



## FINDINGS to a MASTER ENVIRONMENTAL IMPACT REPORT

Project No. 432080  
Master Environmental Impact Report  
No. 96-7918 / SCH No. 97111077

SUBJECT: MEADOWOOD II: VESTING TENTATIVE MAP, PUBLIC RIGHT- OF-WAY VACATION, PLANNED DEVELOPMENT PERMIT, and SITE DEVELOPMENT PERMIT to subdivide 5.72 acres into 21 lots. The project would also construct 16 single-family residential units (lots 1 – 16), and two duplexes totaling four affordable multi-family residential units (lot 17). In addition, the project proposes a private lot for an existing cell tower (lot 18), a private recreation area (lot 19), grading and improvements for two private water quality/hydromodification basins (portion of lot 17 and all of lot 20), and a private driveway (lot 21). The project site includes 1.22 acres of ~~excess-unimproved public right-of-way that is no longer used as a public right-of-way due to the realignment of~~ developed as part of Carmel Valley Road. The However, approximately 0.02 acres (736-square-feet) of excess right-of-way and the easterly portion of Old Survey 57 would be vacated as part of the proposed project. A planned development permit is being requested for development that complies with the applicable land use plan, but contains a use that is not permitted in the underlying zone. Additionally, a site development permit is being requested for deviations to street frontage and front yard setback standards. Various site improvements would also be constructed that include associated hardscape, retaining walls, noise attenuation walls, private recreation area, and landscape. The proposed project would conform to the criteria of the Affordable/In-Fill Housing and Sustainable Buildings Expedite Program by constructing four affordable multi-family residential units. The 5.72 acre (249,163-square-feet) project site is located at 13855 Rancho Santa Fe Farms Road, between Carmel Valley Road and Rancho Santa Fe Lakes Drive within the Pacific Highlands Ranch Community Plan. The project site is designated Low Density Residential Use (2 – 5 dwelling units per acre), and within the RS-1-14 zone. (LEGAL DESCRIPTION: Parcel A: Parcel 1 of Parcel Map No. 12337, file No. 82-296204, excepting therefrom that portion lying southerly and southeasterly of the centerline of that certain easement described in deed to the City of San Diego, File No. 82-271464. Parcel B: Non-exclusive access easement for vehicular, pedestrian and bicycle ingress and egress as described in grant reciprocal access easements and road improvement agreement, Instrument No. 2015-0098690.) Applicant: Sean Santa Cruz, Hall Land Company, Inc.

**UPDATE: May 3, 2016. Revisions and/or minor corrections have been made to this document when compared to the revised final Findings to Master Environmental Impact Report (MEIR) No. 96-7918/SCH No. 97111077 (dated April 6, 2016). More specifically, clarifications have been made to the final environmental document with respect to right-of-way acreage to be vacated. The project site includes 1.22 acres of public right-of-way that is developed as part of Carmel Valley Road. However, approximately 0.02 acres (736-square-feet) of excess right-of-way and the easterly portion of Old Survey 57 would be vacated as part of the proposed project. The modifications within the environmental document do not affect the environmental analysis or conclusions of the final Findings to Master Environmental Impact Report (MEIR) No. 96-7918/SCH No. 97111077. All revisions are shown in a ~~strikethrough~~ and/or underline format.**

**UPDATE: April 6, 2016. Subsequent to the distribution of the final Findings to Master Environmental Impact Report (MEIR) No. 96-7918/SCH No. 97111077, the environmental document has been revised. MEIR Findings are distributed as final environmental documents pursuant to CEQA section 15179. Although a public review and comment period is not required, a comment letter was received and responded to. The comment letter and response have been incorporated into the revised final environmental document. In accordance with CEQA section 15073.5(c)(4), the addition of new information that clarifies, amplifies, or makes insignificant modifications does not require recirculation as there are no new impacts and no new mitigation identified. An environmental document need only be recirculated when there is the identification of new significant environmental impacts or the addition of a new mitigation measure required to avoid a significant environmental impact. The modifications within the environmental document do not affect the environmental analysis or conclusions of the EIR. All revisions are shown in a ~~strikethrough~~ and/or underline format.**

- I. PROJECT DESCRIPTION: See attached Initial Study.
- II. ENVIRONMENTAL SETTING: See attached Initial Study. The 5.72-acre project site is located immediately between Carmel Valley Road to the south, Rancho Santa Fe Lakes Drive to the north, and Rancho Santa Fe Farms to the west in the Pacific Highlands Ranch community in the City of San Diego. The Pacific Highlands Ranch community (formerly Subarea III) is located in the northerly portion of the City of San Diego, east of Interstate 5.
- III. PROJECT BACKGROUND: The City of San Diego previously prepared a Master Environmental Impact Report (MEIR) for the Pacific Highlands Ranch Subarea Plan within the (former) North City Future Urbanizing Area (NCFUA; LDR No. 96-7918/SCH No. 97111077). The MEIR was certified by the City Council on July 28, 1998, and certified by the California State Coastal Commission with minor revisions on March 20, 1999. The "Meadowood II" project described in the subject block is a subsequent project to the MEIR.

IV. DETERMINATION: The City of San Diego conducted an Initial Study which determined that the project could have a significant environmental affect in the following area(s): Paleontological Resources. Subsequent revisions in the project, as revised, now avoids or mitigates the potentially significant environmental effects previously identified with the MEIR and the preparation of an EIR, a subsequent EIR, or a Mitigated Negative Declaration is not required. Based on the Initial Study, the City of San Diego as the Lead Agency, has reached the following determinations:

- A. The project was considered within the scope of analysis of the MEIR pursuant to Section 21157.1(c) of the Public Resources Code.
- B. Implementation of the project would not result in any additional significant effects on the environment beyond those identified in the MEIR, as defined Section 21158(d) of the Public Resources Code.
- C. The project is considered to be within the scope of analysis of the MEIR and no new environmental document or findings pursuant to Public Resources Code, Section 21081, are required.
- D. No substantial changes have occurred with respect to circumstances under which the MEIR was certified, there is no new available information, which was not known and could have been known at the time of the MEIR was certified, and no new environmental document pursuant Public Resources Code Section 21157.6(a) is required.

In accordance with Section 21157.1 of the Public Resources Code, these findings have, therefore, been prepared. Public notice of this determination, pursuant to Section 21092 of the Public Resources Code has been made. Per San Diego Municipal Code Section 128.0306, this document has been made available 14 days prior to certification of this determination.

V. DOCUMENTATION: The attached Initial Study documents the reasons to support the above Determination.

VI. MITIGATION, MONITORING AND REPORTING PROGRAM (MMRP): To ensure that site development would avoid significant environmental impacts, a Mitigation, Monitoring, and Reporting Program (MMRP) is required. Compliance with the mitigation measure shall be the responsibility of the applicant. The mitigation measures are described below.

**A. GENERAL REQUIREMENTS – PART I Plan Check Phase (prior to permit issuance)**

1. Prior to the issuance of a Notice To Proceed (NTP) for a subdivision, or any construction permits, such as Demolition, Grading or Building, or beginning any construction-related activity on-site, the Development Services Department (DSD) Director's Environmental Designee (ED) shall review and approve all Construction Documents (CD), (plans, specification, details, etc.) to ensure the MMRP requirements are incorporated into the design.
2. In addition, the ED shall verify that the MMRP Conditions/Notes that apply ONLY to the construction phases of this project are included VERBATIM, under the heading, "**ENVIRONMENTAL/MITIGATION REQUIREMENTS.**"
3. These notes must be shown within the first three (3) sheets of the construction documents in the format specified for engineering construction document templates as shown on the City website:  
  
<http://www.sandiego.gov/development-services/industry/information/standtemp.shtml>
4. The **TITLE INDEX SHEET** must also show on which pages the "Environmental/Mitigation Requirements" notes are provided.
5. **SURETY AND COST RECOVERY** – The Development Services Director or City Manager may require appropriate surety instruments or bonds from private Permit Holders to ensure the long-term performance or implementation of required mitigation measures or programs. The City is authorized to recover its cost to offset the salary, overhead, and expenses for City personnel and programs to monitor qualifying projects.

**B. GENERAL REQUIREMENTS – PART II Post Plan Check (After permit issuance/Prior to start of construction)**

1. **PRE CONSTRUCTION MEETING IS REQUIRED TEN (10) WORKING DAYS PRIOR TO BEGINNING ANY WORK ON THIS PROJECT.** The PERMIT HOLDER/OWNER is responsible to arrange and perform this meeting by contacting the CITY RESIDENT ENGINEER (RE) of the Field Engineering Division and City staff from MITIGATION MONITORING COORDINATION (MMC). Attendees must also include the Permit holder's Representative(s), Job Site Superintendent, and the following consultants: **Qualified paleontological monitor**

**Note: Failure of all responsible Permit Holder's representatives and consultants to attend shall require an additional meeting with all parties present.**

CONTACT INFORMATION:

- a) The PRIMARY POINT OF CONTACT is the **RE** at the **Field Engineering Division – 858-627-3200**
- b) For Clarification of ENVIRONMENTAL REQUIREMENTS, applicant t is also required to call **RE and MMC at 858-627-3360**

2. **MMRP COMPLIANCE:** This Project, Project Tracking System (PTS) Number 432080 and/or Environmental Document Number 432080, shall conform to the mitigation requirements contained in the associated Environmental Document and implemented to the satisfaction of the DSD's Environmental Designee (MMC) and the City Engineer (RE). The requirements may not be reduced or changed but may be annotated (i.e., to explain when and how compliance is being met and location of verifying proof, etc.). Additional clarifying information may also be added to other relevant plan sheets and/or specifications as appropriate (i.e., specific locations, times of monitoring, methodology, etc.).

**Note: Permit Holder's Representatives must alert RE and MMC if there are any discrepancies in the plans or notes, or any changes due to field conditions. All conflicts must be approved by RE and MMC BEFORE the work is performed.**

3. **OTHER AGENCY REQUIREMENTS:** Evidence of compliance with all other agency requirements or permits shall be submitted to the RE and MMC for review and acceptance prior to the beginning of work or within one week of the Permit Holder obtaining documentation of those permits or requirements. Evidence shall include copies of permits, letters of resolution, or other documentation issued by the responsible agency: Not Applicable.
4. **MONITORING EXHIBITS:** All consultants are required to submit, to RE and MMC, a monitoring exhibit on a 11x17 reduction of the appropriate construction plan, such as site plan, grading, landscape, etc., marked to clearly show the specific areas including the **LIMIT OF WORK**, scope of that discipline's work, and notes indicating when in the construction schedule that work will be performed. When necessary for clarification, a detailed methodology of how the work will be performed shall be included.

**NOTE: Surety and Cost Recovery – When deemed necessary by the Development Services Director or City Manager, additional surety instruments or bonds from the private Permit Holder may be required to ensure the long-term performance or implementation of required mitigation measures or programs. The City is authorized to recover its cost to offset the salary, overhead, and expenses for City personnel and programs to monitor qualifying projects.**

5. **OTHER SUBMITTALS AND INSPECTIONS:** The Permit Holder/Owner’s representative shall submit all required documentation, verification letters, and requests for all associated inspections to the RE and MMC for approval per the following schedule:

DOCUMENT SUBMITTAL/INSPECTION CHECKLIST		
Issue Area	Document Submittal	Associated Inspection/Approvals/Notes
General	Consultant Qualification Letters	Prior to Preconstruction Meeting
General	Consultant Construction Monitoring Exhibits	Prior to or at Preconstruction Meeting
Paleontology	Paleontology Reports	Paleontology Site Observation
Waste Management	Waste Management Reports	Waste Management Inspections
Bond Release	Request for Bond Release Letter	Final MMRP Inspections Prior to Bond Release Letter

**C. SPECIFIC MMRP ISSUE AREA CONDITIONS/REQUIREMENTS**

PALEONTOLOGICAL RESOURCES

**I. Prior to Permit Issuance**

A. Entitlements Plan Check

1. Prior to issuance of any construction permits, including but not limited to, the first Grading Permit, Demolition Plans/Permits and Building Plans/Permits or a Notice to Proceed for Subdivisions, but prior to the first preconstruction meeting, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Paleontological Monitoring have been noted on the appropriate construction documents.

B. Letters of Qualification have been submitted to ADD

1. The applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the paleontological monitoring program, as defined in the City of San Diego Paleontology Guidelines.
2. MMC will provide a letter to the applicant confirming the qualifications of the PI and

all persons involved in the paleontological monitoring of the project.

3. Prior to the start of work, the applicant shall obtain approval from MMC for any personnel changes associated with the monitoring program.

## **II. Prior to Start of Construction**

### **A. Verification of Records Search**

1. The PI shall provide verification to MMC that a site specific records search has been completed. Verification includes, but is not limited to a copy of a confirmation letter from San Diego Natural History Museum, other institution or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.

### **B. PI Shall Attend Precon Meetings**

1. Prior to beginning any work that requires monitoring; the Applicant shall arrange a Precon Meeting that shall include the PI, Construction Manager (CM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified paleontologist shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Paleontological Monitoring program with the Construction Manager and/or Grading Contractor.
  - a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.
2. Identify Areas to be Monitored  
Prior to the start of any work that requires monitoring, the PI shall submit a Paleontological Monitoring Exhibit (PME) based on the appropriate construction documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits. The PME shall be based on the results of a site specific records search as well as information regarding existing known soil conditions (native or formation).
3. When Monitoring Will Occur
  - a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.
  - b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as depth of excavation and/or site graded to bedrock, presence or absence of fossil resources, etc., which may reduce or increase the potential for resources to be present.

### III. During Construction

- A. Monitor Shall be Present During Grading/Excavation/Trenching
1. The monitor shall be present full-time during grading/excavation/trenching activities as identified on the PME that could result in impacts to formations with high and moderate resource sensitivity. **The Construction Manager is responsible for notifying the RE, PI, and MMC of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the PME.**
  2. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as trenching activities that do not encounter formational soils as previously assumed, and/or when unique/unusual fossils are encountered, which may reduce or increase the potential for resources to be present.
  3. The monitor shall document field activity via the Consultant Site Visit Record (CSVR). The CSVR's shall be faxed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries. The RE shall forward copies to MMC.
- B. Discovery Notification Process
1. In the event of a discovery, the Paleontological Monitor shall direct the contractor to temporarily divert trenching activities in the area of discovery and immediately notify the RE or BI, as appropriate.
  2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
  3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
- C. Determination of Significance
1. The PI shall evaluate the significance of the resource.
    - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required. The determination of significance for fossil discoveries shall be at the discretion of the PI.
    - b. If the resource is significant, the PI shall submit a Paleontological Recovery Program (PRP) and obtain written approval from MMC. Impacts to significant resources must be mitigated before ground disturbing activities in the area of discovery will be allowed to resume.
    - c. If resource is not significant (e.g., small pieces of broken common shell fragments or other scattered common fossils) the PI shall notify the RE, or BI as appropriate, that a non-significant discovery has been made. The Paleontologist shall continue to monitor the area without notification to MMC unless a significant resource is encountered.
    - d. The PI shall submit a letter to MMC indicating that fossil resources will be collected, curated, and documented in the Final Monitoring Report. The letter

shall also indicate that no further work is required.

#### **IV. Night and/or Weekend Work**

- A. If night and/or weekend work is included in the contract
  - 1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
  - 2. The following procedures shall be followed.
    - a. No Discoveries  
In the event that no discoveries were encountered during night and/or weekend work, The PI shall record the information on the CSVr and submit to MMC via fax by 8AM on the next business day.
    - b. Discoveries  
All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction.
    - c. Potentially Significant Discoveries  
If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction shall be followed.
    - d. The PI shall immediately contact MMC, or by 8AM on the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.
- B. If night work becomes necessary during the course of construction
  - 1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
  - 2. The RE, or BI, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

#### **V. Post Construction**

- A. Preparation and Submittal of Draft Monitoring Report
  - 1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Paleontological Guidelines which describes the results, analysis, and conclusions of all phases of the Paleontological Monitoring Program (with appropriate graphics) to MMC for review and approval within 90 days following the completion of monitoring.
    - a. For significant paleontological resources encountered during monitoring, the Paleontological Recovery Program shall be included in the Draft Monitoring Report.
    - b. Recording Sites with the San Diego Natural History Museum  
The PI shall be responsible for recording (on the appropriate forms) any significant or potentially significant fossil resources encountered during the Paleontological Monitoring Program in accordance with the City's Paleontological Guidelines, and submittal of such forms to the San Diego Natural History Museum with the Final Monitoring Report.
  - 2. MMC shall return the Draft Monitoring Report to the PI for revision or, for

- preparation of the Final Report.
3. The PI shall submit revised Draft Monitoring Report to MMC for approval.
  4. MMC shall provide written verification to the PI of the approved report.
  5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.
- B. Handling of Fossil Remains
1. The PI shall be responsible for ensuring that all fossil remains collected are cleaned and catalogued.
  2. The PI shall be responsible for ensuring that all fossil remains are analyzed to identify function and chronology as they relate to the geologic history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate
- C. Curation of fossil remains: Deed of Gift and Acceptance Verification
1. The PI shall be responsible for ensuring that all fossil remains associated with the monitoring for this project are permanently curated with an appropriate institution.
  2. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.
- D. Final Monitoring Report(s)
1. The PI shall submit two copies of the Final Monitoring Report to MMC (even if negative), within 90 days after notification from MMC that the draft report has been approved.
  2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

The above mitigation monitoring and reporting program will require additional fees and/or deposits to be collected prior to the issuance of building permits, certificates of occupancy and/or final maps to ensure the successful completion of the monitoring program.

- VII. SIGNIFICANT UNMITIGATED IMPACTS: The City of San Diego has determined that the project would not result in any significant effects on the environmental beyond those identified in the MEIR. However, the final MEIR for the Pacific Highlands Ranch (Subarea III) Specific Plan (LDR No. 96-7918/SCH No. 97111077) identified significant unmitigated impacts relating to land use, traffic, landform alteration, biological resources (wetlands and native grasslands), and cumulative impacts associated with downstream water quality, air quality, landform alteration and visual character, and agricultural land and mineral resources.

Because there were significant unmitigated impacts associated with implementation of the Pacific Highlands Ranch Specific Plan, approval of the plan required the decision maker to make specific and substantiated CEQA Findings which stated that: a) specific economic, social or other considerations make infeasible the mitigation measures or project alternatives identified in the final MEIR, and b) these impacts have been found acceptable because of specific overriding considerations. Therefore, no new CEQA Findings are

required with this project.

- VIII. DISTRIBUTION: Pursuant to CEQA Section 15177, public notice is required for Master EIR Findings for a period of 30 days. A public review and comment period is not required as Master EIR Findings are considered final environmental documents. The intent of the distribution below is to provide other public agencies, the public, and the decision makers the opportunity to review the final document before the first public hearing or discretionary action on the project. No comments are solicited and no written responses to comments on this final environmental document shall be prepared.

County of San Diego

Department of Environmental Health (75)

County of San Diego, Planning & Development Services, Joe Farace

City of San Diego

Mayor's Office

Councilmember Lightner, District 1

City Attorney's Office (93C)

Development Services Department (MS 501)

EAS

Planning Review

Engineering Review

Transportation

Geology

Fire - Plan Review

Landscaping

DPM, Jeff Peterson

Planning Department (MS 413)

Plan - Long-Range Planning

Plan - MSCP

PUD - Water & Sewer

Library, Government Documents (81)

Central Library (81A)

Carmel Valley Branch Library (81F)

Water Review (86A)

Historical Resources Board (87)

Facility Financing (93B)

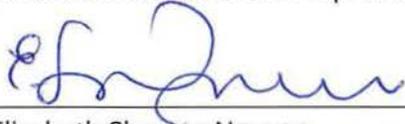
Other Organizations and Interested Individuals

San Diego Natural History Museum (166)

Pacific Highlands Ranch - Subarea III (377A)

Applicant: Sean Santa Cruz, Hall Land Company, Inc.

Copies of the Meadowood II Findings and Initial Study Checklist, the final Pacific Highlands Ranch (Subarea III) Subarea Plan, Subarea Plan MEIR, the Mitigation Monitoring and Reporting Program and any technical appendices (except confidential appendices) may be reviewed in the offices of the Land Development Review Section, Development Services Department via prior appointment or purchased for the cost of reproduction.



Elizabeth Shearer-Nguyen  
Senior Planner  
Development Services Department

February 25, 2016  
Date of Final Report

April 6, 2016  
Date of Revised Final Report

May 3, 2016  
Date of Revised Final Report

Analyst: L. Sebastian

Attachments: Figure 1 – Vicinity Map  
Figure 2 – Site Plan  
Initial Study Checklist



# County of San Diego

MARK WARDLAW  
DIRECTOR  
PHONE (619) 694-2962  
FAX (619) 694-2555

PLANNING & DEVELOPMENT SERVICES  
5510 OVERLAND AVENUE, SUITE 310, SAN DIEGO, CA 92123  
www.sdcounty.ca.gov/pds

DARREN GRETLER  
ASSISTANT DIRECTOR  
PHONE (619) 694-2962  
FAX (619) 694-2555

City staff response(s) to County of San Diego,  
Advance Planning Division, Planning & Development Services comment(s) letter for  
Meadowood II, Project No. 432080

March 25, 2016

Lindsey Sebastian  
Associate Planner  
Development Services Department  
City of San Diego  
1222 First Avenue  
San Diego, CA 92101

Via E-mail: [lsebastian@sanidiego.gov](mailto:lsebastian@sanidiego.gov) and [DSDEAS@sanidiego.gov](mailto:DSDEAS@sanidiego.gov)

## COMMENTS ON THE MASTER EIR FINDINGS FOR THE MEADOWOOD II PROJECT (PTS NO. 432080)

Dear Ms. Sebastian:

The County of San Diego (County) has reviewed the Master EIR Findings for the Meadowood II Project. The County has the following comments.

### WATER QUALITY

The project may generate potential storm water quality impacts onto unincorporated County of San Diego lands; therefore, the project may need to consider the following items:

- Compliance with the recently adopted San Diego Municipal Storm Water Permit Order No. R9-2013-0001, (as amended by Order Nos. R9-2015-0001 and R9-2015-0100). The project may consider implementing permanent Site Design, Storm Water Treatment, and Hydromodification Management pollutant control and flow control Best Management Practices (BMPs) in accordance with the County's BMP Design Manual.
- Construction BMPs and associated plans for conformance with the County's Grading Ordinance, Watershed Protection Ordinance and State of California's Construction General Permit.

} 1.  
} 2.

1. The project will be required to fully meet the requirements of the recently adopted San Diego Storm Water Permit Order No. R9-2013-0001 including the implementation of Permanent BMP's and Hydromodification Controls as outlined in the City of San Diego Storm Water Manual and in conformance with State and Regional Standards.
2. The project will be required to fully meet the construction Best Management Practices necessary to comply with Chapter 14, Article 2, Division 1 (Grading Regulations) of the San Diego Municipal Code. Development of this project will comply with all storm water construction requirements of the State Construction General Permit, Order No. 2009-00090DWQ or subsequent orders. In accordance with Order No. 2009-00090DWQ a Risk Level Determination will be calculated for the site and a Storm Water Pollution Prevention Plan (SWPPP) will be implemented concurrently with the commencement of grading activities.

If you have any questions regarding these comments, please contact Danny Serrano, Planner, at (858) 694- 3680, or via email at [Daniel.Serrano@sdcounty.ca.gov](mailto:Daniel.Serrano@sdcounty.ca.gov)

March 25, 2016  
Ms. Sebastian  
City of San Diego

City staff response(s) to County of San Diego,  
Advance Planning Division, Planning & Development Services comment(s) letter for  
Meadowood II, Project No. 432080

Sincerely,



Joe Parace, AICP  
Group Program Manager  
Advance Planning Division  
Planning & Development Services

e-mail cc:

Megan Jones, CAO Staff Officer, LUEG  
Keith Corry, Policy Advisor, Board of Supervisors, District 3  
Chris Livoni, Policy Advisor, Board of Supervisors, District 5  
Renee Vidales, Watershed Protection Program  
Jeff Kashak, Environmental Planner, Department of Public Works

**THIS PAGE INTENTIONALLY LEFT BLANK**



## Vicinity Map

Meadowood II / Project No. 432080

City of San Diego – Development Services Department

**FIGURE**  
**No. 1**



## INITIAL STUDY CHECKLIST

1. Project title/Project number: Meadowood II / 432080
2. Lead agency name and address: City of San Diego, 1222 First Avenue, MS-501, San Diego, California 92101
3. Contact person and phone number: L. Sebastian / (619) 236-5993
4. Project location: 13855 Rancho Santa Fe Farms Road, San Diego, California 92130
5. Project Applicant/Sponsor's name and address: Sean Santa Cruz, Hall Land Company, Inc., 740 Lomas Santa Fe Drive, Suite 204, San Diego, California 92075
6. General/Community Plan designation: General Plan: Residential / Community Plan: Pacific Highlands Ranch: Low Density Residential (2 – 5 dwelling units per acre)
7. Zoning: RS-1-14 (Residential – Single Unit, requires minimum 5,000-square-foot lots)
8. Description of project (Describe the whole action involved, including but not limited to, later phases of the project, and any secondary, support, or off-site features necessary for its implementation.):

VESTING TENTATIVE MAP, PUBLIC RIGHT- OF-WAY VACATION, PLANNED DEVELOPMENT PERMIT, and SITE DEVELOPMENT PERMIT to subdivide 5.72 acres into 21 lots. The project would also construct 16 single-family residential units (lots 1 – 16), and two duplexes totaling four affordable multi-family residential units (lot 17). In addition, the project proposes a private lot for an existing cell tower (lot 18), a private recreation area (lot 19), grading and improvements for two private water quality/hydromodification basins (portion of lot 17 and all of lot 20), and a private driveway (lot 21). The project site includes 1.22 acres of ~~excess unimproved public right-of-way that is no longer used as a public right-of-way due to the realignment of~~ developed as part of Carmel Valley Road. The ~~However, approximately 0.02 acres (736-square-feet) of excess right-of-way and the easterly portion of Old Survey 57~~ would be vacated as part of the proposed project. A planned development permit is being requested for development that complies with the applicable land use plan, but contains a use that is not permitted in the underlying zone. Additionally, a site development permit is being requested for deviations to street frontage and front yard setback standards.

The proposed single-family residential units would consist of six different two-story floor plans, ranging in size from 2,677-square-feet to 3,048-square-feet, with attached three-car garages. The two proposed two-story duplexes would total 4,676-square-feet with two attached two-car garages.

Various site improvements would also be constructed that include associated hardscape, retaining walls, noise attenuation walls, private recreation area, and landscape. The proposed project would conform to the criteria of the Affordable/In-Fill Housing and Sustainable Buildings Expedite Program by constructing four affordable multi-family residential units.

The project landscaping has been reviewed by City Landscape staff and would comply with all applicable City of San Diego Landscape ordinances and standards. Drainage would be directed into appropriate storm drain systems designated to carry surface runoff, which has been reviewed and accepted by City Engineering staff. Ingress to the project site would be via Rancho Santa Fe Farms Road and a future private road that would connect to Carmel Valley Road to the east of the project site. The project proposes a five-foot high masonry sound wall along Carmel Valley Road that would be screened with landscape materials. An existing masonry wall is located along the entire length of the project site's north property line.

The project site is currently vacant land that has been previously disked for agricultural purposes. Approximately 46,300 cubic yards of soil cut at a maximum depth of 6.1 feet is proposed. Further, approximately 46,300 cubic yards of soil fill at a maximum fill slope of 10.3 feet is proposed. The project proposes to export no material from the project site. Site retaining walls would not exceed six feet in height. There are no slopes greater than 25 percent on-site.

The Land Development Code (LDC), Section 143.0920 allows affordable/in-fill housing and Sustainable Building projects to request deviations from applicable development regulations pursuant to a Site Development Permit decided in accordance with Process Four, provided that the findings in Section 126.0504(a) and the supplemental findings in Section 126.0504(m) are made. Deviations requested by the project include:

1. Street Frontage – A deviation from San Diego Municipal Code (SDMC) Section 144.0211(a) to allow proposed lots to not front directly onto a street, where all lots are required to have frontage on a street that is open to and usable by vehicular traffic.
2. Street Frontage – A deviation from SDMC Section 131.0431(b) to allow no street frontage on Lots 1-8, 12-17, 19, and 20, where 50 feet of public street frontage is required in the RS-1-14 zone.

3. Front Setback – A deviation from SDMC Section 131.0431(b) to allow a 12-foot front setback on Lot 11, where 15 feet is required in the RS-1-14 zone.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

The 5.72 acre (249,163-square-feet) project site is located at 13855 Rancho Santa Fe Farms Road, between Carmel Valley Road and Rancho Santa Fe Lakes Drive within the Pacific Highlands Ranch Community Plan. The project site is designated Low Density Residential Use (2 – 5 dwelling units per acre), and within the RS-1-14 zone. An existing cell tower is located in the south west corner of the parcel. An existing five-foot high masonry wall along the project site's north property line would remain. The project site is almost entirely bounded by existing development and current construction. Residential development is to the north of the project site, and Carmel Valley Road bounds the project site to the south. There is active residential construction further south, a vacant lot to the west, and active residential development further west and to the east. On-site vegetation consists of non-native species classified as disturbed habitat. Furthermore, the project site is situated in a developed area currently served by existing public services and utilities.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):

None required.

11. Project Background (if applicable):

On July 28, 1998, the City Council adopted the PHR Subarea Plan for Subarea III of the North County Future Urbanizing Area (NCFUA). On November 3, 1998, the voters of the City of San Diego approved Ballot Measure "M," which approved an amendment to the City's General Plan to allow a phase shift within PHR from "Future Urbanizing" to "Planned Urbanizing." The City of San Diego prepared a Master Environmental Impact Report (MEIR) for PHR (Subarea III) Subarea Plan in the NCFUA (LDR No. 96-7918/SCH No. 97111077), which analyzed the impacts that would potentially result from development of the Subarea.

The project site lies within what is shown as the Low Density Residential land use designation on Figure 3-1 of the MEIR, on file in the office of the Land Development Review Division. As shown on Figure 3-20 of the MEIR, the project site is zoned RS-1-14 (single-family residential). The MEIR was certified by the City Council on July 28, 1998 and certified by the California State Coastal Commission with minor revisions on March 20, 1999. The project described in the subject block is a subsequent project to the MEIR, as defined in the California Environmental Quality Act (CEQA) Guidelines Section 15177.

The PHR Subarea Plan encompasses approximately 2,652 acres, and includes 1,300 acres of Multi-Habitat Planning Area (MHPA) open space, a maximum potential of 5,470 new residential units, three elementary schools, one junior high school, one senior high school, a community park, two neighborhood parks, a branch library, fire station, employment center, transit center, and a mixed use core. Extensive multiple use, equestrian, hiking, biking and walking trails are proposed throughout the subarea to connect the neighborhoods to schools, the Village and other regional trail systems.

