of 14 feet below existing grade. Liquefaction analysis was performed using the program CLiq (GeoLogismiki, 2017). Estimated total and differential seismic settlement due to liquefaction potential is provided in Table 3 below. Liquefaction calculations are provided in Appendix D.

TABLE 3

Estimated Settlement Due to Liquefaction Potential

Approximate Total Seismic Settlement	Differential Seismic Settlement
1 ½-inches	¾-inch over 40 feet

2.6.2 Lateral Spreading

Lateral spreading is a type of liquefaction-induced ground failure associated with the lateral displacement of surficial blocks of sediment resulting from liquefaction in a subsurface layer. Once liquefaction transforms the subsurface layer into a fluid mass, gravity plus the earthquake inertial forces may cause the mass to move downslope towards a free face (such as a river channel or an embankment). Lateral spreading may cause large horizontal displacements and such movement typically damages pipelines, utilities, bridges, and structures.

Due to the site being relatively level and the lack of an adjacent free face to drive lateral spreading, the potential for lateral spreading is considered low.

2.7 Expansion Potential

Based on the results of our laboratory testing, site soils are anticipated to have a “Very Low” expansion potential. Final expansion potential of site soils should be determined at the completion of grading. Results of expansion testing at finish grades will be utilized to confirm final foundation design.

3.0 CONCLUSIONS

Based on the results of our geotechnical evaluation, it is our opinion that the proposed development is feasible from a geotechnical standpoint, provided the following conclusions and recommendations are implemented.

The following is a summary of the primary geotechnical factors that may affect future development of the site:

- In general, our field explorations indicate primarily medium dense silty sands in the upper approximate 28 feet followed by finer-grained stiff silts and clays to approximately 40 feet followed by medium dense to dense sandy soils interbedded with layers of very stiff finer-grained clayey soils to the maximum explored depth of approximately 50 feet below existing grade. The near-surface loose and compressible soils are not suitable for the planned improvements in their present condition (refer to Section 4.1).
- From a geotechnical perspective, onsite soils are anticipated to be suitable for use as general compacted fill (not retaining wall backfill) provided, they are screened of organic materials, construction debris and any oversized material (8 inches in greatest dimension).
- Groundwater was encountered during our subsurface evaluation at a depth of approximately 14 feet below existing grade. Historic high groundwater is estimated to be about 14 feet below existing grade (CDMG, 2001).
- The subject site is not located within a State of California Earthquake Fault Zone (Alquist-Priolo). The main seismic hazard that may affect the site is ground shaking from one of the active regional faults. The subject site will likely experience strong seismic ground shaking during its design life.
- The site is in a State of California Seismic Hazard Zone for liquefaction (CDMG, 1998). Subsurface data indicates that sandy layers are susceptible to liquefaction and liquefaction-induced settlement. Our analysis indicates approximately 1 ½-inches of seismically induced settlement may occur at the site during a significant earthquake. Differential seismic settlement may be taken as ¾-inch over a horizontal span of 40 feet.
- We recommend the drilling of several small-diameter holes through the bottom of each infiltration vault to minimum depths of approximately 15 feet below existing grade, and backfilling the holes with approved clean sand up to infiltration bottom grades. Holes drilled in the bottom of the infiltration system would reduce the potential for water becoming suspended within the upper alluvial soils by acting as a high permeability conduit, transferring surface water to the deeper sandy native materials below.
- It is our opinion that the possible impacts of liquefaction can be reasonably mitigated by use of a rigid mat slab foundation or structural pad footings interconnected with grade beams. However, as with many structures in Southern California risk does remain that the proposed structure could suffer some damage if liquefaction occurs. Repair and remedial work may be required after a liquefaction event.
- Due to the close-proximity of proposed stormwater infiltration vaults (approximately 10 feet from foundations), the two adjacent residential foundations will require additionally stiffened foundations. This should be determined once foundation plans are available.

- Based on the results of preliminary laboratory testing, site soils are anticipated to have “Very Low” expansion potential. Final design expansion potential must be determined at the completion of grading.
- The site contains some soils that are not suitable for retaining wall backfill due to their fines content; therefore, select grading and stockpiling, or import of sandy soils will be required by the contractor for obtaining suitable backfill soil for planned site retaining walls.
- Excavations into the existing site soils should be feasible with heavy construction equipment in good working order.
- Due to the relatively shallow site groundwater (about 14 feet below existing ground surface) dewatering or stabilization of subgrade for removal bottoms or deep utility trenches may be locally required, prior to subsequent fill placement.

4.0 PRELIMINARY RECOMMENDATIONS

The following recommendations are to be considered preliminary and should be confirmed upon completion of grading and earthwork operations. In addition, they should be considered minimal from a geotechnical viewpoint, as there may be more restrictive requirements from the architect, structural engineer, building codes, governing agencies, or the owner.

It should be noted that the following geotechnical recommendations are intended to provide sufficient information to develop the site in general accordance with the 2019 CBC requirements. With regard to the potential occurrence of potentially catastrophic geotechnical hazards such as fault rupture, earthquake-induced landslides, liquefaction, etc. the following geotechnical recommendations should provide adequate protection for the proposed development to the extent required to reduce seismic risk to an “acceptable level.” The “acceptable level” of risk is defined by the California Code of Regulations as “that level that provides reasonable protection of the public safety, though it does not necessarily ensure continued structural integrity and functionality of the project” [Section 3721(a)]. Therefore, repair and remedial work of the proposed improvements may be required after a significant seismic event. With regards to the potential for less significant geologic hazards to the proposed development, the recommendations contained herein are intended as a reasonable protection against the potential damaging effects of geotechnical phenomena such as expansive soils, fill settlement, groundwater seepage, etc. It should be understood, however, that although our recommendations are intended to maintain the structural integrity of the proposed development and structures given the site geotechnical conditions, they cannot preclude the potential for some cosmetic distress or nuisance issues to develop as a result of the site geotechnical conditions.

The geotechnical recommendations contained herein must be confirmed to be suitable or modified based on the actual as-graded conditions.

4.1 Site Earthwork

We anticipate that earthwork at the site will consist of demolition of the existing site improvements, required earthwork removals, subgrade preparation, precise grading and construction of the proposed new improvements, including the residential structures, neighborhood amenities, subsurface utilities, interior streets, etc.

We recommend that earthwork onsite be performed in accordance with the following recommendations, future grading plan review report(s), the 2019 CBC/City of Garden Grove grading requirements, and the General Earthwork and Grading Specifications included in Appendix F. In case of conflict, the following recommendations shall supersede those included in Appendix F. The following recommendations should be considered preliminary and may be revised based upon future evaluation and review of the project plans and/or based on the actual conditions encountered during site grading/construction.

4.1.1 Site Preparation

Prior to grading of areas to receive structural fill or engineered improvements, the areas should be cleared of existing building structures, asphalt, surface obstructions, and

demolition debris. Vegetation and debris should be removed and properly disposed of off-site. Holes resulting from the removal of buried obstructions, which extend below proposed finish grades, should be replaced with suitable compacted fill material. Any abandoned sewer or storm drain lines should be completely removed and replaced with properly placed compacted fill. Deeper demolition may be required in order to remove existing foundations. We recommend the trenches associated with demolition which extend below the remedial grading depth of 5 feet be backfilled and properly compacted prior to the demolition contractor leaving the site.

If cesspools or septic systems are encountered, they should be removed in their entirety. The resulting excavation should be backfilled with properly compacted fill soils. As an alternative, cesspools can be backfilled with lean sand-cement slurry. Any encountered wells should be properly abandoned in accordance with regulatory requirements. At the conclusion of the clearing operations, a representative of LGC Geotechnical should observe and accept the site prior to further grading.

4.1.2 Removal and Recomposition Depths and Limits

In order to provide a relatively uniform bearing condition for the planned residential building pads and improvements, we recommend the site soils be removed and recompacted according to the criteria outlined below.

Building Structures: Removals should extend a minimum depth of 5 feet below existing grade or 2 feet below proposed footings, whichever is greater. In general, the envelope for removals should extend laterally a minimum horizontal distance of 5 feet beyond the edges of the proposed building footprint. Deeper removals may be required if undocumented fill soils or otherwise unsuitable materials are encountered.

Minor Site Structures: For minor site structures such as free-standing walls, retaining walls, etc., removal and recompaction should extend at least 3 feet below existing grade or 2 feet below the base of foundations, whichever is deeper. Where space is available, the envelope for removal and recompaction should extend laterally a minimum distance of 3 feet beyond the edges of the proposed minor site structure improvements.

Pavement and Hardscape: Within pavement and hardscape areas, removal and recompaction should extend to a depth of at least 2 feet below the existing grade or 1-foot below finished subgrade (i.e., below planned aggregate base/asphalt concrete), whichever is deeper. In general, the envelope for removal and recompaction should extend laterally a minimum distance of 2 feet beyond the edges of the proposed pavement and hardscape improvements.

Local conditions may be encountered during excavation that could require additional over-excavation beyond the above noted minimum in order to obtain an acceptable subgrade. In the event removals extend to over-moist materials, additional recommendations should be provided. The actual depths and lateral extents of grading will be determined by the geotechnical consultant, based on subsurface conditions encountered during grading. Removal areas and areas to be over-excavated should be accurately staked in the field by the Project Surveyor.

4.1.3 Temporary Excavations

Temporary excavations should be performed in accordance with project plans, specifications, and all Occupational Safety and Health Administration (OSHA) requirements. Excavations should be laid back or shored in accordance with OSHA requirements before personnel or equipment are allowed to enter. Based on our field investigation, the majority of site soils are anticipated to be OSHA Type "C" soils (refer to the attached boring logs). Minor amounts of sandy soils are present and should be considered susceptible to caving. Soil conditions should be regularly evaluated during construction to verify conditions are as anticipated. The contractor shall be responsible for providing the "competent person" required by OSHA standards to evaluate soil conditions. Close coordination with the geotechnical consultant should be maintained to facilitate construction while providing safe excavations. Excavation safety is the sole responsibility of the contractor.

Vehicular traffic, stockpiles, and equipment storage should be set back from the perimeter of excavations a minimum distance equivalent to a 1:1 projection from the bottom of the excavation or 5 feet, whichever is greater, unless the cut is shored and designed for applicable surcharge load. Once an excavation has been initiated, it should be backfilled as soon as practical. Prolonged exposure of temporary excavations may result in some localized instability. Excavations should be planned so that they are not initiated without sufficient time to shore/fill them prior to weekends, holidays, or forecasted rain.

It should be noted that any excavation that extends below a 1:1 (horizontal to vertical) projection of an existing foundation will remove existing support of the structure foundation. If requested, temporary shoring parameters will be provided.

4.1.4 Removal Bottoms and Subgrade Preparation

In general, removal bottoms, over-excavation bottoms and areas to receive compacted fill should be scarified to a minimum depth of 6 inches, brought to a near-optimum moisture condition (generally within optimum and 2 percent above optimum moisture content), and re-compacted per project recommendations.

In the event removal bottoms are over-moist and pumping when equipment passes, scarification/processing of removal bottoms is generally not required. If encountered, soft and yielding removal bottoms should be evaluated on a case-by-case basis during earthwork operations. For these conditions, LGC Geotechnical should provide recommendations as needed for stabilization of the subgrade prior to placing compacted fill (e.g., placement of crushed rock, etc.).

Removal bottoms, over-excavation bottoms and areas to receive fill should be observed and accepted by the geotechnical consultant prior to subsequent fill placement. Soil subgrade for planned footings and improvements (e.g., slabs, etc.) should be firm and competent.

4.1.5 Material for Fill

From a geotechnical perspective, the onsite soils are generally considered suitable for use as general compacted fill, provided they are screened of organic materials, construction debris and oversized material (8 inches in greatest dimension).

From a geotechnical viewpoint, any required import soils for general fill (i.e., non-retaining wall backfill) should consist of soils of “Very Low” expansion potential (expansion index 20 or less based on American Society for Testing and Materials [ASTM] D 4829), and free of organic materials, construction debris and any material greater than 3 inches in maximum dimension. Import for any required retaining wall backfill should meet the criteria outlined in the following paragraph. Source samples should be provided to the geotechnical consultant for laboratory testing a minimum of four working days prior to any planned importation.

Some of the onsite soils are not suitable for retaining wall backfill due to their fines content; therefore, select grading and stockpiling, or import of select sandy soils will be required by the contractor for obtaining suitable retaining wall backfill soil. These preliminary findings will be confirmed during grading. Retaining wall backfill should consist of imported sandy soils with a maximum of 35 percent fines (passing the No. 200 sieve) per ASTM Test Method D1140 (or ASTM D6913/D422) and a “Very Low” expansion potential (EI of 20 or less per ASTM D4829). Soils should also be screened of organic materials, construction debris, and material greater than 3 inches in maximum dimension.

Aggregate base (crushed aggregate base or crushed miscellaneous base) should conform to the requirements of Section 200-2 of the most recent version of the Standard Specifications for Public Works Construction (“Greenbook”) for untreated base materials (except processed miscellaneous base) and/or City of Garden Grove requirements.

The placement of demolition materials in compacted fill is acceptable from a geotechnical viewpoint provided the demolition material is broken up into pieces not larger than typically used for aggregate base (approximately 2-inches in maximum dimension) and well blended into fill soils with essentially no resulting voids. Demolition material placed in fills must be free of construction debris (wood, organics, etc.) and reinforcing steel. If asphalt concrete fragments will be incorporated into the demolition materials, approval from an environmental viewpoint may be required and is not the purview of the geotechnical consultant. From our previous experience, we recommend that asphalt concrete fragments be limited to fill areas within planned street areas (i.e., not within building pad areas).

4.1.6 Placement and Compaction of Fills

Material to be placed as fill should be brought to near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content) and recompacted to at least 90 percent relative compaction (per ASTM D1557). Moisture conditioning of site soils will be required in order to achieve adequate compaction. Significant drying and or mixing of very moist soils will be required prior to reusing the

materials in compacted fills. In general, near surface soils present at the site will require additional moisture in order to achieve required compaction.

The optimum lift thickness to produce a uniformly compacted fill will depend on the type and size of compaction equipment used. In general, fill should be placed in uniform lifts not exceeding 8 inches in compacted thickness. Each lift should be thoroughly compacted and accepted prior to subsequent lifts. Generally, placement and compaction of fill should be performed in accordance with local grading ordinances and with observation and testing performed by the geotechnical consultant. Oversized material as previously defined should be removed from site fills.

During backfill of excavations, the fill should be properly benched into firm and competent soils of temporary backcut slopes as it is placed in lifts.

Aggregate base material should be compacted to at least 95 percent relative compaction at or slightly above optimum moisture content per ASTM D1557. Subgrade below aggregate base should be compacted to at least 90 percent relative compaction per ASTM D1557 at near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content).

If gap-graded $\frac{3}{4}$ -inch rock is used for backfill (around storm drain storage chambers, retaining wall backfill, etc.) it will require compaction. Rock shall be placed in thin lifts (typically not exceeding 6 inches) and mechanically compacted with observation by geotechnical consultant. Backfill rock shall meet the requirements of ASTM D2321. Gap-graded rock is required to be wrapped in filter fabric (Mirafi 140N or approved alternative) to prevent the migration of fines into the rock backfill.

4.1.7 Trench and Retaining Wall Backfill and Compaction

Bedding material used within the pipe zone should conform to the requirements of the current Greenbook and the pipe manufacturer. Where applicable, sand having a sand equivalent (SE) of 20 or greater (per Caltrans Test Method [CTM] 217) may be used to bed and shade the pipes within the bedding zone. Sand backfill should be densified by jetting or flooding and then tamped to ensure adequate compaction. Bedding sand should be from a natural source, manufactured sand from recycled material is not suitable for jetting. The onsite soils may generally be considered suitable as trench backfill (zone defined as 12 inches above the pipe to subgrade), provided the soils are screened of rocks greater than 6 inches in maximum dimension, construction debris and organic material. Trench backfill should be compacted in uniform lifts (as outlined above in Section "Material for Fill") by mechanical means to at least 90 percent relative compaction (per ASTM D1557). If gap-graded rock is used for trench backfill, refer to above Section 4.1.6.

Retaining wall backfill should consist of sandy soils as outlined in preceding Section 4.1.5. The limits of select sandy backfill should extend at minimum $\frac{1}{2}$ the height of the retaining wall or the width of the heel (if applicable), whichever is greater (Figure 3). Retaining wall backfill soils should be compacted in relatively uniform thin lifts to at least 90 percent relative compaction (per ASTM D1557). Jetting or flooding of retaining wall backfill materials should not be permitted. If gap-graded rock is used for retaining wall

backfill, refer to above Section 4.1.6.

In backfill areas where mechanical compaction of soil backfill is impractical due to space constraints, typically sand-cement slurry may be substituted for compacted backfill. The slurry should contain about one sack of cement per cubic yard. When set, such a mix typically has the consistency of compacted soil. Sand cement slurry placed near the surface within landscape areas should be evaluated for potential impacts on planned improvements.

A representative from LGC Geotechnical should observe, probe, and test the backfill to verify compliance with the project recommendations.

4.1.8 Shrinkage and Subsidence

Allowance in the earthwork volumes budget should be made for an estimated 0 to 10 percent reduction in volume (shrinkage) of near-surface (upper approximate 5 feet) soils. It should be stressed that these values are only estimates and that an actual shrinkage factor would be extremely difficult to predetermine. Subsidence, due to earthwork operations, is expected to be on the order of 0.1-foot. These values are estimates only and exclude losses due to removal of any vegetation or debris. The effective shrinkage of onsite soils will depend primarily on the type of compaction equipment and method of compaction used onsite by the contractor and accuracy of the topographic survey.

4.2 Preliminary Foundation Recommendations

Preliminary foundation recommendations are provided in the following sections. Proposed building foundations should be designed in consideration of site liquefaction potential and dynamic settlement as outlined below. Due to liquefaction potential and dynamic settlement any isolated structural pad footings should be interconnected with grade beams.

Site soils are anticipated to be “Very Low” expansion potential (EI of 20 or less per ASTM D4829). Please note that the following foundation recommendations are preliminary and must be confirmed by LGC Geotechnical at the completion of grading. Recommended soil bearing and estimated static settlements are provided in Section 4.3.

4.2.1 Preliminary Foundation Design Parameters

Post-tensioned foundations should be designed for the more conservative of the differential seismic settlement due to liquefaction (see Section 2.6.1), or the post-tension parameters provided in Table 4 on the following page. These parameters have been determined in general accordance with the Post-Tensioning Institute (PTI, 2012) Standard Requirements (PTI DC 10.5), referenced in Chapter 18 of the 2019 CBC. In utilizing these parameters, the foundation engineer should design the foundation system in accordance with the allowable deflection criteria of applicable codes and the requirements of the structural designer/architect. Other types of stiff slabs may be used in place of the CBC post-tensioned slab design provided that, in the opinion of the

foundation structural designer, the alternative type of slab is at least as stiff and strong as that designed by the CBC/PTI method.

TABLE 4

Preliminary Geotechnical Parameters for Post-Tensioned Foundation Slab Design

Parameter	PT Slab with Perimeter Footing	PT Mat with Thickened Edge
Center Lift Edge moisture variation distance, e_m Center lift, y_m	9.0 feet 0.5 inch	9.0 feet 0.6 inch
Edge Lift Edge moisture variation distance, e_m Edge lift, y_m	4.7 feet 1.1 inch	4.7 feet 1.3 inch
Modulus of Subgrade Reaction, k (assuming presoaking as indicated below)	150 pci	150 pci
Minimum perimeter footing/thickened edge embedment below finish grade	12 inches	6 inches
1. Moisture condition to 100% of optimum moisture content to a minimum depth of 12 inches prior to trenching.		

4.2.2 Post-Tensioned Foundation Subgrade Preparation and Maintenance

Moisture conditioning of the subgrade soils is recommended prior to trenching the foundation. The duration of this process varies greatly based on the chosen method and is also dependent on factors such as soil type and weather conditions. The recommendations specific to the anticipated site soil conditions, including recommended moisture conditioning, are presented in Table 4 above. The subgrade moisture condition of the building pad soils should be maintained at near-optimum moisture content up to the time of concrete placement. This moisture content should be maintained around the immediate perimeter of the slab during construction and up to occupancy of the homes.

The geotechnical parameters provided herein assume that if the areas adjacent to the foundation are planted and irrigated, these areas will be designed with proper drainage and adequately maintained so that ponding, which causes significant moisture changes below the foundation, does not occur. Our recommendations do not account for excessive irrigation and/or incorrect landscape design. Plants should only be provided with sufficient irrigation for life and not overwatered to saturate subgrade soils. Sunken planters placed adjacent to the foundation, should either be designed with an efficient drainage system or liners to prevent moisture infiltration below the foundation. Some lifting of the perimeter foundation beam should be expected even with properly constructed planters.

In addition to the factors mentioned above, future homeowners should be made aware of the potential negative influences of trees and/or other large vegetation. Roots that extend near the vicinity of foundations can cause distress to foundations. Future homeowners (and the owner's landscape architect) should not plant trees/large shrubs closer to the foundations than a distance equal to half the mature height of the tree or 20 feet, whichever is more conservative unless specifically provided with root barriers to prevent root growth below the house foundation.

Future homeowners should be informed and educated regarding the importance of maintaining a constant level of soil-moisture. The builder should provide these recommendations to future homeowners.

4.2.3 Slab Underlayment Guidelines

The following is for informational purposes only since slab underlayment (e.g., moisture retarder, sand or gravel layers for concrete curing and/or capillary break) is unrelated to the geotechnical performance of the foundation and thereby not the purview of the geotechnical consultant. Post-construction moisture migration should be expected below the foundation. The foundation engineer/architect should determine whether the use of a capillary break (sand or gravel layer), in conjunction with the vapor retarder, is necessary or required by code. Sand layer thickness and location (above and/or below vapor retarder) should also be determined by the foundation engineer/architect.

4.3 Soil Bearing and Lateral Resistance

Provided our earthwork recommendations are implemented, a mat foundation a minimum of 6 inches below lowest adjacent grade may be designed for an allowable soil bearing pressure of 1,000 psf. For minor structures, an allowable soil bearing pressure of 1,500 pounds per square foot (psf) may be used for the design of footings having a minimum width of 12 inches and minimum embedment of 12 inches below lowest adjacent ground surface. This value may be increased by 300 psf for each additional foot of embedment and 150 psf for each additional foot of foundation width to a maximum value of 2,500 psf. These allowable bearing pressures are applicable for level (ground slope equal to or flatter than 5H:1V) conditions only. Bearing values indicated are for total dead loads and frequently applied live loads and may be increased by $\frac{1}{3}$ for short duration loading (i.e., wind or seismic loads). Due to liquefaction potential (Site Class "F") and estimated seismic settlement any isolated structural pad footings should be interconnected with grade beams.

In utilizing the above-mentioned allowable bearing capacity and estimated structural loads, foundation settlement due to structural loads is anticipated to be 1-inch or less. Static differential settlement may be taken as half of the total settlement (i.e., $\frac{1}{2}$ -inch over a horizontal span of 40 feet). Dynamic settlement due to site liquefaction potential is presented in Section 2.6.1.

Resistance to lateral loads can be provided by friction acting at the base of foundations and by passive earth pressure. For concrete/soil frictional resistance, an allowable coefficient of friction of 0.30 may be assumed with dead-load forces. An allowable passive lateral earth pressure of 230 pcf to a maximum of 2,300 psf may be used for lateral resistance for properly compacted fill and

suitable native soils. This allowable passive pressure may be increased to 310 pcf to a maximum of 3,100 for short-duration seismic loading. This passive pressure is applicable for level (ground slope equal to or flatter than 5H:1V) conditions only. Frictional resistance and passive pressure may be used in combination without reduction. The provided allowable passive pressure is based on a static and seismic factor of safety of 1.5 and 1.1, respectively.

4.4 Lateral Earth Pressures for Retaining Walls

The following preliminary lateral earth pressures may be used for any site retaining walls 6 feet or less. Lateral earth pressures are provided as equivalent fluid unit weights, in pound per square foot (psf) per foot of depth or pcf. These values do not contain an appreciable factor of safety, so the retaining wall designer should apply the applicable factors of safety and/or load factors during design.

The following lateral earth pressures are presented on Table 5 for approved select granular soils with a maximum of 35 percent fines (passing the No. 200 sieve per ASTM D-421/422) and Very Low expansion potential (EI of 20 or less per ASTM D4829). The wall designer should clearly indicate on the retaining wall plans the required sandy soil backfill criteria.

TABLE 5
Lateral Earth Pressures – Sandy Backfill

Conditions	Equivalent Fluid Unit Weight (pcf)
	Level Backfill
	Approved Select Sandy Soils
Active	35
At-Rest	55

If the wall can yield enough to mobilize the full shear strength of the soil, it can be designed for “active” pressure. If the wall cannot yield under the applied load, the earth pressure will be higher. This would include 90-degree corners of retaining walls. Such walls should be designed for “at-rest.” The equivalent fluid pressure values assume free-draining conditions. If conditions other than those assumed above are anticipated, the equivalent fluid pressure values should be provided on an individual-case basis by the geotechnical engineer.

Retaining wall structures should be provided with appropriate drainage and appropriately waterproofed. To reduce, but not eliminate, saturation of near-surface (upper approximate 1-foot) soils in front of the retaining walls, the perforated subdrain pipe should be located as low as possible behind the retaining wall. The outlet pipe should be sloped to drain to a suitable outlet. In general, we do not recommend retaining wall outlet pipes be connected to area drains. If subdrains are connected to area drains, special care and information should be provided to homeowners to maintain these drains. Typical retaining wall drainage is illustrated

in Figure 3. It should be noted that the recommended subdrain does not provide protection against seepage through the face of the wall and/or efflorescence. Efflorescence is generally a white crystalline powder (discoloration) that results when water containing soluble salts migrates over a period of time through the face of a retaining wall and evaporates. If such seepage or efflorescence is undesirable, retaining walls should be waterproofed to reduce this potential. Waterproofing and outlet systems are not the purview of the geotechnical consultant.

Surcharge loading effects from any adjacent structures should be evaluated by the retaining wall designer. In general, structural loads within a 1:1 (horizontal to vertical) upward projection from the bottom of the proposed retaining wall footing will surcharge the proposed retaining structure. In addition to the recommended earth pressure, basement/retaining walls adjacent to streets should be designed to resist vehicular traffic if applicable. Uniform surcharges may be estimated using the applicable coefficient of lateral earth pressure using a rectangular distribution. A factor of 0.5 and 0.33 may be used for at-rest and active conditions, respectively. The vertical traffic surcharge may be determined by the structural designer. The structural designer should contact the geotechnical engineer for any required geotechnical input in estimating any applicable surcharge loads.

If a retaining wall greater than 6 feet in height is proposed, the retaining wall designer should contact the geotechnical engineer for specific seismic lateral earth pressure increments based on the configuration of the planned retaining wall structures.

Soil bearing and lateral resistance (friction coefficient and passive resistance) are provided in Section 4.3. Earthwork considerations (temporary backcuts, backfill, compaction, etc.) for retaining walls are provided in Section 4.1 (Site Earthwork) and the subsequent earthwork related sub-sections.

4.5 Soil Corrosivity

Although not corrosion engineers (LGC Geotechnical is not a corrosion consultant), several governing agencies in Southern California require the geotechnical consultant to determine the corrosion potential of soils to buried concrete and metal facilities. We therefore present the results of our testing with regard to corrosion for the use of the client and other consultants, as they determine necessary.

Corrosion testing of a near-surface bulk sample indicated a soluble sulfate content of less than approximately 0.02 percent, a chloride content of 240 ppm, pH of 7.9, and a minimum resistivity of 2770 ohm-centimeters. Based on Caltrans Corrosion Guidelines (Caltrans, 2021), soils are considered corrosive to structural elements if the pH is 5.5 or less, or the chloride concentration is 500 ppm or greater, or the sulfate concentration is 1,500 ppm (0.15 percent) or greater. Based on the preliminary test results, soils are not considered corrosive using Caltrans criteria.

Based on preliminary laboratory sulfate test results, the near surface soils are designated to a class "S0" per ACI 318, Table 19.3.1.1 with respect to sulfates. Concrete in direct contact with the onsite soils can be designed according to ACI 318, Table 19.3.2.1 using the "S0" sulfate classification.

4.6 Control of Surface Water and Drainage Control

From a geotechnical perspective, we recommend that compacted finished grade soils adjacent to proposed residences be sloped away from the proposed residence and towards an approved drainage device or unobstructed swale. Drainage swales, wherever feasible, should not be constructed within 5 feet of buildings. Where lot and building geometry necessitates that the side yard drainage swales be routed closer than 5 feet to structural foundations, we recommend the use of area drains together with drainage swales. Drainage swales used in conjunction with area drains should be designed by the project civil engineer so that a properly constructed and maintained system will prevent ponding within 5 feet of the foundation. Code compliance of grades is not the purview of the geotechnical consultant.

Planters with open bottoms adjacent to buildings should be avoided. Planters should not be designed adjacent to buildings unless provisions for drainage, such as catch basins, liners, and/or area drains, are made. Overwatering must be avoided.

4.7 Subsurface Water Infiltration

Recent regulatory changes have occurred that mandate storm water be infiltrated below grade rather than collected in a conventional storm drain system. It should be noted that collecting and concentrating surface water for the purpose of intentionally infiltrating it below grade, conflicts with the geotechnical engineering objective of directing surface water away from slopes, structures and other improvements. The geotechnical stability and integrity of a site is reliant upon appropriately handling surface water. In general, we do not recommend that surface water be intentionally infiltrated into the subsurface soils.

If it is determined that water must be infiltrated due to regulatory requirements, we recommend the absolute minimum amount of water be infiltrated and that the infiltration areas not be located near slopes or near settlement sensitive existing/proposed improvements. Contamination and environmental suitability of the site for infiltration is not the purview of the geotechnical consultant and should be evaluated by others. LGC Geotechnical only addressed the geotechnical issues associated with stormwater infiltration.

As with all systems that are designed to concentrate surface flow and direct the water into the subsurface soils, some minor settlement, nuisance type localized saturation and/or other water related issues should be expected. Due to variability in geologic and hydraulic conductivity characteristics, these effects may be experienced at the onsite location and/or potentially at other locations well beyond the physical limits of the subject site. Infiltrated water may enter underground utility pipe zones or flow along heterogeneous soil layers or geologic structure and migrate laterally, impacting other improvements that may be located far away or at an elevation much different than the infiltration source.

Based on the results of our field infiltration testing, the Observed Infiltration Rates for I-1 and I-2 (not including required factors of safety for design) were 5.9 and 5.7 inches per hour, respectively. The Design Infiltration Rate shall be determined by dividing the Observed Infiltration Rate by a series of safety factors for site suitability and design considerations that are the purview of both the geotechnical consultant and designer of the infiltration system (County of Orange, 2013). The recommended geotechnical factors of safety that are to be used

to determine the Design Infiltration Rate are provided in Table 6 below.

TABLE 6

Geotechnical Factors of Safety for Design Infiltration Rate

A: Site Suitability Considerations (From Table VII.3)*	
Consideration	Factor of Safety (F.S.)
Soil Assessment Methods	2
Texture Class	1
Site Soil Variability	2
Depth to Groundwater/Impervious Layer	1
Calculated Suitability Assessment Factor of Safety	1.5
B: Design Related Considerations (From Table VII.4)*	
Consideration	Factor of Safety (F.S.)
Tributary Size Area	Per Infiltration Designer
Level of Pretreatment	Per Infiltration Designer
Redundancy of Treatment	Per Infiltration Designer
Compaction during Construction	2
Calculated Design Factor of Safety	Per Infiltration Designer
Combined F.S.= Suitability F.S x Design F.S.	TBD

*from County of Orange, 2013

The factor of safety used to determine the Design Infiltration Rate is determined by multiplying the calculated suitability assessment factor of safety of 1.5 by the design factor of safety that is to be determined (TBD) by the infiltration system designer. The Design Infiltration Rate is thereby equal to the Observed Infiltration Rate provided in Table 1 of Section 2.4 (inches per hour) divided by the product of 1.5 times the calculated design factor of safety. The combined factor of safety must be a minimum of 2.0 but need not exceed 9.0. Results of field infiltration testing are attached to this report.

The following should be considered for design of any required infiltration system:

- Water discharge from any infiltration systems should not occur within the zone of influence of foundation footings (column and load bearing wall locations). At this time, we understand the bottom of infiltration system (~6.5 feet below grade) is proposed to be approximately 10 feet from the nearest building foundation. Based on this separation and the sites' liquefaction potential, we recommend directly adjacent foundations be provided with a minimum stiffness, to be evaluated once foundation plans are generated.
- We recommend the drilling of three small-diameter holes through the bottom of each infiltration vault to minimum depths of approximately 15 feet below existing grade and backfilling the holes with approved clean sand up to infiltration bottom grades. Holes drilled in the bottom of the infiltration system would reduce the potential for water

becoming suspended within the upper alluvial soils by acting as a high permeability conduit, transferring surface water to the deeper sandy native materials below.

- Please note that the infiltration values reported herein are for native materials only and are not for compacted fill.
- An adequate setback distance between any infiltration facility and adjacent private property should be maintained.
- We recommend the design of any infiltration system include at least one redundancy or overflow system. It may be prudent to provide an overflow system connected directly to a storm drain system in order to prevent failure of the infiltration system, either as a result of lower than anticipated infiltration with time and/or very high flow volumes.
- The infiltration values provided are based on clean water and this requires the removal of trash, debris, soil particles, etc., and on-going maintenance. Over time, siltation and plugging may reduce the infiltration rate and subsequent effectiveness of the infiltration system. It should be noted that methods to prevent this shall be the responsibility of the infiltration designer and are not the purview of the geotechnical consultant. If adequate measures cannot be incorporated into the design and maintenance of the system, then the infiltration rates may need to be further reduced. These and other factors should be considered in selecting a Design Infiltration Rate.
- Any designed infiltration system will require routine periodic maintenance.
- As with any systems that are designed to concentrate the surface flow and direct the water into the subsurface soils, some type of nuisance water and/or other water-related issues should be expected.
- Contamination and environmental suitability of the site for infiltration was not evaluated by us and should be evaluated by others (environmental consultant). We only addressed the geotechnical issues associated with stormwater infiltration.

4.8 Preliminary Asphalt Concrete Pavement Sections

The following provisional minimum asphalt concrete (AC) street sections are provided in Table 7 below for Traffic Indices (TI) of 5.0, 5.5 and 6.0. These sections are based on an estimated R-value of 25. These recommendations must be confirmed with R-value testing of representative near-surface soils at the completion of grading and after underground utilities have been installed and backfilled. Final pavement sections should be confirmed by the project civil engineer based upon the final design Traffic Index. If requested, LGC Geotechnical will provide sections for alternate TI values.

TABLE 7

Preliminary Pavement Section Options

Assumed Traffic Index	5.0	5.5	6.0
R -Value Subgrade	25	25	25
AC Thickness	4.0 inches	4.0 inches	4.0 inches
Aggregate Base Thickness	5.0 inches	6.5 inches	8.5 inches

The pavement section thicknesses provided above are considered minimum thicknesses. Increasing the thickness of any or all the above layers will reduce the likelihood of the

pavement experiencing distress during its service life. The above recommendations assume that proper maintenance and irrigation of the areas adjacent to the roadway will occur throughout the design life of the pavement. Failure to maintain a proper maintenance and/or irrigation program may jeopardize the integrity of the pavement.

Earthwork recommendations regarding aggregate base and subgrade are provided in the previous Section 4.1 (Site Earthwork) and the related sub-sections of this report.

4.9 Nonstructural Concrete Flatwork Guidelines

Nonstructural concrete flatwork (such as walkways, private drives, patio slabs, etc.) has a potential for cracking due to changes in soil volume related to soil-moisture fluctuations. To reduce the potential for excessive cracking and lifting, concrete may be designed in accordance with the minimum guidelines outlined in Table 8 below. These guidelines will reduce the potential for irregular cracking and promote cracking along control joints but will not eliminate all cracking or lifting. Thickening the concrete and/or adding additional reinforcement will further reduce cosmetic distress.

TABLE 8

Nonstructural Concrete Flatwork Guidelines for Very Low Expansion Potential

	Homeowner Sidewalks	Private Drives	Patios/ Entryways	City Sidewalk Curb and Gutters
Minimum Thickness (in.)	4 (nominal)	4 (full)	4 (full)	City/Agency Standard
Presoaking	Wet down prior to placing	Wet down prior to placing	Wet down prior to placing	City/Agency Standard
Reinforcement	—	No. 3 at 24 inches on centers	No. 3 at 24 inches on centers	City/Agency Standard
Thickened Edge (in.)	—	8 x 8	—	City/Agency Standard
Crack Control Joints	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	City/Agency Standard
Maximum Joint Spacing	5 feet	10 feet or quarter cut whichever is closer	6 feet	City/Agency Standard
Aggregate Base Thickness (in.)	—	—	—	City/Agency Standard

To reduce the potential for driveways to separate from the garage slab, the builder may elect to install dowels to tie these two elements together. Similarly, future homeowners should consider the use of dowels to connect flatwork to the foundation.

4.10 Geotechnical Plan Review

When available project plans (e.g., grading, foundation, retaining wall, etc.) should be reviewed by LGC Geotechnical in order to verify our geotechnical recommendations are implemented. Updated recommendations and/or additional field work may be necessary.

4.11 Geotechnical Observation and Testing During Construction

The recommendations provided in this report are based on limited subsurface observations and geotechnical analysis. The interpolated subsurface conditions should be checked in the field during construction by a representative of LGC Geotechnical. Geotechnical observation and testing is required per Section 1705 of the 2019 California Building Code (CBC).

Geotechnical observation and/or testing should be performed by LGC Geotechnical at the following stages:

- During grading (removal bottoms, fill placement, etc);
- During utility trench backfill and compaction;
- After presoaking building pads and other concrete-flatwork subgrades, and prior to placement of aggregate base or concrete;
- Preparation of pavement subgrade and placement of aggregate base;
- After building and wall footing excavation and prior to placing steel reinforcement and/or concrete; and
- When any unusual soil conditions are encountered during any construction operation subsequent to issuance of this report.

5.0 LIMITATIONS

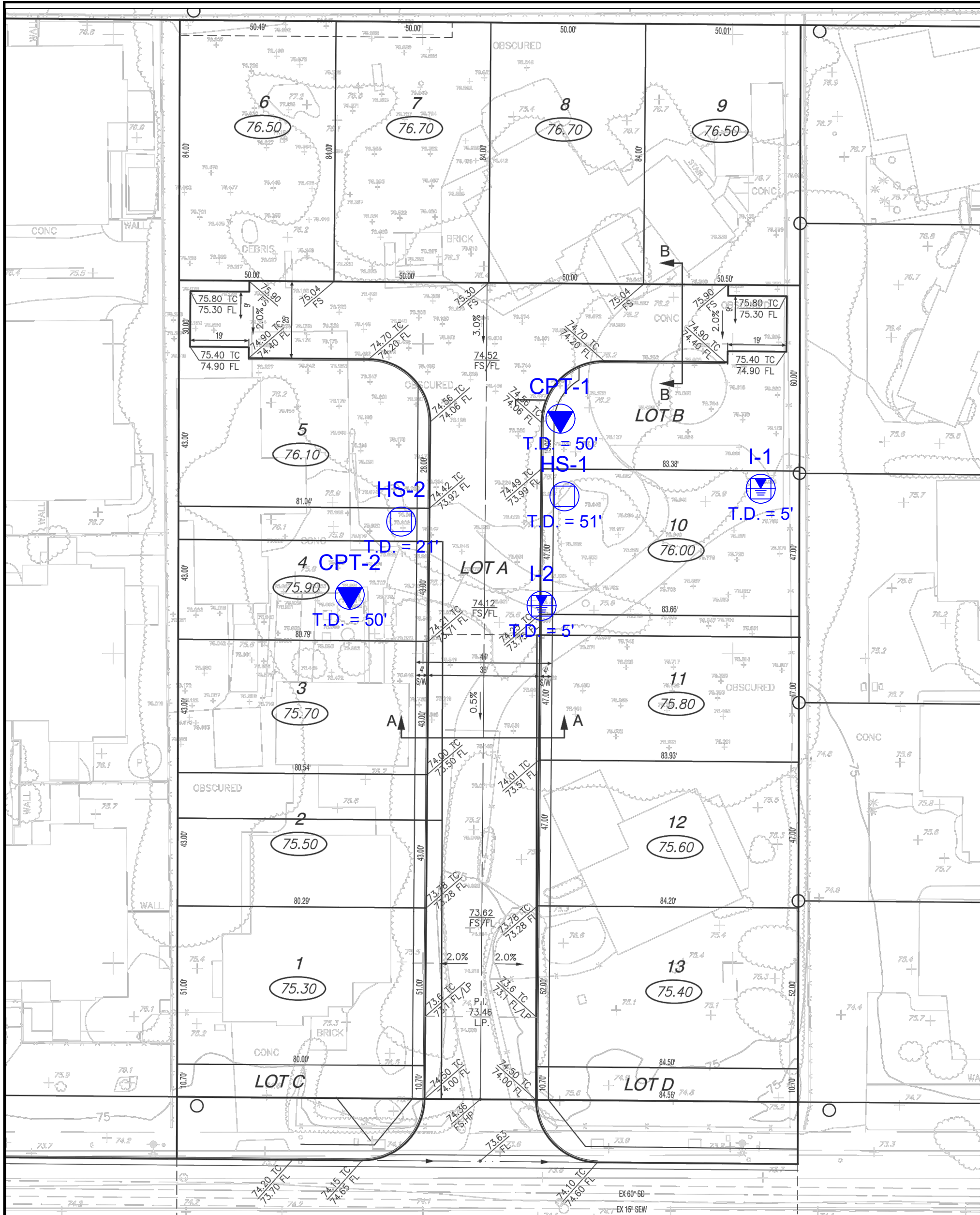
Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

This report is based on data obtained from limited observations of the site, which have been extrapolated to characterize the site. While the scope of services performed is considered suitable to adequately characterize the site geotechnical conditions relative to the proposed development, no practical evaluation can completely eliminate uncertainty regarding the anticipated geotechnical conditions in connection with a subject site. Variations may exist and conditions not observed or described in this report may be encountered during grading and construction.





This report is issued with the understanding that it is the responsibility of the owner, or of his/her representative, to ensure that the information and recommendations contained herein are brought to the attention of the other consultants (at a minimum the civil engineer, structural engineer, landscape architect) and incorporated into their plans. The contractor should properly implement the recommendations during construction and notify the owner if they consider any of the recommendations presented herein to be unsafe, or unsuitable.

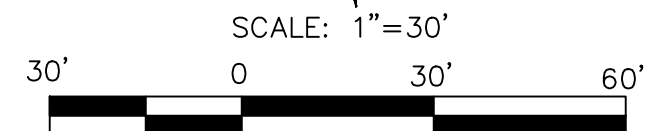
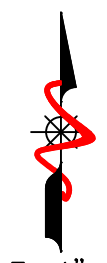
The findings of this report are valid as of the present date. However, changes in the conditions of a site can and do occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. The findings, conclusions, and recommendations presented in this report can be relied upon only if LGC Geotechnical has the opportunity to observe the subsurface conditions during grading and construction of the project, in order to confirm that our preliminary findings are representative for the site. This report is intended exclusively for use by the client, any use of or reliance on this report by a third party shall be at such party's sole risk.

In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and modification.



LEGEND

- 
HS-1
 Approximate Location of Hollow Stem Auger Boring by LGC Geotechnical, With Total Depth in Feet
- 
T.D. = 51'
CPT-2
 Approximate Location of Cone Penetration Test (CPT), Total Depth in Feet
- 
T.D. = 50'
I-1
 Approximate Location of Hollow Stem Auger Infiltration Boring by LGC Geotechnical, With Total Depth in Feet
- 
T.D. = 5'



LGC Geotechnical, Inc.
 131 Calle Iglesia, Ste. 200
 San Clemente, CA 92672
 TEL (949) 369-6141 FAX (949) 369-6142

FIGURE 2
Boring
Location Map

PROJECT NAME	PLC - Lampson
PROJECT NO.	22030-01
ENG. / GEOL.	DJB / KTM
SCALE	1" = 30'
DATE	May 2022

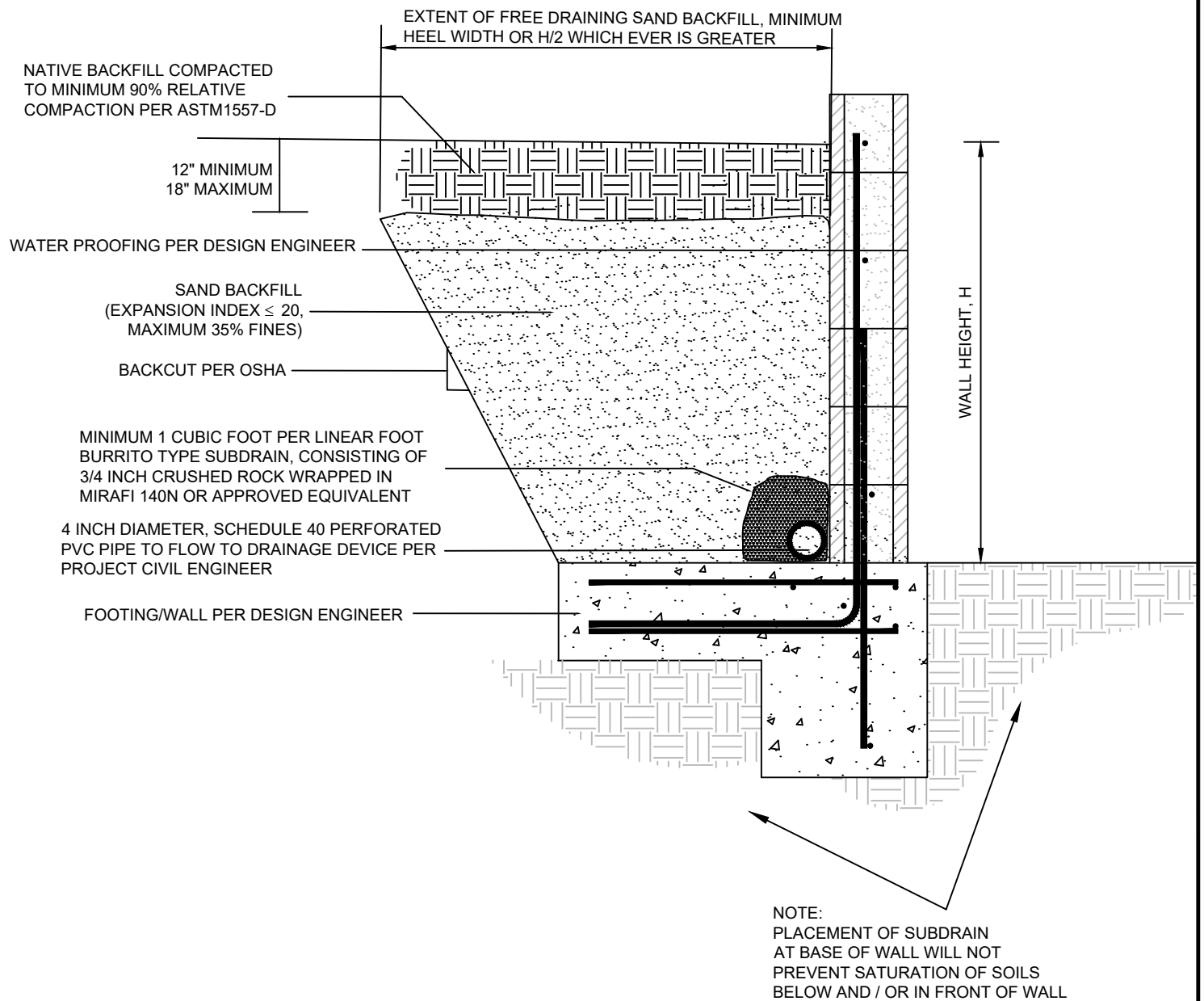


FIGURE 3
Retaining Wall
Backfill Detail

PROJECT NAME	PLC - Lampson
PROJECT NO.	22030-01
ENG. / GEOL.	DJB/KTM
SCALE	Not to Scale
DATE	May 2022

Appendix A
References

APPENDIX A

References

- American Concrete Institute, 2014, Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary (ACI 318R-14).
- American Society of Civil Engineers (ASCE), 2017, Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-16, Third Printing, 2017.
- _____, 2018, Standard 7-16, Minimum Design Loads for Buildings and Associated Criteria for Buildings and Other Structures, Supplement 1, effective: December 12, 2018.
- American Society for Testing and Materials (ASTM), Volume 04.08 Soil and Rock (I): D420 – D5876.
- Bassenian Lagoni, 2022, Conceptual Site Plan, 9071 Lampson Ave, Garden Grove, California, dated January 18, 2022.
- Bray, J.D., and Sancio, R. B., 2006, Assessment of Liquefaction Susceptibility of Fine-Grained Soils, *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, pp. 1165-1177, dated September 2006.
- California Building Standards Commission, 2019, California Building Code, California Code of Regulations Title 24, Volumes 1 and 2, dated July 2019.
- California Department of Transportation (Caltrans), 2021, Corrosion Guidelines, Version 3.2, dated May 2021.
- California Division of Mines and Geology (CDMG), 1998, State of California Seismic Hazard Zones, Anaheim Quadrangle, Revised Official Map Released: April 15, 1998.
- _____, 2001, Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-Minute Quadrangles, Orange County, California, [CDMG Open-File Report 97-08], Seismic Hazard Zone Report 003, Revised 2001.
- California Geological Survey [CGS], 2008, California Geological Society Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California.
- _____, 2018, Earthquake Fault Zones, Special Publication 42; A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California, Revised 2018.
- County of Orange, 2013, Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs), Exhibit 7.III, December 20, 2013.
- GeoLogismiki, 2021, CLiq, v.3.3.1.14, Software for Liquefaction Potential Evaluation using Cone Penetration Tests and Standard Penetration Tests.

- Historical Aerials, 2022, viewed April 28, 2022, Aerials viewed from: 1953, 1963, 1972, 1987, 1992, 2000 and 2018, <https://www.historicaerials.com/>
- LGC Geotechnical, 2022, Summary of Field Infiltration Testing for the Proposed Residential Development at 9071 Lampson Avenue, Garden Grove, California, Project No. 22030-01, dated March 17, 2022
- MDS Consulting, 2022, Conceptual Grading Drainage and Utility Plan, 9071 Lampson Avenue, City of Garden Grove, County of Orange, State of California, dated February 22, 2022.
- Morton, D.M., 2004, Preliminary Digital Geologic Map of the Santa Ana 30' X 60' Quadrangle, Southern California, U.S.G.S. Open-File Report 99-172, Scale: 1:100,000, Version 2.0, dated 2004
- NCEER, 1997, "Proceeding of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils", T.L. Youd and I. M. Idriss Editors, Technical Report NCEER-97-0022, NCEER, Buffalo, NY.
- Post-Tensioning Institute (PTI), 2012, Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils, PTI DC10.5-12.
- Robertson, P.K., 2010, Evaluation of flow liquefaction and liquefied strength using the cone penetration test, *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, pp. 842-853, dated June 2010.
- Southern California Earthquake Center (SCEC), 1999, "Recommended Procedure for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigation Liquefaction Hazards in California", Edited by Martin, G.R., and Lew, M., dated March 1999.
- Tokimatsu, K., and Seed, H. B., 1987, "Evaluation of Settlements in Sands Due to Earthquake Shaking", *Journal of Geotechnical Engineering*, ASCE, Vol. 113, No. 8, pp. 861-878.
- Structural Engineers Association of California (SEAOC), 2022, OSHPD Seismic Design Maps, Retrieved April 26, 2022, from: <https://seismicmaps.org/>.
- United States Geological Survey (USGS), 2014, Unified Hazard Tool, Dynamic: Conterminous U.S. 2014 (v4.2.0), Retrieved March 7, 2022, from: <https://earthquake.usgs.gov/hazards/interactive/>.

Appendix B
Boring & CPT Logs

Geotechnical Boring Log Borehole HS-1

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 2

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0	B-1						@0'- Silty SAND: dark brown, slightly moist; rootlets	CR EI MD
65	5	R-1		5 9 14	103.1	7.6	SM	@5'- Silty SAND: grayish brown, moist, medium dense	
		R-2		5 11 16	102.2	13.1		@7'- Silty SAND: brown, very moist, medium dense	
60	10	R-3		11 15 15	102.6	4.1		@10'- Silty SAND: brown, slightly moist, medium dense	
55	15	SPT-1		4 7 11		18.3	SW-SM	@15'- SAND with SILT: grayish brown, wet, medium dense	
50	20	R-4		21 37 45	112.1	17.4		@20'- SAND with Silt: gray, wet, very dense	
45	25	SPT-2		7 12 16		22.2	SM	@25'- Silty SAND: gray, wet, dense	
	30								



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.



SAMPLE TYPES:	TEST TYPES:
B BULK SAMPLE	DS DIRECT SHEAR
R RING SAMPLE (CA Modified Sampler)	MD MAXIMUM DENSITY
G GRAB SAMPLE	SA SIEVE ANALYSIS
SPT STANDARD PENETRATION TEST SAMPLE	S&H SIEVE AND HYDROMETER
	EI EXPANSION INDEX
	CN CONSOLIDATION
	CR CORROSION
	AL ATTERBERG LIMITS
	CO COLLAPSE/SWELL
	RV R-VALUE
	#200 % PASSING # 200 SIEVE



Geotechnical Boring Log Borehole HS-1

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 2 of 2

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		R-5	1 2 3	103.0	22.1	SC-SM	@30'- Silty/Clayey SAND: gray, wet, loose	AL -#200
	35		SPT-3	3 1 3		28.1	SC	@35'- Clayey SAND: gray, wet, loose	AL -#200
	40		R-6	8 20 31	109.5	20.0	ML	@40'- SILT: brown, wet, hard	
	45		SPT-4	3 4 11		43.1	CL-ML	@45'- Silty CLAY: gray, wet, very stiff	
	50		R-7	4 10 16	94.8	29.1	CL	@50'- Sandy CLAY: olive gray, wet, very stiff	AL -#200
	55							Total Depth = 50' Groundwater Encountered at Approximately 14' Backfilled with Cuttings on 2/28/2022	
	60								

	<p>THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.</p>	<p>SAMPLE TYPES: B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE</p> <p> GROUNDWATER TABLE</p>	<p>TEST TYPES: DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE -#200 % PASSING # 200 SIEVE</p>
---	--	--	--

Geotechnical Boring Log Borehole HS-2

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0	B-1						@0'- Silty SAND: dark brown, slightly moist; rootlets	
65	5	R-1		6 8 10	94.8	1.8	SP-SM	@5'- SAND with Silt: brown, dry, medium dense	
		R-2		10 15 19	116.6	10.9		@7'- SAND with Silt: brown, moist, medium dense	
60	10	R-3		9 13 13	100.2	3.2	SP	@10'- SAND: grayish brown, slight moist, medium dense	
55	15	SPT-1		3 5 5		21.1	SW-SM	@15'- SAND with Silt: grayish brown, wet, medium dense	AL -#200
50	20	R-4		20 32 40	111.2	18.4	SM	@20'- Silty SAND: gray, wet, very dense	
								Total Depth = 20' Groundwater Encountered at Approximately 14' Backfilled with Cuttings on 2/28/2022	
45	25								
	30								



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES: B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE GROUNDWATER TABLE	TEST TYPES: DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE -#200 % PASSING # 200 SIEVE
--	---

Geotechnical Boring Log Borehole I-1

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0							@0'- Silty SAND: olive brown, moist	
65	5							Total Depth = 5' Groundwater Not Encountered 3" Perforated Pipe with Filter Sock Installed, Surrounded by Gravel, and Presoaked on 2/28/2022. Pipe Removed and Boring Backfilled with Cuttings on 3/1/2022	
60	10								
55	15								
50	20								
45	25								
30									



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES:
 B BULK SAMPLE
 R RING SAMPLE (CA Modified Sampler)
 G GRAB SAMPLE
 SPT STANDARD PENETRATION TEST SAMPLE

GROUNDWATER TABLE

TEST TYPES:
 DS DIRECT SHEAR
 MD MAXIMUM DENSITY
 SA SIEVE ANALYSIS
 S&H SIEVE AND HYDROMETER
 EI EXPANSION INDEX
 CN CONSOLIDATION
 CR CORROSION
 AL ATTERBERG LIMITS
 CO COLLAPSE/SWELL
 RV R-VALUE
 #200 % PASSING # 200 SIEVE

Geotechnical Boring Log Borehole I-2

Date: 2/28/2022	Drilling Company: 2R Drilling
Project Name: PLC - Garden Grove	Type of Rig: CME Truck Rig
Project Number: 22030-01	Drop: 30" Hole Diameter: 8"
Elevation of Top of Hole: ~76' MSL	Drive Weight: 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	Logged By CMP Sampled By CMP Checked By KTM DESCRIPTION	Type of Test
	0							@0'- Silty SAND: olive brown, moist	
65	5							Total Depth = 5' Groundwater Not Encountered 3" Perforated Pipe with Filter Sock Installed, Surrounded by Gravel, and Presoaked on 2/28/2022. Pipe removed and boring backfilled with Cuttings on 3/1/2022.	
60	10								
55	15								
50	20								
45	25								
30									

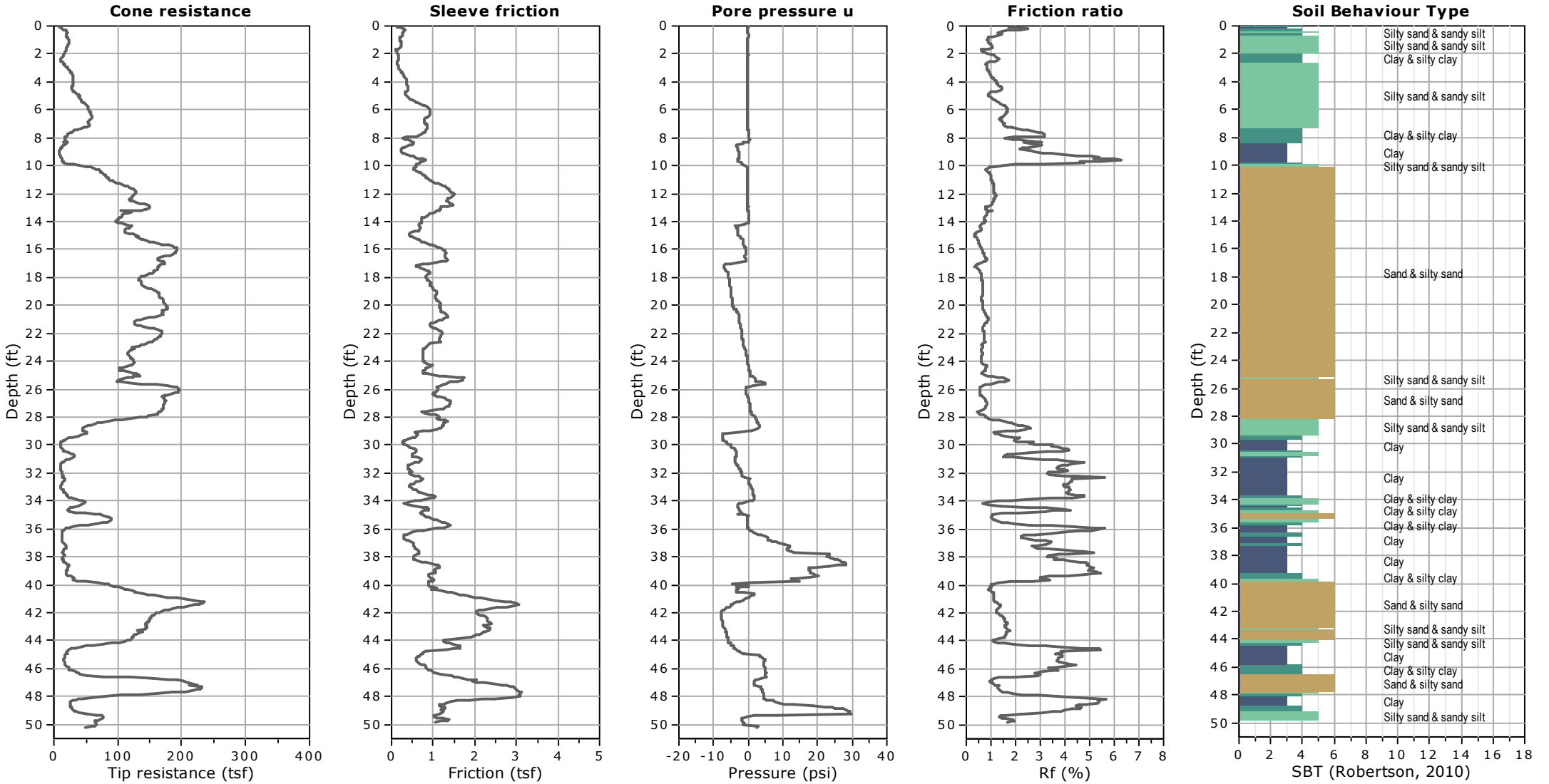


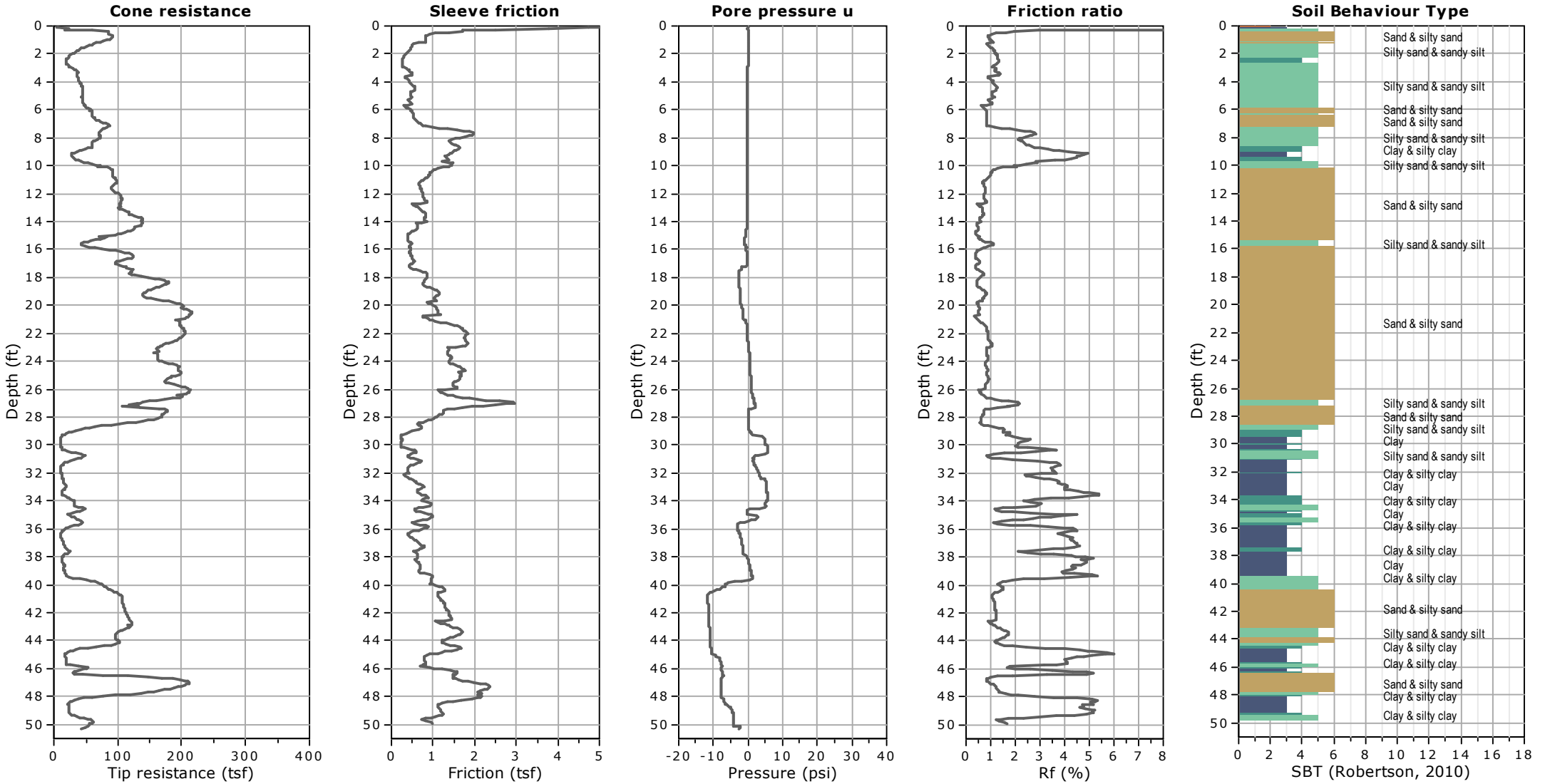
THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

- | | |
|--|--|
| SAMPLE TYPES:
B BULK SAMPLE
R RING SAMPLE (CA Modified Sampler)
G GRAB SAMPLE
SPT STANDARD PENETRATION TEST SAMPLE

GROUNDWATER TABLE | TEST TYPES:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
SA SIEVE ANALYSIS
S&H SIEVE AND HYDROMETER
EI EXPANSION INDEX
CN CONSOLIDATION
CR CORROSION
AL ATTERBERG LIMITS
CO COLLAPSE/SWELL
RV R-VALUE
#200 % PASSING # 200 SIEVE |
|--|--|

Last Edited: 4/22/2022





LGC Geotechnical
 9071 Lampson Ave
 Garden Grove, CA

CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-1	5.02	4.02	4.49	9.40	478	
	10.04	9.04	9.26	16.12	574	710
	15.06	14.06	14.20	25.36	560	535
	20.31	19.31	19.41	33.60	578	632
	25.07	24.07	24.15	40.56	595	681
	30.02	29.02	29.09	50.40	577	502
	35.04	34.04	34.10	58.12	587	649
	40.50	39.50	39.55	66.78	592	630
	45.01	44.01	44.06	72.80	605	748
	50.03	49.03	49.07	79.64	616	733
CPT-2	5.02	4.02	4.49	8.24	545	
	10.04	9.04	9.26	16.68	555	565
	15.03	14.03	14.17	25.90	547	533
	20.05	19.05	19.15	32.76	585	726
	25.03	24.03	24.11	41.02	588	600
	30.02	29.02	29.09	49.24	591	605
	35.01	34.01	34.07	58.24	585	553
	39.99	38.99	39.04	65.68	594	668
	45.05	44.05	44.10	72.24	610	770
	50.07	49.07	49.11	79.20	620	721

Shear Wave Source Offset - 2 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
 Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

Appendix C
Laboratory Test Results

APPENDIX C

Laboratory Test Results

The laboratory testing program was directed towards providing quantitative data relating to the relevant engineering properties of the soils. Samples considered representative of site conditions were tested in general accordance with American Society for Testing and Materials (ASTM) procedure and/or California Test Methods (CTM), where applicable. The following summary is a brief outline of the test type and a table summarizing the test results.

Moisture and Density Determination Tests: Moisture content (ASTM D2216) and dry density determinations (ASTM D2937) were performed on driven samples obtained from the test borings. The results of these tests are presented in the boring logs. Where applicable, only moisture content was determined from SPT or disturbed samples.

Expansion Index: The expansion potential of selected samples was evaluated by the Expansion Index Test, Standard ASTM D4829. Specimens are molded under a given compactive energy to approximately the optimum moisture content and approximately 50 percent saturation or approximately 90 percent relative compaction. The prepared 1-inch-thick by 4-inch-diameter specimens are loaded to an equivalent 144 psf surcharge and are inundated with tap water until volumetric equilibrium is reached. The results of these tests are presented in the table below.

Sample Location	Expansion Index	Expansion Potential*
HS-1 @ 1-3 feet	1	Very Low

* ASTM D4829

Atterberg Limits: The liquid and plastic limits (“Atterberg Limits”) were determined per ASTM D4318 for engineering classification of fine-grained material and presented in the table below. The USCS soil classification indicated in the table below is based on the portion of sample passing the No. 40 sieve and may not necessarily be representative of the entire sample. The plots are provided in this Appendix.

Sample Location	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	USCS Soil Classification
HS-1 @ 15 ft	NP	NP	NP	NP
HS-1 @ 30 ft	19	13	6	CL-ML
HS-1 @ 35 ft	24	14	10	CL
HS-1 @ 50 ft	27	17	10	CL

APPENDIX C (Cont'd)

Laboratory Test Results

Grain Size Distribution/Fines Content: Representative samples were dried, weighed, and soaked in water until individual soil particles were separated (per ASTM D421) and then washed on a No. 200 sieve (ASTM D1140). Where applicable, the portion retained on the No. 200 sieve was dried and then sieved on a U.S. Standard brass sieve set in accordance with ASTM D6913 (sieve) or ASTM D422 (sieve and hydrometer).

Sample Location	Description	% Passing # 200 Sieve
HS-1 @ 30 ft	Gray Silty, Clayey Sand	13.1
HS-1 @ 35 ft	Gray Clayey Sand	46.2
HS-1 @ 50 ft	Olive Gray Sandy Lean Clay	63.1
HS-2 @ 15 ft	Grayish Brown Well-Graded Sand with Silt	4.9

Laboratory Compaction: The maximum dry density and optimum moisture content of typical materials were determined in accordance with ASTM D1557. The results are presented in the table below.

Sample Location	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
HS-1 @ 1-3 ft	Brownish Yellow Sand with Silt	111.5	8.0

Soluble Sulfates: The soluble sulfate contents of selected samples were determined by standard geochemical methods (CTM 417). The test results are presented in the table below.

Sample Location	Sulfate Content (ppm)	Sulfate Content (%)
HS-1 @ 1-3 ft	123	0.0123

Chloride Content: Chloride content was tested per CTM 422. The results are presented below.

Sample Location	Chloride Content (ppm)
HS-1 @ 1-3 ft	240

APPENDIX C (Cont'd)

Laboratory Test Results

Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed in general accordance with CTM 643 and standard geochemical methods. The results are presented in the table below.

Sample Location	pH	Minimum Resistivity (ohms-cm)
HS-1 @ 1-3 ft	7.91	2770

**TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS**

Project Name: Lampson - Garden Grove Tested By : GEB/JD Date: 03/11/22
 Project No. : 22030-01 Checked By: J. Ward Date: 03/29/22

Boring No.	HS-1			
Sample No.	B-1			
Sample Depth (ft)	1-3			
Soil Identification:	Brownish yellow SP-SM			
Wet Weight of Soil + Container (g)	0.00			
Dry Weight of Soil + Container (g)	0.00			
Weight of Container (g)	1.00			
Moisture Content (%)	0.00			
Weight of Soaked Soil (g)	100.53			

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	305			
Crucible No.	9			
Furnace Temperature (°C)	860			
Time In / Time Out	7:45/8:30			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	22.4942			
Wt. of Crucible (g)	22.4912			
Wt. of Residue (g) (A)	0.0030			
PPM of Sulfate (A) x 41150	123.45			
PPM of Sulfate, Dry Weight Basis	123			

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	15			
ml of AgNO ₃ Soln. Used in Titration (C)	1.4			
PPM of Chloride (C -0.2) * 100 * 30 / B	240			
PPM of Chloride, Dry Wt. Basis	240			

pH TEST, DOT California Test 643

pH Value	7.91			
Temperature °C	21.8			

SOIL RESISTIVITY TEST

DOT CA TEST 643

Project Name: Lampson - Garden Grove
 Project No. : 22030-01
 Boring No.: HS-1
 Sample No. : B-1

Tested By : G. Berdy Date: 03/14/22
 Checked By: J. Ward Date: 03/29/22
 Depth (ft.) : 1-3

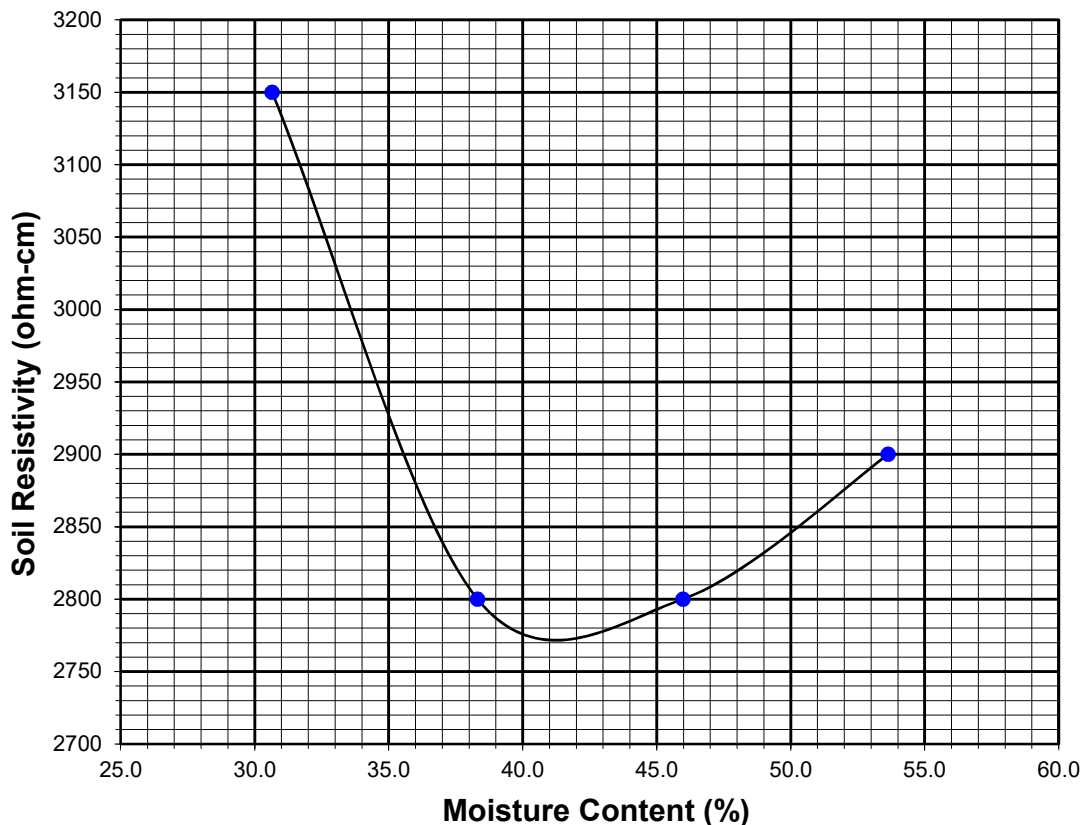
Soil Identification:* Brownish yellow SP-SM

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	40	30.65	3150	3150
2	50	38.31	2800	2800
3	60	45.98	2800	2800
4	70	53.64	2900	2900
5				

Moisture Content (%) (Mci)	0.00
Wet Wt. of Soil + Cont. (g)	0.00
Dry Wt. of Soil + Cont. (g)	0.00
Wt. of Container (g)	1.00
Container No.	
Initial Soil Wt. (g) (Wt)	130.50
Box Constant	1.000
$MC = (((1 + Mci / 100) \times (Wa / Wt + 1)) - 1) \times 100$	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II		DOT CA Test 422	
DOT CA Test 643		DOT CA Test 643		DOT CA Test 643	
2770	41.3	123	240	7.91	21.8



MODIFIED PROCTOR COMPACTION TEST

ASTM D 1557

Project Name: Lampson - Garden Grove Tested By: J. Gonzalez Date: 03/10/22
 Project No.: 22030-01 Checked By: J. Ward Date: 03/29/22
 Boring No.: HS-1 Depth (ft.): 1-3
 Sample No.: B-1
 Soil Identification: Brownish yellow poorly-graded sand with silt (SP-SM)

Preparation Method: Moist Mechanical Ram
 Dry Manual Ram
Mold Volume (ft³) 0.03330 *Ram Weight = 10 lb.; Drop = 18 in.*

TEST NO.	1	2	3	4	5	6
Wt. Compacted Soil + Mold (g)	3582	3650	3655			
Weight of Mold (g)	1826	1826	1826			
Net Weight of Soil (g)	1756	1824	1829			
Wet Weight of Soil + Cont. (g)	462.2	482.9	452.7			
Dry Weight of Soil + Cont. (g)	439.4	448.7	412.8			
Weight of Container (g)	39.3	39.2	37.4			
Moisture Content (%)	5.70	8.35	10.63			
Wet Density (pcf)	116.3	120.8	121.1			
Dry Density (pcf)	110.0	111.4	109.5			

Maximum Dry Density (pcf) 111.5 **Optimum Moisture Content (%)** 8.0

PROCEDURE USED

Procedure A
 Soil Passing No. 4 (4.75 mm) Sieve
 Mold : 4 in. (101.6 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 25 (twenty-five)
 May be used if + #4 is 20% or less

Procedure B
 Soil Passing 3/8 in. (9.5 mm) Sieve
 Mold : 4 in. (101.6 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 25 (twenty-five)
 Use if + #4 is >20% and +3/8 in. is 20% or less

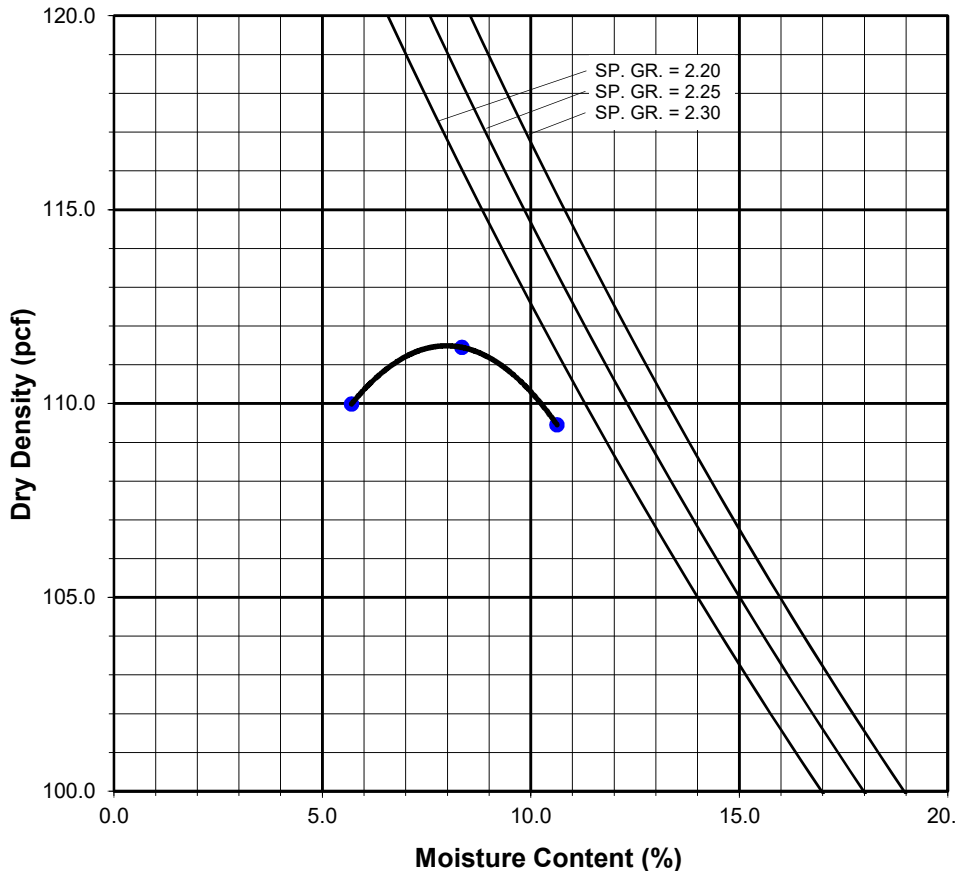
Procedure C
 Soil Passing 3/4 in. (19.0 mm) Sieve
 Mold : 6 in. (152.4 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 56 (fifty-six)
 Use if +3/8 in. is >20% and +3/4 in. is <30%

Particle-Size Distribution:

GR:SA:FI

Atterberg Limits:

LL, PL, PI



ATTERBERG LIMITS ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/10/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-1 Checked By: J. Ward
 Sample No.: R-5 Depth (ft.) 30.0
 Soil Identification: Gray silty, clayey sand (SC-SM)

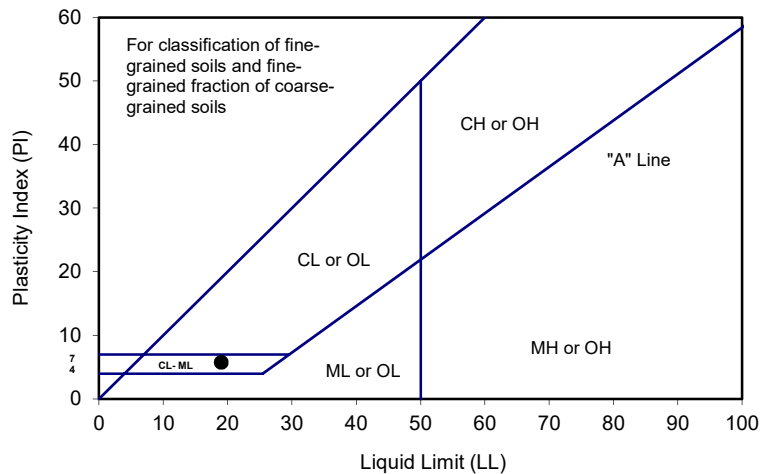
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			29	24	17	
Wet Wt. of Soil + Cont. (g)	10.18	10.15	21.20	20.43	20.71	
Dry Wt. of Soil + Cont. (g)	9.12	9.08	18.06	17.34	17.40	
Wt. of Container (g)	1.03	1.10	1.05	1.16	1.12	
Moisture Content (%) [Wn]	13.10	13.41	18.46	19.10	20.33	

Liquid Limit	19
Plastic Limit	13
Plasticity Index	6
Classification	CL-ML

PI at "A" - Line = $0.73(LL-20)$ -0.73

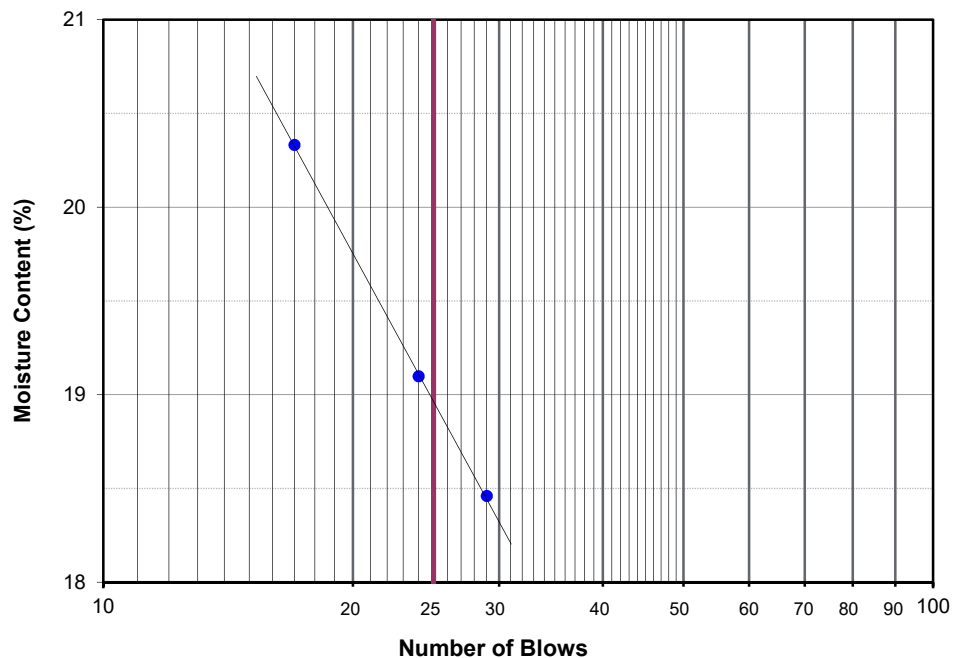
One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$



PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



ATTERBERG LIMITS ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/11/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-1 Checked By: J. Ward
 Sample No.: SP-3 Depth (ft.) 35.0
 Soil Identification: Gray clayey sand (SC)

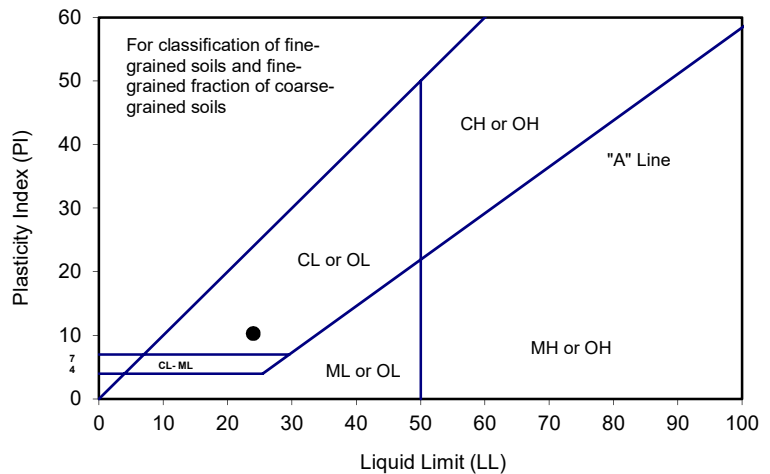
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			30	25	18	
Wet Wt. of Soil + Cont. (g)	10.23	10.15	21.30	20.17	21.89	
Dry Wt. of Soil + Cont. (g)	9.14	9.05	17.53	16.42	17.74	
Wt. of Container (g)	1.13	1.10	1.09	1.08	1.11	
Moisture Content (%) [W _n]	13.61	13.84	22.93	24.45	24.95	

Liquid Limit	24
Plastic Limit	14
Plasticity Index	10
Classification	CL

PI at "A" - Line = $0.73(LL-20)$ 2.92

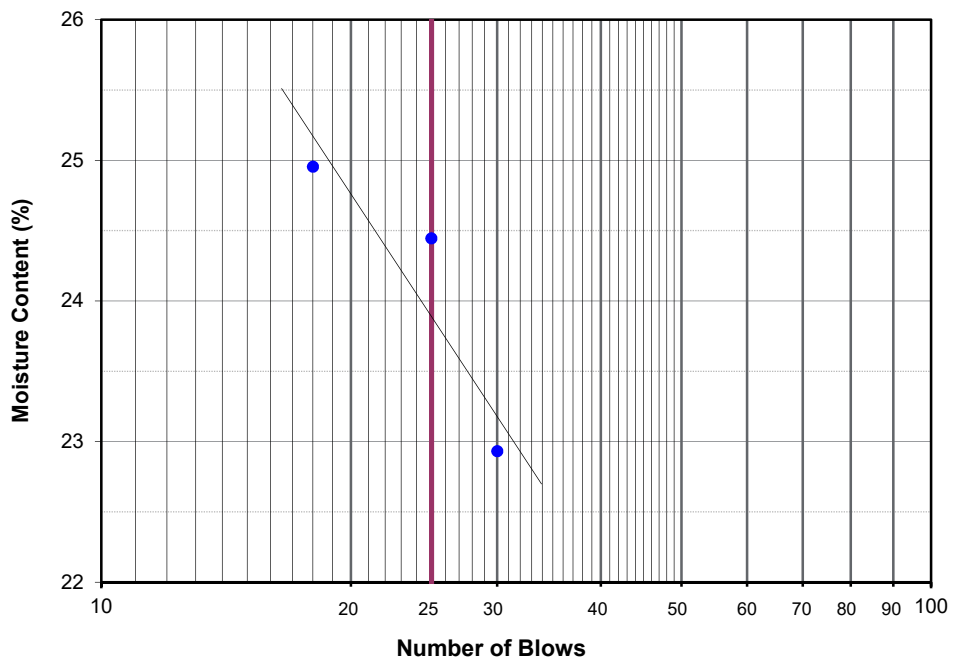
One - Point Liquid Limit Calculation

$$LL = W_n(N/25)^{0.121}$$



PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



ATTERBERG LIMITS ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/11/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-1 Checked By: J. Ward
 Sample No.: R-7 Depth (ft.) 50.0
 Soil Identification: Olive gray sandy lean clay s(CL)

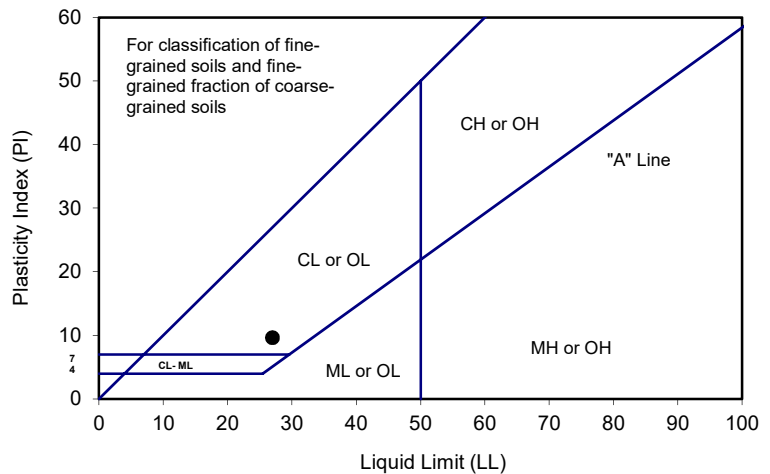
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			27	22	16	
Wet Wt. of Soil + Cont. (g)	10.31	10.32	21.42	21.18	21.58	
Dry Wt. of Soil + Cont. (g)	8.93	8.97	17.17	16.96	17.21	
Wt. of Container (g)	1.07	1.13	1.06	1.10	1.16	
Moisture Content (%) [Wn]	17.56	17.22	26.38	26.61	27.23	

Liquid Limit	27
Plastic Limit	17
Plasticity Index	10
Classification	CL

PI at "A" - Line = $0.73(LL-20)$ 5.11

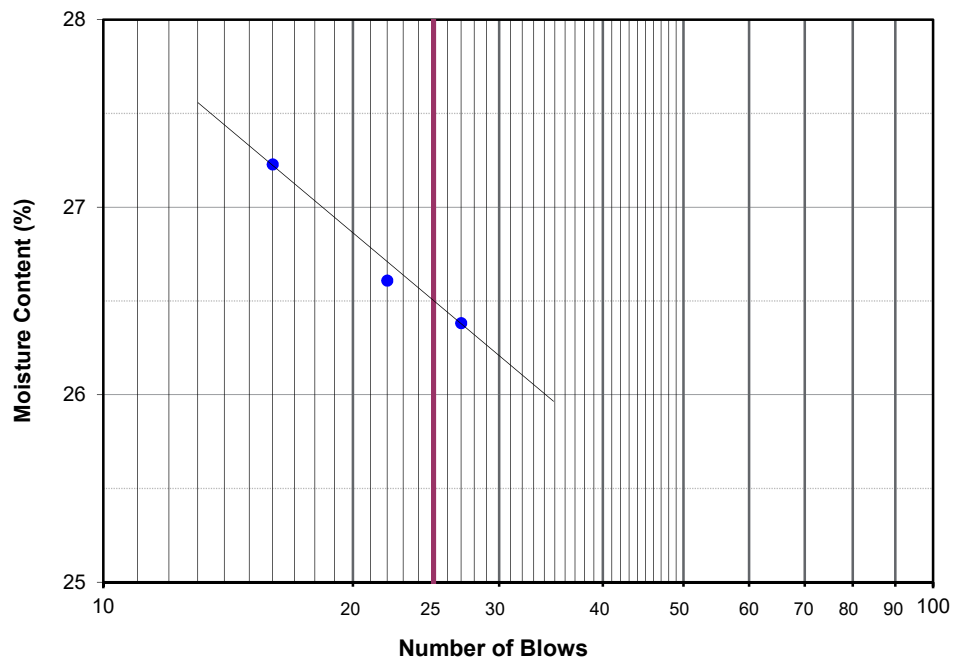
One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$



PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



ATTERBERG LIMITS

ASTM D 4318

Project Name: Lampson - Garden Grove Tested By: S. Felter Date: 03/11/22
 Project No. : 22030-01 Input By: G. Bathala Date: 03/16/22
 Boring No.: HS-2 Checked By: J. Ward
 Sample No.: SP-1 Depth (ft.) 15.0
 Soil Identification: Grayish brown well-graded sand with silt (SW-SM)

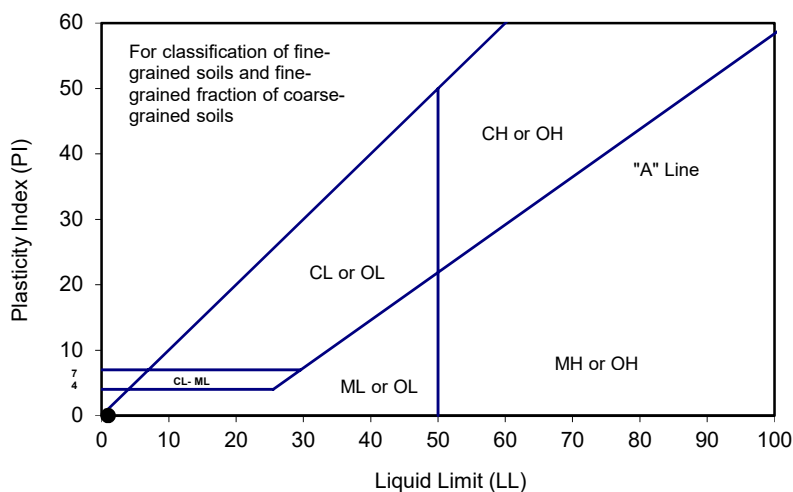
TEST NO.	PLASTIC LIMIT		LIQUID LIMIT			
	1	2	1	2	3	4
Number of Blows [N]			5			
Wet Wt. of Soil + Cont. (g)	Cannot be rolled:		Cannot get more than 5 blows:			
Dry Wt. of Soil + Cont. (g)	NonPlastic		NonPlastic			
Wt. of Container (g)			1.09			
Moisture Content (%) [Wn]			21.36			

Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP
Classification	NP

PI at "A" - Line = $0.73(LL-20)$ =

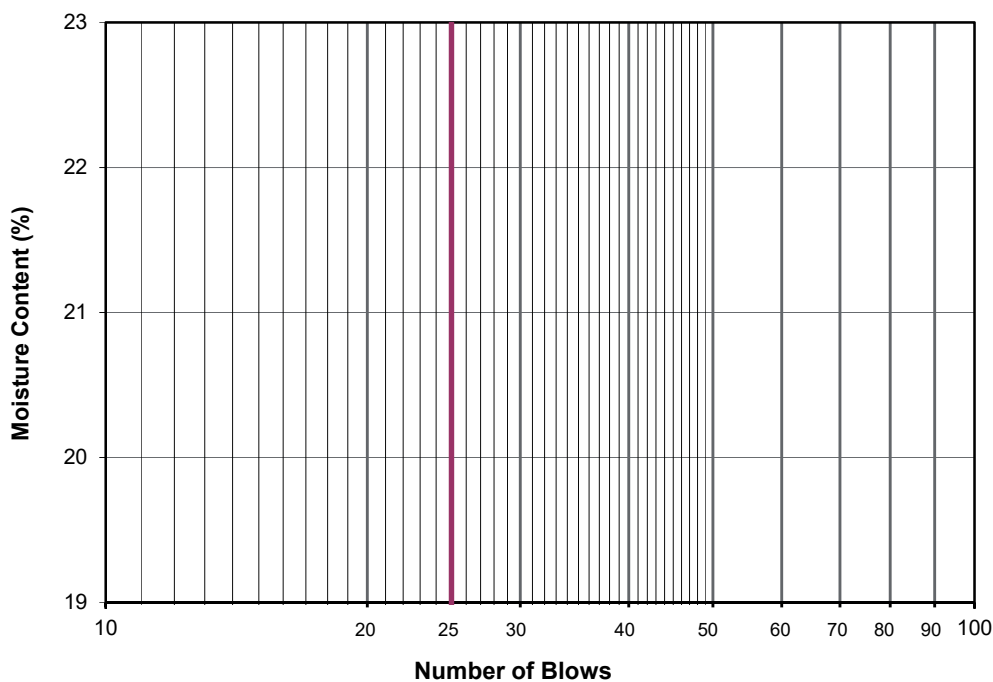
One - Point Liquid Limit Calculation

$$LL = Wn(N/25)^{0.121}$$



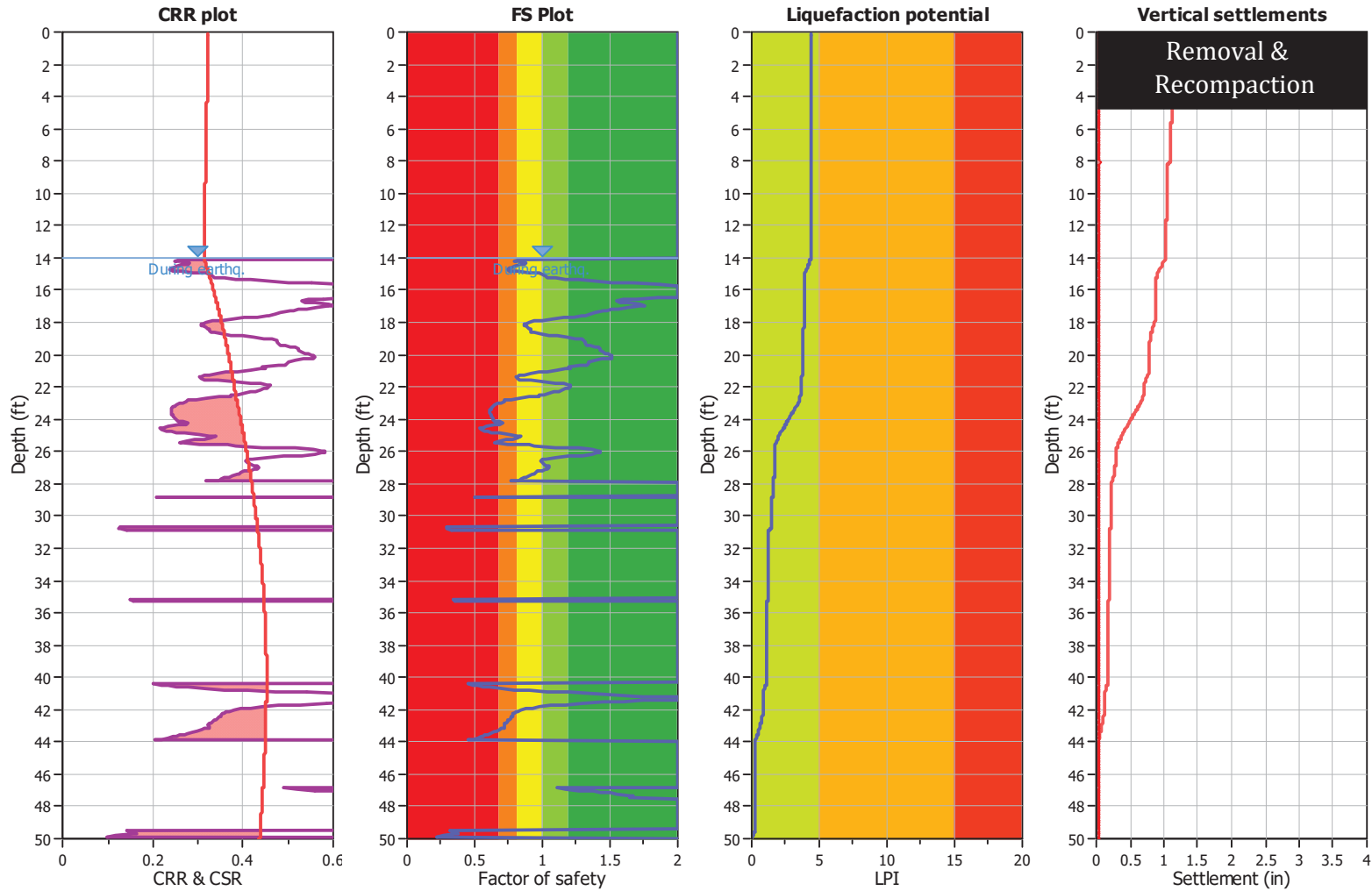
PROCEDURES USED

- Wet Preparation
Multipoint - Wet
- Dry Preparation
Multipoint - Dry
- Procedure A
Multipoint Test
- Procedure B
One-point Test



Appendix D
Liquefaction Analysis

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I _c value	I _c cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

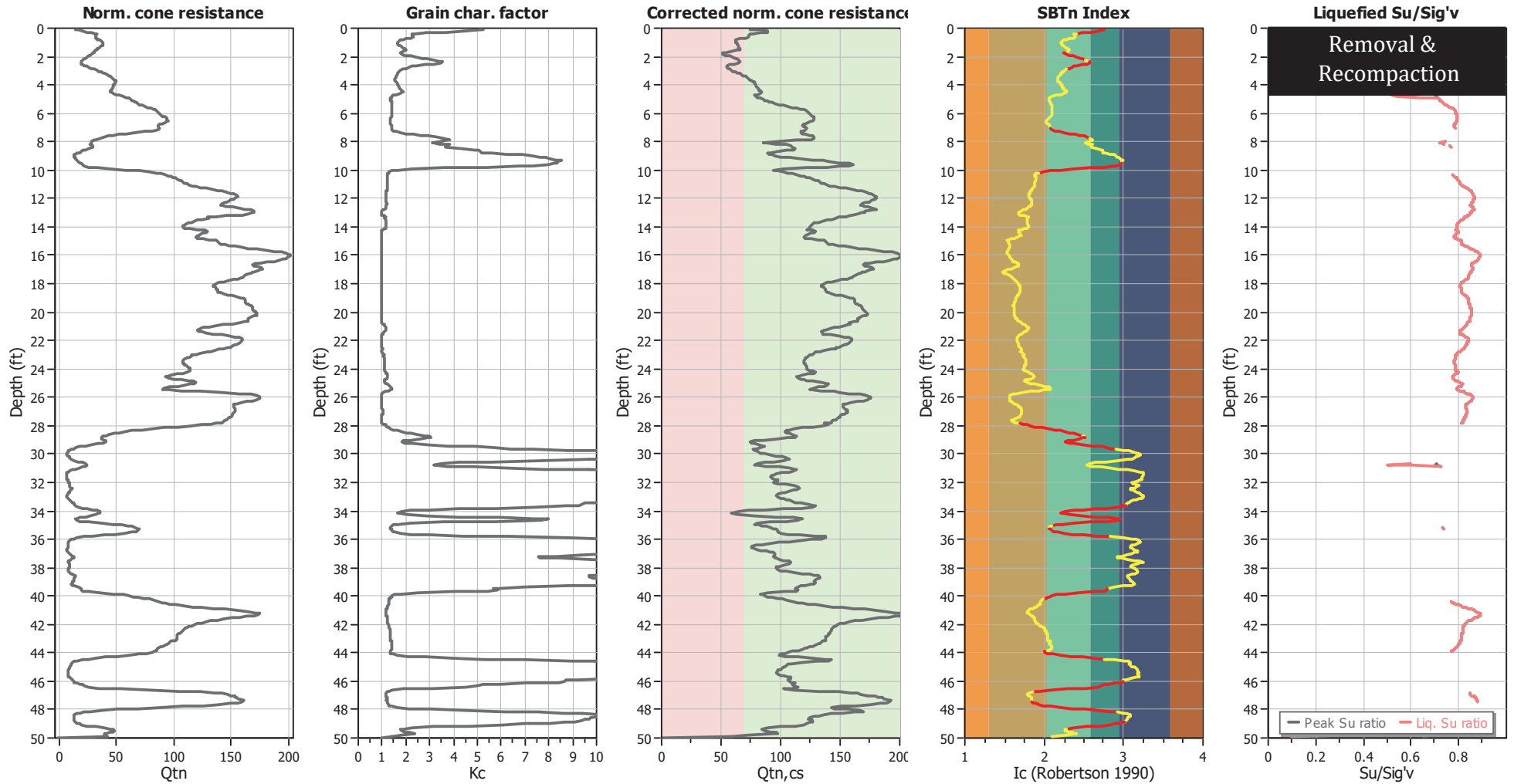
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

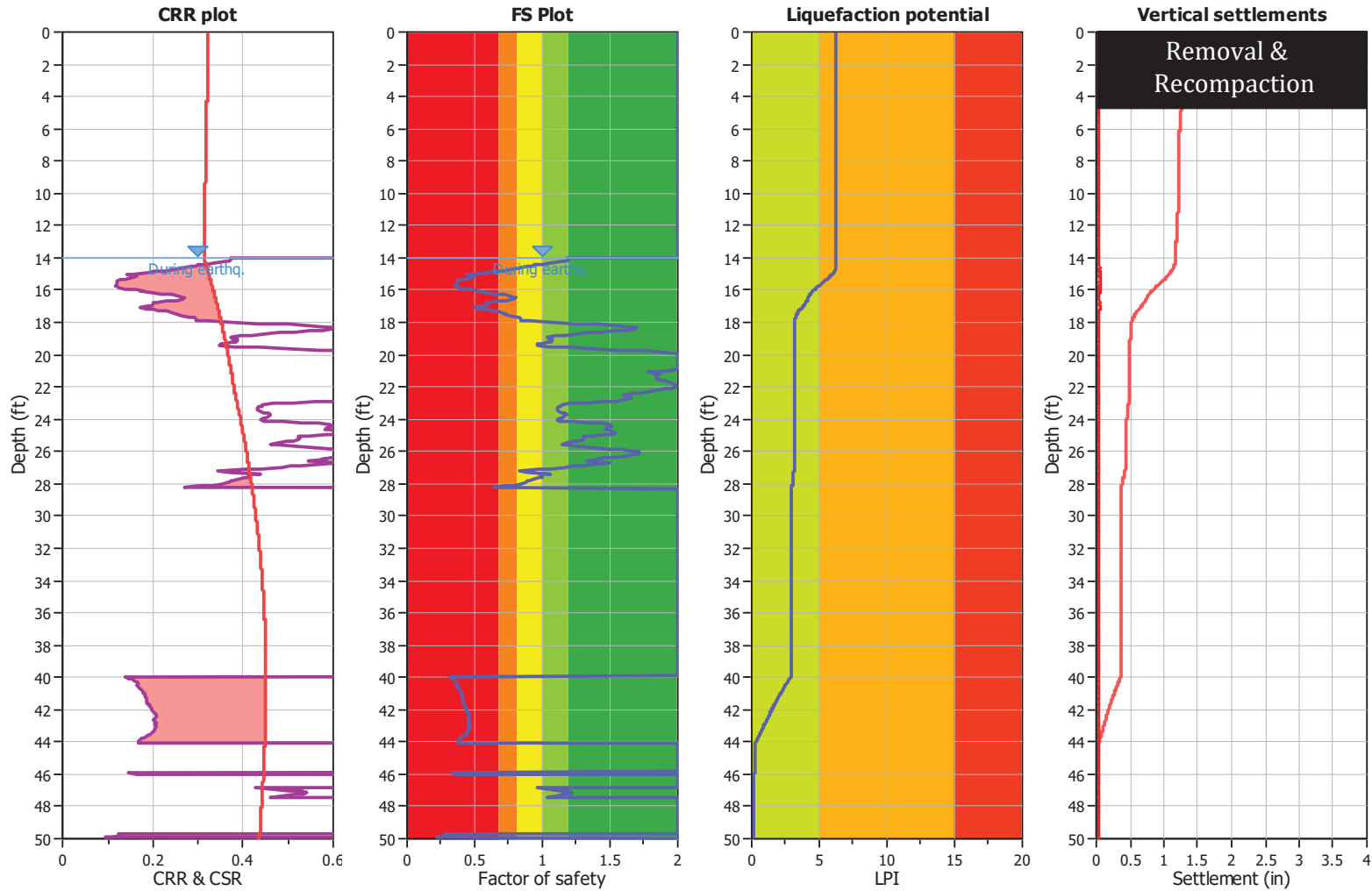
Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_{σ} applied:	Yes
Earthquake magnitude M_w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

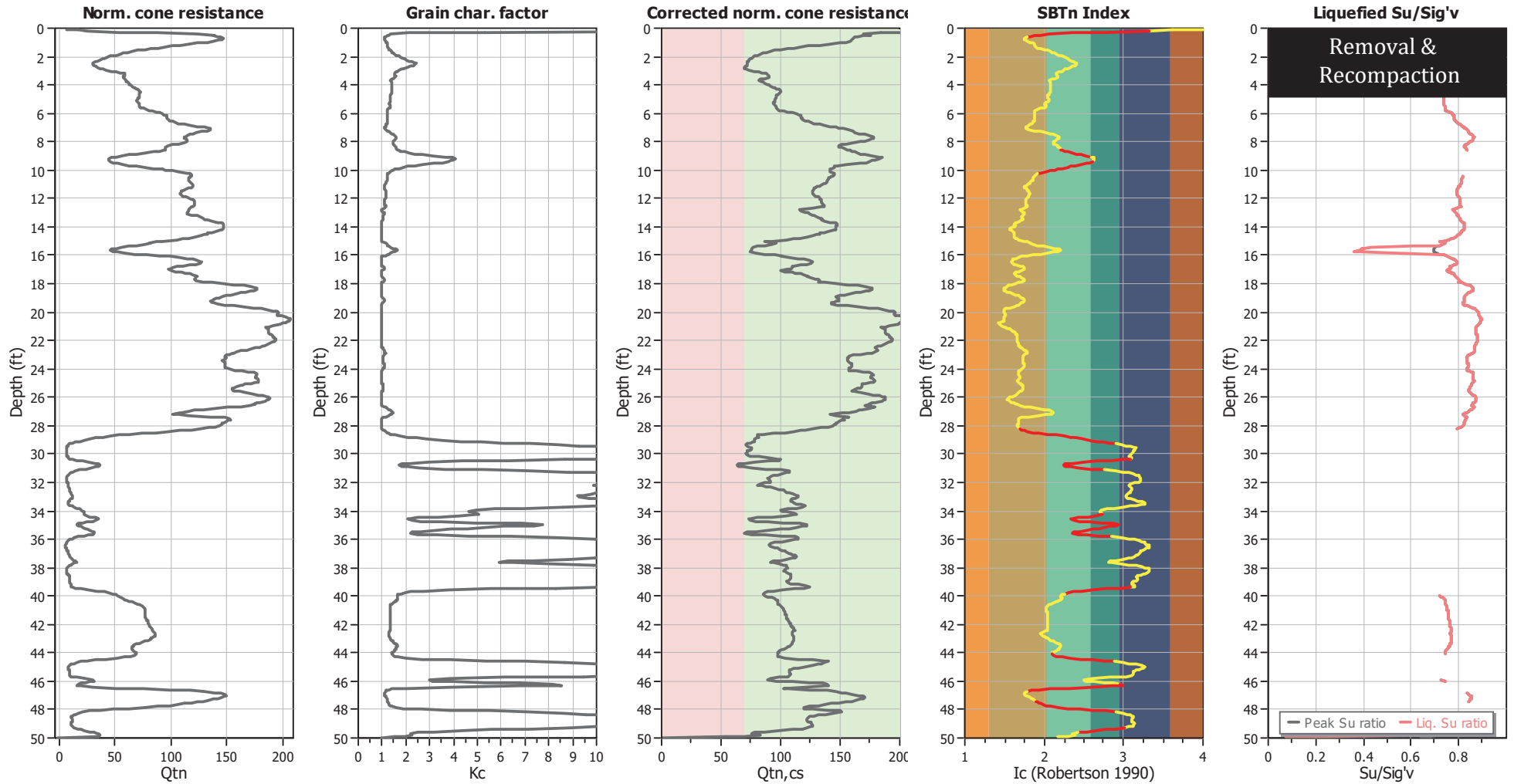
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	14.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.71	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.66	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	14.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Appendix E
Infiltration Test Data

Infiltration Test Data Sheet

LGC Geotechnical, Inc

131 Calle Iglesia Suite 200, San Clemente, CA 92672 tel. (949) 369-6141

Project Name: Lampson - Garden Grove
Project Number: 22030-01
Date: 3/1/2022
Boring Number: I-1

Test hole dimensions (if circular)

Boring Depth (feet)*: 5
 Boring Diameter (inches): 8
 Pipe Diameter (inches): 3

*measured at time of test

Test pit dimensions (if rectangular)

Pit Depth (feet): _____
 Pit Length (feet): _____
 Pit Breadth (feet): _____

Pre-Test (Sandy Soil Criteria)*

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval (min)	Initial Depth to Water (feet)	Final Depth to Water (feet)	Total Change in Water Level (feet)	Greater Than or Equal to 0.5 feet (yes/no)
1	8:35	8:38	3.0	1.60	2.25	0.65	yes
2	8:40	8:43	3.0	1.5	2.05	0.55	yes

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight, and then obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25 inches

Main Test Data

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval, Δt (min)	Initial Depth to Water, D_o (feet)	Final Depth to Water, D_f (feet)	Change in Water Level, ΔD (feet)	Observed Infiltration Rate (in/hr)
1	8:47	8:57	10.0	0.8	2.8	2	7.1
2	9:00	9:10	10.0	0.75	2.7	1.95	6.8
3	9:12	9:22	10.0	0.8	2.65	1.85	6.5
4	9:24	9:34	10.0	0.75	2.5	1.75	5.9
5	9:36	9:46	10.0	0.8	2.5	1.7	5.8
6	9:48	9:58	10.0	0.75	2.5	1.75	5.9
7							
8							
9							
10							
11							
12							
Observed Infiltration Rate (Does Not Include Any Factor of Safety)							5.9

Sketch:

Notes:



Infiltration Test Data Sheet

LGC Geotechnical, Inc

131 Calle Iglesia Suite 200, San Clemente, CA 92672 tel. (949) 369-6141

Project Name: Lampson - Garden Grove
Project Number: 22030-01
Date: 3/1/2022
Boring Number: I-2

Test hole dimensions (if circular)	
Boring Depth (feet)*:	5
Boring Diameter (inches):	8
Pipe Diameter (inches):	3

*measured at time of test

Test pit dimensions (if rectangular)	
Pit Depth (feet):	_____
Pit Length (feet):	_____
Pit Breadth (feet):	_____

Pre-Test (Sandy Soil Criteria)*

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval (min)	Initial Depth to Water (feet)	Final Depth to Water (feet)	Total Change in Water Level (feet)	Greater Than or Equal to 0.5 feet (yes/no)
1	10:05	10:09	4.0	0.75	1.85	1.1	yes
2	10:10	10:14	4.0	0.75	1.75	1	yes

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight, and then obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25 inches

Main Test Data

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval, Δt (min)	Initial Depth to Water, D_o (feet)	Final Depth to Water, D_f (feet)	Change in Water Level, ΔD (feet)	Observed Infiltration Rate (in/hr)
1	10:16	10:26	10.0	0.7	2.55	1.85	6.3
2	10:29	10:39	10.0	0.7	2.55	1.85	6.3
3	10:41	10:51	10.0	0.7	2.6	1.9	6.5
4	10:54	11:04	10.0	0.8	2.45	1.65	5.6
5	11:06	11:16	10.0	0.95	2.6	1.65	5.8
6	11:19	11:29	10.0	0.75	2.45	1.7	5.7
7							
8							
9							
10							
11							
12							
Observed Infiltration Rate (Does Not Include Any Factor of Safety)							5.7

Sketch:

Notes:



Appendix F
General Earthwork and Grading Specifications
for Rough Grading

General Earthwork and Grading Specifications for Rough Grading

1.0 General

1.1 Intent

These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 The Geotechnical Consultant of Record

Prior to commencement of work, the owner shall employ a qualified Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to confirm that the attained level of compaction is being accomplished as specified. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

1.3 The Earthwork Contractor

The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the project plans and specifications. The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "equipment" of work and the estimated quantities of daily earthwork

contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate personnel will be available for observation and testing. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified. It is the contractor's sole responsibility to provide proper fill compaction.

2.0 Preparation of Areas to be Filled

2.1 Clearing and Grubbing

Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed. The contractor is responsible for all hazardous waste relating to his work. The Geotechnical Consultant does not have expertise in this area. If hazardous waste is a concern, then the Client should acquire the services of a qualified environmental assessor.

2.2 Processing

Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be over-excavated as specified in the following section. Scarification shall continue until soils are broken down and free of oversize material and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

2.3 Over-excavation

In addition to removals and over-excavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be over-excavated to competent ground as evaluated by the Geotechnical Consultant during grading.

2.4 Benching

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. Please see the Standard Details for a graphic illustration. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise over-excavated to provide a flat subgrade for the fill.

2.5 Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

3.0 Fill Material

3.1 General

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 Oversize

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

3.3 Import

If importing of fill material is required for grading, proposed import material shall meet the requirements of the geotechnical consultant. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

4.0 Fill Placement and Compaction

4.1 Fill Layers

Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 Fill Moisture Conditioning

Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557).

4.3 Compaction of Fill

After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

4.4 Compaction of Fill Slopes

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

4.5 Compaction Testing

Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.6 Frequency of Compaction Testing

Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.7 Compaction Test Locations

The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided.

5.0 Subdrain Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and the Standard Details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

6.0 Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 Trench Backfills

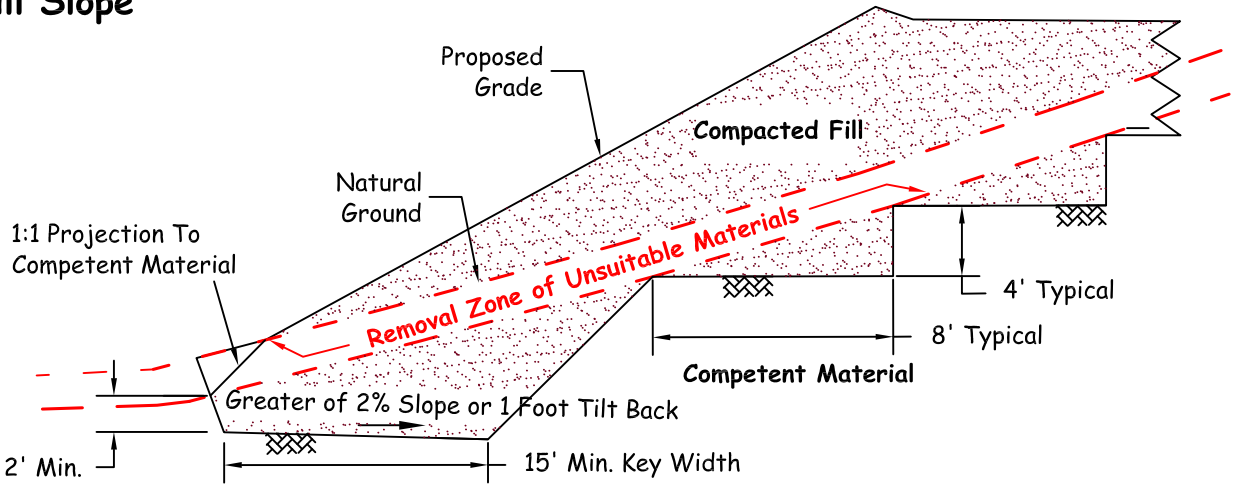
7.1 The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations.

7.2 All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over

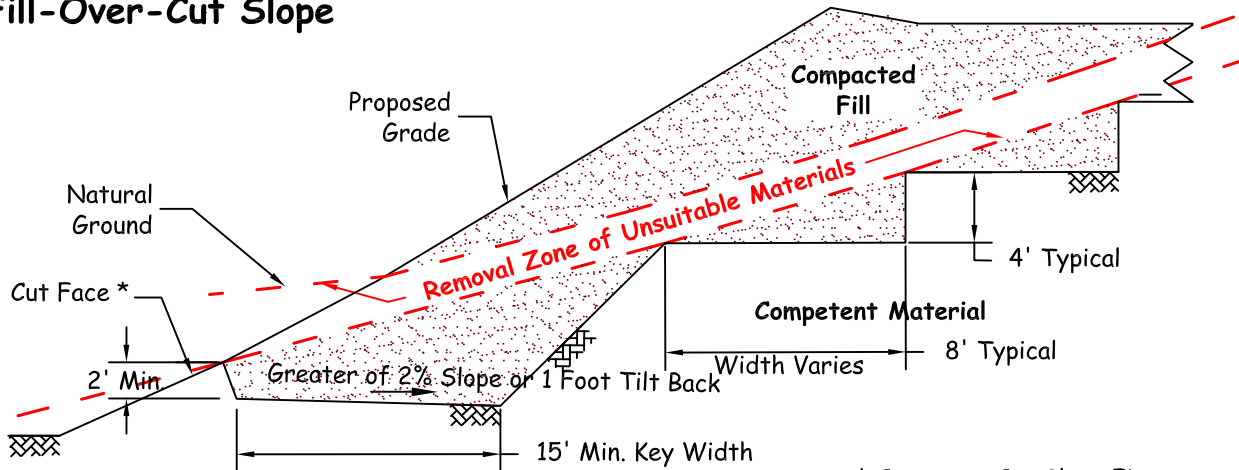
the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 90 percent of maximum from 1 foot above the top of the conduit to the surface.

- 7.3 The jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.
- 7.4 The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.
- 7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

Fill Slope

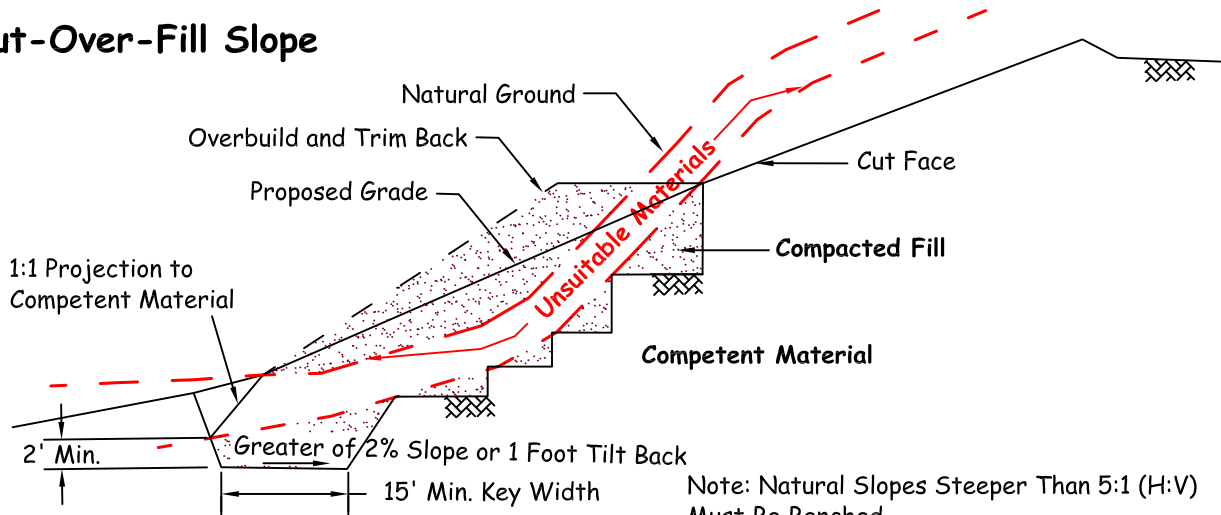


Fill-Over-Cut Slope



* Construct Cut Slope First

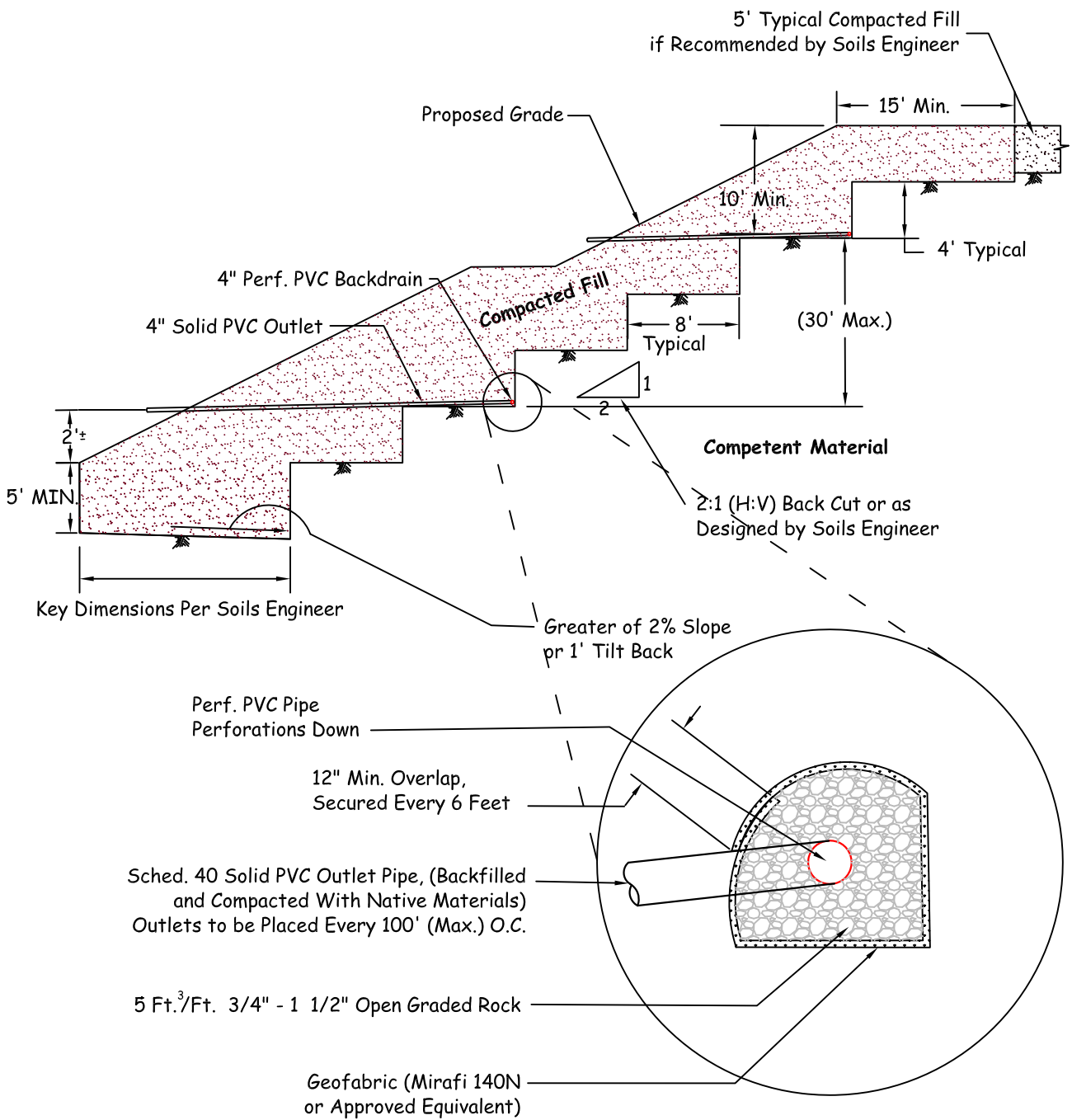
Cut-Over-Fill Slope



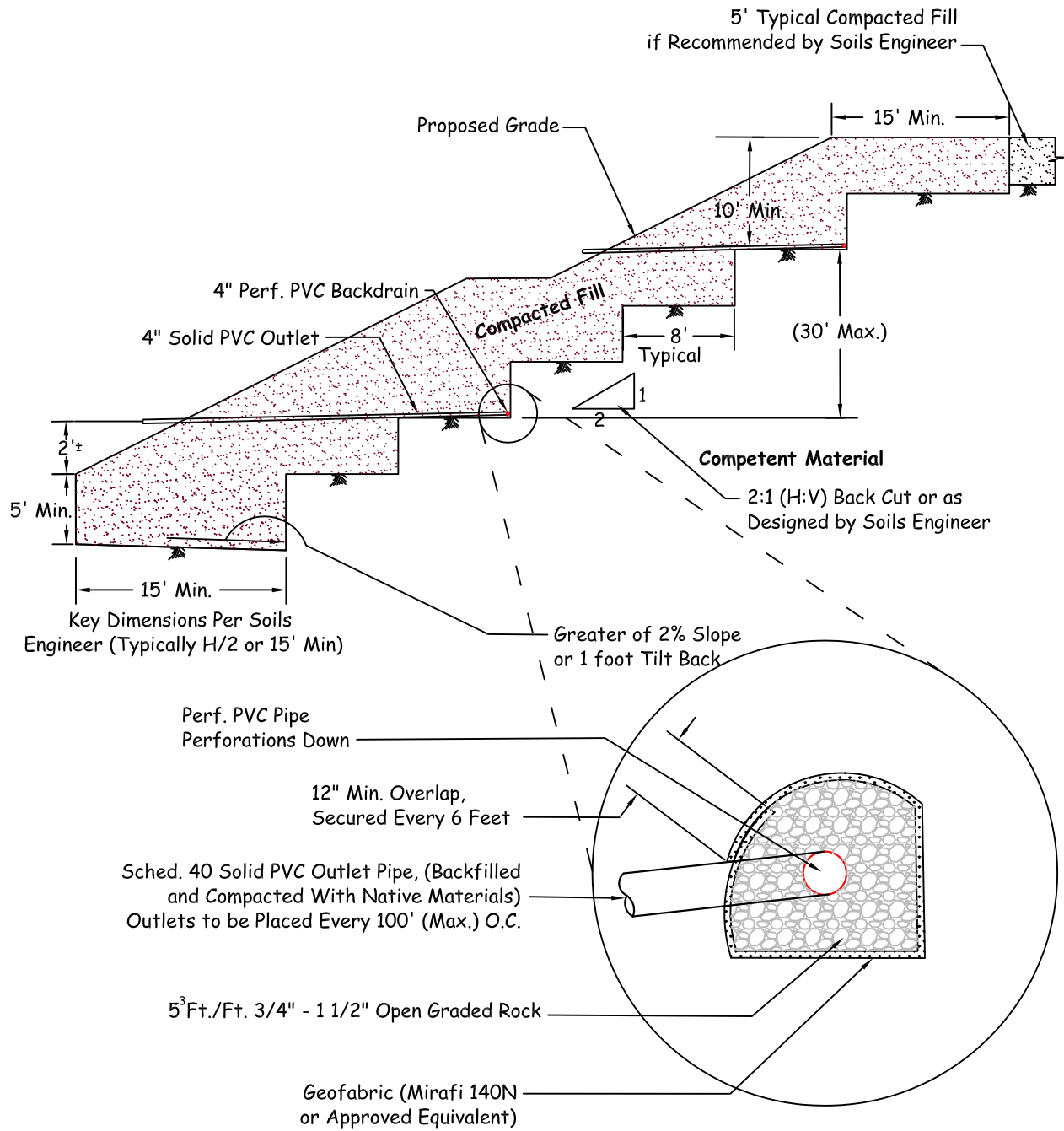
Note: Natural Slopes Steeper Than 5:1 (H:V) Must Be Benched.



KEYING AND BENCHING

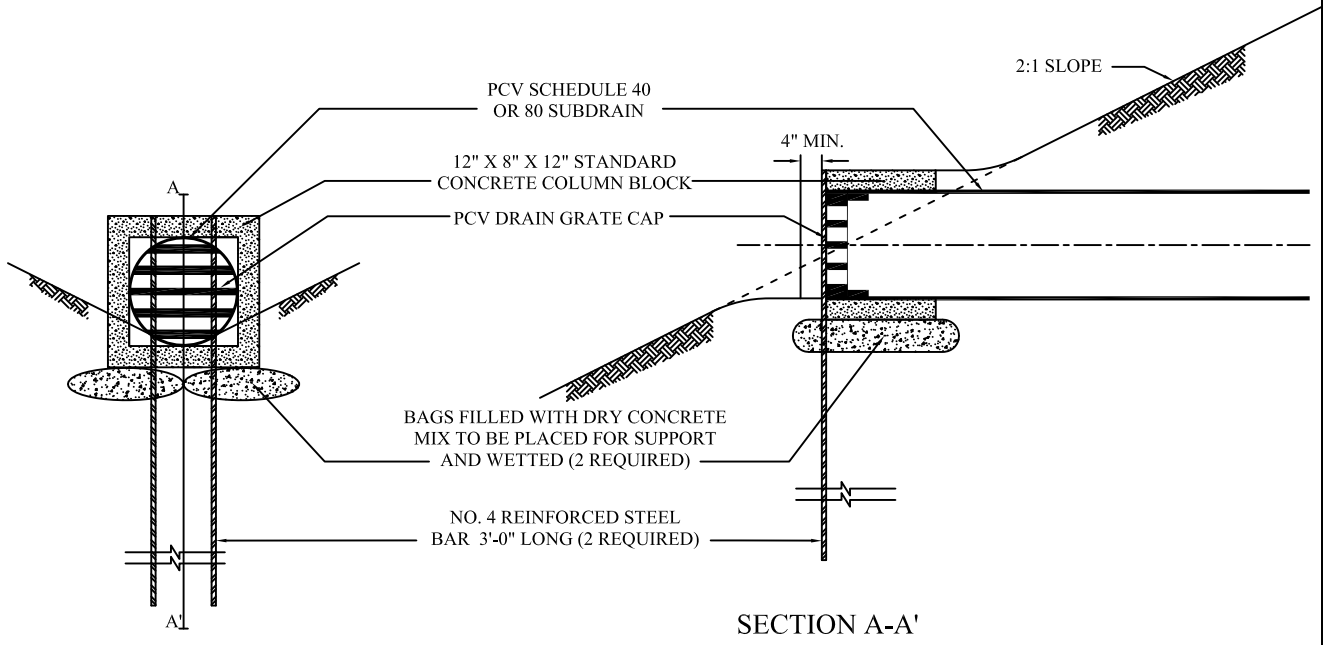


TYPICAL BUTTRESS DETAIL

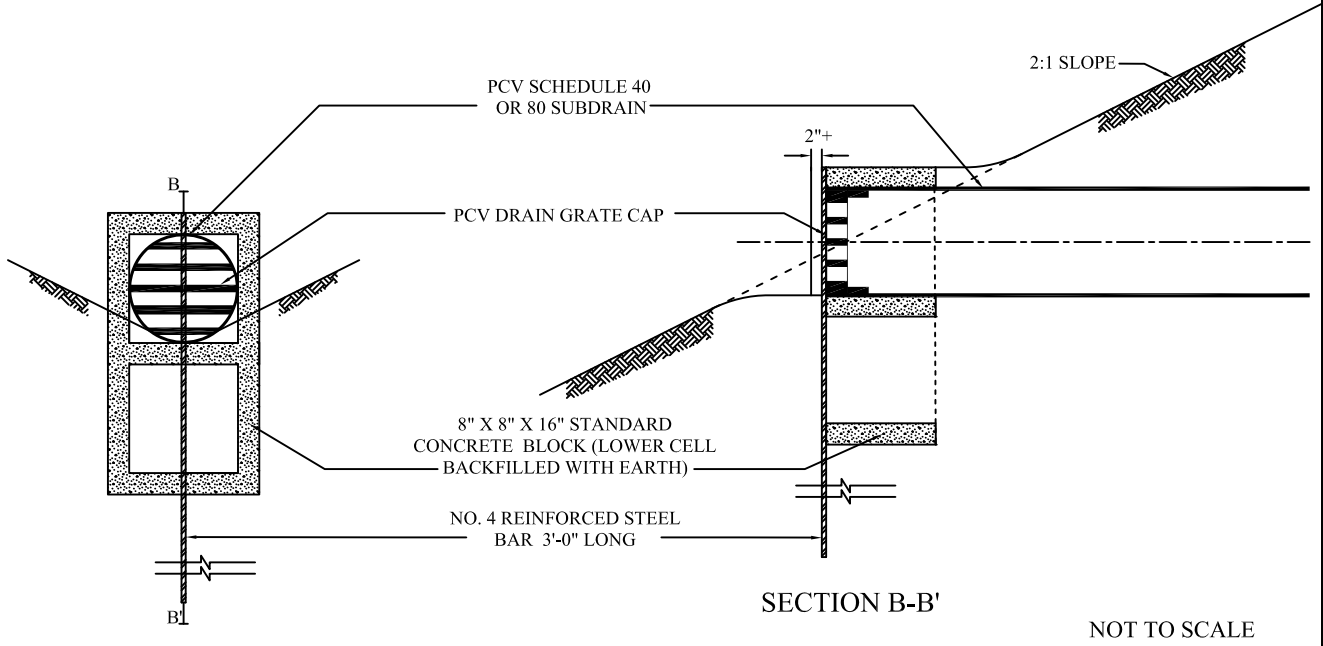


TYPICAL STABILIZATION FILL DETAIL

SUBDRAIN OUTLET MARKER -6" & 8" PIPE

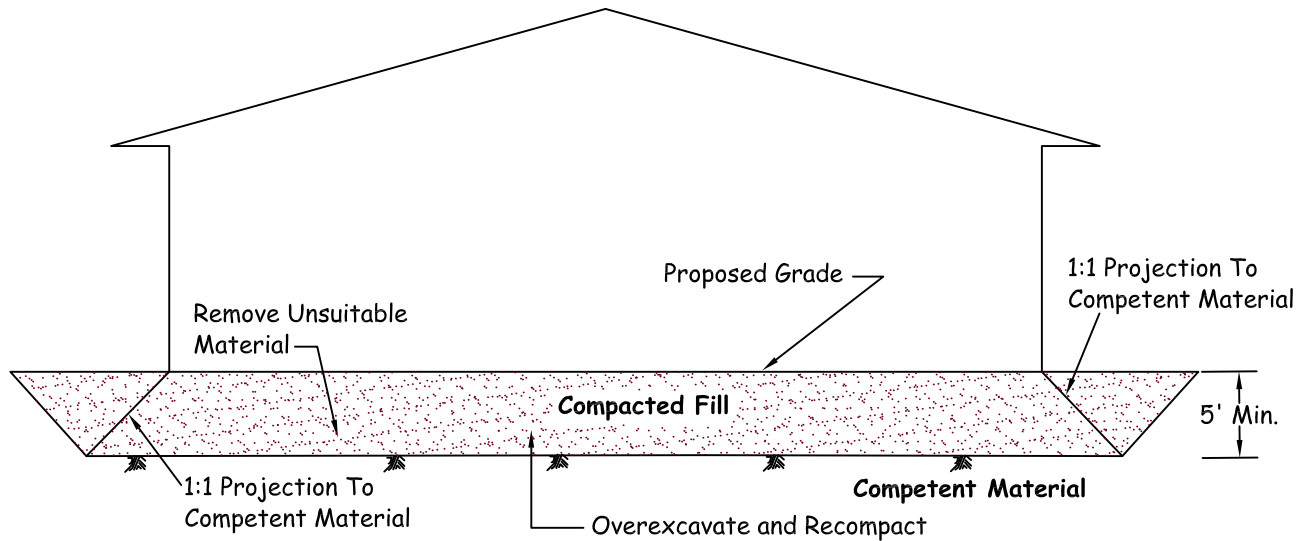


SUBDRAIN OUTLET MARKER -4" PIPE



**SUBDRAIN OUTLET
MARKER DETAIL**

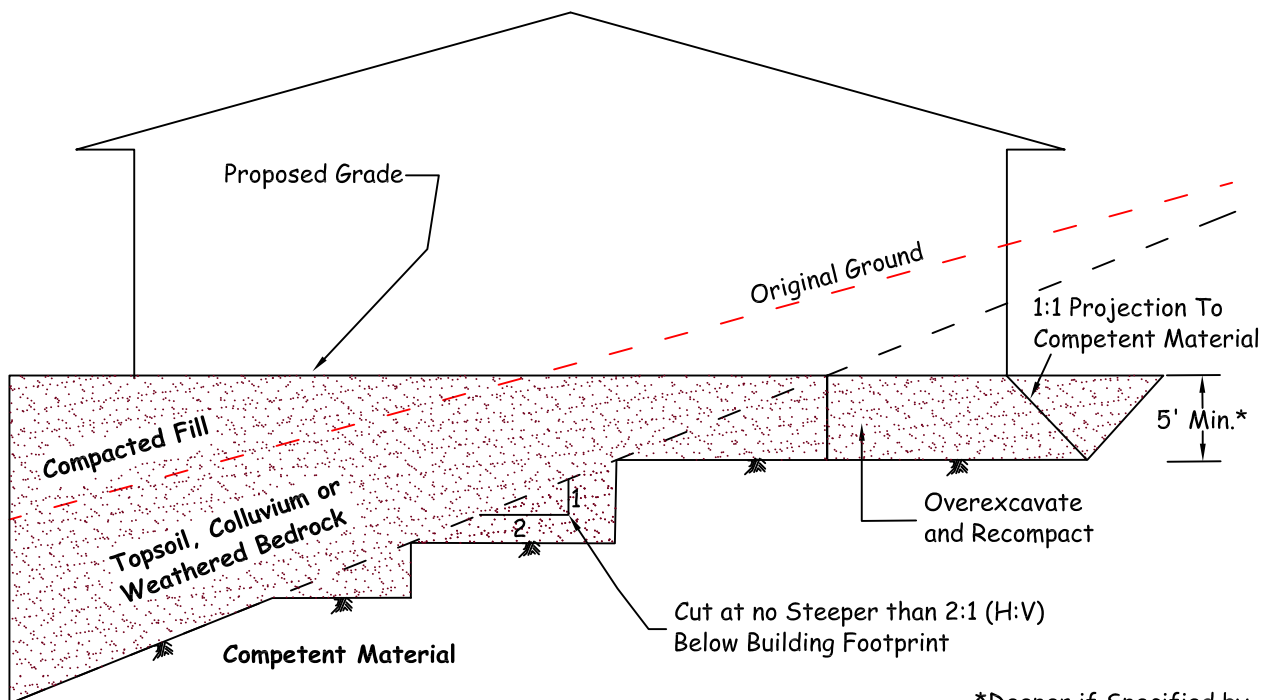
Cut Lot (Exposing Unsuitable Soils at Design Grade)



Note 1: Removal Bottom Should be Graded With Minimum 2% Fall Towards Street or Other Suitable Area (as Determined by Soils Engineer) to Avoid Ponding Below Building

Note 2: Where Design Cut Lots are Excavated Entirely Into Competent Material, Overexcavation May Still be Required for Hard-Rock Conditions or for Materials With Variable Expansion Characteristics.

Cut/Fill Transition Lot



*Deeper if Specified by Soils Engineer

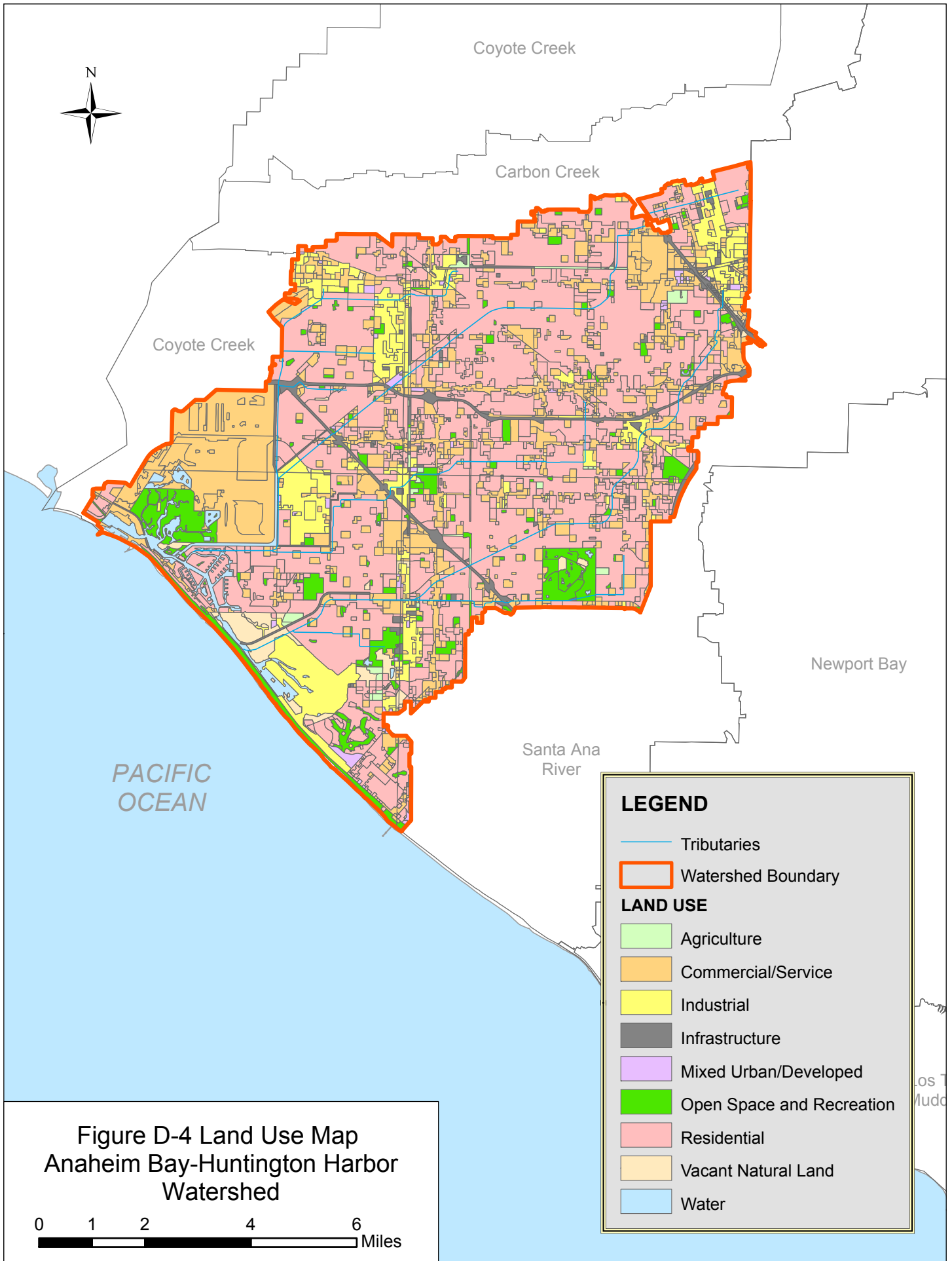


CUT AND TRANSITION LOT OVEREXCAVATION DETAIL

Maps & Worksheets







APPENDIX D

PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)



Phase I Environmental Site Assessment

**9071, 9081, and 9091 Lampson Avenue
Garden Grove, California**

Prepared for:
PLC Communities
888 San Clemente Drive, Suite 200
Newport Beach, California 92660

Prepared by:
Ardent Environmental Group, Inc.
1827 Capital Street, Suite 103
Corona, California 92880

May 17, 2022
Project No. 101352001





May 17, 2022
Project No. 101352001

Mr. Jeff Rulon
PLC Communities
888 San Clemente Drive, Suite 200
Newport Beach, California 92660

Subject: **Phase I Environmental Site Assessment**
9071, 9081, and 9091 Lampson Avenue
Garden Grove, California

Dear Mr. Rulon:

Ardent Environmental Group, Inc. (Ardent) has performed a Phase I Environmental Site Assessment of the above-referenced property (site). Work was completed in general accordance with Ardent's proposal dated December 22, 2022. The site contains three single family dwellings and three associated structures. PLC Communities is considering purchasing the property for residential redevelopment. The attached report presents our methodology, findings, opinions, and conclusions regarding the environmental conditions at the site.

We appreciate this opportunity to be of service.

Sincerely,

Ardent Environmental Group, Inc.

A handwritten signature in black ink that reads "Matthew Pensaw". The signature is written in a cursive style with a large, sweeping initial "M".

Matthew Pensaw
Senior Staff Scientist

A handwritten signature in black ink that reads "Craig A. Metheny". The signature is written in a cursive style with a large, sweeping initial "C".

Craig A. Metheny, C.A.C.
Principal Geologist

CM/MDP/aw Distribution: (1) Addressee (electronic copy)

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	1
1 INTRODUCTION	3
1.1 Purpose of Phase I ESA	3
1.2 Involved Parties	4
1.3 Scope of Work	5
1.4 Limitations and Exceptions	6
1.5 Special Terms and Conditions	6
1.6 User Reliance	7
1.7 Physical Limitations	7
1.8 Data Gaps	7
2 GENERAL SITE CHARACTERISTICS	7
2.1 Location and Legal Description	7
2.2 Site Description and Current Site Uses/Operations	8
2.2.1 Site Description	8
2.2.2 Occupants	8
2.2.3 Heating and Cooling Systems	8
2.2.4 Sewage Disposal/Septic Systems	8
2.2.5 Potable Water	8
2.3 Adjacent Properties	8
3 USER PROVIDED INFORMATION	9
3.1 Current Title Information	9
3.2 Environmental Liens or Activity and Use Limitations	9
3.3 Specialized Knowledge	9
3.4 Commonly Known or Reasonably Ascertainable Information	9
3.5 Valuation Reduction for Environmental Issues	9
3.6 Reason for Performing Phase I ESA	10
3.7 Other User Provided Information	10
4 PHYSICAL SETTING	10
4.1 Site Topography	10
4.2 Geology	10
4.3 Oil and Gas Maps	11
4.4 Site Hydrology	11
4.4.1 Surface Waters	11
4.4.2 Groundwater	11
5 HISTORICAL LAND USE	11
5.1 Summary of Historical Land Use of the Property	12
5.2 Summary of Historical Land Use of Adjoining Properties	12
5.3 Historical Aerial Photographs	12
5.4 Building Department	12
5.5 City Directories	13
5.6 Historical Topographic Maps	13
5.7 Interviews	13

5.7.1	Interview with Owner	13
5.7.2	Interview with Site Manager	14
5.7.3	Interviews with Occupant	14
5.7.4	Interviews with Local Government Officials	14
5.7.5	Interviews with Others	14
5.8	Previous Reports and Documents	14
6	SITE RECONNAISSANCE	14
6.1	Use and Storage of Hazardous Substances and Petroleum Products	15
6.2	Storage and Disposal of Hazardous Wastes.....	15
6.3	Unidentified Substance Containers.....	15
6.4	Aboveground Storage Tanks (ASTs) and Underground Storage Tanks (USTs).....	15
6.5	Evidence of Releases.....	15
6.6	Polychlorinated Biphenyls (PCBs)	15
6.7	Suspect Asbestos-Containing Building Materials (ACM).....	15
6.8	Lead Based Paint (LBP)	16
6.9	Indications of Water Damage or Mold Growth.....	16
6.10	Wastewater Systems.....	16
6.11	Stormwater Systems.....	16
6.12	Wells	16
6.13	Other Subsurface Structures	16
6.14	Other Issues	17
7	ENVIRONMENTAL DATABASE SEARCH.....	17
7.1	Federal National Priorities List (NPL): Distance Searched – 1 mile.....	17
7.2	Federal Delisted NPL: Distance Searched – 1 mile	18
7.3	Federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List: Distance Searched – 0.5 mile.....	18
7.4	Federal Corrective Action Report (CORRACTS): Distance Searched – 1 mile.....	18
7.5	Federal Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Facilities List: Distance Searched – 0.5 mile	18
7.6	Federal RCRA Generators List: Distance Searched – Site and Adjoining Properties.	19
7.7	Federal Institutional Control/Engineering Control Registries: Distance Searched – Site	19
7.8	Federal Emergency Response Notification System (ERNS) List: Distance Searched – Site	19
7.9	Federal Brownfield List: Distance Searched – 0.5 mile	19
7.10	State ENVIROSTOR Database (ENVIROSTOR) or State-Equivalent CERCLIS: Distance Searched – 1 mile	19
7.11	State Solid Waste Landfill Sites (SWLF): Distance Searched – 0.5 mile	20
7.12	State Leaking Underground Storage Tank (LUST) Lists: Distance Searched – 0.5 mile	20
7.13	State Underground Storage Tank (UST) and Aboveground Storage Tank (AST) Registration List: Distance Searched – Site and Adjoining Properties.....	20
7.14	State Voluntary Cleanup Programs (VCPs): Distance Searched – 0.5 mile	20
7.15	Indian Reservations: Distance Searched – 1 mile.....	21
7.16	Other Non-ASTM and AAI Database: Distance Searched – Site	21
8	VAPOR ENCROACHMENT CONDITION (VEC)	21

9	REGULATORY RECORDS REVIEW.....	21
9.1	South Coast Air Quality Management District (SCAQMD)	22
9.2	Department of Toxic Substances Control (DTSC).....	22
9.3	California Regional Water Quality Control Board, Los Angeles Region (LARWQCB).22	
9.4	City of Garden Grove Fire Authority (GGFA)	22
9.5	Orange County Fire Authority (OCFA).....	22
9.6	Orange County Health Care Agency (OCHCA).....	22
10	FINDINGS, OPINIONS AND CONCLUSIONS	22
10.1	Findings and Opinions	23
10.2	Conclusions	23
11	RECOMMENDATIONS.....	24
12	SELECTED REFERENCES.....	25
13	QUALIFICATIONS STATEMENT AND SIGNATURE OF ENVIRONMENTAL PROFESSIONAL	26

Figures

- Figure 1 – Site Location Map
- Figure 2 – Site Vicinity Map
- Figure 3 – Site Plan

Appendices

- Appendix A – Photographic Documentation
- Appendix B – User Provided Information
- Appendix C – Previous Environmental Report
- Appendix D – Historical Land Use Information
- Appendix E – Environmental Database Report
- Appendix F – Regulatory Agency Records
- Appendix G – Resumes

EXECUTIVE SUMMARY

Ardent Environmental Group, Inc. (Ardent) was retained by PLC Communities (client) to perform a Phase I Environmental Site Assessment (ESA) for the property located at 9071, 9081, and 9091 Lampson Avenue in the city of Garden Grove, California (site or subject property). The site is an approximate 1.6-acre plot which is currently developed with three residential buildings and associated structures. PLC Communities is considering purchasing the site for residential redevelopment. Document review and site assessment activities for this report were conducted between March 30, 2022 and May 10, 2022.

In summary, the following items were noted:

- From at least 1938, the site was used for agricultural purposes. By 1947, two residential outbuildings were present in the southern portion of the site. By 1953, the existing northern residential building was present. In 1979 and 1980, the two existing southern residential buildings were constructed. From 1980 to the present, the site has been used for residential purposes.
- Groundwater beneath the site is expected to occur at less than 20 feet bgs and flow in a southwesterly direction.
- Asbestos-containing materials (ACM) have been previously identified in building materials at the site. In addition, suspect asbestos-containing pipes (ACP) were noted in the yard in the eastern portion of the site.
- Based on the age of the site buildings, lead based paint (LBP) may be present.
- No other on or off-site environmental concerns were noted.

CONCLUSIONS

Ardent has performed this Phase I ESA in general conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E 1527-21, ASTM Practice E 2600-15, and the EPA Standards and Practices for All Appropriate Inquires (AAI), Final Rule (40 CFR, Part 312), for the property located at 9071, 9081, and 9091 Lampson Avenue in the City of Garden Grove, California. Any limitations or exceptions encountered during completion of this report are stated in Section 1.4. No evidence or indication of recognized environmental conditions (RECs), or conditions indicative of releases or threatened releases of hazardous substances on, at, in, or to the site has been revealed, with the exception of the following:

RECs

- No RECs were identified during this assessment.

HRECs

- No HRECs were identified during this assessment.

CRECs

- No CRECs were identified during this assessment.

De-Minimis Conditions

- No de-minimis conditions were identified during this assessment.

Other Non-ASTM Conditions

- Although not considered an REC in accordance with ASTM Standards, ACM is known to be present at the site and LBP may be present at the site.

RECOMMENDATIONS

Based on the results of the Phase I ESA, Ardent recommends the following:

- Prior to demolition of the existing structures, ACMs should be removed, and LBP stabilized by a state-licensed abatement contractor.

1 INTRODUCTION

Ardent Environmental Group, Inc. (Ardent) was retained by PLC Communities (client) to perform a Phase I Environmental Site Assessment (ESA) for the property located at 9071, 9081, and 9091 Lampson Avenue in the city of Garden Grove, California (site or subject property). The site is an approximate 1.6-acre plot which is currently developed with three residential buildings and associated outbuildings and garages. PLC Communities is considering purchasing the site for residential redevelopment. The following sections identify the purpose, the involved parties, the scope of work, and the limitations and exceptions associated with the Phase I ESA.

1.1 Purpose of Phase I ESA

In accordance with the American Society for Testing and Materials (ASTM) E 1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM Standard E 1527-21), the objective of the Phase I ESA was to identify, to the extent feasible pursuant to ASTM Standard E 1527-21, recognized environmental conditions (RECs), historical-RECs (HRECs), controlled-RECs (CRECs), or de minimis conditions.

According to ASTM, the term REC means “...(1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment.”

ASTM defines HRECs as “...a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations).”

ASTM defines CRECs as a “...REC affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of

required controls (for example, activity and use limitations or other property use limitations.)”

ASTM defines a de minimis condition as “...a condition related to a release that generally does 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.”

Other environmental considerations include site features or conditions that may have an environmental component of interest but which do not meet the ASTM definition of a REC, CREC, or HREC. ASTM does not necessarily require any actions to address the presence or condition, but such conditions are identified for the sake of thoroughness and completeness.

The United States Environmental Protection Agency (“USEPA” or “EPA”) has stated that ASTM Standard E 1527-21, is consistent with the Standards and Practices for AAI, Final Rule (40 Code of Federal Regulations [CFR], Part 312) and is compliant with the statutory criteria for all appropriate inquiries. All appropriate inquiries, as defined in the AAI Final Rule, must be conducted by persons seeking the landowner liability protections under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) prior to acquiring a property or seeking or receiving federal Brownfields grants under the authorities of CERCLA. The purpose of AAI, as defined in the AAI Final Rule, was to identify releases and threatened releases of hazardous substances which cause or threaten to cause the incurrence of response costs.

As part of this Phase I ESA, Ardent also assessed whether a vapor encroachment condition (VEC) exists at the site. The VEC assessment was completed following the ASTM E 2600-15 Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions (ASTM Standard E 2600-15). The objective of this work was to evaluate the possibility that hazardous materials or other adverse environmental conditions are present due to past or present use of the site and/or properties in the site vicinity.

1.2 Involved Parties

Mr. Matthew Pensaw of Ardent conducted the historical research, site reconnaissance, regulatory inquiries, and document review. Mr. Craig Metheny completed oversight and

management of the project. Mr. Metheny meets the definition of an environmental professional as set forth in the AAI Final Rule.

1.3 Scope of Work

Ardent's scope of work for this Phase I ESA is consistent with ASTM Standard E 1527-21 and included the activities listed below.

- **Review of User Provided Information** – Review of information regarding title and judicial records for environmental liens or activity and use limitations, recorded environmental liens, actual or specialized knowledge or commonly known information regarding environmental conditions at the site, the relationship of the purchase price of the property to the fair market value, readily available maps, environmental reports, and other environmental documents pertaining to the site, as available and obtained from the user/client.
- **Records Review** – Acquisition and review of records, including federal, state, tribal, and local regulatory agency databases, for the site and for properties located within a specified radius of the site; local regulatory agency files for the site and selected nearby properties of potential environmental concern; physical setting sources, including topographic maps, geologic maps, and geologic and hydrogeologic reference documents; and historic land use information including aerial photographs, historical fire insurance rate maps, building department records, and city directories, as necessary, that are reasonably ascertainable, publicly available, can be obtained within reasonable time and cost, and are practically reviewable.
- **Vapor Encroachment Condition (VEC)** – Review available regulatory and client provided data to assess Tier 1 non-numeric screening for the site. Ardent evaluated whether contaminants were present in soil and/or groundwater in the site vicinity which might pose a VEC at the site.
- **Site Reconnaissance** – Performance of a site reconnaissance to visually observe the site and any structure(s) located on the site to the extent not obstructed by bodies of water, adjacent buildings, or other obstacles. The purpose of the site reconnaissance is to obtain information indicating the likelihood of identifying RECs in connection with the site, including the general site setting, site usage, use and storage of hazardous materials and petroleum products, disposal of waste products and materials, sources of polychlorinated biphenyls (PCBs), and evidence of releases and possible risks of contamination from activities at adjacent properties.
- **Interviews** – Interviews with site representatives, including owners, occupants, and site managers, regarding the environmental condition of the site to the extent necessary and such persons are available. Interviews with state and/or local government officials as necessary.
- **Report** – Evaluation of the information and data obtained by the Phase I ESA process outlined above and preparation of this Phase I ESA report documenting findings and providing opinions and conclusions regarding possible environmental impacts and RECs at the site.

1.4 Limitations and Exceptions

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard-of-care exercised by environmental consultants performing similar work in the project area. No warranty, expressed or implied, is made regarding the professional opinions presented in this report.

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

The findings, opinions, and conclusions are based on an analysis of the observed site conditions and the referenced literature. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ardent has no control. Ardent cannot warrant or guarantee that not finding indicators of any particular hazardous material means that this particular hazardous material or any other hazardous materials do not exist on the site. Additional research, including invasive testing, can reduce the uncertainty, but no techniques now commonly employed can eliminate the uncertainty altogether.

1.5 Special Terms and Conditions

As indicated in Section 13.1.5 of ASTM Standard E 1527-21, the following, which is not intended to be all inclusive, represents out-of-scope items with respect to a Phase I ESA: asbestos-containing materials (ACMs), radon, lead-based paint (LBP), lead in drinking water, wetlands, regulatory compliance, cultural and historic risk, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment, biological agents, and mold. As part of our agreement with the client, Ardent visually assessed site buildings (if present) for possible ACMs, LBP, and mold. In addition, ASTM Standard E

2600-15 supplements the ASTM Standard E 1527-21 to include evaluation of VEC using Tier 1 screening.

This study did not include an evaluation of geotechnical conditions or potential geologic hazards. In addition, Ardent did not address interpretations of zoning regulations, building code requirements, or property title issues.

1.6 User Reliance

This report may be relied upon and is intended exclusively for use by the client, its partners, members, investors, affiliates, successors and assigns, and lenders. Any use or reuse of the findings, opinions, and/or conclusions of this report by parties other than the foregoing parties is undertaken at said parties' sole risk.

1.7 Physical Limitations

No physical limitations were encountered during the completion of this report.

1.8 Data Gaps

No significant data gaps were noted during the preparation of this Phase I ESA report.

2 GENERAL SITE CHARACTERISTICS

The following sections describe the location and the current uses of the site and adjacent properties. A site location map is presented as Figure 1, and a site vicinity map is presented as Figure 2. Selected photographs of the site and surrounding properties are provided in Appendix A.

2.1 Location and Legal Description

The site is located east of the intersection of Magnolia Avenue and Lampson Avenue in the city of Garden Grove, California (Figure 1). The site has been assigned the assigned Tax Assessor's Parcel Numbers (APNs): 133-183-55, 133-183-56, 133-183-57, and 133-183-58. A complete legal description of the site is presented in an Amended Preliminary Report (APR) for the site, provided in Appendix B.

The site is bounded to the west, north, and east by residences. Lampson Avenue bounds the site to the south, followed by residences (Figure 2). Site boundary information was obtained during the site reconnaissance and from information provided by the client.

2.2 Site Description and Current Site Uses/Operations

The following subsections present a description of the structures present at the site, the tenants currently occupying the site, the activities being conducted on-site, the heating and cooling systems utilized in the site building, the sewage disposal system, and the potable water provider for the site, if any.

2.2.1 Site Description

The site consists of an approximate 1.6-acre property which is currently developed with three separate residential buildings and associated structures. 9071 and 9091 Lampson Avenue comprise the southern portion of the site and are each developed with one residential building. 9081 Lampson Avenue comprises the northern portion of the site and is developed with one residential building, a detached garage, a residential outbuilding, and a garage/shop.

2.2.2 Occupants

The 9071 and 9091 Lampson Avenue properties are currently occupied by private residents. The 9081 Lampson Avenue property is currently vacant.

2.2.3 Heating and Cooling Systems

The site uses electricity and natural gas for heating and cooling systems which are provided by local utility purveyors.

2.2.4 Sewage Disposal/Septic Systems

Sewage disposal is connected to the municipal sewer system.

2.2.5 Potable Water

Water is obtained from the local water purveyors. No water supply wells were observed on-site.

2.3 Adjacent Properties

The immediate site vicinity is used for residential purposes, with some commercial and religious facilities located in the extended site vicinity (Figure 2). Properties located north, east, and west of the site are occupied by single-family residences. Immediately south of the site is Lampson Avenue, followed by more residential properties (Figure 2).

No evidence of underground storage tanks (USTs), above ground storage tanks (ASTs), or possible hazardous materials or wastes storage at off-site facilities along the site property line was noted. These off-site properties would not be considered an environmental concern to the site.

3 USER PROVIDED INFORMATION

The following sections summarize information provided by the user to assist the environmental professional in identifying the possibility of RECs in connection with the subject property, and to fulfill the user's responsibilities in accordance with Section 6 of ASTM Standard E 1527-21. A copy of the user questionnaire as completed by Mr. Jeff Rulon, Vice President of Operations, of PLC Communities, is presented in Appendix B.

3.1 Current Title Information

An APR for the site was provided by the client and reviewed by Ardent. The APR was prepared by Fidelity National Title Company, dated February 3, 2022. According to the APR, the owner of the site is "RAY A. BICKNELL and JO H. BICKNELL, as Trustees of the BICKNELL FAMILY TRUST."

3.2 Environmental Liens or Activity and Use Limitations

Based on our review of the APR, no records of environmental liens or activity and use limitations (AULs) were noted associated with the site. In addition, Mr. Rulon was not aware of any environmental liens or AULs against the site that are filed or recorded under federal, state, or local law.

3.3 Specialized Knowledge

Mr. Rulon indicated that asbestos-containing materials (ACM) are known to be present at the site. Mr. Rulon did not indicate any other specialized knowledge regarding the site.

3.4 Commonly Known or Reasonably Ascertainable Information

Mr. Rulon indicated that PLC Communities was not aware of commonly known or reasonably ascertainable information pertaining to the site that is material to RECs in connection with the site.

3.5 Valuation Reduction for Environmental Issues

In a transaction involving the purchase of a parcel of commercial real estate, the user shall consider the relationship of the purchase price of the property to fair market value of the

property if the property was not affected by hazardous substances or petroleum products. Mr. Rulon indicated that the purchase price being paid for the subject property reasonably reflects the fair market value of the subject property.

3.6 Reason for Performing Phase I ESA

Ardent was retained by PLC Communities to perform the Phase I ESA as part of its real estate due diligence during acquisition of the property.

3.7 Other User Provided Information

The client provided Ardent with comprehensive asbestos surveys for the individual residential buildings located at the site, prepared by L. Y. Environmental, Inc. of Redlands, California. The reports provided by the client are presented in Appendix C.

Based on the results of the asbestos surveys, ACMs were identified at the site. These materials should be removed by a state-certified abatement contractor prior to demolition of the existing site features.

4 PHYSICAL SETTING

The following sections include discussions of topographic, geologic, and hydrogeologic conditions in the vicinity of the site, based upon our document review and our visual reconnaissance of the site and adjacent areas.

4.1 Site Topography

Based on the review of the United States Geological Survey (USGS) 7.5 Minute Series, Anaheim, California, Topographic Quadrangle Map dated 1981 the site elevation is approximately 72 feet above mean sea level (msl). Local and regional surface topography generally slopes to the southwest.

4.2 Geology

Regionally, the site is located in the Peninsular Ranges province which is composed of plutonic and metamorphic rocks, with tertiary volcanic and sedimentary rock, Quaternary drainage in-fills and sedimentary veneers. Locally, the site is situated near the Santa Ana River and thus is underlain by young alluvial deposits consisting of gravels, sands, and silts from the Santa Ana River.

4.3 Oil and Gas Maps

Based on a review of the California Geologic Energy Management Division (CalGEM) on-line well finder, the site is not located in an active oil field and no oil or natural gas wells have been drilled on the site or adjacent properties.

4.4 Site Hydrology

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

4.4.1 Surface Waters

No natural surface water bodies, including ponds, streams, or other bodies of water, are present on the site or in the immediate site vicinity.

4.4.2 Groundwater

Groundwater information was not available for the site. Ardent reviewed the State Water Resources Control Board (SWRCB) GeoTracker website for groundwater information at facilities undergoing investigations in the site vicinity. The closest facility with groundwater data is the Imperial Stations Inc. facility located at 8221 Garden Grove Boulevard in the city of Stanton, California, located approximately 0.97-mile south of the site. Based on groundwater data from July 2020, groundwater was encountered at approximately 8.59 to 10.47 feet below the ground surface during and was reported to flow in a southwesterly direction (Reynolds, 2020). Based on this information, groundwater beneath the site is expected to occur at less than 20 feet bgs.

5 HISTORICAL LAND USE

Ardent conducted a historical land use record search for both the site and surrounding areas. This included a review of one or more of the following sources that were found to be both reasonably ascertainable and useful for the purposes of this Phase I ESA: historical aerial photographs, historical fire insurance maps, historical city directories, building permits and plans, topographic maps, property tax records, zoning/land use records, and a review of prior environmental assessment reports regarding the site. Copies of historical records obtained during this assessment are provided in Appendix D.

5.1 Summary of Historical Land Use of the Property

From at least 1938, the site was used for agricultural purposes. By 1947, two residential outbuildings were present in the southern portion of the site. By 1953, the existing northern residential building was present. In 1979 and 1980, the two existing southern residential buildings were constructed. From 1980 to the present, the site has been used for residential purposes.

5.2 Summary of Historical Land Use of Adjoining Properties

In general, the site vicinity was used for agricultural purposes (primarily as orchards) from at least 1938 with Lampson Avenue and Magnolia Avenue present to the south and east, respectively. By 1947, numerous agricultural outbuildings were present in the site vicinity. By 1953, land to the south and east of the site were developed with residential housing tracks. By 1963, the site vicinity was fully developed for primarily residential use.

5.3 Historical Aerial Photographs

Historical aerial photographs for selected years between 1938 and 2016 were provided by Environmental Database Report (EDR) of Milford, Connecticut.

- **1938, 1947** – From at least 1938, the site and site vicinity were used for agricultural purposes; primarily as orchards. Lampson Avenue to the south and Magnolia Avenue to the west were present. By 1947, two residential buildings were present in the southern portion of the site and numerous agricultural buildings were present to the west and east of the site.
- **1953, 1963, 1972, 1977** – By 1953, the existing residential building was present in the northern portion of the site. Land to the south and east of the site were developed with residential housing tracks. By 1963, the site vicinity was developed for primarily residential use. By 1972, large trees were present which began to obscure aerial views of the site.
- **1987, 1994, 2005, 2009, 2012, 2016** – From at least 1987 to the present, residential buildings were present in the southern portion of the site and the residential outbuilding and garage/shop were visible in the northern portion of the site.

5.4 Building Department

The City of Garden Grove Building Department (GGBD) maintains building permits for the site and surrounding properties. Ardent requested files associated with the three known site addresses (9071, 9081, and 9091 Lampson Avenue). Records were provided by the GGFD through its online records database for all three site addresses and are presented in Appendix D. Building records for the site included the following information:

- **9071 Lampson Avenue** – Permits for demolition of an existing 1-bedroom structure, construction a single-family dwelling with an attached 3 car garage, and installation of subsurface utilities/HVAC system for the new building (issued from 1979 through 1980); and an inspection record for a water heater replacement (issued in 2006).
- **9081 Lampson Avenue** – An expired permit for construction of four single family dwellings (issued in 1978) and a permit for a furnace replacement (issued in 2011).
- **9091 Lampson Avenue** – Permits for construction of a two-story single-family dwelling with an attached garage and installation of subsurface utilities/HVAC system for the new building (issued from 1979 through 1980); and a permit to replace the existing roof (issued in 2008).

5.5 City Directories

A city directory search for selected years from 1920 through 2014 was obtained from EDR for the site and immediate site vicinity. The following is a summary of information obtained from the city directory search:

- **9071 Lampson Avenue** – Listed occupants were private individuals (residents) or unknown from 1966 through 2014.
- **9081 Lampson Avenue** – Listed occupants were private individuals (residents) from 1970 through 2014.
- **9091 Lampson Avenue** – Listed occupants were private individuals (residents) from 1999 through 2014.
- **Site Vicinity** – Listed occupants were predominantly private individuals (residents) through all identified records (1955 through 2014).

5.6 Historical Topographic Maps

Ardent reviewed historical topographic maps obtained from EDR. The maps were dated 1896, 1898, 1901, 1902, 1935, 1942, 1949, 1950, 1965, 1974, 1981, 1981, 2012, 2015, and 2018. In 1949, two single-family residences were noted on the site. No other features pertaining to the site were noted.

5.7 Interviews

Interviews were conducted by Ardent with key site personnel (e.g., past and present owners, operators, and/or occupants), with the objective of obtaining information indicating RECs in connection with the site. The following are the site personnel interviewed for purposes of this assessment, and a summary of their comments with regards to site conditions.

5.7.1 Interview with Owner

There was no owner available for an interview.

5.7.2 Interview with Site Manager

There was no Site Manager available for an interview.

5.7.3 Interviews with Occupant

There was no occupant available for an interview.

5.7.4 Interviews with Local Government Officials

Representatives of local regulatory agencies were interviewed during completion of this report. Information obtained from these interviews are presented throughout the report.

5.7.5 Interviews with Others

Ardent interviewed Ms. Danielle Berardi of Morgan-Skenderian Real Estate Group, the real estate broker for the site. Details of this interview are included throughout the report.

5.8 Previous Reports and Documents

Comprehensive asbestos surveys were prepared for the site, as noted in Section 3.7.

6 SITE RECONNAISSANCE

The site and site vicinity reconnaissance were performed by Ardent on April 28, 2022. The site reconnaissance involved a walkthrough of the site and visual observations of adjoining properties. At the time of the site reconnaissance, the weather was sunny and clear; no weather-related obstructions were noted. Access to the site was provided by the real estate broker, Ms. Berardi. Selected photographs of the site are included in Appendix A.

At the time of the site reconnaissance, the residential buildings located at 9071 and 9091 Lampson Avenue were occupied, and the property located at 9081 Lampson Avenue was vacant (Figure 3).

During Ardent's site reconnaissance, Ardent evaluated whether hazardous substances and/or petroleum products were being used and/or stored. This includes hazardous substances as defined by CERCLA, as well as substances that occur naturally or through biological digestion (e.g., methane gas), and substances about which human understanding is evolving such as "emerging contaminants." The following information is provided as per ASTM standards and to summarize the current conditions at the site.

6.1 Use and Storage of Hazardous Substances and Petroleum Products

No use or storage of hazardous substances or petroleum products noted during the site reconnaissance.

6.2 Storage and Disposal of Hazardous Wastes

No storage or disposal of hazardous wastes observed during the site reconnaissance.

6.3 Unidentified Substance Containers

No unidentified substance containers observed during the site reconnaissance.

6.4 Aboveground Storage Tanks (ASTs) and Underground Storage Tanks (USTs)

No ASTs or evidence of USTs (i.e. fill ports) were observed during the site reconnaissance.

6.5 Evidence of Releases

No evidence of releases (i.e. stained soil/surfaces or stressed vegetation) were noted during the site reconnaissance.

6.6 Polychlorinated Biphenyls (PCBs)

Historically, PCBs (a group of hazardous substances and suspected human carcinogens) were widely used as an additive in cooling oils for electrical components. Typical sources of PCBs can include electrical transformers. One pole-mounted electrical transformer was noted along the southeastern property line. The transformer appeared in good condition with no leaks or stains observed. Based on this information, this feature would not be considered a significant environmental concern at this time.

6.7 Suspect Asbestos-Containing Building Materials (ACM)

The manufacture of most ACM was phased out in the 1970s, ending in 1980. Previously manufactured ACM that were in stock continued to be used through approximately 1981. Some non-friable ACM are still manufactured. In general, buildings constructed after 1981 have a negligible potential to contain friable ACM and a low potential for most non-friable ACM. According to Mr. Rulon, known areas of ACM are present in the site buildings, as noted in Sections 3.3 and 3.7.

During the site reconnaissance, Ardent noted the presence of three pipes at the 9081 Lampson Avenue property. Based on the appearance (internally fibrous, with a ribbed exterior patter), these pipes may be ACM. If laboratory results or professional inspection

confirm this observation, these pipes should be removed from the site under manifest by state-licensed abatement contractor.

The pipes appeared to be utilized for delineation purposes (possibly to maintain a guest parking space) and were not associated with any piping function (i.e. irrigation, plumbing, etc.). The pipes measured approximately 10-inches in diameter and approximately 4-feet each in length.

6.8 Lead Based Paint (LBP)

The manufacture of LBP was phased out in approximately 1978. Based on the age of the site buildings (9071 Lampson Avenue – 1979; 9081 Lampson Avenue - at least 1963; and 9091 Lampson Avenue – 1979), LBP may be present.

6.9 Indications of Water Damage or Mold Growth

No visual indication of water damage or visible mold growth present during the site reconnaissance.

6.10 Wastewater Systems

No evidence of wastewater systems was noted during the site reconnaissance.

6.11 Stormwater Systems

No evidence of stormwater systems was noted during the site reconnaissance.

6.12 Wells

No wells (e.g., groundwater monitoring wells, water supply wells, etc.) were noted during the site reconnaissance.

6.13 Other Subsurface Structures

A small rectangular patch was observed in the concrete immediately south of the detached garage located at 9081 Lampson Avenue. This feature measured approximately two feet wide by four feet long. The patch is too small to represent the possible removal of a former UST and may represent a utility.

No evidence of other subsurface structures was noted during the site reconnaissance.

6.14 Other Issues

No other on- or off-site issues of environmental concern were noted during the site reconnaissance.

7 ENVIRONMENTAL DATABASE SEARCH

A computerized environmental information database search was performed by EDR for this Phase I ESA on April 15, 2022. The database search includes federal, state, local, and tribal databases. A summary of the environmental databases searched, their corresponding search radii, and number of noted facilities of environmental concern is presented in Appendix E. In addition, a description of the assumptions and approach to the database search is provided in Appendix E. The review was conducted to evaluate whether the site or properties within the vicinity of the site have been reported as having experienced significant unauthorized releases of hazardous substances or other events with potentially adverse environmental effects.

Two unmapped properties, due to poor or inadequate address information, were identified in the database report. One property, located approximately 0.9-mile west of the site at 8141 Lampson Avenue, Stanton, was listed on the Clandestine Drug Labs (CDL) database as a location where an illegal drug lab was operated and/or drug lab equipment/materials were stored. The second facility, located approximately 2-miles north of the site at 10502 Magnolia Avenue South, Stanton, was listed on the Leaking Underground Storage Tanks (LUST) database due to methyl-tert-butyl-ether (MTBE) contamination released from a piping run, with a discovery date of January 15, 1992. Based on the distance, direction, and/or type of facility, these listings would not be considered an environmental concern to the site.

The following paragraphs describe the databases that contain noted properties of environmental concern and include a discussion of the regulatory status of the facilities and potential environmental impact to the subject site.

7.1 Federal National Priorities List (NPL): Distance Searched – 1 mile

The NPL is the USEPA's database of uncontrolled or abandoned hazardous waste properties identified for priority remedial actions under the Superfund program. This database includes proposed NPL listings.

Neither the site nor properties located within a 1-mile radius were listed in this database.

7.2 Federal Delisted NPL: Distance Searched – 1 mile

This database contains delisted NPL properties under the Superfund program. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the USEPA uses to delete properties from the NPL. In accordance with 40 Code of Federal Regulations (CFR) 300.425. (e), properties may be deleted from the NPL where no further response is appropriate.

Neither the site nor properties located within a 1-mile radius were listed in this database.

7.3 Federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List: Distance Searched – 0.5 mile

The CERCLIS database has been replaced by the Superfund Enterprise Management System (SEMS) database, which tracks hazardous waste sites and remedial activities performed in support of the EPA's Superfund Program. This database also includes properties listed on the SEMS-ARCHIVE database for facilities with statuses of No Further Remedial Action Planned (NFRAP).

Neither the site nor properties located within a 0.5-mile radius were listed in this database.

7.4 Federal Corrective Action Report (CORRACTS): Distance Searched – 1 mile

The USEPA maintains this database of Resource Conservation and Recovery Act (RCRA) facilities that are undergoing corrective action. A corrective action order is issued when there has been a release of hazardous waste or constituents into the environment from a RCRA facility.

Neither the site nor properties located within a 1-mile radius were listed in this database.

7.5 Federal Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Facilities List: Distance Searched – 0.5 mile

The RCRA TSD database (non-CORRACTS) is a compilation by the EPA of facilities that report generation, storage, transportation, treatment, or disposal of hazardous waste.

Neither the site nor properties located within a 0.5-mile radius were listed in this database.

7.6 Federal RCRA Generators List: Distance Searched – Site and Adjoining Properties

This list identifies sites that generate hazardous waste as defined by RCRA. Inclusion on this list is for permitting purposes and is not indicative of a release.

Neither the site nor adjoining properties were listed on this database.

7.7 Federal Institutional Control/Engineering Control Registries: Distance Searched – Site

These lists identify properties with engineering and/or institutional controls. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or affect human health. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on the site. Deed restrictions are generally required as part of the institutional controls.

The site is not listed on this database.

7.8 Federal Emergency Response Notification System (ERNS) List: Distance Searched – Site

The ERNS database, maintained by the USEPA, contains information on reported releases of oil and hazardous substances.

The site is not listed on this database.

7.9 Federal Brownfield List: Distance Searched – 0.5 mile

The USEPA Brownfield database, entitled Targeted Brownfield's Assessments (TBA), lists properties for which the USEPA is providing funding and/or technical support for environmental assessments and investigations. The objective of the TBA is to promote cleanup and redevelopment of undesirable properties with environmental issues.

Neither the site nor properties located within a 0.5-mile radius were listed on this database.

7.10 State ENVIROSTOR Database (ENVIROSTOR) or State-Equivalent CERCLIS: Distance Searched – 1 mile

The ENVIROSTOR database, also known as the State-equivalent CERCLIS, is maintained by the Cal-EPA Department of Toxic Substances Control (DTSC). This database contains

information on Federal Superfund Sites, State Responses, including Military Facilities and State Superfund Sites, Voluntary Cleanup, and School Sites.

The site was not listed on this database. Eight facilities within a 1-mile radius were listed on this database. The 8 facilities listed on this database are located in a cross- to downgradient direction from the site and are listed with status of No Action Required, Inactive or No Further Action. Based on direction and regulatory status, these facilities would not be considered a significant environmental concern to the site.

7.11 State Solid Waste Landfill Sites (SWLF): Distance Searched – 0.5 mile

The SWLF database consists of open and closed solid waste disposal facilities and transfer stations. The data comes from the Integrated Waste Management Board's Solid Waste Information System (SWIS) and the SWRCB Waste Management Unit Database (WMUD) database.

Neither the site nor properties located within a 0.5-mile radius were listed on this database.

7.12 State Leaking Underground Storage Tank (LUST) Lists: Distance Searched – 0.5 mile

The LUST information system is obtained from the SWRCB.

The site was not listed on this database. Four facilities, located at least 0.45-mile from and cross- to downgradient of the site were listed. Based on the distance and direction, these facilities would not be considered environmental concerns to the site.

7.13 State Underground Storage Tank (UST) and Aboveground Storage Tank (AST) Registration List: Distance Searched – Site and Adjoining Properties

UST and AST databases are provided by the SWRCB. Inclusion on these lists is for permitting purposes and is not indicative of a release.

Neither the site nor adjoining properties were listed on this database.

7.14 State Voluntary Cleanup Programs (VCPs): Distance Searched – 0.5 mile

The State VCP database lists low threat level properties with either confirmed or unconfirmed releases. Project proponents have requested that the DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Neither the site nor properties located within a 0.5-mile radius were listed on this database.

7.15 Indian Reservations: Distance Searched – 1 mile

This list depicts Indian administered lands of the United States that have an area equal to or greater than 640 acres. Indian Reservations were not listed in the database within a 1-mile radius from the site. Due to the lack of Indian Reservations within 1-mile of the site, other tribal database listings required by ASTM and AAI were deemed not applicable. These listings would include tribal-equivalent NPL, CERCLIS, Landfill and/or Solid Waste Disposal, LUST, UST and AST Registrations, Institutional Control/Engineering Control Registries, VCPs, and Brownfields.

7.16 Other Non-ASTM and AAI Database: Distance Searched – Site

Other databases were included in the EDR report but are not required by ASTM or AAI. The site was not listed on these databases.

8 VAPOR ENCROACHMENT CONDITION (VEC)

Ardent completed a VEC study for the site using Tier 1 criteria as recommended by ASTM E 2600-15. The Tier 1 screening identifies surrounding facilities that pose a possible vapor intrusion source to the site based on the results of the Phase I ESA investigations and certain criteria outlined by ASTM. These criteria include a certain distance from the target site (referred to by ASTM as within the “area of concern”); the types of chemicals used (referred to by ASTM as the “chemicals of concern”); and a plume test to determine if the plume associated with a source of contamination is close enough to the site to impact indoor air quality. A VEC is defined by ASTM as “...the presence or likely presence of chemicals of concern vapors in the vadose zone of the target property caused by the release of vapors from contaminated soil and/or groundwater either on or near the target property identified by the Phase I ESA.” Based on the information reviewed during completion of this Phase I ESA, no vapor intrusion issue is present at the site.

9 REGULATORY RECORDS REVIEW

The South Coast Air Quality Management District (SCAQMD), Department of Toxic Substances Control (DTSC), California Water Quality Control Board, Los Angeles Region (LARWQCB), City of Garden Grove Fire Authority (GGFA), Orange County Fire Authority (OCFA), and Orange County Health Care Agency (OCHCA) are the lead regulatory agencies for permitting and regulating USTs, ASTs, LUST cases, and/or facilities that use, store, or generate hazardous

waste or hazardous materials. Ardent requested information regarding possible files for the site using the current site address.

9.1 South Coast Air Quality Management District (SCAQMD)

Ardent reviewed the SCAQMD FINDS database and submitted a records request to the SCAQMD for the three known site addresses. According to the SCAQMD, no records were available for the site.

9.2 Department of Toxic Substances Control (DTSC)

Ardent researched information regarding the site on the DTSC's EnviroStor and Hazardous Waste Tracking System (HWTS) databases and submitted a records request to the DTSC for the three known site addresses. According to the DTSC, no records were available for the site.

9.3 California Regional Water Quality Control Board, Los Angeles Region (LARWQCB)

Ardent reviewed the State Water Resources Control Board (SWRCB) GeoTracker website and submitted a records request to the LARWQCB using the three known property addresses. According to the LARWQCB, no records for the site were available.

9.4 City of Garden Grove Fire Authority (GGFA)

Records regarding the site were requested from the GGFA using the three known property addresses. According to the GGFA, no records for the site were available.

9.5 Orange County Fire Authority (OCFA)

Records regarding the site were requested from the OCFA using the three known property addresses. According to the OCFA, no records for the site were available.

9.6 Orange County Health Care Agency (OCHCA)

Records regarding the site were requested from the OCHCA using the three known property addresses. According to the OCHCA, no records for the site were available.

10 FINDINGS, OPINIONS AND CONCLUSIONS

Based upon the results of this Phase I ESA the following findings, opinions and conclusions are provided.

10.1 Findings and Opinions

The following presents a summary of findings and opinions associated with this Phase I ESA performed for the site, including known or suspect RECs, HRECS, CRECs, and de minimis environmental conditions (i.e., conditions that generally do not present a material risk of harm to public health or the environment).

In summary, the following items were noted:

- From at least 1938, the site was used for agricultural purposes. By 1947, two agricultural outbuildings were present in the southern portion of the site. By 1963, the existing northern residential building was present. In 1979 and 1980, the two existing southern residential buildings were constructed. From 1980 to the present, the site has been used for residential purposes.
- Groundwater in the site vicinity is reported at depths of approximately 8.59 to 10.47 feet below the ground surface and generally flows to the southwest.
- During the site reconnaissance, a “cut” was noted in the concrete east of the 9081 Lampson Avenue residential building, measuring approximately two feet wide by four feet long. Based on the size, a potential former underground storage tank (UST) may have been removed from this location. Based on the age of the site building, this potential former UST would likely have been used to store heating oil for residential use.
- Asbestos-containing materials (ACM) have been identified in building materials at the site. In addition, suspect asbestos-containing pipes (ACP) were noted in the yard in the northern portion of the site.
- Based on the age of the site buildings, lead based paint (LBP) may be present.
- No other on or off-site environmental concerns were noted.

10.2 Conclusions

Ardent has performed this Phase I ESA and Document Review in conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E 1527-21, ASTM Practice E 2600-15, and the EPA Standards and Practices for All Appropriate Inquiries (AAI), Final Rule (40 CFR, Part 312), for the property located at 9071, 9081, and 9091 Lampson Avenue in the city of Garden Grove, California. Any limitations or exceptions encountered during completion of this report are stated in Section 1.4. No evidence or indication of recognized environmental conditions (RECs), historical-RECs (HRECs), controlled-RECs (CRECs), or conditions indicative of releases or threatened releases of hazardous substances on, at, in, or to the subject property has been revealed, with the exception of the following:

RECs

- **Potential Former UST** – Due to the potential of a petroleum release, this feature would be considered an REC.

HRECs

- No HRECs were identified during this investigation.

CRECs

- No CRECs were identified during this investigation.

De-Minimis Conditions

- No de-minimis conditions were identified during this investigation.

Other Non-ASTM Conditions

- Although not considered an REC in accordance with ASTM Standards, ACMs are known to be present at the site and LBP may be present at the site.

11 RECOMMENDATIONS

Based on the results of the Phase I ESA, Ardent recommends the following:

- Soil samples should be obtained from the location of the Potential Former UST to verify the absence of a petroleum release.
- Prior to demolition of the existing structures, a compressive LBP survey should be conducted.
- Prior to demolition of the existing structures, ACMs should be removed, and LBP stabilized by a state-licensed abatement contractor.

12 SELECTED REFERENCES

- Environmental Data Resources, Inc. (EDR), 2021, Regulatory Database Report, dated April 15.
- Reynolds Group, The (Reynolds), 2020, Imperial Station Inc. Groundwater Monitoring Report – July 2020: Report prepared for the Orange County Health Care Agency, Santa Ana, California, dated August 6.

13 QUALIFICATIONS STATEMENT AND SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

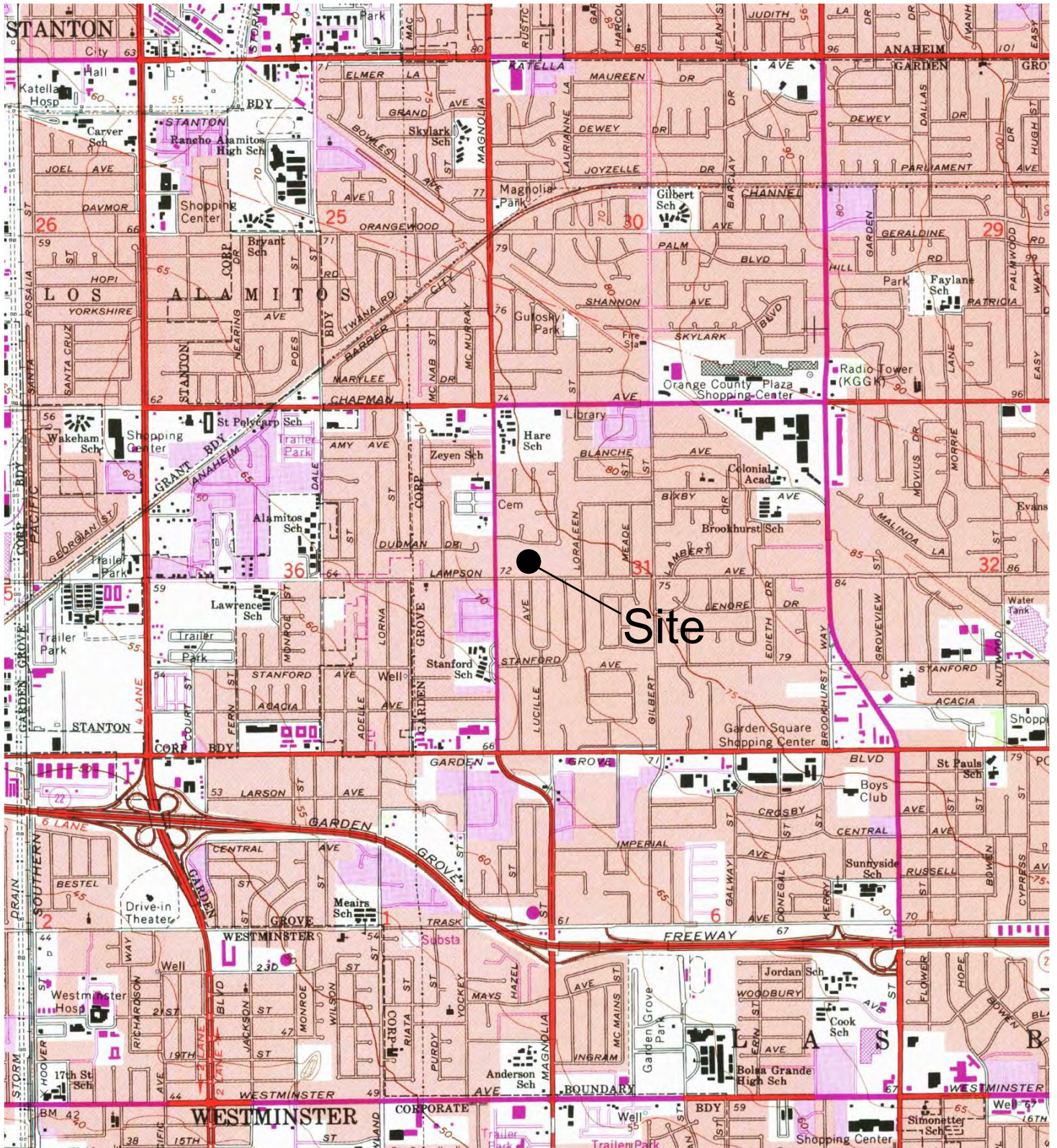
Mr. Craig Metheny states that the Phase I ESA was performed under his direct supervision, and that he has reviewed and approved the report, and the methods and procedures employed in the development of the report conform to the minimum industry standards. Mr. Metheny certifies that Ardent project personnel and subcontractors are properly licensed and/or certified to do the work described herein.