Accompanying City Council and voter approval of the Subarea Plan was an ordinance that rezoned property within the Subarea using a variety of new zones from the Land Development Code. These new zones became effective upon the filing of future final maps for individual projects. The proposed Meadowood II project is consistent with MEIR for the Subarea Plan (LDR No. 96-7918/SCH No.97111077) and the PHR Subarea Plan. Although MEIRs have a planned use of five years, the timeline can be extended if circumstances remain similar. The Environmental Analysis Section of the City of San Diego Department of Development Services has determined that the Subarea MEIR is still adequate to use as a tiering document for Findings for the Meadowood II project.

**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 on the following pages.

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

**DETERMINATION:** (To be completed by Lead Agency)

On the basis of this initial evaluation:

- The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- 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.
- The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required.
- 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 EIR or (MITIGATED) NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or (MITIGATED) NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

**EVALUATION OF ENVIRONMENTAL IMPACTS:**

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.)

- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses", as described in (5) below, may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or (mitigated) negative declaration. *Section 15063(c)(3)(D)*. In this case, a brief discussion should identify the following:
  - a. Earlier Analysis Used. Identify and state where they are available for review.
  - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c. Mitigation Measures. For effects that are "Less Than Significant With Mitigation Measures Incorporated", describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
  - a. The significance criteria or threshold, if any, used to evaluate each question; and
  - b. The mitigation measure identified, if any, to reduce the impact to less than significant.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i) AESTHETICS – 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"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

No scenic vista or view corridor designated within the Pacific Highlands Ranch Community Plan exists on the project site. Therefore, the project would not have a substantial adverse effect on a scenic vista. No impacts would result.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 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"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

No state scenic highways are located on, near, or adjacent to the project site. Therefore, no impacts would result.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project would be developed in accordance with the Pacific Highlands Ranch Subarea Plan. The project site has been previously disturbed and disked for agricultural purposes, and is currently vacant. Project implementation would result in precise grading for the creation of 17 residential building pads, private recreation area, private water quality/hydromodification basins, and a private driveway. Grading would consist of approximately 46,300 cubic yards of cut and 46,300 cubic yards of fill without any need for soil export. Maximum cut depth would be 6.1 feet and maximum fill depth would be 10.3 feet. In addition, the project would require the construction of retaining walls that would not exceed six feet in height, and a sound wall with a maximum height of five feet.

The project would be consistent with the Subarea Plan, and would not result in any new impacts beyond those analyzed in the MEIR. No site-specific mitigation would be required.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Development of the project would include exterior lighting, which would not be expected to cause substantial light or glare. The construction of the project would not be expected to create new and/or cause substantial light or glare. No substantial sources of light would be generated during project construction, as construction activities would occur during daylight hours. All permanent exterior lighting is required to comply with City regulations to reduce potential adverse effects on neighborhood properties. No impacts are anticipated.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURAL AND FOREST 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 forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. – Would the project:				
a) Converts 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"/>

The Pacific Highlands Ranch Subarea Plan designates the project site for Low Density Residential land use and the RS-1-14 single-family residential zone. Although the project site is located on Farmland of Local Importance according to figure 4I-1 in the Pacific Highlands Ranch MEIR, the project would be consistent with the Subarea Plan and would not result in the conversion of prime farmland, unique farmland, or farmland of statewide importance (farmland).

Incremental loss of land being used for agriculture was considered a significant unmitigated cumulative impact in the Pacific Highlands Ranch MEIR. The project is consistent with the MEIR and Subarea Plan as no new impact to farmland would occur with this project that was not previously identified in the MEIR. In addition, no mitigation was required in the MEIR as the impact could not be reduced below a level of significance unless the No Project Alternative was adopted.

The project would be consistent with the Subarea Plan, and would not result in any new impacts beyond those analyzed in the MEIR. No site-specific mitigation would result.

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"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Refer to response to II(a) above. Additionally, the project site is not designated or zoned for agricultural use; the Subarea Plan designated the project site for Low Density Residential land use, and the site is zoned RS-1-14 (Single-Family Residential). The proposed project is consistent with the Subarea Plan land use designation and zone. No Williamson Act contracts exist within the Pacific Highlands Ranch Subarea. No impacts would result.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Production (as defined by Government Code section 51104(g))?				

The project site and surrounding area is not designated or zoned as “forest land” or for “timberland production.” Therefore, the project would not result in, or conflict with, existing zoning of forest land or timberland. No impacts would result.

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"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Refer to response II(c) above. No impacts would result.

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"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Refer to responses II(a) and (c) above. In addition, the Subarea Plan designates the project site for Low Density Residential land use. The project is consistent with the Subarea Plan land use designation. The project would not involve any changes that would affect or result in the conversion of forestland to non-forest uses. No impacts would result.

III. AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations - 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"/>
---	--------------------------	--------------------------	-------------------------------------	--------------------------

Air Quality impacts were addressed in the Subarea Plan MEIR and found to be cumulatively significant. The project is compatible with the underlying zone and community plan designation. Further, the project would incorporate features such as dust abatement during construction to reduce air quality impacts. Additionally, the project would not conflict or obstruct implementation of the Regional Air Quality Strategy (RAQS) or the State Implementation Plan (SIP). While no feasible mitigation was identified in the Subarea Plan MEIR for the cumulative air quality impacts, overriding considerations were adopted as part of the MEIR. Thus, no impacts beyond those disclosed in the MEIR would occur, and no site-specific mitigation is required.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

*Short-term Emissions (Construction)*

The Subarea Plan MEIR found that air quality impacts associated with construction emissions would

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
not be significant as dust control during grading operations would be regulated in accordance with the rules of the San Diego Air Pollution Control District (APCD) and the regulations of the City of San Diego Land Development Code (LDC).				

*Long-term Emissions (Operational)*

With respect to long-term operational impact, the project is consistent with the Subarea Plan and underlying zone with allowable uses in the Low Density designation of the Subarea Plan; therefore, operational air quality impacts associated with project generated vehicular traffic would be consistent with the impacts identified by the Subarea Plan MEIR.

As the project is consistent with the land uses and traffic generation identified for the Subarea Plan, no impacts beyond those disclosed in the Subarea Plan MEIR would occur, and no site-specific mitigation is required.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

The project would contribute to the cumulatively significant impact to air quality, which was identified in the Subarea Plan MEIR. The MEIR considered all of the developments (including those in the applicable Low Density Residential land use designation) associated with the subarea, along with all other current, planned, and reasonably foreseeable projects in the vicinity and determined that combined, they would contribute to the decline in regional air quality associated with increased vehicular travel, and no feasible mitigation was identified. However, no impacts beyond those disclosed in the Subarea Plan MEIR have been identified for the project, and no site-specific mitigation is required.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| d) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

The development of the project site is consistent with the General and Subarea plans, and underlying zone. Furthermore, the project would not be associated with the creation of such odors. No impacts would result.

IV. BIOLOGICAL RESOURCES – Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				

Biological surveys for Subarea Plan MEIR were performed in November and December of 1996 and April through January of 1998. The project site was mapped as "Disked/Agricultural" or (D/AGR). Currently, the project site is disturbed vacant land and has been disked for agricultural uses that previously existed on-site.

Additionally, the project site is not adjacent to or within the vicinity of any MHPA lands. Thus, MSCP Land Use Adjacency guidelines would not be applicable, and no MHPA impacts would occur as a result of the project. Therefore, development of the project site would not result in any impacts to biological resources beyond those identified in the Subarea Plan MEIR.

Additionally, a Biological Resources Technical Report for the Meadowood II Project prepared by Dudek dated December 2015 was completed to determine what impacts, if any, would result through project implementation. The report determined that the project would result in direct impacts to Tier IV habitats (i.e., urban/developed, disturbed, agriculture, eucalyptus woodland, and ornamental) that are not considered significant and do not require mitigation. Thus, the project would not result in significant direct impact to native vegetation communities. Further based on the results of the surveys conducted, no special status plant or animal species (i.e., federally, state, or locally listed species) were detected on-site. Although special status plant species are typically associated with clay soils and have been documented within the soil type present on-site (i.e., Diablo, Olivenhain, and Huerhuero soil series), it is highly unlikely that any special status plants species would occur due to the many years of past site ground disturbances from nursery operations and the continued maintenance of the disturbed landscape via site disking. Additionally, no special status plant species have been recorded within 0.5 miles of the project site. Although burrowing owl has one historical location recorded (March 4, 1999) on the California Natural Diversity Database (CNDDDB) located approximately 0.4 miles southwest of the project site, burrowing owl is not likely to occur on site due to the relatively small size and limited habitat quality of the project site for foraging habitat, lack of connectivity to any adjacent suitable habitat, the continuous anthropogenic disturbances on the project site, and lack of evidence or sign of burrowing owl presence. Therefore, no direct or indirect impacts to special status plant or animal species are expected to occur.

Since no sensitive biological resources are present on site, no impacts would occur as a result of the development of the property, and no mitigation measures are required.

b) Have a substantial adverse effect on any riparian habitat or other community identified in local or regional plans,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				

Refer to response IV(a) above. The project site does not contain any jurisdictional waters/wetlands; therefore, no direct or indirect impacts to U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), or City of San Diego jurisdictional waters would occur as a result of project implementation.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Refer to response IV(b) above. No direct or indirect impacts to USACE, CDFW, RWQCB, or City of San Diego jurisdictional waters would occur from the project as no jurisdictional waters/wetlands exist on the subject property.

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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations. Wildlife movement corridors are considered sensitive by resource and conservation agencies. The MEIR concluded that because the Subarea Plan accommodates the wildlife corridors identified in the MSCP (i.e., McGonigle Canyon, Gonzales Canyon, and the north-south linkage between the two), the impacts on wildlife movement from implementation of the Subarea Plan would not be significant.

Additionally according to the Biological Resources Technical Report for the Meadowood II Project prepared by Dudek dated December 2015, the project site is not considered to retain biological value as a wildlife corridor or habitat linkage. Wildlife movement within the project site is unlikely due to the relatively limited size of the project area, lack of suitable native habitat, the level of site disturbance, and the presence of existing roadways and development that surround the project site. The project site also does not have connectivity with any natural open space (i.e., undeveloped)

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

areas or any areas designated as MHPA in the City Subarea Plan.

The project site is not part of any local or regional wildlife movement corridor, and is situated adjacent to existing residential development to the north and south, and undeveloped residentially zoned land to the east and west. Thus, the project site would ultimately be surrounded by residential development. Consistent with the MEIR, no impacts to migratory wildlife would occur.

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"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The project would not conflict with any local policies and/or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The project is consistent with the Environmentally Sensitive Lands Regulations and consistent with the Multiple Species Conservation Program Subarea Plan. No impacts would result.

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"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

MHPA lands are those that have been included within the City's Multiple Species Conservation Program (MSCP) Subarea Plan for habitat conservation. These lands have been determined to provide the necessary habitat quality, quantity, and connectivity to sustain the unique biodiversity of the San Diego region. MHPA lands are considered by the City of San Diego to be a sensitive biological resource. The project site does not contain MHPA lands, nor is it directly adjacent to any MHPA lands. Therefore, the project would not conflict with an adopted habitat conservation plan.

V. CULTURAL RESOURCES - Would the project:

a) Cause a substantial adverse change in the significance of an historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The purpose and intent of the Historical Resources Regulations of the Land Development Code (Chapter 14, Division 3, and Article 2) is to protect, preserve and, where damaged, restore the historical resources of San Diego. The regulations apply to all proposed development within the City of San Diego when historical resources are present on the premises. Before approving discretionary projects, CEQA requires the Lead Agency to identify and examine the significant adverse environmental effects which may result from that project. A project that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (Sections 15064.5(b) and 21084.1). A substantial adverse change is defined as

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
demolition, destruction, relocation, or alteration activities, which would impair historical significance (Sections 15064.5(b)(1)). Any historical resource listed in, or eligible to be listed in the California Register of Historical Resources, including archaeological resources, is considered to be historically or culturally significant.				

Archaeological Resources

The entire subarea was surveyed for cultural resources by Gallegos and Associates in 1993 (Historical/Archaeological Survey Report for Pacific Highlands Ranch Future Urbanizing Area, San Diego, California). Although cultural resources sites were identified within one mile of the project site, and one site (CA-SDI-6918) was identified approximately 0.25 miles to the southwest, no cultural resources have been recorded within the Meadowood II project area. Furthermore according to the Cultural Resource Letter Update prepared by Gallegos & Associates dated June 9, 2014, the project site was revisited and no cultural resources were noted within the project area. The letter update further noted that the soil, where present, is shallow with disturbance throughout most of the property, especially adjacent to Carmel Valley Road on the south, and the adjacent development on the north. No impacts are anticipated to occur as a result of the finish grading for the proposed project because cultural resources were not identified on the project site. On the basis of lack of surface artifacts or ecofacts; absence of midden; historic site disturbance (i.e., past agricultural use and grading, plowing, cutting, berm construction and disking); and past archaeological experience including cultural resource survey and testing studies conducted for Subareas III, IV and V prior to development of this region, no additional cultural resource work was recommended.

Built Environment

The City of San Diego reviews projects requiring the demolition of structures 45 years or older for historic significance in compliance with the California Environmental Quality Act (CEQA). CEQA Section 21084.1 states that “A project that may cause a substantial adverse change in the significance of an historical resource is a project that may cause a significant effect on the environment.” Historic property (built environment) surveys are required for properties which are 45 years of age or older and which have integrity of setting, location, design, materials, workmanship, feeling, and association.

The project site is currently vacant and undeveloped, with the exception of an existing cellular tower that was developed in the southwest corner of the project site in 2012. Therefore, none of the structures on the project site are over 45 years old and no potentially significant structures are present.

Conclusion

As stated above, the project would have no impact on cultural resources. Thus, development of the project would not result in any impacts to cultural resources beyond those identified in the original MEIR, and no additional project-specific mitigation is required.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Refer to response V(a) above.

c) 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"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------

According to the Geology of the San Diego Metropolitan Area, California (1975) published by the California Division of Mines and Geology, and the Preliminary Geotechnical Investigation prepared by Advanced Geotechnical Solutions, Inc. dated May 21, 2014, the project site is underlain by Mission Valley Formation. Mission Valley Formation is categorized as having a high sensitivity based on the recovery of diverse and well-preserved fossil assemblages of both marine invertebrates and terrestrial vertebrates. Pursuant to the City of San Diego's Significance Determination Thresholds, projects that require over 1,000 cubic yards of excavation, and at depths over 10 feet within a high sensitivity area, could result in impacts to these resources. Further, monitoring may be required for shallow grading (less than 10 feet) when a site has previously been graded and/or unweathered geologic deposits/rock units are present at the surface.

According to the submitted plans (Sheet C-1), approximately 46,300 cubic yards of cut at a maximum depth of 6.1 feet is proposed. Additionally, approximately 46,300 cubic yards of fill with a maximum fill area of 10.3 feet is proposed. Based on the review of the Preliminary Geotechnical Investigation, the project site is mantled with a relatively thin veneer of undocumented fill soils which is subsequently underlain by Mission Valley Formation. According to the Log of Test Pits in the Preliminary Geotechnical Investigation, Mission Valley Formation was encountered at depths ranging within the surface (zero feet) to nine feet. Consequently, paleontological monitoring would be required during all grading and/or excavation activities due to the sensitive formations occurring at depths of less than ten feet.

Therefore, a mitigation monitoring and reporting program, as detailed within Section VI of the Findings for the MEIR, would be implemented to ensure that significant potential impacts to paleontological resources are reduced to below a level significance.

d) Disturb and human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Refer to response V(a) above. No cemeteries, formal or informal, have been identified on the project site; therefore, no impacts would result.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The project site is located in a seismically active region of California where there is a potential for geologic hazards, such as earthquakes and ground failure. According to the City of San Diego Seismic Safety Study (1995 Edition), the property is mapped with Geologic Hazard Zone 53 (level or sloping terrain, unfavorable geologic structure, low to moderate risk).

According to the Preliminary Geotechnical Investigation prepared by Advanced Geotechnical Solutions, Inc. dated May 21, 2014 (Geotechnical Investigation), no known active faults have been mapped at or near the project site. The Geotechnical Investigation indicates that the nearest known active surface fault is in the Del Mar section of the Newport-Inglewood-Rose Canyon fault zone which is approximately seven miles west of the project site. The Geotechnical Investigation concludes that the potential for fault surface rupture on the project site is very low to remote.

Furthermore, the Geotechnical Investigation concluded that the construction of the proposed structures and associated improvements is considered feasible from a geotechnical standpoint, provided that the recommendations presented in the investigation are incorporated in the design, planning and construction of the project. The City's Geology Section has reviewed the Geotechnical Investigation and determined that the geotechnical consultant adequately addressed the soil and geologic conditions potentially affecting the project site. Additionally, the project would be required to utilize proper engineering design and standard construction practices, to be verified at building permit phase, which would ensure that potential impacts from regional geologic hazards would be less than significant.

The project would not result in any new impacts beyond those analyzed in the MEIR. No additional project-specific mitigation is required.

ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
------------------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------

Refer to response VI(a) above. Eight known active faults are located within a 50-mile radius of the project site. According to the Geotechnical Investigation, the nearest known active fault is the Newport-Inglewood-Rose Canyon Fault, located approximately seven miles from the project site.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

Thus, the potential exists for strong ground motion that may affect future improvements. The project would be required to utilize proper engineering design and standard construction practices, to be verified at the building permit stage, which would ensure that the potential for impacts from regional geologic hazards would remain less than significant.

The project would not result in any new impacts beyond those analyzed in the MEIR. No additional project-specific mitigation is required.

iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

Refer to response VI(a)(i) above. The project area is located in a seismically active region of California and therefore, the potential exists for geologic hazards such as earthquakes and ground failure, including liquefaction to occur. However according to the project's Geotechnical Investigation, the potential for liquefaction during a strong earthquake is remote due to the dense nature of the underlying Mission Valley Formation and lack of shallow groundwater table at the project site. The Geotechnical Investigation also concluded that the potential of dynamic settlement at the subject site is considered to be remote, once the existing surficial undocumented fill/alluvium is removed and replaced with engineered fill as recommended in the Geotechnical Investigation, due to the presence of well consolidated Mission Valley Formation deposits and the absence of loose, sandy soils. The project would be required to utilize proper engineering design and standard construction practices, to be verified at the building permit stage, which would ensure that the potential for impacts from regional geologic hazards would remain less than significant.

The project would not result in any new impacts beyond those analyzed in the MEIR. No additional project-specific mitigation is required.

iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
-----------------	--------------------------	--------------------------	--------------------------	-------------------------------------

According to the project's Geotechnical Investigation, no landslide areas were identified within the project area. Further given the relatively flat nature of the project site, the likelihood for seismically induced land sliding is considered to be remote. No impacts associated with landslides would occur.

b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------	--------------------------

Potential short-term erosion impacts could occur during construction activities. Erosion control measures would be implemented during the construction period, including the installation of fiber rolls and silt fencing. The site would be landscaped in accordance with City requirements and all storm water requirements would be met. Therefore, the potential for impacts associated with soil erosion would be less than significant, and no project-specific mitigation measures are deemed

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

Refer to response VI(a) above.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

According to the project's Geotechnical Investigation, on-site soils have a high expansion potential as defined by the 2010 California Building Code. Generally, the on-site soils consist of brown, silty to clayey sands and silty to sandy clays. The project's Geotechnical Investigation further anticipates that the expansion potential of the on-site materials would vary from "medium" to "high." The report cited in VI(a) adequately addresses the geotechnical conditions potentially affecting the project. The project would be required to utilize proper engineering design and standard construction practices, to be verified at the building permit stage, which would ensure that the potential for impacts from geologic hazards would be less than significant.

The project would not result in any new impacts beyond those analyzed in the MEIR. Impacts associated with expansive soils would be less than significant, and no additional project-specific mitigation is required.

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"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

No septic system or alternative wastewater systems are proposed. The project site is located within an area that is already developed with existing infrastructure (i.e., water and sewer lines). No impacts would result.

VII. GREENHOUSE GAS EMISSIONS – 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 type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

<b>Issue</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
--------------	---------------------------------------	---	-------------------------------------	------------------

The MEIR for the Subarea Plan was certified by the City Council on July 28, 1998. The proposed project is a subsequent project to the MEIR whose application was first filed in 2015. The certification of the MEIR for the Subarea Plan predates the issue of Greenhouse Gas (GHG) Emissions, which was added to the CEQA Guidelines Appendix Checklist in 2010. Therefore, the analysis of the GHG emissions does not “tier” to the MEIR.

Currently, the City of San Diego does not have adopted greenhouse gas (GHG) Thresholds of Significance for CEQA. Therefore, the City of San Diego utilizes the California Air Pollution Control Officers Association (CAPCOA) report “CEQA & Climate Change” dated January 2008 as an interim threshold to determine whether GHG analysis would be required. A 900 metric ton screening threshold for determining when a GHG analysis is required was chosen based on available guidance from the CAPCOA white paper. The CAPCOA report references the 900 metric ton guideline as a conservative threshold for requiring further analysis. This emission level is based on the amount of vehicle trips, electricity generation, natural gas consumption/combustion, water usage, and solid waste generation. Additionally, construction emission is calculated, amortized over 30 years, and then added to the project’s operational emissions. The following CAPCOA table identifies project types that are estimated to emit approximately 900 metric tons of GHGs annually.

**Project Types\* that require a GHG Analysis and Mitigation**

PROJECT TYPE	PROJECT SIZE THAT GENERATES APPROXIMATELY 900 METRIC TONS OF GHGS PER YEAR
Single Family Residential	50 Units
Apartments/Condominiums	70 Units
General Commercial Office Space	35,000 square feet
Retail Space	11,000 square feet
Supermarket/Grocery Space	6,300 square feet

\*For project types that do not fit the categories in this table, a determination on the need for a GHG analysis is made on a case-by-case basis, based on the whether the project could generate 900 metric tons of more of GHGs.

Based on the screening thresholds, the project is not required to prepare a GHG analysis in order to determine what, if any, cumulative impacts would result through project implementation because it proposes only 16 single-family residential units, and two duplexes totaling four multi-family residential units; thus, the project would generate less than 900 metric tons of GHG’s per year.

Therefore, impacts from GHG emissions are considered less than significant and no mitigation measures are required.

- b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
reducing the emissions of greenhouse gases?				

The project was found to be consistent with applicable General Plan and Subarea Plan policies. Therefore, the project would be consistent with the goals and strategies of local and state plans, policies, and regulations aimed at reducing GHG emissions from land use development, and no impacts would occur.

VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

No future risks to the public associated with hazardous substances would occur as a result of project implementation because no future on-site operations would require the routine use, transport or disposal of acutely hazardous materials. The proposed residential development would not pose any known health hazards.

Construction of the project may require the use of hazardous materials (fuels, lubricants, solvents, etc.), which would require proper storage, handling, use and disposal. However, the project would be required to comply with all federal, state and local requirements associated with hazardous materials; therefore, impacts would be less than significant, and no mitigation is required.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

The project site was not listed on any regulatory databases concerning hazardous material sites. A Report of Limited Pesticide Residue Sampling and Testing prepared by Christian Wheeler Engineering dated October 7, 2013 was conducted for the project site. A Phase I Environmental Site Assessment (ESA) prepared by Rincon Consultants, Inc. (Rincon) dated April 25, 2014 and an Additional Site Investigation (ASI) prepared by Geocon Incorporated dated November 21, 2014 was also conducted for the project site.

Due to the fact that the project site has been used for agricultural purposes in the past, there is the potential that pesticide contaminated soil may be present. The project's limited pesticide residue sampling and testing evaluation included obtaining samples of the near-surface soils at various locations throughout the subject property and evaluating the samples, by laboratory tests, for the presence of pesticide residues in the near-surface soils. The laboratory tests showed that residues of toxaphene, an organic pesticide that has been banned for use in the United States since 1990 due

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
to associated human health risks, were encountered in some of the test samples obtained from the site.				

California Human Health Screening Levels (CHHSLs) are considered by the California Environmental Protection Agency (CEPA) to be concentrations of hazardous chemicals in soils that are at a threshold of concern for risks to human health. The limited pesticide residue sampling and testing evaluation determined that although toxaphene residues are present in the upper most one foot of the surficial materials at the site, the concentrations likely diminish rapidly with depth and with the site preparations for the proposed residential development, there would be no significant risk to occupants or workers at the site. Based on this finding, the limited pesticide residue sampling and testing evaluation recommends that the upper 12 to 18 inches of material should be removed from the site and disposed of in an off-site facility. Further following the site preparation and grading recommendations presented in a site-specific geotechnical report, the uppermost two feet of soil on those portions of the site that would not be covered by structures, asphalt paving, or hardscape should be removed and disposed of in an off-site facility. Any toxaphene residues in the soil beneath the portions of the site covered by structures, asphalt, or hardscape would probably be below regulatory limits due to the processing during site preparation operations and would likely not be a concern for residents or workers since there would be no contact between the soil and the residents and workers. Additionally after the construction of the buildings and the installation of the streets and hardscape area, additional testing of any areas not covered by structures, paving, or hardscape should be performed to evaluate the presence of toxaphene residues in the soils.

Subsequently, a Phase I ESA was prepared. The purpose of the Phase I ESA was to observe existing subject property conditions and to obtain information indicating the possible presence of recognized environmental conditions (RECs) in connection with the subject property. The Phase I ESA concluded that there is one REC in connection with the subject property, which is former use of the subject property for agricultural purposes and known levels of elevated toxaphene onsite in soil. Based on the elevated levels of toxaphene above residential California Human Health Screening Levels (CHHSLs) in on-site soils, Rincon recommended collecting additional samples at two to three feet below grade to determine the vertical extent of toxaphene impacted soil.

The ASI was then conducted in November 2014. 15 shallow potholes were excavated across the project site using a backhoe up to depths of four feet. Soil samples were collected from each pothole at depths ranging from 0.5 to four feet. Toxaphene concentrations reported for the soil samples collected from six of the potholes exceed the residential CHHSL ranges from two to four feet for this compound. Based on the data collected, approximately 9,900 cubic yards of toxaphene-impacted soil is present on the project site that would require remediation prior to site redevelopment with single-family homes.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

Further, the ASI recommended enrolling in the Voluntary Assistance Program at the County of San Diego – Department of Environmental Health (DEH) for oversight of the mitigation of toxaphene-impacted soils on the project site. Based on the estimated volume of impacted soils and the cost associated with off-site disposal of this material, the most feasible mitigation options would be on-site burial of the impacted soil in deep fills according to the ASI. Additionally, a work plan that describes the selected mitigation method and submission of the work plan to the DEH for review and comment is recommended.

As a condition of project approval, prior to the issuance of any construction permits and site grading, the project proponent would be required to provide written verification demonstrating that the County DEH has reviewed and approved the contaminated soil remediation plan for the project site. This would ensure that potential impacts from contaminated soil on-site would be reduced to a less than significant level and no mitigation is required.

No future risk of explosions or releases of hazardous substances would occur as a result of project implementation. Refer also to response VIII(a) above.

Construction of the project may require the use of hazardous materials (fuels, lubricants, solvents, etc.), which would require proper storage, handling, use and disposal. However, the project would be required to comply with all federal, state and local requirements associated with hazardous materials; therefore, impacts would be less than significant, and no mitigation is required.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Although, the project site is located across Carmel Valley Road from a site that is designated for an optional future junior high school in the Pacific Highland Ranch Subarea Plan, no future risk of releases of hazardous substances would occur as a result of project implementation because it is anticipated that future on-site operations would not require the routine use or transport of acutely hazardous materials.

Construction of the project may require the use of hazardous materials (fuels, lubricants, solvents, etc.), which would require proper storage, handling, use and disposal. However, the project would be required to comply with all federal, state and local requirements associated with hazardous materials; therefore, impacts would be less than significant, and no mitigation is required.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| d) Be located on a site which is included on a list of hazardous materials sites | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Although the project site is not located on a site that is included on a list of hazardous materials sites, a Phase I Environmental Site Assessment and an Additional Site Investigation were conducted that concluded soil remediation would be required. Refer to response VIII. (b).

Staff assessed Geotracker and Envirostor databases, and reviewed the Cortese list.

Geotracker is a database and geographic information system (GIS) that provides online access to environmental data. It tracks regulatory data about leaking underground fuel tanks (LUFT), Department of Defense (DoD), Spills-Leaks-Investigations-Cleanups (SLIC), and Landfill sites.

Envirostor is an online database search and Geographic Information System (GIS) tool for identifying sites that have known contamination or sites for which there may be reasons to investigate further. It also identifies facilities that are authorized to treat, store, dispose or transfer (TSDTF) hazardous waste.

The Cortese List is a Hazardous Waste and Substance Sites (Cortese) List, which is a planning resource used by the State, local agencies, and developers to comply with the California Environmental Quality Act (CEQA) requirements in providing information about the location of hazardous materials release sites. Government Code section 65962.5 requires the California Environmental Protection Agency to develop, at least annually, an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

Based on the searches conducted, no contaminated sites are on or adjacent to the project site. Furthermore, the project site was not identified on the DTSC Cortese List. Therefore, the project would not create a significant hazard to the public or the environment. No impacts would result.

- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two mile of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

The project site is not located within any airport land use plan, the airport environs overlay zone, or airport approach overlay zone. The project site is also not located within two miles of any airport. Therefore, no significant impacts would occur, and no mitigation measures are required.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Refer to response VIII(e) above. The project site is not in proximity to any private airstrip. Therefore, no significant impacts will occur, and no mitigation measures are required.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The project is consistent with adopted land use plans and would not interfere with emergency response and/or evacuation plans. Refer to response VIII(a) above. No impacts would occur, and no mitigation measures are required.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

The project site is surrounded entirely by urban development, or properties which have been disturbed or disked for agricultural purposes and are designated for future development. No substantial expanses of native vegetation are present within the immediate vicinity of the project site. Therefore, the project would not expose people or structures to wildland fires. No impacts would occur, and no mitigation measures are required.

IX. HYDROLOGY AND WATER QUALITY - Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------	--------------------------

The project site is located within Solana Beach Hydrologic Sub-Area (HAS 905.11), a part of the larger San Dieguito River (HAS 905) watershed. A site-specific drainage study dated November 23, 2015 and water quality technical report (WQTR) dated December 14, 2015 were prepared for the proposed project by Hunsacker & Associates – San Diego, Inc.

According to the project's drainage study and WQTR, drainage patterns would remain generally unchanged and no diversions are proposed. However, the project would generate new impervious areas that would increase runoff. On-site drainage improvements would include water quality/hydromodification basins to manage runoff prior to discharge. Catch basins and storm drain

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

pipes would be provided on-site to convey runoff to the existing drainage system. The run-off from the property in developed condition would be attenuated and treated by two on-site detention ponds before discharging to proposed storm drain system to an existing storm drain system adjacent to Rancho Santa Fe Farms Road. The drainage study's hydrologic calculations indicate that the effect of the proposed project's hydromodification basin would be to decrease the peak storm water flow rates that currently discharge from the undeveloped project site. Therefore, the drainage study concludes that there would be no adverse impacts to downstream drainage facilities as a result of the project.

The potential for temporary construction impacts due to increased sedimentation associated with grading for the project would be considered a potentially significant impact, as identified in the Subarea Plan MEIR. However, the MEIR concluded that these impacts are mitigable to below a level of significance by incorporating the City's Best Management Practices (BMPs) and the standard engineering practices.

As described in the MEIR, there is also the potential for permanent impacts to water quality/hydrology with project implementation. Potential impacts to water quality, which occur in conjunction with urban development, include erosion of exposed soils and the resultant sedimentation of natural drainages, as well as runoff of urban pollutants into the natural drainage system.

The project is considered a "priority" project in accordance with the City's *Storm Water Requirements Applicability Checklist*. As such, demolition, construction, and post-construction activities require implementation of BMPs to minimize impacts to receiving waters. Priority projects are required to incorporate site design, source control, and treatment control BMPs. The anticipated pollutants of concern for the project include sediment, nutrients, oxygen demanding substances, oil and grease, organic compounds, pesticides, and trash/debris. Priority Projects that are anticipated to generate pollutants of concern are required to provide storm water BMPs, which maximize pollutant removal.

In accordance with City of San Diego requirements, the development of the project site would include Low Impact Development (LID), Source Control and Treatment Control BMPs to treat the runoff. As specified in the WQTR, proposed water quality BMPs for the project would include bioretention basins as a permanent structural treatment BMP, and post-construction maintenance of the bioretention basins by the homeowner's association.

The project would not violate any water quality standards or waste discharge requirements. Direct impacts to water quality resulting from erosion, sedimentation, and urban runoff during and after development of the project would be reduced to a level of less than significant through conformance to the City's Storm Water Regulations along with implementation of BMPs.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

The project would not result in any new impacts beyond those analyzed in the MEIR. Impacts associated with water quality would be less than significant, and no additional project specific mitigation is required.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The project does not require the construction of wells. The project would be served by the City's Public Utilities Department (PUD) for potable water supply and would not utilize groundwater. No impacts would result.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------	--------------------------

The project site has been disked for previous agricultural purposes and is currently disturbed and vacant. Approximately 46,300 cubic yards of earthwork would be required as part of the finish grading for the project. According to the project's drainage study, drainage patterns would remain generally unchanged by the proposed project. However, the project would generate new impervious areas which would increase runoff. On-site drainage improvements would include water quality/hydromodification basins, to reduce this increase, with a storm drain system to safely convey through the project. All on-site runoff would be collected in two bioretention areas designed to mitigate for water quality and hydromodification. The drainage study's hydrologic calculations indicate that the effect of the proposed project's hydromodification basin would be to decrease the peak storm water flow rates that currently discharge from the undeveloped project site. Therefore, the drainage study concluded that there would be no adverse impacts to downstream drainage facilities as a result of the project.

The project would not result in any new impacts beyond those analyzed in the MEIR. Impacts associated with drainage would be less than significant, and no additional project specific mitigation is required.

d) Substantially alter the existing drainage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?				

See response IX(c) above. Runoff from the project site would drain into two bioretention areas designed to mitigate for water quality and hydromodification. The bioretention areas would be located near the north westerly project boundary and south westerly project boundary. As discussed above, the project would be designed such that post-construction runoff would be less than the existing condition, so the rate and volumes of surface runoff would not increase. All storm drains would be adequately sized to accommodate on- and off-site flows; therefore, no increased risk of flooding or alteration of a stream or river course would result from project implementation.

The project would not result in any new impacts beyond those analyzed in the MEIR. Impacts associated with surface runoff would be less than significant, and no additional project specific mitigation is required.

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

See responses IX(a), (c), and (d) above. The project would comply with all City storm water quality standards during and after construction. Appropriate BMP's would be implemented to ensure that water quality is not degraded; therefore, ensuring that the project runoff is directed to appropriate drainage systems.

The project would not result in any new impacts beyond those analyzed in the MEIR. Impacts associated with runoff would be less than significant, and no additional project specific mitigation is required.

f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------	--------------------------

See response IX(a) above. The project would comply with all City storm water quality standards during and after construction. The project would not result in any new impacts beyond those analyzed in the MEIR. Impacts associated with water quality would be less than significant, and no additional project specific mitigation is required.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Insurance Rate Map or other flood hazard delineation map?	The project site is not located within a 100-year flood hazard area. No impacts would result.			
h) Place within a 100-year flood hazard area, structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project site is not located within a 100-year flood hazard area or any other known flood area. No impacts would result.

X. LAND USE AND PLANNING – Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

The proposed project is consistent with the applicable land use designation in the Subarea Plan for the PHR community. Therefore, the project would not physically divide an established community. No impacts would result.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

A planned development permit is being requested for development that complies with the applicable land use plan, but contains a use that is not permitted in the underlying zone. The Pacific Highlands Ranch Subarea Plan designates the project site Low Density Residential, 2-5 dwelling units per acre. Low-density residential neighborhoods may include single-family small-lot and conventional-lot dwellings, single-family dwellings with second units, duplexes, triplexes and townhomes. The project proposes two duplexes for a total of four multiple-family residential units which are not a permitted use in the RS-1-14 zone, but are an allowed use in the Low Density Residential designation of the Pacific Highlands Ranch Subarea Plan.

Additionally, the Land Development Code (LDC), Section 143.0920 allows affordable/in-fill housing and Sustainable Building projects to request deviations from applicable development regulations pursuant to a Site Development Permit decided in accordance with Process Four, provided that the findings in Section 126.0504(a) and the supplemental findings in Section 126.0504(m) are made. Deviations requested by the project include:

1. Street Frontage – A deviation from San Diego Municipal Code (SDMC) Section 144.0211(a) to

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
allow proposed lots to not front directly onto a street, where all lots are required to have frontage on a street that is open to and usable by vehicular traffic.				
2. Street Frontage – A deviation from San Diego Municipal Code (SDMC) Section 131.0431(b) to allow no street frontage on Lots 1-8, 12-17, 19, and 20, where 50 feet of public street frontage is required in the RS-1-14 zone.				
3. Front Setback – A deviation from SDMC Section 131.0431(b) to allow a 12-foot front setback on Lot 11, where 15 feet is required in the RS-1-14 zone.				

The project would be consistent with the land use designation that applies to the project site and zone with the allowable deviations. Additionally, the project would be consistent with surrounding residential uses and undeveloped residentially zoned land. No changes to the existing General Plan land use or zoning designations are proposed.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The project would not conflict with the City's MSCP. The project site is not located within or adjacent to a MHPA or other designated open space area. See also response IV(e) above.

XI. MINERAL RESOURCES – 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"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

While the MEIR stated that there are areas of important mineral resource deposits (MRZ 2 zoned lands) in the subarea, these zones are located in the far southeast corner of Subarea III, and not in proximity to the project site. Therefore, the project would not result in an impact to mineral resources.

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"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The project site is designated as Low Density Residential by the community plan (Subarea Plan). The project site is located in an urban community and in an area that is either developed with residential uses or planned for future residential uses. There are no such resources located on the project site. Therefore, no impacts would result.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

XII. NOISE – Would the project result in:

a) Generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

The General Plan Noise Element includes Land Use – Noise Compatibility Guidelines. Noise levels are measured in decibels (dBA) as community noise equivalent levels (CNEL) for exterior spaces. According to these guidelines, single-family residential uses are “compatible” with noise levels up to 60 dBA CNEL and “conditionally compatible” at levels lower than 65 dBA CNEL, provided that interior noise levels do not exceed 45 dBA CNEL. Further, multi-family residential uses are “compatible” with noise levels less than 60 dBA CNEL and “conditionally compatible” at levels up to 60 dBA CNEL, provided that interior noise levels do not exceed 45 dBA CNEL.

The MEIR concluded that potentially significant noise impacts could result in conjunction with buildout of the Subarea Plan. The mitigation framework in the MEIR states that at the time that detailed grading plans are available for the future subdivisions within PHR, detailed acoustical analyses shall be performed to determine the exact barrier heights and locations where required. If exterior noise levels within residential areas are found to be above 60 CNEL after mitigation, then detailed interior noise analyses shall be required as well.

A noise study was prepared for the proposed project by Ldn Consulting, Inc. dated May 28, 2015. Due to the fact that the project site is located immediately adjacent to Carmel Valley Road, the noise study indicated that future vehicle noise is the principal source of noise that could impact the project site. The noise study predicted future noise levels utilizing the Caltrans Sound32 noise model. The roadway parameters used in the model included average daily traffic volumes, vehicle speeds and the hourly traffic flow distributions (vehicle mix) for the future Buildout 2035 conditions provided by the SANDAG Traffic Prediction Model. As a design feature, the project proposes a five foot high wall along Carmel Valley Road that was incorporated in the noise study analysis. The noise modeling results determined that the project complies with the City’s 65 dBA standard with the proposed wall at the top of the slope along Carmel Valley Road. The barriers must be constructed of a non-gapping material consisting of masonry, ½ inch thick glass, earthen berm or any combination of these materials.

Single-family residential development would be required to meet the Title 24 requirement for reduction of interior noise to 45 CNEL where building façade noise levels are above 60 dBA CNEL, which would ensure that impacts are less than significant. The noise study identified building facades noise levels are above 60 dBA CNEL, and the project site would require a final noise study to be prepared prior to the issuance of the first building permit for all lots.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

The project would be required to comply with the City's Noise Ordinance during the construction and operational phases. The project would not result in any new impacts beyond those analyzed in the MEIR, and no site-specific mitigation implementing the MEIR for noise would be required.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Generation of, excessive ground borne vibration or ground borne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

See response XII(a) above. Potential effects from construction noise would be reduced through compliance with City restrictions. Pile driving activities that would potentially result in ground borne vibration or ground borne noise are not anticipated with construction of the project. No impacts would result.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

See response XII(a) above. The project has been found to be consistent with the Subarea Plan MEIR, and no additional project-specific mitigation is required.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

See response XII(a) above. The project would not expose people to a substantial increase in temporary or periodic ambient noise levels. Construction noise would result during grading and construction activities, but would be temporary in nature. Construction-related noise impacts from the project would generally be higher than existing ambient noise levels in the project area, but would no longer occur once construction is completed. In addition, the project would be required to comply with the San Diego Municipal Code, Article 9.5, Noise Abatement and Control. Implementation of these standard measures would reduce potential impacts from an increase in ambient noise level during construction to a less than significant level, and no mitigation measures are required.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| e) For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport would the project expose people residing or working in the area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
The project site is not located within an airport land use plan. The project site is also not located within two miles of a public airport or public use airport. No impacts would result.				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project site is not located within the vicinity of a private airstrip. No impacts would result, and no mitigation measures are required.

XIII. POPULATION AND HOUSING – Would the project:

a) Induce substantial 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 type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The project is consistent with the Subarea Plan MEIR, which determined that no significant impacts would occur.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The project site is currently vacant. The project would provide housing consistent with the Subarea Plan. No impacts would result.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The project site is currently vacant. The project would provide housing consistent with the Subarea Plan. The project would not displace numbers of people, nor require the construction of replacement housing elsewhere because the project in and of itself proposes to construct housing. No impacts would result.

XIV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provisions 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 rations, 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"/>

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

According to the Subarea Plan MEIR, the added fire protection requirements of the development of the entire Subarea would create a need for additional fire protection facilities. Currently, there is an existing station west of Subarea III (Station 24) in Carmel Valley, and Station 47 is located within the PHR community at 6041 Edgewood Bend Court, approximately 1.7 miles southwest of the project site, which would provide adequate fire protection and emergency response services to all of the Subarea.

The MEIR concluded that Station 47, developed according to the City's General Plan for fire protection services, would allow the Fire Department to attain its goal of a maximum response time of six minutes to the Subarea in most cases. As the project site is located approximately 8,980 feet from Station 47 (south along Carmel Valley Road). Thus, the project would not result in any new impacts beyond those analyzed in the MEIR, and no site-specific mitigation measures would be required.

ii) Police Protection

The project site is located in an urbanized and developed area within the City of San Diego where police protection services are already provided. Construction of the project would not adversely affect existing levels of police protection services to the area or create significant new demand for such services. Additionally, the project would not require the construction of new, or expansion of, existing governmental facilities. No impacts would result.

iii) Schools

The project site is located in the San Dieguito Union High School District and the Del Mar Union School District. Canyon Crest Academy High School is located approximately 1.2 miles from the project site. Currently, all schools in the San Dieguito Union High School District and the Del Mar Union School District are operating at or above capacity. The generation of additional school students resulting from development of the proposed project would add to the already overcrowded schools. This was considered a significant direct and cumulative impact in the MEIR.

The MEIR for the Subarea Plan utilizes a schools facilities financing and mitigation agreement to accomplish mitigation of direct impacts to schools. The school fees (pursuant to the MEIR) are required to be paid prior to the issuance of building permits. Therefore, the project would not result in any new impacts beyond those analyzed in the MEIR, and additional site-specific mitigation implementing the MEIR for schools would not be required.

v) Parks

The MEIR identified that implementation of the Subarea Plan would create the need for additional

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>parks and recreational facilities. However, the MEIR concluded that the incremental demand for parks and recreation would not constitute a significant environmental impact as there are adequate facilities provided for in the Subarea Plan or surrounding areas. The project is included in a comprehensive planning area that includes adequate neighborhood parks and other recreational opportunities, including those associated with schools and 154 acres of dedicated MHPA in Subarea III. The project has been found to be consistent with the MEIR, and no additional project-specific mitigation is required.</p>				

vi) Other public facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-----------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------

The MEIR identified that implementation of the Subarea Plan would create the need for additional library facilities and services. However, the MEIR concluded that the incremental demand for library services would not constitute a significant environmental impact as there are adequate facilities provided for in the Subarea Plan or surrounding areas. The project has been found to be consistent with the MEIR, and no additional project-specific mitigation is required.

XV. RECREATION

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"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

See response to XIV(a)(v) above.

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"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

See response to XIV(a)(v) above. All impacts associated with the development of the project site have been adequately addressed in the MEIR. The project has been found to be consistent with the MEIR, and no additional project-specific mitigation is required.

XVI. TRANSPORTATION/TRAFFIC – Would the project?

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				

An area wide traffic study was done for Subarea III by Urban Systems Associates (March 1998).

VEHICULAR CIRCULATION

The significant direct and cumulative impacts of the project on vehicular circulation were disclosed in the MEIR as part of the analysis of the Subarea Plan. The MEIR lists required mitigation, which would reduce traffic impacts, but not to below a level of significance. This unmitigated impact was addressed in the findings for the MEIR. The project would not result in any new impacts beyond those analyzed in the MEIR, and site-specific mitigation implementing the MEIR for transportation/traffic circulation would not be required.

MULTI-MODAL CIRCULATION

The MEIR also analyzed the impacts of the Subarea Plan on alternative modes of travel including trails (unpaved), paved trails and paths, improved multi-modal paths and trails, and transit facilities. Bicycle paths, paved paths and sidewalks, unpaved multi-modal paths and trails would be provided throughout the Subarea Plan area. The project would include pedestrian walkways with benches along the Carmel Valley Road project frontage, consistent with the Subarea Plan. No impacts to multi-modal transportation facilities were identified within the MEIR.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

See response XVI(a) above.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

The project is consistent with the community plan designation and underlying zone with allowable deviations. The project site is not located within an ALUCP zone; therefore, no safety risk would result.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
incompatible uses (e.g., farm equipment)?				

The project would comply with City Engineering Roadway Safety Standards. No impacts would result.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

See response VIII(g) above. The project has been reviewed by the City's Fire Chief, and determined to be consistent with all policies. Construction of the project would temporarily affect traffic circulation; however, an approved Traffic Control Plan, reviewed and approved by qualified City staff, would be implemented during construction so that there would be adequate emergency access. Therefore, the project would not result in inadequate emergency access, and no site-specific mitigation is required.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project would not result in any conflicts with policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. Construction of the project would temporarily affect traffic circulation; however, an approved Traffic Control Plan, reviewed and approved by qualified City staff, would be implemented during construction. Therefore, the project would not result in any such conflicts, and no site-specific mitigation is required.

XVII. UTILITIES AND SERVICE SYSTEMS - Would the project:

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Wastewater treatment demand was analyzed in the MEIR for the Subarea Plan. Because the project is consistent with the land uses analyzed for the Subarea Plan, the project would not exceed the wastewater treatment requirements identified in the MEIR. The project would not result in any new impacts beyond those analyzed in the MEIR. Impacts associated with wastewater treatment would be less than significant, and no additional project-specific mitigation is required.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Hydrological, water, and sewer studies were submitted for the PHR (Subarea III) Specific Plan MEIR.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

The studies were completed by John Powell and Associates, Inc. in August of 1999. Potentially significant impacts associated with water and sewer facilities were anticipated by the MEIR with the development of the Subarea due to a lack of existing facilities to serve the area.

Wastewater treatment demand was analyzed for the Subarea Plan in the MEIR. Buildout of the Subarea Plan was estimated to generate 2.063 mgd of sewage effluent. The project is consistent with the land uses analyzed for wastewater treatment demand in the Subarea Plan MEIR. Therefore, no off-site extension of utility lines, nor the construction or expansion of any wastewater treatment facilities or water infrastructure would be required to serve the project. The project would not result in any new impacts beyond those analyzed in the MEIR, and no site-specific mitigation implementing the MEIR for water and sewer would be required.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

All proposed storm drains and related improvements would be located within the development footprint of the Subarea Plan analyzed in the MEIR, and no off-site extension of storm water facilities would be required to serve the proposed project. The construction of these facilities would not result in any new impacts beyond those analyzed in the MEIR, and no site-specific mitigation for storm water infrastructure would be required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

For water demand projects, Senate Bills 610 & 221 require a Water Supply Assessment (WSA) examining that availability of water to meet project water demands for a 20-year planning horizon. The project proposes to add 16 single-family dwelling units and two duplexes for a total of four multiple dwelling units that were anticipated in the Pacific Highland Ranch Subarea Plan MEIR water supply analysis. The residential threshold for requiring a WSA is for developments of 500 units or more (defined as a Water Demand Project). The proposed residential project does not meet the definition of a Water Demand Project; therefore, no WSA is required.

Adequate existing water entitlements and infrastructure are available to serve the site. As the project would not require new or expanded entitlements or service upgrades beyond lot specific hook-ups, impacts would be less than significant.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
project's projected demand in addition to the provider's existing commitments?				

See response XVII(b) above.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

The Subarea Plan MEIR concluded that buildout of the Subarea would affect City waste management programs and services; however, impacts could be minimized by incorporation of recycling and waste reduction measures.

The project would be served by Miramar Landfill until at least 2022. The project would be required to recycle 50% of its solid waste through compliance with Senate Bill 939 (the California Integrated Solid Waste Management Act of 1989), the City General Plan, and City Ordinances including the Refuse and Recyclable Materials Storage Regulations Ordinance (Chapter 14, Article 2, Division 8), the Recycling Ordinance (Chap. 6, Art. 6, Div. 7), and the Construction and Demolition Debris Deposit Ordinance (Chap. 6, Art. 6, Div. 6). Adherence to these regulations through the recycling and diversion of solid waste is intended to reduce landfill impact in the region. With adherence to existing City and state regulations, impacts would be less than significant.

The project would not result in any new impacts beyond those analyzed in the MEIR. Impact associated with solid waste would be less than significant, and no additional project specific mitigation is required.

g) Comply with federal, state, and local statutes and regulation related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

See response VII(f) above. The project would not result in any new impacts beyond those analyzed in the MEIR. Impacts associated with solid waste would be less than significant, and no additional project specific mitigation is required.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE –

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
important examples of the major periods of California history or prehistory?				

As documented in this Initial Study, the project may have the potential to degrade the quality of the environment, notably with respect to Paleontological Resources. As such, mitigation measures have been incorporated to reduce impacts to less than significant.

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 futures projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	-------------------------------------	--------------------------	--------------------------

As documented in this Initial Study, the project may have the potential to degrade the quality of the environment, notably with respect to Paleontological Resources, which may have cumulatively considerable impacts. As such, mitigation measures have been incorporated to reduce impacts to less than significant. Other future projects within the surrounding neighborhood or community would be required to comply with applicable local, State, and Federal regulations to reduce the potential impacts to less than significant, or to the extent possible. As such, the project is not anticipated to contribute potentially significant cumulative environmental impacts.

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"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

As discussed throughout this document, it is not anticipated that the project would create conditions that would significantly directly or indirectly impact human beings. Specifically, potential soil contamination and noise impacts are reduced to below a level of significance by project design features such as construction of noise attenuation walls and implementation of a required contaminated soil remediation plan. Where appropriate, mitigation measures have been required, but in all issue areas impacts are no impact, less than significant, or can be reduced to less than significant through mitigation. For this reason, environmental effects fall below the thresholds established by CEQA and the City of San Diego and thus, would not result in significant impacts. Furthermore, all impacts of the project were identified in the Subarea Plan MEIR and therefore, no such impacts would result. Impacts would be less than significant.

## INITIAL STUDY CHECKLIST

### REFERENCES

#### I. Aesthetics / Neighborhood Character

- City of San Diego General Plan.
- Community Plans: Pacific Highlands Ranch Community Plan

#### II. Agricultural Resources & Forest Resources

- City of San Diego General Plan
- U.S. Department of Agriculture, Soil Survey - San Diego Area, California, Part I and II, 1973
- California Agricultural Land Evaluation and Site Assessment Model (1997)
- Site Specific Report:

#### III. Air Quality

- California Clean Air Act Guidelines (Indirect Source Control Programs) 1990
- Regional Air Quality Strategies (RAQS) - APCD
- Site Specific Report:

#### IV. Biology

- City of San Diego, Multiple Species Conservation Program (MSCP), Subarea Plan, 1997
- City of San Diego, MSCP, "Vegetation Communities with Sensitive Species and Vernal Pools" Maps, 1996
- City of San Diego, MSCP, "Multiple Habitat Planning Area" maps, 1997
- Community Plan - Resource Element
- California Department of Fish and Game, California Natural Diversity Database, "State and Federally-listed Endangered, Threatened, and Rare Plants of California," January 2001
- California Department of Fish & Game, California Natural Diversity Database, "State and Federally-listed Endangered and Threatened Animals of California," January 2001
- City of San Diego Land Development Code Biology Guidelines

- Site Specific Report: Biological Assessment for the Proposed Roberts Ranch Project, APN 305-021-0500, prepared by Dudek dated May 6, 2014
- Site Specific Report: Biological Resources Technical Report, Meadowood II Project, prepared by Dudek dated December 2015

**V. Cultural Resources (includes Historical Resources)**

- City of San Diego Historical Resources Guidelines
- City of San Diego Archaeology Library
- Historical Resources Board List
- Community Historical Survey:
- Site Specific Report: Cultural Resource Letter Update prepared by Gallegos & Associates dated June 9, 2014
- Site Specific Report: Attachment to Cultural Resource Letter Report Update prepared by Gallegos & Associates dated July 22, 2015

**VI. Geology/Soils**

- City of San Diego Seismic Safety Study
- U.S. Department of Agriculture Soil Survey - San Diego Area, California, Part I and II, December 1973 and Part III, 1975
- Site Specific Report: Preliminary Geotechnical Investigations Bob's Corner prepared by Advanced Geotechnical Solutions, Inc. dated May 21, 2014
- Site Specific Report:

**VII. Greenhouse Gas Emissions**

- Site Specific Report:

**VIII. Hazards and Hazardous Materials**

- San Diego County Hazardous Materials Environmental Assessment Listing
- San Diego County Hazardous Materials Management Division
- FAA Determination

- State Assessment and Mitigation, Unauthorized Release Listing, Public Use Authorized
- Airport Land Use Compatibility Plan
- Site Specific Report: Phase I Environmental Site Assessment, Bob's Corner, prepared by Rincon Consultants, Inc. dated April 25, 2014
- Site Specific Report: Summary of Additional Site Investigation, Bob's Corner Property, prepared by Geocon Incorporated dated November 21, 2014

**IX. Hydrology/Water Quality**

- Flood Insurance Rate Map (FIRM)
- Federal Emergency Management Agency (FEMA), National Flood Insurance Program-Flood Boundary and Floodway Map
- Clean Water Act Section 303(b) list, [http://www.swrcb.ca.gov/tmdl/303d\\_lists.html](http://www.swrcb.ca.gov/tmdl/303d_lists.html)
- Site Specific Report: Water Quality Technical Report for Meadowood II prepared by Hunsaker & Associates – San Diego, Inc. dated December 14, 2015
- Site Specific Report: Drainage Study for Meadowood II prepared by by Hunsaker & Associates – San Diego, Inc. dated November 23, 2015

**X. Land Use and Planning**

- City of San Diego General Plan
- Community Plan
- Airport Land Use Compatibility Plan
- City of San Diego Zoning Maps
- FAA Determination
- Other Plans:

**XI. Mineral Resources**

- California Department of Conservation - Division of Mines and Geology, Mineral Land Classification
- Division of Mines and Geology, Special Report 153 - Significant Resources Maps
- Site Specific Report:

**XII. Noise**

- City of San Diego General Plan
- Community Plan
- San Diego International Airport - Lindbergh Field CNEL Maps
- Brown Field Airport Master Plan CNEL Maps
- Montgomery Field CNEL Maps
- San Diego Association of Governments - San Diego Regional Average Weekday Traffic Volumes
- San Diego Metropolitan Area Average Weekday Traffic Volume Maps, SANDAG
- Site Specific Report: Noise Study, Meadowood 2 Residential Development, prepared by Ldn Consulting, Inc. dated May 28, 2015
- Site Specific Report: Meadowood 2 Residential Development Interior Noise Assessment prepared by Ldn Consulting, Inc. dated May 29, 2015

**XIII. Paleontological Resources**

- City of San Diego Paleontological Guidelines
- Deméré, Thomas A., and Stephen L. Walsh, "Paleontological Resources City of San Diego," Department of Paleontology San Diego Natural History Museum, 1996
- Kennedy, Michael P., and Gary L. Peterson, "Geology of the San Diego Metropolitan Area, California. Del Mar, La Jolla, Point Loma, La Mesa, Poway, and SW 1/4 Escondido 7 1/2 Minute Quadrangles," California Division of Mines and Geology Bulletin 200, Sacramento, 1975
- Kennedy, Michael P., and Siang S. Tan, "Geology of National City, Imperial Beach and Otay Mesa Quadrangles, Southern San Diego Metropolitan Area, California," Map Sheet 29, 1977
- Site Specific Report:

**XIV. Population / Housing**

- City of San Diego General Plan
- Community Plan
- Series 11/Series 12 Population Forecasts, SANDAG
- Other:

**XV. Public Services**

- City of San Diego General Plan
- Community Plan

**XVI. Recreational Resources**

- City of San Diego General Plan
- Community Plan
- Department of Park and Recreation
- City of San Diego - San Diego Regional Bicycling Map
- Additional Resources:

**XVII. Transportation / Circulation**

- City of San Diego General Plan
- Community Plan
- San Diego Metropolitan Area Average Weekday Traffic Volume Maps, SANDAG
- San Diego Region Weekday Traffic Volumes, SANDAG
- Site Specific Report:

**XVIII. Utilities**

- Site Specific Report: Private Water System Evaluation for the Meadowood 2 Project prepared by Dexter Wilson Engineering, Inc. dated June 4, 2015
- Site Specific Report: Pacific Highland Ranch, Units 17 through 22, Sewer Study Addendum for Meadowood II, prepared by West Coast Civil dated June 1, 2015

**XIX. Water Conservation**

- Sunset Magazine, New Western Garden Book, Rev. ed. Menlo Park, CA: Sunset Magazine

Created: REVISED - October 11, 2013

# **BIOLOGICAL RESOURCES TECHNICAL REPORT**

## **Meadowood II Project**

*Prepared for:*

**Hall Land Company, Inc.**  
740 Lomas Santa Fe Drive, Suite 204  
Solana Beach, California 92075  
*Contact: Sean Santa Cruz*

*Prepared by:*

**DUDEK**  
605 Third Street  
Encinitas, California 92024



---

*Contact: Thomas Liddicoat  
tliddicoat@dudek.com*

## **DECEMBER 2015**



# Biological Resources Technical Report Meadowood II Development Project

---

## TABLE OF CONTENTS

<b><u>Section</u></b>	<b><u>Page No.</u></b>
<b>EXECUTIVE SUMMARY .....</b>	<b>III</b>
<b>1 INTRODUCTION.....</b>	<b>1</b>
1.1 Project Location .....	1
1.1.1 Topography and Land Uses .....	2
1.1.2 Soils.....	7
1.2 Project Description.....	7
<b>2 METHODS .....</b>	<b>9</b>
2.1 Literature Review.....	9
2.2 Field Surveys .....	9
2.2.1 Resource Mapping .....	10
2.2.2 Plants and Animals .....	10
2.2.3 Special Status Biological Resources .....	11
2.2.4 Wetlands Delineation.....	11
<b>3 RESULTS .....</b>	<b>13</b>
3.1 Vegetation Communities and Land Cover Types .....	13
3.2 Plants and Animals .....	13
3.3 Special Status Plants and Animals.....	14
3.4 Wildlife Corridors and Habitat Linkages.....	17
3.5 Wetlands Delineation.....	18
<b>4 PROJECT IMPACTS .....</b>	<b>21</b>
4.1 Direct Impacts.....	22
4.1.1 Vegetation Communities .....	22
4.1.2 Special Status Plants and Animals.....	22
4.1.3 Wildlife Corridors and Habitat Linkages.....	25
4.2 Indirect Impacts .....	25
4.2.1 Vegetation Communities .....	25
4.2.2 Special Status Plants and Animals.....	25
4.3 Cumulative Impacts and Regional Planning Context.....	26
<b>5 ANALYSIS OF SIGNIFICANCE .....</b>	<b>27</b>
5.1 Explanation of Findings of Significance.....	27
5.2 Vegetation Communities .....	27
5.3 Special-Status Plants and Animals.....	28
5.4 Wildlife Corridors and Habitat Linkages.....	28

# Biological Resources Technical Report Meadowood II Development Project

---

## TABLE OF CONTENTS (CONTINUED)

<u>Section</u>	<u>Page No.</u>
6 MITIGATION.....	29
7 LITERATURE CITED .....	31

### APPENDICES

A Site Photographs	
B Cumulative List of Plant and Wildlife Species Detected on the Project Site	
C Special-Status Plant Species Potential to Occur on the Project Site	
D Special-Status Wildlife Species Potential to Occur on the Project Site	

### FIGURES

1 Regional Map.....	3
2 Vicinity Map.....	5
3 Biological Resources .....	15
4 Locations of Special Status Species.....	19
5 Impacts.....	23

### TABLES

1 Survey Conditions.....	9
2 Vegetation Communities and Land Cover Types On Site.....	13
3 Direct Impacts to Vegetation Communities and/or Land Covers.....	22

# Biological Resources Technical Report Meadowood II Development Project

---

## EXECUTIVE SUMMARY

The proposed Meadowood II project (project) includes development of approximately 4.4 acres for 16 single-family residential lots/homes, and one 4-unit multifamily affordable home on an approximately 4.4-acre site located in San Diego, California. This technical report documents the biological character of the project site in terms of existing conditions, vegetation, flora, wildlife, and sensitive biological resources present. Furthermore, this report provides an analysis of potential direct and indirect impacts to biological resources based on the proposed project scenario and discusses relevant mitigation measures that would reduce such identified significant impacts to a level below significant, if needed. Finally, this report analyzes the biological significance of the site with respect to regulations prescribed under the California Environmental Quality Act (CEQA), the Migratory Bird Treaty Act (MBTA), the California Fish and Game Code, and the City of San Diego's Multiple Species Conservation Program Subarea Plan (MSCP; City of San Diego 1997).