Pursuant to Paragraph 12.14.1 and 12.14.2 of the ASTM Standard E1527-21:

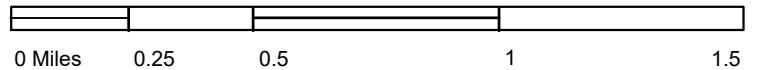
I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental professional* as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the site. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Craig A. Metheny
Principal Geologist




Source: United States Geological Survey (USGS) 7.5 minute series, Garden Grove, California, Topographic Quadrangle Map dated 1981



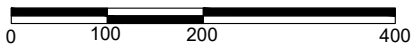
	PROJECT NO. 101352001	SITE LOCATION MAP 9071, 9081, AND 9091 LAMPSON AVENUE GARDEN GROVE, CALIFORNIA	FIGURE 1
	DATE 05/22		

LEGEND

-  Approximate Site Boundary
- ① Residences
9039 - 9162 Lampson Avenue
and 9072 - 9102 Marlene Avenue
- ② Kingdom Hall of Jehovah's Witnesses
9191 Lampson Avenue



Approximate Scale, Feet



Dimensions, Directions, and Locations are Approximate



PROJECT NO.
101352001

DATE
05/22

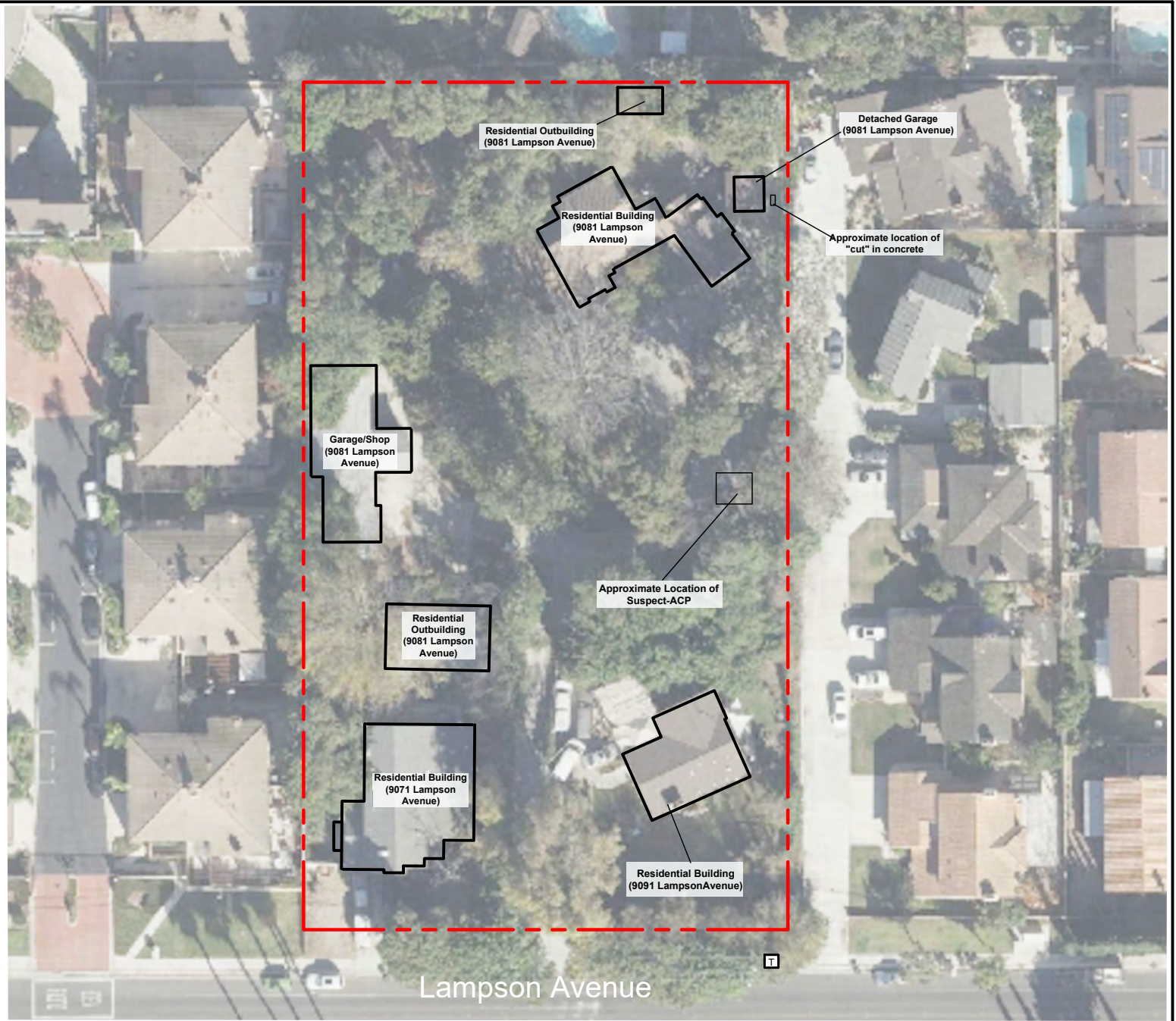
SITE VICINITY MAP

9071, 9081, AND 9091 LAMPSON AVENUE
GARDEN GROVE, CALIFORNIA

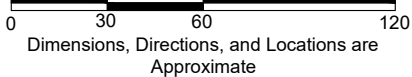
FIGURE
2


LEGEND

- - - Approximate Site Boundary
- ACP Asbestos Containing Pipe
- T Pole-Mounted Electrical Transformer



Approximate Scale, Feet



	PROJECT NO. 101352001	SITE PLAN	FIGURE 3
	DATE 05/22	9071, 9081, AND 9091 LAMPSON AVENUE GARDEN GROVE, CALIFORNIA	

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION



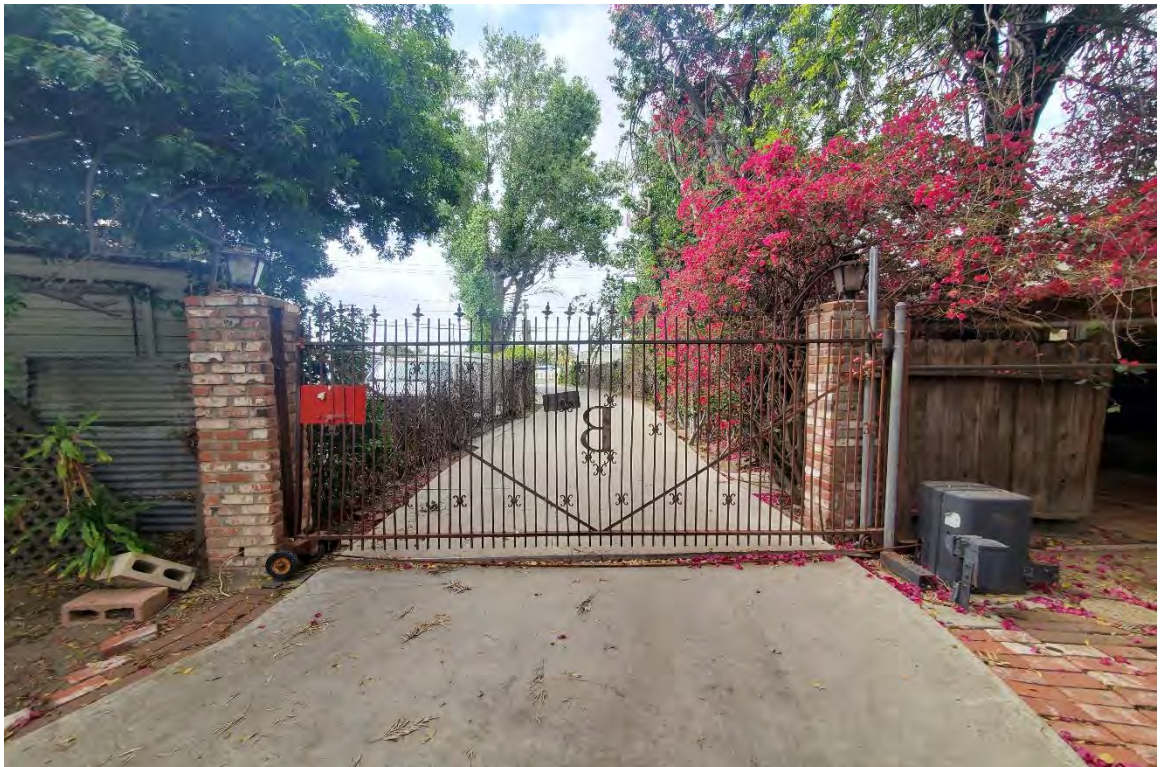
Photograph No. 1: View of site, looking north across Lampson Avenue.



Photograph No. 2: Entrance driveway and southwestern residential building (9071 Lampson Avenue), looking northwest.



Photograph No. 3: Southeastern residential building, looking northeast (9091 Lampson Avenue).



Photograph No. 4: Entrance driveway, looking south (9081 Lampson Avenue).



Photograph No. 5: Entrance driveway, looking north (9081 Lampson Avenue).



Photograph No. 6: Residential building, looking northeast (9081 Lampson Avenue).



Photograph No. 7: Detached garage, with concrete patch noted in driveway (9081 Lampson Avenue).



Photograph No. 8: Northern residential outbuilding (9081 Lampson Avenue).



Photograph No. 9: Suspect asbestos-containing pipe (ACP) located in the yard (9081 Lampson Avenue).



Photograph No. 10: Eastern adjacent private residences, looking northeast.



Photograph No. 11: Western adjacent private residences, looking northeast.



Photograph No. 12: Lampson Avenue, looking east, with view of pole-mounted electrical transformer located along site boundary.



Photograph No. 13: Lampson Avenue, looking west.

APPENDIX B
USER PROVIDED INFORMATION

PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA) USER QUESTIONNAIRE

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *user of the Phase I ESA* must provide the following information (if available) to the *environmental professional*. Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.


Project Information	
Facility Name and Address:	9071 WATSON
Reason for the Phase I ESA:	DEMO / NEW HOMES
Type of Property:	RESIDENTIAL
Site Owner and Contact Information:	BICKNELL FAMILY TRUST
Site Contact Name and Contact Information:	Pete Gilen 4590 MARK AVENUE - BLDG. 260 Newport Bch, CA 92660
Tax Assessors Parcel Number (APN):	133-183-55, 133-183-56 133-183-57 133-183-58

	Yes	No
1. Are you aware of any environmental cleanup liens against the subject property that are filed or recorded under federal, state, or local law?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Are you aware of any activity use limitations, such as engineering controls (engineered caps, liners, treatment methods, etc.), land use restrictions, or institutional controls (administrative measures restricting groundwater use, construction, or property use, etc.) that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, or local law?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Do you have any specialized knowledge or experience related to the subject property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the subject property so that you would have specialized knowledge of the chemicals or processes used by this type of business?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4a. Does the purchase price being paid for the subject property reasonably reflect the fair market value of the subject property?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4b. If you conclude that there is a difference in fair market price, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Are you aware of any commonly known or reasonably ascertainable information about the subject property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as a user,	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5 (a) Do you know of the past uses of the property?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 (b) Do you know of any specific chemicals that are present or were once present on the subject property?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 (c) Do you know of spills or other chemical releases that have taken place at the subject property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5 (d) Do you know of any environmental cleanups that have taken place at the subject property?		X
6. As the user of this ESA, based on your knowledge and experience related to the subject property, are there any obvious indicators that point to the presence or likely presence of contamination at the subject property?	X	

If you answered "yes" to any of the questions (except 4a) above, please provide more detail below, or attach additional information to this document:

9071 B LAMPSON - 40 SF of LINOLEUM w/ ~~Asbestos~~ low level
 9081 LAMPSON - 30 SF - 9x9 Floor Tile w/
 trace Asbestos, TRACE in STUCCO (.01%)
 9091 LAMPSON - TRACE Asbestos in STUCCO (.01%)

Name and title of person completing questionnaire: (Please Print)	
Vice President Operations	
Signature of person completing questionnaire:	Date:
	4-28-22



Fidelity National Title Company

4400 MacArthur Blvd., Suite 200, Newport Beach, CA 92660
Phone: (949) 622-5000 • Fax:

Issuing Policies of Fidelity National Title Insurance Company

Title Officer: Thomas Szopinski (MA)
Escrow Officer: Jody Kelly

Order No.: 008-**30074289**-B-TS4

TO:

PLC Communities
888 San Clemente Drive, Suite 200
Newport Beach, CA 92660

ATTN: **Daniel Oâ€™Bannon**
YOUR REFERENCE:

PROPERTY ADDRESS: 9071, 9081 and 9091 Lampson Avenue, Garden Grove, CA

AMENDED PRELIMINARY REPORT

*In response to the application for a policy of title insurance referenced herein, **Fidelity National Title Company** hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a policy or policies of title insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.*

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said policy or policies are set forth in Attachment One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner’s Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Attachment One. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Fidelity National Title Insurance Company, a Florida Corporation.

Please read the exceptions shown or referred to herein and the exceptions and exclusions set forth in Attachment One of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

Countersigned by:

Authorized Signature



Fidelity National Title Company

4400 MacArthur Blvd., Suite 200, Newport Beach, CA 92660
Phone: (949) 622-5000 • Fax:

AMENDED PRELIMINARY REPORT

EFFECTIVE DATE: February 3, 2022 at 7:30 a.m., Amended: February 10, 2022, Amendment No. B

ORDER NO.: 008-30074289-B-TS4

The form of policy or policies of title insurance contemplated by this report is:

CLTA Standard Coverage Policy (04-08-14)

1. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

**A Fee as to Parcel(s) A, B, C and D;
Easement(s) more fully described below as to Parcel(s) A1, B1, C1 and D1**

2. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS [VESTED IN:](#)

RAY A. BICKNELL and JO H. BICKNELL, as Trustees of the BICKNELL FAMILY TRUST dated March 20, 1975, and any amendments thereto

3. THE LAND REFERRED TO IN THIS REPORT IS DESCRIBED AS FOLLOWS:

See Exhibit A attached hereto and made a part hereof.

EXHIBIT A LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A:

PARCEL 1, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN [BOOK 113, PAGES 1](#) AND 2, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

PARCEL A1:

AN EASEMENT FOR SEWER AND WATER LINES OVER THE EASTERLY 12.00 FEET OF PARCEL 4, IN THE CITY OF GARDEN GROVE, AS SHOWN ON A MAP FILED IN [BOOK 113, PAGES 1](#) AND 2, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

PARCEL B:

PARCEL 2, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN [BOOK 113, PAGES 1](#) AND 2, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

PARCEL B1:

AN EASEMENT FOR ACCESS AND UTILITY PURPOSES OVER THE MOST SOUTHERLY 150 FEET OF PARCEL 1, AS SHOWN ON A MAP FILED IN [BOOK 113, PAGES 1](#) AND 2, OF PARCEL MAPS, AND FURTHER SHOWN AS A 30.50 FOOT BY 150 FOOT STRIP BY INDORSEMENT OF SAID PARCEL MAP.

PARCEL C:

PARCEL 3, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN [BOOK 113, PAGES 1](#) AND 2, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL C1:

AN EASEMENT FOR ACCESS AND UTILITY PURPOSES OVER THE MOST SOUTHERLY 150 FEET OF PARCEL 1, AS SHOWN ON A MAP FILED IN [BOOK 113, PAGES 1](#) AND 2, OF PARCEL MAPS, AND FURTHER SHOWN AS A 30.50 FOOT BY 150 FOOT STRIP BY INDORSEMENT OF SAID PARCEL MAP.

PARCEL D:

PARCEL 4, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN [BOOK 113, PAGES 1](#) AND 2, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

EXHIBIT A
(Continued)

PARCEL D1:

AN EASEMENT FOR ACCESS AND UTILITY PURPOSES OVER THE MOST SOUTHERLY 150 FEET OF PARCEL 1, AS SHOWN ON A MAP FILED IN [BOOK 113, PAGES 1](#) AND 2, OF PARCEL MAPS, AND FURTHER SHOWN AS A 30.50 FOOT BY 150 FOOT STRIP BY INDORSEMENT OF SAID PARCEL MAP.

[APN: 133-183-55](#), [APN: 133-183-56](#), [APN: 133-183-57](#), [APN: 133-183-58](#)

EXCEPTIONS

AT THE DATE HEREOF, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN SAID POLICY FORM WOULD BE AS FOLLOWS:

- A. Property taxes, including any personal property taxes and any assessments collected with taxes, are as follows:

Tax Identification No.: 133-183-58
Fiscal Year: 2021 - 2022
1st Installment: \$992.55, PAID
2nd Installment: \$992.55, OPEN (Delinquent after April 10)
Penalty and Cost: \$122.25
Homeowners Exemption: \$0.00
Code Area: 18-007

Affects: Parcel 1.

- B. Property taxes, including any personal property taxes and any assessments collected with taxes, are as follows:

Tax Identification No.: 133-183-56
Fiscal Year: 2021 - 2022
1st Installment: \$95.70, PAID
2nd Installment: \$95.70, OPEN (Delinquent after April 10)
Penalty and Cost: \$32.57
Homeowners Exemption: \$0.00
Code Area: 18-007

Affects: Parcel 2.

- C. Property taxes, including any personal property taxes and any assessments collected with taxes, are as follows:

Tax Identification No.: 133-183-55
Fiscal Year: 2021 - 2022
1st Installment: \$1,943.53, PAID
2nd Installment: \$1,943.53, OPEN (Delinquent after April 10)
Penalty and Cost: \$217.35
Homeowners Exemption: \$0.00
Code Area: 18-007

Affects: Parcel 3.

- D. Property taxes, including any personal property taxes and any assessments collected with taxes, are as follows:

Tax Identification No.: 133-183-57
Fiscal Year: 2021 - 2022
1st Installment: \$1,962.34, PAID
2nd Installment: \$1,962.34, OPEN (Delinquent after April 10)
Penalty and Cost: \$219.23
Homeowners Exemption: \$0.00
Code Area: 18-007

Affects: Parcel 4.

**EXCEPTIONS
(Continued)**

E. The lien of supplemental or escaped assessments of property taxes, if any, made pursuant to the provisions of Chapter 3.5 (commencing with Section 75) or Part 2, Chapter 3, Articles 3 and 4, respectively, of the Revenue and Taxation Code of the State of California as a result of the transfer of title to the vestee named in Schedule A or as a result of changes in ownership or new construction occurring prior to Date of Policy.

1. Water rights, claims or title to water, whether or not disclosed by the public records.

2. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose: Pipe lines
Recording Date: May 1, 1946
Recording No: [Book 1410, Page 93](#), of Official Records
Affects: Said land.

3. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose: Pole line, conduit purposes and rights incidental thereto
Recording No: [Book 3129, Page 213](#), of Official Records
Affects: Said land.

4. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose: Pole lines, conduit purposes and rights incidental thereto
Recording No: [Book 3195, Page 156](#), of Official Records
Affects: Said land.

5. Intentionally deleted.

6. Matters contained in that certain document

Entitled: Declaration of Common Driveway Easement and Maintenance Agreement
Dated: August 9, 1979
Executed by: Ray A. Bicknell and Jo M. Bicknell, as Trustees
Recording Date: September 7, 1979
Recording No: [Book 13302, Page 1744](#), of Official Records

Reference is hereby made to said document for full particulars.

7. Building restrictions over Parcel 4 which provides among other things "No permanent structure to be built in the Easement Area" as set forth in the above mentioned instrument.

8. A deed of trust to secure an indebtedness in the amount shown below,

Amount: \$300,000.00
Dated: September 16, 1983
Trustor/Grantor: Ray A. Bicknell and Jo H. Bicknell, Trustees under Declaration of Trust dated March 20, 1975
Trustee: Crocker Custody Corporation, a California corporation
Beneficiary: Crocker National Bank, a national banking association
Recording Date: October 12, 1983
[Recording No: 83-449233, of Official Records](#)

**EXCEPTIONS
(Continued)**

An agreement to modify the terms and provisions of said deed of trust as therein provided

Executed by: Ray and Jo Bicknell Family Trust, a Trust, and Crocker National Bank, a national banking association
Recording Date: October 26, 1984
[Recording No: 84-443428, of Official Records](#)
Affects: Parcels 1 and 2.

9. A deed of trust to secure an indebtedness in the amount shown below,

Amount: \$165,000.00
Dated: September 15, 2003
Trustor/Grantor: Denise Bicknell, an unmarried woman and Ray Bicknell and Jo Bicknell, husband and wife, as joint tenants
Trustee: CTC Real Estate Services
Beneficiary: Mortgage Electronic Registration Systems, Inc., solely as nominee for Countrywide Home Loans, Inc., a corporation organized and existing under the laws of New York
Loan No.: 2735802209
Recording Date: September 26, 2003
[Recording No: 2003001185435, of Official Records](#)
Affects: Parcel 3.

10. A deed of trust to secure an indebtedness in the amount shown below,

Amount: \$300,000.00
Dated: December 26, 2013
Trustor/Grantor: Ray A. Bicknell and Jo H. Bicknell, as Trustees of the Bicknell Family Trust dated March 20, 1975, and any amendments thereto
Trustee: Chicago Title Company, a California corporation
Beneficiary: BOFI Federal Bank, organized and existing under the laws of California
Recording Date: January 8, 2014
[Recording No: 2014000006992, of Official Records](#)
Affects: Parcels 1 and 2.

11. Any rights of the parties in possession of a portion of, or all of, said Land, which rights are not disclosed by the public records.

The Company will require, for review, a full and complete copy of any unrecorded agreement, contract, license and/or lease, together with all supplements, assignments and amendments thereto, before issuing any policy of title insurance without excepting this item from coverage.

The Company reserves the right to except additional items and/or make additional requirements after reviewing said documents.

12. Matters which may be disclosed by an inspection and/or by a correct ALTA/NSPS Land Title Survey of said Land that is satisfactory to the Company, and/or by inquiry of the parties in possession thereof.

**EXCEPTIONS
(Continued)**

**PLEASE REFER TO THE "INFORMATIONAL NOTES" AND "REQUIREMENTS" SECTIONS WHICH
FOLLOW FOR INFORMATION NECESSARY TO COMPLETE THIS TRANSACTION.**

END OF EXCEPTIONS

REQUIREMENTS SECTION

1. The Company will require either (a) a complete copy of the trust agreement and any amendments thereto certified by the trustee(s) to be a true and complete copy with respect to the hereinafter named trust, or (b) a Certification, pursuant to California Probate Code Section 18100.5, executed by all of the current trustee(s) of the hereinafter named trust, a form of which is attached.

Name of Trust: The Bicknell Family Trust dated March 20, 1975

2. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below:

Limited Liability Company: PLC Communities LLC, a Delaware limited liability company

- a) A copy of its operating agreement, if any, and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.
 - b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.
 - c) If the Limited Liability Company is member-managed, a full and complete current list of members certified by the appropriate manager or member.
 - d) A current dated certificate of good standing from the proper governmental authority of the state in which the entity is currently domiciled.
 - e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.
 - f) If Limited Liability Company is a Single Member Entity, a Statement of Information for the Single Member will be required.
 - g) Each member and manager of the LLC without an Operating Agreement must execute in the presence of a notary public the Certificate of California LLC (Without an Operating Agreement) Status and Authority form.
3. In order to complete this report, the Company requires a Statement of Information to be completed by the following party(s),

Party(s): All Parties

The Company reserves the right to add additional items or make further requirements after review of the requested Statement of Information.

NOTE: The Statement of Information is necessary to complete the search and examination of title under this order. Any title search includes matters that are indexed by name only, and having a completed Statement of Information assists the Company in the elimination of certain matters which appear to involve the parties but in fact affect another party with the same or similar name. Be assured that the Statement of Information is essential and will be kept strictly confidential to this file.

REQUIREMENTS
(Continued)

4. Unrecorded matters which may be disclosed by an Owner's Affidavit or Declaration. A form of the Owner's Affidavit/Declaration is attached to this Preliminary Report/Commitment. This Affidavit/Declaration is to be completed by the record owner of the land and submitted for review prior to the closing of this transaction. Your prompt attention to this requirement will help avoid delays in the closing of this transaction. Thank you.

The Company reserves the right to add additional items or make further requirements after review of the requested Affidavit/Declaration.

END OF REQUIREMENTS

INFORMATIONAL NOTES SECTION

1. None of the items shown in this report will cause the Company to decline to attach CLTA Endorsement Form 100 to an Extended Coverage Loan Policy, when issued.
2. The Company is not aware of any matters which would cause it to decline to attach CLTA Endorsement Form 116 indicating that there is located on said Land Single Family Residence properties, known as 9071, 9081 and 9091 Lampson Avenue, located within the City of Garden Grove, California, 92841, to an Extended Coverage Loan Policy.
3. Note: The policy of title insurance will include an arbitration provision. The Company or the insured may demand arbitration. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the insured arising out of or relating to this policy, any service of the Company in connection with its issuance or the breach of a policy provision or other obligation. Please ask your escrow or title officer for a sample copy of the policy to be issued if you wish to review the arbitration provisions and any other provisions pertaining to your Title Insurance coverage.
4. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.
5. Pursuant to Government Code Section 27388.1, as amended and effective as of 1-1-2018, a Documentary Transfer Tax (DTT) Affidavit may be required to be completed and submitted with each document when DTT is being paid or when an exemption is being claimed from paying the tax. If a governmental agency is a party to the document, the form will not be required. DTT Affidavits may be available at a Tax Assessor-County Clerk-Recorder.
6. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

END OF INFORMATIONAL NOTES

Thomas Szopinski (MA)/717

Wire Fraud Alert

This Notice is not intended to provide legal or professional advice. If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. **DO NOT** use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the phone number of relevant parties to the transaction as soon as an escrow account is opened.** **DO NOT** send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do **NOT** reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
<http://www.fbi.gov>

Internet Crime Complaint Center:
<http://www.ic3.gov>



Fidelity National Title Company

4400 MacArthur Blvd., Suite 200, Newport Beach, CA 92660
Phone: (949) 622-5000 • Fax:

Notice of Available Discounts

Pursuant to Section 2355.3 in Title 10 of the California Code of Regulations Fidelity National Financial, Inc. and its subsidiaries ("FNF") must deliver a notice of each discount available under our current rate filing along with the delivery of escrow instructions, a preliminary report or commitment. Please be aware that the provision of this notice does not constitute a waiver of the consumer's right to be charged the filed rate. As such, your transaction may not qualify for the below discounts.

You are encouraged to discuss the applicability of one or more of the below discounts with a Company representative. These discounts are generally described below; consult the rate manual for a full description of the terms, conditions and requirements for such discount. These discounts only apply to transactions involving services rendered by the FNF Family of Companies. This notice only applies to transactions involving property improved with a one-to-four family residential dwelling.

Not all discounts are offered by every FNF Company. The discount will only be applicable to the FNF Company as indicated by the named discount.

FNF Underwritten Title Company

CTC – Chicago Title company
CLTC – Commonwealth Land Title Company
FNTC – Fidelity National Title Company of California
FNTCCA - Fidelity National Title Company of California
TICOR – Ticor Title Company of California
LTC – Lawyer's Title Company
SLTC – ServiceLink Title Company

Underwritten by FNF Underwriters

CTIC – Chicago Title Insurance Company
CLTIC - Commonwealth Land Title Insurance Company
FNTIC – Fidelity National Title Insurance Company
FNTIC - Fidelity National Title Insurance Company
CTIC – Chicago Title Insurance Company
CLTIC – Commonwealth Land Title Insurance Company
CTIC – Chicago Title Insurance Company

Available Discounts

DISASTER LOANS (CTIC, CLTIC, FNTIC)

The charge for a Lender's Policy (Standard or Extended coverage) covering the financing or refinancing by an owner of record, within twenty-four (24) months of the date of a declaration of a disaster area by the government of the United States or the State of California on any land located in said area, which was partially or totally destroyed in the disaster, will be fifty percent (50%) of the appropriate title insurance rate.

CHURCHES OR CHARITABLE NON-PROFIT ORGANIZATIONS (CTIC, FNTIC)

On properties used as a church or for charitable purposes within the scope of the normal activities of such entities, provided said charge is normally the church's obligation the charge for an owner's policy shall be fifty percent (50%) to seventy percent (70%) of the appropriate title insurance rate, depending on the type of coverage selected. The charge for a lender's policy shall be forty (40%) to fifty percent (50%) of the appropriate title insurance rate, depending on the type of coverage selected.

FIDELITY NATIONAL FINANCIAL, INC. PRIVACY NOTICE

Effective August 1, 2021

Fidelity National Financial, Inc. and its majority-owned subsidiary companies (collectively, "FNF," "our," or "we") respect and are committed to protecting your privacy. This Privacy Notice explains how we collect, use, and protect personal information, when and to whom we disclose such information, and the choices you have about the use and disclosure of that information.

A limited number of FNF subsidiaries have their own privacy notices. If a subsidiary has its own privacy notice, the privacy notice will be available on the subsidiary's website and this Privacy Notice does not apply.

Collection of Personal Information

FNF may collect the following categories of Personal Information:

- contact information (e.g., name, address, phone number, email address);
- demographic information (e.g., date of birth, gender, marital status);
- identity information (e.g. Social Security Number, driver's license, passport, or other government ID number);
- financial account information (e.g. loan or bank account information); and
- other personal information necessary to provide products or services to you.

We may collect Personal Information about you from:

- information we receive from you or your agent;
- information about your transactions with FNF, our affiliates, or others; and
- information we receive from consumer reporting agencies and/or governmental entities, either directly from these entities or through others.

Collection of Browsing Information

FNF automatically collects the following types of Browsing Information when you access an FNF website, online service, or application (each an "FNF Website") from your Internet browser, computer, and/or device:

- Internet Protocol (IP) address and operating system;
- browser version, language, and type;
- domain name system requests; and
- browsing history on the FNF Website, such as date and time of your visit to the FNF Website and visits to the pages within the FNF Website.

Like most websites, our servers automatically log each visitor to the FNF Website and may collect the Browsing Information described above. We use Browsing Information for system administration, troubleshooting, fraud investigation, and to improve our websites. Browsing Information generally does not reveal anything personal about you, though if you have created a user account for an FNF Website and are logged into that account, the FNF Website may be able to link certain browsing activity to your user account.

Other Online Specifics

Cookies. When you visit an FNF Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. Information gathered using cookies helps us improve your user experience. For example, a cookie can help the website load properly or can customize the display page based on your browser type and user preferences. You can choose whether or not to accept cookies by changing your Internet browser settings. Be aware that doing so may impair or limit some functionality of the FNF Website.

Web Beacons. We use web beacons to determine when and how many times a page has been viewed. This information is used to improve our websites.

Do Not Track. Currently our FNF Websites do not respond to "Do Not Track" features enabled through your browser.

Links to Other Sites. FNF Websites may contain links to unaffiliated third-party websites. FNF is not responsible for the privacy practices or content of those websites. We recommend that you read the privacy policy of every website you visit.

Use of Personal Information

FNF uses Personal Information for three main purposes:

- To provide products and services to you or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you about our, our affiliates', and others' products and services, jointly or independently.

When Information Is Disclosed

We may disclose your Personal Information and Browsing Information in the following circumstances:

- to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to nonaffiliated service providers who provide or perform services or functions on our behalf and who agree to use the information only to provide such services or functions;

- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to jointly market financial products or services to you;
- to law enforcement or authorities in connection with an investigation, or in response to a subpoena or court order; or
- in the good-faith belief that such disclosure is necessary to comply with legal process or applicable laws, or to protect the rights, property, or safety of FNF, its customers, or the public.

The law does not require your prior authorization and does not allow you to restrict the disclosures described above. Additionally, we may disclose your information to third parties for whom you have given us authorization or consent to make such disclosure. We do not otherwise share your Personal Information or Browsing Information with nonaffiliated third parties, except as required or permitted by law. We may share your Personal Information with affiliates (other companies owned by FNF) to directly market to you. Please see "Choices with Your Information" to learn how to restrict that sharing.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of bankruptcy, reorganization, insolvency, receivership, or an assignment for the benefit of creditors. By submitting Personal Information and/or Browsing Information to FNF, you expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings.

Security of Your Information

We maintain physical, electronic, and procedural safeguards to protect your Personal Information.

Choices With Your Information

If you do not want FNF to share your information among our affiliates to directly market to you, you may send an "opt out" request as directed at the end of this Privacy Notice. We do not share your Personal Information with nonaffiliates for their use to direct market to you without your consent.

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you.

For California Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties, except as permitted by California law. For additional information about your California privacy rights, please visit the "California Privacy" link on our website (<https://fnf.com/pages/californiaprivacy.aspx>) or call (888) 413-1748.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 714-2710 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not disclose information about your creditworthiness to our affiliates and will not disclose your personal information, financial information, credit report, or health information to nonaffiliated third parties to market to you, other than as permitted by Vermont law, unless you authorize us to make those disclosures.

Information From Children

The FNF Websites are not intended or designed to attract persons under the age of eighteen (18). We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian.

International Users

FNF's headquarters is located within the United States. If you reside outside the United States and choose to provide Personal Information or Browsing Information to us, please note that we may transfer that information outside of your country of residence. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection, transfer, and use of such information in accordance with this Privacy Notice.

FNF Website Services for Mortgage Loans

Certain FNF companies provide services to mortgage loan servicers, including hosting websites that collect customer information on behalf of mortgage loan servicers (the "Service Websites"). The Service Websites may contain links to both this Privacy Notice and the mortgage loan servicer or lender's privacy notice. The sections of this Privacy Notice titled When Information is Disclosed, Choices with Your Information, and Accessing and Correcting Information do not apply to the Service Websites. The mortgage loan servicer or lender's privacy notice governs use, disclosure, and access to your Personal Information. FNF does not share Personal Information collected through the Service Websites, except as required or authorized by contract with the mortgage loan servicer or lender, or as required by law or in the good-faith belief that such disclosure is necessary: to comply with a legal process or applicable law, to enforce this Privacy Notice, or to protect the rights, property, or safety of FNF or the public.

Your Consent To This Privacy Notice; Notice Changes

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information in accordance with this Privacy Notice. We may change this Privacy Notice at any time. The Privacy Notice's effective date will show the last date changes were made. If you provide information to us following any change of the Privacy Notice, that signifies your assent to and acceptance of the changes to the Privacy Notice.

Accessing and Correcting Information; Contact Us

If you have questions, would like to correct your Personal Information, or want to opt-out of information sharing for affiliate marketing, visit FNF's [Opt Out Page](#) or contact us by phone at (888) 714-2710 or by mail to:

Fidelity National Financial, Inc.
601 Riverside Avenue,
Jacksonville, Florida 32204
Attn: Chief Privacy Officer

ATTACHMENT ONE (Revised 05-06-16)

CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY – 1990

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
- (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
 - (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
 - (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
 - (c) resulting in no loss or damage to the insured claimant;
 - (d) attaching or created subsequent to Date of Policy; or
 - (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13) ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE

EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
 - a. building;
 - b. zoning;
 - c. land use;
 - d. improvements on the Land;
 - e. land division; and
 - f. environmental protection.This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
4. Risks:
 - a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
 - b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;

- c. that result in no loss to You; or
 - d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.
5. Failure to pay value for Your Title.
 6. Lack of a right:
 - a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
 - b. in streets, alleys, or waterways that touch the Land.
 This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
 7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
 8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
 9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:

- For Covered Risk 16, 18, 19, and 21 Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.

The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

	Your Deductible Amount	Our Maximum Dollar Limit of Liability
Covered Risk 16:	1.00% of Policy Amount Shown in Schedule A or \$2,500.00 (whichever is less)	\$ 10,000.00
Covered Risk 18:	1.00% of Policy Amount Shown in Schedule A or \$5,000.00 (whichever is less)	\$ 25,000.00
Covered Risk 19:	1.00% of Policy Amount Shown in Schedule A or \$5,000.00 (whichever is less)	\$ 25,000.00
Covered Risk 21:	1.00% of Policy Amount Shown in Schedule A or \$2,500.00 (whichever is less)	\$ 5,000.00

2006 ALTA LOAN POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;
 or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
- (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13 or 14); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
 - (a) a fraudulent conveyance or fraudulent transfer, or
 - (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

{Except as provided in Schedule B - Part II, {t{or T}his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

{PART I

{The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.}

PART II

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:}

2006 ALTA OWNER'S POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
- (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
 - (a) a fraudulent conveyance or fraudulent transfer; or
 - (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

{The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

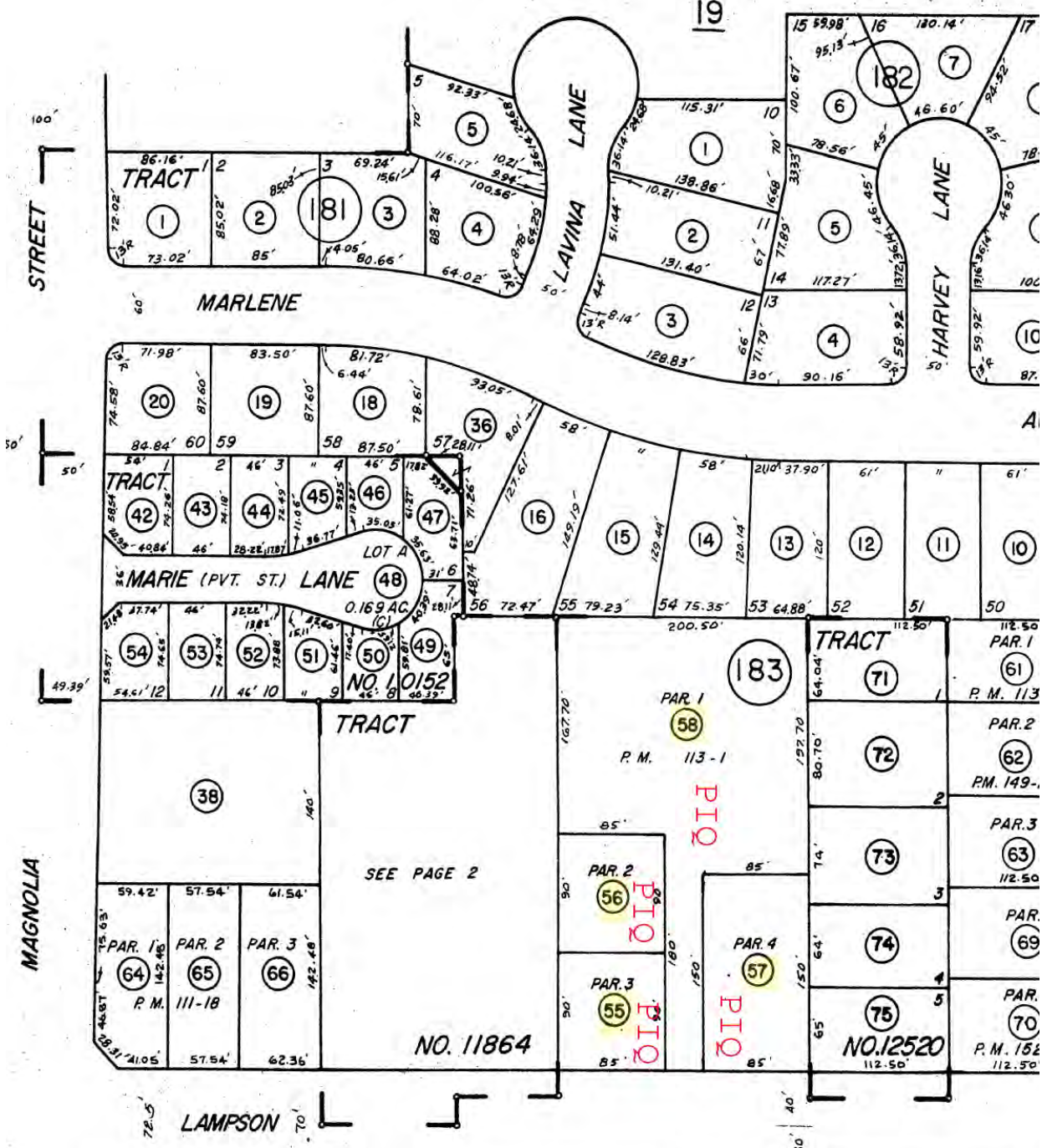
1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown in the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and that are not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records. }
7. {Variable exceptions such as taxes, easements, CC&R's, etc. shown here.}

ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY – ASSESSMENTS PRIORITY (04-02-15)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
- (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
 - (a) a fraudulent conveyance or fraudulent transfer, or
 - (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.



MARCH 1960

28
 TRACT NO. 2241
 TRACT NO. 10152
 TRACT NO. 11864
 TRACT NO. 12520
 PARCEL MAP

M. M. 72 - 37, 38
 M. M. 429 - 41, 42
 M. M. 537 - 20, 21, 23
 M. M. 592 - 45, 46
 P. M. 111-18, 113-1, 113-3, 149

RECORDING REQUESTED BY
Fidelity National Title Company
WHEN RECORDED MAIL TO:
=addressee=

ORDER NO.: 30074289-008-TS4

SPACE ABOVE THIS LINE FOR RECORDER'S USE

CERTIFICATION OF TRUST
California Probate Code Section 18100.5

The undersigned declare(s) under penalty of perjury under the laws of the State of California that the following is true and correct:

1. The Trust known as _____,
executed on _____, is a valid and existing trust.
2. The name(s) of the settlor(s) of the Trust is (are): _____

3. The name(s) of the currently acting trustee(s) is (are): _____

4. The trustee(s) of the Trust have the following powers (initial applicable line(s)):
_____ Power to acquire additional property.
_____ Power to sell and execute deeds.
_____ Power to encumber, and execute deeds of trust.
_____ Other: _____
5. The Trust is (check one): _____ Revocable _____ Irrevocable
The name of the person who may revoke the Trust is: _____
6. The number of trustees who must sign documents in order to exercise the powers of the Trust is (are): _____,
whose name(s) is (are): _____
7. Title to Trust assets is to be taken as follows: _____
8. The Trust has not been revoked, modified or amended in any manner which would cause the representations
contained herein to be incorrect.
9. I (we) am (are) all of the currently acting trustees.
10. I (we) understand that I (we) may be required to provide copies of excerpts from the original Trust documents
which designate the trustees and confer the power to act in the pending transaction.

Dated: _____

(Acknowledgement must be attached)

CERTIFICATE OF ACKNOWLEDGEMENT OF NOTARY PUBLIC

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF

} SS:

On _____ before me,
_____,
a Notary Public, personally appeared _____,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

CERTIFICATE OF ACKNOWLEDGEMENT OF NOTARY PUBLIC

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF

} SS:

On _____ before me,
_____,
a Notary Public, personally appeared _____,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

OWNER'S DECLARATION

Escrow No.: 30074289-008-JK-TS4
Property Address: 9071, 9081 and 9091 Lampson Avenue
Garden Grove, CA 92841

The undersigned hereby declares as follows:

1. (Fill in the applicable paragraph and strike the other)
 - a. Declarant ("Owner") is the owner or lessee, as the case may be, of certain premises located at 9071, 9081 and 9091 Lampson Avenue, Garden Grove, CA 92841, further described as follows: See Preliminary Report/Commitment No. for full legal description (the "Land").
 - b. Declarant is the _____ of _____ ("Owner"), which is the owner or lessee, as the case may be, of certain premises located at 9071, 9081 and 9091 Lampson Avenue, Garden Grove, CA 92841, further described as follows: See Preliminary Report/Commitment No. for full legal description (the "Land").
2. (Fill in the applicable paragraph and strike the other)
 - a. During the period of six months immediately preceding the date of this declaration no work has been done, no surveys or architectural or engineering plans have been prepared, and no materials have been furnished in connection with the erection, equipment, repair, protection or removal of any building or other structure on the Land or in connection with the improvement of the Land in any manner whatsoever.
 - b. During the period of six months immediately preceding the date of this declaration certain work has been done and materials furnished in connection with _____ upon the Land in the approximate total sum of \$_____, but no work whatever remains to be done and no materials remain to be furnished to complete the construction in full compliance with the plans and specifications, nor are there any unpaid bills incurred for labor and materials used in making such improvements or repairs upon the Land, or for the services of architects, surveyors or engineers, except as follows: _____ Owner, by the undersigned Declarant, agrees to and does hereby indemnify and hold harmless Fidelity National Title Company against any and all claims arising therefrom.
3. Owner has not previously conveyed the Land; is not a debtor in bankruptcy (and if a partnership, the general partner thereof is not a debtor in bankruptcy); and has not received notice of any pending court action affecting the title to the Land.
4. Except as shown in the above-referenced Preliminary Report/Commitment, there are no unpaid or unsatisfied mortgages, deeds of trust, Uniform Commercial Code financing statements, regular assessments, special assessments, periodic assessments or any assessment from any source, claims of lien, special assessments, or taxes that constitute a lien against the Land or that affect the Land but have not been recorded in the public records. There are no violations of the covenants, conditions and restrictions as shown in the above-referenced Preliminary Report/Commitment.
5. The Land is currently in use as _____; _____ occupy/occupies the Land; and the following are all of the leases or other occupancy rights affecting the Land:

6. There are no other persons or entities that assert an ownership interest in the Land, nor are there unrecorded easements, claims of easement, or boundary disputes that affect the Land.
7. There are no outstanding options to purchase or rights of first refusal affecting the Land.
8. Between the most recent Effective Date of the above-referenced Preliminary Report/Commitment and the date of recording of the Insured Instrument(s), Owner has not taken or allowed, and will not take or allow, any action or inaction to encumber or otherwise affect title to the Land.

This declaration is made with the intention that Fidelity National Title Company (the "Company") and its policy issuing agents will rely upon it in issuing their title insurance policies and endorsements. Owner, by the undersigned Declarant, agrees to indemnify the Company against loss or damage (including attorneys fees, expenses, and costs) incurred by the Company as a result of any untrue statement made herein.

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed on _____ at _____.

Signature: _____

APPENDIX C
PREVIOUS ENVIRONMENTAL REPORTS

L.Y. Environmental, Inc.

1050 Nevada Street, Suite# 403, Redlands, CA 92374 • Phone (909) 307-9730 • Fax (909) 307-9740

January 13, 2022

PLC Communities
Attn: Jeff Rulon
Phone: 949-729-1222
Email: jrulon@plcland.com
Other: jrulon@plccommunities.com

Summary Report: Comprehensive Asbestos Survey **9071B Lampson Ave, Garden Grove, CA 92841**

I. Introduction

L.Y. Environmental Inc., (LYEI) received a request to conduct a Comprehensive Asbestos Survey for the property located on 9071B Lampson Ave, Garden Grove, California. LYEI was requested to inspect the above-mentioned property for the existence of asbestos containing materials and to provide a written report of findings.

II. Background

Yonan Benjamin (CAC DOSH #02/3228) of LYEI conducted the survey at the subject site on January 7, 2022. The report was reviewed and completed by Yonan Benjamin, a California Asbestos Consultant and Certified Industrial Hygienist with LYEI.

The structure is slated for complete demolition and it appears to be intact and in good condition. The samples of the Ceiling, Floor, Roofing, and Wall Materials were collected. Samples were taken, all of which were analyzed by Inland Asbestos Lab located in Redlands, California, which is an NVLAP Lab (NVLAP Code 201000-0; Ph: 909-435-5504). Asbestos Bulk samples were analyzed by PLM using EPA Method 600/R-93/116, (July 1993), in accordance with 40 CFR 763, Sub-part F, Appendix A (AHERA), and if applicable, the Point Count Method 600/R-93/116 (1000 Point), (July 1993). The survey was conducted in accordance with CAL/OSHA, EPA AHERA and South Coast Air Quality Management District sampling protocols using non-destructive representative sampling techniques. See attached, Asbestos Bulk Sampling Field Log for materials and locations of samples collected.

III. Findings/Conclusions

Asbestos

Results of the bulk sample analysis are attached to this report and showed **positive concentrations of asbestos in the linoleum material in the Bathroom (approx. 20ft²), Office Room 3 (approx. 40ft²), and Garage Bathroom (approx. 20ft²)**. However, there were no concentrations of asbestos in the other structural materials collected and tested. See attached, Asbestos Sampling Field Log for the results and locations.

1-Results Table Summary

Sample #	Material Sampled	Sample Location	Quantity	Analytical Results	Friability	Condition	Percent Damaged
WS-1	Drywall & Joint Compound	Office Room 1	<2,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-2	Drywall & Joint Compound	Office Room 2	<2,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-3	Drywall & Joint Compound	Office Room 3	<2,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CS-1	Drywall & Joint Compound	Office Room 1	<2,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CS-2	Drywall & Joint Compound	Office Room 2	<2,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CS-3	Drywall & Joint Compound	Office Room 3	<2,000 ft ²	Non Detected	Non Friable	Good	0% Intact
AC-1	Acoustical Ceiling	Office Room 1	980 ft ²	Non Detected	Non Friable	Good	0% Intact
AC-2	Acoustical Ceiling	Room 2	980 ft ²	Non Detected	Non Friable	Good	0% Intact
AC-3	Acoustical Ceiling	Office Room 3	980 ft ²	Non Detected	Non Friable	Good	0% Intact
L-1	Linoleum	Bathroom	20 ft ²	25% Chrysotile	Non Friable	Good	0% Intact
L-2	Linoleum	Bathroom	20 ft ²	25% Chrysotile	Non Friable	Good	0% Intact
L-3	Linoleum	Bathroom	20 ft ²	25% Chrysotile	Non Friable	Good	0% Intact
L-4	Linoleum	Office Room 3	40 ft ²	25% Chrysotile	Non Friable	Good	0% Intact
L-5	Linoleum	Office Room 3	40 ft ²	25% Chrysotile	Non Friable	Good	0% Intact
L-6	Linoleum	Office Room 3	40 ft ²	25% Chrysotile	Non Friable	Good	0% Intact
R-1	Roofing	Exterior	4,000 ft ²	Non Detected	Non Friable	Good	0% Intact
R-2	Roofing	Exterior	4,000 ft ²	Non Detected	Non Friable	Good	0% Intact
R-3	Roofing	Exterior	4,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-4	Drywall & Joint Compound	Garage Room	<2,000 ft ²	Non Detected	Non Friable	Good	0% Intact

WS-5	Drywall & Joint Compound	Garage Room	<2,000 ft ²	Non Detected	Non Friable	Good	0% Intact
L-7	Linoleum	Garage Bathroom	20 ft ²	20% Chrysotile	Non Friable	Good	0% Intact
L-8	Linoleum	Garage Bathroom	20 ft ²	20% Chrysotile	Non Friable	Good	0% Intact
L-9	Linoleum	Garage Bathroom	20 ft ²	20% Chrysotile	Non Friable	Good	0% Intact

Thank you for giving L.Y. Environmental, Inc. the opportunity to participate in this investigation. We would be happy to provide any additional services, if necessary. Should there be any questions, or if I may be of further assistance, please feel free to contact me.

Sincerely,
L.Y. Environmental, Inc.

Yonan Benjamin



Yonan Benjamin, CIH CAC LPM
 Director, Indoor Air Quality and Industrial Hygiene
 Certified Industrial Hygienist (ABIH #7299)
 California Asbestos Consultant (DOSH #02/3228)
 Lead Inspector/Assessor (LRC-00008161)

Attachments:
 Laboratory Results for Asbestos
 Chain of Custody

CONDITIONS AND LIMITATIONS

L.Y. Environmental, Inc. (“LYEI”) has prepared this report for the exclusive use of its client. LYEI, in its survey’s measurements, applies approximations of the dimensional areas (square footage) it is not to be relied upon for bidding purposes.

LYEI, in performing its professional services, has applied engineering and scientific judgment that it believes is consistent with OSHA and AHERA industry standards. LYEI has inspected structures and/or contents in a good faith effort to observe pertinent detail. Due to the limitations of time, access, and other variables, certain details may have been overlooked. LYEI has relied in good faith upon the information and representations of others in the preparation of this report and the opinions expressed herein. Accordingly, LYEI accepts no responsibility for deficiencies, omissions, misrepresentations, or fraudulent acts of persons interviewed.

It is always possible that chemical and/or biological agents may be present in a building that have not been targeted for assay, have not been identified by science as a potential health threat, or are present in such small quantities or low levels that they were not detected by the sampling and/or analytical methods employed. It is also possible that variables in sample collection, such as those associated with an isolated or intermittent contaminant, the random selection of a sample location, etc., will affect analytical results. Accordingly, it cannot be determined with absolute certainty that there is no risk of exposure to some chemical and/or biological agents.

LYEI will accept no liability for any loss, injury, claim or damage arising directly or indirectly from any use or reliance on this report or the opinions expressed herein. LYEI makes no warranty, expressed or implied.

INLAND ASBESTOS LAB, INC.

1050 Nevada St., Suite# 403, Redlands, CA 92374
 (909) 435-5504 / info@inlandlab.com
 City of Redlands Business License # 1007671
 NVLAP Lab Code: 201000-0

January 12, 2022

Page 1 of 2




Bulk Sample Analysis Summary

Analytical Method: EPA 40 CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93/116

L.Y. Environmental, Inc. 909-307-9730 yonan@lyenvironmental.com		Inland Asbestos Ref No.: 22010040 Samples Analyzed: 23 Date Collected: January 7, 2022 Sampler: Y. Benjamin Date Received: January 11, 2022 Sample Condition: Acceptable Date Analyzed: January 11, 2022											
Client Reference: 9071 B Lampson Ave, Garden Grove, CA (133183-56-Parcel No.)		Asbestos Type, %						Non-Asbestos Constituents, %				QC	
Client Sample ID Inland Sample ID	Sample Description - Color Comment	Asbestos Detected	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	Cellulose	Fiberglass	Synthetic Fibers		Non-Asbestos Non-Fibrous
WS-1 220040-01	Drywall & Joint Comp. - white / brown	No							3			97	
WS-2 220040-02	Drywall & Joint Comp. - white / brown	No							2			98	
WS-3 220040-03	Drywall & Joint Comp. - white / brown	No							2			98	
CS-1 220040-04	Ceiling Drywall & Joint Comp. - white / brown	No							40			60	
CS-2 220040-05	Ceiling Drywall & Joint Comp. - white / brown	No							15			85	
CS-3 220040-06	Ceiling Drywall & Joint Comp. - white / brown	No							5			95	
AC-1 220040-07	Acoustical Ceiling - white	No							2			98	
AC-2 220040-08	Acoustical Ceiling - white	No										100	
AC-3 220040-09	Acoustical Ceiling - white	No										100	X
L-1 220040-10	Linoleum - beige / brown	Yes	25						5			70	
L-2 220040-11	Linoleum - beige / brown	Yes	25						5			70	
L-3 220040-12	Linoleum - beige / brown	Yes	25						5			70	
L-4 220040-13	Linoleum - brown	Yes	25						10			65	
L-5 220040-14	Linoleum - brown	Yes	25						10			65	

L.Y. Environmental, Inc. 909-307-9730 yonan@lyenvironmental.com		Inland Asbestos Ref No.: 22010040											
		Samples Analyzed: 23					Date Collected: January 7, 2022						
		Sampler: Y. Benjamin					Date Received: January 11, 2022						
		Sample Condition: Acceptable					Date Analyzed: January 11, 2022						
Client Reference: 9071 B Lampson Ave, Garden Grove, CA (133183-56-Parcel No.)		Asbestos Type, %						Non-Asbestos Constituents, %					
		Asbestos Detected	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	Cellulose	Fiberglass	Synthetic Fibers	Non-Asbestos Non-Fibrous	QC
Client Sample ID Inland Sample ID	Sample Description - Color Comment												
L-6 220040-15	Linoleum - brown	Yes	25					10			65		
R-1 220040-16	Roofing - black / white	No							5		95		
R-2 220040-17	Roofing - black / white	No							5		95		
R-3 220040-18	Roofing - black / white	No							5		95		
WS-4 220040-19	Drywall & Joint Comp. - white / brown	No						10			90		X
WS-5 220040-20	Drywall & Joint Comp. - white / brown	No						10			90		
L-7 220040-21	Linoleum - green / white Inseparable adhesive	Yes	20					15			65		
L-8 220040-22	Linoleum - green / white Inseparable adhesive	Yes	20					15			65		
L-9 220040-23	Linoleum - green / white Inseparable adhesive	Yes	20					15			65		

Analyzed by: Julia Benjamin 

The analysis of the samples are visually estimated and expressed as percent area using the EPA method 40 CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93/116. The limit of detection for this analytical method is less than 1% and total sample constituents may total greater than 100% due to trace amounts. Inland Asbestos Lab, Inc. is accredited under the NIST/NVLAP (NVLAP Lab Code: 201000-0) program for asbestos in bulk material by polarized light microscopy and the State of California for asbestos analysis. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available upon request. Inland Asbestos Lab, Inc. will retain samples for a period of six months unless otherwise specified. Please feel free to contact Inland Asbestos Lab, Inc. regarding any questions about this report.

22010040

L.Y. ENVIRONMENTAL, INC.

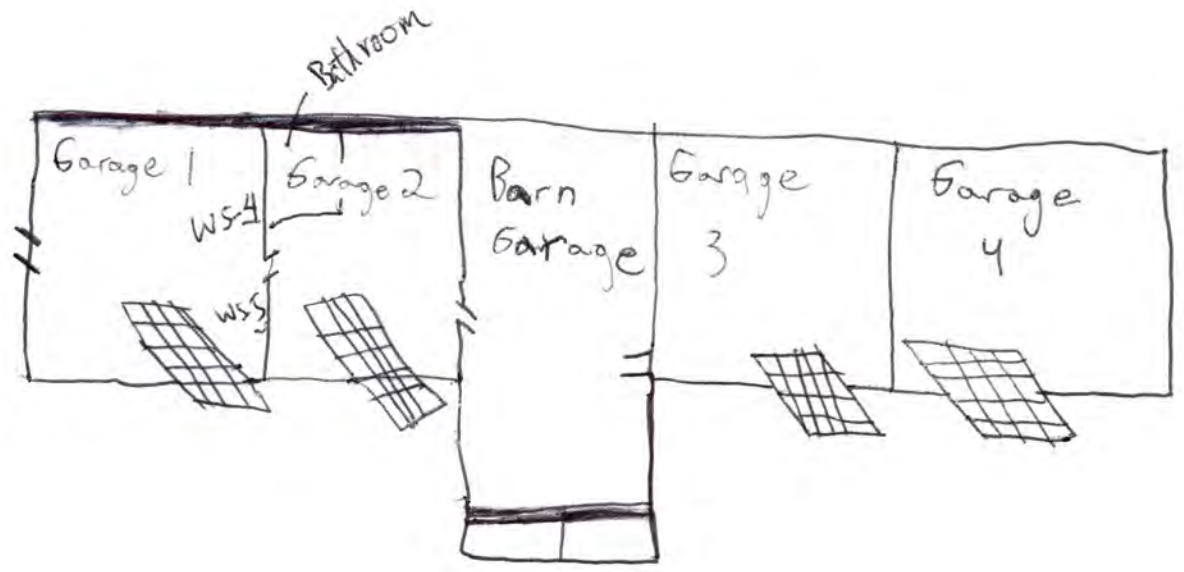
Date: 1-7-2022
 Project No:
 Client: PLC Complex Companies
 Site: 9071 B LAMPSON AVE., Garden Grove, CA. (133183-56-Parcel No.)
 Inspector (s): Yonan Benjamin, CAC 02-3228

ASBESTOS / LEAD BULK SAMPLING FIELD LOG / CHAIN OF CUSTODY

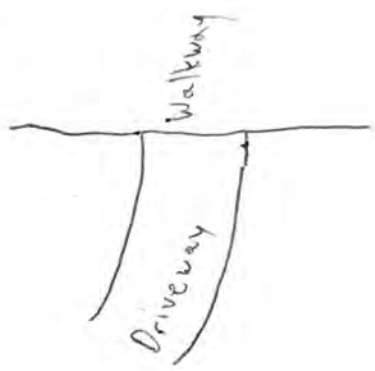
Sample Number	Material Sampled	Sample Location	Quantity ft ²	Analytical Results	Friability	Condition	Damaged %	Damaged Condition
WS-1	Drywall & Joint Compd.	OFFICE ROOM 1	<1000-T		N	G	0	I
WS-2	"	OFFICE ROOM 2	<2000-T		N	G	0	I
WS-3	"	OFFICE ROOM 3	<2000-T		N	G	0	I
CS-1	Ceiling Drywall & J Compd.	OFFICE ROOM 1	<2000-T		N	G	0	I
CS-2	"	OFFICE ROOM 2	<2000-T		N	G	0	I
CS-3	"	OFFICE ROOM 3	<2000-T		N	G	0	I
AC-1	Acoustical Ceiling	OFFICE ROOM 1	980-T		N	G	0	I
AC-2	"	Family Room 2	980-T		N	G	0	I
AC-3	"	OFFICE ROOM 3	980-T		N	G	0	I
L-123	LINOLEUM	Bathroom	20		N	G	0	I
L-456	"	OFFICE ROOM 3	40		N	G	0	I
R-123	ROOFING	EXTERIOR	4,000		N	G	0	I
WS-4	Drywall & Joint Compd.	Garage Room	<2,000-T		N	G	0	I
WS-5	"	"	<2,000-T		N	G	0	I
L-789	LINOLEUM	Garage Bathroom	20		N	G	0	I

NID = Not Detected
 F = Friable ; N = Non Friable
 P = Poor ; F = Fair ; G = Good
 I = Intact ; D = Damaged ; SD = Significantly Damaged

RELINQUISHED BY	DATE	RECEIVED BY (Lab)	DATE
Yonan Benjamin	1-7-2022 (Phonebox)	[Signature]	1/10/22 20800



9071 B LAMPSON AVE
 (OFFICE & GARAGE)



L.Y. Environmental, Inc.

1050 Nevada Street, Suite# 403, Redlands, CA 92374 • Phone (909) 307-9730 • Fax (909) 307-9740

January 13, 2022

PLC Communities
Attn: Jeff Rulon
Phone: 949-729-1222
Email: jrulon@plcland.com
Other: jrulon@plccommunities.com

Summary Report: Comprehensive Asbestos Survey **9081 Lampson Ave, Garden Grove, CA 92841**

I. Introduction

L.Y. Environmental Inc., (LYEI) received a request to conduct a Comprehensive Asbestos Survey for the property located on 9081 Lampson Ave, Garden Grove, California. LYEI was requested to inspect the above-mentioned property for the existence of asbestos containing materials and to provide a written report of findings.

II. Background

Yonan Benjamin (CAC DOSH #02/3228) of LYEI conducted the survey at the subject site on January 7, 2022. The report was reviewed and completed by Yonan Benjamin, a California Asbestos Consultant and Certified Industrial Hygienist with LYEI.

The structure is slated for complete demolition and it appears to be intact and in good condition. The samples of the Ceiling, Floor, Roofing, and Wall Materials were collected. Samples were taken, all of which were analyzed by Inland Asbestos Lab located in Redlands, California, which is an NVLAP Lab (NVLAP Code 201000-0; Ph: 909-435-5504). Asbestos Bulk samples were analyzed by PLM using EPA Method 600/R-93/116, (July 1993), in accordance with 40 CFR 763, Sub-part F, Appendix A (AHERA), and if applicable, the Point Count Method 600/R-93/116 (1000 Point), (July 1993). The survey was conducted in accordance with CAL/OSHA, EPA AHERA and South Coast Air Quality Management District sampling protocols using non-destructive representative sampling techniques. See attached, Asbestos Bulk Sampling Field Log for materials and locations of samples collected.

III. Findings/Conclusions

Asbestos

Results of the bulk sample analysis are attached to this report and showed **positive concentrations of asbestos in the 9x9 floor tile and mastic material in the Laundry (approx. 30ft²)**. However, there were no concentrations of asbestos in the other structural materials collected and tested. See attached, Asbestos Sampling Field Log for the results and locations.

1-Results Table Summary

Sample #	Material Sampled	Sample Location	Quantity	Analytical Results	Friability	Condition	Percent Damaged
FT-1	Floor Tile (off-white)	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-1	Mastic	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-2	Floor Tile (off-white)	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-2	Mastic	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-3	Floor Tile (off-white)	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-3	Mastic	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-4	Floor Tile (brown/off-white)	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-4	Mastic	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-5	Floor Tile (brown/off-white)	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-5	Mastic	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-6	Floor Tile (brown/off-white)	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-6	Mastic	Kitchen & Closet	130 ft ²	Non Detected	Non Friable	Good	0% Intact
FT-7	Floor Tile (brown)	Laundry	30 ft ²	2% Chrysotile	Non Friable	Good	0% Intact
FT-7	Mastic	Laundry	30 ft ²	4% Chrysotile	Non Friable	Good	0% Intact
FT-8	Floor Tile (brown)	Laundry	30 ft ²	3% Chrysotile	Non Friable	Good	0% Intact
FT-8	Mastic	Laundry	30 ft ²	4% Chrysotile	Non Friable	Good	0% Intact
FT-9	Floor Tile (brown)	Laundry	30 ft ²	2% Chrysotile	Non Friable	Good	0% Intact
FT-9	Mastic	Laundry	30 ft ²	5% Chrysotile	Non Friable	Good	0% Intact
WS-1	Drywall & Joint Compound	Kitchen	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-2	Drywall & Joint Compound	Family Room	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact

WS-3	Drywall & Joint Compound	Master Bedroom Upstairs	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
FM-1	Floor Material	Bathroom	40 ft ²	Non Detected	Non Friable	Good	0% Intact
FM-2	Floor Material	Bathroom	40 ft ²	Non Detected	Non Friable	Good	0% Intact
FM-3	Floor Material	Bathroom	40 ft ²	Non Detected	Non Friable	Good	0% Intact
CT-1	Ceiling Tile	Living Room	300 ft ²	Non Detected	Friable	Good	0% Intact
CT-2	Ceiling Tile	Living Room	300 ft ²	Non Detected	Friable	Good	0% Intact
CT-3	Ceiling Tile	Living Room	300 ft ²	Non Detected	Friable	Good	0% Intact
L-1	Linoleum	Kitchen	90 ft ²	Non Detected	Non Friable	Good	0% Intact
L-2	Linoleum	Kitchen	90 ft ²	Non Detected	Non Friable	Good	0% Intact
L-3	Linoleum	Kitchen	90 ft ²	Non Detected	Non Friable	Good	0% Intact
R-1	Roofing	Roof Shingle small section	300 ft ²	Non Detected	Non Friable	Good	0% Intact
R-2	Roofing	Roof Shingle	300 ft ²	Non Detected	Non Friable	Good	0% Intact
R-3	Roofing	small section	300 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-4	Drywall & Joint Compound	Residence Upstairs	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-5	Drywall & Joint Compound	Studio Upstairs	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CT-4	Ceiling Tile	Studio Upstairs	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CT-5	Ceiling Tile	Studio Upstairs	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CT-6	Ceiling Tile	Studio Upstairs	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
FP-1	Felt Paper	Living Room	300 ft ²	Non Detected	Non Friable	Good	0% Intact
FP-2	Felt Paper	Living Room	300 ft ²	Non Detected	Non Friable	Good	0% Intact
FP-3	Felt Paper	Living Room	300 ft ²	Non Detected	Non Friable	Good	0% Intact

Thank you for giving L.Y. Environmental, Inc. the opportunity to participate in this investigation. We would be happy to provide any additional services, if necessary. Should there be any questions, or if I may be of further assistance, please feel free to contact me.

Sincerely,
L.Y. Environmental, Inc.



Yonan Benjamin, CIH CAC LPM
Director, Indoor Air Quality and Industrial Hygiene
Certified Industrial Hygienist (ABIH #7299)
California Asbestos Consultant (DOSH #02/3228)
Lead Inspector/Assessor (LRC-00008161)

Attachments:
Laboratory Results for Asbestos
Chain of Custody

CONDITIONS AND LIMITATIONS

L.Y. Environmental, Inc. (“LYEI”) has prepared this report for the exclusive use of its client. LYEI, in its survey’s measurements, applies approximations of the dimensional areas (square footage) it is not to be relied upon for bidding purposes.

LYEI, in performing its professional services, has applied engineering and scientific judgment that it believes is consistent with OSHA and AHERA industry standards. LYEI has inspected structures and/or contents in a good faith effort to observe pertinent detail. Due to the limitations of time, access, and other variables, certain details may have been overlooked. LYEI has relied in good faith upon the information and representations of others in the preparation of this report and the opinions expressed herein. Accordingly, LYEI accepts no responsibility for deficiencies, omissions, misrepresentations, or fraudulent acts of persons interviewed.

It is always possible that chemical and/or biological agents may be present in a building that have not been targeted for assay, have not been identified by science as a potential health threat, or are present in such small quantities or low levels that they were not detected by the sampling and/or analytical methods employed. It is also possible that variables in sample collection, such as those associated with an isolated or intermittent contaminant, the random selection of a sample location, etc., will affect analytical results. Accordingly, it cannot be determined with absolute certainty that there is no risk of exposure to some chemical and/or biological agents.

LYEI will accept no liability for any loss, injury, claim or damage arising directly or indirectly from any use or reliance on this report or the opinions expressed herein. LYEI makes no warranty, expressed or implied.

L.Y. Environmental, Inc. 909-307-9730 yonan@lyenvironmental.com		Inland Asbestos Ref No.: 22010037												
		Samples Analyzed: 41						Date Collected: January 7, 2022						
		Sampler: Y. Benjamin						Date Received: January 11, 2022						
		Sample Condition: Acceptable						Date Analyzed: January 11, 2022						
Client Reference: 9081 Lampson Ave, Garden Grove, CA		Asbestos Type, %						Non-Asbestos Constituents, %						QC
		Asbestos Detected	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	Cellulose	Fiberglass	Synthetic Fibers	Non-Asbestos Non-Fibrous		
Client Sample ID Inland Sample ID	Sample Description - Color Comment													
FT-8 220037-08	Floor Tile - brown	Yes	3									97		
FT-8 220037-08-1	Mastic - black	Yes	4									96		
FT-9 220037-09	Floor Tile - brown	Yes	2									98		
FT-9 220037-09-1	Mastic - black	Yes	5									95		
WS-1 220037-10	Drywall & J. Cmpd. - white/br. <i>No jt. compound present for analysis</i>	No							5			95		
WS-2 220037-11	Drywall & J. Cmpd. - white/br. <i>No jt. compound present for analysis</i>	No							5			95		
WS-3 220037-12	Drywall & J. Cmpd. - white/br. <i>No jt. compound present for analysis</i>	No							5			95		
FM-1 220037-13	Floor Material - brown / yellow	No							15			85		X
FM-2 220037-14	Floor Material - brown / yellow	No							15			85		
FM-3 220037-15	Floor Material - brown / yellow	No							15			85		
CT-1 220037-16	Ceiling Tile - white / brown	No							93	2		5		
CT-2 220037-17	Ceiling Tile - white / brown	No							93	2		5		
CT-3 220037-18	Ceiling Tile - white / brown	No							93	2		5		
L-1 220037-19	Linoleum - red	No							3			97		
L-2 220037-20	Linoleum - red	No							5			95		
L-3 220037-21	Linoleum - red	No							2			98		

L.Y. Environmental, Inc. 909-307-9730 yonan@lyenvironmental.com		Inland Asbestos Ref No.: 22010037											
		Samples Analyzed: 41					Date Collected: January 7, 2022						
		Sampler: Y. Benjamin					Date Received: January 11, 2022						
		Sample Condition: Acceptable					Date Analyzed: January 11, 2022						
Client Reference: 9081 Lampson Ave, Garden Grove, CA		Asbestos Type, %						Non-Asbestos Constituents, %					QC
		Asbestos Detected	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	Cellulose	Fiberglass	Synthetic Fibers	Non-Asbestos Non-Fibrous	
Client Sample ID Inland Sample ID	Sample Description - Color Comment												
R-1 220037-22	Roofing - black / white	No						5		8	87		
R-2 220037-23	Roofing - black / white	No						5		8	87	X	
R-3 220037-24	Roofing - black / white	No						5		8	87		
WS-4 220037-25	Drywall & J. Cmpd. - white/br. <i>No jt. compound present for analysis</i>	No						5			95		
WS-5 220037-26	Drywall & J. Cmpd. - white/br. <i>No jt. compound present for analysis</i>	No						5			95		
CT-4 220037-27	Ceiling Tile - white / brown	No						93	2		5		
CT-5 220037-28	Ceiling Tile - white / brown	No						93	2		5		
CT-6 220037-29	Ceiling Tile - white / brown	No						93	2		5		
FP-1 220037-30	Felt Paper - dark brown	No						45			55		
FP-2 220037-31	Felt Paper - dark brown	No						45			55		
FP-3 220037-32	Felt Paper - dark brown	No						45			55		



Analyzed by: Julia Benjamin _____

The analysis of the samples are visually estimated and expressed as percent area using the EPA method 40 CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93/116. The limit of detection for this analytical method is less than 1% and total sample constituents may total greater than 100% due to trace amounts. Inland Asbestos Lab, Inc. is accredited under the NIST/NVLAP (NVLAP Lab Code: 201000-0) program for asbestos in bulk material by polarized light microscopy and the State of California for asbestos analysis. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available upon request. Inland Asbestos Lab, Inc. will retain samples for a period of six months unless otherwise specified. Please feel free to contact Inland Asbestos Lab, Inc. regarding any questions about this report.

22010037

L.Y. ENVIRONMENTAL, INC.

Date:	1-7-2022
Project No:	
Client:	PLC Companies
Site:	9081 Lampson Ave, Garden Grove, CA
Inspector (s):	Yonon Benjamin / CAC 02-3228

ASBESTOS / LEAD BULK SAMPLING FIELD LOG / CHAIN OF CUSTODY

Sample Number	Material Sampled	Sample Location	Quantity ft	Analytical Results	Friability	Condition	Damaged %	Damaged Condition
FT-123	Floor Tile & Mastic	Kitchen & closet	130		N	G	0	I
FT-456	"	"	130		N	G	0	I
FT-789	Floor Tile & Mastic	Laundry 9x9	30		N	G	0	I
WS-1	Drywall & Jcompd	Kitchen	<1000-T		N	G	0	I
WS-2	"	Family Room	<1000-T		N	G	0	I
WS-3	"	M. Bedroom UPSTAIRS	<1000-T		N	G	0	I
FM-1	Floor Material	Bathroom	40		N	G	0	I
FM-2	Floor Material	Bathroom	40		N	G	0	I
FM-3	"	"	40		N	G	0	I
CT-123	Ceiling Tile	LIVING ROOM	300		F	G	0	I
L-123	Kit Lining	Kitchen	90		N	G	0	I
R-123	Roofing	EXTERIOR SMALL SECTION	300		N	G	0	I
WS-4	Drywall & Jcompd	Residence UPSTAIRS	<1000		N	G	0	I
WS-5	"	(Metal Roof) Studio UPSTAIRS	<1000		N	G	0	I
CT-456	Ceiling Tile	(Shingles Roof on small section)	<1000		N	G	0	I
FP-123	Felt Paper	Living Room	300		N	G	0	I

ND = Not Detected

F = Friable ; N = Non Friable

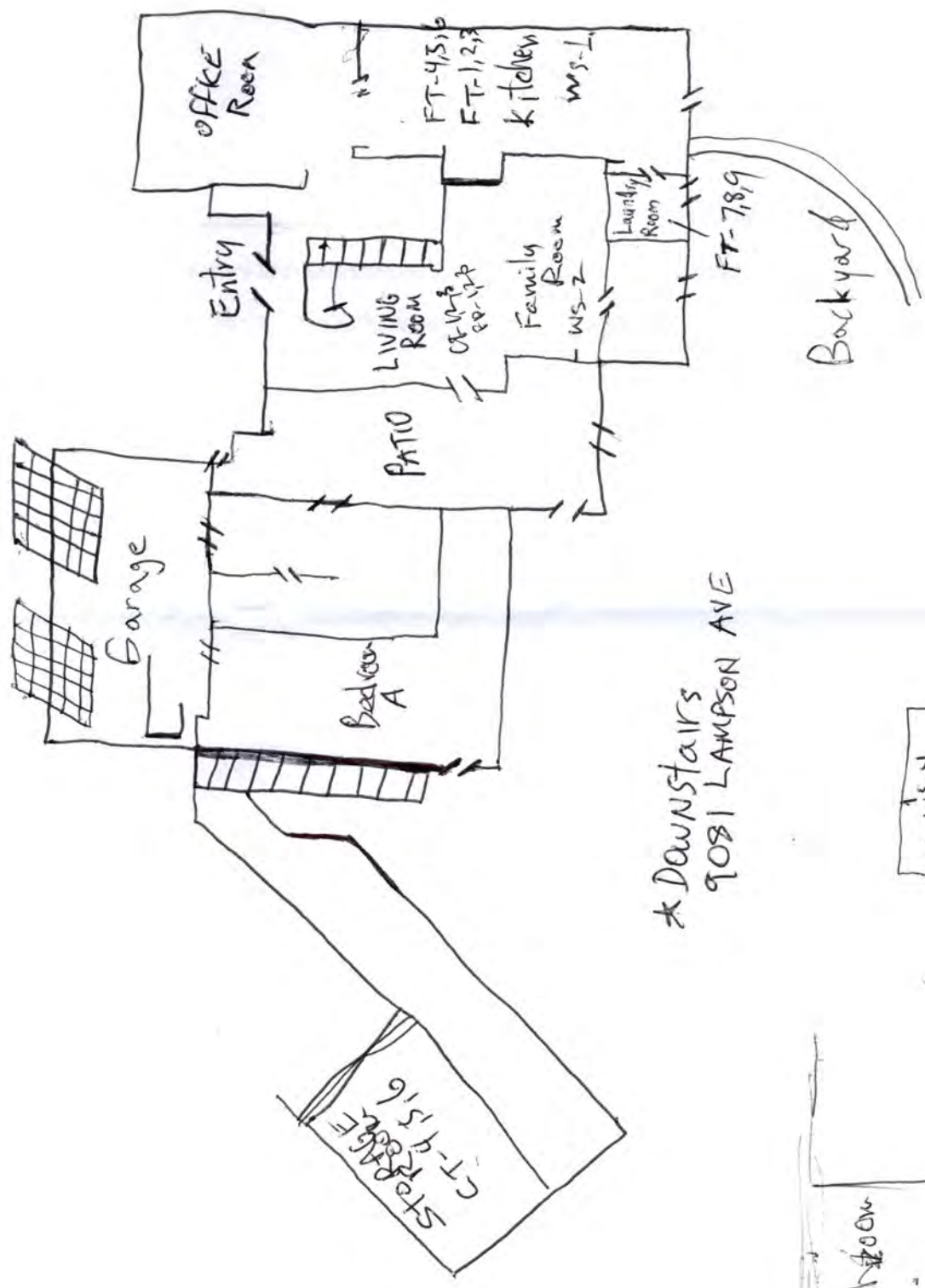
P = Poor ; F = Fair ; G = Good

I = Intact ; D = Damaged ; SD = Significantly Damaged

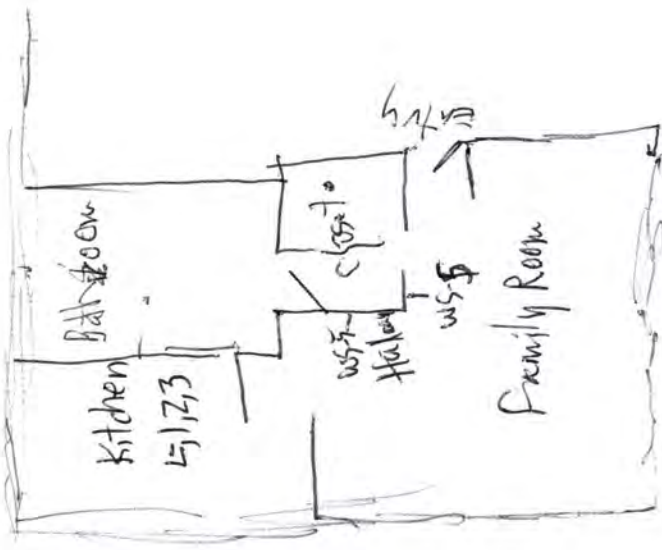


RELINQUISHED BY	DATE	RECEIVED BY (L410)	DATE
Yonon Benjamin	1-7-2022	[Signature]	1/10/22 20800

(PRO MAX)



* DOWNSTAIRS
9081 LAMPSON AVE



L.Y. Environmental, Inc.

1050 Nevada Street, Suite# 403, Redlands, CA 92374 • Phone (909) 307-9730 • Fax (909) 307-9740

January 13, 2022

PLC Communities
Attn: Jeff Rulon
Phone: 949-729-1222
Email: jrulon@plcland.com
Other: jrulon@plccommunities.com

Summary Report: Comprehensive Asbestos Survey (1000 Point Count) **9071 Lampson Ave, Garden Grove, CA 92841**

I. Introduction

L.Y. Environmental Inc., (LYEI) received a request to conduct a Comprehensive Asbestos Survey for the property located on 9071 Lampson Ave, Garden Grove, California. LYEI was requested to inspect the above-mentioned property for the existence of asbestos containing materials and to provide a written report of findings.

II. Background

Yonan Benjamin (CAC DOSH #02/3228) of LYEI conducted the survey at the subject site on January 7, 2022. The report was reviewed and completed by Yonan Benjamin, a California Asbestos Consultant and Certified Industrial Hygienist with LYEI.

The structure is slated for complete demolition and it appears to be intact and in good condition. The samples of the Ceiling, Roofing, Stucco, and Wall Materials were collected. Samples were taken, all of which were analyzed by Inland Asbestos Lab located in Redlands, California, which is an NVLAP Lab (NVLAP Code 201000-0; Ph: 909-435-5504). Asbestos Bulk samples were analyzed by PLM using EPA Method 600/R-93/116, (July 1993), in accordance with 40 CFR 763, Sub-part F, Appendix A (AHERA), and if applicable, the Point Count Method 600/R-93/116 (1000 Point), (July 1993). The survey was conducted in accordance with CAL/OSHA, EPA AHERA and South Coast Air Quality Management District sampling protocols using non-destructive representative sampling techniques. See attached, Asbestos Bulk Sampling Field Log for materials and locations of samples collected.

III. Findings/Conclusions

1-Results Table Summary

Sample #	Material Sampled	Sample Location	Quantity	Analytical Results	Friability	Condition	Percent Damaged
AC-1	Acoustical Ceiling	Master Bedroom & Bedrooms	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
AC-2	Acoustical Ceiling	Family Room & Dining Room	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
AC-3	Acoustical Ceiling	Bedroom 1 & Hallway	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CS-1	Drywall & Joint Compound	Kitchen	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CS-2	Drywall & Joint Compound	Bathroom 1	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CS-3	Drywall & Joint Compound	Master Bedroom upstairs	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
S-1	Stucco	Exterior	<900 ft ²	<1% Chrysotile	Non Friable	Good	0% Intact
S-2	Stucco	Exterior	<900 ft ²	<1% Chrysotile	Non Friable	Good	0% Intact
S-3	Stucco	Exterior	<900 ft ²	<1% Chrysotile	Non Friable	Good	0% Intact
WS-1	Drywall & Joint Compound	Kitchen	<3,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-2	Drywall & Joint Compound	Family Room	<3,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-3	Drywall & Joint Compound	Living Room	<3,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-4	Drywall & Joint Compound	Master Bedroom	<3,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-5	Drywall & Joint Compound	Bedroom 2	<3,000 ft ²	Non Detected	Non Friable	Good	0% Intact
R-1	Roofing	Exterior	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
R-2	Roofing	Exterior	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
R-3	Roofing	Exterior	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact

Asbestos

Results of the bulk sample analysis are attached to this report and showed **trace quantities, less than 1%, of asbestos in the stucco material in the Exterior.** However, there were no concentrations of asbestos in the other structural materials collected and tested. See attached, Asbestos Sampling Field Log for the results and locations. **After further testing (1000 Point Counting, which has a lower detection limit), the above Stucco Materials in the walls were found to contain less than 0.1% Asbestos, and hence these (Stucco Materials) are not considered asbestos containing materials by OSHA definition.** See attached Inland Asbestos Lab Bulk Sample Analysis Point Count Results.

Note: In California, the Department of Occupational Safety and Health (DOSH) enforces the OSHA regulations under Section 1529 of Title 8 of the California Code of Regulations (CCR). DOSH also requires that asbestos consultants & asbestos abatement contractors performing work in California be trained and certified. In California, materials containing concentrations of asbestos greater than one-tenth of one percent (>0.1%) are regulated.

Thank you for giving L.Y. Environmental, Inc. the opportunity to participate in this investigation. We would be happy to provide any additional services, if necessary. Should there be any questions, or if I may be of further assistance, please feel free to contact me.

Sincerely,
L.Y. Environmental, Inc.

Yonan Benjamin



Yonan Benjamin, CIH CAC LPM
Director, Indoor Air Quality and Industrial Hygiene
Certified Industrial Hygienist (ABIH #7299)
California Asbestos Consultant (DOSH #02/3228)
Lead Inspector/Assessor (LRC-00008161)

Attachments:
Laboratory Results for Asbestos
Chain of Custody
1000 Point Count Results

CONDITIONS AND LIMITATIONS

L.Y. Environmental, Inc. ("LYEI") has prepared this report for the exclusive use of its client. LYEI, in its survey's measurements, applies approximations of the dimensional areas (square footage) it is not to be relied upon for bidding purposes.

LYEI, in performing its professional services, has applied engineering and scientific judgment that it believes is consistent with OSHA and AHERA industry standards. LYEI has inspected structures and/or contents in a good faith effort to observe pertinent detail. Due to the limitations of time, access, and other variables, certain details may have been overlooked. LYEI has relied in good faith upon the information and representations of others in the preparation of this report and the opinions expressed herein. Accordingly, LYEI accepts no responsibility for deficiencies, omissions, misrepresentations, or fraudulent acts of persons interviewed.

It is always possible that chemical and/or biological agents may be present in a building that have not been targeted for assay, have not been identified by science as a potential health threat, or are present in such small quantities or low levels that they were not detected by the sampling and/or analytical methods employed. It is also possible that variables in sample collection, such as those associated with an isolated or intermittent contaminant, the random selection of a sample location, etc., will affect analytical results. Accordingly, it cannot be determined with absolute certainty that there is no risk of exposure to some chemical and/or biological agents.

LYEI will accept no liability for any loss, injury, claim or damage arising directly or indirectly from any use or reliance on this report or the opinions expressed herein. LYEI makes no warranty, expressed or implied.

INLAND ASBESTOS LAB, INC.

1050 Nevada St., Suite# 403, Redlands, CA 92374
 (909) 435-5504 / info@inlandlab.com
 City of Redlands Business License # 1007671
 NVLAP Lab Code: 201000-0

January 12, 2022
 Page 1 of 2



Bulk Sample Analysis Summary

Analytical Method: EPA 40 CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93/116

L.Y. Environmental, Inc. 909-307-9730 yonan@lyenvironmental.com		Inland Asbestos Ref No.: 22010038 Samples Analyzed: 17 Date Collected: January 7, 2022 Sampler: Y. Benjamin Date Received: January 11, 2022 Sample Condition: Acceptable Date Analyzed: January 11, 2022											
Client Reference: 9071 Lampson Ave, Garden Grove, CA		Asbestos Type, %						Non-Asbestos Constituents, %				QC	
Client Sample ID Inland Sample ID	Sample Description - Color Comment	Asbestos Detected	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	Cellulose	Fiberglass	Synthetic Fibers		Non-Asbestos Non-Fibrous
AC-1 220038-01	Acoustical Ceiling - white	No							3			97	X
AC-2 220038-02	Acoustical Ceiling - white	No										100	
AC-3 220038-03	Acoustical Ceiling - white	No							2			98	
CS-1 220038-04	Drywall & J. Cmpd. - white	No										100	
CS-2 220038-05	Drywall & J. Cmpd. - white	No										100	
CS-3 220038-06	Drywall & J. Cmpd. - white	No										100	
S-1 220038-07	Stucco - brown / white Contains paint	Yes	<1									100	
S-2 220038-08	Stucco - brown / white Contains paint	Yes	<1									100	
S-3 220038-09	Stucco - brown / white Contains paint	Yes	<1									100	
WS-1 220038-10	Drywall & J. Cmpd. - white	No							5			95	
WS-2 220038-11	Drywall & J. Cmpd. - white	No							5			95	X
WS-3 220038-12	Drywall & J. Cmpd. - white	No							5			95	
WS-4 220038-13	Drywall & J. Cmpd. - white	No							5			95	
WS-5 220038-14	Drywall & J. Cmpd. - white	No							5			95	

L.Y. Environmental, Inc. 909-307-9730 yonan@lyenvironmental.com		Inland Asbestos Ref No.: 22010038 Samples Analyzed: 17 Sampler: Y. Benjamin Sample Condition: Acceptable Date Collected: January 7, 2022 Date Received: January 11, 2022 Date Analyzed: January 11, 2022											
Client Reference: 9071 Lampson Ave, Garden Grove, CA		Asbestos Type, %						Non-Asbestos Constituents, %				QC	
Client Sample ID Inland Sample ID	Sample Description - Color Comment	Asbestos Detected	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	Cellulose	Fiberglass	Synthetic Fibers		Non-Asbestos Non-Fibrous
R-1 220038-15	Roofing - black	No							5	5		90	
R-2 220038-16	Roofing - black	No							5	5		90	
R-3 220038-17	Roofing - black	No							5	5		90	



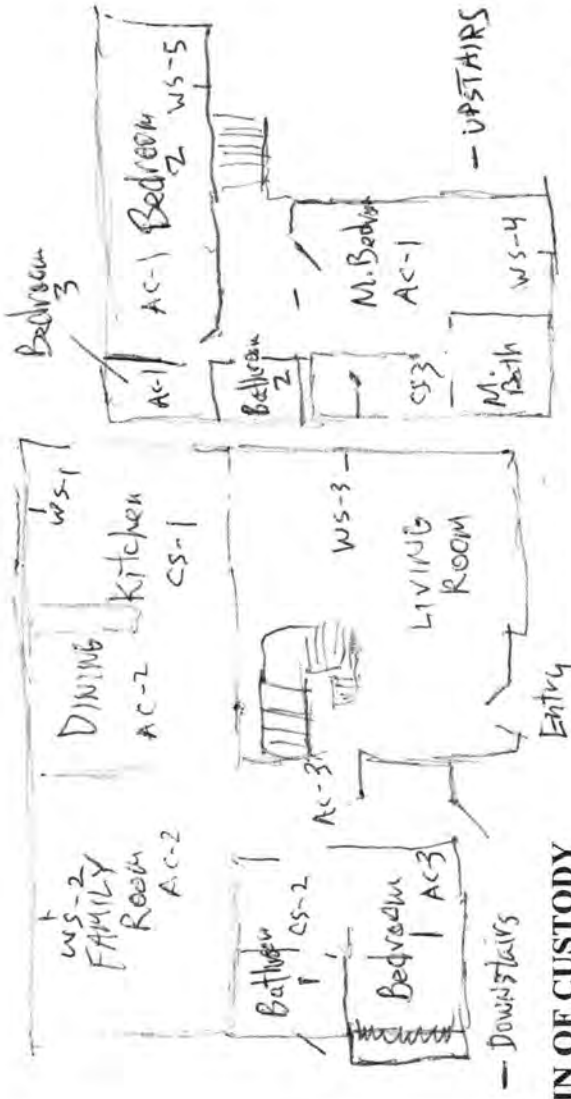
Analyzed by: Julia Benjamin _____

The analysis of the samples are visually estimated and expressed as percent area using the EPA method 40 CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93/116. The limit of detection for this analytical method is less than 1% and total sample constituents may total greater than 100% due to trace amounts. Inland Asbestos Lab, Inc. is accredited under the NIST/NVLAP (NVLAP Lab Code: 201000-0) program for asbestos in bulk material by polarized light microscopy and the State of California for asbestos analysis. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available upon request. Inland Asbestos Lab, Inc. will retain samples for a period of six months unless otherwise specified. Please feel free to contact Inland Asbestos Lab, Inc. regarding any questions about this report.

22010038

L.Y. ENVIRONMENTAL, INC.

Date:	1-7-2022
Project No:	
Client:	PLC COMPANIES
Site:	9071 LAMPSON AVE., Garden Grove, CA.
Inspector (s):	YONAN BENJAMIN, CAC 07-3278



ASBESTOS / LEAD BULK SAMPLING FIELD LOG / CHAIN OF CUSTODY

Sample Number	Material Sampled	Sample Location	Quantity #	Analytical Results	Friability	Condition	Damaged %	Damaged Condition
AC-1	Acoustical Ceiling	M. Bedroom & Bedrooms	<1000-T		N	G	0	0
AC-2	"	Family Room & Dining Room	<1000-T		N	G	0	0
AC-3	"	Bedroom, Hallway	<1000-T		N	G	0	0
CS-1	Drywall @ J Cmpd.	Kitchen	<1000-T		N	G	0	0
CS-2	"	Bathroom	<1000-T		N	G	0	0
CS-3	"	M. Bathroo UPS	<1000-T		N	G	0	0
S-1	Stucco	Exterior	<900		N	G	0	0
S-2	"	"	<900		N	G	0	0
S-3	"	"	<900		N	G	0	0

ND = Not Detected
 F = Friable ; N = Non Friable
 P = Poor ; F = Fair ; G = Good
 I = Intact ; D = Damaged ; SD = Significantly Damaged
 t - Total #

RELINQUISHED BY	DATE	RECEIVED BY (Lab)	DATE
Yonan Benjamin	1-7-2022	[Signature]	1/10/22 20800

22010038

L.Y. ENVIRONMENTAL, INC.

Date:	1-7-2022
Project No:	
Client:	PLC Companies
Site:	9071 Lampson Ave, Garden Grove, CA
Inspector (s):	Yonan Benjamin, CAC 02-3228

ASBESTOS / LEAD BULK SAMPLING FIELD LOG / CHAIN OF CUSTODY

Sample Number	Material Sampled	Sample Location	Quantity	Analytical Results	Friability	Condition	Damaged %	Damaged Condition
WS-1	Drywall & Joint Compd	KITCHEN	<3000-T		N	G	0	I
WS-2	"	Family Room	<3000-T		N	G	0	I
WS-3	"	LIVING ROOM	<3000-T		N	G	0	I
WS-4	"	M. Bedroom	<3000-T		N	G	0	I
WS-5	"	Bedroom 2	<3000-T		N	G	0	I
R-1	Roofing	Exterior	<1000		N	G	0	I
R-2	"	"	<1000		N	G	0	I
R-3	"	"	<1000		N	G	0	I

RELINQUISHED BY		DATE	RECEIVED BY	DATE
Yonan Benjamin		1-7-2022 (VPEP1002)		1/10/22 20800

NID = Not Detected
 F = Friable ; N = Non Friable
 P = Poor ; F = Fair ; G = Good
 I = Intact ; D = Damaged ; SD = Significantly Damaged

INLAND ASBESTOS LAB INC.

1050 Nevada St., Suite# 403, Redlands, CA 92374

(909) 435-5504 / info@inlandalab.com

City of Redlands Business License # 1007671

NVLAP Lab Code: 201000-0

January 13, 2022

Page 1 of 1



Bulk Sample Analysis Summary

Analytical Method: EPA 40 CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93/116 Point Count - 1000 Points

L.Y. Environmental, Inc. 909-307-9730	Samples Analyzed: 3 Sampler: Y. Benjamin Sample Condition: Acceptable	<u>Inland Asbestos Ref No.: 22010038</u> Date Collected: January 7, 2022 Date Received: January 11, 2022 Date Analyzed: January 12, 2022
--	---	---

Client Reference: 9071 Lampson Ave, Garden Grove, CA

Client Sample ID	Sample Description	Analytical Results	QC
Inland Sample ID	Comments		

S-1 220038-07p	Stucco - brown / white	<0.1% Chrysotile	
-------------------	------------------------	------------------	--

S-2 220038-08p	Stucco - brown / white	<0.1% Chrysotile	
-------------------	------------------------	------------------	--

S-3 220038-09p	Stucco - brown / white	<0.1% Chrysotile	
-------------------	------------------------	------------------	--

Analyzed by: Julia Benjamin _____

The analysis was determined using semi-quantitative point count method. The limit of detection for this analytical method is 0.25 percent using 400 points and 0.10 percent using 1000 points (visual area estimates). Inland Asbestos Lab, Inc. is accredited under the NIST/NVLAP (NVLAP Lab Code: 201000-0) program for asbestos in bulk material by polarized light microscopy and the State of California for asbestos analysis. Inland Asbestos Lab, Inc. will retain samples for a period of six months unless otherwise specified. Please feel free to contact Inland Asbestos Lab, Inc. regarding any questions about this report.

L.Y. Environmental, Inc.

1050 Nevada Street, Suite# 403, Redlands, CA 92374 • Phone (909) 307-9730 • Fax (909) 307-9740

January 13, 2022

PLC Communities
Attn: Jeff Rulon
Phone: 949-729-1222
Email: jrulon@plcland.com
Other: jrulon@plccommunities.com

Summary Report: Comprehensive Asbestos Survey (1000 Point Count) **9091 Lampson Ave, Garden Grove, CA 92841**

I. Introduction

L.Y. Environmental Inc., (LYEI) received a request to conduct a Comprehensive Asbestos Survey for the property located on 9091 Lampson Ave, Garden Grove, California. LYEI was requested to inspect the above-mentioned property for the existence of asbestos containing materials and to provide a written report of findings.