Dudek conducted a biological survey of the project site in the summer (i.e., August) of 2015. One land cover type, (i.e., disturbed habitat) was identified within the project site and no native vegetation communities were observed. No special status biological resources were detected on site. The project site is not located within or directly adjacent to preserve lands designated as the MSCP Multiple Habitat Planning Area (MHPA). Proposed project impacts could affect nesting birds if construction is scheduled for commencement during the nesting season.

**Biological Resources Technical Report  
Meadowood II Development Project**

---

INTENTIONALLY LEFT BLANK

# Biological Resources Technical Report

## Meadowood II Development Project

---

### 1 INTRODUCTION

The proposed Meadowood II Project (project) consists of constructing graded pads and building residential homes within on approximately 4.4 acres located in the City of San Diego, California. The biological survey discussed in this report concentrated on identifying biological resources that may be subject to regulation under Section 404 of the Clean Water Act as administered by the U.S. Army Corps of Engineers (ACOE), Section 401 of the Clean Water Act and the Porter Cologne Act as administered by Regional Water Quality Control Board (RWQCB), Sections 1600-1603 of the Fish and Game Code as administered by the California Department of Fish and Game (CDFG), Sections within Chapter 14 Article 3 Division 1 (i.e., Environmentally Sensitive Lands) of the City of San Diego Municipal Code as administered by the City of San Diego (City), and other potential special-status biological resources.

In accordance with the current San Diego Land Development Code Biology Guidelines (San Diego 2012) this survey letter report describes the survey methods; existing biological resources in terms of vegetation communities/land covers, plants, and wildlife; potential for sensitive biological resources to be present; potential project impacts to these resources; and recommended avoidance and mitigation measures, if needed. The project impacts, regulations, and mitigation measures are discussed in accordance with the California Environmental Quality Act (CEQA), Clean Water Act, Migratory Bird Treaty Act (MBTA), California Fish and Game Code, and the City of San Diego Final MSCP Subarea Plan (City Subarea Plan; San Diego 1997).

#### 1.1 Project Location

The approximately 4.4-acre project site is located in the Carmel Valley community of San Diego, California within the City of San Diego's Subarea of the MSCP (Figure 1). The site is located immediately between Carmel Valley Road to the south, Rancho Santa Fe Lakes Drive to the north, and Rancho Santa Fe Farms Road to the west. The approximate centroid of the project is 32°58'10.3" north latitude, 117°10'37.5" west longitude on the U.S. Geological Service (USGS) 7.5 minute series topographic Del Mar quadrangle map Section 10, Range 3 West, Township 14 South (Figure 2). The site is almost entirely bounded by development, both existing and current construction. Specifically, the community of Rancho Santa Fe Lakes abuts the site to the north, Carmel Valley Road bounds the site to the south with active residential construction further south, a small vacant lot directly west, and active residential development further west and to the east.

The project area is designated within the "Northern Area" of City's MSCP Subarea Plan. The project is not within the City Coastal Zone Map No. C-908 as shown in Chapter 13, Article 2, Division 4 (San Diego 2012). The project site is not located within or directly adjacent to any

# Biological Resources Technical Report

## Meadowood II Development Project

---

Environmentally Sensitive Lands (ESLs) or lands designated as MHPA by the City's Subarea Plan. The nearest lands under the County of San Diego jurisdiction are located approximately 1.4 miles south of the site (Figure 2).

### 1.1.1 Topography and Land Uses

Topography within the project site consists of a relatively flat site, with a gentle upward slope from north to south. Elevations within the site range from approximately 290 feet above mean sea level (AMSL) near the northwestern corner to approximately 320 feet AMSL in the southwestern corner.

The site is currently vacant land that shows evidence of past grading, as there are two distinct flat areas on site, one terraced above the other. The site was occupied and operated by a nursery between 2001 and 2008; at which time, it was kept free of vegetation, the operation was covered with ground cloth, and hard-packed gravel roads spanned between the aisles of nursery plants and hoop houses. Since the closing of the nursery operations in 2008, although hoop houses and ornamental plants remained on site for some time thereafter, the property owners have disked the site multiple times per year to keep it free of vegetation. Since 2012, the owners have maintained this effort and routinely (no more than three times per year) disk the site depending on the amount of weed/vegetation growth. Additionally, the owners have placed mulch along the perimeter and within the site to control and reduce weed growth. The schedule of disking performed on site is as follows: January, May, and December of 2013; May and December 2014; and most recently in July 2015 (R. Christopher Barczewski, personal communication, August 2, 2015). Currently, the site is devoid of any structures, except an existing TMobile cellular tower located in the southwest corner of the property.

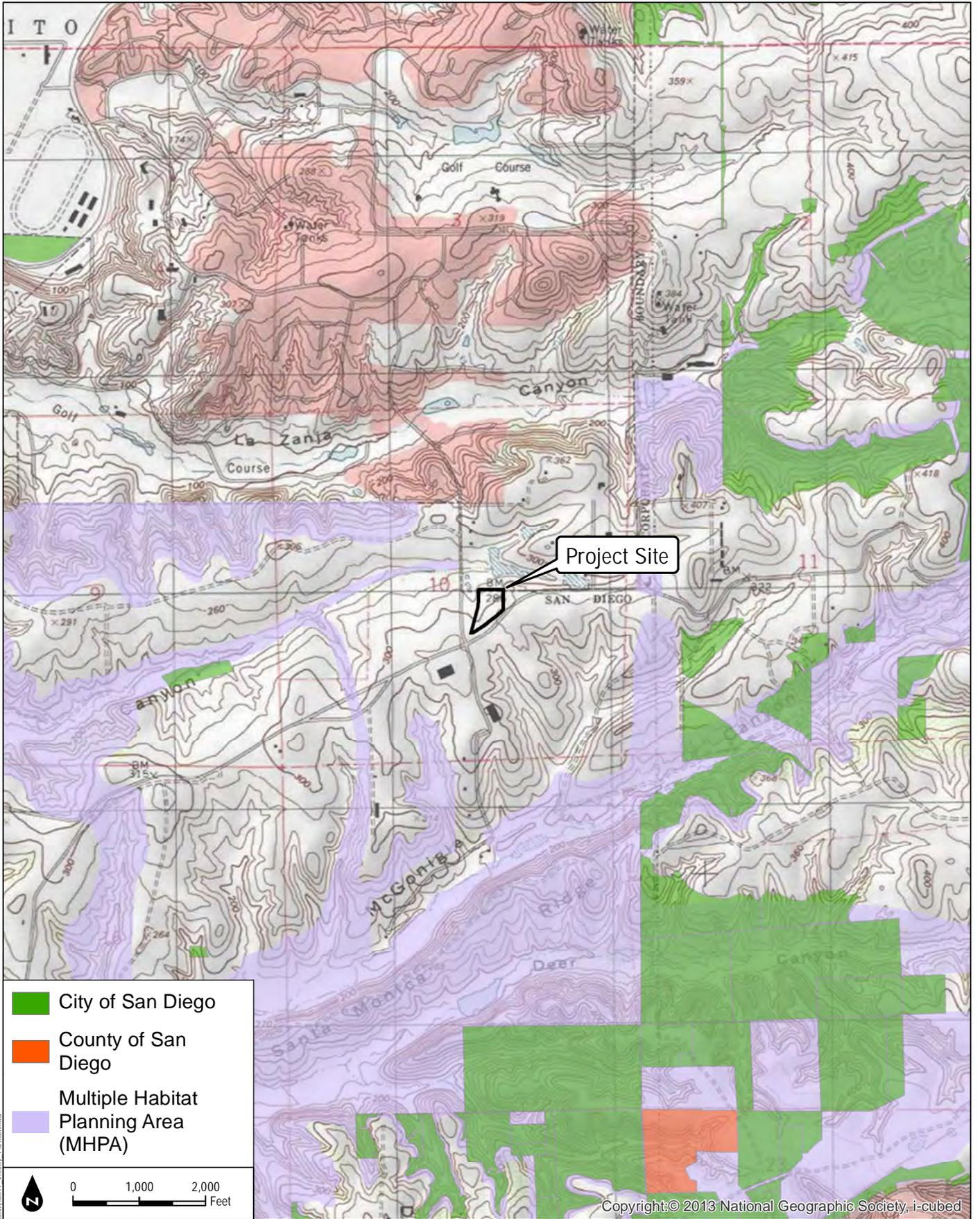


**FIGURE 1**  
**Regional Map**

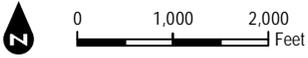
**Biological Resources Technical Report  
Meadowood II Development Project**

---

INTENTIONALLY LEFT BLANK



- City of San Diego
- County of San Diego
- Multiple Habitat Planning Area (MHPA)



Copyright:© 2013 National Geographic Society, i-cubed

SOURCE: USGS 7.5-Minute Series Del Mar Quadrangle.

**FIGURE 2**  
**Vicinity Map**



Biological Resources Technical Report for the Meadowood II Project

Z:\Templates\Arcmap\Current\Veget\8x11\_Vegety\_Portal.mxd

**Biological Resources Technical Report  
Meadowood II Development Project**

---

INTENTIONALLY LEFT BLANK

# Biological Resources Technical Report

## Meadowood II Development Project

---

### 1.1.2 Soils

According to the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil data (NRCS 2015), the following three soil types occur within the Project site:

- DaC, Diablo clay, 2%–9% slopes
- DoE, Diablo-Olivenhain complex, 9%–30% slopes
- HrC2, Huerhuero loam, 5%–9% slopes, eroded

Soils within the Diablo series consist of well drained clay soils formed from calcareous sandstone and shale parent material, often used as farmlands. The soils on site are hillslopes and have slopes of 2%–9%. Soils within the Olivenhain series consist of well drained, cobbly loam and clay soils formed from old alluvium. The soils on site are hillslopes and have slopes of 9%–30%. Soils within the Huerhuero series consist of moderately well drained, clay loam soils formed from calcareous alluvium derived from sedimentary rock, often used as farmlands. The soils on site are marine terraces and have slopes of 5%–9% (Bowman 1973).

## 1.2 Project Description

The project incorporates approximately 4.4 acres and proposes the construction of 16 lots for single family residential homes and one 4-unit multifamily affordable home.

**Biological Resources Technical Report  
Meadowood II Development Project**

---

INTENTIONALLY LEFT BLANK

# Biological Resources Technical Report Meadowood II Development Project

---

## 2 METHODS

Data regarding potential biological resources present within the project study area were obtained through a review of pertinent literature and field reconnaissance; both are described in detail in the following paragraphs.

### 2.1 Literature Review

Prior to conducting the field surveys, the following data sources were reviewed to assist with the biological efforts:

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) (CDFW 2015)
- California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2015)

### 2.2 Field Surveys

Dudek biologists performed field surveys of the project study area in 2014 and 2015 (Table 1). Photographs were taken during both surveys (Appendix A). During the spring of 2014 a general site assessment survey was conducted to identify any potential biological resources on site (Dudek 2014). In the summer of 2015, another field survey of the project area was conducted in order to document the site conditions, assess the biological resources on site, and evaluate any potential project impacts in accordance with the City's Biology Guidelines (San Diego 2012). The field surveys were conducted on foot to visually cover 100% of the project survey area and digital orthographic maps (Bing Maps 2014 and Google Maps 2015) with an overlay of the project boundary was used to map the vegetation communities or land covers present and record any special-status biological resources directly in the field. Throughout this report the project study area is defined as the approximate 4.4-acre property only.

**Table 1**  
**Survey Conditions**

Date	Time	Personnel	Survey Conditions
04/30/14	1400-1555	Thomas Liddicoat	0%cloud cover, sunny; 3-9 mile per hour winds; 92° Fahrenheit
08/03/15	0830-1000	Danielle Mullen	100%cloud cover, overcast; 2-4 mile per hour winds; 72-76° Fahrenheit

# Biological Resources Technical Report

## Meadowood II Development Project

---

### 2.2.1 Resource Mapping

The vegetation community and land cover mapping follows the classifications described by Holland (1986), as adopted in the City of San Diego Land Development Code, Biology Guidelines (San Diego 2012). In some cases, Oberbauer (2008) is also utilized as a reference, especially with regards to land cover types. For example, areas on site that supported less than 20% native plant species cover were mapped as disturbed habitat (DH) and areas that supported at least 20% native plant species, but fewer than 50% native cover were mapped as a disturbed native vegetation community (e.g., disturbed coastal sage scrub). Vegetation community and land cover mapping was conducted for the entire project study area.

Observable biological resources including perennial plants and conspicuous wildlife (i.e., birds and some reptiles) commonly accepted as regionally sensitive by the California Native Plant Society (CNPS), CDFW, and U.S. Fish and Wildlife Service (USFWS) were recorded on the field map, where applicable. Additionally, an assessment and determination of potential for locally recognized special-status species (i.e., Narrow Endemic and Covered Species listed in the City Subarea Plan) to occur on site was conducted. Following completion of the field work, Dudek GIS Technician Curtis Battle digitized the mapped findings using ArcGIS and calculated coverage acreages using ArcCAD.

### 2.2.2 Plants and Animals

The plant species encountered during the field surveys were identified and recorded directly into a field notebook. Those species that could not be identified immediately were brought into the laboratory for further investigation. A compiled list of plant species observed in the project study area is presented in Appendix B.

Latin and common names for plant species with a California Rare Plant Rank (CRPR) (formerly CNPS List) follow the CNPS Online Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2015). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2015), and common names follow the USDA Natural Resource Conservation Service Plants Database (USDA 2015).

Wildlife species detected during the field surveys by sight, calls, tracks, scat, or other signs were recorded directly onto a field notebook. Binoculars (8.5 × 42 and 10 x 40 magnifications) were used to aid in the identification of wildlife. In addition to species actually detected during the surveys, expected wildlife use of the site was determined by known habitat preferences of local

## **Biological Resources Technical Report Meadowood II Development Project**

---

species and knowledge of their relative distributions in the area. A list of wildlife species observed on the project site is presented in Appendix C.

Latin and common names of animals follow Crother (2012) for reptiles and amphibians, American Ornithologists' Union (AOU 2012) for birds, and Wilson and Reeder (2005) for mammals.

### **2.2.3 Special Status Biological Resources**

Special-status biological resources are defined as follows: (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes (CDFW 2015b-c); (2) species and habitat types recognized by local and regional resource agencies as special status (CDFW 2015d; CNPS 2015); (3) habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; (4) wildlife corridors and habitat linkages; or (5) biological resources that may or may not be considered special status, but are regulated under local, state, and/or federal laws.

Searches through the California Native Plant Society (CNPS 2015) online inventory database and California Natural Diversity Database (CNDDDB) online inventory were conducted to assist in the determination of special-status plant and animal species potentially present on site (CDFW 2015). Specifically, both a one-quad search and a nine-quad search were conducted. In addition to these State database searches, each of the 87 species covered under the City's Subarea Plan, including Narrow Endemic Species, were individually evaluated in relation to the project site to assist in determining the level of potential to occur on site.

### **2.2.4 Wetlands Delineation**

A formal jurisdictional delineation of "waters of the United States," including wetlands, under the jurisdiction of the U. S. Army Corps of Engineers (ACOE), CDFW, and Regional Water Quality Control Board (RWQCB) was not conducted. However, the project site was evaluated for any evidence of potential jurisdictional areas (e.g., ordinary high water mark (OHWM), soil saturation, surface water, and hydrophytic vegetation).

**Biological Resources Technical Report  
Meadowood II Development Project**

---

INTENTIONALLY LEFT BLANK

# Biological Resources Technical Report Meadowood II Development Project

---

## 3 RESULTS

The documentation of biological resources described herein pertain to the project site only (approximately 4.4-acres). No off-site areas are anticipated to be included in the proposed project.

### 3.1 Vegetation Communities and Land Cover Types

Based on species composition and general physiognomy one land cover type was identified within the project site; disturbed habitat (DH). Native vegetation communities were not detected within the project area. The acreage DH mapped on site is provided in Table 2, is presented on Figure 3, and is described below.

**Table 2**  
**Vegetation Communities and Land Cover Types On Site**

Vegetation Community/Land Cover Type	Subarea Plan Tier	Acreage
Disturbed Habitat (DH)	Tier IV	4.4
	<b>Total</b>	<b>4.4</b>

**Disturbed Habitat** is a land cover type characterized by a predominance of non-native species, often introduced and established through human action. Oberbauer et al. (2008) describes disturbed habitat (DH) as areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association but continues to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of non-native plant species such as ornamentals or exotic species (i.e., weeds). DH is not regulated by the environmental resource agencies and is included within the disturbed category (Tier IV) according to the City of San Diego Biology Guidelines (City of San Diego 2012).

The entire site was mapped as disturbed habitat. Although the site was disked in July 2015, the site was heavily dominated by Russian thistle (*Salsola australis*), which is a characteristic annual weed species. The site does support some annual non-native grass species; however, due to the frequency of site disking (1-3 times per year), the limited vegetation growth between disking events, and low percent cover of such species (i.e., less than 25% total cover) the site was defined as disturbed habitat rather than annual non-native grassland.

### 3.2 Plants and Animals

A total of 35 species of vascular plants were detected during the surveys, including 10 native species (29%) and 25 non-native species (71%). The floral diversity is low and mostly consists of non-native annual weed species. Although native plant species were observed and scattered

## Biological Resources Technical Report Meadowood II Development Project

---

throughout the site, the vegetation cover was lower than 20% and not substantial enough to define as a native vegetation community. A list of plant species identified on the project site during the surveys is presented in Appendix B.

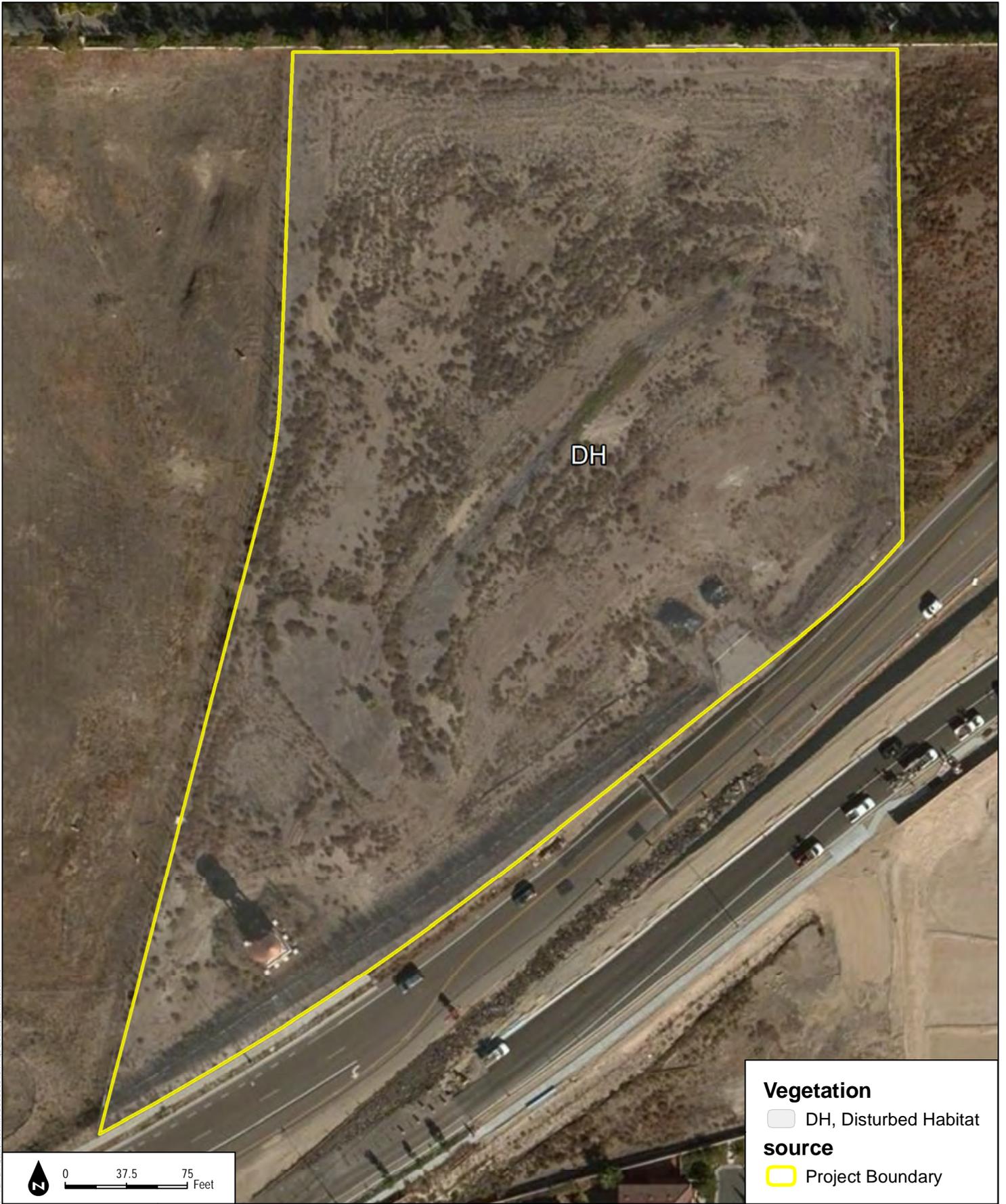
A total of 8 wildlife species were detected during the surveys (Appendix B). All wildlife species observed are common, disturbance-adapted species typically found in urban and suburban settings, such as common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida macroura*), and California ground squirrel (*Spermophilus beecheyi*). The habitat on site is limited in size and very disturbed in character which provides relatively few resources for wildlife due to the lack of cover, structural diversity, and lack of movement/dispersal. A cumulative list of all wildlife species observed or detected within the project site during the survey is presented in Appendix B.

There are a few immature trees and shrubs present on site, planted in a scheme around the cellular tower, that may have potential for roosting or nesting by birds. No rock piles, boulders, or features that could be used by reptiles were observed; additionally, the soil surface is regularly maintained (i.e., disked) to represent a tilled/disturbed condition. Although some non-native grasses and exotic weeds are sprouting across the site, much of the site remains bare, and the soils, because the site is disked regularly and contains non-soil material (i.e., mulches and imported rock material), do not support suitable habitat for grassland wildlife species or for narrow endemic plant species. Additionally, the site is relatively small and adjacent to major roadways and other development activity that precludes uses by wildlife.

### 3.3 Special Status Plants and Animals

No special status plant species or animal species (i.e., federally, state, or locally listed species) were detected on site during the surveys.

Special status plant species are typically associated with clay soils and have been documented within the soil types present on site (i.e., Diablo, Olivenhain, and Huerhuero soil series). However, due to the many years of past site ground disturbances from nursery operations and the continued maintenance of the disturbed landscape via site disking, it is highly unlikely that special status plant species occur on site. Additionally, no special status plant species have been recorded within 0.5-mile of the site (Figure 5).



File: #752015 - Line.sxd by: adf Date: 2/19/2015 10:11:41 AM Project: MEADOWOOD II Project - Biological Resources.mxd

**Vegetation**  
 □ DH, Disturbed Habitat source  
**source**  
 □ Project Boundary

**FIGURE 3**  
**Biological Resources**

**Biological Resources Technical Report  
Meadowood II Development Project**

---

INTENTIONALLY LEFT BLANK

## Biological Resources Technical Report Meadowood II Development Project

---

A search of CNPS and CNDDDB records was used to develop matrices of special status plant and wildlife species that may have potential to occur on site due to the presence of suitable habitat (taking into consideration vegetation communities, soils, elevation, and geographic range, life form/blooming period, etc.). These two matrices of special status plant and wildlife species, their favorable habitat conditions, and their potential to occur on site based on the findings of the field investigations are presented in Appendices C and D, respectively. Species considered special status under the City Subarea Plan, including Narrow Endemic Species, are included in Appendices C and D.

No special status plant species presented in Appendix C have potential to occur (i.e., not expected or low potential to occur) on site due to the lack of suitable habitat and high level of disturbance on site. Similarly, none of the wildlife species presented in Appendix D have potential to occur (i.e., not expected or low potential to occur) on site. There is no federally designated critical habitat for wildlife or plant species mapped within or adjacent to the project site (USFWS 2015).

One special status species, burrowing owl (*Athene cunicularia*), has one historical location recorded (March 4, 1999) on CNDDDB and is located approximately 0.4-miles southwest of the site (CDFW 2015) (Figure 4). Although, a few active ground squirrel burrows and ground squirrel activity/sign were observed during the field surveys, the biologists thoroughly investigated the site for evidence or sign of burrowing owl presence on site; however, none was detected.

According to the current CDFW Burrowing Owl Staff Report, foraging habitat is essential to burrowing owls and their individual home ranges are known to occupy a minimum of 280 acres in intensively dense agricultural zones and up to 600 acres in open grassland pastures (CDFW 2012). Due to the relatively small size of the site (only 4.4 acres), the limited habitat quality on site, the lack of connectivity to any adjacent suitable habitat, and the continuous (i.e., past and present) anthropogenic disturbances of the site, burrowing owl is not likely to occur on the project site.

### 3.4 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Wildlife corridors contribute to population viability by assuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes (e.g., fires).

## Biological Resources Technical Report Meadowood II Development Project

---

Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. Habitat linkages provide a potential route for gene flow and long-term dispersal of plants and animals and may also serve as primary habitat for smaller animals, such as reptiles and amphibians. Habitat linkages may be continuous habitat or discrete habitat islands that function as stepping stones for dispersal.

Wildlife movement within the site is unlikely due to the relatively limited size of the project area, lack of suitable native habitat, the level of site disturbance, and the presence of existing roadways and development that surround the site. In addition, the project site does not have connectivity with any natural open space (i.e., undeveloped) areas or any areas designated as MHPA in the City Subarea Plan. Figure 2 depicts the nearest MHPA lands as occurring approximately 440 linear feet northwest of the site. Ultimately, the site is not considered to retain biological value as a wildlife corridor or habitat linkage.

### 3.5 Wetlands Delineation

Hydrology and vegetation were evaluated throughout the project study area but, because no potential wetland sites or non-wetland waters (i.e., drainages, channels, etc.) were identified, a formal wetland delineation was not conducted. Within the project study area, no jurisdictional wetlands or non-wetland waters were observed. Thus, the project is not subject to the ACOE 404, RWQCB 401, or CDFW 1600 permitting process.

Note that although curly dock (*Rumex crispus*) and giant reed (*Arundo donax*) were recorded on the site during the survey in 2014, neither species was observed with a substantial percentage of cover (few individual plants on site; less than 20% cover) to be considered a vegetation or wetland community. Both species are known to be tolerant of disturbance and often found at disturbed sites, especially where dumping of debris/mulches. On site, the giant reed rhizome sprout and the few scattered curly dock plants are located adjacent to the site entrance pad/ramp in the southeast portion of the site.



**Biological Resources Technical Report  
Meadowood II Development Project**

---

INTENTIONALLY LEFT BLANK

# Biological Resources Technical Report

## Meadowood II Development Project

---

### 4 PROJECT IMPACTS

This section addresses direct and indirect impacts that will result from implementation of the proposed project.

**Direct impacts** include both the permanent loss of any on-site habitat and the plant and wildlife species that it contains and the temporary loss of on-site habitat. Direct impacts were quantified by overlaying the project impact area footprint onto the biological resources map. All biological resources within the direct permanent impact area are considered 100% lost. With exception for the existing cellular tower, the entire 4.4-acre site is considered a direct permanent impact. For purposes of this assessment, all biological resources identified within the areas to be graded for the project (i.e., residential units as well as associated roadways and infrastructure) were considered directly impacted.

There are no direct temporary impacts proposed as part of this project.

**Indirect Impacts** refer to effects that are short-term impacts (i.e., temporary) due to the project construction or long-term (i.e., permanent) design of the project and the effects it may have to adjacent resources. For this project, it is assumed that the potential indirect impacts resulting from construction activities may include dust, noise, and general human presence that may temporarily disrupt species and habitat vitality and construction-related soil erosion and runoff. With respect to these latter factors, however, project grading will be subject to the typical restrictions and requirements that address erosion and runoff.

In accordance with the City's Storm Water Standards Manual (SWSM, San Diego 2012a), all development projects located within the City processing development permits through the City are required to implement site design, source control, and treatment control best management practices (BMPs). All development projects will be required to meet National Pollutant Discharge Elimination System (NPDES) program controls by incorporating BMPs (e.g., preparation/implementation of a Stormwater Pollution Prevention Plan (SWPPP)) during construction and permanent BMP's as defined by the City's SWSM as part of the project development.

Long-term indirect impacts are primarily limited to increased human presence due to the construction of homes and associated roads and infrastructure.

# Biological Resources Technical Report

## Meadowood II Development Project

---

### 4.1 Direct Impacts

#### 4.1.1 Vegetation Communities

Implementation of the project will result in permanent direct impacts to approximately 4.4 acres of disturbed habitat (Figure 5).

**Table 3**  
**Direct Impacts to Vegetation Communities and/or Land Covers**

Vegetation Community/Land Cover Type	Subarea Plan Tier	Study Area Acreage	Permanent Impact Acreage
Disturbed Habitat (DH)	Tier IV	4.4	4.4
<b>Total</b>		<b>4.4</b>	<b>4.4</b>

Vegetation communities considered to be special status by the City's Subarea Plan (San Diego 2012) are listed classified as Tier I through Tier III, none of which are present on the project site.

#### 4.1.2 Special Status Plants and Animals

Implementation of the proposed project would directly permanently impact all special-status plant species that could potentially occur on site. No special status plants were detected on site during the site surveys and there are no special status plant species with a moderate or high potential to occur (Appendix C). Therefore, no direct impacts to special status plants are anticipated.

No special status wildlife species were detected during the surveys. Similar to the plants, there are no special status animal species with a moderate or high potential to occur on site. Thus, no direct impacts to special status wildlife species are expected to occur (Appendix D). The project will comply with the provisions of the Migratory Bird Treaty Act (MBTA); therefore, no impacts to nesting birds are anticipated.



-  Project Boundary
-  Impacts
- Vegetation**
-  DH, Disturbed Habitat



SOURCE: Bing Maps 2015



Biological Resources Technical Report for the Meadowood II Project

**FIGURE 5**  
Proposed Impacts

File: #752015 - Line.sxd by: adhd Date: 2/25/2015 10:41:00 AM Project: Meadowood II Project - 5 impacts.mxd

**Biological Resources Technical Report  
Meadowood II Development Project**

---

INTENTIONALLY LEFT BLANK

# Biological Resources Technical Report

## Meadowood II Development Project

---

### 4.1.3 Wildlife Corridors and Habitat Linkages

As described in Section 3.4, the project site is not expected to provide for considerable wildlife movement or serve as an important habitat linkage for wildlife species. The project study area is very disturbed in character and is surrounded by existing residential development. Permanent direct impacts to wildlife corridors/habitat linkages are not anticipated as a result of the proposed project.

## 4.2 Indirect Impacts

### 4.2.1 Vegetation Communities

Indirect impacts to vegetation communities would primarily result from adverse “edge effects.” During vegetation removal and grading activities, short-term edge effects may include dust, soil erosion, and runoff from dust control that could disrupt plant vitality in non-impacted areas. However, all grading would be subject to the proposed project’s best management practices and typical restrictions and requirements that address dust control, erosion, and runoff.

There are no native vegetation communities adjacent to the project site. The surrounding area is developed and mostly vegetated and maintained with ornamental species. Implementation of storm water regulations and BMPs are expected to substantially control adverse edge effects during and following construction both adjacent and downstream from the site. Therefore, indirect impacts to off-site vegetation communities are not expected.

### 4.2.2 Special Status Plants and Animals

No special-status plant species were observed within the study area during biological surveys and there are no native vegetation communities adjacent to the project site. Additionally, no special-status species have moderate or high potential to occur on site (Appendix C). Thus, no indirect impacts to special-status plants are anticipated.

Most of the indirect impacts to vegetation communities previously described can also affect special-status wildlife. Wildlife may also be indirectly affected in the short-term by construction-related noise, which can disrupt normal activities and subject wildlife to higher predation risks. Adverse edge effects can cause degradation of habitat quality through the invasion of pest species. Breeding birds can be significantly affected by short-term construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities.

Although the areas within the project boundary support very limited suitable vegetation for bird nesting, there is a moderate potential for native birds, which may be affected by

## **Biological Resources Technical Report Meadowood II Development Project**

---

construction-related noise, to nest within the ornamental landscaping scheme around the cellular tower on site and to nest within adjacent ornamental landscaping associated with existing development. The project will comply with the provisions of the MBTA; therefore, no impacts to nesting birds are anticipated.

### **4.3 Cumulative Impacts and Regional Planning Context**

Implementation of the proposed project in conjunction with other planned projects within the City of San Diego, would not result in cumulative significant impacts to biological resources due to the project site not supporting natural vegetation communities used by wildlife.

In an effort to eliminate cumulative impacts to sensitive biological resources throughout San Diego, the City is participating in a regional conservation planning effort, the City Subarea Plan. This planning effort provides a regional plan for preservation and mitigation of sensitive biological resources. The ultimate goal of this plan is the establishment of biological reserve areas in conformance with the State of California Natural Community Conservation Planning (NCCP).

The MHPA is a “hard line” preserve planning area developed by the City in cooperation with the wildlife agencies, property owners, developers, and environmental groups. The MHPA identifies biological core resource areas (BRCAs) and corridors targeted for conservation, in which only limited development may occur (San Diego 1997). The proposed project is not within or directly adjacent to any Environmentally Sensitive Lands (ESLs) or lands designated as MHPA by the City’s Subarea Plan; the nearest is approximately 440 linear feet northwest of the site. Thus, the City’s Land Use Adjacency Guidelines (LUAGs) do not apply to this project and as such a discussion of conformance to the LUAGs is not provided.

The project is located within the Development Area of the City’s Northern Area Planning Component as identified in the City Subarea Plan and as such is development is anticipated; therefore, the proposed project would not impact the goals and objectives of the City’s Subarea Plan. Furthermore, project planning in accordance with the biological resource conservation goals of the MSCP and limitation of impacts in accordance with the MSCP is intended to mitigate cumulative biological resource impacts. Mitigation for direct impacts resulting from the development would comply with the City’s Biology Guidelines. Therefore, the proposed project is consistent with the MSCP and cumulative impacts will be mitigated through implementation of the plan.

# Biological Resources Technical Report

## Meadowood II Development Project

---

### 5 ANALYSIS OF SIGNIFICANCE

#### 5.1 Explanation of Findings of Significance

Impacts to special-status vegetation communities, special-status plants, and special-status wildlife species must be quantified and analyzed to determine whether such impacts are significant under CEQA. CEQA Guidelines Section 15064(b) states that an ironclad definition of “significant” effect is not possible because the significance of an activity may vary with the setting. Appendix G of the CEQA Guidelines, however, does provide examples of consequences that may be “deemed to be a significant effect on the environment” (CEQA Guidelines, Section 15064(e)). These effects include substantial effects on rare or endangered species of animals or plants, or the habitat of the species. Guidelines Section 15065(a) is also helpful in defining whether a project may have “a significant effect on the environment.” Under that section, a proposed project may have a significant effect on the environment if the project has the potential to (1) substantially degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below self-sustaining levels, (4) threaten to eliminate a plant or animal community, (5) reduce the number or restrict the range of a rare or endangered plant or animal, or (6) eliminate important examples of a major period of California history or prehistory.

The evaluation of whether an impact to a particular biological resource is significant must consider both the resource itself and the role of that resource in a regional context. Substantial impacts are those that contribute to or result in permanent loss of an important resource, such as a population of a rare plant or animal. Impacts may be important locally because they result in an adverse alteration of existing site conditions, but considered not significant because they do not contribute substantially to the permanent loss of that resource regionally. The severity of an impact is the primary determinant of whether that impact can be mitigated to a level below significant.

The following significance determinations were made based on the impacts from the proposed project.

#### 5.2 Vegetation Communities

The proposed project would result in direct permanent impacts to one land cover type, as summarized in Table 3 and in Section 4.1.1.

Per Table 3 of the City’s Guidelines, direct impacts to Tier IV habitats (i.e., urban/developed, disturbed, agriculture, eucalyptus woodland, and ornamental) are not considered significant and do not require mitigation (San Diego 2012). The project will not result in significant direct impacts to native vegetation communities.

## Biological Resources Technical Report Meadowood II Development Project

---

### 5.3 Special-Status Plants and Animals

Based on the results of the surveys, no special-status plant or animal species are present on site and, therefore, no direct or indirect impacts to special-status plant or animal species are expected to occur.

The project will comply with the MBTA; therefore, no impacts to nesting birds are anticipated.

### 5.4 Wildlife Corridors and Habitat Linkages

As stated in Section 4.1.3, the project site does not provide for considerable wildlife movement or serve as an important habitat linkage for wildlife species and permanent direct impacts to wildlife corridors/habitat linkages are not anticipated as a result of the proposed project. Therefore, there would be no significant impacts to habitat linkages or wildlife corridors by the proposed project.

# Biological Resources Technical Report Meadowood II Development Project

---

## 6 MITIGATION

According to the City guidelines, mitigation is not required for permanent impacts to Tier IV vegetation. As such, the proposed project is consistent with the City Subarea Plan.

**Biological Resources Technical Report  
Meadowood II Development Project**

---

INTENTIONALLY LEFT BLANK

## Biological Resources Technical Report Meadowood II Development Project

---

### 7 LITERATURE CITED

- AOU. 2015. Check-List of North American Birds: List of the 2,078 Bird Species Known From the AOU Check-list Area. Accessed from <http://www.aou.org/checklist/north/full.php>
- Bowman, R.H. 1973. *Soil Survey, San Diego Area, California, Part 1*. United States Department of Agriculture.
- California Department of Fish and Wildlife (CDFW). 2015. RareFind, Version 5.0. California Natural Diversity Database (CNDDDB). Accessed July 2015. <http://www.dfg.ca.gov/biogeodata/cnddb/rarefind.asp>.
- CDFW. 2012. *Staff Report on Burrowing Owl Mitigation. Appendix A. – Burrowing Owl Natural History and Threats*. Accessed November 2015. [https://www.dfg.ca.gov/wildlife/nongame/survey\\_monitor.html](https://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html)
- CDFW. California Natural Diversity Data Base. 2015a. “Special Animals List.” California Natural Diversity Database. CDFW, Biogeographic Data Branch. January 2015. [http://www.dfg.ca.gov/biogeodata/cnddb/plants\\_and\\_animals.asp](http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp).
- CDFW. 2015b. “State and Federally Listed Endangered and Threatened Animals of California.” California Natural Diversity Database. CDFW, Biogeographic Data Branch. January 2015. [http://www.dfg.ca.gov/biogeodata/cnddb/plants\\_and\\_animals.asp](http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp).
- CDFW. 2015c. “State and Federally Listed Endangered, Threatened, and Rare Plants of California.” California Natural Diversity Database. CDFW, Biogeographic Data Branch. January 2015. <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEPlants.pdf>.
- CDFW. 2015d. California Natural Diversity Database. 2015. *Special Vascular Plants, Bryophytes, and Lichens List*. California Natural Diversity Database. January 2015. [http://www.dfg.ca.gov/biogeodata/cnddb/plants\\_and\\_animals.asp](http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp).
- City of San Diego (San Diego). Multiple Species Conservation Program (MSCP). August 1997.
- City of San Diego. “San Diego Municipal Code – Land Development Manual/Land Development Code – Biology Guidelines”. (revised 2012).
- City of San Diego. 2012. *Storm Water Standards Manual*. January.

## Biological Resources Technical Report Meadowood II Development Project

---

- CNPS. California Native Plant Society. 2015. *Inventory of Rare and Endangered Plants*. Online ed. Version 8-01a. Sacramento, California: CNPS. Accessed July 2015. <http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi>.
- Crother, B.I. 2012. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding*, edited by J.J. Moriarty 7th ed. Society for the Study of Amphibians and Reptiles (SSAR); Herpetological Circular, no. 39. August 2012. [http://home.gwu.edu/~rpyron/publications/Crother\\_et\\_al\\_2012.pdf](http://home.gwu.edu/~rpyron/publications/Crother_et_al_2012.pdf).
- Holland, R. F. 1986. *Preliminary descriptions of the terrestrial natural communities of California. Nongame-Heritage Program, California Department of Fish and Game*.
- Jepson Flora Project. 2015. Jepson eFlora. Berkeley, California: University of California. Accessed July 2015. [http://ucjeps.berkeley.edu/cgi-bin/get\\_JM\\_name\\_data.pl](http://ucjeps.berkeley.edu/cgi-bin/get_JM_name_data.pl).
- Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. March 2008. Accessed September 12, 2012. <http://www.sdcanonlands.org/canyon-groups/canyon-group-resources/canyon-enhancement-guide/189-canyon-enhancement-planning-guide-materials>.
- Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. 2015. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed July 2015.
- USDA (U.S. Department of Agriculture). 2015. "California." State PLANTS Checklist. Accessed July 2015. [http://plants.usda.gov/dl\\_state.html](http://plants.usda.gov/dl_state.html).
- USFWS. 2015. "Critical Habitat and Occurrence Data" [map]. Accessed August 2015. <http://www.fws.gov/data>.
- Wilson, D.E., and D.M. Reeder, eds. 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference* 3rd ed. Baltimore, Maryland: Johns Hopkins University Press.

# **APPENDIX A**

*Field Survey Photographs*



**Meadowood II Photos Taken 4-30-2014**







**Meadowood II Photos Taken 8-3-15**







# **APPENDIX B**

*Cumulative List of Plant and Wildlife Species  
Detected on the Project Site*



**APPENDIX B**  
**Cumulative List of Plant and Wildlife Species**  
**Detected on the Project Site**

---

**VASCULAR SPECIES**

**DICOTS**

***AIZOACEAE—FIG-MARIGOLD FAMILY***

- \* *Aptenia cordifolia*—heartleaf iceplant

***ANACARDIACEAE—SUMAC OR CASHEW FAMILY***

- Malosma laurina*—laurel sumac

***APIACEAE—CARROT FAMILY***

- \* *Foeniculum vulgare*—sweet fennel

***ASTERACEAE—SUNFLOWER FAMILY***

- \* *Centaurea melitensis*—Maltese star-thistle
- \* *Cynara cardunculus*—cardoon
- \* *Glebionis coronaria*—crowndaisy
- Ambrosia psilostachya*—Cuman ragweed
- Baccharis pilularis*—coyotebrush
- Baccharis salicifolia* ssp. *salicifolia*—mule-fat
- Encelia californica*—California brittlebush
- Erigeron canadensis*—Canadian horseweed
- Heterotheca grandiflora*—telegraphweed
- Stephanomeria exigua*—small wirelettuce

***BRASSICACEAE—MUSTARD FAMILY***

- \* *Brassica nigra*—black mustard
- \* *Raphanus sativus*—cultivated radish

***CHENOPODIACEAE—GOOSEFOOT FAMILY***

- \* *Atriplex semibaccata*—Australian saltbush
- \* *Salsola australis*—Russian thistle

***FABACEAE—LEGUME FAMILY***

- \* *Melilotus indicus*—annual yellow sweetclover

***OLEACEAE—OLIVE FAMILY***

- \* *Olea europaea*—olive

## APPENDIX B (Continued)

---

### ***PLATANACEAE—PLANE TREE, SYCAMORE FAMILY***

- \* *Platanus ×hispanica*—London plane tree

### ***PLUMBAGINACEAE—LEADWORT FAMILY***

- \* *Plumbago auriculata*—Cape leadwort

### ***POLYGONACEAE—BUCKWHEAT FAMILY***

- \* *Rumex crispus*—curly dock
- Eriogonum fasciculatum*—Eastern Mojave buckwheat

### ***SIMAROUBACEAE—QUASSIA OR SIMAROUBA FAMILY***

- \* *Ailanthus altissima*—tree of heaven

### ***SOLANACEAE—NIGHTSHADE FAMILY***

- \* *Nicotiana glauca*—tree tobacco

### ***TAMARICACEAE—TAMARISK FAMILY***

- \* *Tamarix ramosissima*—saltcedar

### ***URTICACEAE—NETTLE FAMILY***

- \* *Urtica urens*—dwarf nettle

### ***NYCTAGINACEAE—BOUGAINVILLEA FAMILY***

- Bougainvillea spectabilis*—Bougainvillea

## MONOCOTS

### ***ARECACEAE—PALM FAMILY***

- \* *Phoenix canariensis*—Canary Island date palm
- \* *Washingtonia robusta*—Washington fan palm

### ***POACEAE—GRASS FAMILY***

- \* *Arundo donax*—giant reed
- \* *Bromus madritensis*—compact brome
- \* *Cynodon dactylon*—Bermudagrass
- \* *Digitaria sanguinalis*—hairy crabgrass
- \* *Hordeum marinum* ssp. *gussoneanum*—Mediterranean barley

## APPENDIX B (Continued)

---

### WILDLIFE SPECIES

#### BIRD

##### FINCHES

##### ***FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES***

*Haemorhous mexicanus*—house finch

##### FLYCATCHERS

##### ***TYRANNIDAE—TYRANT FLYCATCHERS***

*Tyrannus verticalis*—western kingbird

##### HUMMINGBIRDS

##### ***TROCHILIDAE—HUMMINGBIRDS***

*Calypte anna*—Anna's hummingbird

##### JAYS, MAGPIES AND CROWS

##### ***CORVIDAE—CROWS AND JAYS***

*Corvus corax*—common raven

##### PIGEONS AND DOVES

##### ***COLUMBIDAE—PIGEONS AND DOVES***

*Zenaida macroura*—mourning dove

#### MAMMAL

##### HARES AND RABBITS

##### ***LEPORIDAE—HARES AND RABBITS***

*Sylvilagus bachmani*—brush rabbit

##### SQUIRRELS

##### ***SCIURIDAE—SQUIRRELS***

*Spermophilus (Otospermophilus) beecheyi*—California ground squirrel

## APPENDIX B (Continued)

---

### REPTILE

### LIZARDS

#### ***PHRYNOSOMATIDAE—IGUANID LIZARDS***

*Uta stansburiana*—common side-blotched lizard

\* signifies introduced (non-native) species

# **APPENDIX C**

*Special-Status Plant Species Potential to Occur on  
the Project Site*



## APPENDIX C

### Special-Status Plant Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Abronia maritima</i>	red sand-verbena	None/ None/ 4.2/ None	Coastal dunes/ perennial herb/ Feb-Nov/ 0-328	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Acanthomintha ilicifolia</i>	San Diego thorn-mint	FT/ CE/ 1B.1/ Narrow endemic	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/Clay, openings/ annual herb/ Apr-Jun/ 33-3150	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Acmispon prostratus</i>	Nuttall's acmispon	None/ None/ 1B.1/ Covered	Coastal dunes, Coastal scrub(sandy)/ annual herb/ Mar-Jun(Jul)/ 0-33	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Adolphia californica</i>	California adolphia	None/ None/ 2B.1/ None	Chaparral, Coastal scrub, Valley and foothill grassland/clay/ perennial deciduous shrub/ Dec-May/ 148-2428	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Agave shawii</i> var. <i>shawii</i>	Shaw's agave	None/ None/ 2B.1/ Narrow endemic	Coastal bluff scrub, Coastal scrub/ perennial leaf succulent/ Sep-May/ 33-394	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Ambrosia monogyra</i>	singlewhorl burrobrush	None/ None/ 2B.2/ None	Chaparral, Sonoran desert scrub/sandy/ perennial shrub/ Aug-Nov/ 33-1640	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Ambrosia pumila</i>	San Diego ambrosia	FE/ None/ 1B.1/ Narrow endemic	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/sandy loam or clay, often in disturbed areas, sometimes alkaline/ perennial rhizomatous herb/ Apr-Oct/ 66-1362	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Aphanisma blitoides</i>	aphanisma	None/ None/ 1B.2/ Narrow endemic	Coastal bluff scrub, Coastal dunes, Coastal scrub/sandy/ annual herb/ Mar-Jun/ 3-1001	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	Del Mar manzanita	FE/ None/ 1B.1/ Covered	Chaparral(maritime, sandy)/ perennial evergreen shrub/ Dec-Jun/ 0-1198	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Arctostaphylos otayensis</i>	Otay manzanita	None/ None/ 1B.2/ Covered	Chaparral, Cismontane woodland/metavolcanic/ perennial evergreen shrub/ Jan-Apr/ 902-5577	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Artemisia palmeri</i>	San Diego sagewort	None/ None/ 4.2/ None	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland/sandy, mesic/ perennial deciduous shrub/ (Feb),May-Sep/ 49-3002	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Asplenium vespertinum</i>	western spleenwort	None/ None/ 4.2/ None	Chaparral, Cismontane woodland, Coastal scrub/rocky/ perennial rhizomatous herb/ Feb-Jun/ 591-3281	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Astragalus tener</i> var. <i>titi</i>	coastal dunes milk-vetch	FE/ CE/ 1B.1/ Narrow endemic	Coastal bluff scrub(sandy), Coastal dunes, Coastal prairie(mesic)/often vernal mesic areas/ annual herb/ Mar-May/ 3-164	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Atriplex coulteri</i>	Coulter's saltbush	None/ None/ 1B.2/ None	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland/alkaline or clay/ perennial herb/ Mar-Oct/ 10-1509	Not expected to occur. No suitable vegetation present.
<i>Atriplex pacifica</i>	South Coast saltscale	None/ None/ 1B.2/ None	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/ annual herb/ Mar-Oct/ 0-459	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Atriplex parishii</i>	Parish's brittle-scale	None/ None/ 1B.1/ None	Chenopod scrub, Playas, Vernal pools/alkaline/ annual herb/ Jun-Oct/ 82-6234	Not expected to occur. No suitable vegetation present.
<i>Baccharis vanessae</i>	Encinitas baccharis	FT/ CE/ 1B.1/ Covered	Chaparral(maritime), Cismontane woodland/sandstone/ perennial deciduous shrub/ Aug-Nov/ 197-2362	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Bahiopsis laciniata</i>	San Diego County viguiera	None/ None/ 4.2/ None	Chaparral, Coastal scrub/ perennial shrub/ Feb-Jun(Aug)/ 197-2461	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Berberis nevini</i>	Nevin's barberry	FE/ CE/ 1B.1/ Covered	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub/sandy or gravelly/ perennial evergreen shrub/ Mar-Jun/ 899-2707	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/ MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Bergerocactus emoryi</i>	golden-spined cereus	None/ None/ 2B.2/ None	Closed-cone coniferous forest, Chaparral, Coastal scrub/sandy/ perennial stem succulent/ May-Jun/ 10-1296	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Bloomeria clevelandii</i>	San Diego goldenstar	None/ None/ 1B.1/ Covered	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/clay/ perennial bulbiferous herb/ Apr-May/ 164-1526	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	FT/ CE/ 1B.1/ Covered	Chaparral(openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools/often clay/ perennial bulbiferous herb/ Mar-Jun/ 82-3675	Not expected to occur. No suitable vegetation present.
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	None/ None/ 1B.1/ Covered	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Vernal pools/mesic, clay, sometimes serpentinite/ perennial bulbiferous herb/ May-Jul/ 98-5551	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Calandrinia breweri</i>	Brewer's calandrinia	None/ None/ 4.2/ None	Chaparral, Coastal scrub/sandy or loamy, disturbed sites and burns/ annual herb/ Mar-Jun/ 33-4003	Not expected to occur. No suitable vegetation present.
<i>Calochortus dunnii</i>	Dunn's mariposa lily	None/ CR/ 1B.2/ Covered	Closed-cone coniferous forest, Chaparral, Valley and foothill grassland/gabbroic or metavolcanic, rocky/ perennial bulbiferous herb/ (Feb),Apr-Jun/ 607-6004	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Camissoniopsis lewisii</i>	Lewis' evening-primrose	None/ None/ 3/ None	Coastal bluff scrub, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland/sandy or clay/ annual herb/ Mar-May(Jun)/ 0-984	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Ceanothus cyaneus</i>	Lakeside ceanothus	None/ None/ 1B.2/ Covered	Closed-cone coniferous forest, Chaparral/ perennial evergreen shrub/ Apr-Jun/ 771-2477	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Ceanothus verrucosus</i>	wart-stemmed ceanothus	None/ None/ 2B.2/ Covered	Chaparral/ perennial evergreen shrub/ Dec-May/ 3-1247	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Centromadia parryi</i> ssp. <i>australis</i>	southern tarplant	None/ None/ 1B.1/ None	Marshes and swamps(margins), Valley and foothill grassland(vernally mesic), Vernal pools/ annual herb/ May-Nov/ 0-1575	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Centromadia pungens</i> ssp. <i>laevis</i>	smooth tarplant	None/ None/ 1B.1/ None	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland/alkaline/ annual herb/ Apr-Sep/ 0-2100	Not expected to occur. No suitable vegetation present.
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	Orcutt's pincushion	None/ None/ 1B.1/ None	Coastal bluff scrub(sandy), Coastal dunes/ annual herb/ Jan-Aug/ 0-328	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Chamaebatia australis</i>	southern mountain misery	None/ None/ 4.2/ None	Chaparral(gabbroic or metavolcanic)/ perennial evergreen shrub/ Nov-May/ 984-3346	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	salt marsh bird's-beak	FE/ CE/ 1B.2/ Covered	Coastal dunes, Marshes and swamps(coastal salt)/ annual herb (hemiparasitic)/ May-Oct/ 0-98	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	FE/ CE/ 1B.1/ None	Closed-cone coniferous forest, Chaparral(maritime), Coastal scrub/sandy openings/ annual herb/ Mar-May/ 10-410	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	long-spined spineflower	None/ None/ 1B.2/ None	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools/often clay/ annual herb/ Apr-Jul/ 98-5020	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Cistanthe maritima</i>	seaside cistanthe	None/ None/ 4.2/ None	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland/sandy/ annual herb/ (Feb),Mar-Jun(Aug)/ 16-984	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Clarkia delicata</i>	delicate clarkia	None/ None/ 1B.2/ None	Chaparral, Cismontane woodland/often gabbroic/ annual herb/ Apr-Jun/ 771-3281	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Clinopodium chandleri</i>	San Miguel savory	None/ None/ 1B.2/ Covered	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland/Rocky, gabbroic or metavolcanic/ perennial shrub/ Mar-Jul/ 394-3527	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	summer holly	None/ None/ 1B.2/ None	Chaparral, Cismontane woodland/ perennial evergreen shrub/ Apr-Jun/ 98-2592	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Convolvulus simulans</i>	small-flowered morning-glory	None/ None/ 4.2/ None	Chaparral(openings), Coastal scrub, Valley and foothill grassland/clay, serpentinite seeps/ annual herb/ Mar-Jul/ 98-2297	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Corethrogyne filaginifolia</i> var. <i>incana</i>	San Diego sand aster	None/ None/ 1B.1/ None	Coastal bluff scrub, Chaparral, Coastal scrub/ perennial herb/ Jun-Sep/ 10-377	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>	Del Mar Mesa sand aster	None/ None/ 1B.1/ Covered	Coastal bluff scrub, Chaparral(maritime, openings), Coastal scrub/sandy/ perennial herb/ May-Sep/ 49-492	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Cryptantha wigginsii</i>	Wiggins' cryptantha	None/ None/ 1B.2/ None	Coastal scrub/often clay/ annual herb/ Feb-Jun/ 66-902	Not expected to occur. No suitable vegetation present.
<i>Cylindropuntia californica</i> var. <i>californica</i>	snake cholla	None/ None/ 1B.1/ Narrow endemic	Chaparral, Coastal scrub/ perennial stem succulent/ Apr-May/ 98-492	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Deinandra conjugens</i>	Otay tarplant	FT/ CE/ 1B.1/ Narrow endemic	Coastal scrub, Valley and foothill grassland/clay/ annual herb/ May-Jun/ 82-984	Not expected to occur. No suitable vegetation present.
<i>Dichondra occidentalis</i>	western dichondra	None/ None/ 4.2/ None	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/ perennial rhizomatous herb/ (Jan),Mar-Jul/ 164-1640	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Dicranostegia orcuttiana</i>	Orcutt's bird's-beak	None/ None/ 2B.1/ Covered	Coastal scrub/ annual herb (hemiparasitic)/ (Mar),Apr-Jul(Sep)/ 33-1148	Not expected to occur. No suitable vegetation present.