II. Background

Yonan Benjamin (CAC DOSH #02/3228) of LYEI conducted the survey at the subject site on January 7, 2022. The report was reviewed and completed by Yonan Benjamin, a California Asbestos Consultant and Certified Industrial Hygienist with LYEI.

The structure is slated for complete demolition and it appears to be intact and in good condition. The samples of the Ceiling, Roofing, Stucco, and Wall Materials were collected. Samples were taken, all of which were analyzed by Inland Asbestos Lab located in Redlands, California, which is an NVLAP Lab (NVLAP Code 201000-0; Ph: 909-435-5504). Asbestos Bulk samples were analyzed by PLM using EPA Method 600/R-93/116, (July 1993), in accordance with 40 CFR 763, Sub-part F, Appendix A (AHERA), and if applicable, the Point Count Method 600/R-93/116 (1000 Point), (July 1993). The survey was conducted in accordance with CAL/OSHA, EPA AHERA and South Coast Air Quality Management District sampling protocols using non-destructive representative sampling techniques. See attached, Asbestos Bulk Sampling Field Log for materials and locations of samples collected.

III. Findings/Conclusions

Asbestos

Results of the bulk sample analysis are attached to this report and showed **trace quantities, less than 1%, of asbestos in the stucco material in the Exterior.** However, there were no concentrations of asbestos in the other structural materials collected and tested. See attached, Asbestos Sampling Field Log for the results and locations. **After further testing (1000 Point Counting, which has a lower detection limit), the above Stucco Materials in the walls were found to contain less than 0.1% Asbestos, and hence these (Stucco Materials) are not considered asbestos containing materials by OSHA definition.** See attached Inland Asbestos Lab Bulk Sample Analysis Point Count Results.

Note: In California, the Department of Occupational Safety and Health (DOSH) enforces the OSHA regulations under Section 1529 of Title 8 of the California Code of Regulations (CCR). DOSH also requires that asbestos consultants & asbestos abatement contractors performing work in California be trained and certified. In California, materials containing concentrations of asbestos greater than one-tenth of one percent (>0.1%) are regulated.

1-Results Table Summary

Sample #	Material Sampled	Sample Location	Quantity	Analytical Results	Friability	Condition	Percent Damaged
WS-1	Drywall & Joint Compound	Master Bedroom	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-2	Drywall & Joint Compound	Kitchen	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
WS-3	Drywall & Joint Compound	Living Room	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
S-1	Stucco	Exterior	<1,000 ft ²	<1% Chrysotile	Non Friable	Good	0% Intact
S-2	Stucco	Exterior	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
S-3	Stucco	Exterior	<1,000 ft ²	<1% Chrysotile	Non Friable	Good	0% Intact
CS-1	Drywall & Joint Compound	Master Bedroom ceiling	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CS-2	Drywall & Joint Compound	Kitchen ceiling	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
CS-3	Drywall & Joint Compound	Living Room ceiling	<1,000 ft ²	Non Detected	Non Friable	Good	0% Intact
R-1	Roofing	Exterior	<1,300 ft ²	Non Detected	Non Friable	Good	0% Intact
R-2	Roofing	Exterior	<1,300 ft ²	Non Detected	Non Friable	Good	0% Intact
R-3	Roofing	Exterior	<1,300 ft ²	Non Detected	Non Friable	Good	0% Intact
PM-1	Penetration Mastic	Exterior	<10 ft ²	Non Detected	Non Friable	Good	0% Intact
PM-2	Penetration Mastic	Exterior	<10 ft ²	Non Detected	Non Friable	Good	0% Intact
PM-3	Penetration Mastic	Exterior	<10 ft ²	Non Detected	Non Friable	Good	0% Intact

Thank you for giving L.Y. Environmental, Inc. the opportunity to participate in this investigation. We would be happy to provide any additional services, if necessary. Should there be any questions, or if I may be of further assistance, please feel free to contact me.

Sincerely,
L.Y. Environmental, Inc.

Yonan Benjamin



Yonan Benjamin, CIH CAC LPM
Director, Indoor Air Quality and Industrial Hygiene
Certified Industrial Hygienist (ABIH #7299)
California Asbestos Consultant (DOSH #02/3228)
Lead Inspector/Assessor (LRC-00008161)

Attachments:
Laboratory Results for Asbestos
Chain of Custody
1000 Point Count Results

CONDITIONS AND LIMITATIONS

L.Y. Environmental, Inc. (“LYEI”) has prepared this report for the exclusive use of its client. LYEI, in its survey’s measurements, applies approximations of the dimensional areas (square footage) it is not to be relied upon for bidding purposes.

LYEI, in performing its professional services, has applied engineering and scientific judgment that it believes is consistent with OSHA and AHERA industry standards. LYEI has inspected structures and/or contents in a good faith effort to observe pertinent detail. Due to the limitations of time, access, and other variables, certain details may have been overlooked. LYEI has relied in good faith upon the information and representations of others in the preparation of this report and the opinions expressed herein. Accordingly, LYEI accepts no responsibility for deficiencies, omissions, misrepresentations, or fraudulent acts of persons interviewed.

It is always possible that chemical and/or biological agents may be present in a building that have not been targeted for assay, have not been identified by science as a potential health threat, or are present in such small quantities or low levels that they were not detected by the sampling and/or analytical methods employed. It is also possible that variables in sample collection, such as those associated with an isolated or intermittent contaminant, the random selection of a sample location, etc., will affect analytical results. Accordingly, it cannot be determined with absolute certainty that there is no risk of exposure to some chemical and/or biological agents.

LYEI will accept no liability for any loss, injury, claim or damage arising directly or indirectly from any use or reliance on this report or the opinions expressed herein. LYEI makes no warranty, expressed or implied.

INLAND ASBESTOS LAB, INC.

1050 Nevada St., Suite# 403, Redlands, CA 92374
 (909) 435-5504 / info@inlandlab.com
 City of Redlands Business License # 1007671
 NVLAP Lab Code: 201000-0



Bulk Sample Analysis Summary

Analytical Method: EPA 40 CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93/116

L.Y. Environmental, Inc. 909-307-9730 yonan@lyenvironmental.com		Inland Asbestos Ref No.: 22010039											
Client Reference: 9091 Lampson Ave, Garden Grove, CA		Asbestos Type, %					Non-Asbestos Constituents, %					QC	
Client Sample ID Inland Sample ID	Sample Description - Color Comment	Asbestos Detected	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	Cellulose	Fiberglass	Synthetic Fibers		Non-Asbestos Non-Fibrous
WS-1 220039-01	Drywall & J. Cmpd. - white / brown	No							5			95	
WS-2 220039-02	Drywall & J. Cmpd. - white / brown	No							5			95	
WS-3 220039-03	Drywall & J. Cmpd. - white / brown	No							5			95	
S-1 220039-04	Stucco - gray / off-white	Yes	<1									100	X
S-2 220039-05	Stucco - gray / off-white	No										100	
S-3 220039-06	Stucco - gray / off-white	Yes	<1									100	
CS-1 220039-07	Drywall & J. Cmpd. - white <i>No jt. compound present for analysis</i>	No							2			98	
CS-2 220039-08	Drywall & J. Cmpd. - white <i>No jt. compound present for analysis</i>	No							2			98	
CS-3 220039-09	Drywall & J. Cmpd. - white <i>No jt. compound present for analysis</i>	No							5			95	
R-1 220039-10	Roofing - black / brown	No								5		95	
R-2 220039-11	Roofing - black / brown	No								5		95	
R-3 220039-12	Roofing - black / brown	No								5		95	
PM-1 220039-13	Penetration Mastic - black	No							8			92	
PM-2 220039-14	Penetration Mastic - black	No							5			95	X

L.Y. Environmental, Inc. 909-307-9730 yonan@lyenvironmental.com		Inland Asbestos Ref No.: 22010039 Samples Analyzed: 15 Sampler: Y. Benjamin Sample Condition: Acceptable Date Collected: January 7, 2022 Date Received: January 11, 2022 Date Analyzed: January 11, 2022											
Client Reference: 9091 Lampson Ave, Garden Grove, CA		Asbestos Type, %						Non-Asbestos Constituents, %					QC
Client Sample ID Inland Sample ID	Sample Description - Color Comment	Asbestos Detected	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	Cellulose	Fiberglass	Synthetic Fibers	Non-Asbestos Non-Fibrous	
PM-3 220039-15	Penetration Mastic - black	No							3			97	



Analyzed by: Julia Benjamin _____

The analysis of the samples are visually estimated and expressed as percent area using the EPA method 40 CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93/116. The limit of detection for this analytical method is less than 1% and total sample constituents may total greater than 100% due to trace amounts. Inland Asbestos Lab, Inc. is accredited under the NIST/NVLAP (NVLAP Lab Code: 201000-0) program for asbestos in bulk material by polarized light microscopy and the State of California for asbestos analysis. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available upon request. Inland Asbestos Lab, Inc. will retain samples for a period of six months unless otherwise specified. Please feel free to contact Inland Asbestos Lab, Inc. regarding any questions about this report.

22010039

L.Y. ENVIRONMENTAL, INC.

Date: 1-07-22
 Project No:
 Client: PLC Companies
 Site: 9091 Lamson Ave, Garden Grove, CA
 Inspector (s): YONAN BENJAMIN, CAC

ASBESTOS / LEAD BULK SAMPLING FIELD LOG / CHAIN OF CUSTODY

Sample Number	Material Sampled	Sample Location	Quantity ft ²	Analytical Results	Friability	Condition	Damaged %	Damaged Condition
WS-1	Drywall & Joint Compd.	M. Bedroom	<1000-T		N	G	0	I
WS-2	"	Kitchen	<1000-T		N	G	0	I
WS-3	"	LIVING ROOM	<1000-T		N	G	0	I
S-1,2,3	Stucco	Exterior	<1000-T		N	G	0	I
CS-1	Drywall & Jcompd	Ceiling M. Bedroom	<1000-T		N	G	0	I
CS-2	"	Ceiling Kitchen	<1000-T		N	G	0	I
CS-3	"	Ceiling LIVING ROOM	<1000-T		N	G	0	I
R-1,2,3	ROOFING	Exterior	<1300		N	G	0	I
PM-1,2,3	Penetration Mastic	Exterior	<10		N	G	0	I



ND = Not Detected
 F = Friable ; N = Non Friable
 P = Poor ; F = Fair ; G = Good
 I = Intact ; D = Damaged ; SD = Significantly Damaged
 T = Total ft² (Homogeneous)

RELINQUISHED BY	DATE	RECEIVED BY (Lab)	DATE
Yonan Benjamin (Owner)	1-7-2022	[Signature]	1/10/22 20800

INLAND ASBESTOS LAB INC.

1050 Nevada St., Suite# 403, Redlands, CA 92374

(909) 435-5504 / info@inlandalab.com

City of Redlands Business License # 1007671

NVLAP Lab Code: 201000-0

January 13, 2022

Page 1 of 1



Bulk Sample Analysis Summary

Analytical Method: EPA 40 CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93/116 Point Count - 1000 Points

L.Y. Environmental, Inc. 909-307-9730	Samples Analyzed: 2 Sampler: Y. Benjamin Sample Condition: Acceptable	<u>Inland Asbestos Ref No.: 22010039</u> Date Collected: January 7, 2022 Date Received: January 11, 2022 Date Analyzed: January 12, 2022
--	---	---

Client Reference: 9091 Lampson Ave, Garden Grove, CA

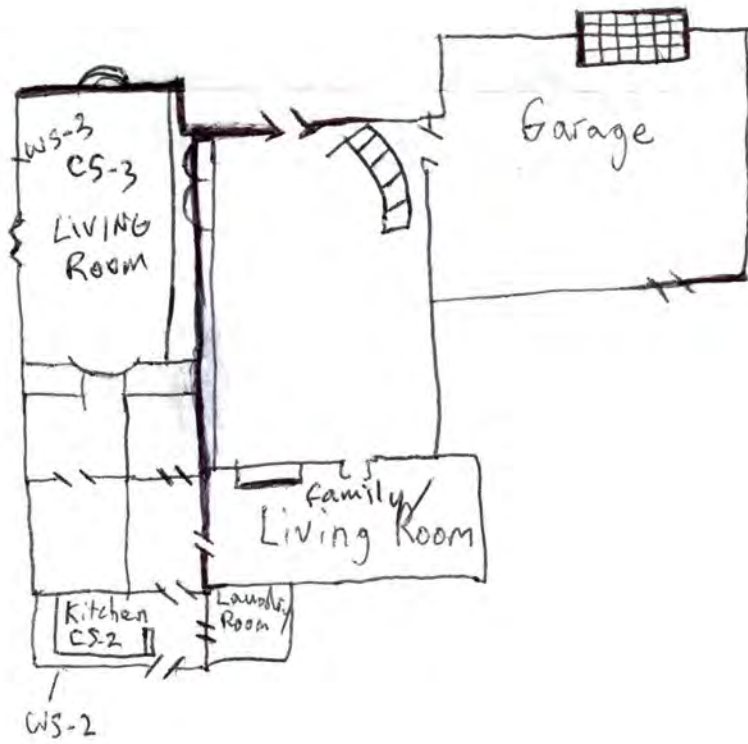
Client Sample ID	Sample Description	Analytical Results	QC
Inland Sample ID	Comments		

S-1 220039-04p	Stucco - gray / off-white	<0.1% Chrysotile
-------------------	---------------------------	----------------------------

S-3 220039-06p	Stucco - gray / off-white	<0.1% Chrysotile
-------------------	---------------------------	----------------------------

Analyzed by: Julia Benjamin _____

The analysis was determined using semi-quantitative point count method. The limit of detection for this analytical method is 0.25 percent using 400 points and 0.10 percent using 1000 points (visual area estimates). Inland Asbestos Lab, Inc. is accredited under the NIST/NVLAP (NVLAP Lab Code: 201000-0) program for asbestos in bulk material by polarized light microscopy and the State of California for asbestos analysis. Inland Asbestos Lab, Inc. will retain samples for a period of six months unless otherwise specified. Please feel free to contact Inland Asbestos Lab, Inc. regarding any questions about this report.



APPENDIX D
HISTORICAL LAND USE INFORMATION



9071-9091 Lampson Avenue

9071-9091 Lampson Avenue

Garden Grove, CA 92841

Inquiry Number: 6941794.8

April 17, 2022

The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

04/17/22

Site Name:

9071-9091 Lampson Avenue
9071-9091 Lampson Avenue
Garden Grove, CA 92841
EDR Inquiry # 6941794.8

Client Name:

Ardent Environmental Group
1827 Capital Street
Corona, CA 92880
Contact: Matthew Pensaw



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1987	1"=500'	Flight Date: March 29, 1987	USDA
1977	1"=500'	Flight Date: January 18, 1977	EDR Proprietary Brewster Pacific
1972	1"=500'	Flight Date: October 30, 1972	USGS
1963	1"=500'	Flight Date: February 28, 1963	USGS
1953	1"=500'	Flight Date: May 30, 1953	USDA
1947	1"=500'	Flight Date: June 17, 1947	FAIR
1938	1"=500'	Flight Date: June 21, 1938	USDA

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2022 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.



INQUIRY #: 6941794.8

YEAR: 2016

— = 500'





INQUIRY #: 6941794.8

YEAR: 2012

— = 500'





INQUIRY #: 6941794.8

YEAR: 2009

— = 500'





INQUIRY #: 6941794.8

YEAR: 2005

— = 500'



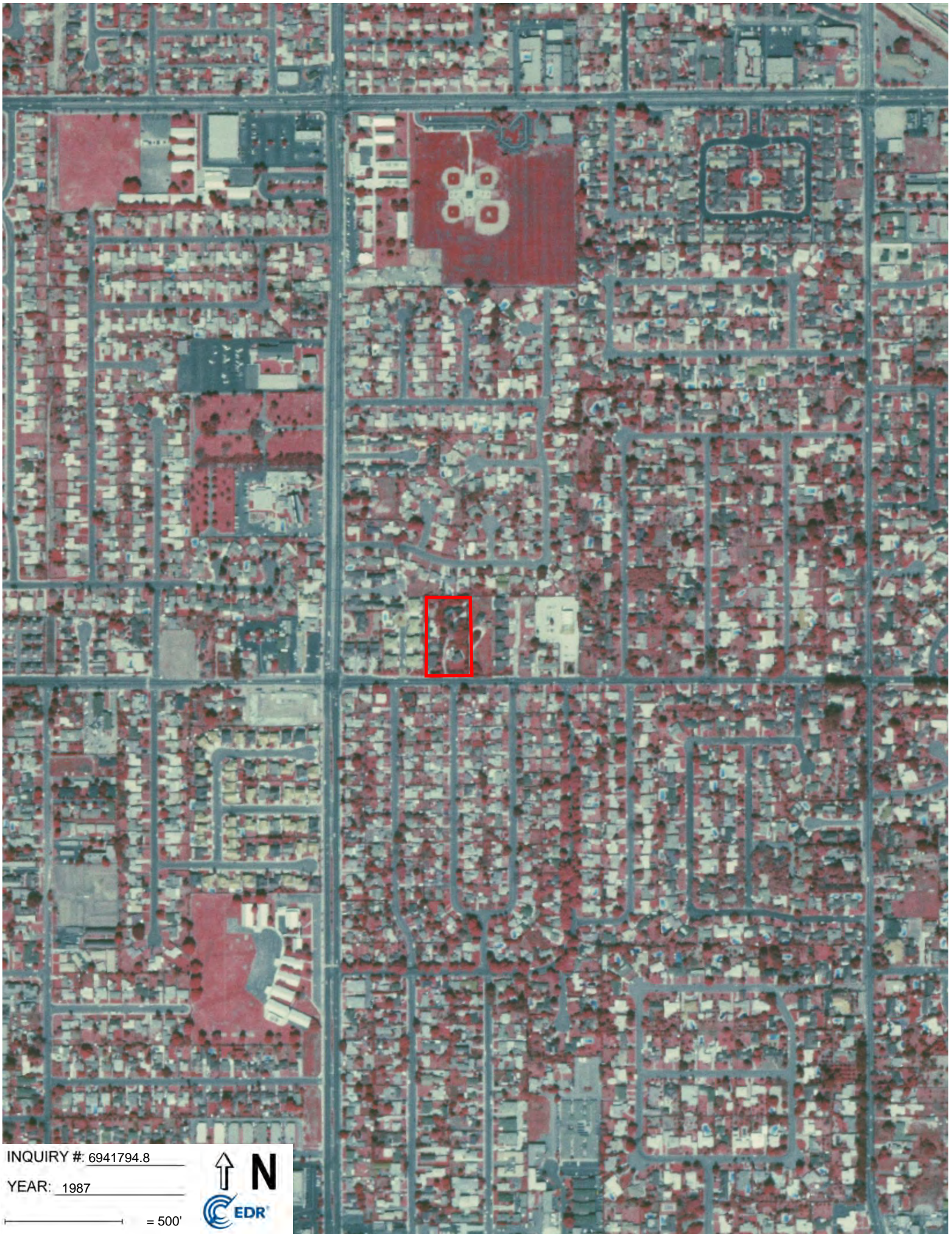


INQUIRY #: 6941794.8

YEAR: 1994

— = 500'



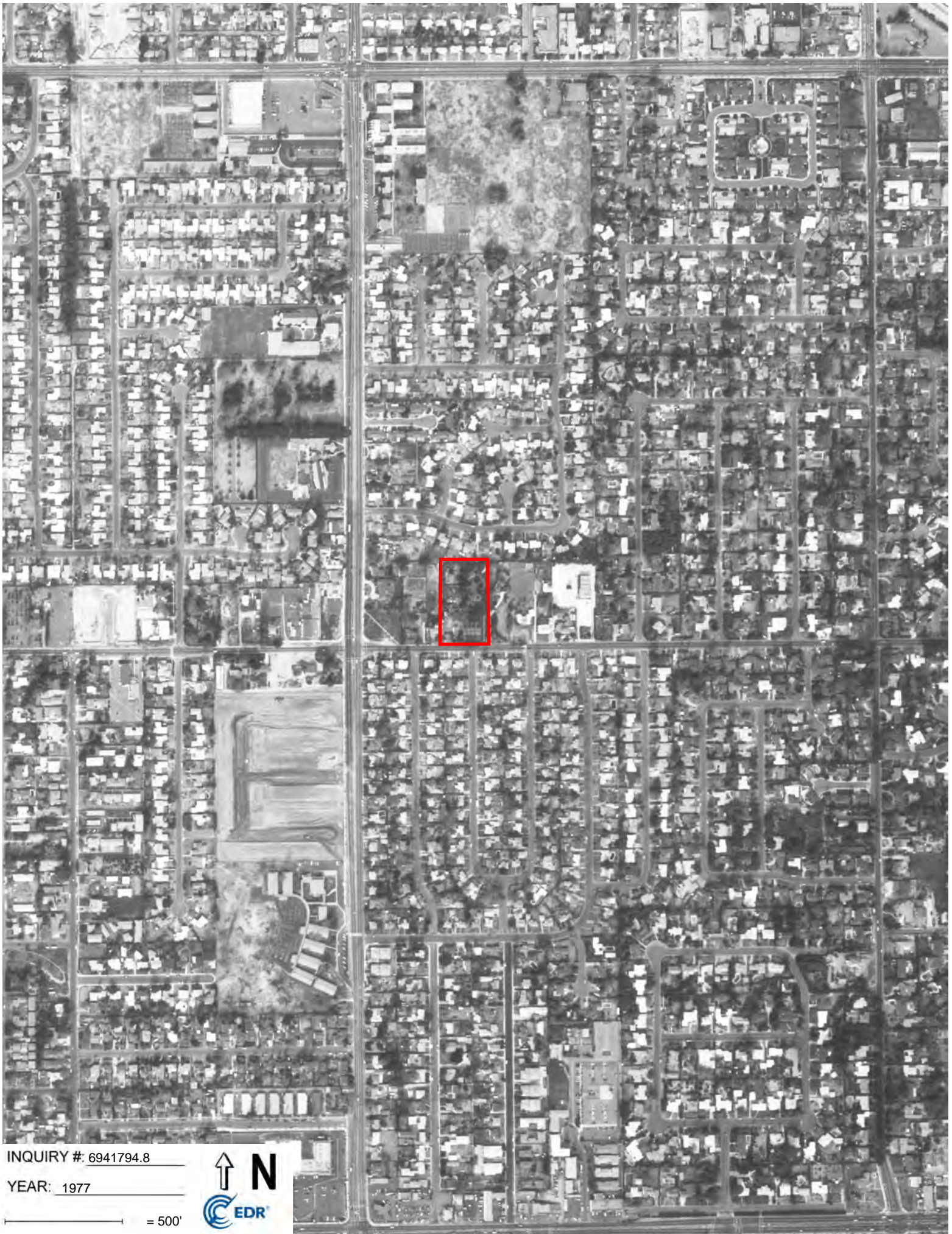


INQUIRY #: 6941794.8

YEAR: 1987

— = 500'



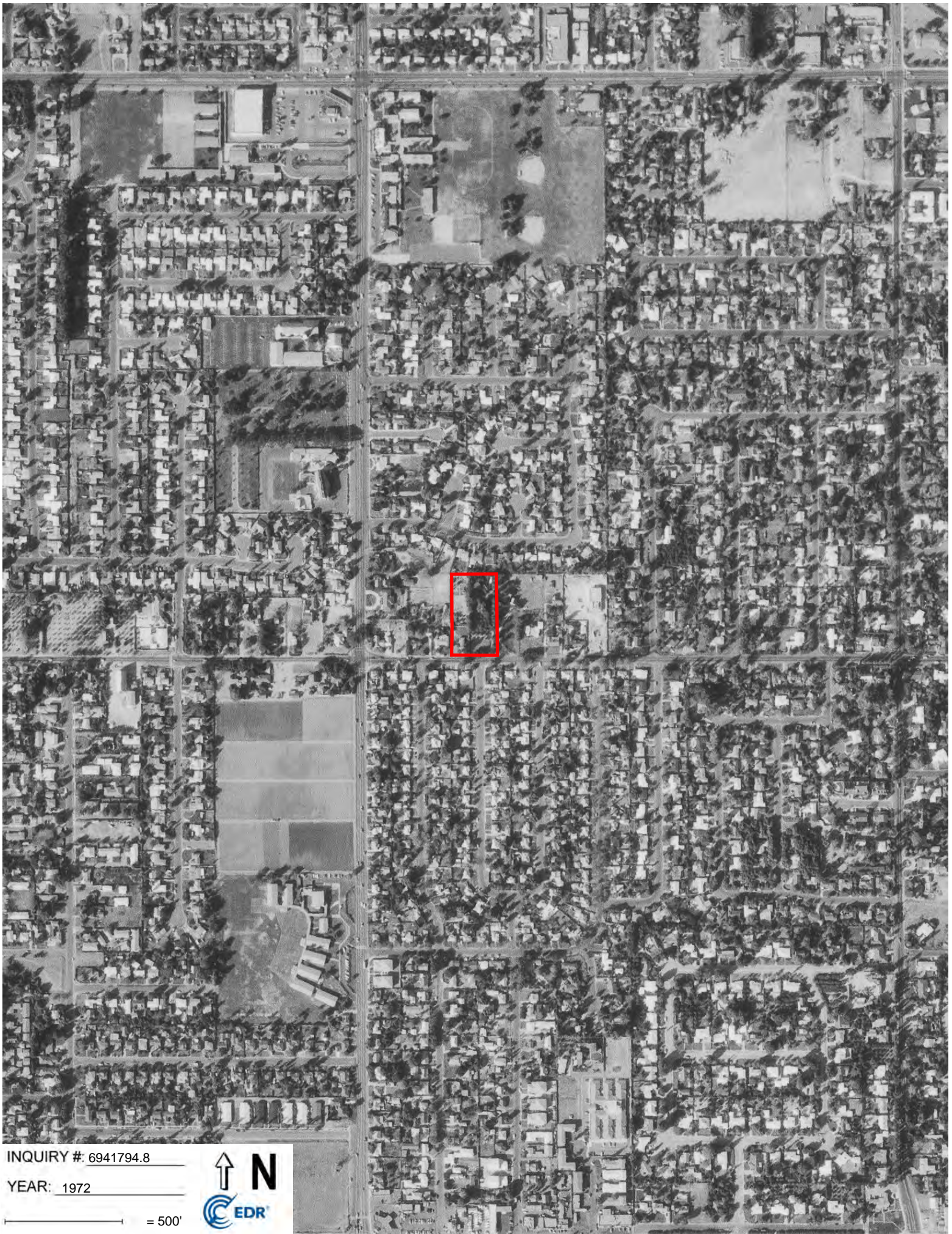


INQUIRY #: 6941794.8

YEAR: 1977

— = 500'





INQUIRY #: 6941794.8

YEAR: 1972

— = 500'





INQUIRY #: 6941794.8

YEAR: 1963

— = 500'





INQUIRY #: 6941794.8

YEAR: 1953

— = 500'





INQUIRY #: 6941794.8

YEAR: 1947

— = 500'





INQUIRY #: 6941794.8

YEAR: 1938

— = 500'



9071-9091 Lampson Avenue

9071-9091 Lampson Avenue
Garden Grove, CA 92841

Inquiry Number: 6941794.5

April 15, 2022

The EDR-City Directory Abstract

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.

Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2020 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1920 through 2014. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.



RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

<u>Year</u>	<u>Source</u>	<u>TP</u>	<u>Adjoining</u>	<u>Text Abstract</u>	<u>Source Image</u>
2014	Cole Information Services	X	X	X	-
2009	Cole Information Services	-	X	X	-
	Cole Information Services	X	X	X	-
2004	Cole Information Services	-	X	X	-
	Cole Information Services	X	X	X	-
2002	Haines Company	-	-	-	-
2001	Pacific Telephone	-	-	-	-
1999	Cole Information Services	-	X	X	-
	Cole Information Services	X	X	X	-
1997	Pacific Telephone	-	-	-	-

EXECUTIVE SUMMARY

<u>Year</u>	<u>Source</u>	<u>TP</u>	<u>Adjoining</u>	<u>Text Abstract</u>	<u>Source Image</u>
1995	Pacific Bell	-	X	X	-
1994	Cole Information Services	-	X	X	-
1992	Pacific Bell	-	-	-	-
1991	Pacific Bell	-	X	X	-
1986	Pacific Bell	-	X	X	-
1980	Pacific Telephone	-	X	X	-
1975	Luskey Brothers & Co., Inc.	-	X	X	-
	Luskey Brothers & Co., Inc.	X	X	X	-
1971	Luskey Brothers Co., Inc.	-	-	-	-
1970	General Telephone Co., of California	-	X	X	-
	General Telephone Co., of California	X	X	X	-
1966	Pacific Telephone	-	X	X	-
	Pacific Telephone	X	X	X	-
1965	Luskey Brothers	-	-	-	-
1961	Luskey Brothers & Co.,	-	-	-	-
1960	Unknown	-	-	-	-
1956	Luskey Brothers & Co., Inc.	-	-	-	-
1955	The Pacific Telephone and Telegraph Co.	-	X	X	-
1952	Luskeys Directory Service Co.	-	-	-	-
1950	The Pacific Telephone and Telegraph Co.	-	X	X	-
1946	Southern California Telephone Co.	-	-	-	-
1945	McCutcheon & Bragonier	-	-	-	-
1941	Southern California Telephone Co.	-	-	-	-
1936	Western Directory Co.	-	-	-	-
1930	Western Directory Co.	-	-	-	-
1926	Pacific Telephone	-	-	-	-
1925	Western Directory Co.	-	-	-	-
1922	Kaasen Directory Co.	-	-	-	-
1921	Western Directory Co.	-	-	-	-
1920	Santa Ana Directory Co.	-	-	-	-

EXECUTIVE SUMMARY

SELECTED ADDRESSES

The following addresses were selected by the client, for EDR to research. An "X" indicates where information was identified.

<u>Address</u>	<u>Type</u>	<u>Findings</u>
9081 Lampson Avenue	Client Entered	X
9091 Lampson Avenue	Client Entered	

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

9071-9091 Lampson Avenue
Garden Grove, CA 92841

FINDINGS DETAIL

Target Property research detail.

LAMPSON AVE

9071 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
2009	PETER BICKNELL	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
1999	PETER BICKNELL	Cole Information Services
1975	Castle Donald E	Luskey Brothers & Co., Inc.
	Hanson Scott	Luskey Brothers & Co., Inc.
1966	Curtis Chas H Rev	Pacific Telephone

9081 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	RAY BICKNELL	Cole Information Services
2009	KEVIN BICKNELL	Cole Information Services
1999	KEVIN BICKNELL	Cole Information Services
1970	Graves Mark E	General Telephone Co., of California

9091 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KEVIN BICKNELL	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
1999	C CARPENTER	Cole Information Services

FINDINGS

Lampson Avenue

9081 Lampson Avenue

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Graves Mark E	General Telephone Co., of California

9091 Lampson Avenue

<u>Year</u>	<u>Uses</u>	<u>Source</u>
-------------	-------------	---------------

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

BARBARA AVE

12521 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	BRAULIO MENDEZ	Cole Information Services
2009	BRAULIO MENDEZ	Cole Information Services
2004	BRAULIO MENDEZ	Cole Information Services
1999	BRAULIO MENDEZ	Cole Information Services
1980	Martz Dale B	Pacific Telephone

12522 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	CHRISTOPHER FAIRGRIEF	Cole Information Services
2009	THERESA VALDEZ	Cole Information Services
2004	ANDREW TRUONG	Cole Information Services
1999	THERESA VALDEZ	Cole Information Services

12531 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	STEVE SPENCER	Cole Information Services
2009	STEVE SPENCER	Cole Information Services
2004	STEVE SPENCER	Cole Information Services
1999	STEVE SPENCER	Cole Information Services

12532 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	BAO DANG	Cole Information Services
2009	GIAO DANG	Cole Information Services
2004	VIVIAN KELLY	Cole Information Services
1999	GIAO DANG	Cole Information Services

FINDINGS

12551 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	FRANCIS TRINH	Cole Information Services
2009	I/Y TRINH	Cole Information Services
2004	GEORGE MORRIS	Cole Information Services
1999	I/Y TRINH	Cole Information Services

12552 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ELIZABETH DESERNA	Cole Information Services
2009	ELIZABETH DESERNA	Cole Information Services
2004	ETHEL MCELROY	Cole Information Services
1999	ELIZABETH DESERNA	Cole Information Services
1991	Mc Eroy Theodore S	Pacific Bell
1986	Mc Eroy Theodore S	Pacific Bell
1975	McElroy Theodore S	Luskey Brothers & Co., Inc.

12561 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DANIEL NGUYEN	Cole Information Services
	DANIEL NGUYEN	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	DUY BUI	Cole Information Services
	DUY BUI	Cole Information Services
1995	Huynh Mien	Pacific Bell
1975	Buser David	Luskey Brothers & Co., Inc.

12562 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JUAN VARGAS	Cole Information Services
	JUAN VARGAS	Cole Information Services
2009	JUAN VARGAS	Cole Information Services
	JUAN VARGAS	Cole Information Services
2004	JUAN VARGAS	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	JUAN VARGAS	Cole Information Services
1999	JUAN VARGAS	Cole Information Services
	JUAN VARGAS	Cole Information Services
1991	Sommerfield Kenneth & Karen	Pacific Bell
1986	Sommerfield Kenneth & Karen	Pacific Bell
1980	Halderman Regina E	Pacific Telephone

12571 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DAVID ARREGUIN	Cole Information Services
	DAVID ARREGUIN	Cole Information Services
2009	TRINIDAD ORNELAS	Cole Information Services
	TRINIDAD ORNELAS	Cole Information Services
2004	JAIME SHOEMAKER	Cole Information Services
	JAIME SHOEMAKER	Cole Information Services
1999	TRINIDAD ORNELAS	Cole Information Services
	TRINIDAD ORNELAS	Cole Information Services
1995	Gonzalez Norma	Pacific Bell
1980	Alvarez Eiseo A	Pacific Telephone
1975	Lindsay Lou	Luskey Brothers & Co., Inc.

12572 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DAVID SANDOVAL	Cole Information Services
	DAVID SANDOVAL	Cole Information Services
2009	RUBEN SANDOVAL	Cole Information Services
	RUBEN SANDOVAL	Cole Information Services
2004	MARIA SANDOVAL	Cole Information Services
	MARIA SANDOVAL	Cole Information Services
1991	Hager Vicki Sue	Pacific Bell
	Hager Vicki Sue	Pacific Bell
1986	Robison Roger	Pacific Bell

FINDINGS

12591 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	NICOLE NAVARRO	Cole Information Services
	NICOLE NAVARRO	Cole Information Services
2009	GUADALUPE FLORES	Cole Information Services
	GUADALUPE FLORES	Cole Information Services
2004	CHANG KIM	Cole Information Services
	CHANG KIM	Cole Information Services
1999	GUADALUPE FLORES	Cole Information Services
	GUADALUPE FLORES	Cole Information Services
1991	Technology Control	Pacific Bell
1986	Bennett Geo J	Pacific Bell

12592 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	ODILIA FLORES	Cole Information Services
	ODILIA FLORES	Cole Information Services
2004	JOSE RODRIGUEZ	Cole Information Services
	JOSE RODRIGUEZ	Cole Information Services
1999	ODILIA FLORES	Cole Information Services
	ODILIA FLORES	Cole Information Services
1991	Condon Kerry & Maura	Pacific Bell

12601 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JOSE UGARTECHE	Cole Information Services
	JOSE UGARTECHE	Cole Information Services
2009	JOSE UGARTECHE	Cole Information Services
	JOSE UGARTECHE	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	JOSE UGARTECHE	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	JOSE UGARTECHE	Cole Information Services
1995	Ash Norman Jr	Pacific Bell
1994	ASH, NORMAN JR	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1994	ASH, NORMAN JR	Cole Information Services
1991	Ash Norman Jr	Pacific Bell
1986	Ash Norman Jr	Pacific Bell
1980	Ash Norman Jr	Pacific Telephone
1975	Armstrong Herschel L	Luskey Brothers & Co., Inc.

12602 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ALAN FORD	Cole Information Services
	ALAN FORD	Cole Information Services
2009	ALAN FORD	Cole Information Services
	ALAN FORD	Cole Information Services
2004	ALAN FORD	Cole Information Services
	ALAN FORD	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	ALAN FORD	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	ALAN FORD	Cole Information Services
1986	Bond Cyle R	Pacific Bell
1980	Huggler S & S	Pacific Telephone
1975	Rivera Saml J	Luskey Brothers & Co., Inc.
	Francher James	Luskey Brothers & Co., Inc.

12611 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	H NGUYEN	Cole Information Services
	H NGUYEN	Cole Information Services
2009	ELIZABETH CHINCHILLA	Cole Information Services
	ELIZABETH CHINCHILLA	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1991	Humphrey R W	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1980	Martinic T	Pacific Telephone
	Martinic C	Pacific Telephone

12612 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	RONA ROBISON	Cole Information Services
	RONA ROBISON	Cole Information Services
2009	RONA ROBISON	Cole Information Services
	RONA ROBISON	Cole Information Services
2004	RONA ROBISON	Cole Information Services
	RONA ROBISON	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services

12631 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2009	FRANCISCO GONZALEZ	Cole Information Services
	FRANCISCO GONZALEZ	Cole Information Services
2004	FRANCISCO GONZALEZ	Cole Information Services
	FRANCISCO GONZALEZ	Cole Information Services
1999	FRANCISCO GONZALEZ	Cole Information Services
	FRANCISCO GONZALEZ	Cole Information Services
1991	Fields Lawrence Earl	Pacific Bell
1986	Fields Lawrence Earl	Pacific Bell
1975	Fields Lawrence Earl	Luskey Brothers & Co., Inc.

12632 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MANUEL GUERRERO	Cole Information Services
	MANUEL GUERRERO	Cole Information Services
2004	SUZETTE A HISCOCK	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	SUZETTE A HISCOCK	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1986	Raymond Kyle & Lucille	Pacific Bell
1975	Law rence Thos E	Luskey Brothers & Co., Inc.
	Law rence Thomas E	Luskey Brothers & Co., Inc.

12641 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	WILMA PETERSON	Cole Information Services
	WILMA PETERSON	Cole Information Services
2009	AUGUSTIN MATEUT	Cole Information Services
	AUGUSTIN MATEUT	Cole Information Services
2004	AUGUSTIN MATEUT	Cole Information Services
	AUGUSTIN MATEUT	Cole Information Services
1999	A MATEUT	Cole Information Services
	A MATEUT	Cole Information Services
1975	Harryman Karol	Luskey Brothers & Co., Inc.
	Harryman Karol	Luskey Brothers & Co., Inc.

12642 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	WENDY MAI	Cole Information Services
2009	TRE MAI	Cole Information Services
2004	TRE MAI	Cole Information Services
1986	Anderson David A	Pacific Bell
1975	Northcliffe Richard	Luskey Brothers & Co., Inc.

12651 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DANIEL HERNANDEZ	Cole Information Services
	DANIEL HERNANDEZ	Cole Information Services
2004	DANIEL HERNANDEZ	Cole Information Services
	DANIEL HERNANDEZ	Cole Information Services
1975	Roudon Jas R	Luskey Brothers & Co., Inc.

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1975	Roudon James R	Luskey Brothers & Co., Inc.

12652 BARBARA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ALFREDO ORNELAS	Cole Information Services
	ALFREDO ORNELAS	Cole Information Services
2009	INDELISA ORNELAS	Cole Information Services
	INDELISA ORNELAS	Cole Information Services
2004	INDELISA ORNELAS	Cole Information Services
	INDELISA ORNELAS	Cole Information Services
1999	INDELISA ORNELAS	Cole Information Services
	INDELISA ORNELAS	Cole Information Services

BARBARA ST

12521 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Vernoy S A	The Pacific Telephone and Telegraph Co.

12552 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Mc Eroy Then S	General Telephone Co., of California

12562 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Anglin Les	General Telephone Co., of California

12571 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Ketcham How ard	General Telephone Co., of California
1955	Malay B L	The Pacific Telephone and Telegraph Co.

12572 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Dubois Omer	General Telephone Co., of California
	Mackin Janice	General Telephone Co., of California

FINDINGS

12591 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Fairley Wm A	The Pacific Telephone and Telegraph Co.

12592 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Quinlan Diane Mrs	General Telephone Co., of California
	Quinlan C Gordon	General Telephone Co., of California

12601 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Armstrong Herschel L	General Telephone Co., of California

12602 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	FPrncher Jas	General Telephone Co., of California

12612 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Cordier Marion M	The Pacific Telephone and Telegraph Co.
	Cordier Jos A	The Pacific Telephone and Telegraph Co.

12631 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Fields Lawrence Earl	General Telephone Co., of California

12632 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Lawrence Thos E	General Telephone Co., of California

12641 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Gattis Cecil W	General Telephone Co., of California
	Cattis Linda Kay	General Telephone Co., of California
	Gattis Sharon Ann	General Telephone Co., of California
	Gattis Dennis	General Telephone Co., of California
	Gattis John	General Telephone Co., of California
	Gattis John	General Telephone Co., of California

FINDINGS

12651 BARBARA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Ray W E	The Pacific Telephone and Telegraph Co.

E LAMPSON AVE

9042 E LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Vineyard John W	Pacific Telephone

9101 E LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Conkey W L Jr	Pacific Telephone

9121 E LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Heidlebaugh F J	Pacific Telephone

HARBOR ISLE LN

12341 HARBOR ISLE LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Donuts & Pastries	Pacific Bell

HARVEY AVE

12342 HARVEY AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Teszler Eugene	Pacific Bell

HARVEY LN

12341 HARVEY LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	LIZETTE ROMERO	Cole Information Services
	LIZETTE ROMERO	Cole Information Services
2009	LIZETTE ROMERO	Cole Information Services
	LIZETTE ROMERO	Cole Information Services
1995	Eden Chris C	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1994	EDEN, CHRIS	Cole Information Services
	EDEN, CHRIS	Cole Information Services
1991	Marquez Russell	Pacific Bell
1986	Marquez Russell	Pacific Bell
1970	Mac Donald Gerald M	General Telephone Co., of California

12342 HARVEY LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	PATRICK HAN	Cole Information Services
	PATRICK HAN	Cole Information Services
2009	DIANA TESZLER	Cole Information Services
	DIANA TESZLER	Cole Information Services
2004	EUGENE TESZLER	Cole Information Services
	EUGENE TESZLER	Cole Information Services
1999	DIANA TESZLER	Cole Information Services
	DIANA TESZLER	Cole Information Services

12343 HARVEY LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1994	TESZLER, EUGENE	Cole Information Services
	TESZLER, EUGENE	Cole Information Services

12345 HARVEY LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2009	HOMERO CANO	Cole Information Services
	HOMERO CANO	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1970	Hackathorn Lester K	General Telephone Co., of California
1966	Benson Wallace M	Pacific Telephone

FINDINGS

12351 HARVEY LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	BAO VO	Cole Information Services
	BAO VO	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	BAO VO	Cole Information Services
	BAO VO	Cole Information Services
1966	La Vasseur Joe P	Pacific Telephone

12352 HARVEY LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	LINH VU	Cole Information Services
	LINH VU	Cole Information Services
2009	DAVID DIAZ	Cole Information Services
	DAVID DIAZ	Cole Information Services
2004	DAVID DIAZ	Cole Information Services
	DAVID DIAZ	Cole Information Services
1999	DAVID DIAZ	Cole Information Services
	DAVID DIAZ	Cole Information Services
1995	Whitaker David & Carol	Pacific Bell
1994	WHITAKER, DAVID	Cole Information Services
	WHITAKER, DAVID	Cole Information Services
1986	Samii Ghasem	Pacific Bell
1980	Samii Ali	Pacific Telephone
1970	Tanny MW	General Telephone Co., of California
1966	Maldonado Raul	Pacific Telephone

12361 HARVEY LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	FRANK GALD	Cole Information Services
	FRANK GALD	Cole Information Services
2009	FRANK GALD	Cole Information Services
	FRANK GALD	Cole Information Services
1991	Young Everett A	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Soph Rolut L	General Telephone Co., of California
1966	Brees Gary	Pacific Telephone

12362 HARVEY LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DANIEL VLASIN	Cole Information Services
	DANIEL VLASIN	Cole Information Services
2009	DANIEL VLASIN	Cole Information Services
	DANIEL VLASIN	Cole Information Services
2004	DANIEL VLASIN	Cole Information Services
	DANIEL VLASIN	Cole Information Services
1999	DANIEL VLASIN	Cole Information Services
	DANIEL VLASIN	Cole Information Services
1995	Liesche Kenneth A	Pacific Bell
1994	LIESCHE, KENNETH A	Cole Information Services
	LIESCHE, KENNETH A	Cole Information Services
1991	Liese A&C	Pacific Bell
	L esche Kenneth A	Pacific Bell
1986	Liesche Kenneth A	Pacific Bell
1980	Beaudrie Gary	Pacific Telephone
1966	Barnard L C	Pacific Telephone

HAZEL

12521 HAZEL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Pike Dennis Wayne	Pacific Telephone

12522 HAZEL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	King Ralph S	General Telephone Co., of California
	King Arlene P	General Telephone Co., of California
1966	Andre Johanna Mrs	Pacific Telephone

FINDINGS

12531 HAZEL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Baw ey Peter H	Pacific Telephone
	Baw ey Rose Marie	Pacific Telephone

12551 HAZEL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Dow ling Geo	Pacific Telephone

12561 HAZEL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Mullen Jim	Pacific Telephone

12562 HAZEL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Rietz Walter A	Pacific Telephone

12571 HAZEL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Mc Cabe Elsie K	General Telephone Co., of California
1966	Mc Cabe Jas F	Pacific Telephone
	Mc Cabe Kathleen M	Pacific Telephone

12572 HAZEL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Wenberg Richard	General Telephone Co., of California
1966	Boucher Donald L	Pacific Telephone

12601 HAZEL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Smith Paul H	General Telephone Co., of California
1966	Smith Paul H	Pacific Telephone

HAZEL AVE

12521 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KARL DUENSING	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	KARL DUENSING	Cole Information Services
2004	KARL DUENSING	Cole Information Services
1999	KARL DUENSING	Cole Information Services
1975	Barga Patrick	Luskey Brothers & Co., Inc.

12522 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TU NGUYEN	Cole Information Services
	TU NGUYEN	Cole Information Services
2009	DOROTHY NGUYEN	Cole Information Services
	SCDT SERVICE CONSTRUCTION DESI	Cole Information Services
	DOROTHY NGUYEN	Cole Information Services
	SCDT SERVICE CONSTRUCTION DESI	Cole Information Services
2004	HA NGUYEN	Cole Information Services
	HA NGUYEN	Cole Information Services
1999	DOROTHY NGUYEN	Cole Information Services
	DOROTHY NGUYEN	Cole Information Services
1986	Faldetta M L	Pacific Bell
1980	Clark Ronald	Pacific Telephone
1975	Draper Richard Sgt	Luskey Brothers & Co., Inc.

12531 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2009	ERIC KNIGHT	Cole Information Services
	ERIC KNIGHT	Cole Information Services
2004	RICHARD KNIGHT	Cole Information Services
	RICHARD KNIGHT	Cole Information Services
1999	ERIC KNIGHT	Cole Information Services
	ERIC KNIGHT	Cole Information Services

FINDINGS

12532 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ADOLFO VERDUZCO	Cole Information Services
	ADOLFO VERDUZCO	Cole Information Services
2009	GUILLERMINA MACIEL	Cole Information Services
	GUILLERMINA MACIEL	Cole Information Services
2004	GEORGE YUN	Cole Information Services
	GEORGE YUN	Cole Information Services
1995	Yun George	Pacific Bell
1994	YUN, GEORGE	Cole Information Services
	YUN, GEORGE	Cole Information Services

12551 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	BERNADITA CUI	Cole Information Services
	BERNADITA CUI	Cole Information Services
2009	TUYET TRAN	Cole Information Services
	TUYET TRAN	Cole Information Services
2004	THUYET NGHIEM	Cole Information Services
	THUYET NGHIEM	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	TUYET TRAN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	TUYET TRAN	Cole Information Services
1986	Gnffin Jeff	Pacific Bell
1980	Warner John S	Pacific Telephone
1975	Dow ling Geo	Luskey Brothers & Co., Inc.
	Dow ling George	Luskey Brothers & Co., Inc.

12552 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	RUSTY KEEN	Cole Information Services
	RUSTY KEEN	Cole Information Services
2009	WILLIAM KEEN	Cole Information Services
	WILLIAM KEEN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	WILLIAM KEEN	Cole Information Services
	WILLIAM KEEN	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	WILLIAM KEEN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	WILLIAM KEEN	Cole Information Services

12561 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TAMMY LEE	Cole Information Services
	TAMMY LEE	Cole Information Services
2009	KOOK KIM	Cole Information Services
	HAN YANG PLUMBING	Cole Information Services
	KOOK KIM	Cole Information Services
	HAN YANG PLUMBING	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	KOOK KIM	Cole Information Services
	KOOK KIM	Cole Information Services
1995	Kim Kook Sung	Pacific Bell
1994	KIM, KOOK S	Cole Information Services
	LEE, KWANG H	Cole Information Services
	KIM, KOOK S	Cole Information Services
	LEE, KWANG H	Cole Information Services
1991	Lee Han Dong	Pacific Bell
	Kim Kris	Pacific Bell
	Kim Kook Sung	Pacific Bell
1986	Law yer John M	Pacific Bell
1975	Calvert David J	Luskey Brothers & Co., Inc.
	McNulty John G	Luskey Brothers & Co., Inc.

12562 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	CHARLES FISCHER	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	CHARLES FISCHER	Cole Information Services
2009	CHARLES FISCHER	Cole Information Services
	CHARLES FISCHER	Cole Information Services
2004	CHARLES FISCHER	Cole Information Services
	CHARLES FISCHER	Cole Information Services
1999	CHARLES FISCHER	Cole Information Services
	CHARLES FISCHER	Cole Information Services

12571 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	NGON LETHIEN	Cole Information Services
	NGON LETHIEN	Cole Information Services
2009	MAREK WASIELWSKI	Cole Information Services
	MAREK WASIELWSKI	Cole Information Services
2004	CATHERINE GARCIA	Cole Information Services
	CATHERINE GARCIA	Cole Information Services
1999	MAREK WASIELWSKI	Cole Information Services
	MAREK WASIELWSKI	Cole Information Services
1975	McCabe Esie K	Luskey Brothers & Co., Inc.

12572 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TRISH HUYNH	Cole Information Services
	TRISH HUYNH	Cole Information Services
2009	JONATHAN PERAZA	Cole Information Services
	JONATHAN PERAZA	Cole Information Services
2004	JONATHAN PERAZA	Cole Information Services
	JONATHAN PERAZA	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	JONATHAN PERAZA	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	JONATHAN PERAZA	Cole Information Services
1980	Duran Maria De Jesus	Pacific Telephone
1975	Wilson Stephen H Mrs	Luskey Brothers & Co., Inc.

FINDINGS

12591 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	SOPHY SE	Cole Information Services
	SOPHY SE	Cole Information Services
2009	SOPHY SE	Cole Information Services
	SOPHY SE	Cole Information Services
2004	LEANG SE	Cole Information Services
	LEANG SE	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	SOPHY SE	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	SOPHY SE	Cole Information Services
1995	Se Khun Y	Pacific Bell
1994	SE, KHUN Y	Cole Information Services
	SE, KHUN Y	Cole Information Services
1991	From Saddleback Valley Telephones Call	Pacific Bell
	Sea Air Inland Heating & Air Conditioning	Pacific Bell
	Sea Air Heating & Air Conditioning	Pacific Bell
	Seal Beach Bl&Bolsa Av @Seal Beach@	Pacific Bell
	From Saddleback Valley Telephones Call	Pacific Bell
	Se Khun Y	Pacific Bell
	Se Yat I OOI ECamile @Santa Ana@	Pacific Bell
1980	Webber Robt	Pacific Telephone
1975	OBrien Dennis	Luskey Brothers & Co., Inc.

12592 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JIMMY HUYNH	Cole Information Services
	JIMMY HUYNH	Cole Information Services
2009	JIMMY HUYNH	Cole Information Services
	JIMMY HUYNH	Cole Information Services
2004	TAM VUONG	Cole Information Services
	TAM VUONG	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1999	JIMMY HUYNH	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	JIMMY HUYNH	Cole Information Services

12601 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	FABIAN ARTEAGA	Cole Information Services
	FABIAN ARTEAGA	Cole Information Services
2009	FABIAN ARTEAGA	Cole Information Services
	FABIAN ARTEAGA	Cole Information Services
2004	FABIAN ARTEAGA	Cole Information Services
	FABIAN ARTEAGA	Cole Information Services
1999	FABIAN ARTEAGA	Cole Information Services
	FABIAN ARTEAGA	Cole Information Services
1994	BURKHART, RICHARD	Cole Information Services
	BURKHART, RICHARD	Cole Information Services
1991	Burkhart Richard	Pacific Bell
1986	Munllo John & Pam	Pacific Bell
1980	Murillo John & Pam	Pacific Telephone
1975	Smith Paul H	Luskey Brothers & Co., Inc.
	Smith Paul H	Luskey Brothers & Co., Inc.

12602 HAZEL AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JESSE VEGA	Cole Information Services
	JESSE VEGA	Cole Information Services
2009	JESUS VEGA	Cole Information Services
	JESUS VEGA	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	JESUS VEGA	Cole Information Services
	JESUS VEGA	Cole Information Services
1980	Mc Laughlin David & Susan	Pacific Telephone
1975	Ingram Robt J	Luskey Brothers & Co., Inc.

FINDINGS

HAZEL ST

12531 HAZEL ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Tanner Kenneth E	The Pacific Telephone and Telegraph Co.

12551 HAZEL ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Dowling Geo	The Pacific Telephone and Telegraph Co.

12552 HAZEL ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Thorpe W L	The Pacific Telephone and Telegraph Co.

12572 HAZEL ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Blacketer Calvin A	The Pacific Telephone and Telegraph Co.

12592 HAZEL ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Adams Geo R	The Pacific Telephone and Telegraph Co.

LAMPSON AVE

8971 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Gilbreath Charlie May	General Telephone Co., of California
	Gilbreath Esther B Mrs	General Telephone Co., of California
1966	Gilbreath Esther B Mrs	Pacific Telephone
1955	Gilbreath J M	The Pacific Telephone and Telegraph Co.

9002 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	PETE VIRGA	Cole Information Services
	PETE VIRGA	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	CARMELO VIRGA	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	VIRGA CONSTRUCTION	Cole Information Services
	CARMELO VIRGA	Cole Information Services
	VIRGA CONSTRUCTION	Cole Information Services
1991	Virga Carmello	Pacific Bell
	Virga Construction	Pacific Bell
1980	Virga Carniello	Pacific Telephone
1955	Mitchell Richard	The Pacific Telephone and Telegraph Co.

9011 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MINH TRAN	Cole Information Services
	EFRAIN AVILA	Cole Information Services
	MINH TRAN	Cole Information Services
	EFRAIN AVILA	Cole Information Services
2009	JOSE CUENCA	Cole Information Services
	MINH TRAN	Cole Information Services
	JOSE CUENCA	Cole Information Services
	MINH TRAN	Cole Information Services
2004	ERICA RODRIGUEZ	Cole Information Services
	ERICA RODRIGUEZ	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	JOSE CUENCA	Cole Information Services
	MINH TRAN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	JOSE CUENCA	Cole Information Services
	MINH TRAN	Cole Information Services
1986	Robida Lon	Pacific Bell
	Pitt Rebecca	Pacific Bell
	Mac Donald John C	Pacific Bell
1980	Jeffers Eleonore	Pacific Telephone
	Souza John Jr & Kim	Pacific Telephone

FINDINGS

9015 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	THAO LUU	Cole Information Services
	SUY VU	Cole Information Services
	THAO LUU	Cole Information Services
	SUY VU	Cole Information Services
2009	THAO LUU	Cole Information Services
	SUY VU	Cole Information Services
	THAO LUU	Cole Information Services
	SUY VU	Cole Information Services
2004	STEVE NGUYEN	Cole Information Services
	STEVE NGUYEN	Cole Information Services
1999	THAO LUU	Cole Information Services
	SUY VU	Cole Information Services
	THAO LUU	Cole Information Services
	SUY VU	Cole Information Services
1995	Palomares Eva	Pacific Bell
1994	TRAN, THAI Q	Cole Information Services
	TRAN, THAI Q	Cole Information Services
1991	Vo Cong	Pacific Bell
1986	Parker Richard Randy	Pacific Bell
1980	Hoang Man Dinh	Pacific Telephone

9021 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KIM VO	Cole Information Services
	QUAN NGUYEN	Cole Information Services
	KIM VO	Cole Information Services
	QUAN NGUYEN	Cole Information Services
2009	HUY NGUYEN	Cole Information Services
	TRUNG HUA	Cole Information Services
	HUY NGUYEN	Cole Information Services
	TRUNG HUA	Cole Information Services
2004	STEPHEN ALMQUIST	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	TRISTEN PETERS	Cole Information Services
	STEPHEN ALMQUIST	Cole Information Services
	TRISTEN PETERS	Cole Information Services
1999	HUY NGUYEN	Cole Information Services
	TRUNG HUA	Cole Information Services
	HUY NGUYEN	Cole Information Services
	TRUNG HUA	Cole Information Services
1991	Higgs Laura	Pacific Bell
1986	Ramos Richard M Jr	Pacific Bell

9022 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	GEORGIA MILLER	Cole Information Services
	GEORGIA MILLER	Cole Information Services
2004	GEORGIA MILLER	Cole Information Services
	GEORGIA MILLER	Cole Information Services
1999	GEORGIA MILLER	Cole Information Services
	GEORGIA MILLER	Cole Information Services
1994	MILLER, GEORGIA L	Cole Information Services
	MILLER, GEORGIA L	Cole Information Services
1991	Miller Georgia L	Pacific Bell
1986	Miller Vern V	Pacific Bell
	Miller Georgia L	Pacific Bell
1980	Miller Vern V	Pacific Telephone
	Miller Georgia L	Pacific Telephone
1975	Miller Vern V	Luskey Brothers & Co., Inc.
	Miller Georgia L	Luskey Brothers & Co., Inc.
1970	Miller Vern V	General Telephone Co., of California
	Miller Georgia L	General Telephone Co., of California
1966	Miller Vern V	Pacific Telephone
	Miller Georgia L	Pacific Telephone
1955	Nation Kent	The Pacific Telephone and Telegraph Co.

FINDINGS

9031 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	FELICITAS EGGLESTON	Cole Information Services
	FELICITAS EGGLESTON	Cole Information Services
2009	FELICITAS EGGLESTON	Cole Information Services
	FELICITAS EGGLESTON	Cole Information Services
2004	F EGGLESTON	Cole Information Services
	F EGGLESTON	Cole Information Services
1999	FELICITAS EGGLESTON	Cole Information Services
	FELICITAS EGGLESTON	Cole Information Services
1975	Petersen M E	Luskey Brothers & Co., Inc.
	Peterson L R	Luskey Brothers & Co., Inc.
	Petersen L R	Luskey Brothers & Co., Inc.
1970	Pitts Darrell	General Telephone Co., of California
1966	Pitts Edith	Pacific Telephone
	Pitts Darrell	Pacific Telephone

9033 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TIM GEHLE	Cole Information Services
	TIM GEHLE	Cole Information Services
2009	TIM GEHLE	Cole Information Services
	TIM GEHLE	Cole Information Services
2004	TIM GEHLE	Cole Information Services
	TIM GEHLE	Cole Information Services
1999	TIM GEHLE	Cole Information Services
	TIM GEHLE	Cole Information Services
1995	Blyth William & Peggy	Pacific Bell
1994	BLYTH, WILLIAM	Cole Information Services
	BLYTH, WILLIAM	Cole Information Services
1991	Evans Middleton & Jessie	Pacific Bell
	Evans Mike	Pacific Bell

FINDINGS

9035 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HOANGTHAI PHAM	Cole Information Services
	HOANGTHAI PHAM	Cole Information Services
2009	JOHNNY PHAM	Cole Information Services
	JOHNNY PHAM	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	JOHNNY PHAM	Cole Information Services
	JOHNNY PHAM	Cole Information Services

9037 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ROGER ALLARD	Cole Information Services
	ROGER ALLARD	Cole Information Services
2009	ROGER ALLARD	Cole Information Services
	ROGER ALLARD	Cole Information Services
2004	JOHN ALLARD	Cole Information Services
	JOHN ALLARD	Cole Information Services
1999	ROGER ALLARD	Cole Information Services
	ROGER ALLARD	Cole Information Services

9039 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JOSE ENRIQUEZ	Cole Information Services
	JOSE ENRIQUEZ	Cole Information Services
2009	BERNARD FARRELL	Cole Information Services
	BERNARD FARRELL	Cole Information Services
2004	M FARRELL	Cole Information Services
	M FARRELL	Cole Information Services
1999	BERNARD FARRELL	Cole Information Services
	BERNARD FARRELL	Cole Information Services

FINDINGS

9041 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	THAO HUA	Cole Information Services
	THAO HUA	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	ELBA GUEVARA	Cole Information Services
	TMC ENGINEERING	Cole Information Services
	ELBA GUEVARA	Cole Information Services
	TMC ENGINEERING	Cole Information Services

9042 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HINH VUONG	Cole Information Services
	HINH VUONG	Cole Information Services
2009	HINH VUONG	Cole Information Services
	HINH VUONG	Cole Information Services
2004	TUONGVI TRAN	Cole Information Services
	TUONGVI TRAN	Cole Information Services
1999	HINH VUONG	Cole Information Services
	HINH VUONG	Cole Information Services
1995	Vineyard John W	Pacific Bell
1980	Vineyard John W	Pacific Telephone
1975	Vineyard John W	Luskey Brothers & Co., Inc.
	Vineyard John W	Luskey Brothers & Co., Inc.

9043 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	RONALD CONWAY	Cole Information Services
	RONALD CONWAY	Cole Information Services
2009	RONALD CONWAY	Cole Information Services
	RONALD CONWAY	Cole Information Services
2004	RONALD CONWAY	Cole Information Services
	RONALD CONWAY	Cole Information Services

FINDINGS

9045 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	EDWIN GREENWALT	Cole Information Services
	EDWIN GREENWALT	Cole Information Services
2009	EDWIN GREENWALT	Cole Information Services
	EDWIN GREENWALT	Cole Information Services
2004	EDWIN GREENWALT	Cole Information Services
	EDWIN GREENWALT	Cole Information Services
1999	EDWIN GREENWALT	Cole Information Services
	EDWIN GREENWALT	Cole Information Services

9047 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	GARY PETERSON	Cole Information Services
	GARY PETERSON	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	GARY PETERSON	Cole Information Services
	GARY PETERSON	Cole Information Services

9048 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	SALLY HUYNH	Cole Information Services
2004	SALLY HUYNH	Cole Information Services
1999	SALLY HUYNH	Cole Information Services

9049 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	SAN MYUNG	Cole Information Services
	SAN MYUNG	Cole Information Services
2009	HYOWON SEO	Cole Information Services
	HYOWON SEO	Cole Information Services
2004	HARRY AGGERS	Cole Information Services
	HARRY AGGERS	Cole Information Services
1999	HYOWON SEO	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1999	HYOWON SEO	Cole Information Services
1995	Aggers Terry	Pacific Bell
1994	AGGERS, TERRY	Cole Information Services
	AGGERS, TERRY	Cole Information Services
1991	Aggers Terry	Pacific Bell

9051 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KENNETH LEE	Cole Information Services
	KENNETH LEE	Cole Information Services
2009	KENNETH LEE	Cole Information Services
	KENNETH LEE	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	KENNETH LEE	Cole Information Services
	KENNETH LEE	Cole Information Services

9052 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Tuggle Tommy	Pacific Bell

9053 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ANA RAMOS	Cole Information Services
	ANA RAMOS	Cole Information Services
2009	GIUSEPPE MAGGIANI	Cole Information Services
	GIUSEPPE MAGGIANI	Cole Information Services
2004	EARL CRISP	Cole Information Services
	EYES FOR YOU VIRTUAL TOURS	Cole Information Services
	EARL CRISP	Cole Information Services
	EYES FOR YOU VIRTUAL TOURS	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services

FINDINGS

9055 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1975	Sebring Geraldine L	Luskey Brothers & Co., Inc.
	Sebring Geraldine L	Luskey Brothers & Co., Inc.
1970	Sebring Doyle D	General Telephone Co., of California
1966	Sebring Doyle D	Pacific Telephone
	Sebring Geraldine L	Pacific Telephone

9062 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TRAM HOANG	Cole Information Services
	TRAM HOANG	Cole Information Services
2009	VALERIE NGUYEN	Cole Information Services
	VALERIE NGUYEN	Cole Information Services
2004	ANH HOANG	Cole Information Services
	ANH HOANG	Cole Information Services
1999	VALERIE NGUYEN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	VALERIE NGUYEN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1995	Moreno Gerardo Ruiz	Pacific Bell
1980	Cano M	Pacific Telephone
1975	Gorman J L	Luskey Brothers & Co., Inc.
1970	Gorman J L	General Telephone Co., of California
1966	Gorman J L	Pacific Telephone

9082 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	THANH CAO	Cole Information Services
	THANH CAO	Cole Information Services
2009	XUAN CAO	Cole Information Services
	XUAN CAO	Cole Information Services
2004	KEVIN MICHAELS	Cole Information Services
	KEVIN MICHAELS	Cole Information Services

FINDINGS

9092 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JOHN GAUTREAU	Cole Information Services
	JOHN GAUTREAU	Cole Information Services
2009	MATTHEW BELL	Cole Information Services
	MATTHEW BELL	Cole Information Services
2004	LLOYD CHESMORE	Cole Information Services
	LLOYD CHESMORE	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	MATTHEW BELL	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	MATTHEW BELL	Cole Information Services
1980	Smorick Theresa	Pacific Telephone
1975	Smorick Theresa	Luskey Brothers & Co., Inc.
	Smorick Theresa	Luskey Brothers & Co., Inc.
1970	Smorick Theresa	General Telephone Co., of California
1966	Smorick Theresa	Pacific Telephone

9101 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KEVIN NGUYEN	Cole Information Services
	KEVIN NGUYEN	Cole Information Services
2009	MINH NGUYEN	Cole Information Services
	MINH NGUYEN	Cole Information Services
2004	LAN DUONG	Cole Information Services
	LAN DUONG	Cole Information Services
1999	MINH NGUYEN	Cole Information Services
	MINH NGUYEN	Cole Information Services
1994	DUONG, LAN	Cole Information Services
	DUONG, LAN	Cole Information Services
1991	Duong Lan	Pacific Bell

9105 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HEE PARK	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HEE PARK	Cole Information Services
2009	HEE PARK	Cole Information Services
	HEE PARK	Cole Information Services
2004	HEE PARK	Cole Information Services
	MARCO INTERNATIONAL	Cole Information Services
	HEE PARK	Cole Information Services
	MARCO INTERNATIONAL	Cole Information Services
1999	HEE PARK	Cole Information Services
	HEE PARK	Cole Information Services
1995	Nguyen Thomas	Pacific Bell
1994	NGUYEN, THOMAS	Cole Information Services
	NGUYEN, THOMAS	Cole Information Services
1991	Nguyen Thomas	Pacific Bell

9109 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	THAO HO	Cole Information Services
	THAO HO	Cole Information Services
2004	PAUL TRUONG	Cole Information Services
	PAUL TRUONG	Cole Information Services
1994	KIM, SOON	Cole Information Services
	KIM, SOON	Cole Information Services
1991	Kim Soon	Pacific Bell

9111 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	LYNN LUNDEEN	Cole Information Services
	LYNN LUNDEEN	Cole Information Services
2009	LYNN LUNDEEN	Cole Information Services
	LYNN LUNDEEN	Cole Information Services
2004	LYNN LUNDEEN	Cole Information Services
	LYNN LUNDEEN	Cole Information Services
1999	LYNN LUNDEEN	Cole Information Services
	LYNN LUNDEEN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Lundeen Lynn K	Pacific Bell
1994	LUNDEEN, LYNN K	Cole Information Services
	LUNDEEN, LYNN K	Cole Information Services
1991	Lundeen Lynn K	Pacific Bell

9115 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HOANG NGUYEN	Cole Information Services
2009	HOANG NGUYEN	Cole Information Services
2004	MIKE NGUYEN	Cole Information Services
1999	HOANG NGUYEN	Cole Information Services

9121 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MICHAEL DAO	Cole Information Services
	MICHAEL DAO	Cole Information Services
2009	MICHAEL DAO	Cole Information Services
	MICHAEL DAO	Cole Information Services
2004	MICHAEL DAO	Cole Information Services
	MICHAEL DAO	Cole Information Services
1999	MICHAEL DAO	Cole Information Services
	MICHAEL DAO	Cole Information Services
1975	Heidlebaugh F J	Luskey Brothers & Co., Inc.

9122 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JAMES AGATEP	Cole Information Services
	JAMES AGATEP	Cole Information Services
2004	NEIL STAFFORD	Cole Information Services
	NEIL STAFFORD	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1995	Hux Sherry	Pacific Bell
1986	Energy Development Corp	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1980	Elzada David & Esther	Pacific Telephone
1975	Meyer John R	Luskey Brothers & Co., Inc.
1970	Grevis Andrew L	General Telephone Co., of California
1966	Grevis Andrew L	Pacific Telephone

9131 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	IELIU TJIA	Cole Information Services
	IELIU TJIA	Cole Information Services
2009	IELIU TJIA	Cole Information Services
	IELIU TJIA	Cole Information Services
2004	SOEN TJIA	Cole Information Services
	SOEN TJIA	Cole Information Services
1999	IELIU TJIA	Cole Information Services
	IELIU TJIA	Cole Information Services

9141 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	YEN LE	Cole Information Services
	YEN LE	Cole Information Services
2009	YEN LE	Cole Information Services
	YEN LE	Cole Information Services
2004	YEN LE	Cole Information Services
	YEN LE	Cole Information Services
1999	YEN LE	Cole Information Services
	YEN LE	Cole Information Services
1986	Chang Wm	Pacific Bell

9142 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JUAN HUERTA	Cole Information Services
	JUAN HUERTA	Cole Information Services
2009	JESUS GOMEZ	Cole Information Services
	JESUS GOMEZ	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	JESUS GOMEZ	Cole Information Services
	JESUS GOMEZ	Cole Information Services
1999	JESUS GOMEZ	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	JESUS GOMEZ	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1970	Lew in Larrance	General Telephone Co., of California
1966	Genn Robt P	Pacific Telephone

9151 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KEVIN BICKNELL	Cole Information Services
	KEVIN BICKNELL	Cole Information Services
2009	RAUL PEREZ	Cole Information Services
	RAUL PEREZ	Cole Information Services
2004	RAUL PEREZ	Cole Information Services
	RAUL PEREZ	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	RAUL PEREZ	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	RAUL PEREZ	Cole Information Services
1986	Ashby David & Pamela	Pacific Bell

9161 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JOHN TULLY	Cole Information Services
	JOHN TULLY	Cole Information Services
2009	JOHN TULLY	Cole Information Services
	JOHN TULLY	Cole Information Services
2004	JOHN TULLY	Cole Information Services
	JOHN TULLY	Cole Information Services
1999	JOHN TULLY	Cole Information Services
	JOHN TULLY	Cole Information Services
1995	Tully John M	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1994	TULLY, JOHN M	Cole Information Services
	TULLY, JOHN M	Cole Information Services
1991	Tully John M	Pacific Bell

9162 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	WILLIAM MORRIS	Cole Information Services
	WILLIAM MORRIS	Cole Information Services
2009	WILLIAM MORRIS	Cole Information Services
	WILLIAM MORRIS	Cole Information Services
1986	Morris Wm E	Pacific Bell
1980	Morris Wm E	Pacific Telephone

9171 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	WILLIAM HALL	Cole Information Services
	WILLIAM HALL	Cole Information Services
2009	RICHARD CONNELL	Cole Information Services
	RD CONNELL CONTRACTING CORP	Cole Information Services
	RICHARD CONNELL	Cole Information Services
	RD CONNELL CONTRACTING CORP	Cole Information Services
2004	ALL NIGHT MEDIA	Cole Information Services
	RD CONNELL CONTRACTING CORP	Cole Information Services
	RICHARD CONNELL	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	ALL NIGHT MEDIA	Cole Information Services
	RD CONNELL CONTRACTING CORP	Cole Information Services
	RICHARD CONNELL	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1991	Connell R D	Pacific Bell
1986	Connell R D	Pacific Bell
1980	Connell RD	Pacific Telephone
	Colarusso K	Pacific Telephone
1975	Kunkle Roger	Luskey Brothers & Co., Inc.

FINDINGS

9173 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MINH NGUYEN	Cole Information Services
	MINH NGUYEN	Cole Information Services
2009	SANG NGUYEN	Cole Information Services
	SANG NGUYEN	Cole Information Services
2004	THOMAS NGUYEN	Cole Information Services
	THOMAS NGUYEN	Cole Information Services
1999	SANG NGUYEN	Cole Information Services
	SANG NGUYEN	Cole Information Services

9175 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	LUAN PHAM	Cole Information Services
	LUAN PHAM	Cole Information Services
2009	MICHELLE NGO	Cole Information Services
	MICHELLE NGO	Cole Information Services
1999	MICHELLE NGO	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	MICHELLE NGO	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1994	MARCHISSET, RAYMOND	Cole Information Services
	MARCHISSET, RAYMOND	Cole Information Services

9177 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TONG DU	Cole Information Services
2009	TONG DU	Cole Information Services
2004	TONG DU	Cole Information Services
1999	TONG DU	Cole Information Services

9181 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ALBERT NORMANDIN	Cole Information Services
	ALBERT NORMANDIN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	RAYMOND NORMANDIN	Cole Information Services
	RAYMOND NORMANDIN	Cole Information Services
2004	ALBERT NORMANDIN	Cole Information Services
	ALBERT NORMANDIN	Cole Information Services
1999	RAYMOND NORMANDIN	Cole Information Services
	RAYMOND NORMANDIN	Cole Information Services
1986	La Luz A	Pacific Bell
	Biglow Geo P	Pacific Bell
1980	iglow Geo P	Pacific Telephone
1975	Biglow Geo P	Luskey Brothers & Co., Inc.
1966	Dickenson Kenny D	Pacific Telephone
	KENNIN CEMENT CONSTRUCTION	Pacific Telephone
1950	Phillips A W r	The Pacific Telephone and Telegraph Co.

9182 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	LINH LEE	Cole Information Services
	LINH LEE	Cole Information Services
2004	RAFAEL CORONA	Cole Information Services
	MARIA LEJES	Cole Information Services
	MARYLU BOLANOS	Cole Information Services
	MARTHEL MENDOZA	Cole Information Services
	RAFAEL CORONA	Cole Information Services
	MARIA LEJES	Cole Information Services
	MARYLU BOLANOS	Cole Information Services
	MARTHEL MENDOZA	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1995	Mendoza J	Pacific Bell
1994	MARTINEZ, ESTRADA P	Cole Information Services
	MARTINEZ, ESTRADA P	Cole Information Services
1986	Harrngton Steve	Pacific Bell
1975	Shirley Wm P	Luskey Brothers & Co., Inc.

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1975	Shirley Wm P Juanita	Luskey Brothers & Co., Inc.
1966	Shirley Wm P	Pacific Telephone

9191 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JEHOVAHS WITNESS	Cole Information Services
	JEHOVAHS WITNESS	Cole Information Services
2009	JEHOVAHS WITNESSES GARDEN GROVE	Cole Information Services
	KINGDOM HALL CHURCH	Cole Information Services
	JEHOVAHS WITNESSES GARDEN GROVE	Cole Information Services
	KINGDOM HALL CHURCH	Cole Information Services
2004	LOUIS RAYZOR	Cole Information Services
	LOUIS RAYZOR	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	JEHOVAHS WITNESSES WESTMINSTER MAGNOLIA CONGREG	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	JEHOVAHS WITNESSES WESTMINSTER MAGNOLIA CONGREG	Cole Information Services
1994	KINGDOM HILL NO GRDN	Cole Information Services
	KINGDOM HILL NO GRDN	Cole Information Services
1991	Kovalak Nicholas Jr	Pacific Bell
1986	Kingdom Hall Of North Garden Grove	Pacific Bell
1980	Kingdom Jew elry Beu Pk	Pacific Telephone
	Kingdom Hall Of North Garden Grove	Pacific Telephone
1975	Kingdom Hall Of North @Garden Grove@	Luskey Brothers & Co., Inc.
	Kingdom Hall of North G Gr	Luskey Brothers & Co., Inc.

9202 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MICHAEL MYERS	Cole Information Services
	MICHAEL MYERS	Cole Information Services
2009	MICHAEL MYERS	Cole Information Services
	MICHAEL MYERS	Cole Information Services
2004	MICHAEL MYERS	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	MICHAEL MYERS	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	MICHAEL MYERS	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	MICHAEL MYERS	Cole Information Services
1991	Culhane Kevin P	Pacific Bell
1986	Culhane Kevin P	Pacific Bell
1966	Mussell Harry	Pacific Telephone

9222 LAMPSON AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ERNEST SNYDER	Cole Information Services
	ERNEST SNYDER	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1991	Salazar Martin	Pacific Bell
1986	Santillan Nancy	Pacific Bell
1980	San an Raul	Pacific Telephone
1975	Westgate Chas A	Luskey Brothers & Co., Inc.
1970	Westgate Chas A	General Telephone Co., of California

LAVINA LN

12351 LAVINA LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	PATRICIA PANTOJA	Cole Information Services
	PATRICIA PANTOJA	Cole Information Services
2009	PATRICIA PANTOJA	Cole Information Services
	PATRICIA PANTOJA	Cole Information Services
1999	PATRICIA PANTOJA	Cole Information Services
	PATRICIA PANTOJA	Cole Information Services
1995	Okamoto Guy	Pacific Bell
1994	OKAMOTO, GUY	Cole Information Services
	OKAMOTO, GUY	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Okamoto Guy	Pacific Bell

12352 LAVINA LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MARIANNE KOENIG	Cole Information Services
	MARIANNE KOENIG	Cole Information Services
2009	DENNIS KOENIG	Cole Information Services
	DENNIS KOENIG	Cole Information Services
2004	DENNIS KOENIG	Cole Information Services
	DENNIS KOENIG	Cole Information Services
1999	DENNIS KOENIG	Cole Information Services
	DENNIS KOENIG	Cole Information Services
1991	Koenig Dennis & Marianne	Pacific Bell
1980	Koenig Dennis & Marianne	Pacific Telephone

12362 LAVINA LN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DAVID TWISS	Cole Information Services
2009	DAVID TWISS	Cole Information Services
2004	DAVID TWISS	Cole Information Services
	DAVEY BEAR & THE CUBS	Cole Information Services
1999	DAVID TWISS	Cole Information Services
1966	Motter Vivian Mrs	Pacific Telephone

LEROY AVE

12521 LEROY AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	GAUDENCIO GUTIERREZ	Cole Information Services
2009	ELIAS GUARDADO	Cole Information Services
2004	GAUDENCIO GUTIERREZ	Cole Information Services
1999	ELIAS GUARDADO	Cole Information Services
1980	Atuatasi Manny	Pacific Telephone
1975	Mihalus Jos M	Luskey Brothers & Co., Inc.
1970	Mihalus Jos M	General Telephone Co., of California

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Shelton Janet	Pacific Telephone
	Shelton Grover	Pacific Telephone

12522 LEROY AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KHIEM NGUYEN	Cole Information Services
2009	D BROCKMAN	Cole Information Services
2004	LAVON ROBERTS	Cole Information Services
1999	D BROCKMAN	Cole Information Services
1975	Estrada Robert	Luskey Brothers & Co., Inc.

12531 LEROY AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HIEP NGO	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
2004	TAP NGUYEN	Cole Information Services
1991	Shearer Loren W Jimmy	Pacific Bell
1986	Shearer Loren W Jimmy	Pacific Bell
1980	Shearer Loren W Jimmy	Pacific Telephone
1975	Shearer Loren W Jimmy	Luskey Brothers & Co., Inc.
	Shearer Loren W Jimmy	Luskey Brothers & Co., Inc.
1970	Shearer Loren W Jimmy	General Telephone Co., of California
1966	Shearer Loren W Jimmy	Pacific Telephone
1955	Frye Robt Dale	The Pacific Telephone and Telegraph Co.

12532 LEROY AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	CA DO	Cole Information Services
	CA DO	Cole Information Services
2009	THANH DO	Cole Information Services
	THANH DO	Cole Information Services
2004	T NGUYEN	Cole Information Services
	T NGUYEN	Cole Information Services
1999	THANH DO	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1999	THANH DO	Cole Information Services
1995	KlingeLe Kenny	Pacific Bell
1980	Dinsay L	Pacific Telephone
1955	Franks Marion	The Pacific Telephone and Telegraph Co.

12551 LEROY AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	NGOC HUYNH	Cole Information Services
	NGOC HUYNH	Cole Information Services
2009	KIMBERLY BARONE	Cole Information Services
	KIMBERLY BARONE	Cole Information Services
2004	KIMBERLY BARONE	Cole Information Services
	KIMBERLY BARONE	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1995	Baughman Wayne	Pacific Bell
1994	BAUGHMAN, WAYNE	Cole Information Services
	BAUGHMAN, WAYNE	Cole Information Services
1991	Baughman Wayne	Pacific Bell
1986	Baughman Wayne	Pacific Bell
1980	Baughman Wayne	Pacific Telephone

12552 LEROY AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	VIRGILIA BENITEZ	Cole Information Services
	VIRGILIA BENITEZ	Cole Information Services
2009	VIRGILIA BENITEZ	Cole Information Services
	VIRGILIA BENITEZ	Cole Information Services
2004	VIRGILIA BENITEZ	Cole Information Services
	VIRGILIA BENITEZ	Cole Information Services
1999	VIRGILIA BENITEZ	Cole Information Services
	VIRGILIA BENITEZ	Cole Information Services
1970	Fernandez Helaria Miss	General Telephone Co., of California

FINDINGS

12561 LEROY AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HUGO ARREDONDO	Cole Information Services
	HUGO ARREDONDO	Cole Information Services
2009	HUGO ARREDONDO	Cole Information Services
	HUGO ARREDONDO	Cole Information Services
2004	HUGO ARREDONDO	Cole Information Services
	HUGO ARREDONDO	Cole Information Services
1999	HUGO ARREDONDO	Cole Information Services
	HUGO ARREDONDO	Cole Information Services
1991	Finley John N	Pacific Bell
1986	Finley John N	Pacific Bell
1980	fnley John N	Pacific Telephone
1975	Finley John N	Luskey Brothers & Co., Inc.
1970	Finley John N	General Telephone Co., of California
1966	Finley John N	Pacific Telephone
1955	Bedwell Dorothy M	The Pacific Telephone and Telegraph Co.

LUCI OLE AVE

12552 LUCI OLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Sandell Richard	Pacific Bell

LUCILLE

12571 LUCILLE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Figueroa Paul J	Pacific Bell

LUCILLE AVE

12521 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	SAM BARELA	Cole Information Services
	SAM BARELA	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	SAM BARELA	Cole Information Services
	SAM BARELA	Cole Information Services
2004	SAM BARELA	Cole Information Services
	SAM BARELA	Cole Information Services
1995	Barela SANTA ANA	Pacific Bell
1994	BARELA, S A	Cole Information Services
	BARELA, S A	Cole Information Services
1975	Rotolo Ernest	Luskey Brothers & Co., Inc.

12522 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HOANG NGUYEN	Cole Information Services
	HOANG NGUYEN	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	IRINEO SOLIS	Cole Information Services
	IRINEO SOLIS	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services

12531 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	QUAN NGUYEN	Cole Information Services
	QUAN NGUYEN	Cole Information Services
2009	QUAN NGUYEN	Cole Information Services
	QUAN NGUYEN	Cole Information Services
2004	PETER NGUYEN	Cole Information Services
	PETER NGUYEN	Cole Information Services
1999	QUAN NGUYEN	Cole Information Services
	QUAN NGUYEN	Cole Information Services
1994	DODGINS, CYNTHIA	Cole Information Services
	DODGINS, CYNTHIA	Cole Information Services
1986	Dodgins C	Pacific Bell
1980	Dodgins C	Pacific Telephone

FINDINGS

12532 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DENNIS ALSTED	Cole Information Services
	DENNIS ALSTED	Cole Information Services
2009	DENNIS ALSTED	Cole Information Services
	ALSTED CARPET CLEANING	Cole Information Services
	DENNIS ALSTED	Cole Information Services
	ALSTED CARPET CLEANING	Cole Information Services
2004	DENNIS ALSTED	Cole Information Services
	DENNIS ALSTED	Cole Information Services
1999	DENNIS ALSTED	Cole Information Services
	DENNIS ALSTED	Cole Information Services
1995	Alsted Dennis A	Pacific Bell
1994	ALSTED, DENNIS A	Cole Information Services
	ALSTED, DENNIS A	Cole Information Services
1991	Alsted Dennis A	Pacific Bell
	Aisted Lynette	Pacific Bell
1986	Alsted Dennis A	Pacific Bell
	Alsteds Carpet & Upholstery Steam Cleaning	Pacific Bell
1980	Alsteads Carpet & Upholstery Steam Cleaning	Pacific Telephone
	Alsted Dennis A	Pacific Telephone
1975	Alsted Dennis A	Luskey Brothers & Co., Inc.

12551 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	LAM NGUYEN	Cole Information Services
	LAM NGUYEN	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	CHRISTINA PHAM	Cole Information Services
	CHRISTINA PHAM	Cole Information Services
1995	Pham Christina	Pacific Bell
1994	HARKEY, JOHN E	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1994	HARKEY, JOHN E	Cole Information Services
1986	Harkey John E	Pacific Bell
1980	rhey John E	Pacific Telephone
1975	Harkey John E	Luskey Brothers & Co., Inc.
	Harkey John E	Luskey Brothers & Co., Inc.

12552 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DELBERT RICHARDSON	Cole Information Services
	DELBERT RICHARDSON	Cole Information Services
2009	DELBERT RICHARDSON	Cole Information Services
	DELBERT RICHARDSON	Cole Information Services
2004	RICHARD SANDELL	Cole Information Services
	RICHARD SANDELL	Cole Information Services
1999	DELBERT RICHARDSON	Cole Information Services
	DELBERT RICHARDSON	Cole Information Services
1995	Sandell Richard	Pacific Bell
1994	SANDELL, RICHARD	Cole Information Services
	FINEMAN, HOWARD	Cole Information Services
	SANDELL, RICHARD	Cole Information Services
	FINEMAN, HOWARD	Cole Information Services
1980	S Barson Nick Jr	Pacific Telephone

12561 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	PHAN TRAN	Cole Information Services
	PHAN TRAN	Cole Information Services
2009	HUNG NGUYEN	Cole Information Services
	HUNG NGUYEN	Cole Information Services
2004	HOA TRAN	Cole Information Services
	HOA TRAN	Cole Information Services
1999	HUNG NGUYEN	Cole Information Services
	HUNG NGUYEN	Cole Information Services
1995	Nguyen Hung Cao	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1980	Johnson Ken A	Pacific Telephone
1975	Pauls M E	Luskey Brothers & Co., Inc.
	Pauls Mary	Luskey Brothers & Co., Inc.

12562 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MACH DANG	Cole Information Services
	MACH DANG	Cole Information Services
2009	DANIEL NGUYEN	Cole Information Services
	DANIEL NGUYEN	Cole Information Services
2004	DANIEL NGUYEN	Cole Information Services
	DANIEL NGUYEN	Cole Information Services
1999	DANIEL NGUYEN	Cole Information Services
	DANIEL NGUYEN	Cole Information Services
1986	Takahashi Osamu	Pacific Bell
1980	Vo Tien Hoang	Pacific Telephone

12571 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	PAUL FIGUEROA	Cole Information Services
	PAUL FIGUEROA	Cole Information Services
1995	Figueroa Paul J	Pacific Bell
1994	FIGUEROA, PAUL J	Cole Information Services
	FIGUEROA, PAUL J	Cole Information Services
1991	Figueroa Paul J	Pacific Bell
1986	Figueroa Paul J	Pacific Bell
1980	Figueroa Paul J	Pacific Telephone
1975	Figueroa Paul J	Luskey Brothers & Co., Inc.

FINDINGS

12572 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	RAY WILSON	Cole Information Services
	RAY WILSON	Cole Information Services
2009	PAUL PEPPER	Cole Information Services
	PAUL PEPPER	Cole Information Services
2004	PAUL PEPPER	Cole Information Services
	PAUL PEPPER	Cole Information Services
1999	PAUL PEPPER	Cole Information Services
	PAUL PEPPER	Cole Information Services
1995	Mc Cammon Charles	Pacific Bell
1994	MCCAMMON, CHARLES	Cole Information Services
	MCCAMMON, CHARLES	Cole Information Services
1991	Mc Cammon George	Pacific Bell
	Mc Cammon F	Pacific Bell
	Mc Cammon Charles	Pacific Bell
1986	Kali Marie	Pacific Bell
1975	Kali Marie	Luskey Brothers & Co., Inc.
	Kali Marie	Luskey Brothers & Co., Inc.

12591 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	LAP NGUYEN	Cole Information Services
	LAP NGUYEN	Cole Information Services
2009	LAP VANNGUYEN	Cole Information Services
	LAP VANNGUYEN	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	LAP VANNGUYEN	Cole Information Services
	LAP VANNGUYEN	Cole Information Services
1995	Nguyen Du	Pacific Bell
1980	Abbott John N	Pacific Telephone
1975	Abbott John N Carol	Luskey Brothers & Co., Inc.
	Abbott John N	Luskey Brothers & Co., Inc.

FINDINGS

12592 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JEANNIE TRAN	Cole Information Services
	JEANNIE TRAN	Cole Information Services
2009	DUY TRUONG	Cole Information Services
	DUY TRUONG	Cole Information Services
2004	BA HOANG	Cole Information Services
	BA HOANG	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	DUY TRUONG	Cole Information Services
	CUSTOM BUILT CONSTRUCTION COMPANY	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	DUY TRUONG	Cole Information Services
	CUSTOM BUILT CONSTRUCTION COMPANY	Cole Information Services

12601 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DONNA HUDSON	Cole Information Services
	DONNA HUDSON	Cole Information Services
2009	CONG LEPHA T	Cole Information Services
	CONG LEPHA T	Cole Information Services
2004	CONG LEPHA T	Cole Information Services
	CONG LEPHA T	Cole Information Services
1999	LESUONG THE	Cole Information Services
	CONG LEPHA T	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	LESUONG THE	Cole Information Services
	CONG LEPHA T	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1995	Le Suong The	Pacific Bell
1994	LE, SUONG T	Cole Information Services
	LE SUONG THE	Cole Information Services
	LE, SUONG T	Cole Information Services
	LE SUONG THE	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Le Suong The	Pacific Bell
1986	La Suong The	Pacific Bell
1975	Mickschl Mary Jo A	Luskey Brothers & Co., Inc.

12602 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JAMES LAM	Cole Information Services
	JAMES LAM	Cole Information Services
2009	QUOC LAM	Cole Information Services
	QUOC LAM	Cole Information Services
2004	QUOC LAM	Cole Information Services
	QUOC LAM	Cole Information Services
1999	QUOC LAM	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	QUOC LAM	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services

12611 LUCILLE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	FRANCIS VU	Cole Information Services
	FRANCIS VU	Cole Information Services
2009	LIEU VU	Cole Information Services
	LIEU VU	Cole Information Services
2004	KHANH VU	Cole Information Services
	KHANH VU	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	LIEU VU	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	LIEU VU	Cole Information Services
1995	Myers Larry D	Pacific Bell
1994	MYERS, LARRY D	Cole Information Services
	MYERS, LARRY D	Cole Information Services
1986	Myers Larry D	Pacific Bell
1980	Myers Larry D	Pacific Telephone

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1975	Myers Larry D	Luskey Brothers & Co., Inc.
	Myers Larry D	Luskey Brothers & Co., Inc.

LUCILLE ST

12521 LUCILLE ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Hughey Henry E	Pacific Telephone

12522 LUCILLE ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	White Bert E Sr	Pacific Telephone

12532 LUCILLE ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Wynn Floyd R	General Telephone Co., of California
1966	Moore Jas N	Pacific Telephone

12561 LUCILLE ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Aragon Susan	General Telephone Co., of California

12562 LUCILLE ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Gilbert Thos M	The Pacific Telephone and Telegraph Co.

12571 LUCILLE ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Figueroa Paul J	Pacific Telephone

12572 LUCILLE ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Kali Marie	General Telephone Co., of California
1966	Kali Marie	Pacific Telephone

12591 LUCILLE ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Abbott John N	General Telephone Co., of California

FINDINGS

12611 LUCILLE ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Brixey A T	The Pacific Telephone and Telegraph Co.

MAGNOLIA

12332 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Perry Anthony	General Telephone Co., of California
1966	Perry Anthony	Pacific Telephone

12361 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Encarnaclon Dante	Pacific Bell
1970	King Ela M Mrs	General Telephone Co., of California
1966	King Ela M Mrs	Pacific Telephone

12382 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Grover Glenn L	Pacific Telephone

12391 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	March Shirley	General Telephone Co., of California
1966	Smith Rosemary	Pacific Telephone

12411 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Magnolia Guest Home	Pacific Bell
1970	Magnolia Lodge Guest Home	General Telephone Co., of California
1966	Magnolia Lodge Guest Home	Pacific Telephone

12412 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Weaver John L	Pacific Bell
1970	Weaver D W	General Telephone Co., of California
1966	Weaver D W	Pacific Telephone

FINDINGS

12421 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	All American Mail Boxes	Pacific Bell
	Gondola Cruises Of New port	Pacific Bell

12422 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Richardson Roy L	Pacific Telephone

12431 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Martin J B	Pacific Bell
1970	Martin S B	General Telephone Co., of California
	Martin BDrchirprctr	General Telephone Co., of California
1966	Martin J B	Pacific Telephone
	Martin J B chirprctr	Pacific Telephone

12441 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	A Preventive Dental Practice	Pacific Bell
	Pratice	Pacific Bell
	GhodsI Sharam DDS	Pacific Bell
	Magnolia Family Dentistry	Pacific Bell
	A Preventive And	Pacific Bell

12522 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Than Binh Van	Pacific Bell
1970	Wall David L	General Telephone Co., of California
1966	Rhoads Orville E	Pacific Telephone

12552 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Elliott Waymon H	Pacific Bell
1966	Clary Dora	Pacific Telephone

FINDINGS

12592 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1966	Gallegly OR	Pacific Telephone

12602 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Ballew How ard	Pacific Bell
1970	Ballew Clara	General Telephone Co., of California
	Ballew How ard	General Telephone Co., of California
	Ballew Ronald	General Telephone Co., of California
1966	Ballew Clara	Pacific Telephone
	Ballew How ard	Pacific Telephone
	Ballew Ronald	Pacific Telephone

12612 MAGNOLIA

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Kendall Nora	General Telephone Co., of California
1966	Kendall Nora	Pacific Telephone

MAGNOLIA AVE

12411 MAGNOLIA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1980	Magnolia Lodge Guest Home	Pacific Telephone
	Reynolds Magnolia Lodge Guest Home	Pacific Telephone

12412 MAGNOLIA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1980	Weaver W Mrs	Pacific Telephone

12421 MAGNOLIA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	ALL ELECTRICAL CONTRACTOR	Pacific Bell

12431 MAGNOLIA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Martin Chiropractic Group	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1975	Martin Chiropractic Offices	Luskey Brothers & Co., Inc.

12562 MAGNOLIA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1980	Lovato Thomas N	Pacific Telephone

12612 MAGNOLIA AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1980	Rafael Consuelo	Pacific Telephone

MAGNOLIA CT

12441 MAGNOLIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1995	Utin Raymond uty	Pacific Bell

MAGNOLIA ST

12332 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1980	Rivera Enilio	Pacific Telephone
1975	Perry Anthony	Luskey Brothers & Co., Inc.
	Perry Anthony	Luskey Brothers & Co., Inc.
1955	How ell Edw F	The Pacific Telephone and Telegraph Co.

12361 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HOWARD CARLSON	Cole Information Services
	HOWARD CARLSON	Cole Information Services
2009	B TRAN	Cole Information Services
	B TRAN	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	B TRAN	Cole Information Services
	B TRAN	Cole Information Services
1986	Baker M & M	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1975	King Ela M Mrs	Luskey Brothers & Co., Inc.
	King Ela M Mrs	Luskey Brothers & Co., Inc.