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya	None/ None/ 1B.1/ None	Coastal bluff scrub, Chaparral, Coastal scrub, Valley and foothill grassland/rocky, often clay or serpentinite/ perennial herb/ Apr-Jun/ 16-1476	Not expected to occur. No suitable vegetation present.
<i>Dudleya brevifolia</i>	short-leaved dudleya	None/ CE/ 1B.1/ Narrow endemic	Chaparral(maritime, openings), Coastal scrub/Torrey sandstone/ perennial herb/ Apr-May/ 98-820	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Dudleya variegata</i>	variegated dudleya	None/ None/ 1B.2/ Narrow endemic	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools/clay/ perennial herb/ Apr-Jun/ 10-1903	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Dudleya viscida</i>	sticky dudleya	None/ None/ 1B.2/ Covered	Coastal bluff scrub, Chaparral, Cismontane woodland, Coastal scrub/rocky/ perennial herb/ May-Jun/ 33-1804	Not expected to occur. No suitable vegetation present.
<i>Ericameria palmeri</i> var. <i>palmeri</i>	Palmer's goldenbush	None/ None/ 1B.1/ Covered	Chaparral, Coastal scrub/mesic/ perennial evergreen shrub/ (Jul),Sep-Nov/ 98-1969	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	FE/ CE/ 1B.1/ Covered	Coastal scrub, Valley and foothill grassland, Vernal pools/mesic/ annual / perennial herb/ Apr-Jun/ 66-2034	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Erysimum ammophilum</i>	sand-loving wallflower	None/ None/ 1B.2/ Covered	Chaparral(maritime), Coastal dunes, Coastal scrub/sandy, openings/ perennial herb/ Feb-Jun/ 0-197	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Euphorbia misera</i>	cliff spurge	None/ None/ 2B.2/ None	Coastal bluff scrub, Coastal scrub, Mojavean desert scrub/rocky/ perennial shrub/ Dec-Aug(Oct)/ 33-1640	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Ferocactus viridescens</i>	San Diego barrel cactus	None/ None/ 2B.1/ Covered	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/ perennial stem succulent/ May-Jun/ 10-1476	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Frankenia palmeri</i>	Palmer's frankenia	None/ None/ 2B.1/ None	Coastal dunes, Marshes and swamps(coastal salt), Playas/ perennial herb/ May-Jul/ 0-33	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Geothallus tuberosus</i>	Campbell's liverwort	None/ None/ 1B.1/ None	Coastal scrub(mesic), Vernal pools/soil/ ephemeral liverwort/ N.A./ 33-1969	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Githopsis diffusa</i> ssp. <i>filicaulis</i>	Mission Canyon bluecup	None/ None/ 3.1/ None	Chaparral(mesic, disturbed areas)/ annual herb/ Apr-Jun/ 1476-2297	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Grindelia hallii</i>	San Diego gumplant	None/ None/ 1B.2/ None	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland/ perennial herb/ May-Oct/ 607-5725	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	None/ None/ 4.2/ None	Chaparral, Coastal scrub, Valley and foothill grassland/clay/ annual herb/ Mar-May/ 66-3133	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Hazardia orcuttii</i>	Orcutt's hazardia	FC/ CT/ 1B.1/ None	Chaparral(maritime), Coastal scrub/often clay/ perennial evergreen shrub/ Aug-Oct/ 262-279	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Hesperocyparis forbesii</i>	Tecate cypress	None/ None/ 1B.1/ Covered	Closed-cone coniferous forest, Chaparral/clay, gabbroic or metavolcanic/ perennial evergreen tree/ N.A./ 262-4921	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	beach goldenaster	None/ None/ 1B.1/ None	Chaparral(coastal), Coastal dunes, Coastal scrub/ perennial herb/ Mar-Dec/ 0-4019	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Holocarpha virgata</i> ssp. <i>elongata</i>	graceful tarplant	None/ None/ 4.2/ None	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/ annual herb/ May-Nov/ 197-3609	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Hordeum intercedens</i>	vernal barley	None/ None/ 3.2/ None	Coastal dunes, Coastal scrub, Valley and foothill grassland(saline flats and depressions), Vernal pools/ annual herb/ Mar-Jun/ 16-3281	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Isocoma menziesii</i> var. <i>decumbens</i>	decumbent goldenbush	None/ None/ 1B.2/ None	Chaparral, Coastal scrub(sandy, often in disturbed areas)/ perennial shrub/ Apr-Nov/ 33-443	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Iva hayesiana</i>	San Diego marsh-elder	None/ None/ 2B.2/ None	Marshes and swamps, Playas/ perennial herb/ Apr-Oct/ 33-1640	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	southwestern spiny rush	None/ None/ 4.2/ None	Coastal dunes(mesic), Meadows and seeps(alkaline seeps), Marshes and swamps(coastal salt)/ perennial rhizomatous herb/ (Mar),May-Jun/ 10-2953	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None/ None/ 1B.1/ None	Marshes and swamps(coastal salt), Playas, Vernal pools/ annual herb/ Feb-Jun/ 3-4003	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Lepechinia cardiophylla</i>	heart-leaved pitcher sage	None/ None/ 1B.2/ Covered	Closed-cone coniferous forest, Chaparral, Cismontane woodland/ perennial shrub/ Apr-Jul/ 1706-4495	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Lepechinia ganderi</i>	Gander's pitcher sage	None/ None/ 1B.3/ Covered	Closed-cone coniferous forest, Chaparral, Coastal scrub, Valley and foothill grassland/Gabbroic or metavolcanic/ perennial shrub/ Jun-Jul/ 1001-3297	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	None/ None/ 4.3/ None	Chaparral, Coastal scrub/ annual herb/ Jan-Jul/ 3-2904	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Leptosyne maritima</i>	sea dahlia	None/ None/ 2B.2/ None	Coastal bluff scrub, Coastal scrub/ perennial herb/ Mar-May/ 16-492	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Lycium californicum</i>	California box-thorn	None/ None/ 4.2/ None	Coastal bluff scrub, Coastal scrub/ perennial shrub/ (Dec),Mar-Aug/ 16-492	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Microseris douglasii</i> ssp. <i>platycarpha</i>	small-flowered microseris	None/ None/ 4.2/ None	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools/clay/ annual herb/ Mar-May/ 49-3510	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Mimulus aurantiacus</i> var. <i>aridus</i>	low bush monkeyflower	None/ None/ 4.3/ None	Chaparral(rocky), Sonoran desert scrub/ perennial evergreen shrub/ Apr-Jul/ 2461-3937	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Mimulus diffusus</i>	Palomar monkeyflower	None/ None/ 4.3/ None	Chaparral, Lower montane coniferous forest/sandy or gravelly/ annual herb/ Apr-Jun/ 4003-6004	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Mobergia calculiformis</i>	light gray lichen	// 3/ None	Coastal scrub(?)/On rocks/ crustose lichen (saxicolous)/ N.A./ 33-33	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Monardella hypoleuca</i> ssp. <i>lanata</i>	felt-leaved monardella	None/ None/ 1B.2/ Covered	Chaparral, Cismontane woodland/ perennial rhizomatous herb/ Jun-Aug/ 984-5167	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Monardella viminea</i>	willow monardella	FE/ CE/ 1B.1/ Covered	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland/alluvial ephemeral washes/ perennial herb/ Jun-Aug/ 164-738	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/ MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Myosurus minimus</i> ssp. <i>apus</i>	little mousetail	None/ None/ 3.1/ None	Valley and foothill grassland, Vernal pools(alkaline)/ annual herb/ Mar-Jun/ 66-2100	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Navarretia fossalis</i>	spreading navarretia	FT/ None/ 1B.1/ Narrow endemic	Chenopod scrub, Marshes and swamps(assorted shallow freshwater), Playas, Vernal pools/ annual herb/ Apr-Jun/ 98-2149	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Navarretia prostrata</i>	prostrate vernal pool navarretia	None/ None/ 1B.1/ None	Coastal scrub, Meadows and seeps, Valley and foothill grassland(alkaline), Vernal pools/Mesic/ annual herb/ Apr-Jul/ 49-3970	Not expected to occur. No suitable vegetation present.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	coast woolly-heads	None/ None/ 1B.2/ None	Coastal dunes/ annual herb/ Apr-Sep/ 0-328	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Nolina interrata</i>	Dehesa nolina	None/ CE/ 1B.1/ Covered	Chaparral(gabbroic, metavolcanic, or serpentinite)/ perennial herb/ Jun-Jul/ 607-2805	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Ophioglossum californicum</i>	California adder's-tongue	None/ None/ 4.2/ None	Chaparral, Valley and foothill grassland, Vernal pools(margins)/mesic/ perennial rhizomatous herb/ (Dec),Jan-Jun/ 197-1722	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Orcuttia californica</i>	California Orcutt grass	FE/ CE/ 1B.1/ Narrow endemic	Vernal pools/ annual herb/ Apr-Aug/ 49-2165	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Orobanche parishii</i> ssp. <i>brachyloba</i>	short-lobed broomrape	None/ None/ 4.2/ None	Coastal bluff scrub, Coastal dunes, Coastal scrub/sandy/ perennial herb (parasitic)/ Apr-Oct/ 10-1001	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Packera ganderi</i>	Gander's ragwort	None/ CR/ 1B.2/ Covered	Chaparral(burns, gabbroic outcrops)/ perennial herb/ Apr-Jun/ 1312-3937	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Pentachaeta aurea</i> ssp. <i>aurea</i>	golden-rayed pentachaeta	None/ None/ 4.2/ None	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland, Valley and foothill grassland/ annual herb/ Mar-Jul/ 262-6070	Not expected to occur. No suitable vegetation present.
<i>Phacelia ramosissima</i> var. <i>australitoralis</i>	south coast branching phacelia	None/ None/ 3.2/ None	Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps(coastal salt)/sandy, sometimes rocky/ perennial herb/ Mar-Aug/ 16-984	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Phacelia stellaris</i>	Brand's star phacelia	FC/ None/ 1B.1/ None	Coastal dunes, Coastal scrub/ annual herb/ Mar-Jun/ 3-1312	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Pinus torreyana</i> ssp. <i>torreyana</i>	Torrey pine	None/ None/ 1B.2/ Covered	Closed-cone coniferous forest, Chaparral/Sandstone/ perennial evergreen tree/ N.A./ 246-525	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Piperia cooperi</i>	chaparral rein orchid	None/ None/ 4.2/ None	Chaparral, Cismontane woodland, Valley and foothill grassland/ perennial herb/ Mar-Jun/ 49-5200	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Pogogyne abramsii</i>	San Diego mesa mint	FE/ CE/ 1B.1/ Narrow endemic	Vernal pools/ annual herb/ Mar-Jul/ 295-656	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Pogogyne nudiuscula</i>	Otay Mesa mint	FE/ CE/ 1B.1/ Narrow endemic	Vernal pools/ annual herb/ May-Jul/ 295-820	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Quercus dumosa</i>	Nuttall's scrub oak	None/ None/ 1B.1/ None	Closed-cone coniferous forest, Chaparral, Coastal scrub/sandy, clay loam/ perennial evergreen shrub/ Feb-Apr(Aug)/ 49-1312	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Quercus engelmannii</i>	Engelmann oak	None/ None/ 4.2/ None	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland/ perennial deciduous tree/ Mar-Jun/ 164-4265	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Rosa minutifolia</i>	small-leaved rose	None/ CE/ 2B.1/ Covered	Chaparral, Coastal scrub/ perennial deciduous shrub/ Jan-Jun/ 492-525	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Salvia munzii</i>	Munz's sage	None/ None/ 2B.2/ None	Chaparral, Coastal scrub/ perennial evergreen shrub/ Feb-Apr/ 377-3494	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Selaginella cinerascens</i>	ashy spike-moss	None/ None/ 4.1/ None	Chaparral, Coastal scrub/ perennial rhizomatous herb/ N.A./ 66-2100	Not observed, would have been detected during surveys if present. This species occurs within the vicinity <sup>2</sup> .
<i>Senecio aphanactis</i>	chaparral ragwort	None/ None/ 2B.2/ None	Chaparral, Cismontane woodland, Coastal scrub/sometimes alkaline/ annual herb/ Jan-Apr/ 49-2625	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Sphaerocarpos drewei</i>	bottle liverwort	None/ None/ 1B.1/ None	Chaparral, Coastal scrub/openings, soil/ ephemeral liverwort/ N.A./ 295-1969	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Stemodia durantifolia</i>	purple stemodia	None/ None/ 2B.1/ None	Sonoran desert scrub(often mesic, sandy)/ perennial herb/ Jan-Dec/ 591-984	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
<i>Stipa diegoensis</i>	San Diego County needle grass	None/ None/ 4.2/ None	Chaparral, Coastal scrub/rocky, often mesic/ perennial herb/ Feb-Jun/ 33-2625	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Stylocline citroleum</i>	oil neststraw	None/ None/ 1B.1/ None	Chenopod scrub, Coastal scrub, Valley and foothill grassland/clay/ annual herb/ Mar-Apr/ 164-1312	Not expected to occur. No suitable vegetation present.

## APPENDIX C (Continued)

Scientific Name	Common Name	Status (Federal/State/CRPR/MSCP) <sup>1</sup>	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Suaeda esteroa</i>	estuary seablite	None/ None/ 1B.2/ None	Marshes and swamps(coastal salt)/ perennial herb/ May-Oct(Jan)/ 0-16	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Suaeda taxifolia</i>	woolly seablite	None/ None/ 4.2/ None	Coastal bluff scrub, Coastal dunes, Marshes and swamps(margins of coastal salt)/ perennial evergreen shrub/ Jan-Dec/ 0-164	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Tetracoccus dioicus</i>	Parry's tetraococcus	None/ None/ 1B.2/ Covered	Chaparral, Coastal scrub/ perennial deciduous shrub/ Apr-May/ 541-3281	Not observed, would have been detected during surveys if present. The site is outside the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Texosporium sancti-jacobi</i>	woven-spored lichen	None/ None/ 3/ None	Chaparral(openings)/On soil, small mammal pellets, dead twigs, and on Selaginella spp/ crustose lichen (terricolous)/ N.A./ 951-2165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Xanthisma junceum</i>	rush-like bristleweed	None/ None/ 4.3/ None	Chaparral, Coastal scrub/ perennial herb/ Jun-Jan/ 787-3281	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.

<sup>1</sup> Status Designations  
**Federal Designations:**  
 FE: Federally listed as endangered  
 FT: Federally listed as threatened  
 FC: Federal Candidate for listing  
 DL: Delisted  
**State Designations:**  
 CE: State listed as endangered

## APPENDIX C (Continued)

---

CT: State listed as threatened

CR: State Rare

**California Native Plant Society Designations:**

CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere

CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere

CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

CRPR 3: Plants About Which More Information is Needed - A Review List

CRPR 4: Plants of Limited Distribution - A Watch List

.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

**MSCP Designations:**

MSCP :City of San Diego MSCP Subarea Plan covered species (*San Diego MSCP Subarea Plan Covered Species List* Section 1.3)

<sup>2</sup> Vicinity refers to species occurring within the Del Mar quadrangle.

## REFERENCES

CDFW (California Department of Fish and Wildlife). 2015. *RareFind*, Version 5.0. California Natural Diversity Database (CNDDDB). Accessed July 2015. <http://www.dfg.ca.gov/biogeodata/cnddb/rarefind.asp>.

CNPS (California Native Plant Society). 2015. *Inventory of Rare and Endangered Plants*. Online ed. Version 8-02. Sacramento, California: CNPS. Accessed July 2015. <http://www.rareplants.cnps.org>.

# **APPENDIX D**

*Special-Status Wildlife Species Potential to Occur  
on the Project Site*



## APPENDIX D

### Special-Status Wildlife Species Potential to Occur on the Project Site

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
<i>Amphibians</i>				
California red-legged frog	<i>Rana draytonii</i>	FT/ SSC/ Covered	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable habitat present.
western spadefoot	<i>Spea hammondi</i>	None/ SSC/ None	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley-foothill woodlands, pastures, and other agriculture	Not expected to occur. No suitable habitat present. This species occurs within the vicinity <sup>2</sup> .
arroyo toad	<i>Anaxyrus californicus</i>	FE/ SSC/ Covered	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically 3rd order); adjacent stream terraces and uplands for foraging and wintering	Not expected to occur. No suitable habitat present.
<i>Reptiles</i>				
western pond turtle	<i>Actinemys marmorata</i>	None/ SSC/ Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Not expected to occur. There is no suitable aquatic habitat or vegetation present.
coast patch-nosed snake	<i>Salvadora hexalepis virgulata</i>	None/ SSC/ None	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	Not expected to occur. No suitable vegetation present.
orangethroat whiptail	<i>Aspidoscelis hyperythra</i>	None/ SSC/ Covered	Low-elevation coastal scrub, chaparral, and valley-foothill hardwood	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
Coronado Island skink	<i>Plestiodon skiltonianus interparietalis</i>	None/ SSC/ None	Woodlands, grasslands, pine forests, chaparral; rocky areas near water	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
San Diego ringneck snake	<i>Diadophis punctatus similis</i>	None/ None/ None	Moist habitats including wet meadows, rocky hillsides, gardens, farmland grassland, chaparral, mixed conifer forest, and woodland habitats	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
Blainville's horned lizard	<i>Phrynosoma blainvillii</i>	None/ SSC/ Covered	Open areas of sandy soil in valleys, foothills and semi-arid mountains including coastal scrub, chaparral, valley-foothill hardwood, conifer, riparian, pine-cypress, juniper and annual grassland	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
red diamondback rattlesnake	<i>Crotalus ruber</i>	None/ SSC/ None	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Not expected to occur. No suitable vegetation present.
San Diegan tiger whiptail	<i>Aspidoscelis tigris stejnegeri</i>	None/ None/ None	Open areas in semiarid grasslands, scrublands, and woodlands	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
two-striped gartersnake	<i>Thamnophis hammondi</i>	None/ SSC/ None	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not expected to occur. No suitable habitat or vegetation present.
<i>Birds</i>				
burrowing owl	<i>Athene cunicularia</i> (burrow sites & some wintering sites)	BCC/ SSC/ Covered	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows.	Not expected to occur. No suitable burrows or habitat present. The site is small, regularly disked and is generally devoid of vegetation. This species occurs within the vicinity <sup>2</sup> .
California black rail	<i>Laterallus jamaicensis coturniculus</i>	BCC/ ST, FP/ None	Tidal marshes, shallow freshwater margins, wet meadows and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra foothill populations	Not expected to occur. No suitable aquatic habitat or vegetation present. This species occurs within the vicinity <sup>2</sup> .
ferruginous hawk	<i>Buteo regalis</i> (wintering)	BCC/ WL/ Covered	Winters and forages in open, dry country, grasslands, open fields, agriculture	Not expected to occur. The site is small, and no suitable vegetation for wintering habitat is present.

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
northern harrier	<i>Circus cyaneus</i> (nesting)	None/ SSC/ Covered	Nests in open wetlands including marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes, but also in drier habitats such as grassland and grain fields; forages in variety of habitats, including grassland, scrubs, rangelands, emergent wetlands, and other open habitats	Not expected to occur. The site is small, regularly disked, and generally devoid of vegetation. No suitable vegetation present.
Swainson's hawk	<i>Buteo swainsoni</i> (nesting)	BCC/ ST/ Covered	Nests in open woodland and savanna, riparian and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable vegetation present.
tricolored blackbird	<i>Agelaius tricolor</i> (nesting colony)	BCC/ SSC/ Covered	Nests near fresh water, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	Not expected to occur. No suitable aquatic habitat or vegetation present.
yellow warbler	<i>Setophaga petechia</i> (nesting)	BCC/ SSC/ None	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine and mixed conifer habitats	Not expected to occur. No suitable vegetation present.
American peregrine falcon	<i>Falco peregrinus anatum</i> (nesting)	FDL/ SDL, FP/ Covered	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	Not expected to occur. No suitable vegetation present.
bald eagle	<i>Haliaeetus leucocephalus</i> (nesting & wintering)	FDL, BCC/ SE, FP/ Covered	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	Not expected to occur. No suitable aquatic habitat or vegetation present.
Cooper's hawk	<i>Accipiter cooperii</i> (nesting)	None/ WL/ Covered	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Not expected to occur. No suitable vegetation present.
coastal cactus wren	<i>Campylorhynchus brunneicapillus sandiegensis</i> (San Diego & Orange Counties only)	BCC/ SSC/ Covered	Southern cactus scrub patches	Not expected to occur. No suitable vegetation present.
coastal California gnatcatcher	<i>Polioptila californica californica</i>	FT/ SSC/ Covered	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 ft in elevation	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
least Bell's vireo	<i>Vireo bellii pusillus</i> (nesting)	FE/ SE/ Covered	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
southwestern willow flycatcher	<i>Empidonax traillii extimus</i> (nesting)	FE/ SE/ Covered	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to occur. No suitable vegetation present.
white-tailed kite	<i>Elanus leucurus</i> (nesting)	None/ FP/ None	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
yellow-breasted chat	<i>Icteria virens</i> (nesting)	None/ SSC/ None	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles and dense brush	Not expected to occur. No suitable vegetation present.
golden eagle	<i>Aquila chrysaetos</i> (nesting & wintering)	BCC/ FP, WL/ Covered	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Not expected to occur. No suitable vegetation present.
prairie falcon	<i>Falco mexicanus</i> (nesting)	BCC/ WL/ None	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Not expected to occur. No suitable vegetation present.
southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	None/ WL/ Covered	Nests and forages open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
Belding's savannah sparrow	<i>Passerculus sandwichensis beldingi</i>	None/ SE/ Covered	Nests and forages in coastal saltmarsh dominated by pickleweed	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
Bell's sage sparrow	<i>Artemisiospiza belli belli</i>	BCC/ WL/ None	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
California brown pelican	<i>Pelecanus occidentalis californicus</i> (nesting colonies & communal roosts)	FDL/ SDL, FP/ Covered	Forage in warm coastal marine and estuarine environments; in California, nests on dry, rocky offshore islands	Not expected to occur. No suitable aquatic habitat or vegetation present.
California horned lark	<i>Eremophila alpestris actia</i>	None/ WL/ None	Nests and forages in grasslands disturbed lands, agriculture, and beaches; nests in alpine fell fields of the high Sierra	Low potential to occur. The site is regularly disked which would preclude nesting of this species. This species occurs within the vicinity <sup>2</sup> .
California least tern	<i>Sternula antillarum browni</i> (nesting colony)	FE/ SE, FP/ Covered	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flat	Not expected to occur. No suitable aquatic habitat or vegetation present. This species occurs within the vicinity <sup>2</sup> .
elegant tern	<i>Thalasseus elegans</i> (nesting colony)	None/ WL/ Covered	Inshore coastal waters, bays, estuaries and harbors; forages over open water	Not expected to occur. No suitable aquatic habitat or vegetation present.
large-billed savannah sparrow	<i>Passerculus sandwichensis rostratus</i> (wintering)	None/ SSC/ Covered	Nests and forages in open, low saltmarsh vegetation including low halophytic scrub	Not expected to occur. No suitable vegetation present.
least bittern	<i>Ixobrychus exilis</i> (nesting)	BCC/ SSC/ None	Nests in freshwater and brackish marshes with dense, tall growths of aquatic and semi-aquatic vegetation	Not expected to occur. No suitable aquatic habitat or vegetation present.
long-billed curlew	<i>Numenius americanus</i> (nesting)	BCC/ WL/ Covered	Nests in grazed, mixed grass, and short-grass prairies. Localized nesting along the California coast; winters and forages in coastal estuaries, mudflats, open grassland and cropland	Not expected to occur. No suitable aquatic habitat or vegetation present.
mountain plover	<i>Charadrius montanus</i> (wintering)	BCC/ SSC/ Covered	Winters in shortgrass prairies, plowed fields, open sagebrush and sandy deserts	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable vegetation present.

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
western snowy plover	<i>Charadrius nivosus nivosus</i> (nesting)	FT, BCC/ SSC/ Covered	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable aquatic habitat or vegetation present. This species occurs within the vicinity <sup>2</sup> .
western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i> (nesting)	FT, BCC/ SE/ None	Nests dense, wide riparian woodlands and forest with well-developed understories	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable vegetation present.
white-faced ibis	<i>Plegadis chihi</i> (nesting colony)	None/ WL/ Covered	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields and estuaries	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable aquatic habitat or vegetation present.
Canada goose	<i>Branta canadensis</i>	None/ None/ Covered	Lakes, rivers, ponds, and other bodies of water; yards, park lawns, and agricultural fields	Not expected to occur. No suitable vegetation present.
reddish egret	<i>Egretta rufescens</i>	None/ None/ Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily nest and forage in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	Not expected to occur. No suitable aquatic habitat or vegetation present.
western bluebird	<i>Sialia mexicana</i>	None/ None/ Covered	Nests in old-growth red fir, mixed conifer, lodegpole pine habitats near wet meadows used for foraging	Not expected to occur. No suitable vegetation present.
Ridgway's rail	<i>Rallus obsoletus levipes</i>	FE/ SE, FP/ Covered	Coastal wetlands, brackish areas, coastal saline emergent wetlands	Not expected to occur. No suitable aquatic habitat or vegetation present. This species occurs within the vicinity <sup>2</sup> .
<i>Mammals</i>				
Pacific pocket mouse	<i>Perognathus longimembris pacificus</i>	FE/ SSC/ None	Fine-grain sandy substrates in open coastal strand, coastal dunes and river alluvium	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
San Diego desert woodrat	<i>Neotoma lepida intermedia</i>	None/ SSC/ None	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
big free-tailed bat	<i>Nyctinomops macrotis</i>	None/ SSC/ None	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
pallid bat	<i>Antrozous pallidus</i>	None/ SSC/ None	Grasslands, shrublands, woodlands, forests; most common in open dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	Not expected to occur. No suitable vegetation present.
Yuma myotis	<i>Myotis yumanensis</i>	None/ None/ None	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers); roosts in bridges, buildings, cliff crevices, caves, mines, and trees	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
American badger	<i>Taxidea taxus</i>	None/ SSC/ Covered	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, pastures, especially with friable soils	Not expected to occur. The site is very small, routinely disked, and surrounded by development. No suitable vegetation present.
Dulzura pocket mouse	<i>Chaetodipus californicus femoralis</i>	None/ SSC/ None	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed conifer habitats; disturbance specialist; 0 to 3,000 ft	Not expected to occur. No suitable vegetation present.
hoary bat	<i>Lasiurus cinereus</i>	None/ None/ None	Forest, woodland riparian, and wetland habitats, also juniper scrub, riparian forest, and desert scrub in arid areas; roosts in tree foliage and sometimes cavities, such as woodpecker holes	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
Mexican long-tongued bat	<i>Choeronycteris mexicana</i>	None/ SSC/ None	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland; roosts in caves, mines, and buildings	Not expected to occur. No suitable vegetation present.

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
northwestern San Diego pocket mouse	<i>Chaetodipus fallax fallax</i>	None/ SSC/ None	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	None/ SSC/ None	Pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, palm oases; roosts in high cliffs or rock outcrops with dropoffs, caverns, buildings	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	None/ SSC/ None	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	Low potential to occur. The site is small, regularly disked and is lacking vegetation for cover. This species occurs within the vicinity <sup>2</sup> .
silver-haired bat	<i>Lasiorycteris noctivagans</i>	None/ None/ None	Old growth forest, maternity roosts in trees (primarily woodpecker hollows), large diameter snags 50 ft above ground; hibernates in hollow trees, under sloughing bark, in rock crevices, and occasionally in buildings, mines and caves; forages in or near coniferous or mixed deciduous forest, often following stream or river drainages	Not expected to occur. No suitable vegetation present.
spotted bat	<i>Euderma maculatum</i>	None/ SSC/ None	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	None/ SC, SSC/ None	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, also man-made structures and tunnels	Not expected to occur. No suitable vegetation present.
western mastiff bat	<i>Eumops perotis californicus</i>	None/ SSC/ None	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees and tunnels	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
western red bat	<i>Lasiurus blossevillii</i>	None/ SSC/ None	Forest, woodland, riparian, mesquite bosque and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
western yellow bat	<i>Lasiurus xanthinus</i>	None/ SSC/ None	Valley foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 ft; roost in riparian and palms	Not expected to occur. No suitable vegetation present.
cougar	<i>Puma concolor</i>	None/ None/ Covered	Scrubs, chaparral, riparian, woodland, forest; rests in rocky area, and on cliffs and ledges that provide cover; most abundant in riparian area and brushy stages of most habitats throughout California, except deserts	Not expected to occur. No suitable vegetation present.
mule deer	<i>Odocoileus hemionus</i>	None/ None/ Covered	Coastal sage scrub, chaparral, riparian, woodlands, forest; often browses in open area adjacent to cover throughout California, except deserts and intensely farmed area.	Not expected to occur. No suitable vegetation present.
<i>Invertebrates</i>				
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	FE/ None/ Covered	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No suitable vegetation or depressions are present.
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	FE/ None/ Covered	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No suitable vegetation or depressions are present. This species occurs within the vicinity <sup>2</sup> .
globose dune beetle	<i>Coelus globosus</i>	None/ None/ None	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico.	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
mesa shoulderband	<i>Helminthoglypta coelata</i>	None/ None/ None	Known only from a few locations in coastal San Diego County.	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable vegetation present.

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
mimic tryonia (=California brackishwater snail)	<i>Tryonia imitator</i>	None/ None/ None	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County.	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
sandy beach tiger beetle	<i>Cicindela hirticollis gravida</i>	None/ None/ None	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico.	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
senile tiger beetle	<i>Cicindela senilis frosti</i>	None/ None/ None	Inhabits marine shoreline, from Central California coast south to salt marshes of San Diego. Also found at Lake Elsinore	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
Thorne's hairstreak	<i>Callophrys thornei</i>	None/ None/ Covered	Interior cypress woodland dominated by host plant <i>Hesperocyparis forbesii</i> (Tecate cypress)	Not expected to occur. No suitable vegetation present.
western beach tiger beetle	<i>Cicindela latesignata latesignata</i>	None/ None/ None	Mudflats and beaches in coastal Southern California.	Not expected to occur. The site is outside of the species' known geographic range and there is no suitable vegetation present.
California mellitid bee	<i>Melitta californica</i>	None/ None/ None	Desert regions of SW Arizona, SE California, and Baja California, Mexico. Also collected from Torrey Pines, San Diego Co	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
Hermes copper	<i>Lycaena hermes</i>	FC/ None/ None	Mixed woodlands, chaparral and coastal scrub	Not expected to occur. No suitable vegetation present.
Monarch	<i>Danus plexippus</i>	None/ None/ None	Wind-protected tree groves with nectar sources and nearby water sources	Not expected to occur. No suitable vegetation present. This species occurs within the vicinity <sup>2</sup> .
quino checkerspot	<i>Euphydryas editha quino</i>	FE/ None/ None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include <i>Plantago erecta</i> (dwarf plantain), <i>Antirrhinum coulterianum</i> (white snapdragon), and <i>Plantago patagonica</i> (woolly plantain) (Silverado Occurrence Complex).	Not expected to occur. No suitable vegetation present.

## APPENDIX D (Continued)

Common Name	Scientific Name	Status (Federal/ State/MSCP) <sup>1</sup>	Habitat	Potential to Occur
wandering skipper	<i>Panoquina errans</i>	None/ None/ Covered	Salt marsh	Not expected to occur. No suitable vegetation present.

- <sup>1</sup> Status Designations  
**Federal Designations:**  
 FE: Federally Endangered  
 FT: Federally Threatened  
 PFE: Proposed Federally Endangered  
 PFT: Proposed Federally Threatened  
 FC: Federal Candidate  
 FDL: Federally Delisted  
 BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern  
 BLM: Bureau of Land Management Sensitive Species  
 USFS: U.S. Forest Service Sensitive Species  
**State Designations:**  
 SSC: California Species of Special Concern  
 FP: California Fully Protected Species  
 WL: California Watch List Species  
 SE: State Endangered  
 ST: State Threatened  
 SC: State Candidate  
 SDL: State Delisted  
 SS: List Special Animals List, but no other status  
**MSCP Designations:**  
 MSCP :City of San Diego MSCP Subarea Plan covered species (*San Diego MSCP Subarea Plan Covered Species List* Section 1.3)
- <sup>2</sup> Vicinity refers to species occurring within the Del Mar quadrangle.

## REFERENCES

CDFW (California Department of Fish and Wildlife). 2015. *RareFind*, Version 5.0. California Natural Diversity Database (CNDDDB). Accessed July 2015. <http://www.dfg.ca.gov/biogeodata/cnddb/rarefind.asp>.

## APPENDIX D (Continued)

---

INTENTIONALLY LEFT BLANK



*& Associates*

*Cultural Resource Services*

15-300-024

July 22, 2015

ATTACHMENT TO CULTURAL RESOURCE LETTER REPORT UPDATE  
PREPARED BY GALLEGOS & ASSOCIATES, DATED 6.9.14

OLD PJ NAME: ROBERTS RANCH

NEW PJ NAME: MEADOW II PDP/VTM

PROJECT NUMBER: 432080

PROJECT ADDRESS: 13855 Rancho Santa Fe Farms Road, San Diego CA

APN: 305-021-05-00

This Attachment provides additional information requested by City Reviewer's comments as identified under City 1st Review, dated 7.14.15, Historical Resources 7, 8, and 9 (see City Comments and Responses provided below).

CITY COMMENT 7 - A Cultural Resource Letter Update for the Roberts Ranch Project prepared by Gallegos & Associates dated June 9, 2014 was submitted and reviewed by EAS staff. The following comments and revisions were identified; therefore, please update the Cultural Resource Letter Update to reflect the comments below:

RESPONSE: Letter Updated with this Attachment and response to Comments 8 and 9.

CITY COMMENT 8 - Please add Project No. 432080 to the Cultural Resource Letter Update

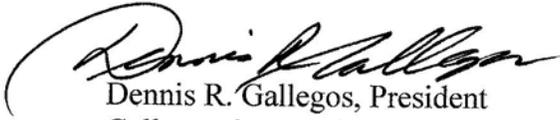
RESPONSE - See ADDED: 7:22.15 to original Cultural Resource Letter Update and this Attachment.

CITY COMMENT 9 - The Cultural Resource Letter Update, Summary section, concludes that no cultural resources were noted within the project area. The letter update further noted that the soil, where present, is shallow with disturbance throughout most of the property, especially adjacent to Carmel Valley Road on the south, and the adjacent development on the north. Please provide a determination regarding whether any additional work is required.

RESPONSE - On the basis of lack of surface artifacts or ecofacts; absence of midden; historic site disturbance (i.e., past agricultural use and grading, plowing, cutting, berm construction and disking); and past archaeological experience including cultural resource survey and testing studies conducted for Subareas III, IV and V prior to development of this region, no additional cultural resource work is recommended.

Please call or email should you have questions or need additional information.

Best regards,

A handwritten signature in black ink, appearing to read "Dennis R. Gallegos". The signature is fluid and cursive, with a large initial "D" and "G".

Dennis R. Gallegos, President

Gallegos & Associates

2908 Via Pepita

Carlsbad, CA 92009

760.929.0055 office/fax

760.845.9362 cell

[Gallegos@aol.com](mailto:Gallegos@aol.com)



*& Associates*

*Cultural Resource Services*

14-300-28  
June 09, 2014

Marc Perlman  
Marker Company  
427 S. Cedros Avenue, Suite 201  
San Diego, CA 92075

Re: Cultural Resource Letter Update for the Roberts Ranch Project

**ADDED: 7.22.15**

**OLD PJ NAME: ROBERTS RANCH**

**NEW PJ NAME: MEADOW II PDP/VTM**

**PROJECT NUMBER: 432080**

**PROJECT ADDRESS: 13855 Rancho Santa Fe Farms Road, San Diego CA**

**APN: 305-021-05-00**

### **Introduction**

Dennis Gallegos was contacted by Marc Perlman to provide a review of previous work, site visit and update for the Roberts Ranch Project. A site visit was conducted on 5.30.14 and visibility was good, as the brush was low or removed. Grading was noted throughout the lot, with a raised berm near the middle of the property, and a raised bank on the south edge of the property for Carmel Valley Road. Basal geologic formation is showing through imported surface gravels, with little to no intact soil. The Roberts Ranch property is approximately 4.5 acres in size. This parcel is located in the City of San Diego, east of Rancho Santa Fe Farms Road, and bound on the north by Rancho Santa Fe Lakes Drive and on the south by Carmel Valley Road (Figures 1 and 2). Survey results, previous work and background cultural resource history for the Roberts Ranch property is provided below.

### **Previous Work - Cultural Resource Studies**

The major cultural resource background study for Subarea III, which includes the Roberts Ranch property, is the Historical/Archaeological Survey and Test Report for North City Future Urbanizing Area (NCFUA), Subarea III, conducted by Gallegos & Associates (Strudwick et al. 1993) for 2,733 acres in North San Diego County. The record search and previous fieldwork for the Subarea III study area identified no cultural resources on the Roberts Ranch project area; and only one cultural resource site (CA-SDI-6918) located approximately 0.25 miles southwest of the Roberts Ranch project area.

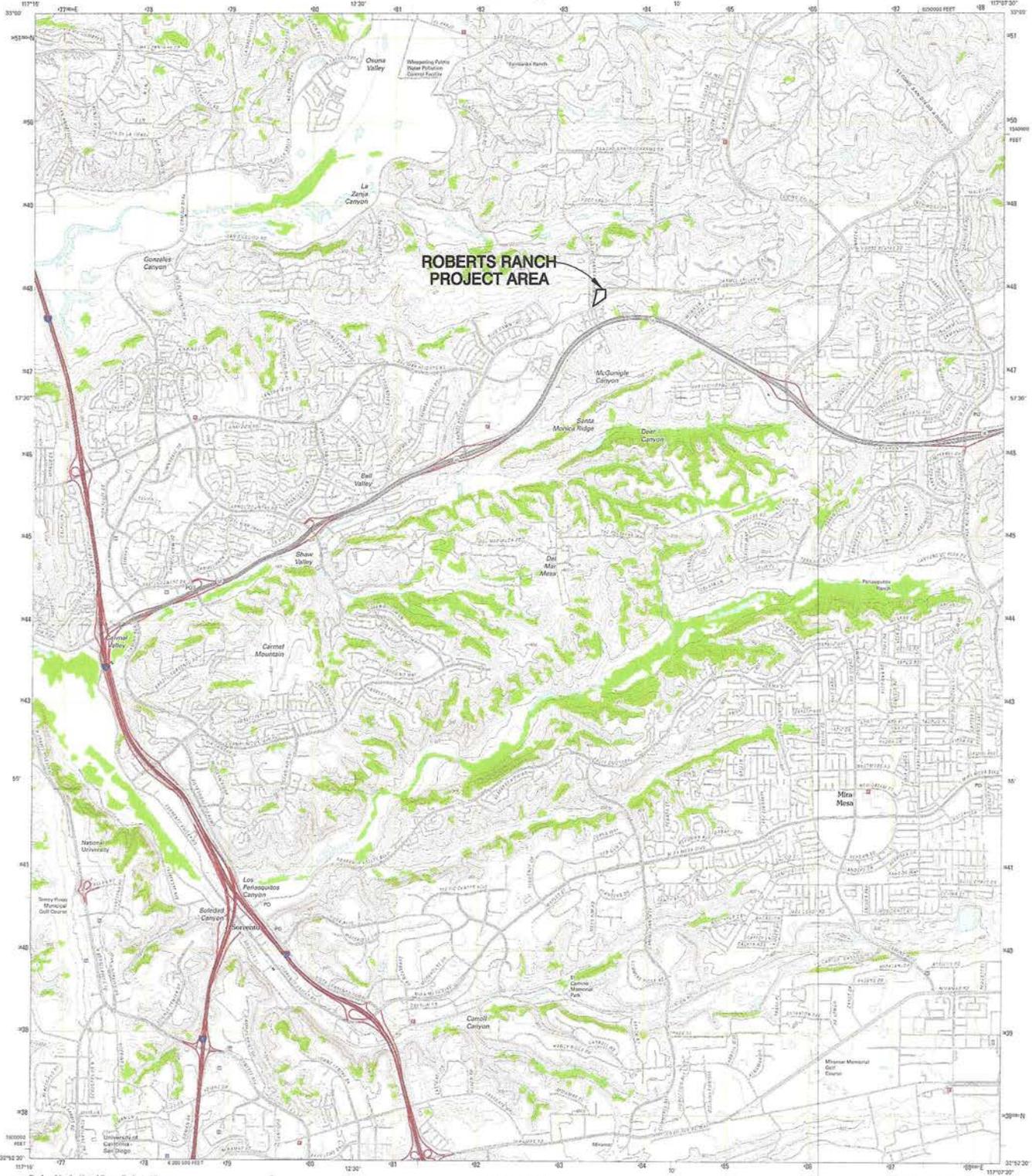
Site CA-SDI-6918 (W-2184), located off-site approximately 0.25 miles, was previously recorded by Norwood in 1979; tested by Hector in 1983, updated by Pigniolo et al. 1992; surveyed by Wade 1993; and updated by Strudwick in 1993. This site was identified by Norwood as a temporary camp with 4 cores, 1 hammerstone, 1 scraper, 10 mano fragments, debitage and fire affected rock. Hector's testing included collection of surface artifacts and



U.S. DEPARTMENT OF THE INTERIOR  
U. S. GEOLOGICAL SURVEY



DEL MAR QUADRANGLE  
CALIFORNIA-SAN DIEGO CO.  
7.5-MINUTE SERIES



**ROBERTS RANCH  
PROJECT AREA**

SCALE 1:24 000



CONTOUR INTERVAL 20 FEET  
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced in conformance with the  
National Geospatial Program (US Topographic Standard, 2011).  
A metadata file associated with this product is available at [www.usgs.gov](http://www.usgs.gov)

**ROAD CLASSIFICATION**

Interstate Route	State Route
US Route	Local Road
Alley	Other

DEL MAR, CA

Produced by the United States Geological Survey  
North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84). Projection and  
1 000-foot grid. Universal Transverse Mercator. Zone 11S  
20 000 feet from California Coordinate System of 1983.  
page 61

UNITED STATES GEOLOGICAL SURVEY  
DEPARTMENT OF THE INTERIOR

Scale	Graphic	Graphic
Scale	Graphic	Graphic
Scale	Graphic	Graphic

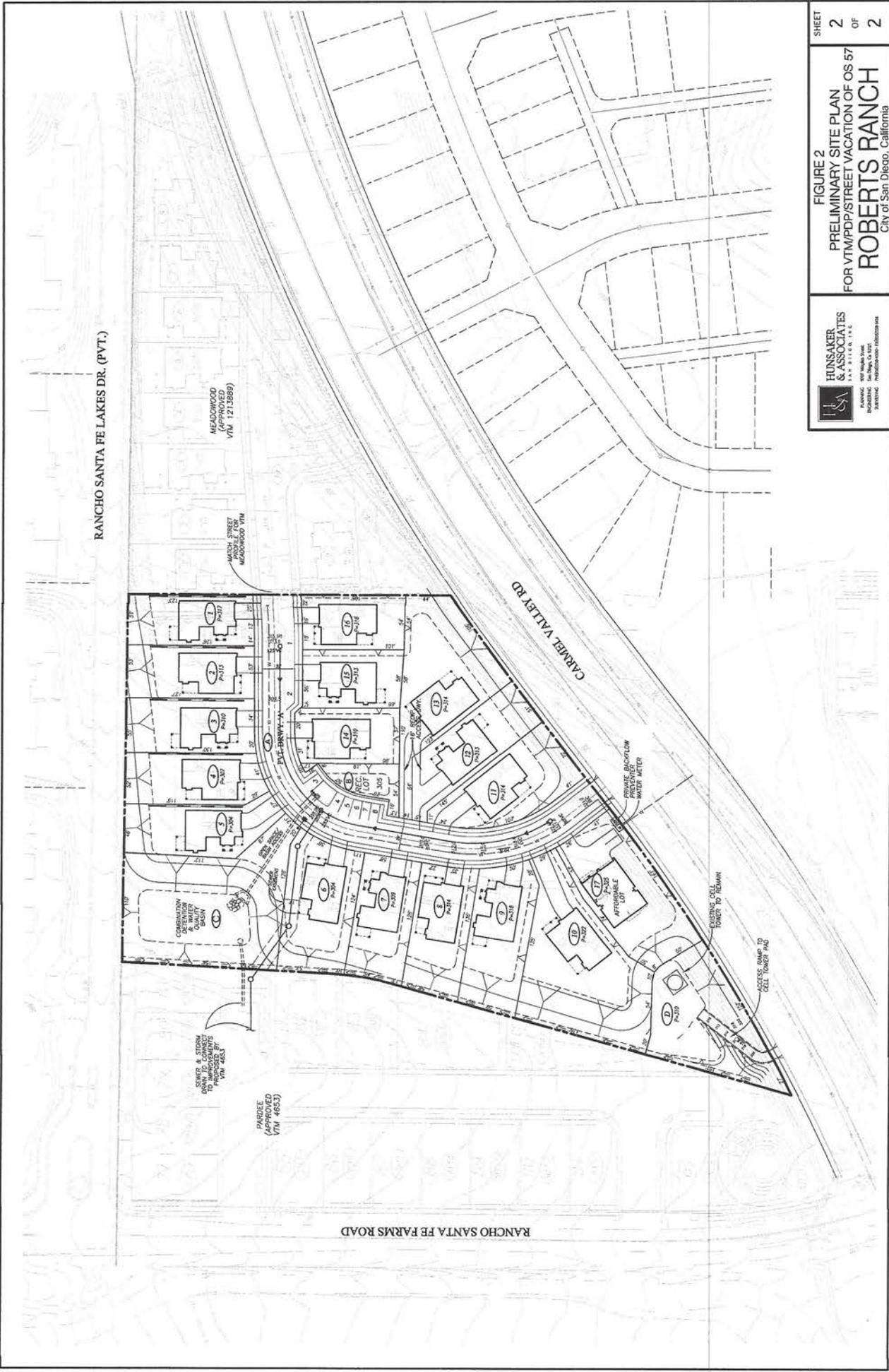
PREPARED BY:

**HUNSAKER  
& ASSOCIATES**  
SAN DIEGO, CA

PLANNING 5727 Highgate Street  
ENGINEERING San Diego, CA 92121  
SURVEYING 619.593.6300 619.593.9444

**FIGURE 1**  
**USGS SITE PLAN**  
**ROBERTS RANCH**  
CITY OF SAN DIEGO, CALIFORNIA

SHEET  
1  
OF  
1



RANCHO SANTA FE LAKES DR. (PVT.)

MEADOWS  
(APPROVED)  
VTM 1213889

MATCH STREET  
MEADOWS VTM

CARME VALLEY RD

SEWER & STORM  
DETENTION QUALITY  
IMPROVEMENT  
BASIN  
PROPOSED BY  
VTM 4653

PADBLE  
(APPROVED)  
VTM 4653

RANCHO SANTA FE FARMS ROAD

PRIVATE BACKFLOW  
PREVENTER  
W/RETRY ACTER

EXISTING CELL  
TOWER TO REMAIN

ACCESS RAMP TO  
CELL TOWER PAD

**HUNSAKER & ASSOCIATES**  
INCORPORATED  
1000 Main Street  
San Diego, CA 92101  
Tel: 619.594.1100  
Fax: 619.594.1101  
www.hunsaker.com

FIGURE 2  
PRELIMINARY SITE PLAN  
FOR VTM/PDP/STREET VACATION OF OS 57  
**ROBERTS RANCH**  
City of San Diego, California

SHEET  
2  
OF  
2

DATE: 04/24/10  
DRAWN: J. ROBERTS  
CHECKED: J. ROBERTS  
SCALE: AS SHOWN

excavation of 11 shovel test pits (STPs). Hector identified this site as not significant. Pigniolo extended the site's boundary and noted 1 mano, 1 core, 6 flakes, fire affected rock and 30+ fragments of shell. Wade's survey of a portion of CA-SDI-6918 noted one small fragment of shell. The NCFUA Subarea III report prepared by Gallegos & Associates identified a light scatter of shell and previous disturbance by grading and use of gravel for a plant nursery (Strudwick et al. 1993). As a result of testing (excavation of two 1x1 meter units in the upper central portion of site CA-SDI-6918), this site was identified as highly disturbed and not significant/important under RPO or CEQA.

### **Present Condition**

The site visit of the 4.5 acre Roberts Ranch project area identified the property disturbed by grading, plowing, cutting, berm construction in the central portion of the property, disking for weed removal, and a cell tower in the southwest corner. Visibility was excellent for the majority of the property, as weeds and grass were low, and the basal Linda Vista geologic formation was showing in some areas.

### **Summary**

Previous studies and record searches were reviewed and no cultural resources were identified within the Roberts Ranch project area. In addition, the Roberts Ranch project area was revisited, visibility was excellent, and no cultural resources were noted within the project area, supporting the previous report by Strudwick et al. 1993. It should be further noted that the soil, where present, is shallow with disturbance throughout most of the property, especially adjacent to Carmel Valley Road on the south, and the adjacent development on the north.

### **Bibliography**

Hector, Susan

1983 Archaeological Resource Assessment of Solar Properties. Report on file at San Diego State University, South Coastal Information Center.

Norwood, Richard H.

1979 Archaeological Site Record Update for CA-SDI-6918. Site record on file at San Diego State University, South Coastal Information Center.

Pigniolo, Andrew, Scott Campbell and Marla Mealey

1992 Archaeological Site Update for Site CA-SDI-6918. Site record on file at San Diego State University, South Coastal Information Center.

Strudwick, Ivan H., Roxana Phillips, and Dennis R. Gallegos

1993 Historical/Archaeological Survey and Test Report for North City Future Urbanizing Area, Subarea III, San Diego, California. Report, prepared by Gallegos & Associates, is on file at San Diego State University, South Coastal Information Center.

Wade, Sue

1993 6918 Letter Report for the Lin/Kasia Property, North City West Future Urbanizing Area. Report is on file at San Diego State University, South Coastal Information Center.

Please call or email should you have questions or need additional information.

Best regards,

A handwritten signature in black ink, appearing to read "Dennis R. Gallegos". The signature is written in a cursive style with a large initial "D" and "G".

Dennis R. Gallegos, President

Gallegos & Associates

2908 Via Pepita

Carlsbad, CA 92009

760.929.0055 office/fax

760.845.9362 cell

[Gallegos@aol.com](mailto:Gallegos@aol.com)



# AGS

**ADVANCED GEOTECHNICAL SOLUTIONS, INC.**

25109 Jefferson Avenue, Suite 20

Murrieta, California 92562

Telephone: (619) 708-1649 Fax: (714) 409-3287

**Marker Company, Inc.**  
427 S. Cedros Avenue, Suite 201  
Solana Beach, CA 92075

May 21, 2014  
P/W 1404-01  
Report 1404-01-B-2

Attention: Mr. Marc R. Perlman

Subject: Preliminary Geotechnical Investigation Bob's Corner, City of San Diego, California

References: See Appendix

Gentlemen:

In accordance with your request, presented herein are the results of Advanced Geotechnical Solutions, Inc.'s (AGS) preliminary geotechnical investigation for the Bob's Corner Project, City of San Diego, California.

In accordance with our proposal, AGS conducted a preliminary geotechnical investigation of the Bob's Corner Project. In preparing this report AGS has utilized the 40-scale Preliminary Site Plan prepared by Hunsaker and Associates of San Diego.

Key geotechnical/geologic elements identified onsite that will affect the proposed development and which should be considered in the design and construction of the project include the following:

- Unsuitable soil removals.
- Excavation characteristics of soil and bedrock unit.
- Undercut recommendations for building pads, streets and retaining walls.
- Grading recommendations.
- Preliminary foundation design recommendations in anticipation of as-graded soil characteristics.

The recommendations presented in this report are based on AGS's field investigation, associated laboratory testing, and our familiarity with the site. It is AGS's opinion, from a geotechnical standpoint, that the subject site is suitable for construction of the proposed single-family residential development and associated improvements, provided the recommendations presented in this report are incorporated into the design, planning and construction. Included in this report are: 1) engineering characteristics of the onsite soils; 2) unsuitable soil removal recommendations; 3) grading recommendations; 4) foundation design recommendations; and 5) flatwork recommendations.

ORANGE AND L.A. COUNTIES  
(714) 786-5661

INLAND EMPIRE  
(619) 708-1649

SAN DIEGO AND IMPERIAL COUNTIES  
(619) 850-3980

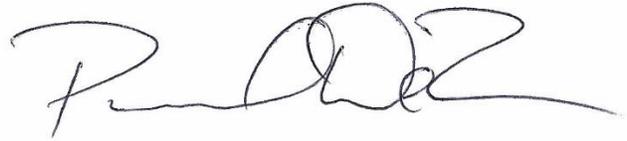
Advanced Geotechnical Solutions, Inc., appreciates the opportunity to provide you with geotechnical consulting services and professional opinions. If you have questions regarding this report, please contact the undersigned at (619) 708-1649.

Respectfully Submitted,  
Advanced Geotechnical Solutions, Inc.



---

JEFFREY A. CHANEY, Vice President  
GE 2314, Reg. Exp. 6-30-15

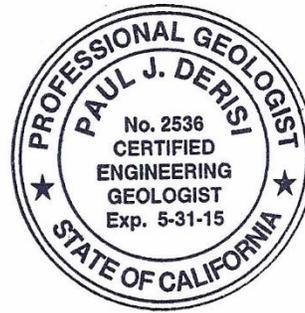


---

PAUL J. DERISI, Vice President  
CEG 2536, Reg. Exp. 5-31-15

Distribution: (3) Addressee

Attachments: Figure 1 – Site Location Plan  
Plate 1 – Geologic Map and Exploration Location Plan  
Plate 2 – Geologic Cross Sections  
Appendix A - References  
Appendix B – Field and Lab Data  
Appendix C - General Earthwork, Grading Guidelines & Details  
Appendix D – Slope Stability Analyses



## **1.0 INTRODUCTION**

### **1.1 Purpose and Background**

The purpose of this report is to provide geotechnical recommendations for the design and construction of the Bob's Corner residential development. In preparing this report, AGS has reviewed the enclosed 40-scale Preliminary Site Plan provided by Hunsaker & Associates. Pertinent subsurface information and laboratory data from previous studies are included herein.

### **1.2 Scope of Work**

The scope of our study consisted of the following:

- Review of available geologic and geotechnical literature.
- Remedial grading recommendations, including undercuts for building pads and underground improvements.
- Earthwork specifications.
- Estimation of shrink/swell parameters of the various onsite earth materials.
- Use of onsite soils as a foundation medium.
- Bearing and friction values.
- Preliminary foundation design.
- Preliminary pavement design.
- Design parameters for conventional retaining walls.
- Preparation of this report with appropriate exhibits.
- Limited slope stability analysis.

### **1.3 Site Location and Description**

The irregularly shaped parcel encompasses approximately 4 acres. The site is primarily vacant land with the exception of an existing cellular tower in the southwest portion of the site. The site is bounded to the south by existing Carmel Valley Road, by unimproved property to the west and east. Rancho Santa Fe Lakes Drive provides the northerly boundary. Elevations onsite range from a high of 320 feet (MSL) on the southeastern end of the site, to a low of 290 feet (MSL) on the northwestern property line.

### **1.4 Report Limitations**

The conclusions and recommendations in this report are based on the data developed during the preliminary site investigation, a review of available geologic and geotechnical reports, and the proposed site plan provided by Hunsaker & Associates.

The materials immediately adjacent to, or beneath those observed in the exploratory excavations may have different characteristics and no representations are made as to the quality or extent of materials not observed. The recommendations presented herein are specific to the development

plans reflected on the current development plan. Modifications to that design or development plans could necessitate revisions to these recommendations.

## **2.0 PROPOSED DEVELOPMENT**

It is AGS's understanding that site will be developed into seventeen (17) single-family residential lots with access afforded by a private residential drive which will tie into Carmel Valley Road. In addition, a recreation lot and a combination detention and water quality basin will be constructed as part of the site development. At this time exact grades are not known, however it is our understanding that cuts and fills will be less than 10 to 15 feet. With cut and fill slopes constructed to a maximum height of 10 to 15 feet. It is our understanding that the residential structures will be one to two stories in height, wood framed, and supported by a conventional or post-tensioned slab-on-grade foundation system.

## **3.0 SUBSURFACE INVESTIGATION**

As part of AGS's recent field work, sixteen test pits (TP-1 through TP-16) were excavated with a CAT 420F rubber tired backhoe and logged by a representative of this firm (see Table 1, Appendix B). The onsite soil and bedrock was sampled to aid in the determination of the engineering properties of the onsite soils, and evaluate whether any adverse geotechnical or geologic conditions were present.

## **4.0 ENGINEERING GEOLOGY**

### **4.1 Regional Geologic and Geomorphic Setting**

The subject site is situated within the Peninsular Ranges Geomorphic Province. The Peninsular Ranges province occupies the southwestern portion of California and extends southward to the southern tip of Baja California. In general the province consists of young, steeply sloped, northwest trending mountain ranges underlain by metamorphosed Late Jurassic to Early Cretaceous-aged extrusive volcanic rock and Cretaceous-aged igneous plutonic rock of the Peninsular Ranges Batholith. The westernmost portion of the province, where the subject site is located, is predominantly underlain by younger marine and non-marine sedimentary rocks. The Peninsular Ranges' dominant structural feature is northwest-southeast trending crustal blocks bounded by active faults of the San Andreas transform system.

### **4.2 Subsurface Conditions**

Based on our review of subsurface excavations, geologic maps and literature, the site is covered with a relatively thin veneer (1.5 to 7 feet) of undocumented fill. These soils are underlain to the maximum depths explored by Tertiary-aged Mission Valley Formation.

### **4.3 Geologic Units**

The proposed project is mantled with a relatively thin veneer of undocumented fill soils which is subsequently underlain by Mission Valley Formation. The approximate distribution of the geologic units is shown on Plate 1. The following is a brief summary of the encountered geologic units. Sixteen (16) test pits were excavated and logged by AGS in April 2014. Approximate locations of the test pits are shown on Plate 1. Logs are presented in Appendix B.

#### **4.3.1 Undocumented Artificial Fill (Map Symbol afu)**

Undocumented artificial fill was encountered in all of the excavations (except TP-10) performed by AGS. As encountered, these materials generally consist of light brown, brown, and dark brown, clayey sand and sandy clay in a dry to slightly moist and loose to medium dense/soft to stiff condition. These materials overlay Mission Valley Formation and were found to be approximately 1.5-7.0 feet thick. Locally deeper artificial fill may exist at the site.

#### **4.3.2 Mission Valley Formation (Map Symbol Tmv)**

The site is underlain to maximum depth explored by Mission Valley Formation, which was encountered below the undocumented fill soils within our test pits. In general, the Mission Valley Formation consisted brown to tan, silty to clayey sandstone in a slightly moist and soft to moderately hard condition. Occasional lenses of siltstone and claystone and zones exhibiting carbonate development were observed.

#### **4.4. Groundwater**

Groundwater was not encountered in our exploratory excavations. No natural groundwater condition is known to exist at the site that would impact the proposed site development. However, it should be noted that localized perched groundwater may develop at a later date, most likely at or near fill/bedrock contacts, due to fluctuations in precipitation, irrigation practices, or factors not evident at the time of our field explorations.

#### **4.5 Faulting and Seismicity**

The site is located in the tectonically active Southern California area, and will therefore likely experience shaking effects from earthquakes. The type and severity of seismic hazards affecting the site are to a large degree dependent upon the distance to the causative fault, the intensity of the seismic event, and the underlying soil characteristics. The seismic hazard may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction or dynamic settlement. The following is a site-specific discussion of ground motion parameters, earthquake-induced landslide hazards, settlement, and liquefaction. The purpose of this analysis is to identify potential seismic hazards and propose mitigations, if necessary, to reduce the hazard to an acceptable level of risk. The following seismic hazards discussion is guided by the California Building Code (2010), CDMG (2008), and Martin and Lew (1998).

##### **4.5.1 City of San Diego Seismic Safety Study**

We have reviewed the City of San Diego Seismic Safety Study (2008). The study is comprised of a series of maps which indicate likely geologic hazards within the city. This project site lies within Grid Tile 43 and is mapped as Category 53 – “Level or sloping terrain, unfavorable geologic structure, low to moderate risk”.

##### **4.5.2 Surface Fault Rupture**

No known active faults have been mapped at or near the subject site. The nearest known active surface fault is the Del Mar section of the Newport-Inglewood-Rose Canyon fault zone which is

approximately 7 miles west of the subject site. Accordingly, the potential for fault surface rupture on the subject site is very low to remote. This conclusion is based on literature and map review.

#### **4.5.3 Seismicity**

As noted, the site is within the tectonically active southern California area, and is approximately 7 miles from an active fault, the Del Mar section of the Newport-Inglewood-Rose Canyon fault zone. The potential exists for strong ground motion that may affect future improvements.

At this point in time, non-critical structures (commercial, residential, and industrial) are usually designed according to the California Building Code (2013) and that of the controlling local agency. However, liquefaction/seismic slope stability analyses, critical structures, water tanks and unusual structural designs will likely require site specific ground motion input.

#### **4.5.4 Liquefaction**

Due to dense nature of the Mission Valley Formation and lack of a shallow groundwater table at the project site, the potential for seismically induced liquefaction is considered remote.

#### **4.5.5 Dynamic Settlement**

Dynamic settlement occurs in response to an earthquake event in loose sandy earth materials. This potential of dynamic settlement at the subject site is considered to be remote once the grading recommended herein is conducted and due to the presence of the Mission Valley Formation and the absence of loose, sandy soils.

#### **4.5.6 Seismically Induced Landsliding**

Evidence of landsliding at the site was not observed during our field observations, nor were there any geomorphic features indicative of landsliding noted in our review of published geologic maps and CWE's previous geotechnical investigation. Further, given the relatively flat nature of the site, the likelihood for seismically induced landsliding is considered to be remote.

### **4.6 Other Geologic Hazards**

The potential for the site to be adversely impacted by tsunamis and/or seiches is considered to be nil due to the distance from large bodies of water and elevation of the project site.

## **5.0 ENGINEERING ANALYSIS**

Presented herein is a general discussion of the geotechnical properties of the various soil types and earth materials summarized from our site-specific analyses of the project and the referenced reports.

### **5.1 Material Properties**

#### **5.1.1 Excavation Characteristics**

The onsite soils within the anticipated cut depths should be readily excavatable with conventional grading equipment. Deeper excavations for buried utilities may require track-hoes to efficiently excavate the onsite soils.

**5.1.2 Compressibility**

Onsite materials that are significantly compressible include undocumented fill and highly weathered Mission Valley Formation. These materials will require complete removal prior to placement of fill, and where exposed at design grade. If removals are impossible due to property line restraints these improvements should be designed for the total and differential settlement potentials as outlined in Table 5.1. Recommended removal depths are presented in Section 6.1, and earthwork adjustment estimates are presented in Section 5.1.5.

<b>TABLE 5.1 SETTLEMENT POTENTIAL</b>	
<i>Total (inches)</i>	<i>Differential (inches in 20 feet)</i>
3/4	3/8

**5.1.3 Expansion Potential**

Our testing indicates that the upper onsite soils have an expansion index (EI) of 101 to 112 which classifies these soils as having “high” expansion potential (CBC 2013). Generally the onsite soils consist of brown, silty to clayey sands and silty to sandy clays. It is anticipated that the expansion potential of the onsite materials will vary from “medium” to “high.” Final determination of expansion potential for foundation design purposes should be based on testing of the as-graded soil conditions.

**5.1.4 Shear Strength Characteristics**

Shear strength testing was not conducted on the onsite soils, however based upon our previous experience in the general area with similar soils the following are assumed shear strengths for compacted fill soils and Mission Valley Formation.

<b>TABLE 5.2 SHEAR STRENGTH</b>		
<i>Material</i>	<i>Cohesion (psf)</i>	<i>Friction Angle (degrees)</i>
Compacted Fill	150	28
Mission Valley Formation	150	32

**5.1.5 Earthwork Adjustments**

The upper onsite soils (undocumented fill) are anticipated to shrink on the order of 8 to 10 percent when reused as compacted fill. Deeper cuts encountering the undisturbed Mission Valley Formation when reused to make compacted fill are anticipated to bulk 4 to 7 percent.

These values may be used in an effort to balance the earthwork quantities. As is the case with every project, contingencies should be made to adjust the earthwork balance when grading is in progress and actual conditions are better defined.

### **5.1.6 Chemical/Resistivity Analyses**

An onsite soil sample indicates the soils exhibited “negligible” sulfate exposure when classified in accordance with ACI 318-05 Table 4.3.1 (per 2013 CBC). Accordingly, the use of sulfate resistant concrete is not anticipated.

Preliminary resistivity and chloride testing indicates that onsite soils are potentially corrosive to metals. In the past on similar projects, corrosion protection typically consisted of non-metallic piping for water lines to and below the slabs or by installing above slab plumbing. Consultation with a corrosion engineer is recommended. Final design should be based upon representative sampling of the as-graded soils.

## **6.0 GEOTECHNICAL ENGINEERING**

Development of the subject property as proposed is considered feasible, from a geotechnical standpoint, provided that the conclusions and recommendations presented herein are incorporated into the design and construction of the project. Presented below are specific issues identified by this study or previous studies as possibly impacting site development. Recommendations to mitigate these issues are presented in the text of this report.

### **6.1 Site Preparation and Removals**

Grading should be accomplished under the observation and testing of the project soils engineer and engineering geologist or their authorized representative in accordance with the recommendations contained herein, the current grading ordinance of the City of San Diego, and AGS's *Earthwork Specifications* (Appendix C). Undocumented fill, topsoil, and highly weathered formational material should be removed in areas planned to receive fill or where exposed at final grade. If encountered, any existing utility lines and/or subterranean structures should be removed prior to fill placement. Removals should expose competent formational materials and be observed and mapped by the engineering geologist prior to fill placement. It is anticipated that the upper 3 to 8 feet of the onsite soils will require removal and recompaction for the support of settlement sensitive structures. Localized areas may require deeper removals. The resulting undercuts should be replaced with engineered fill. The extent of removals can best be determined in the field during grading when observation and evaluation can be performed by the soil engineer and/or engineering geologist. In general, soils removed during remedial grading will be suitable for reuse in compacted fills, provided they are properly moisture conditioned and do not contain deleterious materials.

#### **6.1.1 Stripping and Deleterious Material Removal**

Existing vegetation, trash, debris from site demolition activities, and other deleterious materials should be removed and wasted from the site prior to removal of unsuitable soils and placement of compacted fill.

#### **6.1.2 Undocumented Fill (Map Symbol afu)**

Undocumented fill soil will require complete removal and recompaction to project specifications. Estimated depths of removal are from two to seven feet. Locally deeper areas may be encountered.

### **6.1.3 Mission Valley Formation (Map Symbol Tmv)**

The Mission Valley Formation exhibits a weathered profile. The weathered profile is generally one-half foot to two feet thick. These upper weathered portions of the unit will require removal prior to fill placement in structural fill areas and where exposed at design grade.

## **6.2 Slope Stability and Remediation**

### **6.2.1 Cut Slopes**

Cut slopes have been designed at slope ratios of 2 : 1 (horizontal to vertical) or flatter to maximum anticipated heights of fifteen feet. It is likely that during the remedial grading the majority of the cut slopes will be removed and replaced with fill slopes. Slope stability analyses (static and pseudo-static) for a 15 foot high cut slope are presented on Plates D-1 and D-2.

### **6.2.2 Fill Slopes**

Fill slopes are designed at ratios of 2 : 1 (horizontal to vertical) or flatter. The highest design fill slope is anticipated to be as high as 15 feet. Fill slopes, when properly constructed with onsite materials, are expected to be grossly stable as designed. Slope stability analyses (static and pseudo-static) for a 15 foot high fill slope are presented on Plates D-3 and D-4. Fill slopes constructed at 2 : 1 ratios can be considered surficially stable when properly constructed with onsite materials and as described in Section 6.6.7.