12371 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
2004	PAUL NGUYEN	Cole Information Services
1980	Moore F M	Pacific Telephone

12391 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JULIO ALVAREZ	Cole Information Services
2009	JULIO ALVAREZ	Cole Information Services
2004	JULIO ALVAREZ	Cole Information Services
	EXCELLENT COPIER SERVICES	Cole Information Services
1999	JULIO ALVAREZ	Cole Information Services
1975	Ohnstad Sandra	Luskey Brothers & Co., Inc.
1955	Baldwin Julian	The Pacific Telephone and Telegraph Co.

12411 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	MAGNOLIA GUEST HOME	Cole Information Services
	MAGNOLIA GUEST HOME	Cole Information Services
1999	MAGNOLIA BOARD & CARE HOME	Cole Information Services
	MAGNOLIA BOARD & CARE HOME	Cole Information Services
1994	MAGNOLIA GUEST HOME	Cole Information Services
	MAGNOLIA GUEST HOME	Cole Information Services
1991	Magnolia Guest Home	Pacific Bell
1986	Magnolia Guest Home	Pacific Bell
	Clark Janetta	Pacific Bell
1980	Nevens Wm H	Pacific Telephone
1975	Magnolia Lodge Guest Home	Luskey Brothers & Co., Inc.
	Reynolds Magnolia Lodge Guest Home	Luskey Brothers & Co., Inc.

FINDINGS

12412 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ANNA HA	Cole Information Services
	ANNA HA	Cole Information Services
2009	JAMES NGUYEN	Cole Information Services
	JAMES NGUYEN	Cole Information Services
2004	JAMES NGUYEN	Cole Information Services
	JAMES NGUYEN	Cole Information Services
1999	JAMES NGUYEN	Cole Information Services
	JAMES NGUYEN	Cole Information Services
1994	WEAVER, JOHN L	Cole Information Services
	WEAVER, JOHN L	Cole Information Services
1975	Weaver D W	Luskey Brothers & Co., Inc.
	Weaver D W Maude	Luskey Brothers & Co., Inc.

12421 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	VIETNAMESE COMMUNITY OF ORANGE COUNT	Cole Information Services
	VIETNAMESE COMMUNITY OF ORANGE COUNT	Cole Information Services
2009	VIETNAMESE COMMUNITY ORANGE	Cole Information Services
	VIETNAMESE COMMUNITY ORANGE	Cole Information Services
2004	VIETNAMESE CMINTY OF ORNG CNTY	Cole Information Services
	VIETNAMESE CMINTY OF ORNG CNTY	Cole Information Services
1999	CALIF FLEA MARKET INFORMATION	Cole Information Services
	BEST EDUCATIONAL INSTITUTE	Cole Information Services
	CALIF FLEA MARKET INFORMATION	Cole Information Services
	BEST EDUCATIONAL INSTITUTE	Cole Information Services
1994	DRG ASSOC	Cole Information Services
	OPERATION RESCUE POW MIA	Cole Information Services
	DRG ASSOC	Cole Information Services
	OPERATION RESCUE POW MIA	Cole Information Services
1991	Fax Mail Boxes Garden Grove	Pacific Bell
	Konow itz Business Services	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	All American P O Boxes	Pacific Bell
1986	Konow itz C notry pub	Pacific Bell
	Konow itz Shirley Income Tax Service	Pacific Bell

12431 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ACTION THERAPY INC	Cole Information Services
	ACTION THERAPY INC	Cole Information Services
2009	DANIEL KIM DC	Cole Information Services
	DANIEL KIM DC	Cole Information Services
2004	KIM SAH GUN	Cole Information Services
	DANIEL D KIM DC	Cole Information Services
	KIM SAH GUN	Cole Information Services
	DANIEL D KIM DC	Cole Information Services
1999	N M S CLINIC	Cole Information Services
	MARTIN CHIROPRACTIC GROUP	Cole Information Services
	N M S CLINIC	Cole Information Services
	MARTIN CHIROPRACTIC GROUP	Cole Information Services
1994	MARTIN CHIROPRACTIC GROUP	Cole Information Services
	MARTIN CHIROPRACTIC GRP	Cole Information Services
	MARTIN CHIROPRACTIC GROUP	Cole Information Services
	MARTIN CHIROPRACTIC GRP	Cole Information Services
1991	Martin JD Marketing b	Pacific Bell
	Martin JD	Pacific Bell
	Martin J & C	Pacific Bell
	Martin J B	Pacific Bell
1986	Martin J B	Pacific Bell
	Martin Chiropractic Group	Pacific Bell
1980	Martin J B	Pacific Telephone
	MARTIN CHIROPRACTIC GROUP	Pacific Telephone
1975	Martin J B	Luskey Brothers & Co., Inc.
	MARTIN CHIROPRACTIC GROUP	Luskey Brothers & Co., Inc.
	Martin J B	Luskey Brothers & Co., Inc.

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1975	Martin J B	Luskey Brothers & Co., Inc.

12441 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	PAK JAMES ESQ CPA	Cole Information Services
	HEMAT FARIBA DDS	Cole Information Services
	FARIBA HEMAT	Cole Information Services
	CORPTAXSTRATEGIESCOM	Cole Information Services
	PAK JAMES ESQ CPA	Cole Information Services
	HEMAT FARIBA DDS	Cole Information Services
	FARIBA HEMAT	Cole Information Services
	CORPTAXSTRATEGIESCOM	Cole Information Services
2009	REMAX OF ORANGE COUNTY EAST	Cole Information Services
	MARTIN GARY DC	Cole Information Services
	COSMETIC & LASER DENTISTRY	Cole Information Services
	MARTIN CHIROPRACTIC GROUP	Cole Information Services
	THANH TAT	Cole Information Services
	REMAX OF ORANGE COUNTY EAST	Cole Information Services
	MARTIN GARY DC	Cole Information Services
	COSMETIC & LASER DENTISTRY	Cole Information Services
	MARTIN CHIROPRACTIC GROUP	Cole Information Services
	THANH TAT	Cole Information Services
2004	PARISSA BAYAT	Cole Information Services
	DUTY FREE CAR PAYMENT	Cole Information Services
	MARTIN CHIROPRACTIC GROUP	Cole Information Services
	LD DRIVING SCHOOL	Cole Information Services
	MAILS & PARCEL SERVICE	Cole Information Services
	DFCP FINANCIAL GROUP	Cole Information Services
	EMERGENDENT	Cole Information Services
	LUCAS CAFE	Cole Information Services
	DFCP FINANCIAL GROUP INC	Cole Information Services
	USED CAR VALUE DOT CO	Cole Information Services
	PARISSA BAYAT	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	DUTY FREE CAR PAYMENT	Cole Information Services
	MARTIN CHIROPRACTIC GROUP	Cole Information Services
	LD DRIVING SCHOOL	Cole Information Services
	MAILS & PARCEL SERVICE	Cole Information Services
	DFCP FINANCIAL GROUP	Cole Information Services
	EMERGENDENT	Cole Information Services
	LUCAS CAFE	Cole Information Services
	DFCP FINANCIAL GROUP INC	Cole Information Services
	USED CAR VALUE DOT CO	Cole Information Services
1999	GHODSI SHARAM DDS	Cole Information Services
	A PREVENTIVE AND 24 HOUR EMERGENCY CARE DENTAL PRATICE	Cole Information Services
	MAGNOLIA FAMILY DENTISTRY	Cole Information Services
	PAK JAMES J C P A	Cole Information Services
	THANH TAT	Cole Information Services
	GHODSI SHARAM DDS	Cole Information Services
	A PREVENTIVE AND 24 HOUR EMERGENCY CARE DENTAL PRATICE	Cole Information Services
	MAGNOLIA FAMILY DENTISTRY	Cole Information Services
	PAK JAMES J C P A	Cole Information Services
	THANH TAT	Cole Information Services
1994	GIRL TALK	Cole Information Services
	A PREVENTIVE DENTAL PRACTICE	Cole Information Services
	GHODSI, SHARAM	Cole Information Services
	GRAPHIC IMAGINA TNS	Cole Information Services
	BOY TALK	Cole Information Services
	LEGAL AFFAIRS	Cole Information Services
	EMERGEDENT	Cole Information Services
	GIRL TALK	Cole Information Services
	A PREVENTIVE DENTAL PRACTICE	Cole Information Services
	GHODSI, SHARAM	Cole Information Services
GRAPHIC IMAGINA TNS	Cole Information Services	
BOY TALK	Cole Information Services	

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1994	LEGAL AFFAIRS	Cole Information Services
	EMERGEDENT	Cole Information Services
1991	Pratice	Pacific Bell
	Ghodsí Sharam DDS	Pacific Bell
	Integrity Polygraph Service	Pacific Bell
	Integrity Security	Pacific Bell
	Intesec Inc	Pacific Bell
1986	Exchange Enterprises	Pacific Bell
	Baldini Howard E MD	Pacific Bell
	PracticeQuan Lawrence D DDS Inc	Pacific Bell
	Quan Lawrence D ODS Inc	Pacific Bell
1980	Or	Pacific Telephone
	Quan Lawrence DDS	Pacific Telephone
	Le Chiqui Hair Design	Pacific Telephone
	I Exchange Enterprises	Pacific Telephone

12472 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1955	Weaver D W	The Pacific Telephone and Telegraph Co.
1950	Weaver D W r	The Pacific Telephone and Telegraph Co.

12501 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1975	Aihara Dw ight	Luskey Brothers & Co., Inc.
	Alhara Dw ight	Luskey Brothers & Co., Inc.

12522 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KIM NGUYEN	Cole Information Services
	QUYNH PRUETT	Cole Information Services
	KIM NGUYEN	Cole Information Services
	QUYNH PRUETT	Cole Information Services
2009	DINH NGUYEN	Cole Information Services
	DINH NGUYEN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	DINH NGUYEN	Cole Information Services
	ALAMITOS VIDEO	Cole Information Services
	DINH NGUYEN	Cole Information Services
	ALAMITOS VIDEO	Cole Information Services
1999	DINH NGUYEN	Cole Information Services
	DINH NGUYEN	Cole Information Services
1994	THAN, BINH V	Cole Information Services
	THAN, BINH V	Cole Information Services
1991	Nguyen Kim Lan	Pacific Bell
1975	Johanson Michael	Luskey Brothers & Co., Inc.

12532 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	BANG TRAN	Cole Information Services
	BANG TRAN	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services

12552 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2009	RUBY ELLIOTT	Cole Information Services
	RUBY ELLIOTT	Cole Information Services
2004	ELLIOTT WAYMON	Cole Information Services
	ELLIOTT WAYMON	Cole Information Services
1999	RUBY ELLIOTT	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	RUBY ELLIOTT	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1994	ELLIOTT, WAYMON H	Cole Information Services
	ELLIOTT, WAYMON H	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Elliott Waymon H	Pacific Bell
1986	Elliott Waymon H	Pacific Bell
1980	Elliott Waymon H	Pacific Telephone
1975	Elliott Waymon H	Luskey Brothers & Co., Inc.
	Elliott Waymon H Ruby	Luskey Brothers & Co., Inc.

12562 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	CRISTIAN CASTANON	Cole Information Services
	CRISTIAN CASTANON	Cole Information Services
2009	MARIA CASTANON	Cole Information Services
	MARIA CASTANON	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	CERACE RODOLFO	Cole Information Services
	CERACE RODOLFO	Cole Information Services
1986	Lovato Thomas N	Pacific Bell
1975	Lovato Thomas N	Luskey Brothers & Co., Inc.
	Lavato Thomas N	Luskey Brothers & Co., Inc.

12572 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TRUNG TRINH	Cole Information Services
	TRUNG TRINH	Cole Information Services
2009	SUOI TRINH	Cole Information Services
	SUOI TRINH	Cole Information Services
1999	SUOI TRINH	Cole Information Services
	SUOI TRINH	Cole Information Services

12592 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	SI DIEP	Cole Information Services
	SI DIEP	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	OCCUPANT UNKNOWN	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1991	Gallegly O R	Pacific Bell
1986	Gallegly O R	Pacific Bell
1980	Galoegy OR	Pacific Telephone
1975	Gallegly O R	Luskey Brothers & Co., Inc.
	Gallegly O R Juanita	Luskey Brothers & Co., Inc.
1955	Gallegly O R	The Pacific Telephone and Telegraph Co.

12602 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2009	MAN TRAN	Cole Information Services
	MAN TRAN	Cole Information Services
2004	ISIDRO AVILA	Cole Information Services
	ISIDRO AVILA	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	MAN TRAN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	MAN TRAN	Cole Information Services
1994	BALLEW, HOWARD	Cole Information Services
	BALLEW, HOWARD	Cole Information Services
1991	Ballew How ard	Pacific Bell
1986	Ballew How ard	Pacific Bell
1980	I Ballew How ard	Pacific Telephone
1975	Ballew How ard Clara	Luskey Brothers & Co., Inc.
	Ballew How ard	Luskey Brothers & Co., Inc.

12612 MAGNOLIA ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	ALDOLFO HORTA	Cole Information Services
	ALDOLFO HORTA	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	ADOLFO HORTA	Cole Information Services
	ADOLFO HORTA	Cole Information Services
1999	ALDOLFO HORTA	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	ALDOLFO HORTA	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1986	Rafael Consuelo	Pacific Bell
1975	Colwell Dick	Luskey Brothers & Co., Inc.
	Kendall Nora	Luskey Brothers & Co., Inc.

MARIE LN

9011 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	NINI DOAN	Cole Information Services
	NINI DOAN	Cole Information Services
2009	JORGE CANCHE	Cole Information Services
	JORGE CANCHE	Cole Information Services
2004	ELIZABETH PORTUGAL	Cole Information Services
	ELIZABETH PORTUGAL	Cole Information Services

9012 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KIM DERRICK	Cole Information Services
	KIM DERRICK	Cole Information Services
2009	TAMMY NGUYEN	Cole Information Services
	TAMMY NGUYEN	Cole Information Services
2004	LECONG & ASSOCS	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	LECONG & ASSOCS	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	TAMMY NGUYEN	Cole Information Services
	TAMMY NGUYEN	Cole Information Services

FINDINGS

9019 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	RICHARD MACIEL	Cole Information Services
	RICHARD MACIEL	Cole Information Services
2009	NEIL TA	Cole Information Services
	NEIL TA	Cole Information Services
2004	LEON PHAM	Cole Information Services
	NGHIA TA	Cole Information Services
	LEON PHAM	Cole Information Services
	NGHIA TA	Cole Information Services
1999	NEIL TA	Cole Information Services
	NEIL TA	Cole Information Services
1991	Ho Q&D	Pacific Bell

9020 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	SONG KUK	Cole Information Services
	SONG KUK	Cole Information Services
2009	HOMES PAINTING	Cole Information Services
	PETER KUK	Cole Information Services
	HOMES PAINTING	Cole Information Services
	PETER KUK	Cole Information Services
2004	CHOL KUK	Cole Information Services
	CHOL KUK	Cole Information Services
1999	PETER KUK	Cole Information Services
	PETER KUK	Cole Information Services

9027 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1980	Perez Cipriano	Pacific Telephone

FINDINGS

9028 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	CLAUDIA FLORES	Cole Information Services
	CLAUDIA FLORES	Cole Information Services
1999	CLAUDIA FLORES	Cole Information Services
	CLAUDIA FLORES	Cole Information Services
1994	MOSCHETTI, BOB	Cole Information Services
	MOSCHETTI, BOB	Cole Information Services
1991	Moschetti Bob & Lou	Pacific Bell

9035 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JORGE JIMENEZ	Cole Information Services
	JORGE JIMENEZ	Cole Information Services
2009	ANTONIO JIMENEZ	Cole Information Services
	ANTONIO JIMENEZ	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	ANTONIO JIMENEZ	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	ANTONIO JIMENEZ	Cole Information Services

9036 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DAN HILL	Cole Information Services
	DAN HILL	Cole Information Services
2009	ILSU KIM	Cole Information Services
	ILSU KIM	Cole Information Services
2004	JONG LEE	Cole Information Services
	JONG LEE	Cole Information Services
1999	ILSU KIM	Cole Information Services
	ILSU KIM	Cole Information Services

9043 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	THY TA	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	THY TA	Cole Information Services
2009	HAISA HAN	Cole Information Services
	HAISA HAN	Cole Information Services
2004	HANG TRAN	Cole Information Services
	HANG TRAN	Cole Information Services

9044 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KATSUMI MIYAZAKI	Cole Information Services
	KATSUMI MIYAZAKI	Cole Information Services
2009	KATSUMI MIYAZAKI	Cole Information Services
	KATSUMI MIYAZAKI	Cole Information Services
2004	KATSUMI MIYAZAKI	Cole Information Services
	KATSUMI MIYAZAKI	Cole Information Services
1999	KATSUMI MIYAZAKI	Cole Information Services
	KATSUMI MIYAZAKI	Cole Information Services

9052 MARIELN

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services

MARLENE AVE

9001 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	IOAN TOMOAGA	Cole Information Services
2009	JOHN MILLER	Cole Information Services
2004	BARBARA STANFIELD	Cole Information Services
1999	JOHN MILLER	Cole Information Services
1966	Thompson Jas W	Pacific Telephone
	Thompson Grace	Pacific Telephone
1955	Alco Construction Co	The Pacific Telephone and Telegraph Co.

FINDINGS

9002 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
2004	ARTURO CORTEZ	Cole Information Services
1986	Guardian Librado	Pacific Bell
1980	Guardian Librado	Pacific Telephone
	Guardian Librado Jr	Pacific Telephone
1975	Guardian Librado	Luskey Brothers & Co., Inc.
1970	Friesen Romaine K	General Telephone Co., of California
1966	Randby Lawrence B	Pacific Telephone
	Randby Nadine	Pacific Telephone

9021 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KHA TRAN	Cole Information Services
	KHA TRAN	Cole Information Services
2009	KHA TRAN	Cole Information Services
	KHA TRAN	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	KHA TRAN	Cole Information Services
	KHA TRAN	Cole Information Services
1994	AQUINO, I	Cole Information Services
	AQUINO, I	Cole Information Services
1980	Aquino Ildetonso	Pacific Telephone
1975	Aquino Ildefonso	Luskey Brothers & Co., Inc.
	Aquino Ildefonso Ruth	Luskey Brothers & Co., Inc.
1966	Aquino Ildefonso D	Pacific Telephone

9022 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	CAROL MORROW	Cole Information Services
2009	CAROL MORROW	Cole Information Services
2004	FRED MORROW	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1986	Morrow Fred	Pacific Bell
1980	Marrow Fred	Pacific Telephone
1975	Morrow Fred	Luskey Brothers & Co., Inc.
1966	Iacovino Bruce A	Pacific Telephone

9041 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TERESA LAYNE	Cole Information Services
	TERESA LAYNE	Cole Information Services
2004	STEVE MARKEL	Cole Information Services
	STEVE MARKEL	Cole Information Services

9042 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DAN IONESCU	Cole Information Services
	DAN IONESCU	Cole Information Services
2009	DAN IONESCU	Cole Information Services
	DAN IONESCU	Cole Information Services
1999	DAN IONESCU	Cole Information Services
	DAN IONESCU	Cole Information Services
1966	Cyester Geo Wm	Pacific Telephone

9062 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
2009	DENNIS KOUTSOPOULOS	Cole Information Services
2004	PEGASUS REAL ESTATE SERVICES	Cole Information Services
	PEGASUS APPRAISALS	Cole Information Services
1999	DENNIS KOUTSOPOULOS	Cole Information Services
1980	Crow e Lois	Pacific Telephone

9072 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HAROLD MCNABB	Cole Information Services
	HAROLD MCNABB	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	HAROLD MCNABB	Cole Information Services
	HAROLD MCNABB	Cole Information Services
2004	HAROLD MCNABB	Cole Information Services
	HAROLD MCNABB	Cole Information Services
1999	HAROLD MCNABB	Cole Information Services
	HAROLD MCNABB	Cole Information Services
1980	Rogers S	Pacific Telephone

9082 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
2009	RUTH WHITEHEAD	Cole Information Services
2004	RUTH WHITEHEAD	Cole Information Services
1999	RUTH WHITEHEAD	Cole Information Services
1980	Whitehead Robt G Jr	Pacific Telephone

9092 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	VINCENT TRAN	Cole Information Services
	VINCENT TRAN	Cole Information Services
2009	PATRICIA TORRES	Cole Information Services
	PATRICIA TORRES	Cole Information Services
2004	JACOB COSTE	Cole Information Services
	JACOB COSTE	Cole Information Services
1999	PATRICIA TORRES	Cole Information Services
	PATRICIA TORRES	Cole Information Services
1994	MATEI, D	Cole Information Services
	MATEI, D	Cole Information Services

9102 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MARIANNE SCHULTZ	Cole Information Services
	MARIANNE SCHULTZ	Cole Information Services
2009	MARIANNE SCHULTZ	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	MARIANNE SCHULTZ	Cole Information Services
2004	MARIANNE SCHULTZ	Cole Information Services
	MARIANNE SCHULTZ	Cole Information Services
1999	MARIANNE SCHULTZ	Cole Information Services
	MARIANNE SCHULTZ	Cole Information Services
1966	Dreher Alfred	Pacific Telephone

9112 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MANUEL ROMERO	Cole Information Services
	MANUEL ROMERO	Cole Information Services
2009	MANUEL ROMERO	Cole Information Services
	MANUEL ROMERO	Cole Information Services
2004	MANUEL ROMERO	Cole Information Services
	MANUEL ROMERO	Cole Information Services
1975	Ryan James B Jacqueline	Luskey Brothers & Co., Inc.
1970	Ryan James B	General Telephone Co., of California

9122 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2009	DENISE JACQUES	Cole Information Services
	DENISE JACQUES	Cole Information Services
2004	DENISE JACQUES	Cole Information Services
	DENISE JACQUES	Cole Information Services
1999	DENISE JACQUES	Cole Information Services
	DENISE JACQUES	Cole Information Services
1975	Lewis James R	Luskey Brothers & Co., Inc.
	Lewis Jas R	Luskey Brothers & Co., Inc.
1970	Lewis Jas R	General Telephone Co., of California

FINDINGS

9132 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	NATHANAEL MATEI	Cole Information Services
	NATHANAEL MATEI	Cole Information Services
2009	CORNELIU MATEI	Cole Information Services
	CORNELIU MATEI	Cole Information Services
2004	CORNELIU MATEI	Cole Information Services
	CORNELIU MATEI	Cole Information Services
1994	MATEI, CORELIU	Cole Information Services
	MATEI, CORELIU	Cole Information Services
1991	Matei Corneliu	Pacific Bell
1986	Matei Corneliu	Pacific Bell
1966	Mc Eroy Jimmie D	Pacific Telephone

9152 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ANTONIO JAIME	Cole Information Services
	ANTONIO JAIME	Cole Information Services
2009	ANTONIO JAIME	Cole Information Services
	ANTONIO JAIME	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	ANTONIO JAIME	Cole Information Services
	ANTONIO JAIME	Cole Information Services
1966	Williams Charlotte L	Pacific Telephone
	Williams Chas L	Pacific Telephone

9162 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JAMES SCHUSTER	Cole Information Services
	JAMES SCHUSTER	Cole Information Services
2009	DORIS GOLDEN	Cole Information Services
	DORIS GOLDEN	Cole Information Services
2004	MINH DUONG	Cole Information Services
	MINH DUONG	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1999	DORIS GOLDEN	Cole Information Services
	DORIS GOLDEN	Cole Information Services
1995	Lauriano Ted	Pacific Bell
1994	LAURIANO, TED	Cole Information Services
	LAURIANO, TED	Cole Information Services
1991	Lauriano Ted	Pacific Bell
1986	Laurano Ted	Pacific Bell
1975	Lauriano Ted	Luskey Brothers & Co., Inc.
	Lauriano Ted	Luskey Brothers & Co., Inc.

9172 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	COAST CONSTRUCTION	Cole Information Services
	ROBERT MCNEIL	Cole Information Services

9182 MARLENE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TERRY BISCHOF	Cole Information Services
2009	TRAVIS BISCHOF	Cole Information Services
2004	JEREMY BISCHOF	Cole Information Services
1999	TRAVIS BISCHOF	Cole Information Services
1975	Silva Gilbert	Luskey Brothers & Co., Inc.
	Silva Gilbert	Luskey Brothers & Co., Inc.
1970	Silva Gilbert	General Telephone Co., of California
1966	Silva Jane T	Pacific Telephone

MARY HILL DR

8931 MARY HILL DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2009	YOUNG GO	Cole Information Services
	YOUNG GO	Cole Information Services
2004	ROBERT TU	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	ROBERT TU	Cole Information Services
1999	YOUNG GO	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
	YOUNG GO	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1991	Arndt Helen	Pacific Bell

8932 MARY HILL DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DANIEL WHITE	Cole Information Services
	DANIEL WHITE	Cole Information Services
2009	HUYEN TON	Cole Information Services
	HUYEN TON	Cole Information Services
2004	HUYEN TON	Cole Information Services
	HUYEN TON	Cole Information Services
1999	HUYEN TON	Cole Information Services
	HUYEN TON	Cole Information Services
1986	Jacobs Frank & E	Pacific Bell
1980	Jacobs Frank & E	Pacific Telephone

8941 MARY HILL DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services

8942 MARY HILL DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TAN NGUYEN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TAN NGUYEN	Cole Information Services
2009	AIMEE HART	Cole Information Services
	AIMEE HART	Cole Information Services
1999	STANLEY HART	Cole Information Services
	STANLEY HART	Cole Information Services
1991	Boyle Timothy & Diane	Pacific Bell
1986	Boyle Timothy & Diane	Pacific Bell
1980	Le Master Harold & Kitty	Pacific Telephone

8961 MARY HILL DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TERRI NGUYEN	Cole Information Services
	TERRI NGUYEN	Cole Information Services
2009	LUCRECIA RODRIGUEZ	Cole Information Services
	LUCRECIA RODRIGUEZ	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services

8962 MARY HILL DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	RONALD GROSMAN	Cole Information Services
	RONALD GROSMAN	Cole Information Services
2009	RONALD GROSMAN	Cole Information Services
	RONALD GROSMAN	Cole Information Services
2004	RONALD GROSMAN	Cole Information Services
	RONALD GROSMAN	Cole Information Services
1999	RONALD GROSMAN	Cole Information Services
	RONALD GROSMAN	Cole Information Services
1994	GROSMAN, RONALD G	Cole Information Services
	GROSMAN, RONALD G	Cole Information Services
1991	Grosman Ronald G	Pacific Bell
1986	Grosman Ronald G	Pacific Bell

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1980	Grosman Ronald G	Pacific Telephone

8971 MARY HILL DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JOHNNY TRUONG	Cole Information Services
	JOHNNY TRUONG	Cole Information Services
2004	VERNON PAUL	Cole Information Services
	VERNON PAUL	Cole Information Services
1980	Sarquiz Bertha	Pacific Telephone

8972 MARY HILL DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	CHRISTOPHER NGO	Cole Information Services
	CHRISTOPHER NGO	Cole Information Services
2009	HEALTHY LIVING ENTERPRISES INC	Cole Information Services
	LONG BUI	Cole Information Services
	HEALTHY LIVING ENTERPRISES INC	Cole Information Services
	LONG BUI	Cole Information Services
2004	ELLE BUI	Cole Information Services
	ELLE BUI	Cole Information Services
1999	LONG BUI	Cole Information Services
	LONG BUI	Cole Information Services
1995	Bul Van	Pacific Bell
1991	Palmer Henry R	Pacific Bell
1986	Pashos G M	Pacific Bell
	Hermosillo Rick	Pacific Bell

PALIKA PL

8940 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	RENE CASTELLANOS	Cole Information Services
	FELIX JAUREGUI	Cole Information Services
	RENE CASTELLANOS	Cole Information Services
	FELIX JAUREGUI	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1999	FELIX JAUREGUI	Cole Information Services
	FELIX JAUREGUI	Cole Information Services

8942 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JAMES BECKER	Cole Information Services
	RAFAEL RODRIGUEZ	Cole Information Services
	JAMES BECKER	Cole Information Services
	RAFAEL RODRIGUEZ	Cole Information Services
2009	ANGELICA PEREZ	Cole Information Services
	ANGELICA PEREZ	Cole Information Services
2004	ANGELICA PEREZ	Cole Information Services
	ANGELICA PEREZ	Cole Information Services
1999	ANGELICA PEREZ	Cole Information Services
	ANGELICA PEREZ	Cole Information Services
1991	Chang Eun	Pacific Bell

8946 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JENNIFER GUILLEN	Cole Information Services
	BARBARA ZUZIERLA	Cole Information Services
	BRENDA GONZALEZ	Cole Information Services
	JENNIFER GUILLEN	Cole Information Services
	BARBARA ZUZIERLA	Cole Information Services
	BRENDA GONZALEZ	Cole Information Services
2009	BARBARA ZUZIERLA	Cole Information Services
	GUADALUPE GORDEN	Cole Information Services
	BARBARA ZUZIERLA	Cole Information Services
	GUADALUPE GORDEN	Cole Information Services
2004	BARBARA ZUZIERLA	Cole Information Services
	BARBARA ZUZIERLA	Cole Information Services
1999	GUADALUPE GORDEN	Cole Information Services
	BARBARA ZUZIERLA	Cole Information Services
	GUADALUPE GORDEN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1999	BARBARA ZUZIERLA	Cole Information Services
1995	Medrano Norma & Jesse	Pacific Bell
1994	MEDRANO, JESSE	Cole Information Services
	MEDRANO, JESSE	Cole Information Services
1991	Medrano Norma & Jesse	Pacific Bell

8948 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	STEPHEN CARLSON	Cole Information Services
	STEPHEN CARLSON	Cole Information Services
2004	ERWIN LESMAN	Cole Information Services
	ERWIN LESMAN	Cole Information Services

8952 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TRANG HOANG	Cole Information Services
	TRANG HOANG	Cole Information Services
2009	PAMELA HERNANDEZ	Cole Information Services
	VALERIE HERNANDEZ	Cole Information Services
	PAMELA HERNANDEZ	Cole Information Services
	VALERIE HERNANDEZ	Cole Information Services
2004	TOM HERNANDEZ	Cole Information Services
	TOM HERNANDEZ	Cole Information Services
1999	PAMELA HERNANDEZ	Cole Information Services
	VALERIE HERNANDEZ	Cole Information Services
	PAMELA HERNANDEZ	Cole Information Services
	VALERIE HERNANDEZ	Cole Information Services
1995	Gierstorfer B	Pacific Bell
1994	GIERSTORFER, B	Cole Information Services
	GIERSTORFER, B	Cole Information Services

8954 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MAHA SEN GUNA WARDENA	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MAHA SEN GUNA WARDENA	Cole Information Services
2009	JON RIOS	Cole Information Services
	ROSA ORTIZ	Cole Information Services
	JON RIOS	Cole Information Services
	ROSA ORTIZ	Cole Information Services
2004	ADRIAN REYES	Cole Information Services
	ROSA HATCH	Cole Information Services
	ADRIAN REYES	Cole Information Services
	ROSA HATCH	Cole Information Services
1999	JON RIOS	Cole Information Services
	ROSA ORTIZ	Cole Information Services
	ROSA HATCH	Cole Information Services
	JON RIOS	Cole Information Services
	ROSA ORTIZ	Cole Information Services
	ROSA HATCH	Cole Information Services

8958 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	RAMIREZ SANTA	Cole Information Services
	RAMIREZ SANTA	Cole Information Services
2009	ANA CARDENAS	Cole Information Services
	ANA CARDENAS	Cole Information Services
2004	RUTH LAWYER	Cole Information Services
	RUTH LAWYER	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services

8960 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ANDREW CHOI	Cole Information Services
	ANDREW CHOI	Cole Information Services
2009	ANDREW CHOI	Cole Information Services
	ANDREW CHOI	Cole Information Services
2004	ANDREW CHOI	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	CHOI ANDREW REALTY	Cole Information Services
	ANDREW CHOI	Cole Information Services
	CHOI ANDREW REALTY	Cole Information Services

8961 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	KIRK INAGI	Cole Information Services
	KIRK INAGI	Cole Information Services
2004	JULI TAJAI	Cole Information Services
	JULI TAJAI	Cole Information Services
1995	Takai J	Pacific Bell
1994	TAKAI, JULI	Cole Information Services
	TAKAI, JULI	Cole Information Services
1991	Takai J	Pacific Bell

8964 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ISMAEL CARRASCO	Cole Information Services
	ISMAEL CARRASCO	Cole Information Services
2009	V CARRASCO	Cole Information Services
	V CARRASCO	Cole Information Services
2004	MARY GARCIA	Cole Information Services
	MARY GARCIA	Cole Information Services
1999	OCCUPANT UNKNOWN	Cole Information Services
	OCCUPANT UNKNOWN	Cole Information Services
1991	Miyagishima Kevin	Pacific Bell

8966 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	NHIEU LE	Cole Information Services
	SUN LAI	Cole Information Services
	NHIEU LE	Cole Information Services
	SUN LAI	Cole Information Services
2009	SUN LAI	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	SUN LAI	Cole Information Services
2004	MICHAEL RIGGLE	Cole Information Services
	MICHAEL RIGGLE	Cole Information Services
1999	SUN LAI	Cole Information Services
	SUN LAI	Cole Information Services

8967 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	JEREMY TAYLOR	Cole Information Services
	JEREMY TAYLOR	Cole Information Services
2009	DENNIS DIONNE	Cole Information Services
	DENNIS DIONNE	Cole Information Services
2004	DONALD WELCH	Cole Information Services
	DONALD WELCH	Cole Information Services
1999	DENNIS DIONNE	Cole Information Services
	DENNIS DIONNE	Cole Information Services
1995	Webb Daniel	Pacific Bell
1994	WEBB, DANIEL	Cole Information Services
	WEBB, DANIEL	Cole Information Services
1991	Daniel Webb	Pacific Bell

8970 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MIRTHA OSLE	Cole Information Services
	MIRTHA OSLE	Cole Information Services
2009	MIRTHA OSLE	Cole Information Services
	MIRTHA OSLE	Cole Information Services
2004	OSMEL OSLE	Cole Information Services
	OSMEL OSLE	Cole Information Services
1999	MIRTHA OSLE	Cole Information Services
	MIRTHA OSLE	Cole Information Services
1995	Osle Osmel	Pacific Bell
1994	OSLE, OSMEL	Cole Information Services
	OSLE, OSMEL	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Oslo Osnel	Pacific Bell

8971 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	EDDIE BLANCHE	Cole Information Services
	EDDIE BLANCHE	Cole Information Services
2009	EDDIE BLANCHE	Cole Information Services
	EDDIE BLANCHE	Cole Information Services
2004	EDDIE BLANCHE	Cole Information Services
	EDDIE BLANCHE	Cole Information Services
1999	EDDIE BLANCHE	Cole Information Services
	EDDIE BLANCHE	Cole Information Services
1994	NAM, CHAN	Cole Information Services
	NAM, CHAN	Cole Information Services

8972 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	CASSANDRA TERLAJE	Cole Information Services
	SAMUEL AGUIRRE	Cole Information Services
	CASSANDRA TERLAJE	Cole Information Services
	SAMUEL AGUIRRE	Cole Information Services
2004	LILIAN CHWEH	Cole Information Services
	LILIAN CHWEH	Cole Information Services
1999	SAMUEL AGUIRRE	Cole Information Services
	CASSANDRA TERLAJE	Cole Information Services
	SAMUEL AGUIRRE	Cole Information Services
	CASSANDRA TERLAJE	Cole Information Services
1994	CHWEH, LILIAN	Cole Information Services
	CHWEH, LILIAN	Cole Information Services
1991	Chw eh L	Pacific Bell

8975 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	MA CAN	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	CHAU ONG	Cole Information Services
	MA CAN	Cole Information Services
	CHAU ONG	Cole Information Services
2009	MA CAN	Cole Information Services
	MA CAN	Cole Information Services
2004	HENRY HERRERA	Cole Information Services
	HENRY HERRERA	Cole Information Services
1994	HOANG, TYLER T	Cole Information Services
	HOANG, TYLER T	Cole Information Services

8976 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	METTE NADEL	Cole Information Services
	METTE NADEL	Cole Information Services
2009	METTE NADEL	Cole Information Services
	METTE NADEL	Cole Information Services
2004	CAROLE LUKAS	Cole Information Services
	CAROLE LUKAS	Cole Information Services
1999	METTE NADEL	Cole Information Services
	METTE NADEL	Cole Information Services
1994	ANDERSON BUSNS SERV	Cole Information Services
	ANDERSON BUSINESS SVC	Cole Information Services
	LUKAS, CAROLE L	Cole Information Services
	ANDERSON BUSNS SERV	Cole Information Services
	ANDERSON BUSINESS SVC	Cole Information Services
	LUKAS, CAROLE L	Cole Information Services
1991	Anderson Business Services	Pacific Bell

8978 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ROMEL MENDOZA	Cole Information Services
	ROMEL MENDOZA	Cole Information Services
2009	ROMEL MENDOZA	Cole Information Services
	ROMEL MENDOZA	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	ROMMEL MENDOZA	Cole Information Services
	ROMMEL MENDOZA	Cole Information Services
1999	ROMEL MENDOZA	Cole Information Services
	ROMEL MENDOZA	Cole Information Services

8979 PALIKA PL

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	SANG PHAM	Cole Information Services
	SANG PHAM	Cole Information Services
2009	DUNG TRUONG	Cole Information Services
	JU LEE	Cole Information Services
	LY DOAN	Cole Information Services
	DUNG TRUONG	Cole Information Services
	JU LEE	Cole Information Services
	LY DOAN	Cole Information Services
2004	MICHAEL HANLON	Cole Information Services
	MICHAEL HANLON	Cole Information Services
1999	JU LEE	Cole Information Services
	DUNG TRUONG	Cole Information Services
	LY DOAN	Cole Information Services
	JU LEE	Cole Information Services
	DUNG TRUONG	Cole Information Services
	LY DOAN	Cole Information Services
1994	LE, HUONG	Cole Information Services
	LE, HUONG	Cole Information Services

SEQUOIA CT

8891 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	TRUOC NGUYEN	Cole Information Services

8892 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2009	TRINIDAD RAMIREZ	Cole Information Services

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2004	TERI MEEKS	Cole Information Services
1999	TRINIDAD RAMIREZ	Cole Information Services

8895 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
2009	HUONG NGUYEN	Cole Information Services
2004	HUONG NGUYEN	Cole Information Services
1999	HUONG NGUYEN	Cole Information Services

8896 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DAT NGUYEN	Cole Information Services
2009	DUNG NGUYEN	Cole Information Services
2004	DUNG NGUYEN	Cole Information Services
1999	DUNG NGUYEN	Cole Information Services

8901 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	ERNEST FISHER	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services

8905 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TUYEN PHAM	Cole Information Services
2009	TUYEN PHAM	Cole Information Services
2004	TUYEN PHAM	Cole Information Services
1999	TUYEN PHAM	Cole Information Services

8906 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	GEORGE CHA	Cole Information Services
2009	JOHN NGUYEN	Cole Information Services
2004	HONG NGUYEN	Cole Information Services
1999	JOHN NGUYEN	Cole Information Services

FINDINGS

8910 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	DUNG VU	Cole Information Services
2009	SAM VU	Cole Information Services
2004	SAM VU	Cole Information Services
1999	SAM VU	Cole Information Services

8911 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	CHRIS HA	Cole Information Services
2009	CHRIS HA	Cole Information Services
2004	D LESONNY	Cole Information Services

8912 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	NANCY TRINH	Cole Information Services
2009	NANCY TRINH	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
1999	NANCY TRINH	Cole Information Services

8915 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HORN UNG	Cole Information Services
2009	HORN UNG	Cole Information Services
2004	SUSAN ABAD	Cole Information Services
1999	HORN UNG	Cole Information Services

8921 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	VAN LEKHOA	Cole Information Services
2009	VAN LEKHOA	Cole Information Services
2004	VAN LEKHOA	Cole Information Services
1999	VAN LEKHOA	Cole Information Services

FINDINGS

8925 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	SHIN SU	Cole Information Services
2009	SHIN SU	Cole Information Services
2004	SEUNG SOHN	Cole Information Services
1999	SHIN SU	Cole Information Services

8926 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	OCCUPANT UNKNOWN	Cole Information Services
2009	TERESA ZAMORA	Cole Information Services
2004	NANCY TRINH	Cole Information Services
1999	TERESA ZAMORA	Cole Information Services

8928 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TUNG LE	Cole Information Services
2009	TUNG LE	Cole Information Services
2004	OCCUPANT UNKNOWN	Cole Information Services
1999	TUNG LE	Cole Information Services

8930 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	HAI HUYNH	Cole Information Services
2009	KEVIN LAM	Cole Information Services
2004	KEVIN LAM	Cole Information Services
1999	KEVIN LAM	Cole Information Services

8932 SEQUOIA CT

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2014	TONY TRAN	Cole Information Services
2009	OCCUPANT UNKNOWN	Cole Information Services
2004	AN SVAY	Cole Information Services

FINDINGS

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
12332 MAGNOLIA	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12332 MAGNOLIA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12341 HARBOR ISLE LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12341 HARVEY LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12341 HARVEY LN	2004, 2002, 2001, 1999, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12342 HARVEY AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12342 HARVEY LN	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12343 HARVEY LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12345 HARVEY LN	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12345 HARVEY LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12351 HARVEY LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12351 HARVEY LN	2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12351 LAVINA LN	2004, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12351 LAVINA LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
12352 HARVEY LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1975, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12352 HARVEY LN	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12352 LAVINA LN	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12352 LAVINA LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12361 HARVEY LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1980, 1975, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12361 HARVEY LN	2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12361 MAGNOLIA	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12361 MAGNOLIA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12361 MAGNOLIA ST	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12362 HARVEY LN	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12362 HARVEY LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1975, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12362 LAVINA LN	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12362 LAVINA LN	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12371 MAGNOLIA ST	2009, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12371 MAGNOLIA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12382 MAGNOLIA	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
12531 BARBARAAVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12531 HAZEL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12531 HAZEL AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12531 HAZEL ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12531 LEROY AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1971, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12531 LEROY AVE	2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12531 LUCILLE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12531 LUCILLE AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12532 BARBARAAVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12532 HAZEL AVE	2002, 2001, 1999, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12532 HAZEL AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12532 LEROY AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12532 LEROY AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12532 LUCILLE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12532 LUCILLE AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12532 LUCILLE ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
12532 MAGNOLIA ST	2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12551 BARBARAAVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12551 HAZEL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12551 HAZEL AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12551 HAZEL AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12551 HAZEL ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12551 LEROY AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12551 LEROY AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12551 LUCILLE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12551 LUCILLE AVE	2002, 2001, 1999, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 BARBARAAVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 BARBARAAVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 BARBARA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 HAZEL AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 HAZEL ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 LEROY AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
12552 LEROY AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 LUCI OLE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 LUCILLE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 LUCILLE AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 MAGNOLIA	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 MAGNOLIA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12552 MAGNOLIA ST	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12561 BARBARAAVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12561 BARBARAAVE	2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12561 HAZEL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12561 HAZEL AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12561 HAZEL AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12561 LEROY AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1971, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12561 LEROY AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12561 LUCILLE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12561 LUCILLE AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
12572 MAGNOLIA ST	2004, 2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12591 BARBARAAVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12591 BARBARAAVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12591 BARBARA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12591 HAZEL AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1986, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12591 HAZEL AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12591 LUCILLE AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12591 LUCILLE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12591 LUCILLE ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12592 BARBARAAVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12592 BARBARAAVE	2014, 2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12592 BARBARA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12592 HAZEL AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12592 HAZEL ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12592 LUCILLE AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12592 MAGNOLIA	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
12592 MAGNOLIA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12592 MAGNOLIA ST	2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12601 BARBARAAVE	2004, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12601 BARBARAAVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12601 BARBARA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12601 HAZEL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12601 HAZEL AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12601 HAZEL AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12601 LUCILLE AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12601 LUCILLE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12602 BARBARAAVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12602 BARBARAAVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12602 BARBARA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12602 HAZEL AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12602 HAZEL AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12602 LUCILLE AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
12602 MAGNOLIA	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12602 MAGNOLIA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12602 MAGNOLIA ST	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12611 BARBARAAVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12611 BARBARAAVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12611 LUCILLE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12611 LUCILLE AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12611 LUCILLE ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12612 BARBARAAVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12612 BARBARA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12612 MAGNOLIA	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12612 MAGNOLIAAVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12612 MAGNOLIA ST	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12612 MAGNOLIA ST	2014, 2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12631 BARBARAAVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12631 BARBARAAVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched

Address Not Identified in Research Source

8961 MARY HILL DR	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8961 PALIKA PL	2009, 2002, 2001, 1999, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8961 PALIKA PL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8962 MARY HILL DR	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8962 MARY HILL DR	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8964 PALIKA PL	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8964 PALIKA PL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8966 PALIKA PL	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8967 PALIKA PL	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8967 PALIKA PL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8970 PALIKA PL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8970 PALIKA PL	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8971 LAMPSON AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1965, 1961, 1960, 1956, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8971 MARY HILL DR	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8971 MARY HILL DR	2009, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8971 PALIKA PL	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
8972 MARY HILL DR	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8972 MARY HILL DR	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8972 PALIKA PL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8972 PALIKA PL	2014, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8975 PALIKA PL	2002, 2001, 1999, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8976 PALIKA PL	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8976 PALIKA PL	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8978 PALIKA PL	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8979 PALIKA PL	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9001 MARLENE AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9001 MARLENE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9002 LAMPSON AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9002 LAMPSON AVE	2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9002 MARLENE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9002 MARLENE AVE	2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9011 LAMPSON AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

<u>Address Researched</u>	<u>Address Not Identified in Research Source</u>
9162 LAMPSON AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9162 MARLENE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9162 MARLENE AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9171 LAMPSON AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9171 LAMPSON AVE	2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9172 MARLENE AVE	2014, 2009, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9173 LAMPSON AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9175 LAMPSON AVE	2004, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9177 LAMPSON AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9181 LAMPSON AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9181 LAMPSON AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9182 LAMPSON AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1994, 1992, 1991, 1980, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9182 LAMPSON AVE	2009, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9182 MARLENE AVE	2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9182 MARLENE AVE	2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9191 LAMPSON AVE	2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched

9191 LAMPSON AVE

9202 LAMPSON AVE

9202 LAMPSON AVE

9222 LAMPSON AVE

9222 LAMPSON AVE

Address Not Identified in Research Source

2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1980, 1975, 1971, 1970, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

2014, 2009, 2004, 2002, 2001, 1999, 1997, 1995, 1994, 1992, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched

9071-9091 Lampson Avenue

Address Not Identified in Research Source

2002, 2001, 1997, 1995, 1994, 1992, 1991, 1986, 1980, 1971, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

9071-9091 Lampson Avenue

9071-9091 Lampson Avenue

Garden Grove, CA 92841

Inquiry Number: 6941794.3

April 15, 2022

Certified Sanborn® Map Report



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

04/15/22

Site Name:

9071-9091 Lampson Avenue
9071-9091 Lampson Avenue
Garden Grove, CA 92841
EDR Inquiry # 6941794.3

Client Name:

Ardent Environmental Group
1827 Capital Street
Corona, CA 92880
Contact: Matthew Pensaw



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Ardent Environmental Group were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # B996-4FFF-AD1B
PO # NA
Project NA



Sanborn® Library search results

Certification #: B996-4FFF-AD1B

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

Ardent Environmental Group (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice. Copyright 2022 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

APPENDIX E
ENVIRONMENTAL DATABASE REPORT

9071-9091 Lampson Avenue

9071-9091 Lampson Avenue

Garden Grove, CA 92841

Inquiry Number: 6941794.4

April 15, 2022

EDR Historical Topo Map Report

with QuadMatch™



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

04/15/22

Site Name:

9071-9091 Lampson Avenue
9071-9091 Lampson Avenue
Garden Grove, CA 92841
EDR Inquiry # 6941794.4

Client Name:

Ardent Environmental Group
1827 Capital Street
Corona, CA 92880
Contact: Matthew Pensaw



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Ardent Environmental Group were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:**Coordinates:**

P.O.# NA
Project: NA

Latitude: 33.781345 33° 46' 53" North
Longitude: -117.973667 -117° 58' 25" West
UTM Zone: Zone 11 North
UTM X Meters: 409852.56
UTM Y Meters: 3738338.30
Elevation: 74.00' above sea level

Maps Provided:

2018	1949
2015	1942
2012	1935
1981	1902
1974	1901
1972	1898
1965	1896
1950	

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

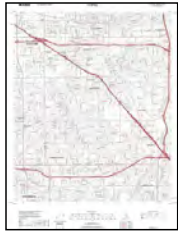
Copyright 2022 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2018 Source Sheets



Anaheim
2018
7.5-minute, 24000



Los Alamitos
2018
7.5-minute, 24000

2015 Source Sheets



Anaheim
2015
7.5-minute, 24000

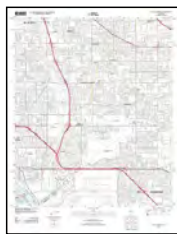


Los Alamitos
2015
7.5-minute, 24000

2012 Source Sheets



Anaheim
2012
7.5-minute, 24000



Los Alamitos
2012
7.5-minute, 24000

1981 Source Sheets



Anaheim
1981
7.5-minute, 24000
Aerial Photo Revised 1963

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1974 Source Sheets



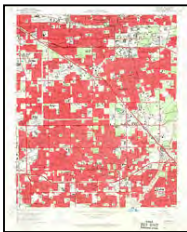
Anaheim
1974
7.5-minute, 24000
Aerial Photo Revised 1974

1972 Source Sheets



Anaheim
1972
7.5-minute, 24000
Aerial Photo Revised 1972

1965 Source Sheets



Anaheim
1965
7.5-minute, 24000
Aerial Photo Revised 1963

1950 Source Sheets



Anaheim
1950
7.5-minute, 24000
Aerial Photo Revised 1947

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1949 Source Sheets



Anaheim
1949
7.5-minute, 24000
Aerial Photo Revised 1947

1942 Source Sheets



ANAHEIM
1942
15-minute, 50000

1935 Source Sheets



Garden Grove
1935
7.5-minute, 31680

1902 Source Sheets



Corona
1902
30-minute, 125000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1901 Source Sheets



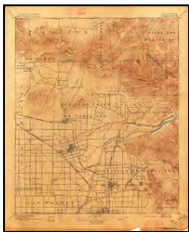
Anaheim
1901
15-minute, 62500

1898 Source Sheets

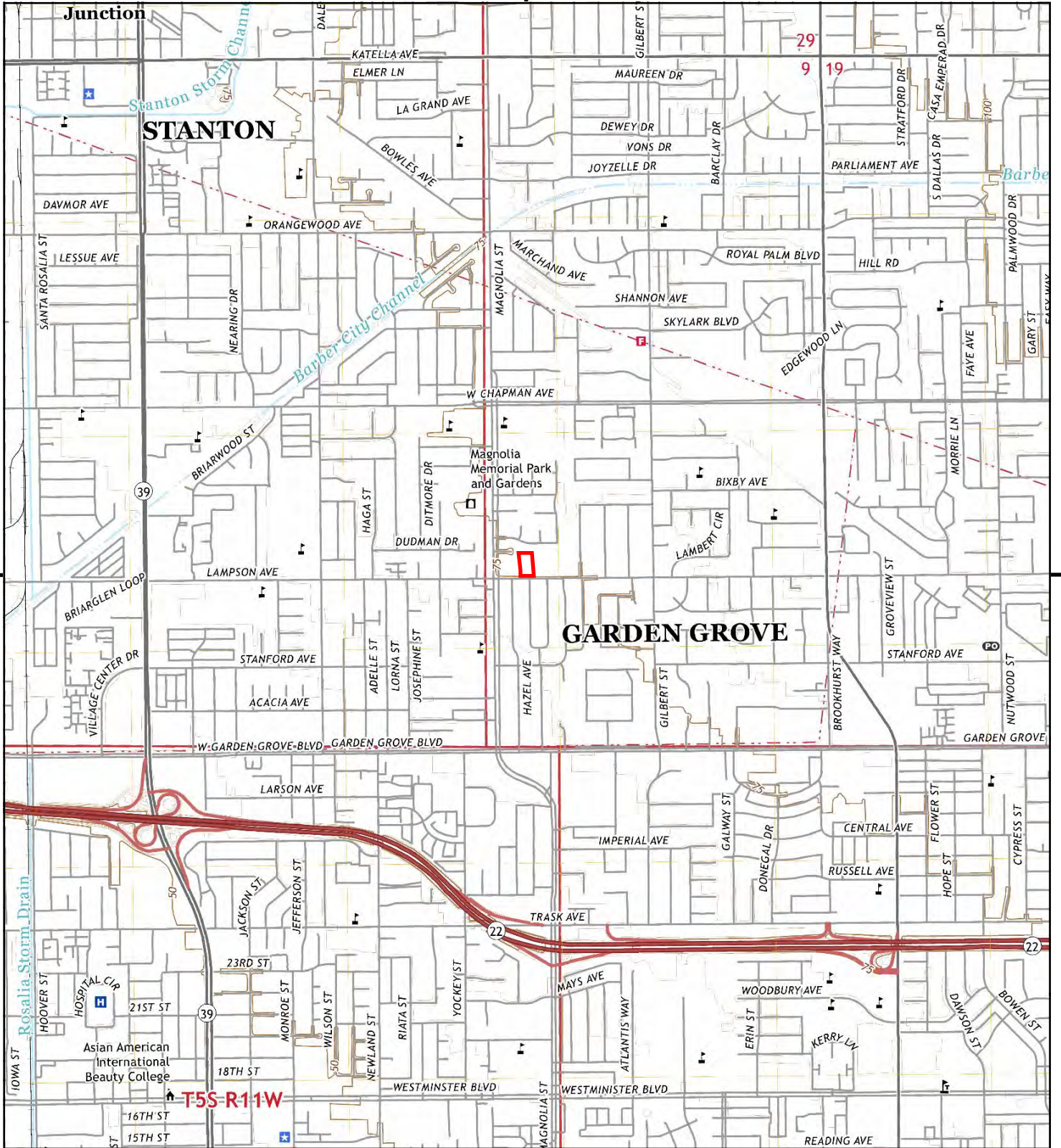


Anaheim
1898
15-minute, 62500

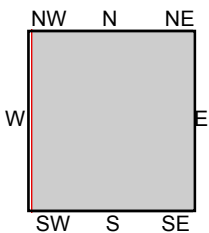
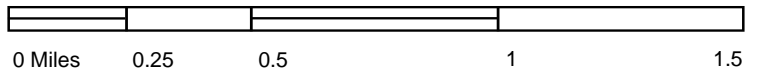
1896 Source Sheets



Anaheim
1896
15-minute, 62500



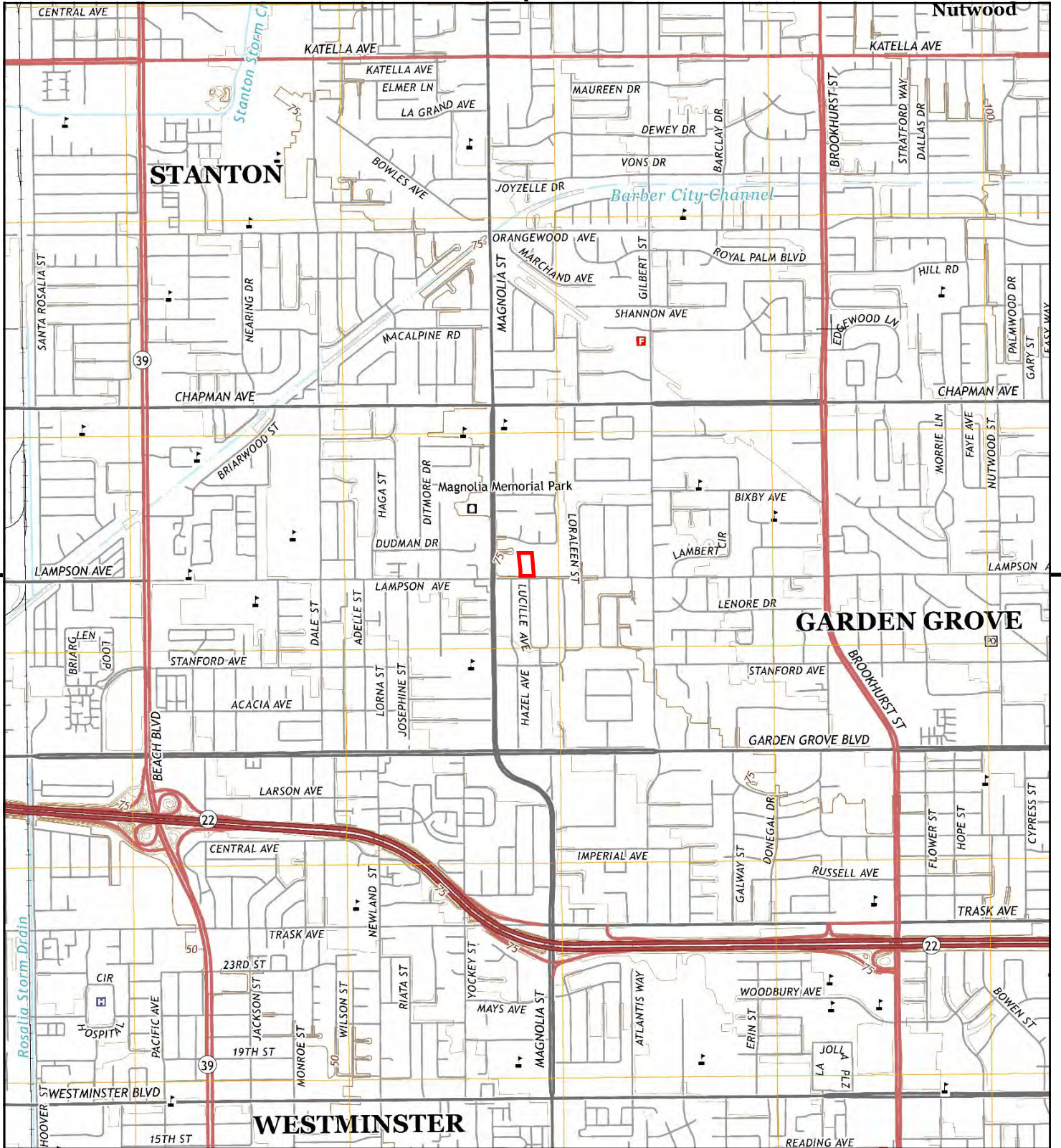
This report includes information from the following map sheet(s).



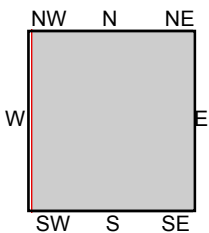
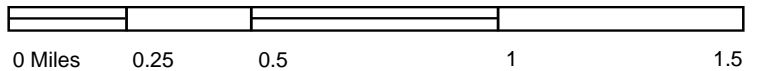
TP, Anaheim, 2018, 7.5-minute
 NW, Los Alamitos, 2018, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
CLIENT: Ardent Environmental Group





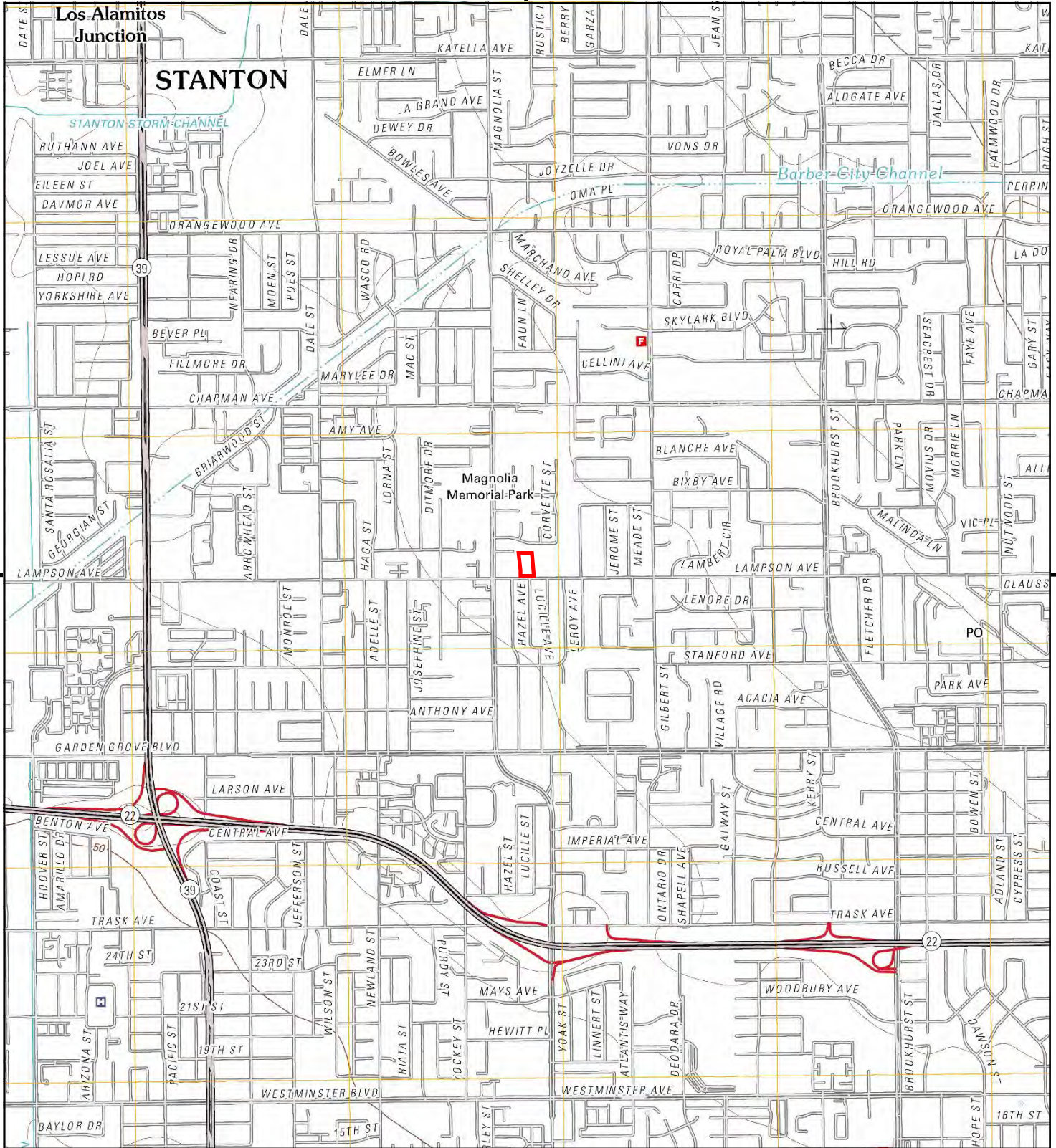
This report includes information from the following map sheet(s).



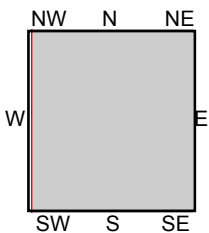
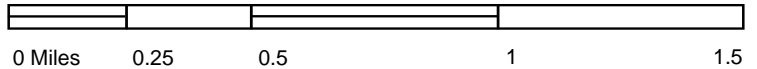
TP, Anaheim, 2015, 7.5-minute
 NW, Los Alamitos, 2015, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
CLIENT: Ardent Environmental Group





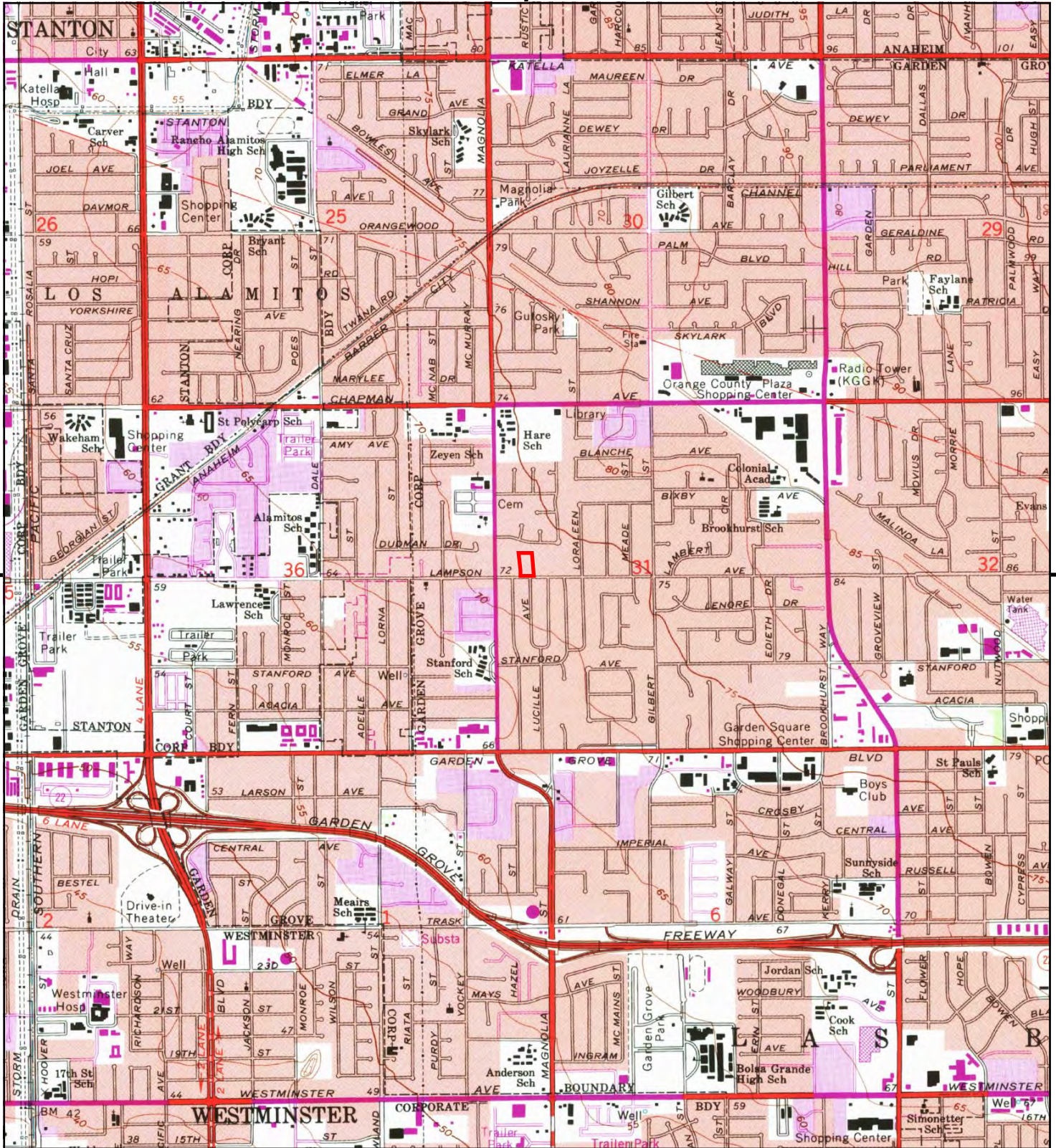
This report includes information from the following map sheet(s).



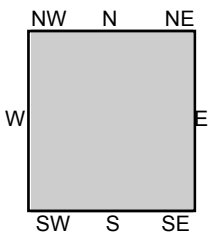
TP, Anaheim, 2012, 7.5-minute
 NW, Los Alamitos, 2012, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
CLIENT: Ardent Environmental Group





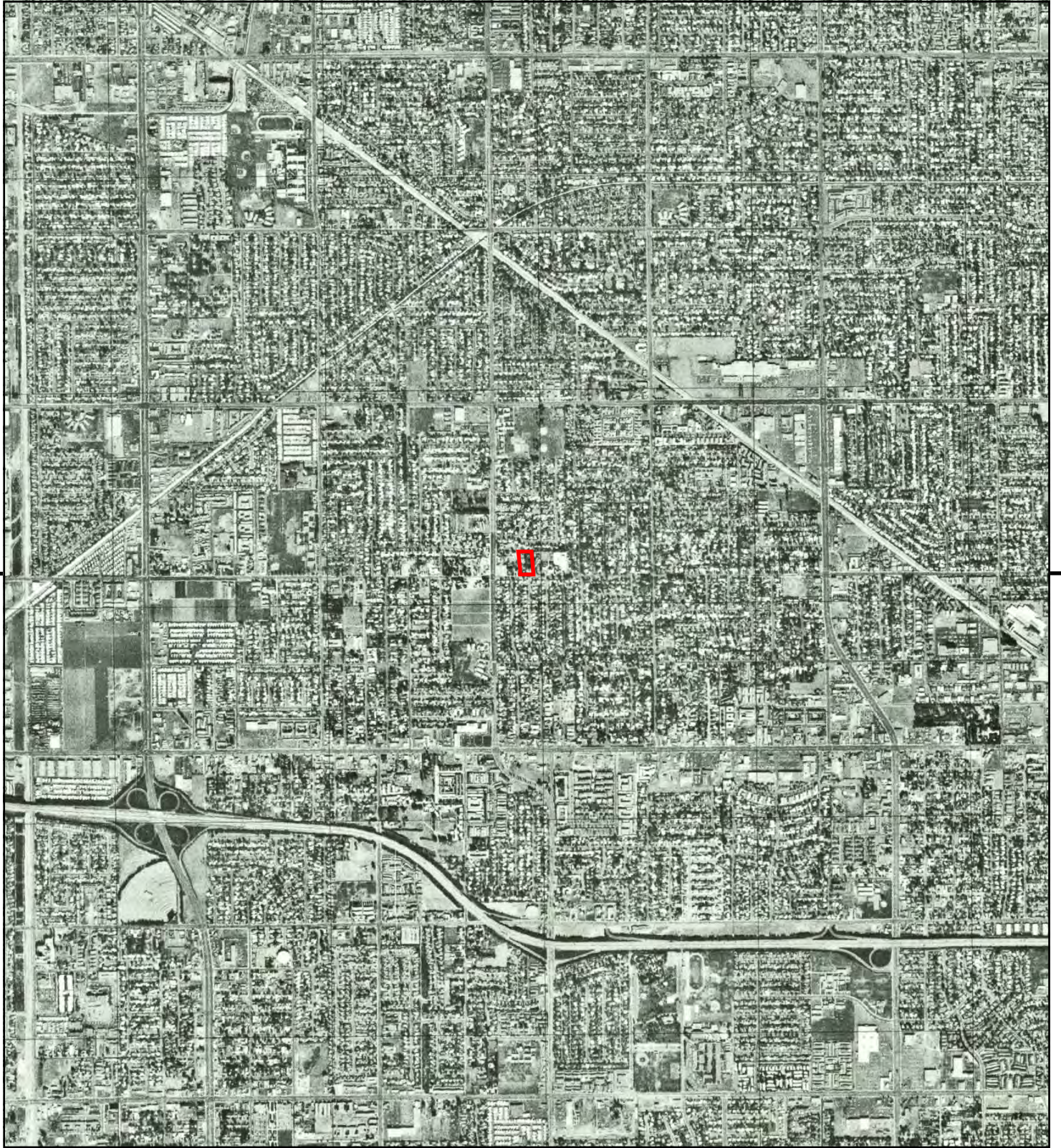
This report includes information from the following map sheet(s).



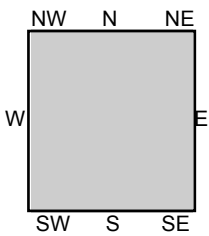
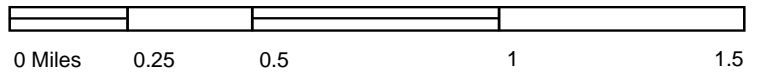
TP, Anaheim, 1981, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
 CLIENT: Ardent Environmental Group





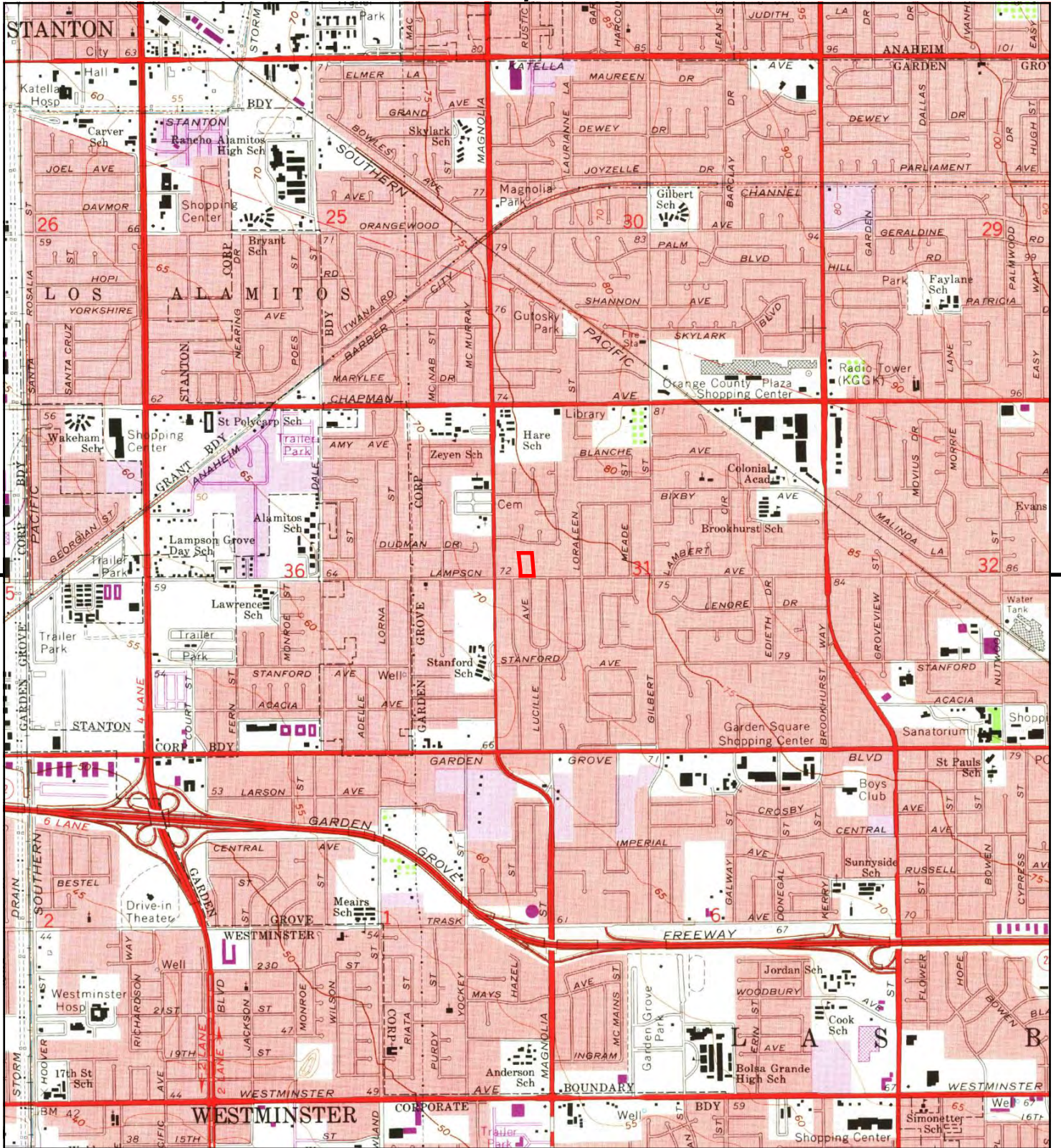
This report includes information from the following map sheet(s).



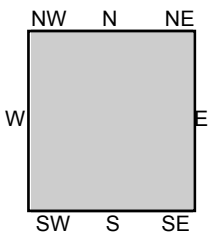
TP, Anaheim, 1974, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
ADDRESS: 9071-9091 Lampson Avenue
Garden Grove, CA 92841
CLIENT: Ardent Environmental Group





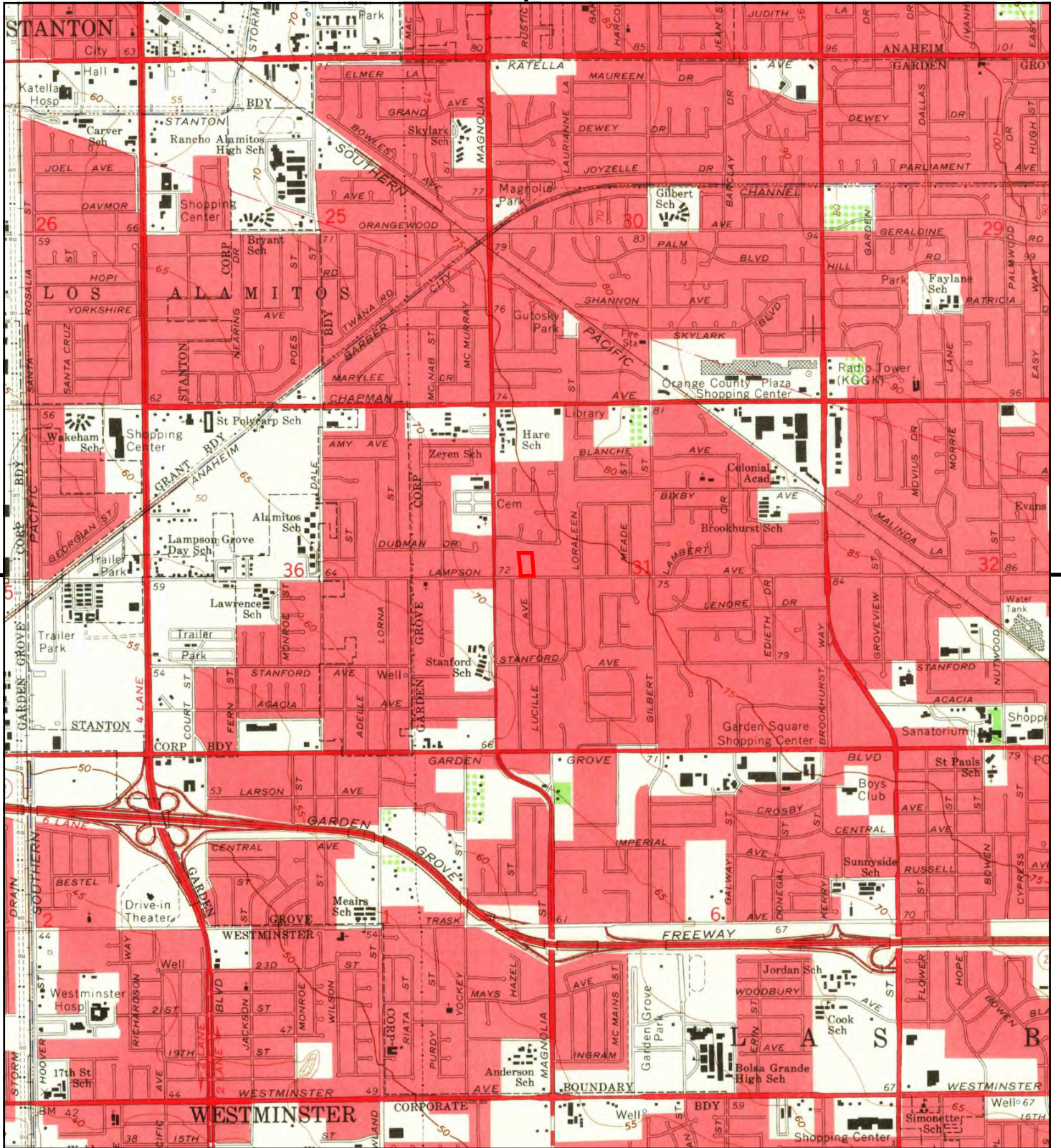
This report includes information from the following map sheet(s).



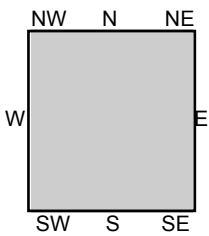
TP, Anaheim, 1972, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
 CLIENT: Ardent Environmental Group





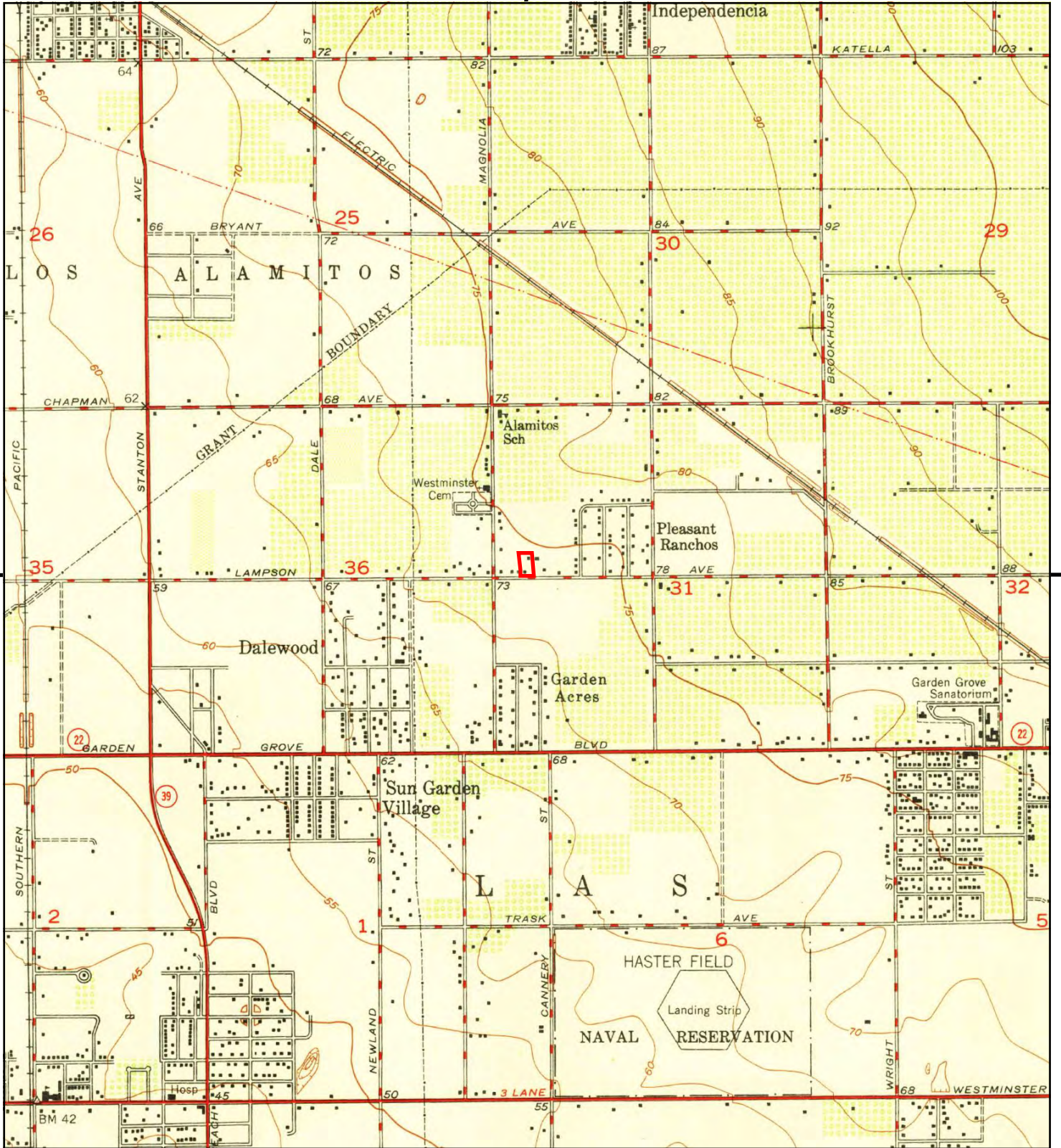
This report includes information from the following map sheet(s).



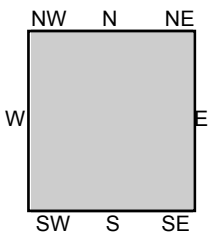
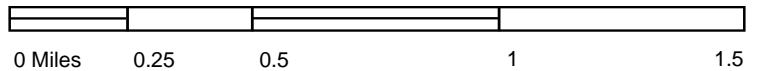
TP, Anaheim, 1965, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
 CLIENT: Ardent Environmental Group





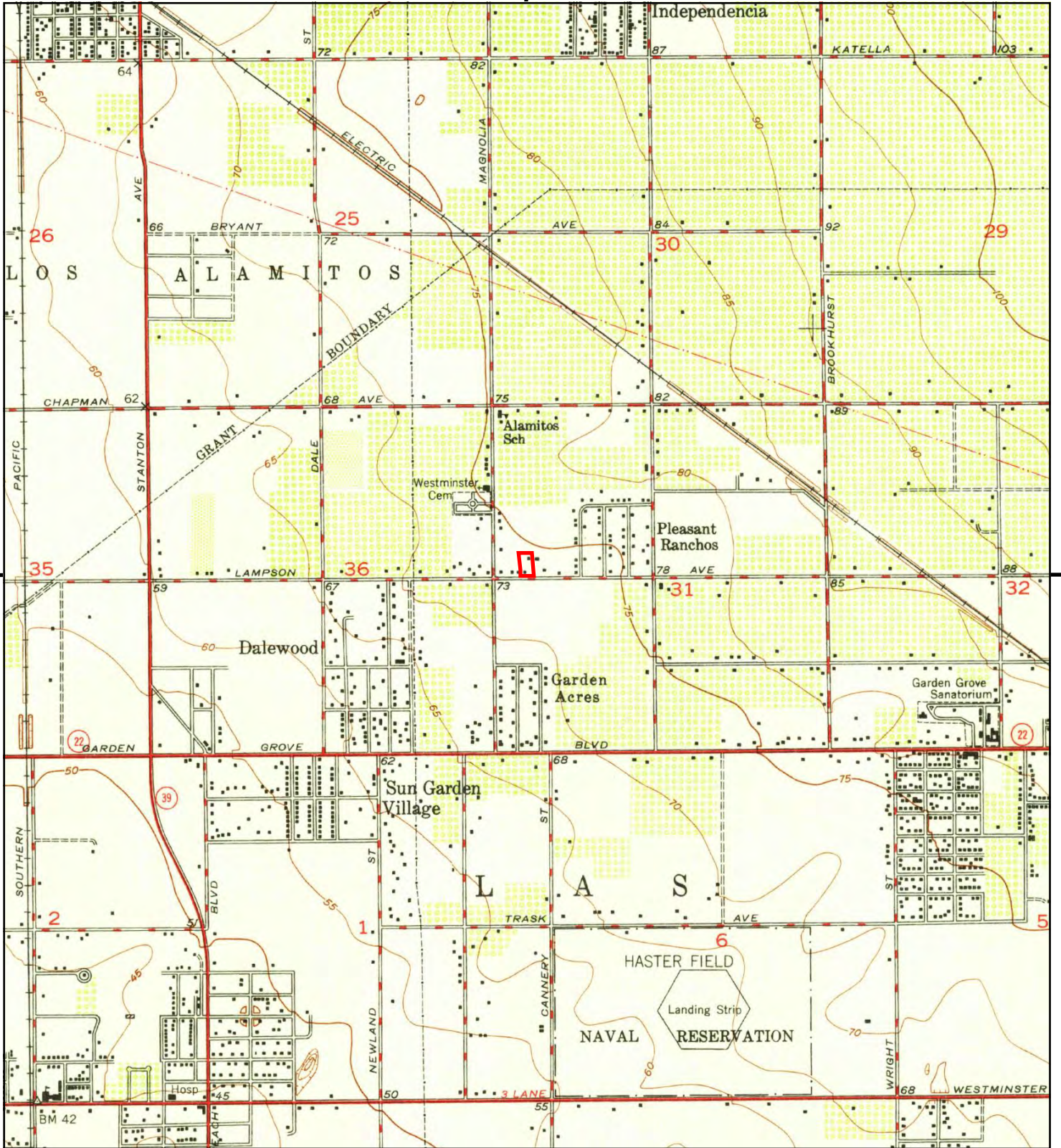
This report includes information from the following map sheet(s).



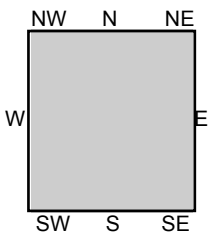
TP, Anaheim, 1950, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
 CLIENT: Ardent Environmental Group





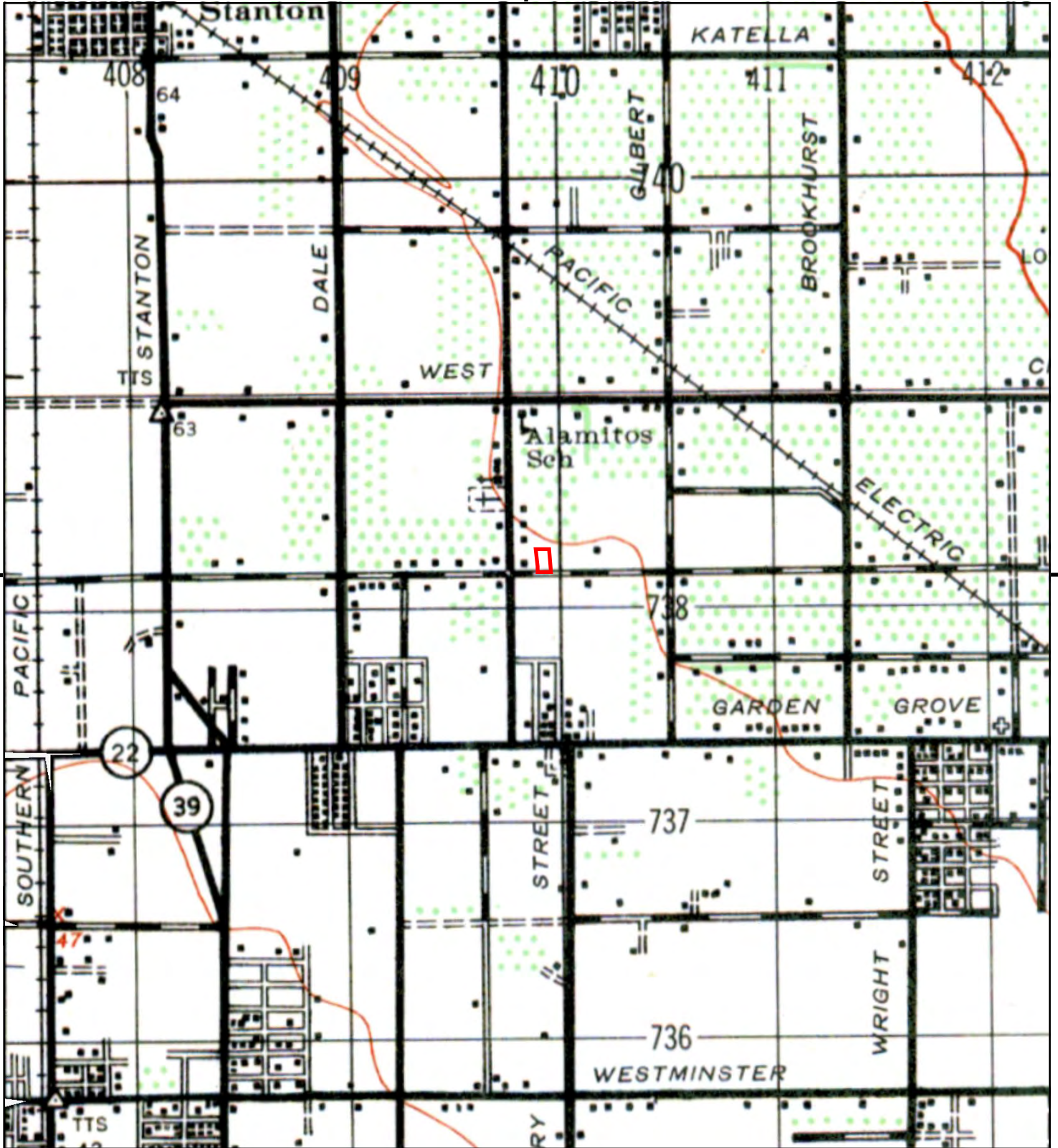
This report includes information from the following map sheet(s).



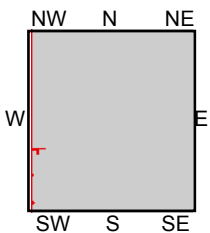
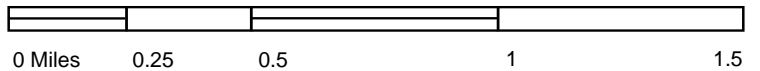
TP, Anaheim, 1949, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
 CLIENT: Ardent Environmental Group





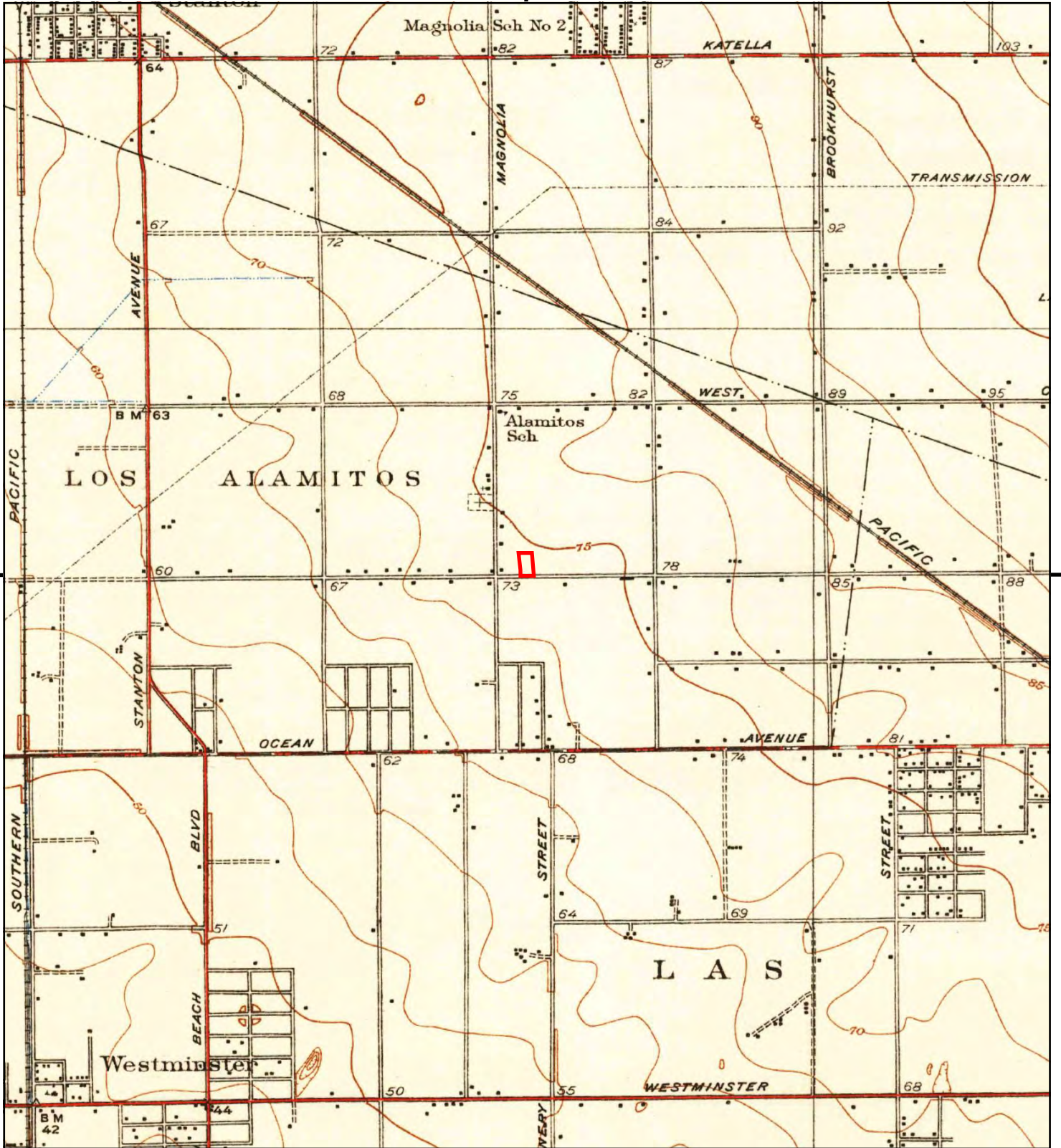
This report includes information from the following map sheet(s).



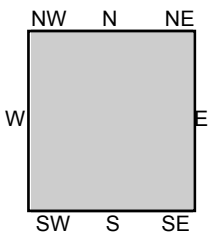
TP, ANAHEIM, 1942, 15-minute

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
 CLIENT: Ardent Environmental Group





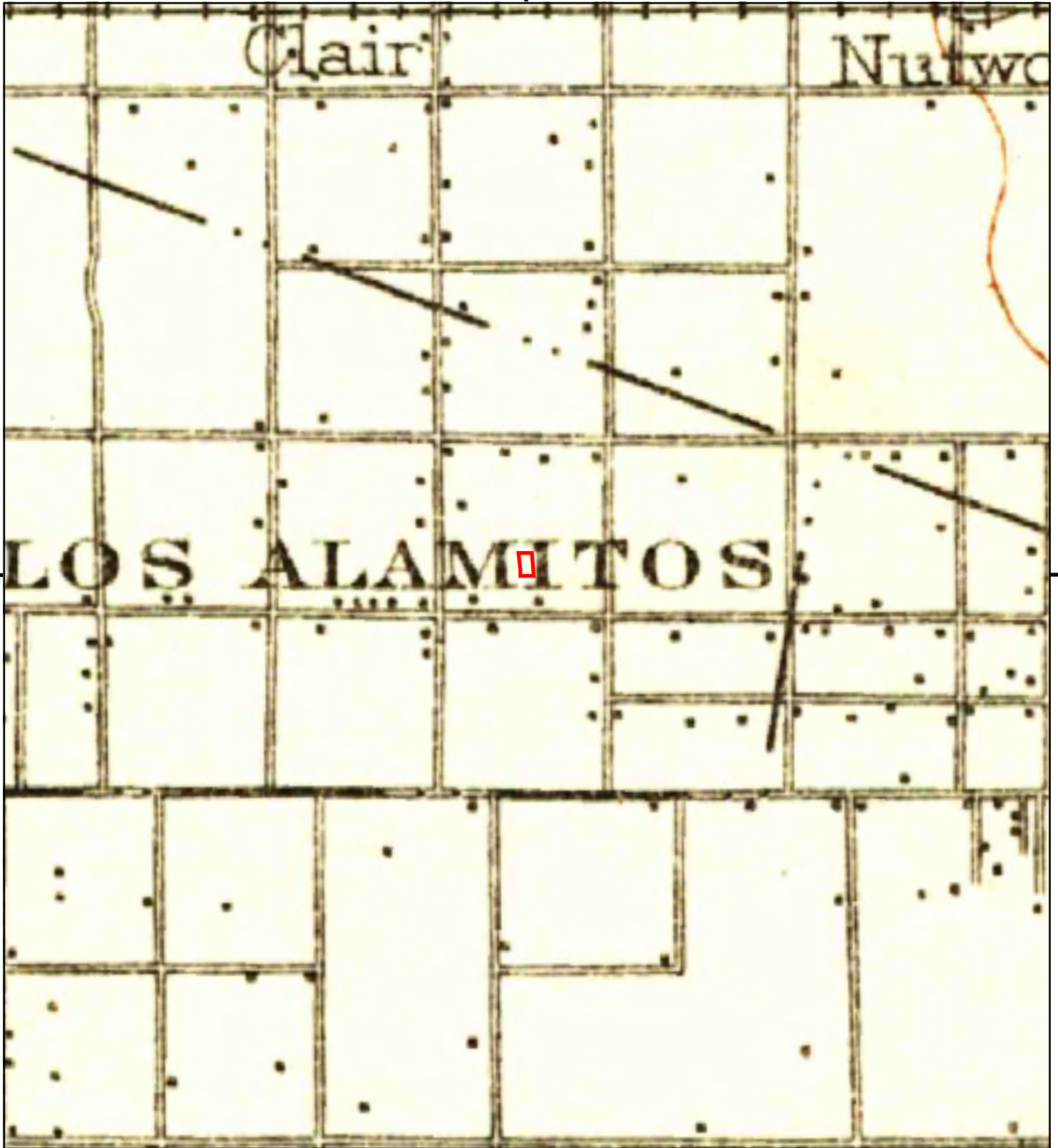
This report includes information from the following map sheet(s).



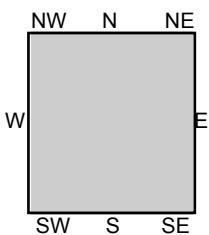
TP, Garden Grove, 1935, 7.5-minute

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
 CLIENT: Ardent Environmental Group





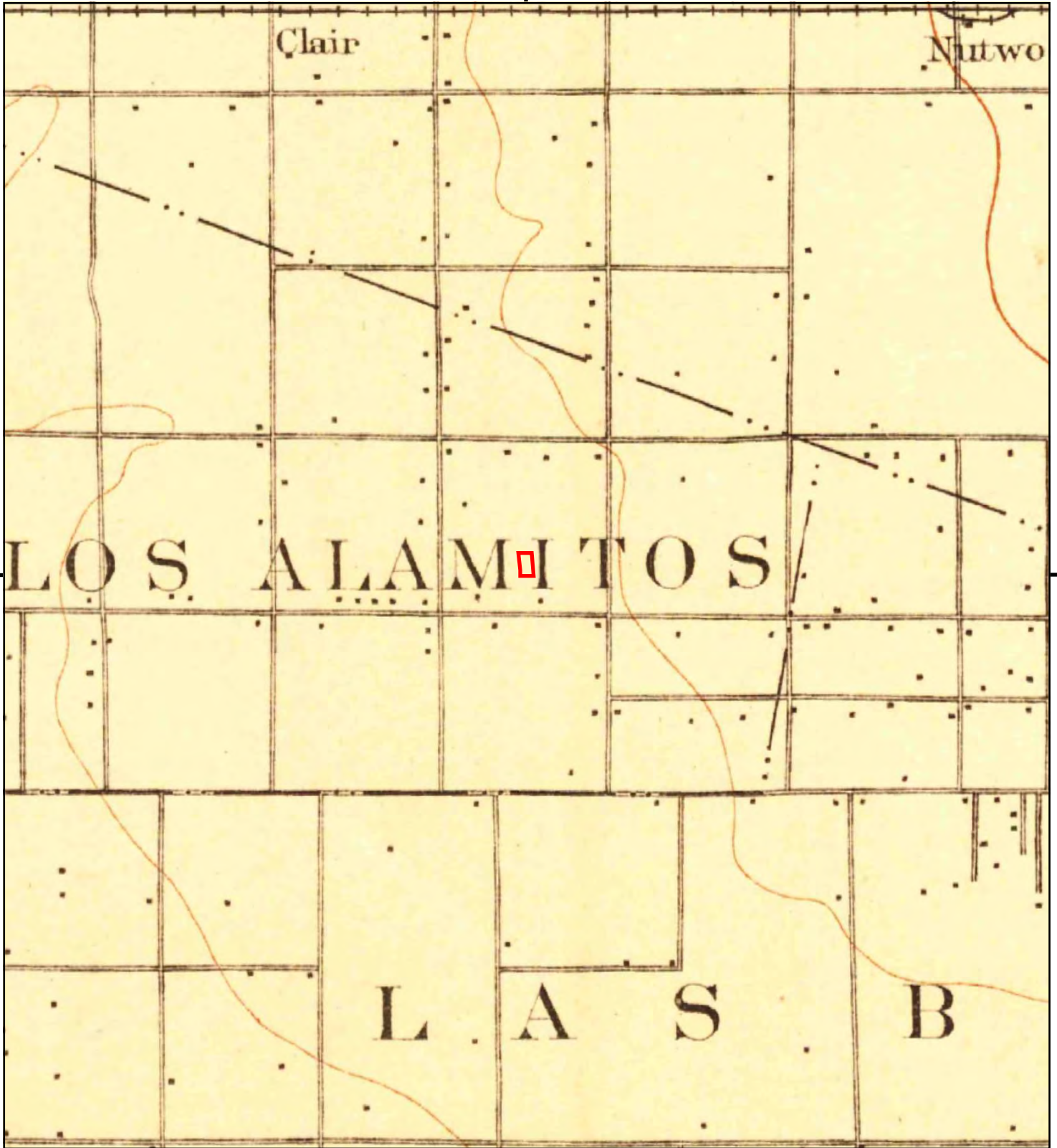
This report includes information from the following map sheet(s).



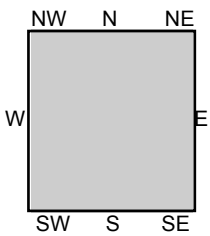
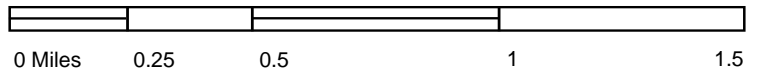
TP, Corona, 1902, 30-minute

SITE NAME: 9071-9091 Lampson Avenue
ADDRESS: 9071-9091 Lampson Avenue
Garden Grove, CA 92841
CLIENT: Ardent Environmental Group





This report includes information from the following map sheet(s).



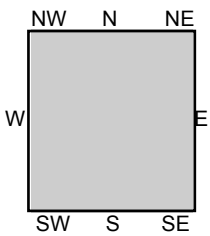
TP, Anaheim, 1901, 15-minute

SITE NAME: 9071-9091 Lampson Avenue
ADDRESS: 9071-9091 Lampson Avenue
Garden Grove, CA 92841
CLIENT: Ardent Environmental Group





This report includes information from the following map sheet(s).



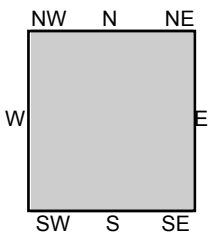
TP, Anaheim, 1898, 15-minute

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
 CLIENT: Ardent Environmental Group





This report includes information from the following map sheet(s).



TP, Anaheim, 1896, 15-minute

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove, CA 92841
 CLIENT: Ardent Environmental Group



APPENDIX E
ENVIRONMENTAL DATABASE REPORT

9071-9091 Lampson Avenue
9071-9091 Lampson Avenue
Garden Grove, CA 92841

Inquiry Number: 6941794.2s
April 15, 2022

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	9
Orphan Summary	75
Government Records Searched/Data Currency Tracking	GR-1
 <u>GEOCHECK ADDENDUM</u>	
Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-6
Physical Setting Source Map	A-11
Physical Setting Source Map Findings	A-13
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2020 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527-21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

9071-9091 LAMPSON AVENUE
GARDEN GROVE, CA 92841

COORDINATES

Latitude (North): 33.7813450 - 33° 46' 52.84"
Longitude (West): 117.9736670 - 117° 58' 25.20"
Universal Transverse Mercator: Zone 11
UTM X (Meters): 409850.5
UTM Y (Meters): 3738144.5
Elevation: 74 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 12014828 ANAHEIM, CA
Version Date: 2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20140513
Source: USDA

MAPPED SITES SUMMARY

Target Property Address:
 9071-9091 LAMPSON AVENUE
 GARDEN GROVE, CA 92841

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	KEVIN BICKNELL	9081 LAMPSON AVE	HWTS		TP
A2	KEVIN BICKNELL	9081 LAMPSON AVE	RCRA NonGen / NLR		TP
A3	KEVIN BICKNELL	9081 LAMPSON AVE	FINDS		TP
A4	KEVIN BICKNELL	9081 LAMPSON AVE	ECHO		TP
5	MACIEL GUILLERMINA	12532 HAZEL AVE	RCRA NonGen / NLR	Lower	283, 0.054, SSW
6	J.W. CONGREGATION SU	9191 LAMPSON AVENUE	RCRA NonGen / NLR	Higher	421, 0.080, ENE
B7	NEW WAVE AUTO ACCESS	12441 MAGNOLIA ST ST	EDR Hist Auto	Lower	456, 0.086, WNW
B8	SEASIDE CLEANERS INC	12441 MAGNOLIA ST ST	EDR Hist Cleaner	Lower	456, 0.086, WNW
9	VERNS MOBIL SERVICE	8971 MARY HILL DR	EDR Hist Auto	Lower	570, 0.108, WSW
10	PHILLIPS, JAMES	9032 HEALEY DRIVE	RCRA NonGen / NLR	Higher	837, 0.159, NNW
11	BRIAN BUI	12682 LUCILLE AVE	RCRA NonGen / NLR	Lower	1013, 0.192, South
12	JOHN O'DONNELL	12421 JEROME ST	RCRA NonGen / NLR	Higher	1030, 0.195, ENE
13	JOHNNY NGUYEN	8911 ANN CROSS DR	RCRA NonGen / NLR	Lower	1127, 0.213, SW
14	CASSANDRA WILLIAMS	12601 JEROME LN	RCRA NonGen / NLR	Higher	1141, 0.216, ESE
15	MARK ANDERSON	12332 JEROME ST.	RCRA NonGen / NLR	Higher	1214, 0.230, ENE
16	KELLY LASCONIA	12571 OHMER WAY	RCRA NonGen / NLR	Higher	1300, 0.246, ESE
17	TERESA VU	12355 PENTAGON ST	RCRA NonGen / NLR	Lower	1317, 0.249, WNW
18	STATER BROS. MARKETS	8888 CHAPMAN AVE	SWRCY, CERS HAZ WASTE, CERS	Higher	2162, 0.409, NNW
C19	KIMS AUTO REPAIR SER	8971 CHAPMAN AVE	LUST, UST, SWEEPS UST	Higher	2407, 0.456, NNW
C20	KIM'S AUTO	8971 CHAPMAN	LUST	Higher	2407, 0.456, NNW
C21	KIMS AUTO REPAIR	8971 CHAPMAN	Cortese, HAZNET, HWTS	Higher	2407, 0.456, NNW
22	MARAVEN, PETER & JEA	12202 HAGA	HIST CORTESE	Lower	2431, 0.460, WNW
D23	ARCO #1055	9001 GARDEN GROVE	LUST, Cortese	Lower	2612, 0.495, South
D24	ARCO #1055	9001 GARDEN GROVE BL	CA FID UST, HIST CORTESE	Lower	2612, 0.495, South
D25	ARCO #1055	9001 GARDEN GROVE BL	LUST, UST, SWEEPS UST, Orange Co. Industrial Site,...	Lower	2612, 0.495, South
D26	THE CANS COMPANY	8911 GARDEN GROVE BL	SWRCY	Lower	2633, 0.499, South
27	FORMER MORELAND CLEA	8661-8681 GARDEN GRO	ENVIROSTOR, Orange Co. Industrial Site	Lower	3421, 0.648, SW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 9 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
KEVIN BICKNELL 9081 LAMPSON AVE GARDEN GROVE, CA 92841	HWTS	N/A
KEVIN BICKNELL 9081 LAMPSON AVE GARDEN GROVE, CA 92841	RCRA NonGen / NLR	CAC003063244
KEVIN BICKNELL 9081 LAMPSON AVE GARDEN GROVE, CA 92841	FINDS	N/A
KEVIN BICKNELL 9081 LAMPSON AVE GARDEN GROVE, CA 92841	ECHO Registry ID: 110070803681	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL..... National Priority List
 Proposed NPL..... Proposed National Priority List Sites
 NPL LIENS..... Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL..... National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY..... Federal Facility Site Information listing
 SEMS..... Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

EXECUTIVE SUMMARY

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS..... Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG..... RCRA - Large Quantity Generators

RCRA-SQG..... RCRA - Small Quantity Generators

RCRA-VSQG..... RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List

US INST CONTROLS..... Institutional Controls Sites List

Federal ERNS list

ERNS..... Emergency Response Notification System

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE..... State Response Sites

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF..... Solid Waste Information System

Lists of state and tribal leaking storage tanks

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

CPS-SLIC..... Statewide SLIC Cases

Lists of state and tribal registered storage tanks

FEMA UST..... Underground Storage Tank Listing

UST..... Active UST Facilities

AST..... Aboveground Petroleum Storage Tank Facilities

INDIAN UST..... Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program Properties

INDIAN VCP..... Voluntary Cleanup Priority Listing

Lists of state and tribal brownfield sites

BROWNFIELDS..... Considered Brownfields Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

EXECUTIVE SUMMARY

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT.....	Waste Management Unit Database
HAULERS.....	Registered Waste Tire Haulers Listing
INDIAN ODI.....	Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9.....	Torres Martinez Reservation Illegal Dump Site Locations
ODI.....	Open Dump Inventory
IHS OPEN DUMPS.....	Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL.....	Delisted National Clandestine Laboratory Register
HIST Cal-Sites.....	Historical Calsites Database
SCH.....	School Property Evaluation Program
CDL.....	Clandestine Drug Labs
CERS HAZ WASTE.....	CERS HAZ WASTE
Toxic Pits.....	Toxic Pits Cleanup Act Sites
US CDL.....	National Clandestine Laboratory Register
AQUEOUS FOAM.....	Former Fire Training Facility Assessments Listing
PFAS.....	PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST.....	SWEEPS UST Listing
HIST UST.....	Hazardous Substance Storage Container Database
CA FID UST.....	Facility Inventory Database
CERS TANKS.....	California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS.....	Environmental Liens Listing
LIENS 2.....	CERCLA Lien Information
DEED.....	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS.....	Hazardous Materials Information Reporting System
CHMIRS.....	California Hazardous Material Incident Report System
LDS.....	Land Disposal Sites Listing
MCS.....	Military Cleanup Sites Listing
Orange Co. Industrial Site.....	List of Industrial Site Cleanups
SPILLS 90.....	SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS.....	Formerly Used Defense Sites
DOD.....	Department of Defense Sites
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR.....	Financial Assurance Information
EPA WATCH LIST.....	EPA WATCH LIST
2020 COR ACTION.....	2020 Corrective Action Program List
TSCA.....	Toxic Substances Control Act
TRIS.....	Toxic Chemical Release Inventory System
SSTS.....	Section 7 Tracking Systems

EXECUTIVE SUMMARY

ROD.....	Records Of Decision
RMP.....	Risk Management Plans
RAATS.....	RCRA Administrative Action Tracking System
PRP.....	Potentially Responsible Parties
PADS.....	PCB Activity Database System
ICIS.....	Integrated Compliance Information System
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS.....	Material Licensing Tracking System
COAL ASH DOE.....	Steam-Electric Plant Operation Data
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER.....	PCB Transformer Registration Database
RADINFO.....	Radiation Information Database
HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS.....	Incident and Accident Data
CONSENT.....	Superfund (CERCLA) Consent Decrees
INDIAN RESERV.....	Indian Reservations
FUSRAP.....	Formerly Utilized Sites Remedial Action Program
UMTRA.....	Uranium Mill Tailings Sites
LEAD SMELTERS.....	Lead Smelter Sites
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
US MINES.....	Mines Master Index File
ABANDONED MINES.....	Abandoned Mines
DOCKET HWC.....	Hazardous Waste Compliance Docket Listing
UXO.....	Unexploded Ordnance Sites
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN.....	Bond Expenditure Plan
CUPA Listings.....	CUPA Resources List
DRYCLEANERS.....	Cleaner Facilities
EMI.....	Emissions Inventory Data
ENF.....	Enforcement Action Listing
Financial Assurance.....	Financial Assurance Information Listing
HAZNET.....	Facility and Manifest Data
ICE.....	ICE
HWP.....	EnviroStor Permitted Facilities Listing
HWT.....	Registered Hazardous Waste Transporter Database
MINES.....	Mines Site Location Listing
MWMP.....	Medical Waste Management Program Listing
NPDES.....	NPDES Permits Listing
PEST LIC.....	Pesticide Regulation Licenses Listing
PROC.....	Certified Processors Database
Notify 65.....	Proposition 65 Records
UIC.....	UIC Listing
UIC GEO.....	UIC GEO (GEOTRACKER)
WASTEWATER PITS.....	Oil Wastewater Pits Listing
WDS.....	Waste Discharge System
WIP.....	Well Investigation Program Case List
MILITARY PRIV SITES.....	MILITARY PRIV SITES (GEOTRACKER)
PROJECT.....	PROJECT (GEOTRACKER)
WDR.....	Waste Discharge Requirements Listing
CIWQS.....	California Integrated Water Quality System
CERS.....	CERS
NON-CASE INFO.....	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS.....	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS.....	PROD WATER PONDS (GEOTRACKER)

EXECUTIVE SUMMARY

SAMPLING POINT..... SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ..... Well Stimulation Project (GEOTRACKER)
MINES MRDS..... Mineral Resources Data System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 01/24/2022 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<i>FORMER MORELAND CLEA</i>	<i>8661-8681 GARDEN GRO</i>	<i>SW 1/2 - 1 (0.648 mi.)</i>	<i>27</i>	<i>73</i>

EXECUTIVE SUMMARY

Facility Id: 30720002
Status: Refer: 1248 Local Agency

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 4 LUST sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
KIMS AUTO REPAIR SER Database: LUST, Date of Government Version: 12/06/2021 Database: ORANGE CO. LUST, Date of Government Version: 10/08/2021 Facility Id: 00UT018 Global Id: T0605999102 Status: Completed - Case Closed	8971 CHAPMAN AVE	NNW 1/4 - 1/2 (0.456 mi.)	C19	45
KIM'S AUTO Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Remediation Plan Global ID: T0605999102	8971 CHAPMAN	NNW 1/4 - 1/2 (0.456 mi.)	C20	52

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ARCO #1055 Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Remediation Plan Global ID: T0605900038	9001 GARDEN GROVE	S 1/4 - 1/2 (0.495 mi.)	D23	55
ARCO #1055 Database: LUST, Date of Government Version: 12/06/2021 Database: ORANGE CO. LUST, Date of Government Version: 10/08/2021 Facility Id: 89UT097 Global Id: T0605900038 Status: Completed - Case Closed	9001 GARDEN GROVE BL	S 1/4 - 1/2 (0.495 mi.)	D25	58

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: A listing of recycling facilities in California.

A review of the SWRCY list, as provided by EDR, and dated 12/06/2021 has revealed that there are 2 SWRCY sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
STATER BROS. MARKETS	8888 CHAPMAN AVE	NNW 1/4 - 1/2 (0.409 mi.)	18	38

EXECUTIVE SUMMARY

Cert Id: RC307663.001

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
THE CANS COMPANY Cert Id: RC251928.001	8911 GARDEN GROVE BL	S 1/4 - 1/2 (0.499 mi.)	D26	72

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 02/28/2022 has revealed that there are 10 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
J.W. CONGREGATION SU EPA ID:: CAC002983825	9191 LAMPSON AVENUE	ENE 0 - 1/8 (0.080 mi.)	6	15
PHILLIPS, JAMES EPA ID:: CAC002981266	9032 HEALEY DRIVE	NNW 1/8 - 1/4 (0.159 mi.)	10	18
JOHN O'DONNELL EPA ID:: CAC002995796	12421 JEROME ST	ENE 1/8 - 1/4 (0.195 mi.)	12	23
CASSANDRA WILLIAMS EPA ID:: CAC003059449	12601 JEROME LN	ESE 1/8 - 1/4 (0.216 mi.)	14	28
MARK ANDERSON KELLY LASCONIA EPA ID:: CAC003055779	12332 JEROME ST. 12571 OHMER WAY	ENE 1/8 - 1/4 (0.230 mi.) ESE 1/8 - 1/4 (0.246 mi.)	15 16	31 33

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
MACIEL GUILLERMINA	12532 HAZEL AVE	SSW 0 - 1/8 (0.054 mi.)	5	12
BRIAN BUI	12682 LUCILLE AVE	S 1/8 - 1/4 (0.192 mi.)	11	21
JOHNNY NGUYEN EPA ID:: CAC003012695	8911 ANN CROSS DR	SW 1/8 - 1/4 (0.213 mi.)	13	26
TERESA VU	12355 PENTAGON ST	WNW 1/8 - 1/4 (0.249 mi.)	17	36

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 12/16/2021 has revealed that there are 2 Cortese sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
KIMS AUTO REPAIR Cleanup Status: COMPLETED - CASE CLOSED	8971 CHAPMAN	NNW 1/4 - 1/2 (0.456 mi.)	C21	53

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ARCO #1055	9001 GARDEN GROVE	S 1/4 - 1/2 (0.495 mi.)	D23	55

EXECUTIVE SUMMARY

Cleanup Status: COMPLETED - CASE CLOSED

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSTATES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 2 HIST CORTESE sites within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
MARAVEN, PETER & JEA Reg Id: 6A189102N33	12202 HAGA	WNW 1/4 - 1/2 (0.460 mi.)	22	55
ARCO #1055 Reg Id: 083000657T Reg Id: 083000046T	9001 GARDEN GROVE BL	S 1/4 - 1/2 (0.495 mi.)	D24	57

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 2 EDR Hist Auto sites within approximately 0.125 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
NEW WAVE AUTO ACCESS	12441 MAGNOLIA ST ST	WNW 0 - 1/8 (0.086 mi.)	B7	17
VERNS MOBIL SERVICE	8971 MARY HILL DR	WSW 0 - 1/8 (0.108 mi.)	9	18

EDR Hist Cleaner: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there is 1 EDR Hist

EXECUTIVE SUMMARY

Cleaner site within approximately 0.125 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
SEASIDE CLEANERS INC	12441 MAGNOLIA ST ST	WNW 0 - 1/8 (0.086 mi.)	B8	18

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

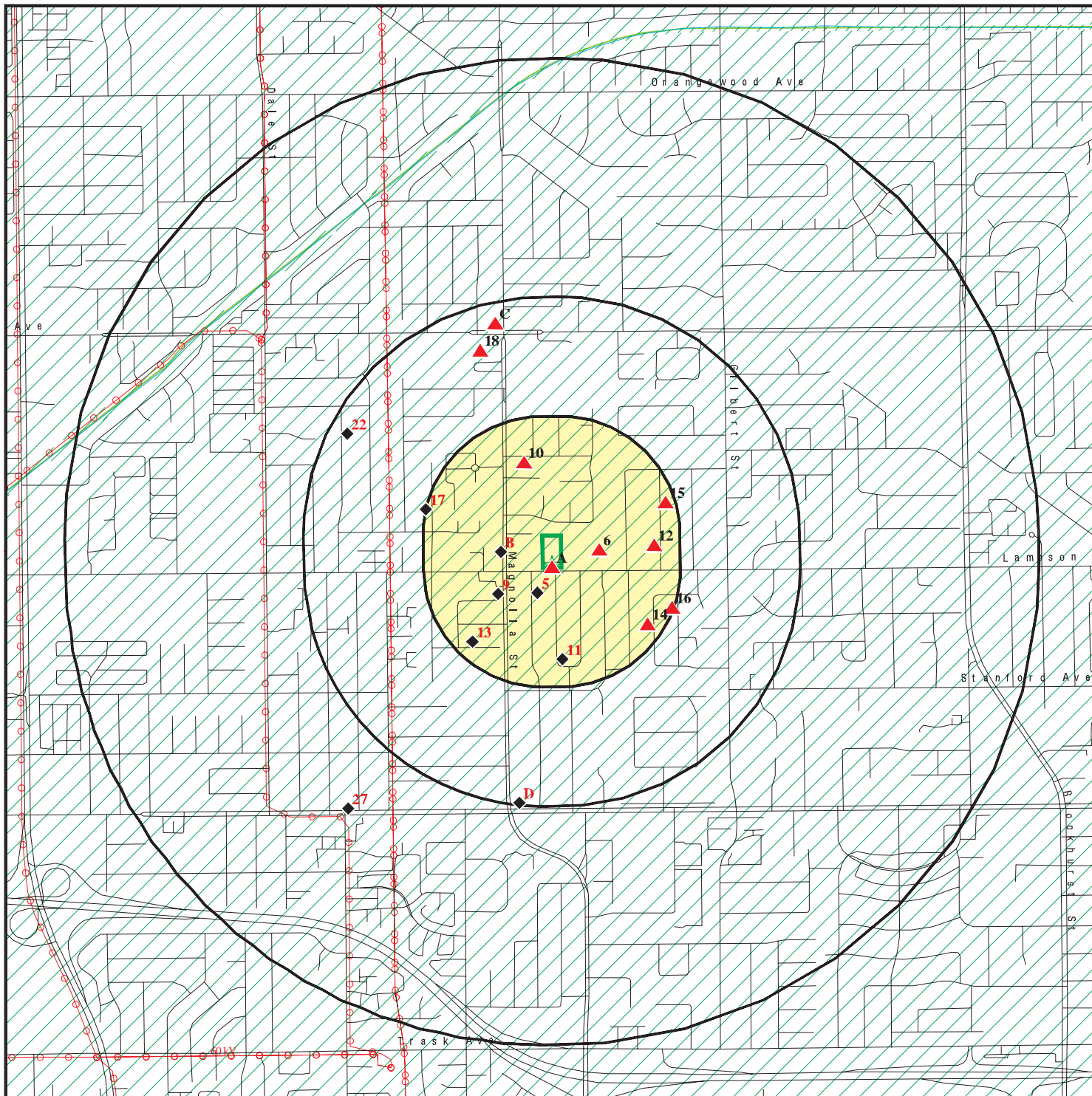
Site Name

Database(s)

G & M OIL #61/ FORMER TARGET #91

CDL
LUST

OVERVIEW MAP - 6941794.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

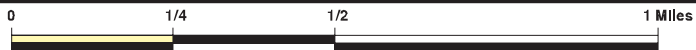
Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

Areas of Concern

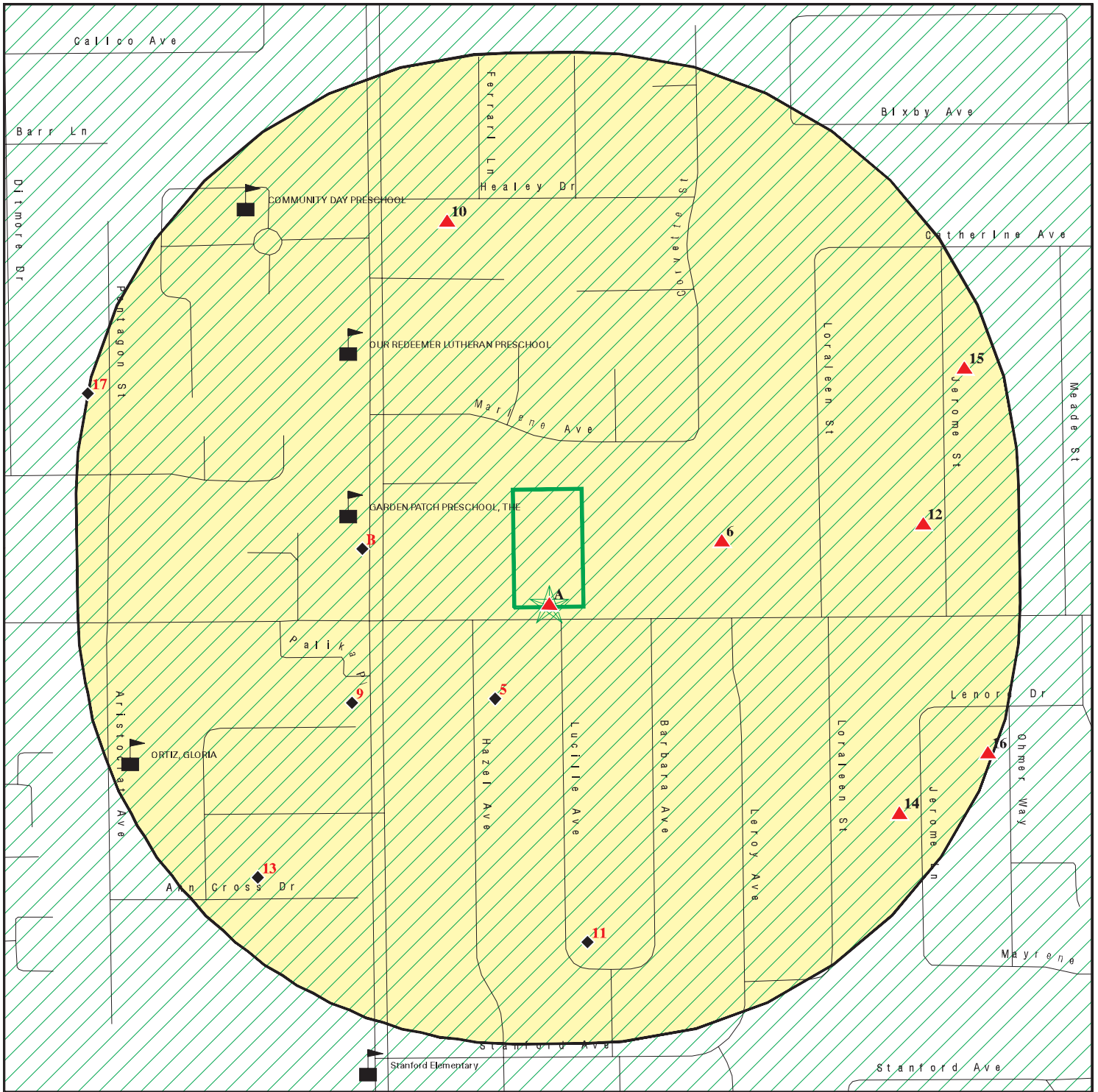









This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.





SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove CA 92841
 LAT/LONG: 33.781345 / 117.973667

CLIENT: Ardent Environmental Group
 CONTACT: Matthew Pensaw
 INQUIRY #: 6941794.2s
 DATE: April 15, 2022 2:22 pm

DETAIL MAP - 6941794.2S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  Special Flood Hazard Area (1%)
-  0.2% Annual Chance Flood Hazard
-  Areas of Concern



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove CA 92841
 LAT/LONG: 33.781345 / 117.973667

CLIENT: Ardent Environmental Group
 CONTACT: Matthew Pensaw
 INQUIRY #: 6941794.2s
 DATE: April 15, 2022 2:23 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Lists of Federal NPL (Superfund) sites</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
<i>Lists of Federal Delisted NPL sites</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Lists of Federal sites subject to CERCLA removals and CERCLA orders</i>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<i>Lists of Federal CERCLA sites with NFRAP</i>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<i>Lists of Federal RCRA facilities undergoing Corrective Action</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Lists of Federal RCRA TSD facilities</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Lists of Federal RCRA generators</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	0.001		0	NR	NR	NR	NR	0
<i>Lists of state- and tribal (Superfund) equivalent sites</i>								
RESPONSE	1.000		0	0	0	0	NR	0
<i>Lists of state- and tribal hazardous waste facilities</i>								
ENVIROSTOR	1.000		0	0	0	1	NR	1
<i>Lists of state and tribal landfills and solid waste disposal facilities</i>								
SWF/LF	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<i>Lists of state and tribal leaking storage tanks</i>								
LUST	0.500		0	0	4	NR	NR	4
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal registered storage tanks</i>								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
<i>Lists of state and tribal voluntary cleanup sites</i>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal brownfield sites</i>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<u>ADDITIONAL ENVIRONMENTAL RECORDS</u>								
<i>Local Brownfield lists</i>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Landfill / Solid Waste Disposal Sites</i>								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	2	NR	NR	2
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Hazardous waste / Contaminated Sites</i>								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
AQUEOUS FOAM	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Registered Storage Tanks</i>								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
Orange Co. Industrial Site	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250	1	2	8	NR	NR	NR	11
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001	1	0	NR	NR	NR	NR	1
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
ECHO	0.001	1	0	NR	NR	NR	NR	1
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	2	NR	NR	2
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	2	NR	NR	2
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
HWTS	TP	1	NR	NR	NR	NR	NR	1
MINES MRDS	0.001		0	NR	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		2	NR	NR	NR	NR	2
EDR Hist Cleaner	0.125		1	NR	NR	NR	NR	1

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	0.001		0	NR	NR	NR	NR	0
--------	-------	--	---	----	----	----	----	---

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		4	5	8	10	1	0	28

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

A1 **KEVIN BICKNELL**
Target **9081 LAMPSON AVE**
Property **GARDEN GROVE, CA 92841**

HWTS **S126377123**
N/A

Site 1 of 4 in cluster A

Actual:
74 ft.

HWTS:
 Name: KEVIN BICKNELL
 Address: 9081 LAMPSON AVE
 Address 2: Not reported
 City,State,Zip: GARDEN GROVE, CA 928414828
 EPA ID: CAC003063244
 Inactive Date: 07/14/2020
 Create Date: 04/14/2020
 Last Act Date: 07/15/2020
 Mailing Name: Not reported
 Mailing Address: 9081 LAMPSON AVE
 Mailing Address 2: Not reported
 Mailing City,State,Zip: GARDEN GROVE, CA 928414828
 Owner Name: KEVIN BICKNIL
 Owner Address: 9081 LAMPSON AVE
 Owner Address 2: Not reported
 Owner City,State,Zip: GARDEN GROVE, CA 928414828
 Contact Name: TIM WILSON
 Contact Address: 525 W VALENCIA DR
 Contact Address 2: Not reported
 City,State,Zip: FULLERTON, CA 928322117

A2 **KEVIN BICKNELL**
Target **9081 LAMPSON AVE**
Property **GARDEN GROVE, CA 92841**

RCRA NonGen / NLR **1026163253**
CAC003063244

Site 2 of 4 in cluster A

Actual:
74 ft.

RCRA NonGen / NLR:
 Date Form Received by Agency: 20200414
 Handler Name: KEVIN BICKNELL
 Handler Address: 9081 LAMPSON AVE
 Handler City,State,Zip: GARDEN GROVE, CA 92841-4828
 EPA ID: CAC003063244
 Contact Name: TIM WILSON
 Contact Address: 525 W VALENCIA DR
 Contact City,State,Zip: FULLERTON, CA 92832-2117
 Contact Telephone: 714-447-4780
 Contact Fax: Not reported
 Contact Email: TWILSON@TWCONTRACTING.COM
 Contact Title: Not reported
 EPA Region: 09
 Land Type: Not reported
 Federal Waste Generator Description: Not a generator, verified
 Non-Notifier: Not reported
 Biennial Report Cycle: Not reported
 Accessibility: Not reported
 Active Site Indicator: Not reported
 State District Owner: Not reported
 State District: Not reported
 Mailing Address: 9081 LAMPSON AVE
 Mailing City,State,Zip: GARDEN GROVE, CA 92841-4828
 Owner Name: KEVIN BICKNIL
 Owner Type: Other

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

KEVIN BICKNELL (Continued)

1026163253

Operator Name:	TIM WILSON
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRC Permit Baseline:	Not on the Baseline
2018 GPRC Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRC Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDs Where RCRA CA has Been Imposed Universe:	No
TSDs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSD Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20200424
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KEVIN BICKNELL (Continued)

1026163253

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	KEVIN BICKNIL
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	9081 LAMPSON AVE
Owner/Operator City,State,Zip:	GARDEN GROVE, CA 92841-4828
Owner/Operator Telephone:	714-606-6580
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	TIM WILSON
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	525 W VALENCIA DR
Owner/Operator City,State,Zip:	FULLERTON, CA 92832-2117
Owner/Operator Telephone:	714-447-4780
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20200414
Handler Name:	KEVIN BICKNELL
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found
-------------	---------------------

Evaluation Action Summary:

Evaluations:	No Evaluations Found
--------------	----------------------

MAP FINDINGS

Map ID
Direction
Distance
Elevation

Site

Database(s)

EDR ID Number
EPA ID Number

A3
Target
Property

KEVIN BICKNELL
9081 LAMPSON AVE
GARDEN GROVE, CA 92841

FINDS **1026445711**
N/A

Site 3 of 4 in cluster A

Actual: FINDS:
74 ft. Registry ID: 110070803681

Click Here:
Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A4
Target
Property

KEVIN BICKNELL
9081 LAMPSON AVE
GARDEN GROVE, CA 92841

ECHO **1026214370**
N/A

Site 4 of 4 in cluster A

Actual: ECHO:
74 ft. Envid: 1026214370
Registry ID: 110070803681
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110070803681>
Name: KEVIN BICKNELL
Address: 9081 LAMPSON AVE
City,State,Zip: GARDEN GROVE, CA 92841

5
SSW
< 1/8
0.054 mi.
283 ft.

MACIEL GUILLERMINA
12532 HAZEL AVE
GARDEN GROVE, CA 92841

RCRA NonGen / NLR **1027080449**
CAC003152450

Relative: RCRA NonGen / NLR:
Lower Date Form Received by Agency: 20211213
Actual: Handler Name: MACIEL GUILLERMINA
73 ft. Handler Address: 12532 HAZEL AVE
Handler City,State,Zip: GARDEN GROVE, CA 92841
EPA ID: CAC003152450
Contact Name: MACIEL GUILLERMINA
Contact Address: 12532 HAZEL AVE
Contact City,State,Zip: GARDEN GROVE, CA 92841
Contact Telephone: 949-278-6559
Contact Fax: Not reported
Contact Email: VERDUZCOAMERICA@YAHOO.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

MACIEL GUILLERMINA (Continued)

1027080449

Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	12532 HAZEL AVE
Mailing City, State, Zip:	GARDEN GROVE, CA 92841
Owner Name:	MACIEL GUILLERMINA
Owner Type:	Other
Operator Name:	MACIEL GUILLERMINA
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDs Where RCRA CA has Been Imposed Universe:	No
TSDs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MACIEL GUILLERMINA (Continued)

1027080449

Handler Date of Last Change: 20211213
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:

Owner/Operator Indicator: Owner
Owner/Operator Name: MACIEL GUILLERMINA
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 12532 HAZEL AVE
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 949-278-6559
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: MACIEL GUILLERMINA
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 12532 HAZEL AVE
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 949-278-6559
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 20211213
Handler Name: MACIEL GUILLERMINA
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:

NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations: No Violations Found

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

MACIEL GUILLERMINA (Continued)

1027080449

Evaluation Action Summary:
 Evaluations:

No Evaluations Found

6
ENE
 < 1/8
 0.080 mi.
 421 ft.

J.W. CONGREGATION SUPPORT, INC.
9191 LAMPSON AVENUE
GARDEN GROVE, CA 92841

RCRA NonGen / NLR

1024763959
CAC002983825

Relative:
Higher
Actual:
76 ft.

RCRA NonGen / NLR:	20181008
Date Form Received by Agency:	20181008
Handler Name:	J.W. CONGREGATION SUPPORT, INC.
Handler Address:	9191 LAMPSON AVENUE
Handler City,State,Zip:	GARDEN GROVE, CA 92841
EPA ID:	CAC002983825
Contact Name:	J.W. CONGREGATION SUPPORT, INC.
Contact Address:	1005 RED MILLS RD.
Contact City,State,Zip:	WALLKILL, NY 12589
Contact Telephone:	845-524-1429
Contact Fax:	Not reported
Contact Email:	CRISTAL.TEECOR@YAHOO.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	1005 RED MILLS RD.
Mailing City,State,Zip:	WALLKILL, NY 12589
Owner Name:	J.W. CONGREGATION SUPPORT, INC.
Owner Type:	Other
Operator Name:	J.W. CONGREGATION SUPPORT, INC.
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

J.W. CONGREGATION SUPPORT, INC. (Continued)

1024763959

Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20181120
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	J.W. CONGREGATION SUPPORT, INC.
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1005 RED MILLS RD.
Owner/Operator City,State,Zip:	WALLKILL, NY 12589
Owner/Operator Telephone:	845-524-1429
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	J.W. CONGREGATION SUPPORT, INC.
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1005 RED MILLS RD.

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

J.W. CONGREGATION SUPPORT, INC. (Continued)

1024763959

Owner/Operator City,State,Zip:	WALLKILL, NY 12589
Owner/Operator Telephone:	845-524-1429
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20181008
Handler Name:	J.W. CONGREGATION SUPPORT, INC.
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found
-------------	---------------------

Evaluation Action Summary:

Evaluations:	No Evaluations Found
--------------	----------------------

B7
WNW
< 1/8
0.086 mi.
456 ft.

NEW WAVE AUTO ACCESSORIES INC
12441 MAGNOLIA ST STE F
GARDEN GROVE, CA 92841

EDR Hist Auto 1021400239
N/A

Site 1 of 2 in cluster B

Relative:
Lower

EDR Hist Auto

Actual:
73 ft.

Year:	Name:	Type:
2001	PING LING TEXACO INC	Gasoline Service Stations
2002	SENSIBLE AUTO INC	General Automotive Repair Shops
2002	PING LING TEXACO INC	Gasoline Service Stations
2002	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops
2003	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops
2003	PING LING TEXACO INC	Gasoline Service Stations
2003	SENSIBLE AUTO INC	General Automotive Repair Shops
2004	PING LING TEXACO INC	Gasoline Service Stations
2004	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops
2004	SENSIBLE AUTO INC	General Automotive Repair Shops
2005	SENSIBLE AUTO INC	General Automotive Repair Shops
2005	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops
2006	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops
2006	SENSIBLE AUTO INC	General Automotive Repair Shops
2007	SENSIBLE AUTO INC	General Automotive Repair Shops
2007	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

NEW WAVE AUTO ACCESSORIES INC (Continued)

1021400239

2008	SENSIBLE AUTO INC	General Automotive Repair Shops
2008	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops
2009	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops
2010	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops
2011	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops
2012	NEW WAVE AUTO ACCESSORIES INC	General Automotive Repair Shops

B8
WNW
 < 1/8
 0.086 mi.
 456 ft.

SEASIDE CLEANERS INC
12441 MAGNOLIA ST STE F
GARDEN GROVE, CA 92841

EDR Hist Cleaner **1018921040**
 N/A

Site 2 of 2 in cluster B

Relative: EDR Hist Cleaner
 Lower

Actual: 73 ft.	Year: Name:	Type:
	2001 SEASIDE CLEANERS INC	Drycleaning Plants, Except Rugs, NEC
	2002 SEASIDE CLEANERS INC	Drycleaning Plants, Except Rugs, NEC
	2003 SEASIDE CLEANERS INC	Drycleaning Plants, Except Rugs, NEC
	2004 SEASIDE CLEANERS INC	Drycleaning Plants, Except Rugs, NEC

9
WSW
 < 1/8
 0.108 mi.
 570 ft.

VERNS MOBIL SERVICE
8971 MARY HILL DR
GARDEN GROVE, CA 92641

EDR Hist Auto **1022021501**
 N/A

Relative: EDR Hist Auto
 Lower

Actual: 72 ft.	Year: Name:	Type:
	1991 VERNS MOBIL SERV	Gasoline Service Stations
	1992 VERNS MOBIL SERVICE	Gasoline Service Stations
	1993 VERNS MOBIL SERVICE	Gasoline Service Stations

10
NNW
 1/8-1/4
 0.159 mi.
 837 ft.

PHILLIPS, JAMES
9032 HEALEY DRIVE
GARDEN GROVE, CA 92841

RCRA NonGen / NLR **1024761406**
CAC002981266

Relative: Higher

RCRA NonGen / NLR:	
Date Form Received by Agency:	20180920
Handler Name:	PHILLIPS, JAMES
Handler Address:	9032 HEALEY DRIVE
Handler City,State,Zip:	GARDEN GROVE, CA 92841
EPA ID:	CAC002981266
Contact Name:	PHILLIPS, JAMES
Contact Address:	9032 HEALEY DRIVE
Contact City,State,Zip:	GARDEN GROVE, CA 92841
Contact Telephone:	714-927-0793
Contact Fax:	Not reported
Contact Email:	ANDREW@PWSEI.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

PHILLIPS, JAMES (Continued)

1024761406

Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	9032 HEALEY DRIVE
Mailing City, State, Zip:	GARDEN GROVE, CA 92841
Owner Name:	PHILLIPS, JAMES
Owner Type:	Other
Operator Name:	PHILLIPS, JAMES
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PHILLIPS, JAMES (Continued)

1024761406

Addressed Significant Non-Complier Universe: No
Significant Non-Complier With a Compliance Schedule Universe: No
Financial Assurance Required: Not reported
Handler Date of Last Change: 20181001
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:

Owner/Operator Indicator: Owner
Owner/Operator Name: PHILLIPS, JAMES
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 9032 HEALEY DRIVE
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 714-927-0793
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: PHILLIPS, JAMES
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 9032 HEALEY DRIVE
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 714-927-0793
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 20180920
Handler Name: PHILLIPS, JAMES
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

PHILLIPS, JAMES (Continued)

1024761406

Facility Has Received Notices of Violations:
 Violations: No Violations Found

Evaluation Action Summary:
 Evaluations: No Evaluations Found

11
South
1/8-1/4
0.192 mi.
1013 ft.

BRIAN BUI
12682 LUCILLE AVE
GARDEN GROVE, CA 92841

RCRA NonGen / NLR

1026713436
CAC003101748

Relative:
Lower
Actual:
71 ft.

RCRA NonGen / NLR:
 Date Form Received by Agency: 20210120
 Handler Name: BRIAN BUI
 Handler Address: 12682 LUCILLE AVE
 Handler City,State,Zip: GARDEN GROVE, CA 92841
 EPA ID: CAC003101748
 Contact Name: BRIAN GUI
 Contact Address: 12682 LUCILLE AVE
 Contact City,State,Zip: GARDEN GROVE, CA 92841
 Contact Telephone: 714-902-7546
 Contact Fax: Not reported
 Contact Email: KARLA@SUPERIORENV.COM
 Contact Title: Not reported
 EPA Region: 09
 Land Type: Not reported
 Federal Waste Generator Description: Not a generator, verified
 Non-Notifier: Not reported
 Biennial Report Cycle: Not reported
 Accessibility: Not reported
 Active Site Indicator: Not reported
 State District Owner: Not reported
 State District: Not reported
 Mailing Address: 12682 LUCILLE AVE
 Mailing City,State,Zip: GARDEN GROVE, CA 92841
 Owner Name: BRIAN GUI
 Owner Type: Other
 Operator Name: BRIAN GUI
 Operator Type: Other
 Short-Term Generator Activity: No
 Importer Activity: No
 Mixed Waste Generator: No
 Transporter Activity: No
 Transfer Facility Activity: No
 Recycler Activity with Storage: No
 Small Quantity On-Site Burner Exemption: No
 Smelting Melting and Refining Furnace Exemption: No
 Underground Injection Control: No
 Off-Site Waste Receipt: No
 Universal Waste Indicator: No
 Universal Waste Destination Facility: No
 Federal Universal Waste: No
 Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
 Active Site Converter Treatment storage and Disposal Facility: Not reported
 Active Site State-Reg Treatment Storage and Disposal Facility: Not reported

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

BRIAN BUI (Continued)

1026713436

Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDs Where RCRA CA has Been Imposed Universe:	No
TSDs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20210226
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	BRIAN GUI
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	12682 LUCILLE AVE
Owner/Operator City,State,Zip:	GARDEN GROVE, CA 92841
Owner/Operator Telephone:	714-902-7546
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	BRIAN GUI
Legal Status:	Other

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BRIAN BUI (Continued)

1026713436

Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 12682 LUCILLE AVE
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 714-902-7546
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 20210120
Handler Name: BRIAN BUI
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:

NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

12
ENE
1/8-1/4
0.195 mi.
1030 ft.

JOHN O'DONNELL
12421 JEROME ST
GARDEN GROVE, CA 92841

RCRA NonGen / NLR 1024775864
CAC002995796

Relative:
Higher
Actual:
76 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 20190109
Handler Name: JOHN O'DONNELL
Handler Address: 12421 JEROME ST
Handler City,State,Zip: GARDEN GROVE, CA 92841
EPA ID: CAC002995796
Contact Name: JOHN O'DONNELL
Contact Address: 12421 JEROME ST
Contact City,State,Zip: GARDEN GROVE, CA 92841
Contact Telephone: 714-322-2920
Contact Fax: Not reported
Contact Email: MANIFEST.SIRRIS@GMAIL.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

JOHN O'DONNELL (Continued)

1024775864

Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	12421 JEROME ST
Mailing City,State,Zip:	GARDEN GROVE, CA 92841
Owner Name:	JOHN O'DONNELL
Owner Type:	Other
Operator Name:	JOHN O'DONNELL
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JOHN O'DONNELL (Continued)

1024775864

Significant Non-Complier With a Compliance Schedule Universe: No
Financial Assurance Required: Not reported
Handler Date of Last Change: 20190222
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:

Owner/Operator Indicator: Operator
Owner/Operator Name: JOHN O'DONNELL
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 12421 JEROME ST
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 714-322-2920
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: JOHN O'DONNELL
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 12421 JEROME ST
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 714-322-2920
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 20190109
Handler Name: JOHN O'DONNELL
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

JOHN O'DONNELL (Continued)

1024775864

Facility Has Received Notices of Violations:
 Violations: No Violations Found

Evaluation Action Summary:
 Evaluations: No Evaluations Found

13
SW
1/8-1/4
0.213 mi.
1127 ft.

JOHNNY NGUYEN
8911 ANN CROSS DR
GARDEN GROVE, CA 92841

RCRA NonGen / NLR

1025833121
CAC003012695

Relative:
Lower
Actual:
69 ft.

RCRA NonGen / NLR:	
Date Form Received by Agency:	20190430
Handler Name:	JOHNNY NGUYEN
Handler Address:	8911 ANN CROSS DR
Handler City,State,Zip:	GARDEN GROVE, CA 92841
EPA ID:	CAC003012695
Contact Name:	JOHNNY NGUYEN
Contact Address:	8911 ANN CROSS DR
Contact City,State,Zip:	GARDEN GROVE, CA 92841
Contact Telephone:	714-653-5611
Contact Fax:	Not reported
Contact Email:	NANCYRUIZ@ALLIANCE-ENVIRO.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	8911 ANN CROSS DR
Mailing City,State,Zip:	GARDEN GROVE, CA 92841
Owner Name:	JOHNNY NGUYEN
Owner Type:	Other
Operator Name:	JOHNNY NGUYEN
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

JOHNNY NGUYEN (Continued)

1025833121

Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDs Where RCRA CA has Been Imposed Universe:	No
TSDs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20190627
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	JOHNNY NGUYEN
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	8911 ANN CROSS DR
Owner/Operator City,State,Zip:	GARDEN GROVE, CA 92841
Owner/Operator Telephone:	714-653-5611
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	JOHNNY NGUYEN
Legal Status:	Other

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JOHNNY NGUYEN (Continued)

1025833121

Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 8911 ANN CROSS DR
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 714-653-5611
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 20190430
Handler Name: JOHNNY NGUYEN
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

14
ESE
1/8-1/4
0.216 mi.
1141 ft.

CASSANDRA WILLIAMS
12601 JEROME LN
GARDEN GROVE, CA 92841

RCRA NonGen / NLR 1026052553
CAC003059449

Relative:
Higher
Actual:
74 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 20200310
Handler Name: CASSANDRA WILLIAMS
Handler Address: 12601 JEROME LN
Handler City,State,Zip: GARDEN GROVE, CA 92841-4805
EPA ID: CAC003059449
Contact Name: CASSANDRA WILLIAMS
Contact Address: 12601 JEROME LN
Contact City,State,Zip: GARDEN GROVE, CA 92841-4805
Contact Telephone: 435-650-9144
Contact Fax: Not reported
Contact Email: BILLIAMS_KASSANDRI002@AOL.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

CASSANDRA WILLIAMS (Continued)

1026052553

Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	12601 JEROME LN
Mailing City,State,Zip:	GARDEN GROVE, CA 92841-4805
Owner Name:	CASSANDRA WILLIAMS
Owner Type:	Other
Operator Name:	CASSANDRA WILLIAMS
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CASSANDRA WILLIAMS (Continued)

1026052553

Significant Non-Complier With a Compliance Schedule Universe: No
Financial Assurance Required: Not reported
Handler Date of Last Change: 20200313
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:

Owner/Operator Indicator: Operator
Owner/Operator Name: CASSANDRA WILLIAMS
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 12601 JEROME LN
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841-4805
Owner/Operator Telephone: 435-650-9144
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: CASSANDRA WILLIAMS
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 12601 JEROME LN
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841-4805
Owner/Operator Telephone: 435-650-9144
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 20200310
Handler Name: CASSANDRA WILLIAMS
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

CASSANDRA WILLIAMS (Continued)

1026052553

Facility Has Received Notices of Violations:
 Violations: No Violations Found

Evaluation Action Summary:
 Evaluations: No Evaluations Found

15
ENE
1/8-1/4
0.230 mi.
1214 ft.

MARK ANDERSON
12332 JEROME ST.
GARDEN GROVE, CA 92841

RCRA NonGen / NLR

1026714200
CAC003102551

Relative:
Higher
Actual:
78 ft.

RCRA NonGen / NLR:		
Date Form Received by Agency:		20210126
Handler Name:	MARK ANDERSON	
Handler Address:		12332 JEROME ST.
Handler City,State,Zip:		GARDEN GROVE, CA 92841
EPA ID:		CAC003102551
Contact Name:		MARK ANDERSON
Contact Address:		12332 JEROME ST.
Contact City,State,Zip:		GARDEN GROVE, CA 92841
Contact Telephone:		714-232-6243
Contact Fax:		Not reported
Contact Email:		ENKAY@ENKAYENGINEERING.COM
Contact Title:		Not reported
EPA Region:		09
Land Type:		Not reported
Federal Waste Generator Description:		Not a generator, verified
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Not reported
State District Owner:		Not reported
State District:		Not reported
Mailing Address:		12332 JEROME ST.
Mailing City,State,Zip:		GARDEN GROVE, CA 92841
Owner Name:		MARK ANDERSON
Owner Type:		Other
Operator Name:		MARK ANDERSON
Operator Type:		Other
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

MARK ANDERSON (Continued)

1026714200

Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDs Where RCRA CA has Been Imposed Universe:	No
TSDs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20210226
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	MARK ANDERSON
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	12332 JEROME ST.
Owner/Operator City,State,Zip:	GARDEN GROVE, CA 92841
Owner/Operator Telephone:	714-232-6243
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	MARK ANDERSON
Legal Status:	Other

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

MARK ANDERSON (Continued)

1026714200

Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	12332 JEROME ST.
Owner/Operator City,State,Zip:	GARDEN GROVE, CA 92841
Owner/Operator Telephone:	714-232-6243
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20210126
Handler Name:	MARK ANDERSON
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found
-------------	---------------------

Evaluation Action Summary:

Evaluations:	No Evaluations Found
--------------	----------------------

16
ESE
1/8-1/4
0.246 mi.
1300 ft.

KELLY LASCONIA
12571 OHMER WAY
GARDEN GROVE, CA 92841

RCRA NonGen / NLR **1026049061**
CAC003055779

Relative:
Higher
Actual:
75 ft.

RCRA NonGen / NLR:	
Date Form Received by Agency:	20200213
Handler Name:	KELLY LASCONIA
Handler Address:	12571 OHMER WAY
Handler City,State,Zip:	GARDEN GROVE, CA 92841
EPA ID:	CAC003055779
Contact Name:	KELLY LASCONIA
Contact Address:	12571 OHMER WAY
Contact City,State,Zip:	GARDEN GROVE, CA 92841
Contact Telephone:	714-595-4241
Contact Fax:	Not reported
Contact Email:	DONNAC@PWSEI.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

KELLY LASCONIA (Continued)

1026049061

Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	12571 OHMER WAY
Mailing City,State,Zip:	GARDEN GROVE, CA 92841
Owner Name:	KELLY LASCONIA
Owner Type:	Other
Operator Name:	KELLY LASCONIA
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KELLY LASCONIA (Continued)

1026049061

Significant Non-Complier With a Compliance Schedule Universe: No
Financial Assurance Required: Not reported
Handler Date of Last Change: 20200306
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:

Owner/Operator Indicator: Operator
Owner/Operator Name: KELLY LASCONIA
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 12571 OHMER WAY
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 714-595-4241
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: KELLY LASCONIA
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 12571 OHMER WAY
Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
Owner/Operator Telephone: 714-595-4241
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 20200213
Handler Name: KELLY LASCONIA
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

KELLY LASCONIA (Continued)

1026049061

Facility Has Received Notices of Violations:
 Violations: No Violations Found

Evaluation Action Summary:
 Evaluations: No Evaluations Found

17
WNW
1/8-1/4
0.249 mi.
1317 ft.

TERESA VU
12355 PENTAGON ST
GARDEN GROVE, CA 92841

RCRA NonGen / NLR

1027077606
CAC003149452

Relative:
Lower
Actual:
71 ft.

RCRA NonGen / NLR:	
Date Form Received by Agency:	20211119
Handler Name:	TERESA VU
Handler Address:	12355 PENTAGON ST
Handler City,State,Zip:	GARDEN GROVE, CA 92841
EPA ID:	CAC003149452
Contact Name:	TERESA VU
Contact Address:	12355 PENTAGON ST
Contact City,State,Zip:	GARDEN GROVE, CA 92841
Contact Telephone:	949-698-3936
Contact Fax:	Not reported
Contact Email:	SCHEDULING@PWSEI.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	12355 PENTAGON ST
Mailing City,State,Zip:	GARDEN GROVE, CA 92841
Owner Name:	TERESA VU
Owner Type:	Other
Operator Name:	TERESA VU
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

TERESA VU (Continued)

1027077606

Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDs Where RCRA CA has Been Imposed Universe:	No
TSDs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20211122
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	TERESA VU
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	12355 PENTAGON ST
Owner/Operator City,State,Zip:	GARDEN GROVE, CA 92841
Owner/Operator Telephone:	949-698-3936
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	TERESA VU
Legal Status:	Other

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

TERESA VU (Continued)

1027077606

Date Became Current: Not reported
 Date Ended Current: Not reported
 Owner/Operator Address: 12355 PENTAGON ST
 Owner/Operator City,State,Zip: GARDEN GROVE, CA 92841
 Owner/Operator Telephone: 949-698-3936
 Owner/Operator Telephone Ext: Not reported
 Owner/Operator Fax: Not reported
 Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 20211119
 Handler Name: TERESA VU
 Federal Waste Generator Description: Not a generator, verified
 State District Owner: Not reported
 Large Quantity Handler of Universal Waste: No
 Recognized Trader Importer: No
 Recognized Trader Exporter: No
 Spent Lead Acid Battery Importer: No
 Spent Lead Acid Battery Exporter: No
 Current Record: Yes
 Non Storage Recycler Activity: No
 Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:

NAICS Code: 56299
 NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

18
 NNW
 1/4-1/2
 0.409 mi.
 2162 ft.

STATER BROS. MARKETS 032
8888 CHAPMAN AVE
GARDEN GROVE, CA 92841

SWRCY S107136912
CERS HAZ WASTE N/A
CERS

Relative:
Higher
Actual:
75 ft.

SWRCY:
 Name: CRV RECYCLING SOLUTIONS
 Address: 8888 CHAPMAN AVE
 City,State,Zip: GARDEN GROVE, CA 92841
 Reg Id: Not reported
 Cert Id: RC307663.001
 Mailing Address: 26104 Adamor Rd
 Mailing City: Calabasas
 Mailing State: CA
 Mailing Zip Code: 91302
 Website: Not reported
 Email: Not reported
 Phone Number: (818) 203-3035
 Rural: N
 Operation Begin Date: 10/22/2021
 Aluminium: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

STATER BROS. MARKETS 032 (Continued)

S107136912

Glass: Not reported
Plastic: Not reported
Bimetal: Not reported
Hours of Operation: Mon - Sun 9:00 am - 5:00 pm, Closed 1:00 pm - 1:30 pm
Organization ID: Not reported
Organization Name: Recycling Solution Sites Inc

CERS HAZ WASTE:

Name: STATER BROS. MARKETS 032
Address: 8888 CHAPMAN AVE
City,State,Zip: GARDEN GROVE, CA 92841
Site ID: 156973
CERS ID: 10544422
CERS Description: Hazardous Waste Generator

CERS:

Name: STATER BROS. MARKETS 032
Address: 8888 CHAPMAN AVE
City,State,Zip: GARDEN GROVE, CA 92841
Site ID: 156973
CERS ID: 10544422
CERS Description: Chemical Storage Facilities

Evaluation:

Eval General Type: Other/Unknown
Eval Date: 04-17-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Emergency plan reviewed by M Sutphin . Please correct CUPA phone number to 714-433-6000 Facility has disclosed two types of freon coolant Disclosure reviewed and accepted by M Sutphin
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-14-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review in CERS, accepted facility info this date.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-20-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Mark Sutphin on site to conduct a routine hazardous waste inspection. Facility EPA ID # CAL000340292 The grocery store generates waste oxidizers, toxics,corrosives and flammables. All Hazardous waste were observed stored in properly labeled 5 gallon buckets. The facility has less than 100 kilograms of hazardous waste stored at site . Please not that the facility must dispose of all hazardous waste within 90 days of generating a total of 100 Kilograms of hazardous waste Hazardous waste containers were properly labeled and covered Each container and portable tank holding hazardous waste was marked with the following

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

STATER BROS. MARKETS 032 (Continued)

S107136912

information: 1. "HAZARDOUS WASTE" 2. Waste (name) 3. Hazardous property of the waste (e.g. - toxic, flammable, corrosive, etc.) 4. Physical state of the waste (liquid or solid) 5. Name and address of the business 6. The Accumulation start date

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-04-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Mark Sutphin on site to conduct a routine HMBP inspection. Permission to enter, inspect, and take photographs granted by Marcus Ortega the assistant Manager Facility EPA ID # CAL000340292 The grocery store uses Freon for refrigeration and freeing and the from is regulated under HMBP for 2000 cubic feet or greater CERS submittal 10544422 was not accepted because the fron was not listed Reviewed by M Sutphin and not accepted Facility lists Helium as a regulated material but should also include the refrigerant (probably Freon) used at site if over 200 cubic feet

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-09-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: accepted in CERS
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-20-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Mark Sutphin on site to conduct a routine hazardous waste inspection. Facility EPA ID # CAL000340292 The grocery store has two types of freon listed on the Hazmat Business Plan.d with the following information:

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 07-23-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: PER REVIEW OF cers 10544422 THIS FACILITY DOES NOT HAVE HAZARDOUS WASTE AT QUANTITIES THAT ARE REPORTABLE ON THE HMBP

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

STATER BROS. MARKETS 032 (Continued)

S107136912

Eval Date: 07-23-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted by M Sutphin Note that the R-22,R-134A, AND R-404A are listed below the reportable quantity of 1000 cubic feet and are not required to be listed facility also lists reportable quantities of helium
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 07-28-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: An onsite hazardous materials inspection of this facility was conducted this date. Access to the facility was provided by Ryan Brousseau, Store Manager. The hazardous materials disclosed in CERS were observed. The site map appears to be accurate. Appropriate training documentation was reviewed. A copy of this inspection report will be emailed to: store32chapman@staterbros.com
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-08-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: 7-23-15 review was accepted. This old submission is accepted.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-25-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: CERS reviewed declined HM, accepted rest The submittal was declined, please make the following changes and resubmit within 30 days. The storage pressure on both of the hazardous materials should be above ambient if it is stored under pressure.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-07-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: The following documents were received and ACCEPTED on the eSubmit Portal: Business Activities Form Business Owner/Operator Form Chemical Inventory for 1 Facility site Map
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

STATER BROS. MARKETS 032 (Continued)

S107136912

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-20-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Mark Sutphin on site to conduct a routine hazardous waste inspection. Facility EPA ID # CAL000340292 The grocery store generates waste oxidizers, toxics, corrosives and flammables. All Hazardous waste were observed stored in properly labeled 5 gallon buckets. The facility has less than 100 kilograms of hazardous waste stored at site . Please note that the facility must dispose of all hazardous waste within 90 days of generating a total of 100 Kilograms of hazardous waste Hazardous waste containers were properly labeled and covered Each container and portable tank holding hazardous waste was marked with the following information: 1. "HAZARDOUS WASTE" 2. Waste (name) 3. Hazardous property of the waste (e.g. - toxic, flammable, corrosive, etc.) 4. Physical state of the waste (liquid or solid) 5. Name and address of the business 6. The Accumulation start date
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 07-28-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine hazardous waste inspection. Access to the facility, and permission to inspect and take photographs (if needed) was provided by Ryan Brousseau, Store Manager, and included the areas noted below. - Interior of store - Hazardous waste storage area The containers were observed properly stored and labeled. Hazardous waste disposal documents were reviewed. Last shipment of hazardous waste in March 2021. A copy of this report will be sent to: store32chapman@staterbros.com
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-04-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Mark Sutphin on site to conduct a routine hazardous waste inspection. Permission to enter, inspect, and take photographs granted by Marcus Ortega the assistant Manager Facility EPA ID # CAL000340292 The grocery store generates waste oxidizers, toxics,corrosives and flammables. All Hazardous waste were observed stored in properly labeled 5 gaooln busckets. The facility has less than 100 kilograms of hazardous waste stored at site and per Marcus they will dispose of all waste once they generate 100 kilograms The labels on the containers have accumulation start dates as old as 2009 Per marcus no manifests have been generated yet The perimeter of the facility was also inspected; no obvious signs of releases were noted. Hazardous waste containers were properly labeled and covered Each container and portable tank holding hazardous waste was marked with the following information: 1. "HAZARDOUS WASTE" 2. Waste (name) 3. Hazardous property of the waste (e.g. - toxic, [Truncated])
Eval Division: Orange County Environmental Health

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

STATER BROS. MARKETS 032 (Continued)

S107136912

Eval Program: HW
Eval Source: CERS,

Coordinates:
Site ID: 156973
Facility Name: Stater Bros. Markets 032
Env Int Type Code: HWG
Program ID: 10544422
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 33.787930
Longitude: -117.976280

Affiliation:
Affiliation Type Desc: Identification Signer
Entity Name: Giovanna Moreno
Entity Title: Environmental Health and Safety Manager
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Legal Owner
Entity Name: Stater Bros. Markets
Entity Title: Not reported
Affiliation Address: P.O. Box 150
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 92408
Affiliation Phone: (909) 733-5000,

Affiliation Type Desc: Parent Corporation
Entity Name: Stater Bros. Markets
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Document Preparer
Entity Name: Arianna Nunez
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Environmental Contact
Entity Name: Giovanna Moreno

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

STATER BROS. MARKETS 032 (Continued)

S107136912

Entity Title: Not reported
Affiliation Address: P.O. Box 150
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92408
Affiliation Phone: ,

Affiliation Type Desc: Operator
Entity Name: Stater Bros. Markets 032
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (909) 733-5000,

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 8888 Chapman Avenue
Affiliation City: Garden Grove
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92841
Affiliation Phone: ,

Affiliation Type Desc: Property Owner
Entity Name: Stater Bros. Markets
Entity Title: Not reported
Affiliation Address: P.O. Box 150
Affiliation City: San Bernardino
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 92408
Affiliation Phone: (909) 733-5000,

Affiliation Type Desc: CUPA District
Entity Name: Orange County Env Health
Entity Title: Not reported
Affiliation Address: 1241 East Dyer RoadSuite 120
Affiliation City: Santa Ana
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92705-5611
Affiliation Phone: (714) 433-6406,

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

C19 **KIMS AUTO REPAIR SERVICE**
NNW **8971 CHAPMAN AVE**
1/4-1/2 **GARDEN GROVE, CA 92841**
0.456 mi.
2407 ft. **Site 1 of 3 in cluster C**

LUST **U003783948**
UST **N/A**
SWEEPS UST

Relative:
Higher
Actual:
76 ft.

LUST:
Name: KIM'S AUTO
Address: 8971 CHAPMAN
City,State,Zip: GARDEN GROVE, CA 92841
Lead Agency: ORANGE COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605999102
Global Id: T0605999102
Latitude: 33.788637
Longitude: -117.975996
Status: Completed - Case Closed
Status Date: 06/03/2013
Case Worker: KL
RB Case Number: 083003677T
Local Agency: ORANGE COUNTY LOP
File Location: Local Agency
Local Case Number: 00UT018
Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: Gasoline
Site History: Please refer to recent Site Documents or Monitoring Reports in GeoTracker for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.

LUST:
Global Id: T0605999102
Contact Type: Local Agency Caseworker
Contact Name: KEVIN LAMBERT
Organization Name: ORANGE COUNTY LOP
Address: 1241 E DYER ROAD SUITE 120
City: SANTA ANA
Email: klambert@ochca.com
Phone Number: 7144336261

Global Id: T0605999102
Contact Type: Regional Board Caseworker
Contact Name: ROSE SCOTT
Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 MAIN STREET, SUITE 500
City: RIVERSIDE
Email: rose.scott@waterboards.ca.gov
Phone Number: 9513206375

LUST:
Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 08/24/2012
Action: Clean Up Fund - Case Closure Review Summary Report (RSR)

Global Id: T0605999102
Action Type: Other
Date: 03/01/2000
Action: Leak Discovery

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KIMS AUTO REPAIR SERVICE (Continued)

U003783948

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 05/21/2008
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 02/26/2007
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 04/27/2007
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 11/21/2006
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 02/22/2007
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 09/10/2007
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 11/20/2006
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 07/07/2003
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 12/31/2003
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 06/14/2004
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 04/15/2003
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KIMS AUTO REPAIR SERVICE (Continued)

U003783948

Date: 04/18/2005
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 02/10/2004
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 10/01/2008
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 10/24/2008
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 10/01/2008
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 07/27/2009
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 03/04/2013
Action: Notification - Public Notice of Case Closure

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 03/04/2013
Action: Notification - Public Notice of Case Closure

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 06/03/2013
Action: Closure/No Further Action Letter

Global Id: T0605999102
Action Type: REMEDIATION
Date: 03/05/2002
Action: In Situ Physical/Chemical Treatment (other than SVE)

Global Id: T0605999102
Action Type: REMEDIATION
Date: 04/22/2005
Action: Soil Vapor Extraction (SVE)

Global Id: T0605999102
Action Type: Other
Date: 03/01/2000
Action: Leak Began

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KIMS AUTO REPAIR SERVICE (Continued)

U003783948

Global Id: T0605999102
Action Type: Other
Date: 06/29/2000
Action: Leak Reported

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 12/13/2010
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 05/03/2011
Action: Staff Letter

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 03/25/2013
Action: Notification - Preclosure

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 05/30/2013
Action: LOP Case Closure Summary to RB

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 03/04/2013
Action: Notification - Public Notice of Case Closure

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 06/02/2010
Action: Clean Up Fund - Case Closure Review Summary Report (RSR)

Global Id: T0605999102
Action Type: ENFORCEMENT
Date: 07/08/2009
Action: Staff Letter

LUST:

Global Id: T0605999102
Status: Open - Case Begin Date
Status Date: 03/01/2000

Global Id: T0605999102
Status: Open - Remediation
Status Date: 04/22/2005

Global Id: T0605999102
Status: Open - Eligible for Closure
Status Date: 03/25/2013

Global Id: T0605999102
Status: Completed - Case Closed
Status Date: 06/03/2013

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KIMS AUTO REPAIR SERVICE (Continued)

U003783948

ORANGE CO. LUST:

Name: KIM'S AUTO
Address: 8971 CHAPMAN AVE
City,State,Zip: GARDEN GROVE, CA 92841
Region: ORANGE
Facility Id: 00UT018
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: 06/03/2013
Record ID: RO0001540

UST:

Name: KIMS AUTO REPAIR SERVICE
Address: 8971 CHAPMAN AVE
City,State,Zip: GARDEN GROVE, CA 92841
Facility ID: 7044
Permitting Agency: ORANGE COUNTY
CERSID: Not reported
Latitude: 33.790101
Longitude: -117.974384

SWEEPS UST:

Name: KIMS AUTO REPAIR SERVICE
Address: 8971 CHAPMAN AVE
City: GARDEN GROVE
Status: Active
Comp Number: 7044
Number: 9
Board Of Equalization: 44-016560
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-007044-000002
Tank Status: A
Capacity: 280
Active Date: Not reported
Tank Use: PETROLEUM
STG: P
Content: Not reported
Number Of Tanks: 8

Name: KIMS AUTO REPAIR SERVICE
Address: 8971 CHAPMAN AVE
City: GARDEN GROVE
Status: Active
Comp Number: 7044
Number: 9
Board Of Equalization: 44-016560
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-007044-000003
Tank Status: A
Capacity: 3000
Active Date: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KIMS AUTO REPAIR SERVICE (Continued)

U003783948

Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: Not reported

Name: KIMS AUTO REPAIR SERVICE
Address: 8971 CHAPMAN AVE
City: GARDEN GROVE
Status: Active
Comp Number: 7044
Number: 9
Board Of Equalization: 44-016560
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-007044-000004
Tank Status: A
Capacity: 4000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: Not reported

Name: KIMS AUTO REPAIR SERVICE
Address: 8971 CHAPMAN AVE
City: GARDEN GROVE
Status: Active
Comp Number: 7044
Number: 9
Board Of Equalization: 44-016560
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-007044-000005
Tank Status: A
Capacity: 4000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: Not reported

Name: KIMS AUTO REPAIR SERVICE
Address: 8971 CHAPMAN AVE
City: GARDEN GROVE
Status: Active
Comp Number: 7044
Number: 9
Board Of Equalization: 44-016560
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-007044-000006

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KIMS AUTO REPAIR SERVICE (Continued)

U003783948

Tank Status: A
Capacity: 12000
Active Date: Not reported
Tank Use: UNKNOWN
STG: P
Content: Not reported
Number Of Tanks: Not reported

Name: KIMS AUTO REPAIR SERVICE
Address: 8971 CHAPMAN AVE
City: GARDEN GROVE
Status: Active
Comp Number: 7044
Number: 9
Board Of Equalization: 44-016560
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-007044-000007
Tank Status: A
Capacity: 6000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Name: KIMS AUTO REPAIR SERVICE
Address: 8971 CHAPMAN AVE
City: GARDEN GROVE
Status: Active
Comp Number: 7044
Number: 9
Board Of Equalization: 44-016560
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-007044-000008
Tank Status: A
Capacity: 8000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Name: KIMS AUTO REPAIR SERVICE
Address: 8971 CHAPMAN AVE
City: GARDEN GROVE
Status: Active
Comp Number: 7044
Number: 9
Board Of Equalization: 44-016560
Referral Date: 09-30-92
Action Date: 09-15-92

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KIMS AUTO REPAIR SERVICE (Continued)

U003783948

Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-007044-000009
Tank Status: A
Capacity: 12000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

**C20
NNW
1/4-1/2
0.456 mi.
2407 ft.**

**KIM'S AUTO
8971 CHAPMAN
GARDEN GROVE, CA 92841**

**LUST S104539404
N/A**

Site 2 of 3 in cluster C

**Relative:
Higher
Actual:
76 ft.**

LUST REG 8:
Name: KIM'S AUTO
Address: 8971 CHAPMAN
City: GARDEN GROVE
Region: 8
County: Orange
Regional Board: Santa Ana Region
Facility Status: Remediation Plan
Case Number: 083003677T
Local Case Num: 00UT018
Case Type: Soil only
Substance: Gasoline
Qty Leaked: 0
Abate Method: Not reported
Cross Street: Not reported
Enf Type: SEL
Funding: Not reported
How Discovered: Tank Closure
How Stopped: Close Tank
Leak Cause: Unknown
Leak Source: Tank
Global ID: T0605999102
How Stopped Date: 9/9/9999
Enter Date: Not reported
Date Confirmation of Leak Began: Not reported
Date Preliminary Assessment Began: 8/20/2001
Discover Date: 3/1/2000
Enforcement Date: Not reported
Close Date: Not reported
Date Prelim Assessment Workplan Submitted: 6/29/2000
Date Pollution Characterization Began: 11/8/2001
Date Remediation Plan Submitted: 3/5/2002
Date Remedial Action Underway: Not reported
Date Post Remedial Action Monitoring: Not reported
Enter Date: Not reported
GW Qualifies: =
Soil Qualifies: =
Operator: Not reported
Facility Contact: Not reported
Interim: Not reported
Oversite Program: LUST

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KIM'S AUTO (Continued)

S104539404

Latitude: 33.788637
Longitude: -117.975996
MTBE Date: 3/5/2004
Max MTBE GW: 430803
MTBE Concentration: 0
Max MTBE Soil: 793
MTBE Fuel: 1
MTBE Tested: MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class: *
Staff: RS
Staff Initials: SS
Lead Agency: Local Agency
Local Agency: 30000L
Hydr Basin #: Not reported
Beneficial: MUN
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Summary: Not reported

C21 NNW
1/4-1/2
0.456 mi.
2407 ft.

KIMS AUTO REPAIR
8971 CHAPMAN
GARDEN GROVE, CA 92641

Cortese **S113163893**
HAZNET **N/A**
HWTS

Site 3 of 3 in cluster C

Relative:
Higher
Actual:
76 ft.

CORTESE:
Name: KIM'S AUTO
Address: 8971 CHAPMAN
City,State,Zip: GARDEN GROVE, CA 92841
Region: CORTESE
Envirostor Id: Not reported
Global ID: T0605999102
Site/Facility Type: LUST CLEANUP SITE
Cleanup Status: COMPLETED - CASE CLOSED
Status Date: Not reported
Site Code: Not reported
Latitude: Not reported
Longitude: Not reported
Owner: Not reported
Enf Type: Not reported
Swat R: Not reported
Flag: active
Order No: Not reported
Waste Discharge System No: Not reported
Effective Date: Not reported
Region 2: Not reported
WID Id: Not reported
Solid Waste Id No: Not reported
Waste Management Uit Name: Not reported
File Name: Active Open

HAZNET:
Name: KIMS AUTO REPAIR
Address: 8971 CHAPMAN
Address 2: Not reported
City,State,Zip: GARDEN GROVE, CA 926410000

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KIMS AUTO REPAIR (Continued)

S113163893

Contact: --
Telephone: --
Mailing Name: Not reported
Mailing Address: 8971 CHAPMAN AVE

Year: 2002
Gepaid: CAL912884120
TSD EPA ID: CAD099452708
CA Waste Code: 221 - Waste oil and mixed oil
Disposal Method: R01 - Recycler
Tons: 1.786

Additional Info:

Year: 2002
Gen EPA ID: CAL912884120

Shipment Date: 20021126
Creation Date: 2/25/2003 18:31:38
Receipt Date: 20021127
Manifest ID: 22157899
Trans EPA ID: CAL000027718
Trans Name: Not reported
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSD EPA ID: CAD099452708
Trans Name: Not reported
TSD Alt EPA ID: Not reported
TSD Alt Name: Not reported
Waste Code Description: 221 - Waste oil and mixed oil
RCRA Code: Not reported
Meth Code: R01 - Recycler
Quantity Tons: 1.786
Waste Quantity: 470
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

HWTS:

Name: KIMS AUTO REPAIR
Address: 8971 CHAPMAN
Address 2: Not reported
City,State,Zip: GARDEN GROVE, CA 926410000
EPA ID: CAL912884120
Inactive Date: 06/30/1998
Create Date: 10/15/1991
Last Act Date: 04/19/2004
Mailing Name: Not reported
Mailing Address: 8971 CHAPMAN AVE
Mailing Address 2: Not reported
Mailing City,State,Zip: GARDEN GROVE, CA 928412304
Owner Name: KIM KWANG
Owner Address: 8971 CHAPMAN AVE

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

KIMS AUTO REPAIR (Continued)

S113163893

Owner Address 2: Not reported
 Owner City,State,Zip: GARDEN GROVE, CA 928412304
 Contact Name: --
 Contact Address: INACT PER 98VQ FINAL NOTICE
 Contact Address 2: - BATCH 4/27
 City,State,Zip: --, 99 --

Name: KIMS AUTO REPAIR
 Address: 8971 CHAPMAN
 Address 2: Not reported
 City,State,Zip: GARDEN GROVE, CA 928410000
 EPA ID: CAL000022717
 Inactive Date: 06/01/1997
 Create Date: 05/09/1990
 Last Act Date: 08/18/1999
 Mailing Name: Not reported
 Mailing Address: 8971 CHAPMAN AVE
 Mailing Address 2: Not reported
 Mailing City,State,Zip: GARDEN GROVE, CA 928410000
 Owner Name: KIM-KI KWANG
 Owner Address: --
 Owner Address 2: Not reported
 Owner City,State,Zip: --, 99 --
 Contact Name: --
 Contact Address: --
 Contact Address 2: Not reported
 City,State,Zip: --, 99 --

22
WNW
1/4-1/2
0.460 mi.
2431 ft.

MARAVEN, PETER & JEANNINE
12202 HAGA
GARDEN GROVE, CA 92641

HIST CORTESE **S105023868**
N/A

Relative:
Lower
Actual:
69 ft.

HIST CORTESE:
 edr_fname: MARAVEN, PETER & JEANNINE
 edr_fadd1: 12202 HAGA
 City,State,Zip: GARDEN GROVE, CA 92641
 Region: CORTESE
 Facility County Code: 18
 Reg By: WBC&D
 Reg Id: 6A189102N33

D23
South
1/4-1/2
0.495 mi.
2612 ft.

ARCO #1055
9001 GARDEN GROVE
GARDEN GROVE, CA 92844

LUST **S106174625**
Cortese **N/A**

Site 1 of 4 in cluster D

Relative:
Lower
Actual:
67 ft.

LUST REG 8:
 Name: ARCO #1055
 Address: 9001 GARDEN GROVE
 City: GARDEN GROVE
 Region: 8
 County: Orange
 Regional Board: Santa Ana Region

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

S106174625

Facility Status:	Remediation Plan
Case Number:	083000046T
Local Case Num:	89UT097
Case Type:	Other ground water affected
Substance:	Gasoline
Qty Leaked:	0
Abate Method:	Not reported
Cross Street:	Not reported
Enf Type:	SEL
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Close Tank
Leak Cause:	Unknown
Leak Source:	Tank
Global ID:	T0605900038
How Stopped Date:	9/9/9999
Enter Date:	Not reported
Date Confirmation of Leak Began:	5/22/1989
Date Preliminary Assessment Began:	5/25/1990
Discover Date:	5/23/1989
Enforcement Date:	Not reported
Close Date:	Not reported
Date Prelim Assessment Workplan Submitted:	5/23/1989
Date Pollution Characterization Began:	4/30/1992
Date Remediation Plan Submitted:	6/22/1995
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	=
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.7741121
Longitude:	-117.9750811
MTBE Date:	11/16/2001
Max MTBE GW:	1200
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	VJJ
Staff Initials:	SS
Lead Agency:	Local Agency
Local Agency:	30000L
Hydr Basin #:	Not reported
Beneficial:	MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported

CORTESE:

Name: ARCO #1055
Address: 9001 GARDEN GROVE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

S106174625

City,State,Zip: GARDEN GROVE, CA 92844
Region: CORTESE
Envirostor Id: Not reported
Global ID: T0605900038
Site/Facility Type: LUST CLEANUP SITE
Cleanup Status: COMPLETED - CASE CLOSED
Status Date: Not reported
Site Code: Not reported
Latitude: Not reported
Longitude: Not reported
Owner: Not reported
Enf Type: Not reported
Swat R: Not reported
Flag: active
Order No: Not reported
Waste Discharge System No: Not reported
Effective Date: Not reported
Region 2: Not reported
WID Id: Not reported
Solid Waste Id No: Not reported
Waste Management Uit Name: Not reported
File Name: Active Open

D24
South
1/4-1/2
0.495 mi.
2612 ft.

ARCO #1055
9001 GARDEN GROVE BLVD
GARDEN GROVE, CA 92641

CA FID UST S101609493
HIST CORTESE N/A

Site 2 of 4 in cluster D

Relative:
Lower
Actual:
67 ft.

CA FID UST:
Facility ID: 30000445
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 7145303565
Mail To: Not reported
Mailing Address: 17315 STUDEBAKER RD
Mailing Address 2: Not reported
Mailing City,St,Zip: GARDEN GROVE 92641
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

HIST CORTESE:
edr_fname: EXXON SERVICE STATION #79
edr_fadd1: 9001
City,State,Zip: GARDEN GROVE, CA 92641
Region: CORTESE
Facility County Code: 30
Reg By: LTNKA
Reg Id: 083000657T

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

S101609493

edr_fname: ARCO #1055
edr_fadd1: 9001
City,State,Zip: GARDEN GROVE, CA 92641
Region: CORTESE
Facility County Code: 30
Reg By: LTNKA
Reg Id: 083000046T

D25
South
1/4-1/2
0.495 mi.
2612 ft.
Relative:
Lower
Actual:
67 ft.

ARCO #1055
9001 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844

Site 3 of 4 in cluster D

LUST **U003937623**
UST **N/A**
SWEEPS UST
Orange Co. Industrial Site
HAZNET
CERS
HWTS

LUST:

Name: ARCO #1055
Address: 9001 GARDEN GROVE
City,State,Zip: GARDEN GROVE, CA 92844
Lead Agency: ORANGE COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900038
Global Id: T0605900038
Latitude: 33.7741121
Longitude: -117.9750811
Status: Completed - Case Closed
Status Date: 02/22/2016
Case Worker: KL
RB Case Number: 083000046T
Local Agency: ORANGE COUNTY LOP
File Location: Local Agency
Local Case Number: 89UT097
Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: Gasoline
Site History: Please refer to recent Site Documents or Monitoring Reports in GeoTracker for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.

LUST:

Global Id: T0605900038
Contact Type: Local Agency Caseworker
Contact Name: KEVIN LAMBERT
Organization Name: ORANGE COUNTY LOP
Address: 1241 E DYER ROAD SUITE 120
City: SANTA ANA
Email: klambert@ochca.com
Phone Number: 7144336261

Global Id: T0605900038
Contact Type: Regional Board Caseworker
Contact Name: VALERIE JAHN-BULL
Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 MAIN STREET, SUITE 500
City: RIVERSIDE
Email: valerie.jahn-bull@waterboards.ca.gov
Phone Number: 9517824903

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

LUST:

Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	05/07/2010
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	05/12/2011
Action:	File review
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	07/11/2012
Action:	Site Visit / Inspection / Sampling
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	06/24/1999
Action:	* Historical Enforcement
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	06/10/2005
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	07/22/2005
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	11/23/2005
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	08/14/2003
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	06/18/2004
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	11/22/2005
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	07/27/2006
Action:	Staff Letter
Global Id:	T0605900038

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Action Type:	ENFORCEMENT
Date:	06/07/2007
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	06/29/2007
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	07/11/2005
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	10/17/2005
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	10/09/2008
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	01/20/2009
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	02/03/2009
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	07/14/2009
Action:	Staff Letter
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	12/04/2014
Action:	Notification - Public Notice of Case Closure - #11/21/2014
Global Id:	T0605900038
Action Type:	ENFORCEMENT
Date:	03/04/2015
Action:	State Water Board Closure Order
Global Id:	T0605900038
Action Type:	Other
Date:	05/23/1989
Action:	Leak Discovery
Global Id:	T0605900038
Action Type:	RESPONSE
Date:	12/12/2012

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Action: Request for Closure - Regulator Responded

Global Id: T0605900038
Action Type: REMEDIATION
Date: 10/09/1991
Action: Pump & Treat (P&T) Groundwater

Global Id: T0605900038
Action Type: REMEDIATION
Date: 10/09/1991
Action: Soil Vapor Extraction (SVE)

Global Id: T0605900038
Action Type: ENFORCEMENT
Date: 09/29/2010
Action: File review

Global Id: T0605900038
Action Type: ENFORCEMENT
Date: 02/22/2016
Action: Closure/No Further Action Letter

Global Id: T0605900038
Action Type: ENFORCEMENT
Date: 01/12/2016
Action: Email Correspondence

Global Id: T0605900038
Action Type: Other
Date: 05/23/1989
Action: Leak Began

Global Id: T0605900038
Action Type: Other
Date: 05/23/1989
Action: Leak Reported

Global Id: T0605900038
Action Type: ENFORCEMENT
Date: 12/13/2012
Action: Letter - Notice

Global Id: T0605900038
Action Type: ENFORCEMENT
Date: 04/09/2013
Action: File review

Global Id: T0605900038
Action Type: ENFORCEMENT
Date: 12/24/2015
Action: File review

Global Id: T0605900038
Action Type: ENFORCEMENT
Date: 08/11/2011
Action: Staff Letter

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Global Id: T0605900038
Action Type: ENFORCEMENT
Date: 08/13/2013
Action: Notice of Responsibility

Global Id: T0605900038
Action Type: RESPONSE
Date: 09/09/9999
Action: Unknown

Global Id: T0605900038
Action Type: ENFORCEMENT
Date: 08/12/2009
Action: Staff Letter

LUST:

Global Id: T0605900038
Status: Open - Case Begin Date
Status Date: 05/22/1989

Global Id: T0605900038
Status: Open - Site Assessment
Status Date: 05/22/1989

Global Id: T0605900038
Status: Open - Site Assessment
Status Date: 05/23/1989

Global Id: T0605900038
Status: Open - Site Assessment
Status Date: 05/25/1990

Global Id: T0605900038
Status: Open - Remediation
Status Date: 10/09/1991

Global Id: T0605900038
Status: Open - Site Assessment
Status Date: 04/30/1992

Global Id: T0605900038
Status: Open - Remediation
Status Date: 06/22/1995

Global Id: T0605900038
Status: Open - Assessment & Interim Remedial Action
Status Date: 08/11/2011

Global Id: T0605900038
Status: Open - Eligible for Closure
Status Date: 04/09/2013

Global Id: T0605900038
Status: Completed - Case Closed
Status Date: 02/22/2016

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

ORANGE CO. LUST:

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City,State,Zip: GARDEN GROVE, CA 92844
Region: ORANGE
Facility Id: 89UT097
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: 02/29/2016
Record ID: RO0000845

UST:

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City,State,Zip: GARDEN GROVE, CA 92844
Facility ID: 4335
Permitting Agency: ORANGE COUNTY
CERSID: Not reported
Latitude: 33.775647
Longitude: -117.973483

SWEEPS UST:

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City: GARDEN GROVE
Status: Not reported
Comp Number: 4335
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-004335-000001
Tank Status: Not reported
Capacity: 6000
Active Date: Not reported
Tank Use: UNKNOWN
STG: PRODUCT
Content: Not reported
Number Of Tanks: 5

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City: GARDEN GROVE
Status: Not reported
Comp Number: 4335
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-004335-000002
Tank Status: Not reported
Capacity: 4000
Active Date: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Tank Use: UNKNOWN
STG: PRODUCT
Content: Not reported
Number Of Tanks: Not reported

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City: GARDEN GROVE
Status: Not reported
Comp Number: 4335
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-004335-000003
Tank Status: Not reported
Capacity: 4000
Active Date: Not reported
Tank Use: UNKNOWN
STG: PRODUCT
Content: Not reported
Number Of Tanks: Not reported

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City: GARDEN GROVE
Status: Not reported
Comp Number: 4335
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-004335-000004
Tank Status: Not reported
Capacity: 4000
Active Date: Not reported
Tank Use: UNKNOWN
STG: PRODUCT
Content: Not reported
Number Of Tanks: Not reported

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City: GARDEN GROVE
Status: Not reported
Comp Number: 4335
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-004335-000005

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Tank Status: Not reported
Capacity: 250
Active Date: Not reported
Tank Use: UNKNOWN
STG: PRODUCT
Content: Not reported
Number Of Tanks: Not reported

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City: GARDEN GROVE
Status: Active
Comp Number: 4335
Number: 9
Board Of Equalization: Not reported
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-004335-000006
Tank Status: A
Capacity: 12000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 4

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City: GARDEN GROVE
Status: Active
Comp Number: 4335
Number: 9
Board Of Equalization: Not reported
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-004335-000007
Tank Status: A
Capacity: 12000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: Not reported

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City: GARDEN GROVE
Status: Active
Comp Number: 4335
Number: 9
Board Of Equalization: Not reported
Referral Date: 09-30-92
Action Date: 09-15-92

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-004335-000008
Tank Status: A
Capacity: 12000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City: GARDEN GROVE
Status: Active
Comp Number: 4335
Number: 9
Board Of Equalization: Not reported
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-004335-000009
Tank Status: A
Capacity: 550
Active Date: Not reported
Tank Use: PETROLEUM
STG: P
Content: Not reported
Number Of Tanks: Not reported

Orange Co. Industrial Site:

Name: ARCO #1055
Address: 9001 GARDEN GROVE BLVD
City,State,Zip: GARDEN GROVE, CA 92641
Case ID: 92IC022
Record ID: RO0000368
Current Status: CLOSED 11/16/1992
Closure Type: Closed pre 1994, file review required to determine closure type
Released Chemical: WASTE (OR SLOP) OIL

HAZNET:

Name: BP WEST COAST PRODUCTS LLC 01055
Address: 9001 GARDEN GROVE BLVD
Address 2: Not reported
City,State,Zip: GARDEN GROVE, CA 92641
Contact: JACK OMEN, WASTE SPECIALIST
Telephone: 7146902425
Mailing Name: Not reported
Mailing Address: PO BOX 80249

Year: 1999
Gepaid: CAL000260707
TSD EPA ID: CAT000613935
CA Waste Code: 134 - Aqueous solution with total organic residues less than 10 percent

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Disposal Method: H01 - Transfer Station
Tons: 0.1218

Additional Info:

Year: 1999
Gen EPA ID: CAL000260707

Shipment Date: 19990226
Creation Date: 4/20/1999 0:00:00
Receipt Date: 19990226
Manifest ID: 98858088
Trans EPA ID: ILD984908202
Trans Name: Not reported
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDf EPA ID: CAT000613935
Trans Name: Not reported
TSDf Alt EPA ID: Not reported
TSDf Alt Name: Not reported
Waste Code Description: 134 - Aqueous solution with <10% total organic residues
RCRA Code: D039
Meth Code: H01 - Transfer Station
Quantity Tons: 0.1218
Waste Quantity: 29
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

CERS:

Name: ARCO #1055
Address: 9001 GARDEN GROVE
City,State,Zip: GARDEN GROVE, CA 92844
Site ID: 216062
CERS ID: T0605900038
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc: Local Agency Caseworker
Entity Name: KEVIN LAMBERT - ORANGE COUNTY LOP
Entity Title: Not reported
Affiliation Address: 1241 E DYER ROAD SUITE 120
Affiliation City: SANTA ANA
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: 7144336261,

Affiliation Type Desc: Regional Board Caseworker
Entity Name: VALERIE JAHN-BULL - SANTA ANA RWQCB (REGION 8)
Entity Title: Not reported
Affiliation Address: 3737 MAIN STREET, SUITE 500
Affiliation City: RIVERSIDE
Affiliation State: CA

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: 9517824903,

Name: SHILPARK PAINT (GARDEN GROVE, CA)
Address: 9001 GARDEN GROVE BLVD
City,State,Zip: GARDEN GROVE, CA 92844
Site ID: 366663
CERS ID: 10512265
CERS Description: Chemical Storage Facilities

Violations:

Site ID: 366663
Site Name: Shilpark Paint (Garden Grove, CA)
Violation Date: 03-21-2016
Citation: HSC 6.95 25508.1(a)-(e) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(e)

Violation Description: Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name.

Violation Notes: Returned to compliance on 06/13/2017. Chemical inventory reported on CERS is not current to what was found on site at the paint shop. Please make sure to report all chemicals that exceed 55 gallons for liquid, 200 cubic feet for gas and 500 pounds for a solid. Please calculate all the chemicals that need to be reported and please update the electronic submittal. The facility is responsible for identifying all hazardous materials, to include hazardous wastes, which are above disclosure thresholds. If there is a change in the type or amount of chemicals that are maintained on site, please submit revised documents (electronically) within 30 days of the change.

Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

Site ID: 366663
Site Name: Shilpark Paint (Garden Grove, CA)
Violation Date: 03-21-2016
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)

Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.

Violation Notes: Returned to compliance on 06/13/2017. Annual training records were missing for 2015. Please make sure to provide annual training to employees on safety procedures in the event of a release or threatened release of a hazardous material and emergency response plan. Please make sure the sign in sheets include name of the employee, date, signature and type of training.

Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Evaluation:
Eval General Type: Other/Unknown
Eval Date: 04-16-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This CERS submittal has been reviewed and NOT ACCEPTED. Please see below comments and submit revisions within 30 days. Hazardous Material Inventory: Please refer to your inspection report and include all the chemicals (product) that are hazardous. - Include all the paints (solvent based and water based), acetone, thinner, alcohol, stains and joint sealing compound. Please report all hazardous material that meet the following threshold: liquids greater than 55 gallons or 500 pounds of solid. Please contact Shruthi Sill at ssill@ochca.com with regards to any questions.

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-26-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Mark Sutphin at site for Hazmat facility inspection . Inspection Performed with Victor Mata. The contact at site is Young Ju. Facility has Totes with containers of waste paint that are dropped off by customers. Manifests for recycling of the waste paint were reviewed at site. The facility has submitted a Hazmat Business plan but it is old and a new updated plan Must be submitted at CERS.ca.gov A link to facilities CERS site was sent to Young Ju.

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-21-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Shilpark Paint 3/21/2016 On site to conduct a routine hazardous material and business plan inspection. Consent to enter, inspect and take pictures was given by Mr. Brian Lee at 2:40 pm. Walked the site with Mr. Lee and observed the hazardous material storage areas throughout paint store and the following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: Paint (various grades and brands) = 620 gallons Westpac joint compound = 3000 pounds Various Stains = 60 gallons Acetone = 498 gallons Lacquer thinner = 206 gallons Apart from the above list, please report all the types of paint, thinners, stains, stucco and acetone that are hazardous materials and that would exceed the reporting threshold. Please refer to the safety data sheet for the materials to determine if it needs to be reported under the hazardous material business plan. Please only report liquid that are over 55 gallons, unless the chemical is a [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Coordinates:

Site ID: 366663
Facility Name: Shilpark Paint (Garden Grove, CA)
Env Int Type Code: HMBP
Program ID: 10512265
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 33.774300
Longitude: -117.974830

Affiliation:

Affiliation Type Desc: CUPA District
Entity Name: Orange County Env Health
Entity Title: Not reported
Affiliation Address: 1241 East Dyer RoadSuite 120
Affiliation City: Santa Ana
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92705-5611
Affiliation Phone: (714) 433-6406,

Affiliation Type Desc: Document Preparer
Entity Name: Corman Park
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Environmental Contact
Entity Name: Corman Park
Entity Title: Not reported
Affiliation Address: 9001 GARDEN GROVE BLVD
Affiliation City: GARDEN GROVE
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92844
Affiliation Phone: ,

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 9001 Garden Grove blvd.
Affiliation City: Garden Grove
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92844
Affiliation Phone: ,

Affiliation Type Desc: Identification Signer
Entity Name: Corman Park
Entity Title: Assistant Manager
Affiliation Address: Not reported
Affiliation City: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO #1055 (Continued)

U003937623

Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Legal Owner
Entity Name: Shil Kyung Park
Entity Title: Not reported
Affiliation Address: 1640 S. Vermont Ave.
Affiliation City: Los Angeles
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 90006
Affiliation Phone: (213) 422-0539,

Affiliation Type Desc: Parent Corporation
Entity Name: Shilpark Paint (Garden Grove, CA)
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Operator
Entity Name: Shil Park
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (213) 422-0539,

Affiliation Type Desc: Property Owner
Entity Name: Shil Kyung Park
Entity Title: Not reported
Affiliation Address: 1640 S. Vermont Avenue
Affiliation City: Los Angeles
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 90006
Affiliation Phone: (213) 422-0539,

HWTS:

Name: BP WEST COAST PRODUCTS LLC 01055
Address: 9001 GARDEN GROVE BLVD
Address 2: Not reported
City,State,Zip: GARDEN GROVE, CA 92641
EPA ID: CAL000260707
Inactive Date: 06/30/2007
Create Date: 10/13/2002
Last Act Date: 03/17/2008
Mailing Name: Not reported
Mailing Address: PO BOX 80249

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

ARCO #1055 (Continued)

U003937623

Mailing Address 2:	Not reported
Mailing City,State,Zip:	RCHO STA MARG, CA 926880000
Owner Name:	BP WEST COAST PRODUCTS LLC
Owner Address:	PO BOX 6038
Owner Address 2:	Not reported
Owner City,State,Zip:	ARTESIA, CA 907026038
Contact Name:	JACK OMEN, WASTE SPECIALIST
Contact Address:	PO BOX 6038
Contact Address 2:	Not reported
City,State,Zip:	ARTESIA, CA 907026038
NAICS:	
EPA ID:	CAL000260707
Create Date:	2002-10-13 23:28:11.187
NAICS Code:	44711
NAICS Description:	Gasoline Stations with Convenience Stores
Issued EPA ID Date:	2002-10-13 23:28:10.96700
Inactive Date:	2007-06-30 00:00:00
Facility Name:	BP WEST COAST PRODUCTS LLC 01055
Facility Address:	9001 GARDEN GROVE BLVD
Facility Address 2:	Not reported
Facility City:	GARDEN GROVE
Facility County:	Not reported
Facility State:	CA
Facility Zip:	92641

D26
South
1/4-1/2
0.499 mi.
2633 ft.

THE CANS COMPANY
8911 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844
Site 4 of 4 in cluster D

SWRCY S119102731
N/A

Relative:
Lower
Actual:
67 ft.

SWRCY:	
Name:	THE CANS COMPANY
Address:	8911 GARDEN GROVE BLVD
City,State,Zip:	GARDEN GROVE, CA 92844
Reg Id:	251928
Cert Id:	RC251928.001
Mailing Address:	12362 Lampson Ave
Mailing City:	Garden Grove
Mailing State:	CA
Mailing Zip Code:	92840
Website:	Not reported
Email:	thecanscompany@yahoo.com
Phone Number:	(714) 402-5580
Rural:	N
Operation Begin Date:	11/17/2016
Aluminium:	Y
Glass:	Y
Plastic:	Y
Bimetal:	Y
Hours of Operation:	Mon - Sat 9:00 am - 5:00 pm; Sun 9:00 am - 2:00 pm
Organization ID:	19077
Organization Name:	The Cans Company

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

27
SW
1/2-1
0.648 mi.
3421 ft.

FORMER MORELAND CLEANERS
8661-8681 GARDEN GROVE BLVD
GARDEN GROVE, CA 92841

ENVIROSTOR S109348902
Orange Co. Industrial Site N/A

Relative:
Lower
Actual:
62 ft.

ENVIROSTOR:
Name: MORELAND CLEANERS(FORMER)
Address: 8661-8681 GARDEN GROVE BOULEVARD
City,State,Zip: GARDEN GROVE, CA 92841
Facility ID: 30720002
Status: Refer: 1248 Local Agency
Status Date: 03/19/2004
Site Code: Not reported
Site Type: Evaluation
Site Type Detailed: Evaluation
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Cypress
Assembly: 68
Senate: Not reported
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not Applicable
Latitude: 33.77413
Longitude: -117.9808
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 30720002
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Orange Co. Industrial Site:
Name: FORMER MORELAND CLEANERS
Address: 8661-8681 GARDEN GROVE BLVD

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FORMER MORELAND CLEANERS (Continued)

S109348902

City,State,Zip: GARDEN GROVE, CA 92841
Case ID: 04IC011
Record ID: RO0003302
Current Status: OPEN
Closure Type: Not reported
Released Chemical: PERCHLOROETHYLENE

Count: 2 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
STANTON	S107536511		8141 LAMPSON AVE APT #1	90680	CDL
STANTON	S105774133	G & M OIL #61/ FORMER TARGET #91	10502 MAGNOLIA AVE S	90680	LUST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 01/25/2022	Source: EPA
Date Data Arrived at EDR: 02/03/2022	Telephone: N/A
Date Made Active in Reports: 02/22/2022	Last EDR Contact: 04/01/2022
Number of Days to Update: 19	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 01/25/2022	Source: EPA
Date Data Arrived at EDR: 02/03/2022	Telephone: N/A
Date Made Active in Reports: 02/22/2022	Last EDR Contact: 04/01/2022
Number of Days to Update: 19	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 01/25/2022
Date Data Arrived at EDR: 02/03/2022
Date Made Active in Reports: 02/22/2022
Number of Days to Update: 19

Source: EPA
Telephone: N/A
Last EDR Contact: 04/01/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 06/24/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/01/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/25/2022
Date Data Arrived at EDR: 02/03/2022
Date Made Active in Reports: 02/22/2022
Number of Days to Update: 19

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/01/2022
Next Scheduled EDR Contact: 07/25/2022
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 01/25/2022	Source: EPA
Date Data Arrived at EDR: 02/03/2022	Telephone: 800-424-9346
Date Made Active in Reports: 02/22/2022	Last EDR Contact: 04/01/2022
Number of Days to Update: 19	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 02/28/2022	Source: EPA
Date Data Arrived at EDR: 03/02/2022	Telephone: 800-424-9346
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 11/15/2021	Source: Department of the Navy
Date Data Arrived at EDR: 11/16/2021	Telephone: 843-820-7326
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 02/07/2022
Number of Days to Update: 84	Next Scheduled EDR Contact: 05/23/2022
	Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 11/19/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/19/2021	Telephone: 703-603-0695
Date Made Active in Reports: 02/14/2022	Last EDR Contact: 02/23/2022
Number of Days to Update: 87	Next Scheduled EDR Contact: 06/06/2022
	Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 11/19/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/19/2021	Telephone: 703-603-0695
Date Made Active in Reports: 02/14/2022	Last EDR Contact: 02/23/2022
Number of Days to Update: 87	Next Scheduled EDR Contact: 06/06/2022
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2021

Source: National Response Center, United States Coast Guard

Date Data Arrived at EDR: 03/01/2022

Telephone: 202-267-2180

Date Made Active in Reports: 03/10/2022

Last EDR Contact: 03/22/2022

Number of Days to Update: 9

Next Scheduled EDR Contact: 07/04/2022

Data Release Frequency: Quarterly

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/24/2022

Source: Department of Toxic Substances Control

Date Data Arrived at EDR: 01/25/2022

Telephone: 916-323-3400

Date Made Active in Reports: 04/13/2022

Last EDR Contact: 01/25/2022

Number of Days to Update: 78

Next Scheduled EDR Contact: 05/09/2022

Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 01/24/2022

Source: Department of Toxic Substances Control

Date Data Arrived at EDR: 01/25/2022

Telephone: 916-323-3400

Date Made Active in Reports: 04/13/2022

Last EDR Contact: 01/25/2022

Number of Days to Update: 78

Next Scheduled EDR Contact: 05/09/2022

Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/08/2021

Source: Department of Resources Recycling and Recovery

Date Data Arrived at EDR: 11/09/2021

Telephone: 916-341-6320

Date Made Active in Reports: 01/28/2022

Last EDR Contact: 02/08/2022

Number of Days to Update: 80

Next Scheduled EDR Contact: 05/23/2022

Data Release Frequency: Quarterly

Lists of state and tribal leaking storage tanks

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004	Source: California Regional Water Quality Control Board Los Angeles Region (4)
Date Data Arrived at EDR: 09/07/2004	Telephone: 213-576-6710
Date Made Active in Reports: 10/12/2004	Last EDR Contact: 09/06/2011
Number of Days to Update: 35	Next Scheduled EDR Contact: 12/19/2011
	Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004	Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Date Data Arrived at EDR: 02/26/2004	Telephone: 760-776-8943
Date Made Active in Reports: 03/24/2004	Last EDR Contact: 08/01/2011
Number of Days to Update: 27	Next Scheduled EDR Contact: 11/14/2011
	Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005	Source: California Regional Water Quality Control Board Santa Ana Region (8)
Date Data Arrived at EDR: 02/15/2005	Telephone: 909-782-4496
Date Made Active in Reports: 03/28/2005	Last EDR Contact: 08/15/2011
Number of Days to Update: 41	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004	Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Date Data Arrived at EDR: 10/20/2004	Telephone: 510-622-2433
Date Made Active in Reports: 11/19/2004	Last EDR Contact: 09/19/2011
Number of Days to Update: 30	Next Scheduled EDR Contact: 01/02/2012
	Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001	Source: California Regional Water Quality Control Board North Coast (1)
Date Data Arrived at EDR: 02/28/2001	Telephone: 707-570-3769
Date Made Active in Reports: 03/29/2001	Last EDR Contact: 08/01/2011
Number of Days to Update: 29	Next Scheduled EDR Contact: 11/14/2011
	Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001	Source: California Regional Water Quality Control Board San Diego Region (9)
Date Data Arrived at EDR: 04/23/2001	Telephone: 858-637-5595
Date Made Active in Reports: 05/21/2001	Last EDR Contact: 09/26/2011
Number of Days to Update: 28	Next Scheduled EDR Contact: 01/09/2012
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005	Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Date Data Arrived at EDR: 06/07/2005	Telephone: 760-241-7365
Date Made Active in Reports: 06/29/2005	Last EDR Contact: 09/12/2011
Number of Days to Update: 22	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/06/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/07/2021	Telephone: see region list
Date Made Active in Reports: 02/23/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003	Source: California Regional Water Quality Control Board Central Coast Region (3)
Date Data Arrived at EDR: 05/19/2003	Telephone: 805-542-4786
Date Made Active in Reports: 06/02/2003	Last EDR Contact: 07/18/2011
Number of Days to Update: 14	Next Scheduled EDR Contact: 10/31/2011
	Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003	Source: California Regional Water Quality Control Board Lahontan Region (6)
Date Data Arrived at EDR: 09/10/2003	Telephone: 530-542-5572
Date Made Active in Reports: 10/07/2003	Last EDR Contact: 09/12/2011
Number of Days to Update: 27	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008	Source: California Regional Water Quality Control Board Central Valley Region (5)
Date Data Arrived at EDR: 07/22/2008	Telephone: 916-464-4834
Date Made Active in Reports: 07/31/2008	Last EDR Contact: 07/01/2011
Number of Days to Update: 9	Next Scheduled EDR Contact: 10/17/2011
	Data Release Frequency: No Update Planned

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/28/2021	Source: EPA Region 4
Date Data Arrived at EDR: 06/22/2021	Telephone: 404-562-8677
Date Made Active in Reports: 09/20/2021	Last EDR Contact: 01/18/2022
Number of Days to Update: 90	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/12/2021
Date Data Arrived at EDR: 11/15/2021
Date Made Active in Reports: 02/08/2022
Number of Days to Update: 85

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 10/12/2021
Date Data Arrived at EDR: 11/15/2021
Date Made Active in Reports: 02/08/2022
Number of Days to Update: 85

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/12/2021
Date Data Arrived at EDR: 11/15/2021
Date Made Active in Reports: 02/08/2022
Number of Days to Update: 85

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/12/2021
Date Data Arrived at EDR: 11/15/2021
Date Made Active in Reports: 02/08/2022
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/12/2021
Date Data Arrived at EDR: 11/15/2021
Date Made Active in Reports: 02/08/2022
Number of Days to Update: 85

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/12/2021
Date Data Arrived at EDR: 11/15/2021
Date Made Active in Reports: 02/08/2022
Number of Days to Update: 85

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/06/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/07/2021	Telephone: 866-480-1028
Date Made Active in Reports: 02/23/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003	Source: California Regional Water Quality Control Board, North Coast Region (1)
Date Data Arrived at EDR: 04/07/2003	Telephone: 707-576-2220
Date Made Active in Reports: 04/25/2003	Last EDR Contact: 08/01/2011
Number of Days to Update: 18	Next Scheduled EDR Contact: 11/14/2011
	Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004	Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Date Data Arrived at EDR: 10/20/2004	Telephone: 510-286-0457
Date Made Active in Reports: 11/19/2004	Last EDR Contact: 09/19/2011
Number of Days to Update: 30	Next Scheduled EDR Contact: 01/02/2012
	Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006	Source: California Regional Water Quality Control Board Central Coast Region (3)
Date Data Arrived at EDR: 05/18/2006	Telephone: 805-549-3147
Date Made Active in Reports: 06/15/2006	Last EDR Contact: 07/18/2011
Number of Days to Update: 28	Next Scheduled EDR Contact: 10/31/2011
	Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004	Source: Region Water Quality Control Board Los Angeles Region (4)
Date Data Arrived at EDR: 11/18/2004	Telephone: 213-576-6600
Date Made Active in Reports: 01/04/2005	Last EDR Contact: 07/01/2011
Number of Days to Update: 47	Next Scheduled EDR Contact: 10/17/2011
	Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005	Source: Regional Water Quality Control Board Central Valley Region (5)
Date Data Arrived at EDR: 04/05/2005	Telephone: 916-464-3291
Date Made Active in Reports: 04/21/2005	Last EDR Contact: 09/12/2011
Number of Days to Update: 16	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 10/14/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 02/01/2022
Number of Days to Update: 88

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/04/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 12/01/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/07/2021	Telephone: 916-327-7844
Date Made Active in Reports: 03/02/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 12/06/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/07/2021	Telephone: 866-480-1028
Date Made Active in Reports: 02/23/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Varies

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/06/2021	Source: SWRCB
Date Data Arrived at EDR: 12/07/2021	Telephone: 916-341-5851
Date Made Active in Reports: 02/23/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 07/12/2016	Telephone: 916-327-5092
Date Made Active in Reports: 09/19/2016	Last EDR Contact: 03/10/2022
Number of Days to Update: 69	Next Scheduled EDR Contact: 06/27/2022
	Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/28/2021	Source: EPA Region 4
Date Data Arrived at EDR: 06/22/2021	Telephone: 404-562-9424
Date Made Active in Reports: 09/20/2021	Last EDR Contact: 01/18/2022
Number of Days to Update: 90	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/12/2021	Source: EPA Region 6
Date Data Arrived at EDR: 11/15/2021	Telephone: 214-665-7591
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 01/18/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/06/2021	Source: EPA Region 5
Date Data Arrived at EDR: 06/11/2021	Telephone: 312-886-6136
Date Made Active in Reports: 09/07/2021	Last EDR Contact: 02/09/2022
Number of Days to Update: 88	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/12/2021	Source: EPA Region 10
Date Data Arrived at EDR: 11/15/2021	Telephone: 206-553-2857
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 01/18/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 10/12/2021	Source: EPA Region 7
Date Data Arrived at EDR: 11/15/2021	Telephone: 913-551-7003
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 01/18/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/12/2021	Source: EPA Region 8
Date Data Arrived at EDR: 11/15/2021	Telephone: 303-312-6137
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 01/18/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/12/2021	Source: EPA Region 9
Date Data Arrived at EDR: 11/15/2021	Telephone: 415-972-3368
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 01/18/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/14/2021	Source: EPA, Region 1
Date Data Arrived at EDR: 11/15/2021	Telephone: 617-918-1313
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 01/18/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 07/08/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 01/24/2022	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/25/2022	Telephone: 916-323-3400
Date Made Active in Reports: 04/13/2022	Last EDR Contact: 01/25/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 05/09/2022
	Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 03/16/2022
Number of Days to Update: 142	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS: Considered Brownfields Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/15/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/16/2021	Telephone: 916-323-7905
Date Made Active in Reports: 03/03/2022	Last EDR Contact: 03/21/2022
Number of Days to Update: 77	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 02/23/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/10/2022	Telephone: 202-566-2777
Date Made Active in Reports: 03/10/2022	Last EDR Contact: 03/15/2022
Number of Days to Update: 0	Next Scheduled EDR Contact: 06/27/2022
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000	Source: State Water Resources Control Board
Date Data Arrived at EDR: 04/10/2000	Telephone: 916-227-4448
Date Made Active in Reports: 05/10/2000	Last EDR Contact: 01/24/2022
Number of Days to Update: 30	Next Scheduled EDR Contact: 05/09/2022
	Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 12/06/2021	Source: Department of Conservation
Date Data Arrived at EDR: 12/07/2021	Telephone: 916-323-3836
Date Made Active in Reports: 02/23/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 09/14/2021	Source: Integrated Waste Management Board
Date Data Arrived at EDR: 11/11/2021	Telephone: 916-341-6422
Date Made Active in Reports: 11/23/2021	Last EDR Contact: 02/17/2022
Number of Days to Update: 12	Next Scheduled EDR Contact: 05/23/2022
	Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/03/2007	Telephone: 703-308-8245
Date Made Active in Reports: 01/24/2008	Last EDR Contact: 01/24/2022
Number of Days to Update: 52	Next Scheduled EDR Contact: 05/09/2022
	Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009	Source: EPA, Region 9
Date Data Arrived at EDR: 05/07/2009	Telephone: 415-947-4219
Date Made Active in Reports: 09/21/2009	Last EDR Contact: 04/14/2022
Number of Days to Update: 137	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 11/16/2021
Date Data Arrived at EDR: 11/18/2021
Date Made Active in Reports: 02/08/2022
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/23/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 01/24/2022
Date Data Arrived at EDR: 01/25/2022
Date Made Active in Reports: 04/13/2022
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/25/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/04/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/18/2022
Date Data Arrived at EDR: 01/19/2022
Date Made Active in Reports: 04/11/2022
Number of Days to Update: 82

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/19/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 11/16/2021
Date Data Arrived at EDR: 11/18/2021
Date Made Active in Reports: 02/08/2022
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/23/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing

Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 12/10/2021
Date Made Active in Reports: 02/25/2022
Number of Days to Update: 77

Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 03/11/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990	Source: State Water Resources Control Board
Date Data Arrived at EDR: 01/25/1991	Telephone: 916-341-5851
Date Made Active in Reports: 02/12/1991	Last EDR Contact: 07/26/2001
Number of Days to Update: 18	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 11/04/2021	Source: San Francisco County Department of Public Health
Date Data Arrived at EDR: 11/05/2021	Telephone: 415-252-3896
Date Made Active in Reports: 01/24/2022	Last EDR Contact: 01/28/2022
Number of Days to Update: 80	Next Scheduled EDR Contact: 05/16/2022
	Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 09/05/1995	Telephone: 916-341-5851
Date Made Active in Reports: 09/29/1995	Last EDR Contact: 12/28/1998
Number of Days to Update: 24	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 01/18/2022	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 01/19/2022	Telephone: 916-323-2514
Date Made Active in Reports: 04/11/2022	Last EDR Contact: 01/19/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/24/2022	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 02/25/2022	Telephone: 916-323-3400
Date Made Active in Reports: 03/09/2022	Last EDR Contact: 02/24/2022
Number of Days to Update: 12	Next Scheduled EDR Contact: 06/13/2022
	Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 01/25/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2022	Telephone: 202-564-6023
Date Made Active in Reports: 02/22/2022	Last EDR Contact: 04/01/2022
Number of Days to Update: 19	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 11/30/2021	Source: DTSC and SWRCB
Date Data Arrived at EDR: 11/30/2021	Telephone: 916-323-3400
Date Made Active in Reports: 02/16/2022	Last EDR Contact: 02/28/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 06/13/2022
	Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/15/2021	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 12/16/2021	Telephone: 202-366-4555
Date Made Active in Reports: 03/10/2022	Last EDR Contact: 03/21/2022
Number of Days to Update: 84	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2021	Source: Office of Emergency Services
Date Data Arrived at EDR: 01/19/2022	Telephone: 916-845-8400
Date Made Active in Reports: 04/08/2022	Last EDR Contact: 01/19/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/06/2021	Source: State Water Quality Control Board
Date Data Arrived at EDR: 12/07/2021	Telephone: 866-480-1028
Date Made Active in Reports: 02/23/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/06/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/07/2021	Telephone: 866-480-1028
Date Made Active in Reports: 02/23/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 02/22/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 50	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 10/26/2021	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 11/16/2021	Telephone: 202-528-4285
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 02/15/2022
Number of Days to Update: 84	Next Scheduled EDR Contact: 05/30/2022
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021	Source: USGS
Date Data Arrived at EDR: 07/13/2021	Telephone: 888-275-8747
Date Made Active in Reports: 03/09/2022	Last EDR Contact: 04/12/2022
Number of Days to Update: 239	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018	Source: U.S. Geological Survey
Date Data Arrived at EDR: 04/11/2018	Telephone: 888-275-8747
Date Made Active in Reports: 11/06/2019	Last EDR Contact: 04/05/2022
Number of Days to Update: 574	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/08/2022
Next Scheduled EDR Contact: 05/23/2022
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 12/13/2021
Date Data Arrived at EDR: 12/17/2021
Date Made Active in Reports: 03/17/2022
Number of Days to Update: 90

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/21/2022
Next Scheduled EDR Contact: 07/04/2022
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/01/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/03/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/18/2022
Next Scheduled EDR Contact: 06/27/2022
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/18/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 01/19/2022
Date Data Arrived at EDR: 01/19/2022
Date Made Active in Reports: 04/11/2022
Number of Days to Update: 82

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/19/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/25/2022
Date Data Arrived at EDR: 02/03/2022
Date Made Active in Reports: 02/22/2022
Number of Days to Update: 19

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 04/01/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 01/25/2022	Source: EPA
Date Data Arrived at EDR: 02/03/2022	Telephone: 202-564-6023
Date Made Active in Reports: 02/25/2022	Last EDR Contact: 04/01/2022
Number of Days to Update: 22	Next Scheduled EDR Contact: 05/16/2022
	Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2022	Source: EPA
Date Data Arrived at EDR: 01/20/2022	Telephone: 202-566-0500
Date Made Active in Reports: 03/25/2022	Last EDR Contact: 04/08/2022
Number of Days to Update: 64	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 03/31/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/29/2021	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 08/24/2021	Telephone: 301-415-7169
Date Made Active in Reports: 11/19/2021	Last EDR Contact: 01/18/2022
Number of Days to Update: 87	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2020	Source: Department of Energy
Date Data Arrived at EDR: 11/30/2021	Telephone: 202-586-8719
Date Made Active in Reports: 02/22/2022	Last EDR Contact: 02/28/2022
Number of Days to Update: 84	Next Scheduled EDR Contact: 06/13/2022
	Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/05/2019	Telephone: N/A
Date Made Active in Reports: 11/11/2019	Last EDR Contact: 02/28/2022
Number of Days to Update: 251	Next Scheduled EDR Contact: 06/13/2022
	Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/06/2019	Telephone: 202-566-0517
Date Made Active in Reports: 02/10/2020	Last EDR Contact: 02/04/2022
Number of Days to Update: 96	Next Scheduled EDR Contact: 05/16/2022
	Data Release Frequency: Varies

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2019	Telephone: 202-343-9775
Date Made Active in Reports: 09/23/2019	Last EDR Contact: 03/28/2022
Number of Days to Update: 84	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transportation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/08/2022
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 01/14/2022
Date Made Active in Reports: 03/25/2022
Number of Days to Update: 70

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/04/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 03/02/2022
Date Made Active in Reports: 03/25/2022
Number of Days to Update: 23

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/02/2022
Next Scheduled EDR Contact: 07/04/2022
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/05/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/26/2021
Date Data Arrived at EDR: 07/27/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/31/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/17/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/25/2022
Date Data Arrived at EDR: 02/03/2022
Date Made Active in Reports: 02/22/2022
Number of Days to Update: 19

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 05/03/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 03/21/2022
Date Data Arrived at EDR: 03/22/2022
Date Made Active in Reports: 03/25/2022
Number of Days to Update: 3

Source: DOL, Mine Safety & Health Administration
Telephone: 202-693-9424
Last EDR Contact: 03/14/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Quarterly

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/02/2021
Date Data Arrived at EDR: 11/22/2021
Date Made Active in Reports: 02/14/2022
Number of Days to Update: 84

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/23/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 12/14/2021
Date Data Arrived at EDR: 12/15/2021
Date Made Active in Reports: 03/10/2022
Number of Days to Update: 85

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/04/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/04/2021
Date Data Arrived at EDR: 11/22/2021
Date Made Active in Reports: 02/25/2022
Number of Days to Update: 95

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 02/28/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 01/01/2022
Date Data Arrived at EDR: 01/04/2022
Date Made Active in Reports: 01/10/2022
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 04/05/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2020	Source: Department of Defense
Date Data Arrived at EDR: 01/11/2022	Telephone: 703-704-1564
Date Made Active in Reports: 02/14/2022	Last EDR Contact: 04/12/2022
Number of Days to Update: 34	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/21/2021	Telephone: 202-564-0527
Date Made Active in Reports: 08/11/2021	Last EDR Contact: 02/22/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 06/06/2022
	Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/15/2021	Source: EPA
Date Data Arrived at EDR: 11/15/2021	Telephone: 800-385-6164
Date Made Active in Reports: 02/01/2022	Last EDR Contact: 02/17/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 05/30/2022
	Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 12/16/2021	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 12/16/2021	Telephone: 916-323-3400
Date Made Active in Reports: 03/03/2022	Last EDR Contact: 03/21/2022
Number of Days to Update: 77	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019	Source: Livermore-Pleasanton Fire Department
Date Data Arrived at EDR: 05/14/2019	Telephone: 925-454-2361
Date Made Active in Reports: 07/17/2019	Last EDR Contact: 02/08/2022
Number of Days to Update: 64	Next Scheduled EDR Contact: 05/23/2022
	Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/27/2021
Date Data Arrived at EDR: 09/01/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 79

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/07/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 11/17/2021
Date Data Arrived at EDR: 11/18/2021
Date Made Active in Reports: 02/07/2022
Number of Days to Update: 81

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 02/17/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 11/29/2021
Date Data Arrived at EDR: 11/29/2021
Date Made Active in Reports: 02/14/2022
Number of Days to Update: 77

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Varies

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 78

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/18/2022
Next Scheduled EDR Contact: 06/27/2022
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/10/2021
Date Data Arrived at EDR: 11/11/2021
Date Made Active in Reports: 02/03/2022
Number of Days to Update: 84

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 03/03/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/13/2022
Date Data Arrived at EDR: 01/14/2022
Date Made Active in Reports: 04/08/2022
Number of Days to Update: 84

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/18/2021
Date Data Arrived at EDR: 11/19/2021
Date Made Active in Reports: 02/07/2022
Number of Days to Update: 80

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/17/2022
Next Scheduled EDR Contact: 05/23/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 04/15/2020	Telephone: 916-255-1136
Date Made Active in Reports: 07/02/2020	Last EDR Contact: 04/08/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/15/2021	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/15/2021	Telephone: 877-786-9427
Date Made Active in Reports: 02/03/2022	Last EDR Contact: 02/15/2022
Number of Days to Update: 80	Next Scheduled EDR Contact: 05/30/2022
	Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/22/2009	Telephone: 916-323-3400
Date Made Active in Reports: 04/08/2009	Last EDR Contact: 01/22/2009
Number of Days to Update: 76	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/15/2021	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/15/2021	Telephone: 916-323-3400
Date Made Active in Reports: 02/03/2022	Last EDR Contact: 02/15/2022
Number of Days to Update: 80	Next Scheduled EDR Contact: 05/30/2022
	Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/03/2022	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/04/2022	Telephone: 916-440-7145
Date Made Active in Reports: 03/18/2022	Last EDR Contact: 04/05/2022
Number of Days to Update: 73	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/06/2021	Source: Department of Conservation
Date Data Arrived at EDR: 12/07/2021	Telephone: 916-322-1080
Date Made Active in Reports: 02/23/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/18/2021	Source: Department of Public Health
Date Data Arrived at EDR: 11/30/2021	Telephone: 916-558-1784
Date Made Active in Reports: 02/17/2022	Last EDR Contact: 02/28/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 06/13/2022
	Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/09/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 11/09/2021	Telephone: 916-445-9379
Date Made Active in Reports: 01/27/2022	Last EDR Contact: 02/08/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 05/23/2022
	Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 11/30/2021	Source: Department of Pesticide Regulation
Date Data Arrived at EDR: 11/30/2021	Telephone: 916-445-4038
Date Made Active in Reports: 02/17/2022	Last EDR Contact: 02/28/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 06/13/2022
	Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 11/29/2021	Source: Department of Conservation
Date Data Arrived at EDR: 11/29/2021	Telephone: 916-323-3836
Date Made Active in Reports: 02/11/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 74	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 12/13/2021	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/14/2021	Telephone: 916-445-3846
Date Made Active in Reports: 03/03/2022	Last EDR Contact: 03/09/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 06/26/2022
	Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 12/03/2021	Source: Department of Conservation
Date Data Arrived at EDR: 12/07/2021	Telephone: 916-445-2408
Date Made Active in Reports: 02/24/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UIC GEO: Underground Injection Control Sites (GEOTRACKER)

Underground control injection sites

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 90

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 04/08/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/11/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/16/2022
Next Scheduled EDR Contact: 07/04/2022
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)

Military privatized sites

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)

Projects sites

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 11/30/2021
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/16/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 02/28/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 01/18/2022
Date Data Arrived at EDR: 01/19/2022
Date Made Active in Reports: 04/08/2022
Number of Days to Update: 79

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/19/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 12/06/2021
Date Data Arrived at EDR: 12/07/2021
Date Made Active in Reports: 02/23/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Semi-Annually

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 07/13/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 84

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 04/05/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

PCS INACTIVE: Listing of Inactive PCS Permits

An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Semi-Annually

MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A	Source: Department of Resources Recycling and Recovery
Date Data Arrived at EDR: 07/01/2013	Telephone: N/A
Date Made Active in Reports: 01/13/2014	Last EDR Contact: 06/01/2012
Number of Days to Update: 196	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A	Source: State Water Resources Control Board
Date Data Arrived at EDR: 07/01/2013	Telephone: N/A
Date Made Active in Reports: 12/30/2013	Last EDR Contact: 06/01/2012
Number of Days to Update: 182	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019	Source: Alameda County Environmental Health Services
Date Data Arrived at EDR: 01/11/2019	Telephone: 510-567-6700
Date Made Active in Reports: 03/05/2019	Last EDR Contact: 03/31/2022
Number of Days to Update: 53	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 12/28/2021	Source: Alameda County Environmental Health Services
Date Data Arrived at EDR: 12/28/2021	Telephone: 510-567-6700
Date Made Active in Reports: 03/18/2022	Last EDR Contact: 04/04/2022
Number of Days to Update: 80	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List

Cupa Facility List

Date of Government Version: 11/01/2021	Source: Amador County Environmental Health
Date Data Arrived at EDR: 11/02/2021	Telephone: 209-223-6439
Date Made Active in Reports: 01/24/2022	Last EDR Contact: 01/28/2022
Number of Days to Update: 83	Next Scheduled EDR Contact: 05/16/2022
	Data Release Frequency: Varies

BUTTE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 12/28/2021
Date Data Arrived at EDR: 12/28/2021
Date Made Active in Reports: 03/18/2022
Number of Days to Update: 80

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/17/2022
Next Scheduled EDR Contact: 07/04/2022
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 01/24/2022
Date Data Arrived at EDR: 01/25/2022
Date Made Active in Reports: 04/14/2022
Number of Days to Update: 79

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 01/10/2022
Date Data Arrived at EDR: 01/26/2022
Date Made Active in Reports: 04/14/2022
Number of Days to Update: 78

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

EL DORADO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA EL DORADO: CUPA Facility List CUPA facility list.

Date of Government Version: 11/30/2021
Date Data Arrived at EDR: 12/01/2021
Date Made Active in Reports: 02/16/2022
Number of Days to Update: 77

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 02/07/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/28/2021
Date Data Arrived at EDR: 12/21/2021
Date Made Active in Reports: 03/03/2022
Number of Days to Update: 72

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/11/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List Cupa facility list.

Date of Government Version: 01/13/2022
Date Data Arrived at EDR: 01/14/2022
Date Made Active in Reports: 04/06/2022
Number of Days to Update: 82

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INYO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA INYO: CUPA Facility List Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/11/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List

A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 11/10/2021
Date Data Arrived at EDR: 11/12/2021
Date Made Active in Reports: 02/02/2022
Number of Days to Update: 82

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing Kern County Sites and Tanks Listing.

Date of Government Version: 11/10/2021
Date Data Arrived at EDR: 11/12/2021
Date Made Active in Reports: 02/02/2022
Number of Days to Update: 82

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 03/24/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List Cupa facility list

Date of Government Version: 11/04/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 80

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/11/2022
Next Scheduled EDR Contact: 07/25/2022
Data Release Frequency: Varies

LASSEN COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA LASSEN: CUPA Facility List Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 03/10/2022
Next Scheduled EDR Contact: 06/27/2022
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 04/04/2022
Date Data Arrived at EDR: 04/05/2022
Date Made Active in Reports: 04/13/2022
Number of Days to Update: 8

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/04/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/10/2022
Date Data Arrived at EDR: 01/11/2022
Date Made Active in Reports: 04/04/2022
Number of Days to Update: 83

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/12/2022
Next Scheduled EDR Contact: 07/25/2022
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2022
Date Data Arrived at EDR: 01/21/2022
Date Made Active in Reports: 04/11/2022
Number of Days to Update: 80

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/08/2022
Next Scheduled EDR Contact: 07/25/2022
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory

A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/23/2022
Next Scheduled EDR Contact: 07/04/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 01/10/2022	Source: Los Angeles County Department of Public Works
Date Data Arrived at EDR: 01/12/2022	Telephone: 626-458-6973
Date Made Active in Reports: 04/04/2022	Last EDR Contact: 04/13/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 04/19/2021	Source: Los Angeles Fire Department
Date Data Arrived at EDR: 06/17/2021	Telephone: 213-978-3800
Date Made Active in Reports: 06/28/2021	Last EDR Contact: 03/21/2022
Number of Days to Update: 11	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 04/19/2021	Source: Los Angeles Fire Department
Date Data Arrived at EDR: 06/17/2021	Telephone: 213-978-3800
Date Made Active in Reports: 09/14/2021	Last EDR Contact: 03/21/2022
Number of Days to Update: 89	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/26/2021	Source: Community Health Services
Date Data Arrived at EDR: 07/09/2021	Telephone: 323-890-7806
Date Made Active in Reports: 09/29/2021	Last EDR Contact: 04/14/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017	Source: City of El Segundo Fire Department
Date Data Arrived at EDR: 04/19/2017	Telephone: 310-524-2236
Date Made Active in Reports: 05/10/2017	Last EDR Contact: 04/08/2022
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019	Source: City of Long Beach Fire Department
Date Data Arrived at EDR: 04/23/2019	Telephone: 562-570-2563
Date Made Active in Reports: 06/27/2019	Last EDR Contact: 04/14/2022
Number of Days to Update: 65	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/02/2021	Source: City of Torrance Fire Department
Date Data Arrived at EDR: 04/28/2021	Telephone: 310-618-2973
Date Made Active in Reports: 07/13/2021	Last EDR Contact: 01/13/2022
Number of Days to Update: 76	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020	Source: Madera County Environmental Health
Date Data Arrived at EDR: 08/12/2020	Telephone: 559-675-7823
Date Made Active in Reports: 10/23/2020	Last EDR Contact: 02/11/2022
Number of Days to Update: 72	Next Scheduled EDR Contact: 05/30/2022
	Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018	Source: Public Works Department Waste Management
Date Data Arrived at EDR: 10/04/2018	Telephone: 415-473-6647
Date Made Active in Reports: 11/02/2018	Last EDR Contact: 03/23/2022
Number of Days to Update: 29	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/22/2021	Source: Department of Public Health
Date Data Arrived at EDR: 11/18/2021	Telephone: 707-463-4466
Date Made Active in Reports: 11/22/2021	Last EDR Contact: 02/17/2022
Number of Days to Update: 4	Next Scheduled EDR Contact: 06/06/2022
	Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/24/2021	Source: Merced County Environmental Health
Date Data Arrived at EDR: 11/29/2021	Telephone: 209-381-1094
Date Made Active in Reports: 02/11/2022	Last EDR Contact: 02/11/2022
Number of Days to Update: 74	Next Scheduled EDR Contact: 05/30/2022
	Data Release Frequency: Varies

MONO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA MONO: CUPA Facility List CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 03/17/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/04/2021
Date Data Arrived at EDR: 10/06/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 84

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 04/04/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/17/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/17/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List CUPA facility list.

Date of Government Version: 01/25/2022
Date Data Arrived at EDR: 01/26/2022
Date Made Active in Reports: 04/14/2022
Number of Days to Update: 78

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups Petroleum and non-petroleum spills.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/14/2022
Date Data Arrived at EDR: 02/03/2022
Date Made Active in Reports: 04/14/2022
Number of Days to Update: 70

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 01/31/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 10/08/2021
Date Data Arrived at EDR: 11/02/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 01/31/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 10/29/2021
Date Data Arrived at EDR: 10/29/2021
Date Made Active in Reports: 01/20/2022
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/01/2021
Date Data Arrived at EDR: 12/02/2021
Date Made Active in Reports: 02/25/2022
Number of Days to Update: 85

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List

Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 03/31/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 04/08/2022
Number of Days to Update: 8

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/14/2022
Next Scheduled EDR Contact: 06/27/2022
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST RIVERSIDE: Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 03/31/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 04/08/2022
Number of Days to Update: 8

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/14/2022
Next Scheduled EDR Contact: 06/27/2022
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 06/18/2021
Date Data Arrived at EDR: 09/28/2021
Date Made Active in Reports: 12/14/2021
Number of Days to Update: 77

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/02/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 11/02/2021
Number of Days to Update: 90

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 11/04/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 80

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 12/01/2021
Date Data Arrived at EDR: 12/02/2021
Date Made Active in Reports: 02/17/2022
Number of Days to Update: 77

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 01/31/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 11/30/2021
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/16/2022
Number of Days to Update: 78

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 02/28/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 86

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 02/03/2022
Date Data Arrived at EDR: 02/04/2022
Date Made Active in Reports: 02/11/2022
Number of Days to Update: 7

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversight Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/10/2021
Date Data Arrived at EDR: 11/11/2021
Date Made Active in Reports: 02/02/2022
Number of Days to Update: 83

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/10/2022
Next Scheduled EDR Contact: 06/27/2022
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List

Cupa Facility List.

Date of Government Version: 11/15/2021
Date Data Arrived at EDR: 11/16/2021
Date Made Active in Reports: 02/03/2022
Number of Days to Update: 79

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/11/2022
Next Scheduled EDR Contact: 05/23/2022
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/11/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/02/2022
Next Scheduled EDR Contact: 06/20/2022
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA SANTA BARBARA: CUPA Facility Listing

CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/11/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List

Cupa facility list

Date of Government Version: 11/19/2021
Date Data Arrived at EDR: 11/22/2021
Date Made Active in Reports: 02/07/2022
Number of Days to Update: 77

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/11/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/17/2022
Next Scheduled EDR Contact: 06/06/2022
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List

CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/11/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: Varies

SHASTA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA SHASTA: CUPA Facility List Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/11/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 09/15/2021
Date Data Arrived at EDR: 09/16/2021
Date Made Active in Reports: 12/09/2021
Number of Days to Update: 84

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/16/2022
Next Scheduled EDR Contact: 07/04/2022
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/16/2022
Next Scheduled EDR Contact: 07/04/2022
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List Cupa facility list

Date of Government Version: 11/09/2021
Date Data Arrived at EDR: 11/11/2021
Date Made Active in Reports: 02/02/2022
Number of Days to Update: 83

Source: Stanislaus County Department of Environmental Protection
Telephone: 209-525-6751
Last EDR Contact: 04/11/2022
Next Scheduled EDR Contact: 07/25/2022
Data Release Frequency: Varies

SUTTER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST SUTTER: Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 11/23/2021
Date Data Arrived at EDR: 11/29/2021
Date Made Active in Reports: 02/11/2022
Number of Days to Update: 74

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 02/24/2022
Next Scheduled EDR Contact: 06/13/2022
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List

Cupa facilities

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 04/06/2021
Number of Days to Update: 82

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 03/08/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List

Cupa facility list

Date of Government Version: 01/13/2022
Date Data Arrived at EDR: 01/14/2022
Date Made Active in Reports: 04/06/2022
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List

Cupa program facilities

Date of Government Version: 04/26/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List

Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Division of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

VENTURA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/27/2021	Source: Ventura County Environmental Health Division
Date Data Arrived at EDR: 01/20/2022	Telephone: 805-654-2813
Date Made Active in Reports: 04/08/2022	Last EDR Contact: 01/18/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011	Source: Environmental Health Division
Date Data Arrived at EDR: 12/01/2011	Telephone: 805-654-2813
Date Made Active in Reports: 01/19/2012	Last EDR Contact: 03/23/2022
Number of Days to Update: 49	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008	Source: Environmental Health Division
Date Data Arrived at EDR: 06/24/2008	Telephone: 805-654-2813
Date Made Active in Reports: 07/31/2008	Last EDR Contact: 02/07/2022
Number of Days to Update: 37	Next Scheduled EDR Contact: 05/23/2022
	Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/27/2021	Source: Ventura County Resource Management Agency
Date Data Arrived at EDR: 01/20/2022	Telephone: 805-654-2813
Date Made Active in Reports: 04/11/2022	Last EDR Contact: 01/18/2022
Number of Days to Update: 81	Next Scheduled EDR Contact: 05/02/2022
	Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/29/2021	Source: Environmental Health Division
Date Data Arrived at EDR: 12/07/2021	Telephone: 805-654-2813
Date Made Active in Reports: 02/24/2022	Last EDR Contact: 03/08/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 06/20/2022
	Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 12/27/2021	Source: Yolo County Department of Health
Date Data Arrived at EDR: 01/04/2022	Telephone: 530-666-8646
Date Made Active in Reports: 03/18/2022	Last EDR Contact: 03/24/2022
Number of Days to Update: 73	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Annually

YUBA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA YUBA: CUPA Facility List

CUPA facility listing for Yuba County.

Date of Government Version: 01/26/2022
Date Data Arrived at EDR: 01/27/2022
Date Made Active in Reports: 04/14/2022
Number of Days to Update: 77

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/11/2021
Date Data Arrived at EDR: 11/12/2021
Date Made Active in Reports: 02/01/2022
Number of Days to Update: 81

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/11/2022
Next Scheduled EDR Contact: 05/23/2022
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/07/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 10/29/2021
Date Made Active in Reports: 01/19/2022
Number of Days to Update: 82

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/08/2022
Next Scheduled EDR Contact: 07/25/2022
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/14/2022
Next Scheduled EDR Contact: 05/30/2022
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 05/31/2018

Date Data Arrived at EDR: 06/19/2019

Date Made Active in Reports: 09/03/2019

Number of Days to Update: 76

Source: Department of Natural Resources

Telephone: N/A

Last EDR Contact: 03/02/2022

Next Scheduled EDR Contact: 06/20/2022

Data Release Frequency: Annually

Oil/Gas Pipelines

Source: Endeavor Business Media

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data

Source: Endeavor Business Media

This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities

Source: Department of Social Services

Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

Â© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

9071-9091 LAMPSON AVENUE
9071-9091 LAMPSON AVENUE
GARDEN GROVE, CA 92841

TARGET PROPERTY COORDINATES

Latitude (North):	33.781345 - 33° 46' 52.84"
Longitude (West):	117.973667 - 117° 58' 25.20"
Universal Transverse Mercator:	Zone 11
UTM X (Meters):	409850.5
UTM Y (Meters):	3738144.5
Elevation:	74 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	12014828 ANAHEIM, CA
Version Date:	2018

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

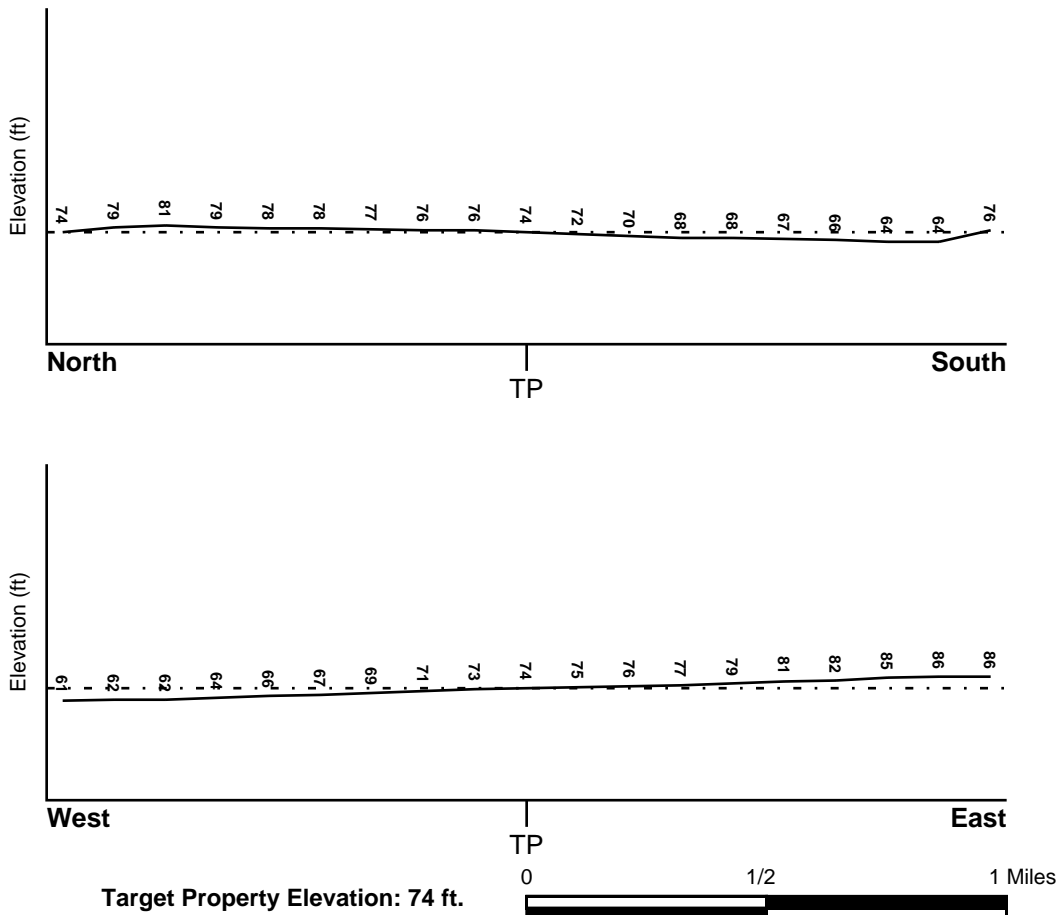
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
06059C0136J	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
06059C0137J	FEMA FIRM Flood data
06059C0138J	FEMA FIRM Flood data
06059C0139J	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
ANAHEIM	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
C51	1/2 - 1 Mile South	SW
H67	1/2 - 1 Mile SW	W
H68	1/2 - 1 Mile SW	W
71	1/2 - 1 Mile East	WSW
1G	1/2 - 1 Mile East	WSW
2G	1/2 - 1 Mile SW	W

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
3G	1/2 - 1 Mile SW	W
4G	1/2 - 1 Mile South	SW

For additional site information, refer to Physical Setting Source Map Findings.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

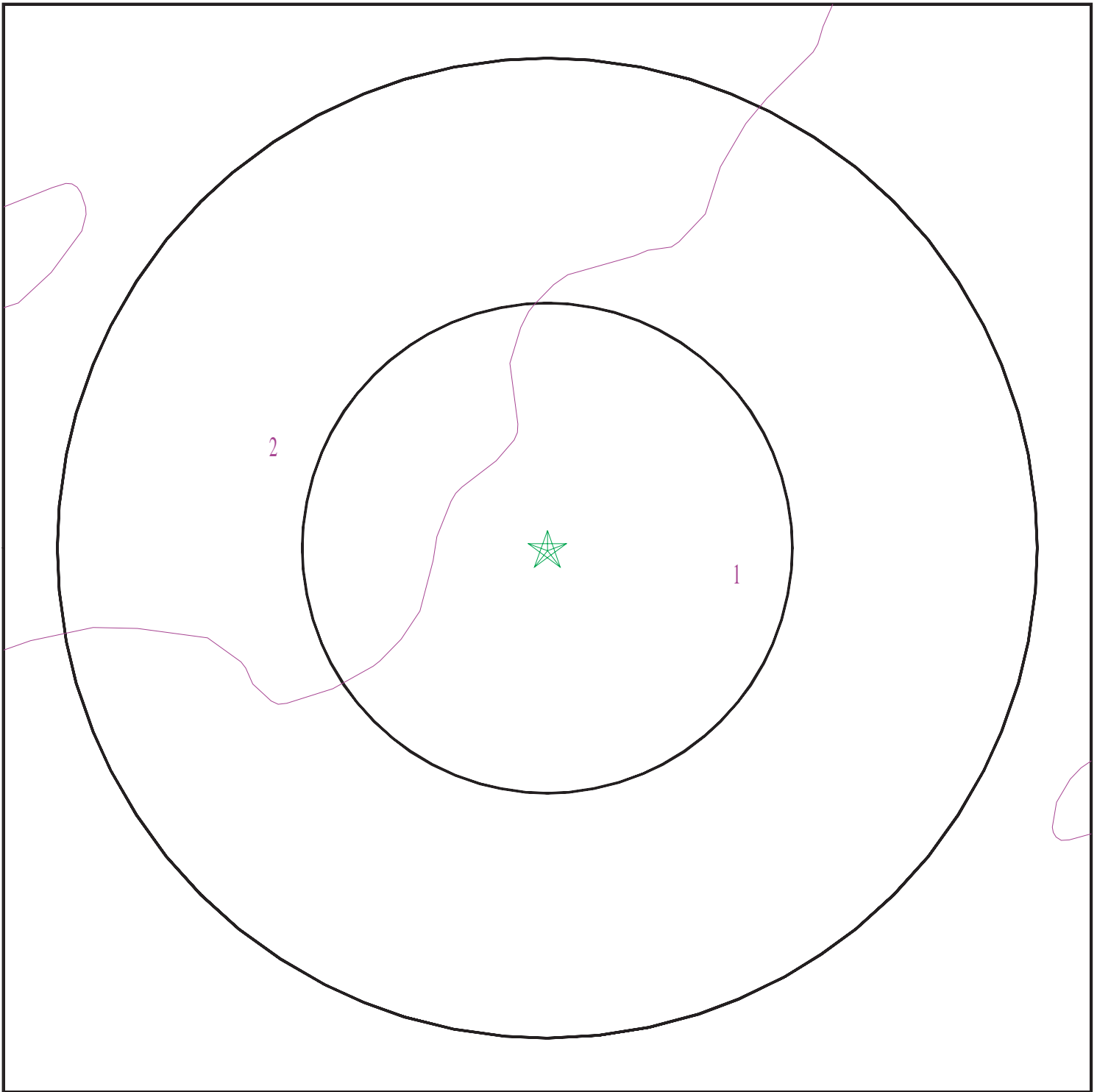
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q (<i>decoded above as Era, System & Series</i>)

GEOLOGIC AGE IDENTIFICATION

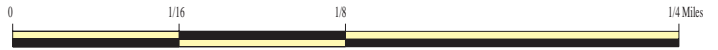
Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 6941794.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: 9071-9091 Lampson Avenue
ADDRESS: 9071-9091 Lampson Avenue
Garden Grove CA 92841
LAT/LONG: 33.781345 / 117.973667

CLIENT: Ardent Environmental Group
CONTACT: Matthew Pensaw
INQUIRY #: 6941794.2s
DATE: April 15, 2022 2:23 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: HUENEME

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	27 inches	fine sandy loam	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.4
2	27 inches	59 inches	stratified sand to silt loam	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.4

Soil Map ID: 2

Soil Component Name: METZ

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	16 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6
2	16 inches	62 inches	stratified sand to fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
9	USGS40000138106	1/4 - 1/2 Mile SE
D38	USGS40000138172	1/2 - 1 Mile NE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
G64	USGS40000138194	1/2 - 1 Mile NW
N102	USGS40000138000	1/2 - 1 Mile South

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CADWR0000004079	1/8 - 1/4 Mile ENE
A2	CADDW0000018029	1/4 - 1/2 Mile WSW
A3	5279	1/4 - 1/2 Mile West
4	5165	1/4 - 1/2 Mile ENE
5	CADWR9000005504	1/4 - 1/2 Mile NE
6	CADWR9000005469	1/4 - 1/2 Mile SE
B7	CADDW0000010005	1/4 - 1/2 Mile SW
B8	CADDW0000020973	1/4 - 1/2 Mile SW
B10	5282	1/4 - 1/2 Mile SW
B11	5283	1/4 - 1/2 Mile SW
C12	CAEDF0000132214	1/4 - 1/2 Mile South
C13	CAEDF0000103861	1/2 - 1 Mile South
C14	CAEDF0000107783	1/2 - 1 Mile South
C15	CAEDF0000039206	1/2 - 1 Mile South
D16	CADWR9000005525	1/2 - 1 Mile NE
E17	CAEDF0000004074	1/2 - 1 Mile NNW
C18	CAEDF0000068450	1/2 - 1 Mile South
C19	CAEDF0000101432	1/2 - 1 Mile South
C20	CAEDF0000061547	1/2 - 1 Mile South
E21	CAEDF0000132518	1/2 - 1 Mile NNW
E22	CAEDF0000099962	1/2 - 1 Mile NNW
C23	CAEDF0000099171	1/2 - 1 Mile South
E24	CAEDF0000130443	1/2 - 1 Mile NNW
C25	CAEDF0000041118	1/2 - 1 Mile South
C26	CAEDF0000094896	1/2 - 1 Mile South
E27	CAEDF0000018880	1/2 - 1 Mile NNW
E28	CAEDF0000142276	1/2 - 1 Mile NNW
C29	CAEDF0000128711	1/2 - 1 Mile SSW
C30	CAEDF0000029920	1/2 - 1 Mile SSW
E31	CAEDF0000047848	1/2 - 1 Mile NNW
C32	CAEDF0000137700	1/2 - 1 Mile SSW
C33	CAEDF0000095459	1/2 - 1 Mile SSW
E34	CAEDF0000075146	1/2 - 1 Mile NNW
E35	CAEDF0000117943	1/2 - 1 Mile NNW
C36	CAEDF0000137308	1/2 - 1 Mile South

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

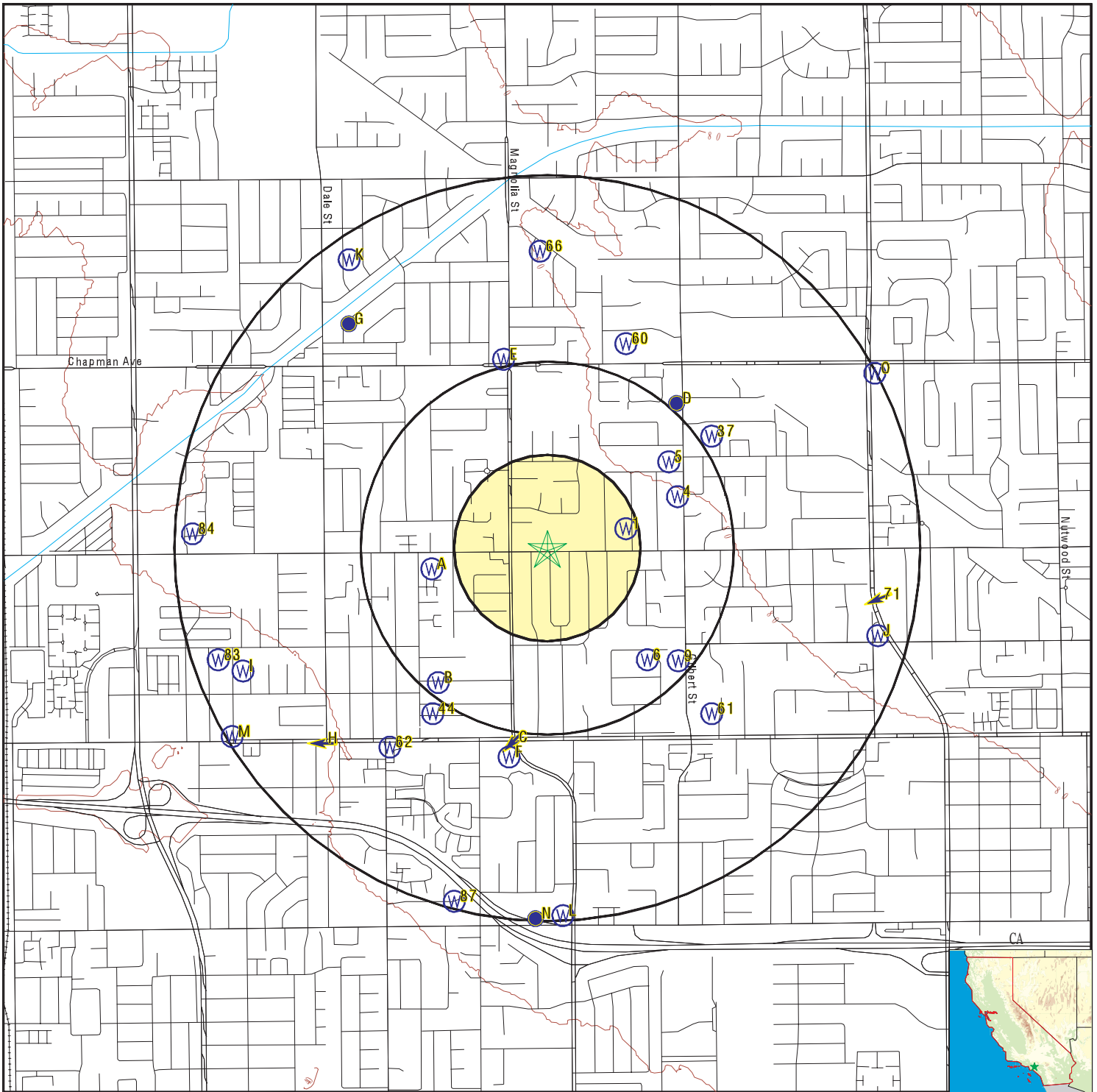
MAP ID	WELL ID	LOCATION FROM TP
37	CADWR0000001051	1/2 - 1 Mile NE
E39	CAEDF0000102119	1/2 - 1 Mile NNW
C40	CAEDF0000127804	1/2 - 1 Mile South
C41	CAEDF0000061167	1/2 - 1 Mile South
C42	CAEDF0000012879	1/2 - 1 Mile SSW
C43	CAEDF0000049553	1/2 - 1 Mile SSW
44	CADWR0000011895	1/2 - 1 Mile SW
C45	CAEDF0000033936	1/2 - 1 Mile South
C46	CAEDF0000136781	1/2 - 1 Mile South
C47	CAEDF0000114992	1/2 - 1 Mile South
C48	CAEDF0000080120	1/2 - 1 Mile South
C49	CAEDF0000084300	1/2 - 1 Mile SSW
C50	CAEDF0000039929	1/2 - 1 Mile South
C52	CAEDF0000142945	1/2 - 1 Mile South
F53	CAEDF0000018531	1/2 - 1 Mile SSW
F54	CAEDF0000021986	1/2 - 1 Mile SSW
F55	CAEDF0000129689	1/2 - 1 Mile South
F56	CAEDF0000128796	1/2 - 1 Mile South
F57	CAEDF0000035941	1/2 - 1 Mile South
F58	CAEDF0000078985	1/2 - 1 Mile SSW
F59	CAEDF0000061304	1/2 - 1 Mile South
60	CADWR0000030773	1/2 - 1 Mile NNE
61	CADWR0000012808	1/2 - 1 Mile SE
62	CADWR9000005445	1/2 - 1 Mile SW
G63	CAUSGSN00018873	1/2 - 1 Mile NW
G65	CADDW0000011378	1/2 - 1 Mile NW
66	CADWR0000019006	1/2 - 1 Mile North
G69	5263	1/2 - 1 Mile NW
I70	CADDW0000016895	1/2 - 1 Mile WSW
J72	CAEDF0000128228	1/2 - 1 Mile ESE
I73	5281	1/2 - 1 Mile WSW
J74	CAEDF0000116168	1/2 - 1 Mile ESE
J75	CAEDF0000058324	1/2 - 1 Mile ESE
J76	CAEDF0000140910	1/2 - 1 Mile ESE
K77	5261	1/2 - 1 Mile NW
L78	CADWR9000005418	1/2 - 1 Mile South
J79	CAEDF0000065413	1/2 - 1 Mile ESE
J80	CAEDF0000065589	1/2 - 1 Mile ESE
J81	CAEDF0000126643	1/2 - 1 Mile ESE
J82	CAEDF0000102855	1/2 - 1 Mile ESE
83	CADWR0000010254	1/2 - 1 Mile WSW
84	CADDW0000014687	1/2 - 1 Mile West
K85	CADWR0000010205	1/2 - 1 Mile NW
M86	CAEDF0000063540	1/2 - 1 Mile WSW
87	CADWR0000025855	1/2 - 1 Mile SSW
M88	CAEDF0000067579	1/2 - 1 Mile WSW
M89	CAEDF0000059200	1/2 - 1 Mile WSW
L90	CAEDF0000005232	1/2 - 1 Mile South
M91	CAEDF0000047819	1/2 - 1 Mile WSW
M92	CAEDF0000008049	1/2 - 1 Mile WSW
M93	CAEDF0000095927	1/2 - 1 Mile WSW
M94	CAEDF0000045646	1/2 - 1 Mile WSW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
L95	CADWR0000023706	1/2 - 1 Mile South
L96	CAEDF0000015643	1/2 - 1 Mile South
L97	CAEDF0000041267	1/2 - 1 Mile South
L98	CAEDF0000050814	1/2 - 1 Mile South
L99	CAEDF0000143646	1/2 - 1 Mile South
L100	CAEDF0000140984	1/2 - 1 Mile South
L101	CAEDF0000072616	1/2 - 1 Mile South
M103	CAEDF0000120427	1/2 - 1 Mile WSW
O104	CAEDF0000110505	1/2 - 1 Mile ENE
L105	CALLNL000000840	1/2 - 1 Mile South
L106	CALLNL000000358	1/2 - 1 Mile South
N107	CAUSGSN00009449	1/2 - 1 Mile South
L108	CAEDF0000114954	1/2 - 1 Mile South
L109	CAEDF0000108057	1/2 - 1 Mile South
L110	CAEDF0000115715	1/2 - 1 Mile South
O111	CAEDF0000121576	1/2 - 1 Mile ENE

PHYSICAL SETTING SOURCE MAP - 6941794.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons



- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells



SITE NAME: 9071-9091 Lampson Avenue
 ADDRESS: 9071-9091 Lampson Avenue
 Garden Grove CA 92841
 LAT/LONG: 33.781345 / 117.973667

CLIENT: Ardent Environmental Group
 CONTACT: Matthew Pensaw
 INQUIRY #: 6941794.2s
 DATE: April 15, 2022 2:23 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

1
ENE
1/8 - 1/4 Mile
Higher **CA WELLS** **CADWR0000004079**

Well ID:	04S10W31F001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	04S10W31F001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=04S10W31F001S&store_num=		
GeoTracker Data:	Not Reported		

A2
WSW
1/4 - 1/2 Mile
Lower **CA WELLS** **CADDW0000018029**

Well ID:	3000605-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 01 - DESTROYED	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=3000605-001&store_num=		
GeoTracker Data:	Not Reported		

A3
West
1/4 - 1/2 Mile
Lower **CA WELLS** **5279**

Seq:	5279	Prim sta c:	04S/11W-36K01 S
Frds no:	3000605001	County:	30
District:	08	User id:	TEE
System no:	3000605	Water type:	G
Source nam:	WELL 01 - DESTROYED	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	334650.0	Longitude:	1175843.0
Precision:	3	Status:	DS
Comment 1:	SW CORNER OF JOSEPHINE STREET & LAMPSON AVENUE		
Comment 2:	Not Reported	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported
System no:	3000605	System nam:	Tract 1052 Mutual Water Association
Hqname:	Not Reported	Address:	Not Reported
City:	Not Reported	State:	Not Reported
Zip:	Not Reported	Zip ext:	Not Reported
Pop serv:	0	Connection:	0
Area serve:	Not Reported		

4
ENE
1/4 - 1/2 Mile
Higher **CA WELLS** **5165**

Seq:	5165	Prim sta c:	04S/10W-31F01 S
Frds no:	3010062002	County:	30

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

District:	08	User id:	TEE
System no:	3010062	Water type:	G
Source nam:	WELL 006 - DESTROYED	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	334700.0	Longitude:	1175800.0
Precision:	8	Status:	DS
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3010062	System nam:	City Of Garden Grove
Hqname:	GARDEN GROVE WATER DEPT	Address:	13802 NEWHOPE
City:	GARDEN GROVE	State:	CA
Zip:	92642	Zip ext:	Not Reported
Pop serv:	151807	Connection:	33251
Area serve:	GARDEN GROVE		

**5
NE
1/4 - 1/2 Mile
Higher**

CA WELLS CADWR9000005504

State Well #:	04S10W31F001S	Station ID:	25131
Well Name:	Not Reported	Basin Name:	Coastal Plain Of Orange County
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

**6
SE
1/4 - 1/2 Mile
Higher**

CA WELLS CADWR9000005469

State Well #:	04S10W31P001S	Station ID:	5235
Well Name:	Not Reported	Basin Name:	Coastal Plain Of Orange County
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

**B7
SW
1/4 - 1/2 Mile
Lower**

CA WELLS CADDW0000010005

Well ID:	3010062-052	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 01 WEST WELL - DESTROYED		
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=3010062-052&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

B8
SW
1/4 - 1/2 Mile
Lower

CA WELLS CADDW0000020973

Well ID:	3010062-053	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 02 EAST WELL - DESTROYED		
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=3010062-053&store_num=		
GeoTracker Data:	Not Reported		

9
SE
1/4 - 1/2 Mile
Higher

FED USGS USGS40000138106

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	004S010W31P001S	Type:	Well
Description:	Not Reported	HUC:	18070201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	33	Level reading date:	1986-09-03
Feet below surface:	38.47	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1986-05-07	Feet below surface:	35.54
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-02-20	Feet below surface:	35.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-11-06	Feet below surface:	37.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-08-17	Feet below surface:	36.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-05-09	Feet below surface:	32.78
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-02-14	Feet below surface:	32.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-11-14	Feet below surface:	35.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-09-06	Feet below surface:	32.80
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1984-05-17	Feet below surface:	31.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-02-16	Feet below surface:	30.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-11-01	Feet below surface:	35.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-08-16	Feet below surface:	38.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-05-12	Feet below surface:	37.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-02-11	Feet below surface:	39.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-11-08	Feet below surface:	41.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-08-05	Feet below surface:	42.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-04-30	Feet below surface:	40.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-01-29	Feet below surface:	39.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-11-10	Feet below surface:	42.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-07-28	Feet below surface:	43.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-05-07	Feet below surface:	40.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-02-09	Feet below surface:	42.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-10-30	Feet below surface:	46.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-08-26	Feet below surface:	48.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-06-10	Feet below surface:	48.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-02-07	Feet below surface:	50.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-11-16	Feet below surface:	53.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-08-01	Feet below surface:	56.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-05-02	Feet below surface:	55.98
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1979-02-05	Feet below surface:	57.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-11-03	Feet below surface:	62.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-09-18	Feet below surface:	63.76
Feet to sea level:	Not Reported	Note:	Not Reported

**B10
SW
1/4 - 1/2 Mile
Lower**

CA WELLS 5282

Seq:	5282	Prim sta c:	04S/11W-36Q01 S
Frds no:	3000688001	County:	30
District:	08	User id:	TEE
System no:	3000688	Water type:	G
Source nam:	WELL 01 WEST WELL - DESTROYED	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	334634.0	Longitude:	1175842.0
Precision:	3	Status:	DS
Comment 1:	GARDEN GROVE	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		
System no:	3000688	System nam:	Dalewood Mutual Water Association Inc.
Hqname:	Not Reported	Address:	Not Reported
City:	Not Reported	State:	Not Reported
Zip:	Not Reported	Zip ext:	Not Reported
Pop serv:	0	Connection:	0
Area serve:	Not Reported		

**B11
SW
1/4 - 1/2 Mile
Lower**

CA WELLS 5283

Seq:	5283	Prim sta c:	04S/11W-36Q02 S
Frds no:	3000688002	County:	30
District:	08	User id:	TEE
System no:	3000688	Water type:	G
Source nam:	WELL 02 EAST WELL - DESTROYED	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	334634.0	Longitude:	1175842.0
Precision:	3	Status:	DS
Comment 1:	SW CORNER OF JOSEPHINE ST & STANFORD AVE., GARDEN GROVE		
Comment 2:	Not Reported	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported
System no:	3000688	System nam:	Dalewood Mutual Water Association Inc.
Hqname:	Not Reported	Address:	Not Reported
City:	Not Reported	State:	Not Reported
Zip:	Not Reported	Zip ext:	Not Reported
Pop serv:	0	Connection:	0
Area serve:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C12
South
1/4 - 1/2 Mile
Lower

CA WELLS CAEDF0000132214

Well ID:	T0605900038-AMW-1	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-1		

C13
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000103861

Well ID:	T0605900038-AMW-6	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-6
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-6&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-6		

C14
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000107783

Well ID:	T0605900038-AMW-2	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-2		

C15
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000039206

Well ID:	T0605900038-AMW-10	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-10
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-10&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-10		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

D16
NE
1/2 - 1 Mile
Higher

CA WELLS CADWR9000005525

State Well #:	04S10W31B002S	Station ID:	28872
Well Name:	Not Reported	Basin Name:	Coastal Plain Of Orange County
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

E17
NNW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000004074

Well ID:	T0605999102-MW6	Well Type:	MONITORING
Source:	EDF	Other Name:	MW6
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW6&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW6		

C18
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF00000068450

Well ID:	T0605900038-AMW-4	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-4
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-4&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-4		

C19
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000101432

Well ID:	T0605900038-AMW-3	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-3		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C20
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000061547

Well ID:	T0605900038-AMW-7	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-7
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-7&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-7		

E21
NNW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000132518

Well ID:	T0605999102-MW1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW1		

E22
NNW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000099962

Well ID:	T0605999102-MW8	Well Type:	MONITORING
Source:	EDF	Other Name:	MW8
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW8&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW8		

C23
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000099171

Well ID:	T0605900038-AMW-9	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-9
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-9&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-9		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

E24
NNW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000130443

Well ID:	T0605999102-MW2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW2		

C25
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000041118

Well ID:	T0605900038-AMW-5	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-5
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-5&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-5		

C26
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000094896

Well ID:	T0605900038-AMW-8	Well Type:	MONITORING
Source:	EDF	Other Name:	AMW-8
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=AMW-8&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=AMW-8		

E27
NNW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000018880

Well ID:	T0605999102-MW9	Well Type:	MONITORING
Source:	EDF	Other Name:	MW9
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW9&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW9		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

E28
NNW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000142276

Well ID:	T0605999102-MW10	Well Type:	MONITORING
Source:	EDF	Other Name:	MW10
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW10&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW10		

C29
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000128711

Well ID:	T0605900772-MW18D	Well Type:	MONITORING
Source:	EDF	Other Name:	MW18D
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW18D&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW18D		

C30
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000029920

Well ID:	T0605900772-MW18S	Well Type:	MONITORING
Source:	EDF	Other Name:	MW18S
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW18S&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW18S		

E31
NNW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000047848

Well ID:	T0605999102-MW5	Well Type:	MONITORING
Source:	EDF	Other Name:	MW5
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW5&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW5		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C32
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000137700

Well ID:	T0605900772-MW19S	Well Type:	MONITORING
Source:	EDF	Other Name:	MW19S
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW19S&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW19S		

C33
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000095459

Well ID:	T0605900772-MW19D	Well Type:	MONITORING
Source:	EDF	Other Name:	MW19D
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW19D&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW19D		

E34
NNW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000075146

Well ID:	T0605999102-MW3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW3		

E35
NNW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000117943

Well ID:	T0605999102-MW7	Well Type:	MONITORING
Source:	EDF	Other Name:	MW7
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW7&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW7		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C36
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000137308

Well ID:	T0605900772-MW9	Well Type:	MONITORING
Source:	EDF	Other Name:	MW9
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW9&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW9		

37
NE
1/2 - 1 Mile
Higher

CA WELLS CADWR0000001051

Well ID:	04S10W31B001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	04S10W31B001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=04S10W31B001S&store_num=		
GeoTracker Data:	Not Reported		

D38
NE
1/2 - 1 Mile
Higher

FED USGS USGS40000138172

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	004S010W31B002S	Type:	Well
Description:	Not Reported	HUC:	18070201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19240101	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	192
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	81	Level reading date:	1986-09-02
Feet below surface:	46.82	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1986-05-06	Feet below surface:	43.95
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1986-02-20	Feet below surface:	43.74
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1985-11-05	Feet below surface:	45.49
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1985-08-17	Feet below surface:	44.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-05-09	Feet below surface:	41.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-02-14	Feet below surface:	41.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-11-01	Feet below surface:	43.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-09-06	Feet below surface:	42.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-05-17	Feet below surface:	39.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-02-15	Feet below surface:	39.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-11-01	Feet below surface:	45.01
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-08-17	Feet below surface:	47.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-05-11	Feet below surface:	46.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-02-10	Feet below surface:	47.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-11-04	Feet below surface:	51.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-07-28	Feet below surface:	51.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-04-30	Feet below surface:	49.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-01-29	Feet below surface:	48.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-11-03	Feet below surface:	51.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-07-28	Feet below surface:	52.04
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-05-06	Feet below surface:	49.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-02-06	Feet below surface:	52.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-10-28	Feet below surface:	56.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-08-26	Feet below surface:	58.26
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1980-06-10	Feet below surface:	58.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-02-07	Feet below surface:	60.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-11-16	Feet below surface:	62.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-07-31	Feet below surface:	66.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-05-02	Feet below surface:	66.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-02-05	Feet below surface:	67.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-11-03	Feet below surface:	72.78
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-09-25	Feet below surface:	74.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-11-03	Feet below surface:	77.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-03-16	Feet below surface:	73.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-01-13	Feet below surface:	73.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-05	Feet below surface:	74.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-09	Feet below surface:	69.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-06	Feet below surface:	69.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-31	Feet below surface:	73.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-03-18	Feet below surface:	68.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-01-03	Feet below surface:	69.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-10-30	Feet below surface:	71.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-08-29	Feet below surface:	74.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-07-02	Feet below surface:	73.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-04-30	Feet below surface:	67.60
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1974-03-18	Feet below surface:	67.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-01-23	Feet below surface:	68.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-31	Feet below surface:	71.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-07-03	Feet below surface:	70.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-05-09	Feet below surface:	67.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-01-04	Feet below surface:	63.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-31	Feet below surface:	65.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-09-11	Feet below surface:	67.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-06-29	Feet below surface:	63.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-02-28	Feet below surface:	51.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-01-11	Feet below surface:	54.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-11-01	Feet below surface:	57.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-08-30	Feet below surface:	58.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-07-07	Feet below surface:	55.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-06-07	Feet below surface:	51.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-04-29	Feet below surface:	50.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-04-12	Feet below surface:	51.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-01	Feet below surface:	53.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-12-09	Feet below surface:	53.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-29	Feet below surface:	55.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-01	Feet below surface:	54.00
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1970-08-31	Feet below surface:	56.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-08-06	Feet below surface:	53.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-06-29	Feet below surface:	52.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-05-29	Feet below surface:	49.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-04-30	Feet below surface:	43.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-04-01	Feet below surface:	43.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-06	Feet below surface:	43.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-02-02	Feet below surface:	43.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-12-30	Feet below surface:	45.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-11-02	Feet below surface:	53.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-10-02	Feet below surface:	53.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-08-28	Feet below surface:	55.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-06-04	Feet below surface:	52.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-28	Feet below surface:	53.00
Feet to sea level:	Not Reported	Note:	Not Reported

**E39
NNW
1/2 - 1 Mile
Higher**

CA WELLS CAEDF0000102119

Well ID:	T0605999102-MW4	Well Type:	MONITORING
Source:	EDF	Other Name:	MW4
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605999102&assigned_name=MW4&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605999102&assigned_name=MW4		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C40
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000127804

Well ID:	T0605900038-MW-11	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-11
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900038&assigned_name=MW-11&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900038&assigned_name=MW-11		

C41
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000061167

Well ID:	T0605900772-MW3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW3		

C42
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000012879

Well ID:	T0605900772-MW17D	Well Type:	MONITORING
Source:	EDF	Other Name:	MW17D
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW17D&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW17D		

C43
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000049553

Well ID:	T0605900772-MW17	Well Type:	MONITORING
Source:	EDF	Other Name:	MW17
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW17&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW17		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

44
SW
1/2 - 1 Mile
Lower

CA WELLS CADWR0000011895

Well ID: 04S11W36R001S Well Type: UNK
 Source: Department of Water Resources
 Other Name: 04S11W36R001S GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=04S11W36R001S&store_num=
 GeoTracker Data: Not Reported

C45
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000033936

Well ID: T0605900772-MW10 Well Type: MONITORING
 Source: EDF Other Name: MW10
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW10&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW10

C46
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000136781

Well ID: T0605900772-MW2 Well Type: MONITORING
 Source: EDF Other Name: MW2
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW2&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW2

C47
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000114992

Well ID: T0605900772-MW2D Well Type: MONITORING
 Source: EDF Other Name: MW2D
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW2D&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW2D

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C48
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000080120

Well ID:	T0605900772-MW4	Well Type:	MONITORING
Source:	EDF	Other Name:	MW4
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW4&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW4		

C49
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000084300

Well ID:	T0605900772-MW1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW1		

C50
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000039929

Well ID:	T0605900772-MW5	Well Type:	MONITORING
Source:	EDF	Other Name:	MW5
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW5&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW5		

C51
South
1/2 - 1 Mile
Lower

AQUIFLOW 54942

Site ID:	083000973T
Groundwater Flow:	SW
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	11.13
Date:	01/27/1999

C52
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000142945

Well ID:	T0605900772-MW6	Well Type:	MONITORING
Source:	EDF	Other Name:	MW6

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW6&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW6

F53
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000018531

Well ID: T0605900772-MW14D Well Type: MONITORING
 Source: EDF Other Name: MW14D
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW14D&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW14D

F54
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000021986

Well ID: T0605900772-MW14 Well Type: MONITORING
 Source: EDF Other Name: MW14
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW14&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW14

F55
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000129689

Well ID: T0605900772-MW12 Well Type: MONITORING
 Source: EDF Other Name: MW12
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW12&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW12

F56
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000128796

Well ID: T0605900772-MW7 Well Type: MONITORING
 Source: EDF Other Name: MW7
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW7&store_num=

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW7

F57
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000035941

Well ID:	T0605900772-MW8	Well Type:	MONITORING
Source:	EDF	Other Name:	MW8
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW8&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW8		

F58
SSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000078985

Well ID:	T0605900772-MW13	Well Type:	MONITORING
Source:	EDF	Other Name:	MW13
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW13&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW13		

F59
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000061304

Well ID:	T0605900772-MW11	Well Type:	MONITORING
Source:	EDF	Other Name:	MW11
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605900772&assigned_name=MW11&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605900772&assigned_name=MW11		

60
NNE
1/2 - 1 Mile
Higher

CA WELLS CADWR0000030773

Well ID:	04S10W30P001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	04S10W30P001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=04S10W30P001S&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

61
SE
1/2 - 1 Mile
Higher

CA WELLS CADWR0000012808

Well ID:	04S10W31Q001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	04S10W31Q001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=04S10W31Q001S&store_num=		
GeoTracker Data:	Not Reported		

62
SW
1/2 - 1 Mile
Lower

CA WELLS CADWR9000005445

State Well #:	05S11W01C002S	Station ID:	37820
Well Name:	Not Reported	Basin Name:	Coastal Plain Of Orange County
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

G63
NW
1/2 - 1 Mile
Lower

CA WELLS CAUSGSN00018873

Well ID:	USGS-334724117585801	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-334724117585801	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-334724117585801&store_num=		
GeoTracker Data:	Not Reported		

G64
NW
1/2 - 1 Mile
Lower

FED USGS USGS40000138194

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	004S011W25Q001S	Type:	Well
Description:	DATA FROM OCWD (SAMPLE FOR TRITIUM)		
HUC:	18070203	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	California Coastal Basin aquifers
Formation Type:	Alluvium	Aquifer Type:	Confined single aquifer
Construction Date:	19530701	Well Depth:	562
Well Depth Units:	ft	Well Hole Depth:	562
Well Hole Depth Units:	ft		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

G65
NW
1/2 - 1 Mile
Lower

CA WELLS CADDW0000011378

Well ID:	3010022-024	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	DALE	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=3010022-024&store_num=		
GeoTracker Data:	Not Reported		

66
North
1/2 - 1 Mile
Higher

CA WELLS CADWR0000019006

Well ID:	04S10W30M001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	04S10W30M001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=04S10W30M001S&store_num=		
GeoTracker Data:	Not Reported		

H67
SW
1/2 - 1 Mile
Lower

AQUIFLOW 50964

Site ID:	083000771T
Groundwater Flow:	W
Shallow Water Depth:	9.68
Deep Water Depth:	10.96
Average Water Depth:	Not Reported
Date:	04/18/1995

H68
SW
1/2 - 1 Mile
Lower

AQUIFLOW 50963

Site ID:	083000771T
Groundwater Flow:	W
Shallow Water Depth:	9.68
Deep Water Depth:	10.96
Average Water Depth:	Not Reported
Date:	04/18/1995

G69
NW
1/2 - 1 Mile
Lower

CA WELLS 5263

Seq:	5263	Prim sta c:	04S/11W-25Q01 S
Frds no:	3010022024	County:	30
District:	08	User id:	TEE
System no:	3010022	Water type:	G
Source nam:	DALE	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	334725.4	Longitude:	1175857.6
Precision:	2	Status:	AU
Comment 1:	200' E/O DALE ST.; 600' N/O CHAPMAN S/O FLOOD CONTROL CHANNEL		
Comment 2:	Not Reported	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

System no:	3010022	System nam:	Southern Calif Wc - West Orange
Hqname:	SOUTHERN CALIF WATER CO	Address:	1920 W. CORPORATE WAY
City:	ANAHEIM	State:	CA
Zip:	92801	Zip ext:	Not Reported
Pop serv:	84737	Connection:	25347
Area serve:	LOS ALAMITOS		
Sample date:	12-FEB-18	Finding:	528.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-18	Finding:	0.12
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-18	Finding:	4.68
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	12-FEB-18	Finding:	851.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	12-FEB-18	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	12-FEB-18	Finding:	196.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-18	Finding:	196.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-18	Finding:	4.68
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	12-FEB-18	Finding:	344.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-18	Finding:	106.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-18	Finding:	19.6
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-18	Finding:	50.4
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-18	Finding:	4.2
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-18	Finding:	68.3
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	12-FEB-18	Finding:	126.
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	12-FEB-18	Finding:	0.49
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	12-FEB-18	Finding:	110.
Chemical:	BORON	Report units:	UG/L
Dir:	100.		
Sample date:	12-FEB-18	Finding:	1.91
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dir:	1.		
Sample date:	12-FEB-18	Finding:	4.
Chemical:	VANADIUM	Report units:	UG/L
Dir:	3.		
Sample date:	05-JUN-17	Finding:	2.96
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	05-JUN-17	Finding:	9.63
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dir:	1.		
Sample date:	05-JUN-17	Finding:	0.47
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	05-JUN-17	Finding:	1.15
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	05-JUN-17	Finding:	2.14
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	08-FEB-17	Finding:	3.99
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	08-FEB-17	Finding:	1.9
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dir:	1.		
Sample date:	08-FEB-17	Finding:	4.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	16-MAY-16	Finding:	4.44
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	16-MAY-16	Finding:	4.45
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	16-MAY-16	Finding:	4.45
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.4		
Sample date:	16-MAY-16	Finding:	4.44
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	04-APR-16	Finding:	4.2
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	07-MAR-16	Finding:	4.1
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	17-FEB-16	Finding:	4.35
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	17-FEB-16	Finding:	4.35
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	02-FEB-16	Finding:	3.9
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	11-JAN-16	Finding:	4.7
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	07-DEC-15	Finding:	4.4
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	12-OCT-15	Finding:	4.5
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	01-SEP-15	Finding:	4.2
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	04-FEB-15	Finding:	63.3
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	04-FEB-15	Finding:	4050.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	04-FEB-15	Finding:	0.16
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	04-FEB-15	Finding:	802.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	04-FEB-15	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	04-FEB-15	Finding:	199.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	04-FEB-15	Finding:	199.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	04-FEB-15	Finding:	327.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	04-FEB-15	Finding:	101.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	04-FEB-15	Finding:	18.1
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	04-FEB-15	Finding:	46.8
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	04-FEB-15	Finding:	4.
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	04-FEB-15	Finding:	122.
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	04-FEB-15	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	04-FEB-15	Finding:	2.2
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	04-FEB-15	Finding:	110.
Chemical:	BORON	Report units:	UG/L
Dir:	100.		
Sample date:	04-FEB-15	Finding:	4.6
Chemical:	VANADIUM	Report units:	UG/L
Dir:	3.		
Sample date:	04-FEB-15	Finding:	512.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	330.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	100.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	16.
Chemical:	MAGNESIUM	Report units:	MG/L

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.		
Sample date:	05-JAN-15	Finding:	550.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	2.18
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	0.225
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	6.6e-002
Chemical:	RA-226 FOR CWS OR TOTAL RA FOR NTNC BY 903.0	Dir:	0.
Report units:	PCI/L		
Sample date:	12-AUG-14	Finding:	0.2
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	0.3
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	1.11
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	1.63
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	7.1
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dir:	1.		
Sample date:	12-AUG-14	Finding:	0.561
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	7.72
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dir:	3.		
Sample date:	12-AUG-14	Finding:	0.418
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0	Dir:	0.
Report units:	PCI/L		
Sample date:	12-AUG-14	Finding:	4.3e-002
Chemical:	RADIUM 228	Report units:	PCI/L
Dir:	1.		
Sample date:	21-MAY-14	Finding:	1.8
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dir:	1.		
Sample date:	21-MAY-14	Finding:	4120.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	07-APR-14	Finding:	3500.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	04-MAR-14	Finding:	290.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	04-MAR-14	Finding:	88.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	04-MAR-14	Finding:	17.
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	04-MAR-14	Finding:	7.86
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	04-MAR-14	Finding:	520.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	04-SEP-13	Finding:	3.6
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	20-AUG-13	Finding:	3.9
Chemical:	VANADIUM	Report units:	UG/L
Dir:	3.		
Sample date:	20-AUG-13	Finding:	2.1
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	20-AUG-13	Finding:	829.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	05-AUG-13	Finding:	3.9
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	01-JUL-13	Finding:	4.1
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	03-JUN-13	Finding:	3.6
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	20-MAY-13	Finding:	4130.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	06-MAY-13	Finding:	3.9
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	01-APR-13	Finding:	4.1
Chemical:	NITRATE (AS NO3)	Report units:	MG/L

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	2.		
Sample date:	11-MAR-13	Finding:	4.2
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	04-FEB-13	Finding:	3.9
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	14-JAN-13	Finding:	7.71
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	14-JAN-13	Finding:	310.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	14-JAN-13	Finding:	18.
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	14-JAN-13	Finding:	500.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	14-JAN-13	Finding:	94.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	07-JAN-13	Finding:	4.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	04-DEC-12	Finding:	4.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	01-NOV-12	Finding:	3.9
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	01-OCT-12	Finding:	4.1
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	04-SEP-12	Finding:	3.6
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	01-AUG-12	Finding:	3.8
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	14-MAY-12	Finding:	16.9
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	14-MAY-12	Finding:	43.3
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	14-MAY-12	Finding:	3.8
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	14-MAY-12	Finding:	57.
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	14-MAY-12	Finding:	111.
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	14-MAY-12	Finding:	0.5
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	14-MAY-12	Finding:	2.5
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	14-MAY-12	Finding:	5.8
Chemical:	VANADIUM	Report units:	UG/L
Dir:	3.		
Sample date:	14-MAY-12	Finding:	464.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	14-MAY-12	Finding:	0.2
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	14-MAY-12	Finding:	3750.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	14-MAY-12	Finding:	95.8
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	14-MAY-12	Finding:	309.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	14-MAY-12	Finding:	228.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	14-MAY-12	Finding:	187.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	14-MAY-12	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	14-MAY-12	Finding:	779.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	05-MAR-12	Finding:	1.9
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir: 1.

I70
WSW
1/2 - 1 Mile
Lower

CA WELLS CADDW0000016895

Well ID:	3010022-018	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	SYCAMORE (FERN)	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=3010022-018&store_num=		
GeoTracker Data:	Not Reported		

71
East
1/2 - 1 Mile
Higher

AQUIFLOW 54952

Site ID:	083000284T
Groundwater Flow:	WSW
Shallow Water Depth:	78
Deep Water Depth:	90
Average Water Depth:	Not Reported
Date:	07/09/1998

J72
ESE
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000128228

Well ID:	T0605946054-MW7	Well Type:	MONITORING
Source:	EDF	Other Name:	MW7
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605946054&assigned_name=MW7&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605946054&assigned_name=MW7		

I73
WSW
1/2 - 1 Mile
Lower

CA WELLS 5281

Seq:	5281	Prim sta c:	04S/11W-36N01 S
Frds no:	3010022018	County:	30
District:	08	User id:	TEE
System no:	3010022	Water type:	G
Source nam:	SYCAMORE (FERN)	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	334634.5	Longitude:	1175914.7
Precision:	2	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		
System no:	3010022	System nam:	Southern Calif Wc - West Orange
Hqname:	SOUTHERN CALIF WATER CO	Address:	1920 W. CORPORATE WAY
City:	ANAHEIM	State:	CA
Zip:	92801	Zip ext:	Not Reported
Pop serv:	84737	Connection:	25347

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Area serve:	LOS ALAMITOS		
Sample date:	10-MAY-17	Finding:	3.54
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	10-MAY-17	Finding:	3.54
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	23-FEB-17	Finding:	7.8
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	23-FEB-17	Finding:	187.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	228.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	3.56
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	23-FEB-17	Finding:	311.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	96.1
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	17.2
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	43.1
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	3.7
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	61.1
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	111.
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	23-FEB-17	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	23-FEB-17	Finding:	1.7
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dir:	1.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	23-FEB-17	Finding:	4.
Chemical:	VANADIUM	Report units:	UG/L
Dir:	3.		
Sample date:	23-FEB-17	Finding:	486.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	0.19
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	23-FEB-17	Finding:	3.56
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	23-FEB-17	Finding:	801.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	08-FEB-17	Finding:	3.48
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	08-FEB-17	Finding:	3.47
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	16-MAY-16	Finding:	3.55
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	16-MAY-16	Finding:	3.55
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	04-APR-16	Finding:	3.3
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	07-MAR-16	Finding:	3.2
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	01-FEB-16	Finding:	3.4
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	11-JAN-16	Finding:	3.7
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	07-DEC-15	Finding:	3.4
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	07-DEC-15	Finding:	0.21
Chemical:	AMMONIA (NH3-N)	Report units:	MG/L
Dir:	0.		
Sample date:	05-OCT-15	Finding:	3.5
Chemical:	NITRATE (AS N)	Report units:	MG/L

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.4		
Sample date:	01-SEP-15	Finding:	3.9
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	05-AUG-15	Finding:	494.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	780.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	05-AUG-15	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	05-AUG-15	Finding:	185.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	225.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	318.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	97.9
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	17.8
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	43.8
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	3.8
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	62.
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	110.
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	05-AUG-15	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	05-AUG-15	Finding:	4.
Chemical:	VANADIUM	Report units:	UG/L
Dir:	3.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	05-AUG-15	Finding:	0.14
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	05-AUG-15	Finding:	3720.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	12-MAY-15	Finding:	3510.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	03-FEB-15	Finding:	3.9
Chemical:	VANADIUM	Report units:	UG/L
Dir:	3.		
Sample date:	03-FEB-15	Finding:	504.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	03-FEB-15	Finding:	0.15
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	03-FEB-15	Finding:	3420.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	03-FEB-15	Finding:	817.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	03-FEB-15	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	03-FEB-15	Finding:	191.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	03-FEB-15	Finding:	191.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	03-FEB-15	Finding:	323.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	03-FEB-15	Finding:	100.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-FEB-15	Finding:	17.8
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-FEB-15	Finding:	44.1
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-FEB-15	Finding:	3.8
Chemical:	POTASSIUM	Report units:	MG/L

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.		
Sample date:	03-FEB-15	Finding:	61.7
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	03-FEB-15	Finding:	111.
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	03-FEB-15	Finding:	0.46
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	02-FEB-15	Finding:	0.2
Chemical:	AMMONIA (NH3-N)	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	520.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	16.
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	95.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	300.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	02-SEP-14	Finding:	0.35
Chemical:	AMMONIA (NH3-N)	Report units:	MG/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	1.84
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	0.418
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0	Dir:	0.
Report units:	PCI/L		
Sample date:	12-AUG-14	Finding:	0.234
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	9.9e-002
Chemical:	RA-226 FOR CWS OR TOTAL RA FOR NTNC BY 903.0	Dir:	0.
Report units:	PCI/L		
Sample date:	12-AUG-14	Finding:	0.253
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	0.3
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dir:	0.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	12-AUG-14	Finding:	1.11
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	3480.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	12-AUG-14	Finding:	5.15
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dir:	3.		
Sample date:	12-AUG-14	Finding:	0.576
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	12-AUG-14	Finding:	9.37
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dir:	1.		
Sample date:	12-AUG-14	Finding:	1.86
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	07-APR-14	Finding:	4100.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	13-FEB-14	Finding:	1.5
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dir:	1.		
Sample date:	11-FEB-14	Finding:	7.82
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	11-FEB-14	Finding:	490.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	11-FEB-14	Finding:	18.
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	11-FEB-14	Finding:	94.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	11-FEB-14	Finding:	310.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	04-SEP-13	Finding:	3.4
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	20-AUG-13	Finding:	3620.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	05-AUG-13	Finding:	3.6
Chemical:	NITRATE (AS NO3)	Report units:	MG/L

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	2.		
Sample date:	01-JUL-13	Finding:	3.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	03-JUN-13	Finding:	3.2
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	06-MAY-13	Finding:	3.4
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	01-APR-13	Finding:	3.6
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	04-MAR-13	Finding:	2.9
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	04-FEB-13	Finding:	3.4
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	14-JAN-13	Finding:	480.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	14-JAN-13	Finding:	19.
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	14-JAN-13	Finding:	100.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	14-JAN-13	Finding:	330.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	14-JAN-13	Finding:	7.73
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	07-JAN-13	Finding:	3.6
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	04-DEC-12	Finding:	3.6
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	01-NOV-12	Finding:	3.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	01-OCT-12	Finding:	3.6
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	04-SEP-12	Finding:	3.3
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	20-AUG-12	Finding:	326.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	20-AUG-12	Finding:	102.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	20-AUG-12	Finding:	17.7
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	20-AUG-12	Finding:	44.
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	20-AUG-12	Finding:	3.8
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	20-AUG-12	Finding:	121.
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	20-AUG-12	Finding:	0.54
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	20-AUG-12	Finding:	4.2
Chemical:	VANADIUM	Report units:	UG/L
Dir:	3.		
Sample date:	20-AUG-12	Finding:	484.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	20-AUG-12	Finding:	0.14
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	20-AUG-12	Finding:	3550.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	20-AUG-12	Finding:	237.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	20-AUG-12	Finding:	195.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	20-AUG-12	Finding:	8.1
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	20-AUG-12	Finding:	844.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.		
Sample date:	20-AUG-12	Finding:	65.8
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	01-AUG-12	Finding:	3.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	14-MAY-12	Finding:	1.6
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dir:	1.		

**J74
ESE
1/2 - 1 Mile
Higher**

CA WELLS CAEDF0000116168

Well ID:	T0605946054-MW1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605946054&assigned_name=MW1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605946054&assigned_name=MW1		

**J75
ESE
1/2 - 1 Mile
Higher**

CA WELLS CAEDF0000058324

Well ID:	T0605946054-MW2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605946054&assigned_name=MW2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605946054&assigned_name=MW2		

**J76
ESE
1/2 - 1 Mile
Higher**

CA WELLS CAEDF0000140910

Well ID:	T0605946054-MW6	Well Type:	MONITORING
Source:	EDF	Other Name:	MW6
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605946054&assigned_name=MW6&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605946054&assigned_name=MW6		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

K77
NW
1/2 - 1 Mile
Lower

CA WELLS 5261

Seq:	5261	Prim sta c:	04S/11W-25M01 S
Frds no:	3000519002	County:	30
District:	08	User id:	TEE
System no:	3000519	Water type:	G
Source nam:	WELL 02 (SOUTH)	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	334732.0	Longitude:	1175855.0
Precision:	3	Status:	AU
Comment 1:	8101 CRAGER LANE STANTON	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3000519	System nam:	Hynes Estates Mutual Water Co.
Hqname:	Not Reported	Address:	8061 Crager Ln.
City:	Stanton	State:	CA
Zip:	90680	Zip ext:	Not Reported
Pop serv:	120	Connection:	39
Area serve:	Not Reported		

Sample date:	13-MAR-17	Finding:	9.09
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dir:	3.		

Sample date:	13-MAR-17	Finding:	0.47
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dir:	0.		

Sample date:	13-MAR-17	Finding:	12.4
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dir:	1.		

Sample date:	13-MAR-17	Finding:	2.1
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dir:	0.		

Sample date:	13-MAR-17	Finding:	1.15
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dir:	0.		

Sample date:	13-MAR-17	Finding:	2.44
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dir:	0.		

Sample date:	13-JAN-16	Finding:	0.61
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		

Sample date:	15-JAN-15	Finding:	680.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		

Sample date:	15-JAN-15	Finding:	0.6
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dir:	0.1		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	15-JAN-15	Finding:	0.21
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	15-JAN-15	Finding:	3.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	15-JAN-15	Finding:	612.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	15-JAN-15	Finding:	0.46
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	15-JAN-15	Finding:	167.
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	15-JAN-15	Finding:	49.
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	15-JAN-15	Finding:	3.2
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	15-JAN-15	Finding:	42.2
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	15-JAN-15	Finding:	20.2
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	15-JAN-15	Finding:	116.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	15-JAN-15	Finding:	373.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	15-JAN-15	Finding:	0.36
Chemical:	TOTAL ORGANIC CARBON (TOC)	Report units:	MG/L
Dir:	0.3		
Sample date:	15-JAN-15	Finding:	252.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	15-JAN-15	Finding:	903.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	15-JAN-15	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	15-JAN-15	Finding:	207.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.		
Sample date:	06-AUG-14	Finding:	1.7
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dir:	1.		
Sample date:	15-JAN-14	Finding:	0.13
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.	Report units:	PCI/L
Dir:	0.		
Sample date:	15-JAN-14	Finding:	0.253
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	15-JAN-14	Finding:	0.3
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	15-JAN-14	Finding:	1.11
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	15-JAN-14	Finding:	2.8
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	15-JAN-14	Finding:	9.53
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dir:	1.		
Sample date:	15-JAN-14	Finding:	0.445
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	15-JAN-14	Finding:	2.8e-002
Chemical:	RADIUM 228	Report units:	PCI/L
Dir:	1.		
Sample date:	15-JAN-14	Finding:	2.55
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	15-JAN-14	Finding:	630.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	15-JAN-14	Finding:	0.322
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0	Report units:	PCI/L
Dir:	0.		
Sample date:	15-JAN-14	Finding:	1.78
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	08-APR-13	Finding:	863.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	15-JAN-13	Finding:	2.3
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	15-JAN-13	Finding:	520.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	03-JAN-12	Finding:	244.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	0.31
Chemical:	TOTAL ORGANIC CARBON (TOC)	Report units:	MG/L
Dir:	0.3		
Sample date:	03-JAN-12	Finding:	358.
Chemical:	HARDNESS (TOTAL) AS CaCO ₃	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	109.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	20.8
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	43.
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	3.2
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	47.1
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	175.
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	03-JAN-12	Finding:	0.5
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	03-JAN-12	Finding:	544.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	0.15
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	200.
Chemical:	ALKALINITY (TOTAL) AS CaCO ₃	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	03-JAN-12	Finding:	842.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir: 0.

L78
South
1/2 - 1 Mile
Lower

CA WELLS CADWR9000005418

State Well #:	05S11W01H001S	Station ID:	25333
Well Name:	Not Reported	Basin Name:	Coastal Plain Of Orange County
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

J79
ESE
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000065413

Well ID:	T0605946054-MW3A	Well Type:	MONITORING
Source:	EDF	Other Name:	MW3A
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605946054&assigned_name=MW3A&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605946054&assigned_name=MW3A		

J80
ESE
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000065589

Well ID:	T0605946054-MW4A	Well Type:	MONITORING
Source:	EDF	Other Name:	MW4A
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605946054&assigned_name=MW4A&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605946054&assigned_name=MW4A		

J81
ESE
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000126643

Well ID:	T0605946054-MW4	Well Type:	MONITORING
Source:	EDF	Other Name:	MW4
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605946054&assigned_name=MW4&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605946054&assigned_name=MW4		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

J82
ESE
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000102855

Well ID:	T0605946054-MW3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605946054&assigned_name=MW3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605946054&assigned_name=MW3		

83
WSW
1/2 - 1 Mile
Lower

CA WELLS CADWR0000010254

Well ID:	04S11W36N001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	04S11W36N001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=04S11W36N001S&store_num=		
GeoTracker Data:	Not Reported		

84
West
1/2 - 1 Mile
Lower

CA WELLS CADDW0000014687

Well ID:	3000606-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 01 - DESTROYED	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=3000606-001&store_num=		
GeoTracker Data:	Not Reported		

K85
NW
1/2 - 1 Mile
Lower

CA WELLS CADWR0000010205

Well ID:	04S11W25K001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	04S11W25K001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=04S11W25K001S&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

M86
WSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000063540

Well ID:	T060592821-MW12	Well Type:	MONITORING
Source:	EDF	Other Name:	MW12
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T060592821&assigned_name=MW12&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T060592821&assigned_name=MW12		

87
SSW
1/2 - 1 Mile
Higher

CA WELLS CADWR0000025855

Well ID:	05S11W01H001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	05S11W01H001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=05S11W01H001S&store_num=		
GeoTracker Data:	Not Reported		

M88
WSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000067579

Well ID:	T060592821-MW1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T060592821&assigned_name=MW1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T060592821&assigned_name=MW1		

M89
WSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000059200

Well ID:	T060592821-MW1D	Well Type:	MONITORING
Source:	EDF	Other Name:	MW1D
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T060592821&assigned_name=MW1D&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T060592821&assigned_name=MW1D		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

L90
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF000005232

Well ID:	T0605901947-MW-8	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-8
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-8&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-8		

M91
WSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000047819

Well ID:	T060592821-MW3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T060592821&assigned_name=MW3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T060592821&assigned_name=MW3		

M92
WSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF000008049

Well ID:	T060592821-MW11	Well Type:	MONITORING
Source:	EDF	Other Name:	MW11
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T060592821&assigned_name=MW11&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T060592821&assigned_name=MW11		

M93
WSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000095927

Well ID:	T060592821-MW16	Well Type:	MONITORING
Source:	EDF	Other Name:	MW16
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T060592821&assigned_name=MW16&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T060592821&assigned_name=MW16		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

M94
WSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000045646

Well ID:	T060592821-MW2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T060592821&assigned_name=MW2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T060592821&assigned_name=MW2		

L95
South
1/2 - 1 Mile
Lower

CA WELLS CADWR0000023706

Well ID:	05S11W01H002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	05S11W01H002S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=05S11W01H002S&store_num=		
GeoTracker Data:	Not Reported		

L96
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000015643

Well ID:	T0605901947-MW-13A	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-13A
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-13A&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-13A		

L97
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000041267

Well ID:	T0605901947-MW-2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-2		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

L98
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000050814

Well ID:	T0605901947-MW-2C	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-2C
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-2C&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-2C		

L99
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000143646

Well ID:	T0605901947-MW-7B	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-7B
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-7B&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-7B		

L100
South
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000140984

Well ID:	T0605901947-MW-7A	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-7A
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-7A&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-7A		

L101
South
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000072616

Well ID:	T0605901947-MW-10	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-10
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-10&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-10		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

N102
South
1/2 - 1 Mile
Lower

FED USGS USGS40000138000

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	005S011W01H002S	Type:	Well
Description:	NAWQA DATA ENTRY COM + VER 01/08/2002 SNHAMLIN		
HUC:	Not Reported	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Units:	Not Reported	Aquifer:	California Coastal Basin aquifers
Formation Type:	Not Reported	Aquifer Type:	Confined single aquifer
Construction Date:	Not Reported	Well Depth:	960
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels, Number of Measurements:	1	Level reading date:	2000-10-30
Feet below surface:	111	Feet to sea level:	Not Reported
Note:	Not Reported		

M103
WSW
1/2 - 1 Mile
Lower

CA WELLS CAEDF0000120427

Well ID:	T060592821-MW4	Well Type:	MONITORING
Source:	EDF	Other Name:	MW4
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T060592821&assigned_name=MW4&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T060592821&assigned_name=MW4		

O104
ENE
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000110505

Well ID:	T0605902067-MW-05	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-05
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605902067&assigned_name=MW-05&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605902067&assigned_name=MW-05		

L105
South
1/2 - 1 Mile
Higher

CA WELLS CALLNL000000840

Well ID:	100641	Well Type:	MUNICIPAL
Source:	Lawrence Livermore National Laboratory		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Other Name:	05S/11W-01H02 S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	Not Reported		
GeoTracker Data:	Not Reported		
Chemical:	Xenon	Results:	.0000000116138
Units:	cm3STP/g	Date:	04/13/2001
Chemical:	Neon	Results:	.000000300382
Units:	cm3STP/g	Date:	04/13/2001
Chemical:	Helium-4	Results:	.0000000757252
Units:	cm3STP/g	Date:	04/13/2001
Chemical:	Tritium (Hydrogen 3)	Results:	2.17
Units:	pCi/L	Date:	08/16/2001
Chemical:	Argon	Results:	.000415087
Units:	cm3STP/g	Date:	04/13/2001
Chemical:	Helium-3/Helium-4	Results:	.000001559
Units:	atom ratio	Date:	04/13/2001
Chemical:	Krypton	Results:	.0000000846942
Units:	cm3STP/g	Date:	04/13/2001

**L106
South
1/2 - 1 Mile
Higher**

CA WELLS CALLNL000000358

Well ID:	101119	Well Type:	MUNICIPAL
Source:	Lawrence Livermore National Laboratory		
Other Name:	05S/11W-01H02 S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	Not Reported		
GeoTracker Data:	Not Reported		
Chemical:	Tritium (Hydrogen 3)	Results:	3.19
Units:	pCi/L	Date:	04/15/2002
Chemical:	Helium-3/Helium-4	Results:	.00000157556
Units:	atom ratio	Date:	04/03/2002
Chemical:	Argon	Results:	.000430905
Units:	cm3STP/g	Date:	04/03/2002
Chemical:	Helium-4	Results:	.0000000796846
Units:	cm3STP/g	Date:	04/03/2002

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

N107
South
1/2 - 1 Mile
Lower

CA WELLS CAUSGSN00009449

Well ID: USGS-334601117582401 Well Type: UNK
 Source: United States Geological Survey
 Other Name: USGS-334601117582401 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-334601117582401&store_num=
 GeoTracker Data: Not Reported

L108
South
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000114954

Well ID: T0605901947-MW-13C Well Type: MONITORING
 Source: EDF Other Name: MW-13C
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-13C&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-13C

L109
South
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000108057

Well ID: T0605901947-MW-13B Well Type: MONITORING
 Source: EDF Other Name: MW-13B
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-13B&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-13B

L110
South
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000115715

Well ID: T0605901947-MW-9 Well Type: MONITORING
 Source: EDF Other Name: MW-9
 GAMA PFAS Testing: Not Reported
 Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605901947&assigned_name=MW-9&store_num=
 GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605901947&assigned_name=MW-9

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

O111			CA WELLS	CAEDF0000121576
ENE				
1/2 - 1 Mile				
Higher				
Well ID:	T0605902067-MW-06	Well Type:	MONITORING	
Source:	EDF	Other Name:	MW-06	
GAMA PFAS Testing:	Not Reported			
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0605902067&assigned_name=MW-06&store_num=			
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0605902067&assigned_name=MW-06			

1G	Site ID:	083000284T	AQUIFLOW	54952
East	Groundwater Flow:	WSW		
1/2 - 1 Mile	Shallow Water Depth:	78		
Lower	Deep Water Depth:	90		
	Average Water Depth:	Not Reported		
	Date:	07/09/1998		

2G	Site ID:	083000771T	AQUIFLOW	50964
SW	Groundwater Flow:	W		
1/2 - 1 Mile	Shallow Water Depth:	9.68		
Lower	Deep Water Depth:	10.96		
	Average Water Depth:	Not Reported		
	Date:	04/18/1995		

3G	Site ID:	083000771T	AQUIFLOW	50963
SW	Groundwater Flow:	W		
1/2 - 1 Mile	Shallow Water Depth:	9.68		
Lower	Deep Water Depth:	10.96		
	Average Water Depth:	Not Reported		
	Date:	04/18/1995		

4G	Site ID:	083000973T	AQUIFLOW	54942
South	Groundwater Flow:	SW		
1/2 - 1 Mile	Shallow Water Depth:	Not Reported		
Lower	Deep Water Depth:	Not Reported		
	Average Water Depth:	11.13		
	Date:	01/27/1999		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92841	9	0

Federal EPA Radon Zone for ORANGE County: 3

- Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for ORANGE COUNTY, CA

Number of sites tested: 30

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.763 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: Department of Fish and Wildlife

Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program

State Water Resources Control Board

Telephone: 916-341-5577

The GAMA Program is California's comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Health Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database

Source: Department of Water Resources

Telephone: 916-651-9648

California Drinking Water Quality Database

Source: Department of Public Health

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations

Source: Dept of Conservation, Geologic Energy Management Division

Telephone: 916-323-1779

Oil and Gas well locations in the state.

California Earthquake Fault Lines

Source: California Division of Mines and Geology

The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon

Source: Department of Public Health

Telephone: 916-210-8558

Radon Database for California

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRRA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

Â© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

8141 LAMPSON AVE APT #1
STANTON, CA 90680

Inquiry Number:
May 4, 2022

EDR Site Report™



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

The EDR-Site Report™ is a comprehensive presentation of government filings on a facility identified in a search of federal, state and local environmental databases.

Section 1: Facility Detail Reports Page 3

All available detailed information from databases where sites are identified.

Section 2: Databases and Update Information. Page 4

Name, source, update dates, contact phone number and description of each of the databases for this report.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This report contains information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this report "AS IS". Any analyses, estimates, ratings, or risk codes provided in this report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can produce information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2020 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

SECTION 1: FACILITY DETAIL REPORTS

8141 LAMPSON AVE APT #1
STANTON, CA 90680
EDR ID #S107536511

Databases:

CDL: Clandestine Drug Labs

CDL:

Name: Not reported
Address: 8141 LAMPSON AVE APT #1
City,State,Zip: STANTON, CA 90680
Facility ID: 1996-08-087
Date: 08/28/1996
Labtype: Illegal Drug lab
Lab Type: Illegal Drug Lab (L) - location where an illegal drug lab was operated or drug lab equipment and/or materials were stored.

SECTION 2: DATABASES AND UPDATE DATES

To maintain currency of the following federal, state and local databases, EDR contacts the appropriate government agency on a monthly or quarterly basis as required.

Elapsed ASTM days: Provides confirmation that this report meets or exceeds the 90-day updating requirement of the ASTM standard.

DATABASES FOUND IN THIS REPORT

CA CDL: Clandestine Drug Labs

Source: Department of Toxic Substances Control

Telephone: 916-255-6504

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2019
Database Release Frequency: Varies

Date of Last EDR Contact: 04/28/2022
Date of Next Scheduled Update: 07/18/2022

G & M OIL #61/ FORMER TARGET #91

10502 MAGNOLIA AVE S

STANTON, CA 90680

Inquiry Number:

May 4, 2022

EDR Site Report™



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

The EDR-Site Report™ is a comprehensive presentation of government filings on a facility identified in a search of federal, state and local environmental databases.

Section 1: Facility Detail Reports Page 3

All available detailed information from databases where sites are identified.

Section 2: Databases and Update Information. Page 4

Name, source, update dates, contact phone number and description of each of the databases for this report.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This report contains information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this report "AS IS". Any analyses, estimates, ratings, or risk codes provided in this report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can produce information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2020 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

SECTION 1: FACILITY DETAIL REPORTS

G & M OIL #61/ FORMER TARGET #91
10502 MAGNOLIA AVE S
STANTON, CA 90680
EDR ID #S105774133

Databases:

L_REG_8: Leaking Underground Storage Tanks

LUST REG 8:

Name:	G & M OIL #61/ FORMER TARGET #91
Address:	10502 MAGNOLIA AVE S
City:	STANTON
Region:	8
County:	Orange
Regional Board:	Santa Ana Region
Facility Status:	Pollution Characterization
Case Number:	083003845T
Local Case Num:	92UT029
Case Type:	Other ground water affected
Substance:	Unleaded Gasoline
Qty Leaked:	0
Abate Method:	Not reported
Cross Street:	Not reported
Enf Type:	SEL
Funding:	Not reported
How Discovered:	LD
How Stopped:	RPP
Leak Cause:	Unknown
Leak Source:	Piping
Global ID:	T060594807
How Stopped Date:	9/9/9999
Enter Date:	Not reported
Date Confirmation of Leak Began:	Not reported
Date Preliminary Assessment Began:	Not reported
Discover Date:	1/15/1992
Enforcement Date:	Not reported
Close Date:	Not reported
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	7/22/2002
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	=
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.802864
Longitude:	-117.992287
MTBE Date:	1/24/2003
Max MTBE GW:	520000
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	VJJ
Staff Initials:	SK
Lead Agency:	Local Agency
Local Agency:	30000L
Hydr Basin #:	Not reported
Beneficial:	MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported

SECTION 2: DATABASES AND UPDATE DATES

To maintain currency of the following federal, state and local databases, EDR contacts the appropriate government agency on a monthly or quarterly basis as required.

Elapsed ASTM days: Provides confirmation that this report meets or exceeds the 90-day updating requirement of the ASTM standard.

DATABASES FOUND IN THIS REPORT

CA LUST: Geotracker's Leaking Underground Fuel Tank Report

Source: State Water Resources Control Board

Telephone: see region listings for the contact phone numbers

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/06/2021

Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/08/2022

Date of Next Scheduled Update: 06/20/2022

CA L_REG_8: Leaking Underground Storage Tanks

Source: California Regional Water Quality Control Board Santa Ana Region (8)

Telephone: 909-782-4496

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005

Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/15/2011

Date of Next Scheduled Update: 11/28/2011

APPENDIX F
REGULATORY AGENCY RECORDS

From: mcard@aqmd.gov
To: [Matthew Penkshaw](mailto:Matthew.Penkshaw)
Cc: ob_pr_support_docs@aqmd.gov
Subject: SCAQMD Public Records Request# 1411565, -- Completion Letter
Date: Thursday, April 21, 2022 10:45:57 AM
Attachments: [ATT00001.tif](#)



Matthew Penkshaw
Ardent Environmental Group Inc
1827 Capital
Corona, Ca 92880

Ref: Request for Records; Control No. **1411565**, Received 4/15/2022
RE: P/O'S, EQL'S, NOV'S & ASBESTOS/SOIL NOTIF'S FOR 9071 LAMPSON AVE, GARDEN GROVE, CA.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE REFERENCED FACILITY OR FACILITY SITE.

Should you have any questions or need additional information, please do not hesitate to contact me at (909) 396-3700, Tuesday through Friday, between the hours of **8:00 a.m.** and **4:30 p.m.**

Sincerely,

Michelle Card
For Colleen Paine
Public Records Coordinator
Information Management

From: mcard@aqmd.gov
To: [Matthew Pensaw](mailto:Matthew.Pensaw)
Cc: ob_pr_support_docs@aqmd.gov
Subject: SCAQMD Public Records Request# 1411566, -- Completion Letter
Date: Thursday, April 21, 2022 10:48:21 AM
Attachments: [ATT00001.tif](#)



Matthew Pensaw
Ardent Environmental Group Inc
1827 Capital
Corona, Ca 92880

Ref: Request for Records; Control No. **1411566**, Received 4/15/2022
RE: P/O'S, EQL'S, NOV'S & ASBESTOS/SOIL NOTIF'S FOR 9081 LAMPSON AVE, GARDEN GROVE, CA.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE REFERENCED FACILITY OR FACILITY SITE.

Should you have any questions or need additional information, please do not hesitate to contact me at (909) 396-3700, Tuesday through Friday, between the hours of **8:00 a.m.** and **4:30 p.m.**

Sincerely,

Michelle Card
For Colleen Paine
Public Records Coordinator
Information Management

From: mcard@aqmd.gov
To: [Matthew Penkaw](mailto:Matthew.Penkaw)
Cc: ob_pr_support_docs@aqmd.gov
Subject: SCAQMD Public Records Request# 1411730, -- Completion Letter
Date: Friday, April 29, 2022 8:57:35 AM
Attachments: [ATT00001.tif](#)



Matthew Penkaw
Ardent Environmental Group Inc
1827 Capital
Corona, Ca 92880

Ref: Request for Records; Control No. **1411730**, Received 4/28/2022
RE: P/O'S, EQL'S, NOV'S & ASBESTOS RECORDS FOR 9091 LAMPSON AVE, GARDEN GROVE, CA.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE REFERENCED FACILITY OR FACILITY SITE.

Should you have any questions or need additional information, please do not hesitate to contact me at (909) 396-3700, Tuesday through Friday, between the hours of **8:00 a.m.** and **4:30 p.m.**

Sincerely,

Michelle Card
For Colleen Paine
Public Records Coordinator
Information Management



Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
9211 Oakdale Avenue
Chatsworth, California 91311



Gavin Newsom
Governor

April 19, 2022

Matthew Pensaw
ARD ENVIRONMENTAL GROUP
mpensaw@ardentenv.com

Public Records Request Number: PR3-041522-04

Locations: 9071, 9081, and 9091 Lampson Ave, Garden Grove, CA 92841

Dear Mr. Pensaw:

On April 15, 2022, the Department of Toxic Substances Control (DTSC) received your email of the same date requesting records under the Public Records Act. After a thorough review of our files, no site records were found pertaining to the sites/facilities referenced above.

However, DTSC's Hazardous Waste Tracking System (HWTS) may have records that pertain to **9081 Lampson Ave**. This unit tracks toxic waste generators, transporters (manifests), and disposal facilities. If you are interested in this type of information, it can be identified by accessing the HWTS database at <http://hwts.dtsc.ca.gov>. If you are interested in retrieving detailed reports, additional charges may apply. Please contact the HWTS unit by email at hwtsreports@dtsc.ca.gov or by phone at (800) 618-6942 for further information. For copies of manifests, please send an email to mcr@dtsc.ca.gov.

Many of our records are available on EnviroStor, an online database that provides non-confidential, public access to DTSC's data management system. It tracks our cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known or suspected contamination issues. EnviroStor is available 24/7, 365 days a year. The data reflects the latest updates as they are entered in the system. Access it from your computer or smartphone, the local library – anywhere Internet access is available. Just go to www.envirostor.dtsc.ca.gov. You'll find a step-by-step tour of EnviroStor under the "How to Use EnviroStor" menu on the website.

If you have any questions or would like further information regarding your request, please contact me via email at ChatsworthFileRoom@dtsc.ca.gov.

Sincerely,

Roya Riahi Nejad

Roya Riahi Nejad
Records Mgmt. Asst. Coordinator



Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

Meredith Williams, Acting Director
5796 Corporate Avenue
Cypress, California 90630



Gavin Newsom
Governor

April 15, 2022

Matthew Pensaw
Ardent
mpensaw@ardentenv.com

PR4-041522-03

9071, **9081** & 9091 **Lampson Ave., Garden Grove. (HWTS)** may have records that pertain to this request.

Dear Requestor:

On April 15, 2022, the Department of Toxic Substances Control (DTSC) received your email of April 15, 2022, requesting records under the Public Records Act. After a thorough review of our files, *no site records* were found pertaining to the sites/facilities referenced above.

DTSC Generator information: DTSC Cypress Office does not house Generator/**HWTS** Records.

DTSC's Hazardous Waste Tracking System (**HWTS**) may have records that pertain to this request. This unit tracks toxic waste generators, transporters (manifests), and disposal facilities. If you are interested in this type of information, it can be identified by accessing the HWTS database at <http://hwts.dtsc.ca.gov>. If you are interested in retrieving detailed reports, additional charges may apply. Please contact the HWTS unit by email at hwtsreports@dtsc.ca.gov or by phone at (800) 618-6942 for further information. For copies of manifests, please send an email to mcr@dtsc.ca.gov.

A large number of our records are available on EnviroStor, an online database that provides non-confidential, public access to DTSC's data management system. It tracks our cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known or suspected contamination issues. EnviroStor is available 24/7, 365 days a year. The data reflects the latest updates as they are entered in the system. Access it from your computer or smartphone, the local library – anywhere Internet access is available. Just go to www.envirostor.dtsc.ca.gov. You'll find a step-by-step tour of EnviroStor under the "How to Use EnviroStor" menu on the website.

If you have any questions, would like further information regarding your request, please contact me, via email at jone.barrio@dtsc.ca.gov

Sincerely,
Jone Barrio

Jone Barrio
Regional Records Coordinator



ORANGE COUNTY FIRE AUTHORITY

Prevention Field Services

1 Fire Authority Road

Irvine, CA 92602

P.O. Box 57115, Irvine CA 92619

Phone (714) 573-6254

Fax (714) 368-8836

RECORDS REQUEST

To: Matthew Pensaw – Ardent Environmental Group Inc

Number of Pages (including cover): 1

Date: 4/19/2022

COMMENTS: No records were found for your Public Records Request for 9071, 9081, 9091 LAMPSON AV in the city of GARDEN GROVE.

NO RECORDS WERE FOUND FOR THIS ADDRESS.

APPENDIX G
RESUMES



RESUME OF CRAIG A. METHENY *Principal Geologist*

EDUCATION

Bachelor of Science, Geology, 1989, California State University, Fullerton, California

REGISTRATIONS AND CERTIFICATIONS

OSHA 40-Hour Health and Safety Training (with annual updates)

OSHA 8-Hour Health and Safety Supervisor Training

EPA/AHERA Manager-Planner, Project Designer, Building Inspector, and Contractor/Supervisor

State of California Certified Asbestos Consultant, CAC 08-4421

EMPLOYMENT HISTORY

1985-1993 – Applied Geosciences Inc. (environmental consulting)

1993-2007 – Ninyo & Moore (environmental consulting)

2007-present – Ardent Environmental Group, Inc. (environmental consulting)

PROFESSIONAL EXPERIENCE AND RESPONSIBILITIES

As a Principal Geologist for Ardent Environmental Group, Inc., Mr. Metheny manages and performs Phase I Environmental Site Assessments, hydrogeologic investigations, and site characterization studies; manages groundwater sampling and pollutant evaluations; develops remedial action plans; performs risk assessments; and manages hazardous building material assessments and abatement monitoring. Mr. Metheny also designs, develops, installs, and manages soil and groundwater remediation systems and conducts landfill site investigations. Mr. Metheny's project experience includes:

- **Various School Districts, California:** Project Geologist for various environmental consulting services including Phase I assessment, Phase II sampling, asbestos surveys, and Preliminary Endangerment Assessments (PEAs) for at various proposed and existing schools sites for the Santa Ana Unified School District, Los Angeles Unified School District, and Long Beach Unified School District.
- **Port of Los Angeles, San Pedro, California:** Project Geologist providing environmental consulting services relative to the location and construction of trolley stations and maintenance facilities. Services included document review, soil and groundwater assessments, transportation and disposal of contaminated soil, and preliminary risk evaluations for site workers and the public.
- **On-Call Environmental Consulting Services, City of Long Beach, California:** Project Geologist providing on-call environmental consulting services for the City of Long Beach Public Works facilities construction project. Eleven areas of suspected contaminated soil were discovered during grading at the site. Mr. Metheny performed rush characterizations of each suspect area, delineated the extent of contaminations requiring off-site disposal, performed removal confirmation sampling, and developed an on-site management plan for

RESUME OF CRAIG A. METHENY
Principal Geologist

Continued

metals contamination in artificial fill areas of the site. The on-site management plan was approved by the State Department of Toxic Substances Control on a rush basis so that the site construction schedule was minimally impacted.

- **Hazardous Materials Evaluations for Environmental Impact Studies and Reports:** Project Geologist for hazardous materials evaluations for environmental impact studies and reports for road and rail widening and realignment projects for various cities and rail authorities in Southern California.
- **Phase I and Phase II Environmental Site Assessments, Asbestos Surveys, and Lead-Based Paint Surveys:** Project Manager for hundreds of real estate acquisition environmental due-diligence projects, including Phase I Environmental Site Assessments, Asbestos Surveys, Lead-Based Paint Surveys, and Phase II Subsurface investigations of residential, agricultural, commercial, and industrial properties throughout the western United States for major commercial and residential developers, lending institutions, and municipalities.
- **City of Industry:** Project manager and asbestos consultant for numerous pre-demolition asbestos surveys and abatement monitoring projects for the City of Industry Redevelopment Agency.
- **Mold Assessment and Abatement Oversight:** Project Manager for the assessment of the presence and extent to mold contamination and post-abatement inspection and air clearance sampling for numerous commercial office, retail, and warehouse buildings throughout Southern California for property owners and managers.
- **Port of Long Beach Naval Station and Shipyard, Administrative Draft EIR, Long Beach, California:** Project Geologist for portions of the EIR relating to hazardous materials and remediation of contaminated sites. Services consisted of review of existing data to describe the historical and recent use of the Long Beach Naval Station and Shipyard, known and suspected contamination, and mitigation measures.
- **Los Angeles Community Redevelopment Agency (CRA), Los Angeles, California:** Project Manager for as-needed contract for environmental services with CRA. Projects under this contract included site development under City funded capital improvement programs as well as USEPA funded Brownfield projects. Tasks included Phase I and Phase II Environmental Site Assessments of brownfields sites and research of area-wide property information, ownership status and environmental condition of brownfields target areas, asbestos and lead paint surveys, and site remediation.
- **Indoor Air Quality Assessments, California:** Project Manager for numerous indoor air quality (IAQ) assessments of commercial office buildings. The IAQ assessments were performed for a variety of objectives, including determining the concentrations of volatile organic compounds (VOCs) in indoor air from subsurface contamination sources; evaluating the operation of air handling systems; identifying sources of indoor air pollutants including mold, dust, and VOCs; and evaluating general “sick building syndrome” issues.
- **San Gabriel Valley Council of Governments:** Project Manager for an assessment of redevelopment opportunities in the San Gabriel Valley under a Proposition 40 grant from the

RESUME OF CRAIG A. METHENY
Principal Geologist

Continued

State of California. The property inventory and assessment included research and identification of potential redevelopment properties greater than 8,000 square feet; development of a database inventory of the properties; and preparation of a Geographic Information System (GIS) map of the Valley with inventory properties identified.

- **Metro Pasadena Blue Line Transit Project, California:** Project Geologist providing environmental consulting services to conduct pre-acquisition Phase I and Phase II environmental site assessments and asbestos surveys for parcels required for construction and operation of the Metro Pasadena Blue Line Transit Project.
- **Industry Urban-Development Agency:** Project Manager for hazardous material management and planning for several commercial/industrial properties in the City of Industry. Work included performance of comprehensive hazardous building material surveys, preparation of inventory of miscellaneous hazardous materials, preparation of hazardous material removal workplans for use in project specifications and bid documents, performance of Phase II subsurface soil and groundwater contamination assessments, negotiate and obtain closure from regulatory agencies of underground fuel storage tanks and clarifiers, and oversee hazardous material or contaminated soil removal work by contractors.
- **Orange County Transportation Authority (OCTA):** Project Environmental Geologist performing Phase I and Phase II environmental site assessments along the I-5 Corridor in Orange County for the OCTA's Environmental Investigation and Remedial Services contract. Additional services included site remediation feasibility studies and design and site remediation.
- **Caltrans Districts 7 and 12 On-Call Environmental Assessment Contracts, California:** Managing Project Geologist performing numerous hazardous materials site investigations, Phase I environmental assessments, asbestos surveys, lead in soil studies, and tank removal and replacement projects at various properties and right-of-ways throughout Los Angeles, Orange, and Ventura Counties, California. Work involved assessing numerous properties that would be taken by Caltrans for freeway widening or realignment projects, assessing lead in unpaved shoulders along many miles of freeways and highways for widening projects, characterizing contamination in soil and groundwater at maintenance stations, and directed the development of remedial action plans for various maintenance stations. Work was conducted under numerous consecutive 3-year master service agreements.
- **As-Needed Environmental Consulting Services, Pacific Bell, Statewide, California:** Project Geologist performing underground fuel storage tank management services on an as-needed basis for numerous sites throughout California under a Master Agreement.

ASSOCIATIONS

Association for the Environmental Health of Soils
Association of Groundwater Scientists and Engineers





RESUME OF MATTHEW PENKSAW
Senior Staff Scientist

EDUCATION

Associate of Arts, Economics, June 2016, Santiago Canyon College

Bachelor of Arts, English with an Emphasis in Professional Writing, April 2019, Grand Canyon University

REGISTRATION AND CERTIFICATIONS

HAZWOPER 40-Hour Training (with annual updates)

EPA/AHERA Building Inspector and Contractor/Supervisor (with annual updates)

SCAQMD Rule 403 Fugitive Dust Control Training

EMPLOYMENT HISTORY

2019 to present – Ardent Environmental Group, Inc. (environmental consulting)

PROFESSIONAL EXPERIENCE AND RESPONSIBILITIES

As a Staff Scientist, Mr. Penksaw is responsible for coordinating environmental research, reviewing historical documents, overseeing the advancement of soil borings, collecting soil, soil gas, groundwater, and air samples, monitoring soil excavations for contaminated media, directing subcontractors, data evaluation, and technical report preparation. His project experience includes:

- **Phase I Environmental Site Assessment:** Report preparation includes site reconnaissance, research and review of regulatory and historical land use records, and identification of potential environmental concerns.
- **Phase II Site Characterization:** Plans and manages soil boring advancement by hollow-stem auger, direct push, and hand auger methods for the collection of soil, soil gas, and/or groundwater samples to identify or assess contaminated media. Mr. Penksaw has installed and sampled soil vapor points at a number of properties located throughout Southern California to assess for vapor intrusion issues in accordance with current Department of Toxic Substances Control (DTSC) guidelines.
- **Soil Remediation and Mass Grading Coordination:** Directs field operations during removal of impacted soil and conducts field monitoring during mass grading operations at sites with known chemical contamination. These tasks include air monitoring in accordance with South Coast Air Quality Management District (SCAQMD) Rule 1166, soil management, waste manifest record keeping, and interfacing between contractors, clients, and regulators.
- **Vapor Extraction System (VES) Operation and Maintenance:** Completes weekly monitoring visits in accordance with SCAQMD permit requirements, monthly system data

RESUME OF MATTHEW PENKSAW

Staff Scientist

Continued

retrieval and soil gas sample collection, quarterly reports to regulatory parties, and periodic evaluations and optimizations of VES operations.

- **Telemetric Methane Monitoring:** Installed and maintains a methane monitoring system equipped with telemetric capabilities allowing for continuous measurement and instant data retrieval. Includes periodic calibration and system maintenance.
- **Industrial Waste Discharge Permitting:** Completes site profiles, application packages, and correspondence with regional departments of public works and sanitations districts to obtain applicable permits for industrial waste discharges.
- **Asbestos Sampling:** Conducts surveys of commercial buildings to identify suspect asbestos-containing materials (ACM) and completes sampling of suspect materials for laboratory analysis.
- **Reporting:** Keeps records of field work in the specializations noted above and documents the completion of tasks for company archives, client records, and/or regulatory review. This includes tabulation, evaluation, and comparison of laboratory data with regulatory standards, preparation and modification of maps using AutoCAD software, and management of invoices, reports, notices, and other documentation.

APPENDIX E

NOISE AND VIBRATION IMPACT MEMORANDUM

MEMORANDUM

DATE: June 6, 2022

TO: Mary Martinez, Associate Planner

FROM: J.T. Stephens, Principal
Moe Abushanab, Noise Engineer

SUBJECT: Noise and Vibration Impact Analysis: Lampson Avenue Residential Project in Garden Grove, Orange County, California

INTRODUCTION AND PROJECT DESCRIPTION

This noise and vibration impact analysis has been prepared to evaluate the potential impacts associated with the proposed Lampson Avenue Residential Project (project) at 9071 Lampson Avenue in Garden Grove, Orange County, California. This memorandum is intended to satisfy the City of Garden Grove's (City) requirement for a project-specific noise and vibration impact analysis and examines the impacts to the surrounding noise-sensitive uses with the incorporation of project design features and standard conditions. Additionally, this analysis determines the land-use compatibility of the proposed project through compliance with exterior and interior noise standards for residential type uses. Future noise level impacts are based on the noise measurement data gathered in the vicinity of the project site (from May 18, 2022, to May 19, 2022), modeled traffic volumes from the *Project Trip Generation Analysis* (LSA 2022), and calculated stationary source noise levels to properly account for the impacts associated with the proposed project.

Location and Description

LSA understands that the applicant proposes to subdivide a 1.6-acre property into 13 single-family residential lots, three common area open space lots, and one private street lot (project). The project site is currently developed with three single-family homes and is located in a highly urbanized and residential area of the City. Surrounding land uses include single-family residential uses to the north, south, and east and multi-family residential uses to the west. There are office and institutional uses further west across Magnolia Street and to the east past Barbara Avenue, but the uses immediately surrounding the project site are residential. The project would demolish all existing on-site structures and include grading and landscaping that would remove the existing landscaping features. Figures 1 and 2, presented in Attachment B, show the project location and site plan, respectively.

The project site is classified as R-1-7, a single-family residential zone on the City's Zoning Map (City of Garden Grove n.d.). The project site is designated Low Density Residential according to the City's General Plan Land Use Map (City of Garden Grove n.d.)

METHODOLOGY

The evaluation of noise impacts associated with the proposed project includes the following:

- A determination of the short-term construction noise and vibration levels at off-site noise-sensitive uses and a comparison to the City's General Plan noise standards and Noise Ordinances within the Municipal Code
- A determination of the long-term noise levels at off-site noise-sensitive uses as well as the proposed project and comparison of those levels to the City's pertinent noise standards
- A determination of required mitigation measures, such as noise barriers and upgraded windows, to reduce long-term noise impacts from all sources

CHARACTERISTICS OF SOUND

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units (e.g., inches or pounds), decibels are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 decibels (dB) is 10 times more intense than 1 dB, 20 dB is 100 times more intense than 1 dB, and 30 dB is 1,000 times more intense than 1 dB. Thirty decibels (30 dB) represent 1,000 times as much acoustic energy as 1 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single-point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dB for each doubling of distance in a hard site environment. Similarly, line sources with intervening absorptive vegetation or line sources that are located at a great distance to the receptor would decrease 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours), and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City uses the CNEL noise scale for long-term noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max} , which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale or noise standards in terms of percentile noise levels in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level (i.e., half the time the noise level exceeds this level, and half the time it is less than this level). The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160–165 dBA will result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying less developed areas.

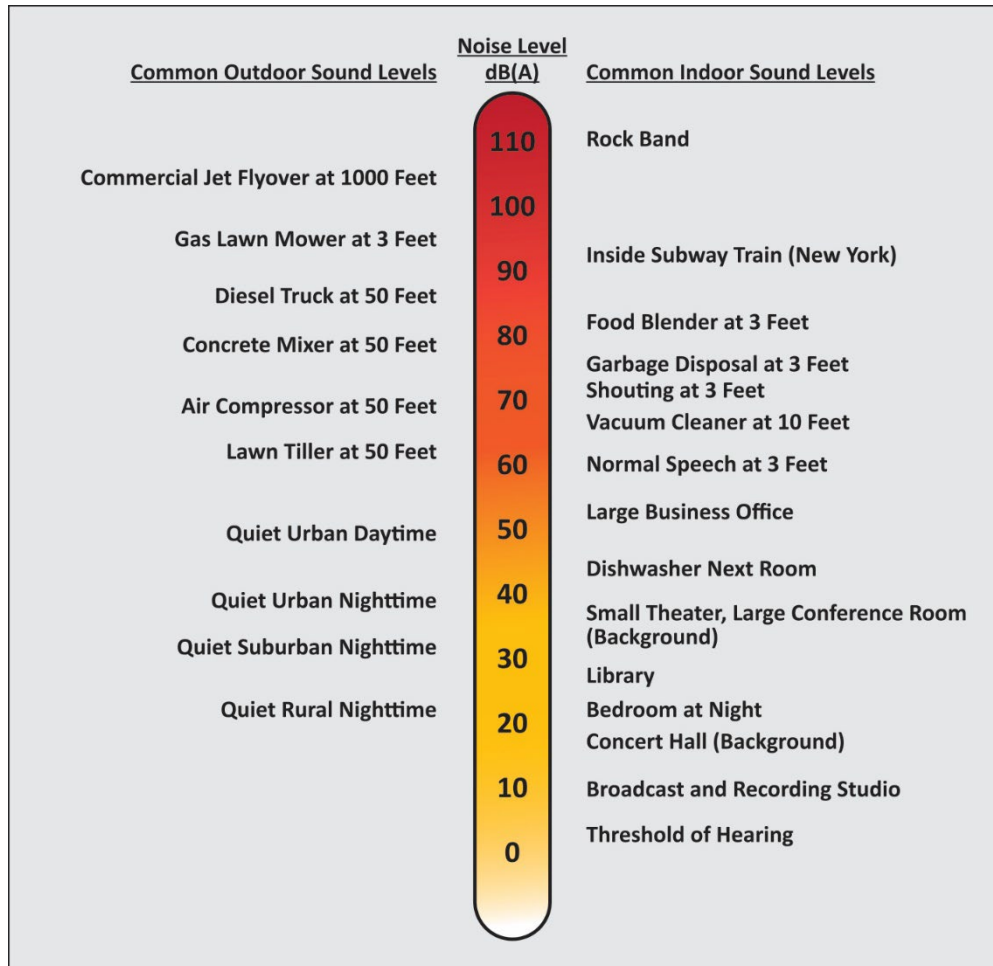
Table A lists full definitions of acoustical terms, and Table B shows common sound levels and their sources.

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities proportional to power, the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this assessment are A-weighted, unless reported otherwise.
L_{01} , L_{10} , L_{50} , L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dB to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max} , L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Harris 1991).

Table B: Common Sound Levels and Noise Sources



Source: LSA (2016).

CHARACTERISTICS OF VIBRATION

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernible. Typically, there is more adverse reaction to effects associated with the shaking of a building. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as the motion of building surfaces, the rattling of items on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibration of walls, floors, and ceilings that radiate sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with both ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet (ft) of the vibration source, although there are examples of ground-borne vibration causing interference to distances greater than 200 ft (FTA 2018). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, the construction of the project could result in ground-borne vibration that may be perceptible and annoying.

Ground-borne vibration has the potential to disturb people and damage buildings. Although it is very rare for typical construction activities to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2018). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). The RMS is best for characterizing human response to building vibration, and PPV is used to characterize potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as:

$$L_v = 20 \log_{10} [V/V_{ref}]$$

where L_v is the vibration velocity in decibels (VdB), “V” is the RMS velocity amplitude, and “ V_{ref} ” is the reference velocity amplitude, or 1×10^{-6} inches/second (in/sec) used in the United States.

APPLICABLE NOISE STANDARDS

The following information provides standards to which potential noise impacts will be compared. Where exceedances have been identified, impacts are described, and mitigation recommended.

California Code of Regulations

Interior noise levels for residential habitable rooms are regulated by Title 24 of the California Code of Regulations (CCR) California Noise Insulation Standards. Title 24, Chapter 12, Section 1206.4, of the 2019 California Building Code requires that interior noise levels attributable to exterior sources not exceed 45 CNEL in any habitable room (CCR 2019). A habitable room is a room used for living, sleeping, eating, or cooking. Bathrooms, closets, hallways, utility spaces, and similar areas are not considered habitable rooms for this regulation (Title 24 CCR, Chapter 12, Section 1206.4).

City of Garden Grove General Plan

The City adopted its General Plan in 2008. Chapter 7, Noise Element, of the City’s General Plan provides noise and vibration elements as guidelines to minimize the impacts of noise and vibration on people, residences, and business operations. An exterior noise level of 50 dBA CNEL to 60 dBA CNEL is considered to be “normally acceptable” for residential uses. New residences must meet interior noise levels of 45 dBA CNEL or provide mitigation measures to reduce noise impacts. Table C, below, shows land use compatibility guidelines for community noise within Garden Grove.

Table C : : City of Garden Grove General Plan Land Use Compatibility Guidelines

Land Use Category	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low Density, Single-Family, Duplex, Mobile Homes	50 – 60	55 – 70	70 – 75	75 – 85
Residential – Multiple family	50 – 65	60 – 70	70 – 75	70 – 85
Transient Lodging – Motel, Hotels	50 – 65	60 – 70	70 – 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes ¹	50 – 70	60 – 70	70 – 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	N/A	50 – 70	N/A	65 – 85
Sports Arenas, Outdoor Spectator Sports	N/A	50 – 75	N/A	70 – 85
Playgrounds, Neighborhood Parks	50 – 70	N/A	67.5 – 75	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	N/A	70 – 80	80 – 85
Office Buildings, Business Commercial, and Professional	50 – 70	67.5 – 77.5	75 – 85	N/A
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 – 80	75 – 85	N/A

Source: State of California General Plan Guidelines (OPR October 2003).

Notes:

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features must be included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

¹ Applies to noise-sensitive areas which serve a significant function for the use which could be adversely affected by noise such as outside areas used primarily for instruction, meditation areas, rest and relaxation areas, and other areas where general peace and quiet are important.

L_{dn} = day-night noise level

N/A = not applicable

OPR = Governor’s Office of Planning and Research

The General Plan’s Noise Element includes the following policies applicable to this proposed project that are intended to minimize noise through standards, site planning, and noise mitigation:

- **Policy N – 1.1:** Require all new residential construction in areas with an exterior noise level greater than 55 dBA to include sound attenuation measures.

- **Policy N – 1.3:** Ensure acceptable noise levels are maintained near schools, hospitals, convalescent homes, churches, and other noise sensitive areas.
- **Policy N – 4.1:** Examine the feasibility of implementing sound attenuation measures along the City’s arterial streets. Prioritize the areas in need of sound attenuation based on degree of sensitivity, excess of maximum allowable standards, length of time the noise impact has existed, and the number or residential uses or sensitive receptors impacted.
- **Policy N – 5.2:** Require noise attenuation measures for residential construction in areas affected by the 65 dBA CNEL railroad noise contour. Sound attenuation measures shall reduce interior noise to a maximum of 45 dBA CNEL. These measures shall be applicable to all residential construction in a railroad noise impact area, both for new structures and for renovations, remodels, and building additions.

While the General Plan Noise Element does not specify a level to which the noise level impacts should be mitigated, Goal N-3, Policy N-3.1 states the following:

Encourage Caltrans to meet the State standard of 65 dBA CNEL for exterior noise levels for the Garden Grove Freeway (SR-22) and the San Diego Freeway (I-405).

Based on this direction and similar requirements of Policy N-5.2, the proposed project will assess potential mitigation such that exterior noise levels along the main arterials are 65 dBA CNEL or less.

City of Garden Grove Municipal Code

The City’s Noise Ordinance is part of the Municipal Code. Section 8.47.040, Ambient Base Noise Levels, of the City’s Municipal Code provides the base ambient noise limits for various land use categories. This section permits any noise level that does not exceed either the ambient base noise level or the actual measured ambient noise level by 5 dBA, as measured at the property line of the noise generation property. These standards are to be used as the basis of measurement for determining noise violations affecting uses within the residential districts. The established hourly average sound level limits for daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) sound level limit for residential uses are 55 dBA L_{eq} and 50 dBA L_{eq} , respectively.

Section 8.47.060 (D) of the City’s Municipal Code establishes the following limit on construction:

It shall be unlawful for any person within a residential area, or within a radius of 500 feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects, or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hours of 10:00 p.m. of one day and 7:00 a.m. of the next day in such a manner that a person of normal sensitiveness, as determined utilizing the criteria established in Section 8.47.050(B), is caused discomfort or annoyance unless such operations are of an emergency nature.

APPLICABLE VIBRATION STANDARDS

The following information provides standards to which potential vibration impacts will be compared. Where exceedances have been identified, impacts are discussed, and mitigation recommended.

Federal Transit Administration

The criteria for environmental impacts resulting from ground-borne vibration and noise are based on the maximum levels for a single event. The City’s Municipal Code does not include specific criteria for assessing vibration impacts associated with structural damage. Therefore, for the purpose of determining the significance of vibration impacts experienced at sensitive uses surrounding the project site, the guidelines within the Federal Transit Administration’s (FTA) *Transit Noise and Vibration Impact Assessment Manual* (2018) (FTA Manual) have been used to determine vibration impacts (refer to Table D, below).

Table D: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
Reinforced concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018), Table 12-3.
 FTA = Federal Transit Administration
 in/sec = inches per second

The FTA Manual (2018) guidelines show that a vibration level of up to 0.20 in/sec in PPV is considered safe for non-engineered timber and masonry buildings and would not result in any construction vibration damage. Therefore, to be conservative, the 0.20 in/sec in PPV threshold has been used when evaluating vibration impacts at the nearest structures to the site (i.e., residences north of the project site).

To provide numerical thresholds related to ground-borne vibration impacts, criteria (included in the FTA Manual) for human annoyance are shown in Table E. The criteria account for the variation in project types as well as the frequency of events, which differ widely among projects. It is logical that when there would be fewer events per day, it should take higher vibration levels to evoke the same community response. The variation in project times and the frequency of events is accounted for in the criteria by distinguishing between projects with frequent and infrequent events, in which the term “frequent events” is defined as more than 70 events per day.

THRESHOLDS OF SIGNIFICANCE

Based on *Guidelines for the Implementation of the California Environmental Quality Act (State CEQA Guidelines)*, Appendix G, Public Resources Code, Sections 15000–15387, a project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and the goals of the community in which it is located. The following are the thresholds for potential noise impacts.

Table E: Ground-Borne Vibration Impact Criteria for General Assessment

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 μin/sec)		
	Frequent Events ¹	Occasional Events ²	Infrequent Events ³
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB ⁴	65 VdB ⁴	65 VdB ⁴
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018), Table 8-1.

¹ Frequent events are defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.

² Occasional events are defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.

³ Infrequent events are defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.

⁴ This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

μin/sec = micro-inches per second

HVAC = heating, ventilation, and air-conditioning

FTA = Federal Transit Administration

VdB = vibration velocity decibels

The *State CEQA Guidelines* indicate that a project would have a significant impact on noise if it would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive ground-borne vibration or ground-borne noise levels; or
- For a project located within the vicinity of a private airstrip or 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, expose people residing or working in the project area to excessive noise levels.

OVERVIEW OF THE EXISTING NOISE ENVIRONMENT

The primary existing noise sources in the project area are transportation facilities, including Lampson Avenue. In addition, periodic noise from adjacent properties is audible on the project site.

To assess the existing noise conditions in the area, long-term noise measurements were conducted at the project site. Two long-term, 24-hour measurements were taken from May 18, 2022, to May 19, 2022. The locations of the noise measurements are shown on Figure 3 (Attachment B), and the results are summarized in Table F. Noise measurement data information is provided in Attachment C of this analysis.

Table F: Existing Noise Level Measurements

Location Number	Location Description	Daytime Noise Levels ¹ (dBA L _{eq})	Evening Noise Levels ² (dBA L _{eq})	Nighttime Noise Levels ³ (dBA L _{eq})	Average Daily Noise Levels (dBA CNEL)	Primary Noise Sources
LT-1	At the southern edge of the project site. Near a tree second closest to Lampson Avenue. Approximately 55 ft from Lampson Avenue centerline	58.9–61.4	56.7–59.5	45.4–57.5	61.7	Traffic on Lampson Avenue. Faint noise from adjacent property.
LT-2	At the northeast corner of the project site. Near a tree next to an abandoned shed. Approximately 375 ft from Lampson Avenue centerline.	42.1–50.7	43.1–45.4	35.3–41.0	47.5	Generally quiet. Faint noise from adjacent property.

Source: Compiled by LSA (May 2022).

¹ Daytime Noise Levels = noise levels during the hours of 7:00 a.m. to 7:00 p.m.

² Evening Noise Levels = noise levels during the hours of 7:00 p.m. to 10:00 p.m.

³ Nighttime Noise Levels = noise levels during the hours of 10:00 p.m. to 7:00 a.m.

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = foot/feet

L_{eq} = equivalent continuous sound level

Sensitive Land Uses in the Project Vicinity

Certain land uses are considered more sensitive to noise than others are. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project site is surrounded primarily by residential uses in all directions.

The nearest noise-sensitive use is the residence directly to the west, approximately 15 ft from the western edge of the project site. The residences to the east and north are also within 50 ft of the project site boundary.

Aircraft Noise

The project site is approximately 6.25 miles south of Fullerton Municipal Airport and approximately 3.85 miles west of Joint Forces Training Base Los Alamitos. Based on a review of the Airport Influence Area Map for the Fullerton Municipal Airport (Los Angeles County Airport Land Use Commission 2003, noise impacts related to aircraft operations may contribute to the aircraft noise in the project area; however, the project site is well outside of the 60 dBA CNEL contours. Additionally, the project site is not in a flight pattern area (i.e., takeoff or landing) for either airport.

PROJECT IMPACT ANALYSIS

The proposed project would result in short-term construction noise and vibration impacts and long-term mobile source noise and vibration impacts, as described below.

Short-Term Construction-Related Impacts

Project construction would result in short-term noise and vibration impacts on adjacent land uses. Maximum construction impacts would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of impacts generally would be from 1 day to several weeks depending on the phase of construction. The following describes the level and types of impacts that would occur during construction.

Construction Noise Impacts

Two types of short-term noise impacts would occur during project construction: (1) equipment delivery and construction worker commutes, and (2) project construction operations.

The first type of short-term construction noise would result from transport of construction equipment and materials to the project site and construction worker commutes. These transportation activities would incrementally raise noise levels on access roads leading to the site. It is expected that larger trucks used in equipment delivery would generate higher noise impacts than trucks associated with worker commutes. The single-event noise from equipment trucks passing at a distance of 50 ft from a sensitive noise receptor would reach a maximum level of 84 dBA L_{max} . However, the pieces of heavy equipment for grading and construction activities would be moved on site one time and would remain on site for the duration of each construction phase. This one-time trip, when heavy construction equipment is moved on and off site, would not add to the daily traffic noise in the project vicinity. The total number of daily vehicle trips would be minimal when compared to existing traffic volumes on the affected streets, and the long-term noise level changes associated with these trips would not be perceptible. Therefore, equipment transport noise and construction-related worker commute impacts would be short term and would not result in a significant off-site noise impact.

The second type of short-term noise impact is related to noise generated during demolition, site preparation, grading, building construction, paving, and architectural coating, on the project site. Construction is undertaken in discrete steps, each of which has its own mix of equipment, and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table G lists the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 ft between the construction equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1–2 minutes of full power operation followed by 3–4 minutes at lower power settings.

Table G: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%) ¹	Maximum Noise Level (L _{max}) at 50 Ft ²
Auger Drill Rig	20	84
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Paver	50	77
Pickup Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Trencher	50	80
Welder	40	73

Source: FHWA Roadway Construction Noise Model User's Guide, Table 1 (FHWA 2006).

Note: Noise levels reported in this table are rounded to the nearest whole number.

¹ Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

² Maximum noise levels were developed based on Specification 721.560 from the Central Artery/Tunnel program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

FHWA = Federal Highway Administration

ft = foot/feet

L_{max} = maximum instantaneous sound level

In addition to the reference maximum noise level, the usage factor provided in Table G is used to calculate the hourly noise level impact for each piece of equipment based on the following equation:

$$L_{eq}(equip) = E.L. + 10 \log(U.F.) - 20 \log\left(\frac{D}{50}\right)$$

where: $L_{eq}(equip)$ = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period

E.L. = Noise emission level of the particular piece of equipment at a reference distance of 50 ft

U.F. = Usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time

D = Distance from the receiver to the piece of equipment

Each piece of construction equipment operates as an individual point source. Using the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq (composite) = 10 * \log_{10} \left(\sum_1^n 10^{\frac{Ln}{10}} \right)$$

Table H shows the composite noise levels of the pieces of equipment for each construction phase at a distance of 50 ft from the construction area. Once composite noise levels are calculated, reference noise levels can then be adjusted for distance using the following equation:

$$Leq (at distance X) = Leq (at 50 feet) - 20 * \log_{10} \left(\frac{X}{50} \right)$$

In general, this equation shows that doubling the distance would decrease noise levels by 6 dBA while halving the distance would increase noise levels by 6 dBA.

Table H: Construction Noise Levels by Phase

Phase	Duration (days)	Equipment	Composite Noise Level at 50 ft (dBA L _{eq})	Distance to Sensitive Receptor (ft) ¹	Noise Level at Receptor (dBA L _{eq})
Demolition	30	2 dumpers/tenders, 2 excavators, 1 dozer, 3 tractors/loaders/backhoes	87	110	80
Site Preparation	90	1 dumper/tender, 1 excavator, 1 grader, 1 dozer, 1 tractor/loader/backhoe	86	110	79
Grading	30	1 grader, 1 dozer, 2 tractors/loaders/backhoes	86	110	79
Building Construction	180	1 air compressor, 1 crane, 1 forklift, 1 generator, 1 tractor/loader/backhoe, 3 welders	84	110	77
Paving	90	1 cement and mortar mixer, 1 paver, 1 paving equipment, 1 roller, 1 tractor/loader/backhoe	85	110	78
Architectural Coating	30	1 air compressor	74	110	74

Source: Compiled by LSA (2022).

¹ Distances are from the average location of construction activity for each phase, center of project site. Residential zoned properties would be within 300 ft of the edge of construction activity

dBA L_{eq} = average A-weighted hourly noise level

ft = foot/feet

As presented above, Table H shows the construction phases, the expected duration of each phase, the equipment expected to be used during each phase, the composite noise levels of the equipment at 50 ft, the distance of the nearest residential building from the average location of construction activities (a distance of 110 ft), and noise levels expected during each phase of construction. These

noise level projections do not take into account intervening topography or barriers. Attachment D provides construction noise calculations.

It is expected that average noise levels during construction at the nearest residences to the west, would approach 80 dBA L_{eq} during the demolition phase, which would take place for a duration of approximately 6 weeks. Average noise levels during other construction phases would range from 74 dBA L_{eq} to 79 dBA L_{eq} . While construction operations have the potential to generate audible noise at surrounding uses, construction noise levels generated during the permitted hours are exempt from compliance with City noise standards and would be less than significant. No mitigation is required. Furthermore, the elevated noise levels would cease once project construction is completed.

As stated above, noise impacts associated with construction activities are regulated by the City’s Noise Ordinance. The proposed project would be required to comply with the construction hours specified in the City’s Noise Ordinance which states that construction activities on sites within 500 ft of a residentially zoned property are allowed between 7:00 a.m. and 10:00 p.m. Emergency work is excluded from these restrictions. Additionally, Policy N – 1.1 of the City’s General Plan Noise Element requires the proposed project to develop techniques to minimize the noise impacts on residences from construction activities in or near residential neighborhoods. With adherence to the City’s Noise Ordinance (as summarized in Regulatory Compliance Measure RCM-1, below) and the City’s General Plan Policy N – 1.1 (as summarized in RCM-2), noise levels during construction would be reduced to the greatest extent feasible.

Construction Vibration Building Damage Potential

Ground-borne noise and vibration from construction activity would be mostly low. Table I provides reference PPV values and vibration levels (in terms of VdB) from typical construction vibration sources at 25 ft. Although the specific pieces of equipment that would be used on the site are unknown at this time, to provide an analysis of potential vibration levels expected for a project of this size, a large bulldozer would generate 0.089 PPV (in/sec) of ground-borne vibration when measured at 25 ft, based on the FTA Manual. As shown in Table D, it would take a minimum of 0.20 PPV (in/sec) to cause any potential building damage to non-engineered timber and masonry buildings.

Table I: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/ L_v at 25 ft	
	PPV (in/sec)	L_v (VdB) ¹
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

¹ RMS VdB re 1 μ in/sec.

μ in/sec = micro-inches per second

ft = foot/feet

FTA = Federal Transit Administration

in/sec = inches per second

L_v = velocity in decibels

PPV = peak particle velocity

RMS = root-mean-square

VdB = vibration velocity in decibels

The closest structure to the project site is the residence to the north of the site, approximately 5 ft from the limits of construction activity. Given that this structure is less than 25 ft from the project construction area limits, the estimated vibration impacts are propagated for distance based on the following equation.

$$PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.1}$$

Using the reference data from Table I and the equation above, it is expected that vibration levels generated by dump trucks and other large equipment that would be as close as 10 ft from the property line would generate ground-borne vibration levels of up to 0.192 PPV (in/sec) at the closest structure to the project site. This vibration level would not exceed the 0.2 PPV (in/sec) threshold considered safe for non-engineered timber and masonry buildings. It is expected that construction activities utilizing heavy equipment would generate vibration levels greater than 0.2 in/sec in PPV when operating within 10 ft of the property line, which would result in a potentially significant impact. Vibration levels at all other buildings would be lower. Therefore, construction would not result in any vibration damage, and impacts would be less than significant with the incorporation of Mitigation Measure NOI-1, as detailed below.

Construction Vibration Human Annoyance Potential

As stated above, the existing residence, located approximately 110 ft to the west from the center of the project site, is the nearest sensitive receptor and would experience vibration levels approaching 68 VdB based on the following equation:

$$L_{\text{vdB}}(D) = L_{\text{vdB}}(25 \text{ ft}) - 30 \text{ Log}(D/25)$$

Based on the standards provided in Table E, this level of ground-borne vibration is below the threshold of distinctly perceptible, which is approximately 72 VdB for frequent events at uses where people sleep and would not exceed the FTA vibration threshold for human annoyance at the nearest sensitive use. The City's Municipal Code excludes temporary construction vibration; however, as shown in the analysis above, project construction would not result in vibration levels that would typically result in human annoyance.

Long-Term Off-Site Traffic Noise Impacts

The proposed project is estimated to generate an average daily traffic (ADT) volume of 95 based on 13 single-family residential lots totaling 1.17 acres. The existing ADT volume on Lampson Avenue is 13,853 (City of Garden Grove, Circulation Element 2008). It takes a doubling of traffic to increase traffic noise levels by 3 dBA per the following equation that was used to determine potential traffic noise increases:

$$\text{Change in CNEL} = 10 \log_{10} [V_{\text{e+pt}}/V_{\text{existing}}]$$

where: V_{existing} = the existing daily volume
 $V_{\text{e+pt}}$ = existing daily volumes plus project trips
 Change in CNEL = the increase in noise level due to project trips

Using an existing ADT of 13,853 is conservative, and while the existing volume is likely higher today, the project-related traffic would increase traffic noise along Lampson Avenue by up to 0.1 dBA. This noise level increase would not be perceptible to the human ear in an outdoor environment. Therefore, traffic noise impacts from project-related traffic on off-site sensitive receptors would be less than significant, and no mitigation measures are required.

Long-Term Off-Site Operational Noise Impacts

Potential long-term noise impacts would be associated with stationary sources proposed on the project site. Stationary noise sources from the proposed project would include noise generated from on-site heating, ventilation, and air conditioning (HVAC) noise.

Heating, Ventilation, and Air Conditioning Equipment

The project would have HVAC units. The HVAC equipment could operate 24 hours per day. Based on previous measurements that LSA has conducted, the HVAC equipment would generate noise levels of 66.6 dBA L_{eq} at 5 ft per HVAC unit. The closest off-site residential use during operation of the proposed project would be the existing single-family residences surrounding the project site. Due to the location of HVAC equipment and specifications being unknown, operations would result in a potentially significant impact. With similar HVAC equipment to the previously mentioned reference equipment 35 ft or more from the adjacent property lines as shown in Table J or by providing quieter HVAC equipment, the City’s exterior noise level standard would be met as described in Mitigation Measure NOI-2. After distance attenuation, noise generated from on-site HVAC equipment 35 ft from the project property line would potentially reach up to 49.7 dBA L_{eq} at the nearest residences, which would not exceed the City’s exterior daytime (7:00 a.m. to 9:00 p.m.) and nighttime (9:00 p.m. to 7:00 a.m.) noise standards of 55 dBA L_{eq} and 50 dBA L_{eq} , respectively, for residential uses. Therefore, noise associated with the on-site HVAC equipment would be less than significant with incorporation of Mitigation Measure NOI-2.

Table J: Summary of HVAC Noise Levels

Off-Site Land Use	Direction	Description	Distance from HVAC Units (ft)	Reference Noise Level (dBA L_{eq}) at 5 ft	Distance Attenuation (dBA)	Average Noise Level (dBA L_{eq})
Residential	East	Single-Family House	35	66.6	16.9	49.7

Source: Compiled by LSA (2021).

dBA = A-weighted decibels

ft = foot/feet

HVAC = heating, ventilation, and air conditioning

L_{eq} = equivalent continuous sound level

Long-Term Ground-Borne Noise and Vibration from Vehicular Traffic

Because the rubber tires and suspension systems of buses and other on-road vehicles provide vibration isolation and reduce noise, it is unusual for on-road vehicles to cause ground-borne noise or vibration. When on-road vehicles cause such effects as the rattling of windows, the source is almost always airborne noise. Most problems with on-road vehicle-related noise and vibration can be directly related to a pothole, bump, expansion joint, or other discontinuity in the road surface. Smoothing the bump or filling the pothole will usually solve the problem. The proposed project

would have roads with smooth pavement and would not result in significant ground-borne noise or vibration impacts from vehicular traffic.

ON-SITE LAND USE COMPATIBILITY ANALYSIS

The proposed project is in an area where parcels to the east, west, south, and north are currently in use. For this reason, this analysis relies on the existing measured noise levels as well as future predicted noise levels to provide the most accurate description of the noise environment related to traffic noise impacts. For on-site stationary impacts, the analysis relies on approved future uses and operational information associated with the project.

As described in City's Noise Element of the General Plan, Policy N – 5.2 requires sound attenuation at common recreational and open space areas for multifamily developments where noise levels would exceed 65 dBA CNEL. Outdoor areas were evaluated using the standards for multifamily residential units. Sound attenuation measures shall reduce interior noise to a maximum of 45 dBA CNEL.

On-Site Exterior Traffic Noise Impacts

Based on the monitoring results shown in Table F and adjusting for distance, existing traffic noise levels at the project site are expected to reach 61 dBA CNEL at the building setbacks. To adjust existing noise levels for future traffic conditions, the project trips are added to existing volumes. The existing ADT volume for the adjacent segment of Lampson Avenue is 13,853. Future capacity ADT volume for the segment Lampson Avenue between Magnolia Street and Gilbert Street, based on the City's General Plan Circulation Element, is estimated to be 25,000. Using the following equation where V_{existing} equals the existing ADT volume and V_{future} equals the future ADT volume, the change in noise level can be calculated:

$$\text{Change in noise level} = 10 \log_{10} [V_{\text{future}}/V_{\text{existing}}]$$

Taking into account the future volume adjustment of 2.6 dBA CNEL, future noise levels are expected to approach 63.6 dBA CNEL at the private exterior living area of the single-family homes closest to Lampson Avenue. Therefore, noise levels at outdoor noise-sensitive uses would not exceed the City's exterior allowable noise exposure level of 65 dBA CNEL.

On-Site Interior Noise Impacts

In addition to the exterior noise level standards, the project must demonstrate compliance with the interior noise standard of 45 dBA CNEL.

Based on the Environmental Protection Agency's *Protective Noise Levels* (United States Environmental Protection Agency [EPA] 1974), with windows and doors open, interior noise levels would be 52.0 dBA (i.e., 64.0 dBA – 12 dBA = 52.0 dBA), which would exceed the 45 dBA CNEL interior noise standard. The proposed project includes an HVAC system that would allow windows to remain closed. With the incorporation of standard building construction which assumes a wall rating of Sound Transmission Class (STC) 46 (Harris 1997) along with a window rating of STC-25 (Milgard Windows 2008) and a windows closed condition, interior noise levels would be 39 dBA (i.e.,

64 dBA – 25 dBA = 39 dBA), which is below the 45 dBA CNEL interior noise standard with windows closed for noise-sensitive land uses. Therefore, with standard building construction and the proposed HVAC system, the interior noise levels would be considered acceptable.

SUMMARY OF REGULATORY COMPLIANCE MEASURES

The proposed project, like all projects in Garden Grove, would be required to comply with the City's Noise Ordinance and General Plan's Noise Element. The Noise Ordinance and Noise Element Policies are summarized in Regulatory Compliance Measures RCM-1 and RCM-2, respectively.

Regulatory Compliance Measures

RCM-1 The proposed project will be required to comply with the construction hours specified in the City of Garden Grove's (City) Noise Ordinance, which states that construction activities on sites within 500 feet (ft) of a residentially zoned property are allowed between 7:00 a.m. and 10:00 p.m.

RCM-2 As required by the policies of the City's Noise Element, the proposed project must implement techniques to minimize the noise impacts on residences from construction activities that take place in or near residential neighborhoods. The following are measures that should be implemented:

- Noise and ground-borne vibration construction activities whose specific location on the project site may be flexible (e.g., operation of compressors and generators, cement mixing, general truck idling) shall be conducted as far as possible from the nearest off-site land uses.
- When possible, construction activities shall be scheduled to avoid operating several pieces of equipment simultaneously, which causes high noise levels.
- The project contractor shall use power construction equipment with state-of-the-art noise shielding and muffling devices.
- Barriers such as flexible sound control curtains shall be erected around heavy equipment to minimize the amount of noise on the surrounding land uses to the maximum extent feasible during construction.
- All construction truck traffic shall be restricted to truck routes approved by the City, which shall avoid residential areas and other sensitive receptors to the extent feasible.
- A construction notice shall be prepared and shall include the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and

displayed in a location that is readily visible to the public and approved by the City.

SUMMARY OF MITIGATION MEASURES

The following mitigation measures are required to reduce noise impacts:

Mitigation Measure NOI-1

Construction Vibration Damage. Due to the close proximity to surrounding structures, the City of Garden Grove (City) Director of Community Development, or designee, shall verify prior to issuance of demolition or grading permits, that the approved plans require that the construction contractor shall implement the following mitigation measures during project construction activities to ensure that damage does not occur at surrounding structures:

- Identify structures that are located within 5 feet (ft) of heavy construction activities and that have the potential to be affected by ground-borne vibration. This task shall be conducted by a qualified structural engineer as approved by the City's Director of Community Development, or designee.
- Develop a vibration monitoring and construction contingency plan for approval by the City Director of Community Development, or designee, to identify structures where monitoring would be conducted; set up a vibration monitoring schedule; define structure-specific vibration limits; and address the need to conduct photo, elevation, and crack surveys to document before and after construction conditions. Construction contingencies would be identified for when vibration levels approached the limits.
- At a minimum, monitor vibration during initial demolition activities. Monitoring results may indicate the need for more or less intensive measurements.
- When vibration levels approach limits, suspend construction and implement contingencies as identified in the approved vibration monitoring and construction contingency plan to either lower vibration levels or secure the affected structures.

Mitigation Measure NOI-2

HVAC Equipment. Prior to issuance of construction permits, the City Director of Community Development, or designee, shall verify that the approved plans indicate that mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC]) shall have a sound rating of less than 66.6 A-weighted decibels (dBA) when measured at 5 ft located more than 35 ft from the project property line to

assure compliance with the City's Noise Ordinance. Should HVAC equipment be designed to be louder or closer than those details provided above, additional noise reduction measures such as equipment enclosures may be necessary.

Attachments: A: References
B: Figures
C: Noise Measurement Data
D: Construction Noise Calculations

ATTACHMENT A

REFERENCES

- California Department of Transportation (Caltrans). 2006. *Roadway Construction Noise Model User's Guide*. January.
- City of Garden Grove. 2008. *General Plan, Circulation Element*.
- _____. 2008. *General Plan, Noise Element*.
- _____. 2022. *Municipal Code, Noise Ordinance*.
- _____. n.d. Land Use Map. Website: <https://ggcity.org/maps/zoning-land-use/> (accessed June 2022).
- _____. n.d. Zoning Map. Website: <https://ggcity.org/econdev/zoning-map> (accessed June 2022).
- County of Los Angeles Airport Land Use Commission. 2003. *Airport Influence Area Map for the Fullerton Municipal Airport*.
- Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model User's Guide*. January. Washington, D.C. Website: https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf (accessed June 2022).
- Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual (FTA Manual)*. FTA Report 0123. Office of Planning and Environment. September.
- Harris, Cyril M., editor. 1991. *Handbook of Acoustical Measurements and Noise Control, Third Edition*.
- Harris, David A. 1997. *Noise Control Manual for Residential Buildings*. July.
- LSA Associates, Inc. (LSA). 2022. *Project Trip Generation Analysis*.
- Milgard Windows. 2008. *Various Acoustical Performance Test Reports – Milgard Windows*.
- United States Environmental Protection Agency (EPA). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. December 31.
- _____. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety*. Office of Noise Abatement and Control.

ATTACHMENT B

FIGURES

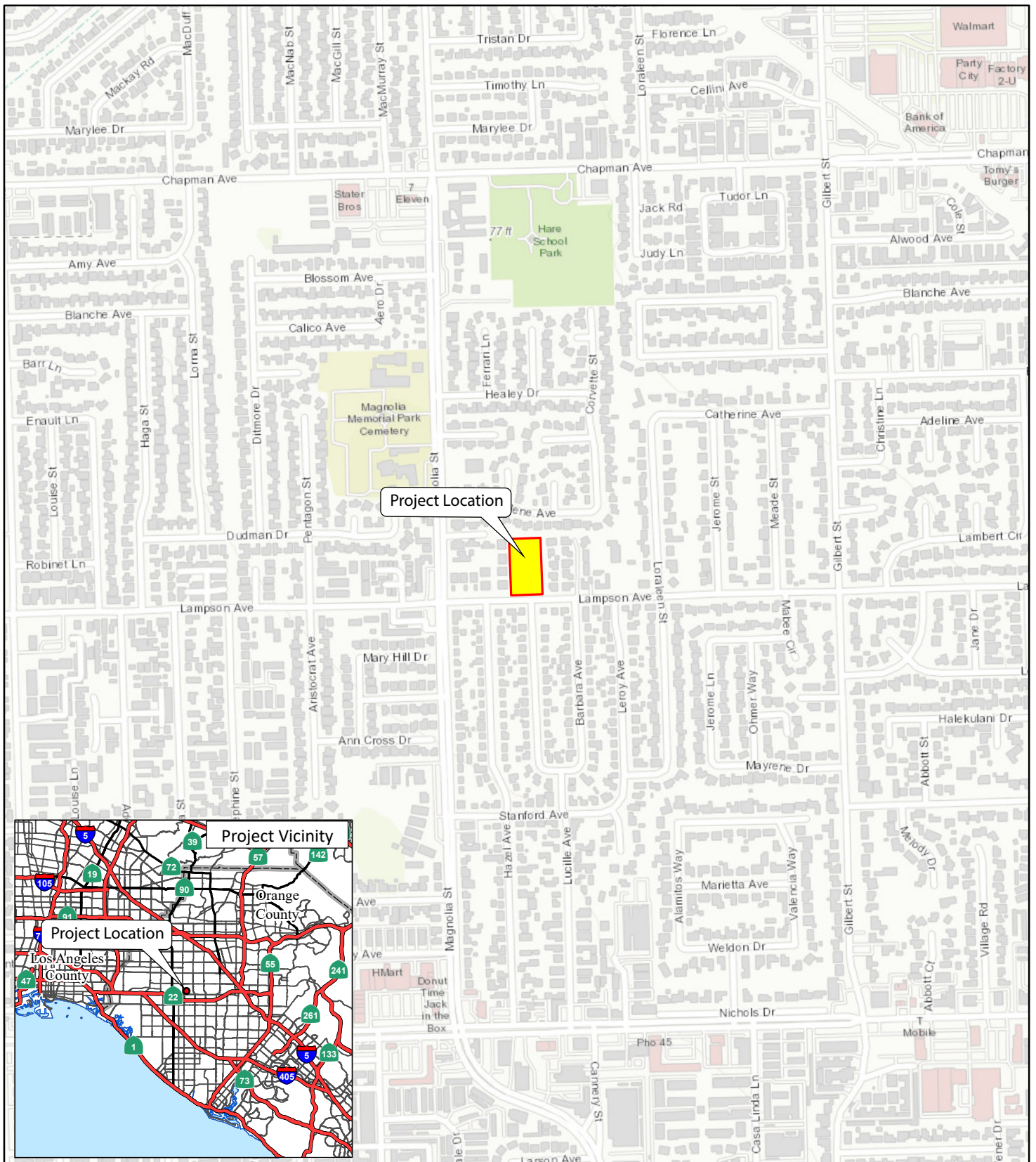
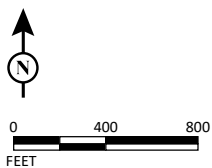


FIGURE 1

LSA

LEGEND
 Project Site



Lampson Avenue Residential Project
 Project Location

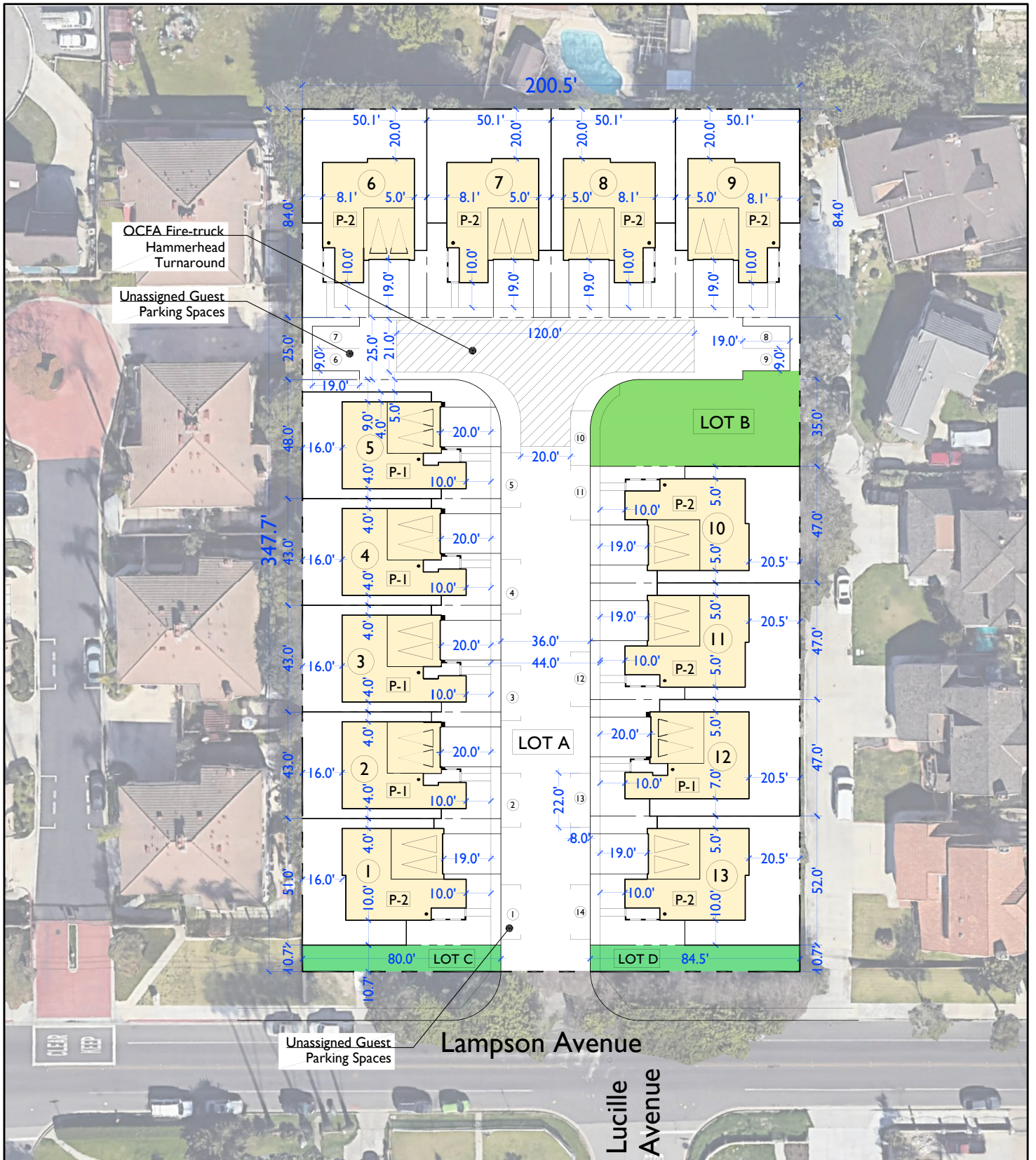


FIGURE 2

LSA



SOURCE: Bassenian | Lagoni Architecture • Planning • Interiors

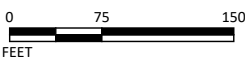
I:\CGG2201\G\Site_Plan.ai (6/7/2022)



FIGURE 3

LSA

- LEGEND
- Project Site Boundary
 - LT-1 - Long-Term Noise Monitoring Location



ATTACHMENT C

NOISE MEASUREMENT DATA

Noise Measurement Survey – 24 HR

Project Number: CGG2201 Test Personnel: Kevin Nguyendo
Project Name: Lampson TM Equipment: Spark 706RC (SN:18905)

Site Number: LT-1 Date: 5/18/22 Time: From 11:00 a.m. To 11:00 a.m.

Site Location: Located at the southern edge of the project site. Near a tree second closest to Lampson ave.

Primary Noise Sources: Traffic noise on Lampson. Faint noise from the property's security Systems.

Comments: Chain link fence surrounds the property with a height of 5 feet and 11 inches.

Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L _{eq}	L _{max}	L _{min}
11:00 AM	5/18/22	58.9	71.9	45.5
12:00 PM	5/19/22	60.7	75.7	48.9
1:00 PM	5/19/22	59.9	75.8	48.9
2:00 PM	5/19/22	60.2	81.3	48.8
3:00 PM	5/19/22	59.9	73.9	49.0
4:00 PM	5/19/22	61.1	77.9	49.3
5:00 PM	5/19/22	60.8	72.3	49.6
6:00 PM	5/19/22	60.4	76.5	48.9
7:00 PM	5/19/22	59.5	72.9	48.6
8:00 PM	5/19/22	58.3	77.3	46.9
9:00 PM	5/19/22	56.7	77.2	45.8
10:00 PM	5/19/22	55.7	77.4	41.8
11:00 PM	5/19/22	52.0	67.4	40.0
12:00 AM	5/19/22	50.0	68.0	36.9
1:00 AM	5/19/22	45.4	65.4	35.3
2:00 AM	5/19/22	46.2	69.2	35.1
3:00 AM	5/19/22	46.3	65.9	35.8
4:00 AM	5/19/22	48.3	69.1	38.2
5:00 AM	5/19/22	53.6	70.2	38.9
6:00 AM	5/19/22	57.5	79.9	41.4
7:00 AM	5/19/22	60.2	77.1	45.1
8:00 AM	5/19/22	59.4	75.7	44.5
9:00 AM	5/19/22	61.4	78.2	46.2
10:00 AM	5/19/22	59.0	74.1	44.8

Source: Compiled by LSA Associates, Inc. (2022).

dBA = A-weighted decibel

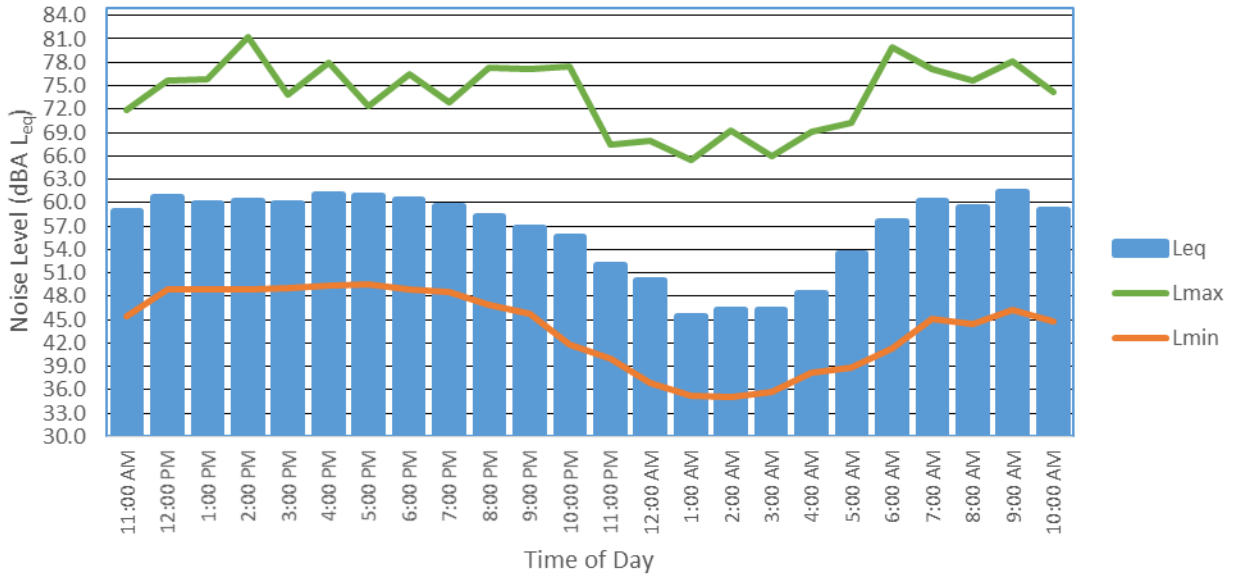
L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

L_{min} = minimum measured sound level

Long-Term (24-Hour) Noise Level Measurement

LT-1



Noise Measurement Survey – 24 HR

Project Number: CGG2201 Test Personnel: Kevin Nguyendo
Project Name: Lampson TM Equipment: Spark 706RC (SN:18906)

Site Number: LT-2 Date: 5/18/22 Time: From 11:00 a.m. To 11:00 a.m.

Site Location: Located in the northeast corner of the project site. Near a tree next to an abandoned shed.

Primary Noise Sources: Quiet with light bird chirping sounds. Faint backyard watering noise From adjacent property.

Comments: Concrete and wooden wall along northern wall of property. Height is 5 feet and 11 inches.

Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L _{eq}	L _{max}	L _{min}
11:00 AM	5/18/22	46.9	61.5	43.7
12:00 PM	5/19/22	50.7	62.6	45.0
1:00 PM	5/19/22	44.7	60.2	41.3
2:00 PM	5/19/22	43.8	56.9	40.9
3:00 PM	5/19/22	44.4	53.7	41.2
4:00 PM	5/19/22	45.4	59.7	41.5
5:00 PM	5/19/22	48.2	66.3	41.4
6:00 PM	5/19/22	45.4	55.8	41.8
7:00 PM	5/19/22	45.4	62.6	41.7
8:00 PM	5/19/22	44.7	60.6	41.4
9:00 PM	5/19/22	43.1	57.6	40.0
10:00 PM	5/19/22	40.9	52.8	37.3
11:00 PM	5/19/22	38.2	50.1	36.1
12:00 AM	5/19/22	36.4	46.4	34.9
1:00 AM	5/19/22	35.3	44.6	34.7
2:00 AM	5/19/22	35.5	41.0	34.7
3:00 AM	5/19/22	36.2	47.8	35.1
4:00 AM	5/19/22	36.9	49.3	35.3
5:00 AM	5/19/22	39.8	60.1	35.9
6:00 AM	5/19/22	41.0	56.9	36.4
7:00 AM	5/19/22	42.1	64.4	37.4
8:00 AM	5/19/22	43.4	61.6	37.7
9:00 AM	5/19/22	44.1	51.7	38.1
10:00 AM	5/19/22	44.4	52.3	42.3

Source: Compiled by LSA Associates, Inc. (2022).

dBA = A-weighted decibel

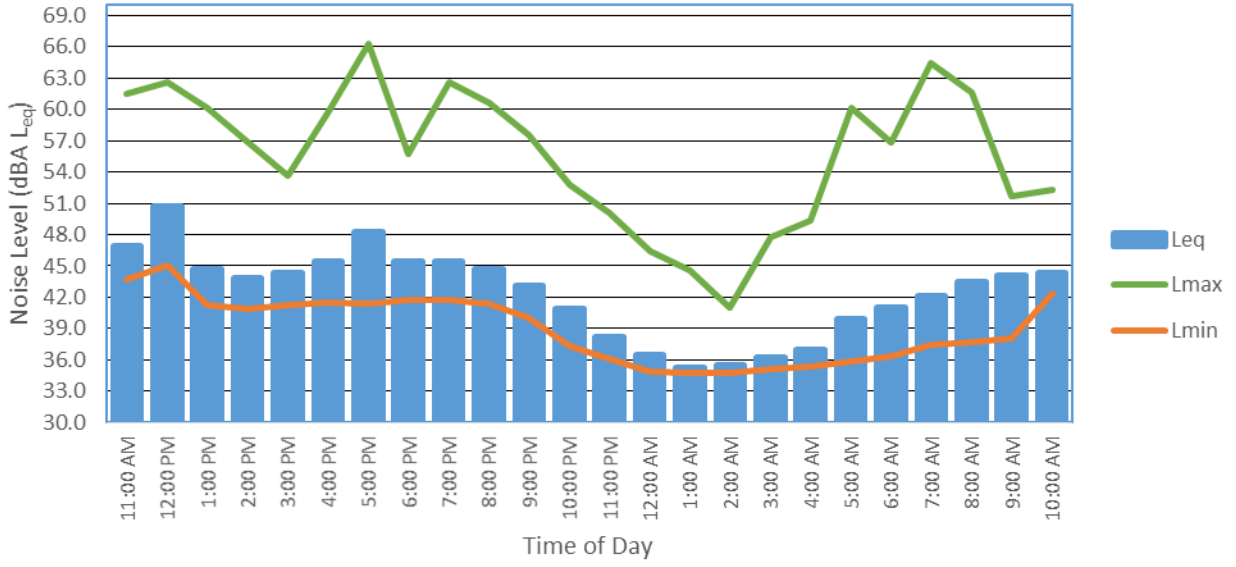
L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

L_{min} = minimum measured sound level

Long-Term (24-Hour) Noise Level Measurement

LT-2



ATTACHMENT D

CONSTRUCTION NOISE CALCULATIONS

Construction Calculations

Phase: Demolition

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Dump Truck	2	76	40	50	0.5	76	75
Excavator	2	81	40	50	0.5	81	80
Dozer	1	82	40	50	0.5	82	78
Tractor	3	84	40	50	0.5	84	85
Combined at 50 feet						88	87
Combined at Receptor 110 feet						81	80
Combined at Receptor 140 feet						79	78
Combined at Receptor 200 feet						76	75

Phase: Site Preparation

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Dump Truck	1	76	40	50	0.5	76	72
Excavator	1	81	40	50	0.5	81	77
Grader	1	85	40	50	0.5	85	81
Dozer	1	82	40	50	0.5	82	78
Tractor	1	84	40	50	0.5	84	80
Combined at 50 feet						90	86
Combined at Receptor 110 feet						83	79
Combined at Receptor 140 feet						81	77
Combined at Receptor 200 feet						77	73

Phase: Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Grader	1	85	40	50	0.5	85	81
Dozer	1	82	40	50	0.5	82	78
Tractor	2	84	40	50	0.5	84	83
Combined at 50 feet						89	86
Combined at Receptor 110 feet						82	79

Phase: Building Construction

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Compressor (air)	1	78	40	50	0.5	78	74
Crane	1	81	16	50	0.5	81	73
Man Lift	1	75	20	50	0.5	75	68
Generator	1	81	50	50	0.5	81	78
Tractor	1	84	40	50	0.5	84	80
Welder / Torch	3	74	40	50	0.5	74	75
Combined at 50 feet						88	84
Combined at Receptor 110 feet						81	77

Phase: Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Concrete Mixer Truck	1	79	40	50	0.5	79	75
Paver	1	77	50	50	0.5	77	74
All Other Equipment > 5 HP	1	85	50	50	0.5	85	82
Roller	1	80	20	50	0.5	80	73
Tractor	1	84	40	50	0.5	84	80
Combined at 50 feet						89	85
Combined at Receptor 110 feet						82	78

Phase: Architectural Coating

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Compressor (air)	1	78	40	50	0.5	78	74
Combined at 50 feet						78	74
Combined at Receptor 110 feet						71	67

Sources: RCNM

¹ - Percentage of time that a piece of equipment is operating at full power.

dBA - A-weighted Decibels

Lmax- Maximum Level

Leq- Equivalent Level