A surficial stability analysis was prepared for a fill slope. Results of that analysis are presented on Plate D-5. Based upon the shear strengths of the bedrock and the compacted fill both cut and fill slopes are anticipated to be surficially stable when graded to 2:1 slope ratios.

Keys should be constructed at the toe of all fill slopes toeing on existing or cut grade. Fill keys should have a minimum width equal to 15 feet or one-half (1/2) the height of ascending slope, whichever is greater. Where possible, unsuitable soil removals below the toe of proposed fill slopes should extend outward from the catch point of the design toe at a minimum 1 : 1 projection to an approved cleanout. Backcuts should be cut no steeper than 1 : 1, or as recommended by the geotechnical engineer.

## **6.3 Temporary Backcut Stability**

During grading operations, temporary backcuts may be required to accomplish remedial grading. Backcuts in undocumented fill, topsoil, and bedrock areas should be made no steeper than 1: 1.

In consideration of the inherent instability created by temporary construction backcuts, it is imperative that grading schedules are coordinated to minimize the unsupported exposure time of these excavations. Once started, these excavations and subsequent fill operations should be maintained to completion without intervening delays imposed by avoidable circumstances. In cases where five-day workweeks comprise a normal schedule, grading should be planned to avoid exposing at-grade or near-grade excavations through a non-work weekend. Where improvements may be affected by temporary instability, either on or offsite, further restrictions such as slot cutting, extending work days, implementing weekend schedules, and/or other requirements considered critical to serving specific circumstances may be imposed.

## **6.4 Overexcavation Recommendations**

It is advisable that overexcavation of cut/fill transition lots and areas where hard rock is encountered on cut lots and streets should be conducted during this phase of grading. The following general overexcavation recommendations are presented.

### **6.4.1 Cut/Fill Transitions**

Where design grades and/or remedial grading activities create a cut/fill transition, the cut and shallow fill portions of the building pad shall be overexcavated a minimum depth of three feet or 18 inches below the bottom of the proposed footings (whichever is deeper) and replaced with compacted fill. These remedial grading measures are recommended in order to minimize the potential for differential settlements between cut and fill areas. The undercut should be graded such that a gradient of at least one percent is maintained toward deeper fill areas or the front of the lot.

### **6.4.2 Cut Lots**

Cut lots are not anticipated to exist onsite after completion of the recommended remedial grading described herein.

## **6.5 Construction Staking and Survey**

Removal bottoms, keyways, subdrains and backdrains should be surveyed by the civil engineer after approval by the geotechnical engineer/engineering geologist and prior to the placement of fill. Toe stakes should be provided by the civil engineer in order to verify required key dimensions and locations.

## **6.6 Earthwork Considerations**

### **6.6.1 Compaction Standards**

Fill and processed natural ground shall be compacted to a minimum relative compaction of 90 percent as determined by ASTM Test Method: D 1557. Care should be taken that the ultimate grade be considered when determining the compaction requirements for disposal fill areas. Compaction shall be achieved at slightly above the optimum moisture content, and as generally discussed in the attached Earthwork Specifications (Appendix C).

### **6.6.2 Documentation of Removals and Drains**

Removal bottoms fill keys, backcuts, backdrains and their outlets should be observed and approved by the engineering geologist and/or geotechnical engineer and documented by the civil engineer prior to fill placement.

### **6.6.3 Treatment of Removal Bottoms**

At the completion of removals, the exposed bottom should be scarified to a practical depth, moisture conditioned to above optimum conditions, and compacted in-place to the standards set forth in this report.

### **6.6.4 Fill Placement**

After removals, scarification, and compaction of in-place materials are completed, additional fill may be placed. Fill should be placed in thin lifts [eight- (8) inch bulk], moisture conditioned to

slightly above the optimum moisture content, mixed, compacted, and tested as grading progresses until final grades are attained.

#### **6.6.5 Benching**

Where the natural slope is steeper than 5-horizontal to 1-vertical, and where designed by the project geotechnical engineer or geologist, compacted fill material should be keyed and benched into competent bedrock or firm natural soil.

#### **6.6.6 Mixing**

In order to provide thorough moisture conditioning and proper compaction, processing (mixing) of materials is necessary. Mixing should be accomplished prior to, and as part of the compaction of each fill lift.

#### **6.6.7 Fill Slope Construction**

Fill slopes shall be overfilled to an extent determined by the contractor, but not less than two (2) feet measured perpendicular to the slope face, so that when trimmed back to the compacted core, the required compaction is achieved.

Compaction of each fill lift should extend out to the temporary slope face. Backrolling during mass filling at intervals not exceeding four (4) feet in height is recommended unless more extensive overfill is undertaken.

As an alternative to overfilling, fill slopes may be built to the finish slope face in accordance with the following recommendations:

- Compaction of each fill lift shall extend to the face of the slopes.
- Backrolling during mass grading shall be undertaken at intervals not exceeding four (4) feet in height. Backrolling at more frequent intervals may be required.
- Care should be taken to avoid spillage of loose materials down the face of the slopes during grading.
- At completion of mass filling, the slope surface shall be watered, shaped and compacted first with a sheepsfoot roller or track walked with a bulldozer, such that compaction to project standards is achieved to the face slope.

Proper seeding and planting of the slopes should follow as soon as practical, to inhibit erosion and deterioration of the slope surfaces. Proper moisture control will enhance the long-term stability of the finished slope surface.

### **6.7 Haul Roads**

Haul roads, ramp fills, and tailing areas should be removed prior to placement of fill.

## 6.8 Import Materials

Based on the preliminary earthwork quantities, import soils will likely be required to achieve design site grades. Import materials, should have similar engineering characteristics as the onsite soils and should be approved by the soil engineer at the source prior to importation to the site.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

Construction of the proposed single-family residential structures and associated improvements is considered feasible, from a geotechnical standpoint, provided that the conclusions and recommendations presented herein are incorporated into the design and construction of the project. Presented below are specific issues identified by this study as possibly affecting site development. Recommendations to mitigate these issues are presented in the text of this report.

### 7.1 Design Recommendations

It is our understanding that the proposed foundations will consist of either conventionally reinforced or post-tensioned slab-on-grade foundation systems supporting the proposed one- to two-story, wood frame, single-family residential structures. In addition to the structures, associated private access roads, driveways, hardscape and landscape areas are proposed. From a geotechnical perspective these proposed improvements are feasible provided that the following recommendations are incorporated into the design and construction.

#### 7.1.1 Foundation Design Criteria

The single-family residential structures can be supported by either post-tensioned or conventional shallow slab-on-grade foundation systems. The expansion potential of the underlying soils is anticipated to range from “medium” to “high” The following preliminary values may be used in the foundation design.

<b>Allowable Bearing:</b>	2000 lbs./sq.ft.
<b>Lateral Bearing:</b>	250 lbs./sq.ft. at a depth of 12 inches plus 125 lbs./sq.ft. for each additional 12 inches embedment to a maximum of 2000 lbs./sq.ft.
<b>Sliding Coefficient:</b>	0.35

The above values may be increased as allowed by Code to resist transient loads such as wind or seismic. Building Code and structural design considerations may govern. Depth and reinforcement requirements should be evaluated by the Structural Engineer.

#### 7.1.2 Post-Tensioned foundation Design Parameters

The following post-tensioned design parameters are presented in Table 7.1 for building pads exhibiting “medium” and “high” expansion potential.

<b>TABLE 7.1</b>					
<b>Post Tensioned Design Parameters</b>					
<b>Expansion Potential</b>	<b>Lot Catagory</b>	<b>Center Lift</b>		<b>Edge Lift</b>	
		<b>Em (ft)</b>	<b>Ym (ft)</b>	<b>Em (ft)</b>	<b>Ym (ft)</b>
<i>Medium</i>	II	9	0.38	4.6	0.9
<i>High</i>	III	7.5	0.51	3.9	1.26

### 7.1.3 Conventional Foundation Design Recommendations

Based upon the onsite soil conditions and information supplied by the CBC-2013, conventional foundation systems should be designed in accordance with Section 7.1.1 and the following recommendations:

- **One-story** - Interior and exterior footings should be a minimum of 12 inches wide and extend to a depth below lowest adjacent grade of at least 12 inches for “Low” expansive soil, 18 inches for “Medium” expansive soil, and 24 inches for “High” expansive soil. Footing reinforcement should minimally consist of four No. 4 reinforcing bars, two top and two bottom or two No. 5 reinforcing bars, one top and one bottom.
- **Two-story** - Interior and exterior footings should be a minimum of 15 inches wide and extend to a depth of at least 18 inches below lowest adjacent grade for “Low” to “Medium” expansive soils and 24 inches below lowest adjacent grade for “High” expansive soils. Footing reinforcement should minimally consist of four No. 4 reinforcing bars, two top and two bottom or two No. 5 reinforcing bars, one top and one bottom.
- **Slab** - Conventional, slab-on-grade floors or parking garage slabs, underlain by “low to medium” expansive compacted fill, should be five or more inches thick and be reinforced with No. 3 or larger reinforcing bars spaced 15 inches on center each way.

Conventional, slab-on-grade floors or parking garage slabs, underlain by “high” expansive compacted fill, should be six or more inches thick and be reinforced with No. 3 or larger reinforcing bars spaced 12 inches on center each way. The slab reinforcement and expansion joint spacing should be designed by the Structural Engineer.

- **Embedment** - If exterior footings adjacent to drainage swales are to exist within five feet horizontally of the swale, the footing should be embedded sufficiently to assure embedment below the swale bottom is maintained. Footings adjacent to slopes should be embedded such that a least seven feet are provided horizontally from edge of the footing to the face of the slope.
- **Garage** - A grade beam reinforced continuously with the garage footings shall be constructed across the garage entrance, tying together the ends of the perimeter footings and between individual spread footings. This grade beam should be embedded at the same depth

as the adjacent perimeter footings. A thickened slab, separated by a cold joint from the garage beam, should be provided at the garage entrance. Minimum dimensions of the thickened edge shall be six (6) inches deep. Footing depth, width and reinforcement should be the same as the structure. Slab thickness, reinforcement and under-slab treatment should be the same as the structure.

- **Isolated Spread Footings** - Isolated spread footings should be embedded a minimum of 18 inches below lowest adjacent finish grade and should at least 24 inches wide. A grade beam should also be constructed for interior and exterior spread footings and should be tied into the structure in two orthogonal directions footing dimensions and reinforcement should be similar to the aforementioned continuous footing recommendations. Final depth, width and reinforcement should be determined by the structural engineer.
- **Presaturation** - Prior to concrete placement the subgrade soils should be moisture conditioned to the following:

**Low Expansion Potential** - Minimum of optimum moisture prior to concrete placement.

**Medium Expansion Potential** - Minimum of 120 percent of optimum moisture at least 24 hours prior to concrete placement.

**High Expansion Potential** - Minimum of 130 percent of optimum moisture at least 48 hours prior to concrete placement.

#### 7.1.4 Seismic Design Parameters

The following seismic design parameters are presented to be code compliant to the California Building Code (2013). The project site is considered to be Site Class "D" in accordance with CBC, 2013, Section 1613.3.2 and ASCE 7, Chapter 20. The site is located at Latitude 32.9694 ° N and Longitude -117.1771° W. Utilizing this information, the United States Geological Survey (USGS) web tool (<http://earthquake.usgs.gov/designmaps>) and ASCE 7 criterion, the mapped seismic acceleration parameters  $S_s$ , for 0.2 seconds and  $S_1$ , for 1.0 second period (CBC, 2013, 1613.3.1) for Risk-Targeted Maximum Considered Earthquake ( $MCE_R$ ) can be determined. The mapped acceleration parameters are provided for Site Class "B". Adjustments for other Site Classes are made, as needed, by utilizing Site Coefficients  $F_a$  and  $F_v$  for determination of  $MCE_R$  spectral response acceleration parameters  $S_{MS}$  for short periods and  $S_{M1}$  for 1.0 second period (CBC, 2013 1613.3.3). Five-percent damped design spectral response acceleration parameters  $S_{DS}$  for short periods and  $S_{D1}$  for 1.0 second period can be determined from the equations in CBC, 2013, Section 1613.3.4.

<b>Table 7.1.4</b>	
<b>Seismic Design Criteria</b>	
Mapped Spectral Acceleration (0.2 sec Period), $S_s$	0.968g
Mapped Spectral Acceleration (1.0 sec Period), $S_1$	0.375g
Site Coefficient, $F_a$ (CBC, 2013, Table 1613.3.3(1))	1.113
Site Coefficient, $F_v$ (CBC, 2013, Table 1613.3.3(2))	1.650
MCE <sub>R</sub> Spectral Response Acceleration (0.2 sec Period), $S_{MS}$	1.077g
MCE <sub>R</sub> Spectral Response Acceleration (1.0 sec Period), $S_{M1}$	0.619g
Design Spectral Response Acceleration (0.2 sec Period), $S_{DS}$	0.718g
Design Spectral Response Acceleration (1.0 sec Period), $S_{D1}$	0.413g

Utilizing a probabilistic approach, the CBC recommends that structural design be based on the peak horizontal ground acceleration (PGA) having of 2 percent probability of exceedance in 50 years (approximate return period of 2,475 years) which is defined as the Maximum Considered Earthquake (MCE). Using the United States Geological Survey (USGS) web-based ground motion calculator, the site class modified  $PGA_M (F_{PGA} * PGA)$  was determined to be 0.424g. This value does not include near-source factors that may be applicable to the design of structures on site.

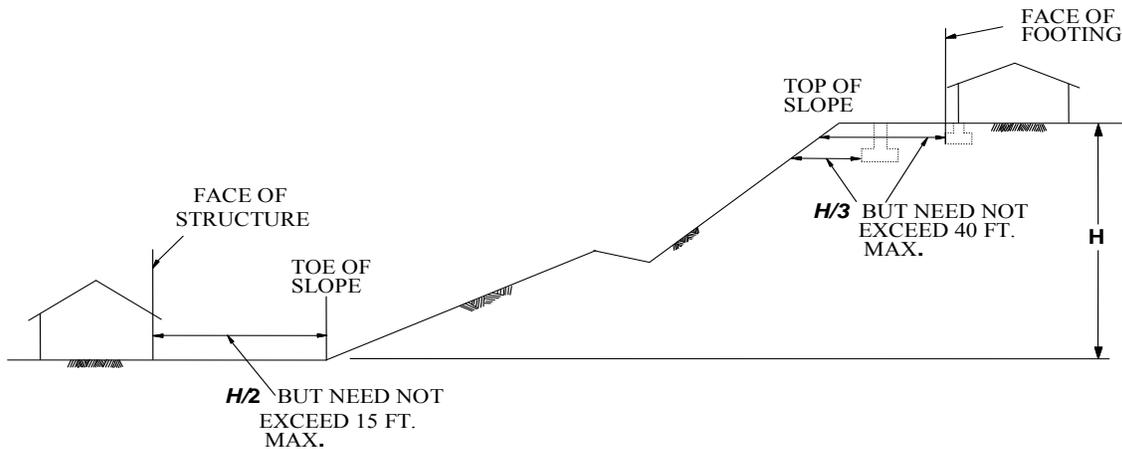
#### **7.1.5 Under Slab**

A moisture and vapor retarding system should be placed below the slabs-on-grade in portions of the structure considered to be moisture sensitive. The retarder should be of suitable composition, thickness, strength and low permeance to effectively prevent the migration of water and reduce the transmission of water vapor to acceptable levels. Historically, a 10-mil plastic membrane, such as *Visqueen*, placed between one to four inches of clean sand, has been used for this purpose. More recently Stego® Wrap or similar underlayments have been used to lower permeance to effectively prevent the migration of water and reduce the transmission of water vapor to acceptable levels. The use of this system or other systems, materials or techniques can be considered, at the discretion of the designer, provided the system reduces the vapor transmission rates to acceptable levels.

#### **7.1.6 Deepened Footings and Structural Setbacks**

It is generally recognized that improvements constructed in proximity to natural slopes or properly constructed, manufactured slopes can, over a period of time, be affected by natural processes including gravity forces, weathering of surficial soils and long-term (secondary) settlement. Most building codes, including the California Building Code (CBC), require that structures be set back or footings deepened, where subject to the influence of these natural processes.

For the subject site, where foundations for residential structures are to exist in proximity to slopes, the footings should be embedded to satisfy the requirements presented in Figure 2.



### 7.1.7 Concrete Design

Preliminary testing indicates onsite soils exhibit a “negligible” sulfate exposure when classified in accordance with ACI 318-05 Table 4.3.1 (per 2013 CBC). However, some fertilizers have been known to leach sulfates into soils otherwise containing "negligible" sulfate concentrations and increase the sulfate concentrations to potentially detrimental levels. It is incumbent upon the owner to determine whether additional protective measures are warranted to mitigate the potential for increased sulfate concentrations to onsite soils as a result of the future homeowner’s actions.

### 7.1.8 Retaining Walls

The following earth pressures are recommended for the design of conventional retaining walls onsite. It is assumed select (low expansive and granular soils) soils will be utilized as wall backfill:

#### Static Case

<u>Level Backfill</u>	<u>Rankine Coefficients</u>	<u>Equivalent Fluid Pressure (psf/lin.ft.)</u>
Coefficient of Active Pressure:	$K_a = 0.35$	43
Coefficient of Passive Pressure:	$K_p = 2.88$	360
Coefficient of at Rest Pressure:	$K_o = 0.52$	64

<b>2 : 1 Backfill</b>	<b>Rankine Coefficients</b>	<b>Equivalent Fluid Pressure (psf/lin.ft.)</b>
Coefficient of Active Pressure:	$K_a = 0.58$	72
Coefficient of Passive Pressure:		
Descending	$K_p (-) = 1.06$	133
Coefficient of At Rest Pressure:	$K_o = 0.86$	107

### Seismic Case

In addition to the above static pressures, unrestrained retaining walls located should be designed to resist seismic loading as required by the 2010 CBC. The seismic load can be modeled as a thrust load applied at a point 0.6H above the base of the wall, where H is equal to the height of the wall. This seismic load (in pounds per lineal foot of wall) is represented by the following equation:

$$P_e = \frac{3}{8} * \gamma * H^2 * k_h$$

Where:

- $P_e$  = Seismic thrust load
- H = Height of the wall (feet)
- $\gamma$  = soil density = 125 pounds per cubic foot (pcf)
- $k_h$  = seismic pseudostatic coefficient = 0.5 \* peak horizontal ground acceleration / g

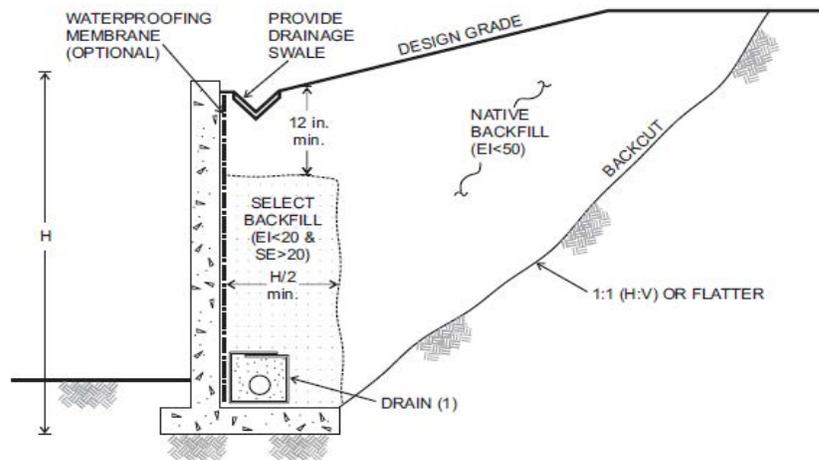
The peak horizontal ground accelerations are provided in Section 7.1.4. Walls should be designed to resist the combined effects of static pressures and the above seismic thrust load.

The foundations for retaining walls of appurtenant structures structurally separated from the building structures, may bear on properly compacted fill. A bearing value of 2,000 psf may be used for design of retaining walls. Retaining wall footings should be designed to resist the lateral forces by passive soil resistance and/or base friction as recommended for foundation lateral resistance. To relieve the potential for hydrostatic pressure wall backfill should consist of a free draining backfill (sand equivalent "SE" >20) and a heel drain should be constructed. The heel drain should be placed at the heel of the wall and should consist of a 4-inch diameter perforated pipe (SDR35 or SCHD 40) surrounded by 4 cubic feet of crushed rock (3/4-inch) per lineal foot, wrapped in filter fabric (Mirafi® 140N or equivalent).

Proper drainage devices should be installed along the top of the wall backfill, which should be properly sloped to prevent surface water ponding adjacent to the wall. In addition to the wall drainage system, for building perimeter walls extending below the finished grade, the wall should be waterproofed and/or damp-proofed to effectively seal the wall from moisture infiltration through the wall section to the interior wall face.

The wall should be backfilled with granular soils placed in loose lifts no greater than 8-inches thick, at or near optimum moisture content, and mechanically compacted to a minimum 90 percent relative compaction as determined by ASTM Test Method D1557. Flooding or jetting of backfill materials generally do not result in the required degree and uniformity of compaction and, therefore, is not recommended. The soils engineer or his representative should observe the retaining wall footings,

backdrain installation and be present during placement of the wall backfill to confirm that the walls are properly backfilled and compacted.



NOTES: (1) DRAIN: 4-INCH PERFORATED ABS OR PVC PIPE OR APPROVED EQUIVALENT SUBSTITUTE PLACED PERFORATIONS DOWN AND SURROUNDED BY A MINIMUM OF 1 CUBIC FEET OF 3/4 INCH ROCK OR APPROVED EQUIVALENT SUBSTITUTE AND WRAPPED IN MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT SUBSTITUTE

## 7.2 Utility Trench Excavation

All utility trenches should be shored or laid back in accordance with applicable OSHA standards. Excavations in bedrock areas should be made in consideration of underlying geologic structure. AGS should be consulted on these issues during construction.

## 7.3 Utility Trench Backfill

Mainline and lateral utility trench backfill should be compacted to at least 90 percent of maximum dry density as determined by ASTM D 1557. Onsite soils will not be suitable for use as bedding material but will be suitable for use in backfill, provided oversized materials are removed. No surcharge loads should be imposed above excavations. This includes spoil piles, lumber, concrete trucks or other construction materials and equipment. Drainage above excavations should be directed away from the banks. Care should be taken to avoid saturation of the soils.

Compaction should be accomplished by mechanical means. Jetting of native soils will not be acceptable.

## **7.4 Exterior Slabs and Walkways**

### **7.4.1 Subgrade Compaction**

The subgrade below exterior slabs, sidewalks, driveways, patios, etc. should be compacted to a minimum of 90 percent relative compaction as determined by ASTM D 1557.

### **7.4.2 Subgrade Moisture**

The subgrade below exterior slabs, sidewalks, driveways, patios, etc. should be moisture conditioned to a minimum of 110 to 130 percent of optimum moisture content prior to concrete placement, dependent upon the expansion potential of the subgrade soils.

### **7.4.3 Slab Thickness**

Concrete flatwork and driveways should be designed utilizing four-inch minimum thickness.

### **7.4.4 Control Joints**

Weakened plane joints should be installed on walkways at intervals of approximately eight to ten feet. Exterior slabs should be designed to withstand shrinkage of the concrete.

### **7.4.5 Flatwork Reinforcement**

Consideration should be given to reinforcing any exterior flatwork.

### **7.4.6 Thickened Edge**

Consideration should be given to construct a thickened edge (scoop footing) at the perimeter of slabs and walkways adjacent to landscape areas to minimize moisture variation below these improvements. The thickened edge (scoop footing) should extend approximately eight inches below concrete slabs and should be a minimum of six inches wide.

## **7.5 Plan Review**

Once approved grading and foundation design plans become available, they should be reviewed by AGS to verify that the design recommendations presented are consistent with the proposed construction.

## **7.6 Geotechnical Review**

As is the case in any grading project, multiple working hypotheses are established utilizing the available data, and the most probable model is used for the analysis. Information collected during the grading and construction operations is intended to evaluate the hypotheses, and some of the assumptions summarized herein may need to be changed as more information becomes available. Some modification of the grading and construction recommendations may become necessary, should the conditions encountered in the field differ significantly than those hypothesized to exist.

AGS should review the pertinent plans and sections of the project specifications, to evaluate conformance with the intent of the recommendations contained in this report.

If the project description or final design varies from that described in this report, AGS must be consulted regarding the applicability of, and the necessity for, any revisions to the recommendations presented herein. AGS accepts no liability for any use of its recommendations if the project description or final design varies and AGS is not consulted regarding the changes.

## **8.0 SLOPE AND LOT MAINTENANCE**

Maintenance of improvements is essential to the long-term performance of structures and slopes. Although the design and construction during mass grading is planned to create slopes that are both grossly and surficially stable, certain factors are beyond the control of the soil engineer and geologist. The homeowners must implement certain maintenance procedures.

The following recommendations should be implemented.

### **8.1 Slope Planting**

Slope planting should consist of ground cover, shrubs and trees that possess deep, dense root structures and require a minimum of irrigation. The resident should be advised of their responsibility to maintain such planting.

### **8.2 Lot Drainage**

Roof, pad and lot drainage should be collected and directed away from structures and slopes and toward approved disposal areas. Design fine-grade elevations should be maintained through the life of the structure or if design fine grade elevations are altered, adequate area drains should be installed in order to provide rapid discharge of water, away from structures and slopes. Residents should be made aware that they are responsible for maintenance and cleaning of all drainage terraces, down drains and other devices that have been installed to promote structure and slope stability.

### **8.3 Slope Irrigation**

The resident, homeowner and Homeowner Association should be advised of their responsibility to maintain irrigation systems. Leaks should be repaired immediately. Sprinklers should be adjusted to provide maximum uniform coverage with a minimum of water usage and overlap.

Overwatering with consequent wasteful run-off and ground saturation should be avoided. If automatic sprinkler systems are installed, their use must be adjusted to account for natural rainfall conditions.

### **8.4 Burrowing Animals**

Residents or homeowners should undertake a program for the elimination of burrowing animals. This should be an ongoing program in order to maintain slope stability.

## **9.0 LIMITATIONS**

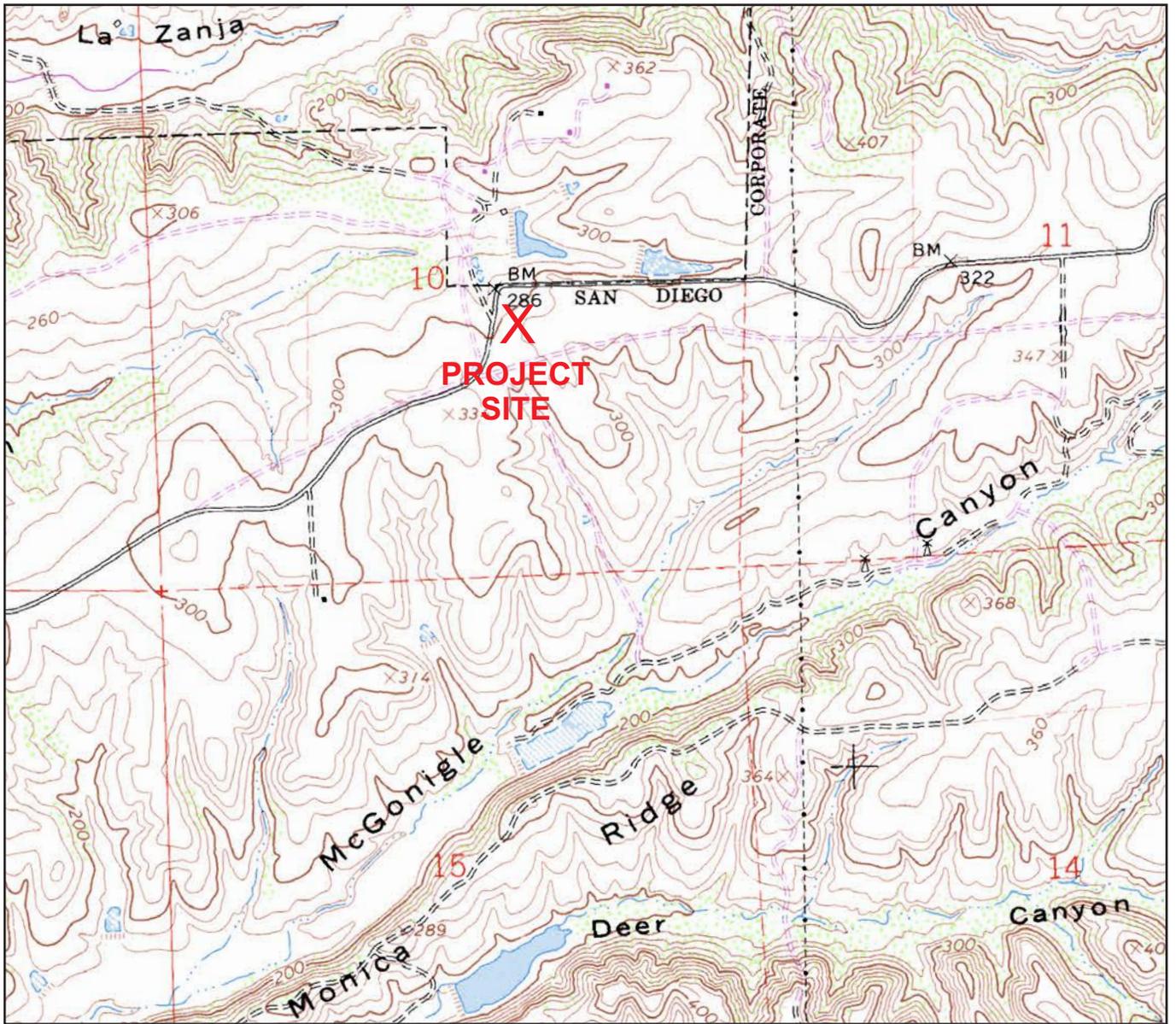
This report is based on the project as described and the information obtained from the excavations at the approximate locations indicated on the Plate 1. The findings are based on the results of the field, laboratory, and office investigations combined with an interpolation and extrapolation of conditions between and beyond the excavation locations. The results reflect an interpretation of the direct evidence obtained.

Services performed by AGS have been conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, either expressed or implied, and no warranty or guarantee is included or intended.

The recommendations presented in this report are based on the assumption that an appropriate level of field review will be provided by geotechnical engineers and engineering geologists who are familiar with the design and site geologic conditions. That field review shall be sufficient to confirm that geotechnical and geologic conditions exposed during grading are consistent with the geologic representations and corresponding recommendations presented in this report. AGS should be notified of any pertinent changes in the project plans or if subsurface conditions are found to vary from those described herein. Such changes or variations may require a re-evaluation of the recommendations contained in this report.

The data, opinions, and recommendations of this report are applicable to the specific design of this project as discussed in this report. They have no applicability to any other project or to any other location, and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent of AGS.

AGS has no responsibility for construction means, methods, techniques, sequences, or procedures, or for safety precautions or programs in connection with the construction, for the acts or omissions of the CONTRACTOR, or any other person performing any of the construction, or for the failure of any of them to carry out the construction in accordance with the final design drawings and specifications.



**SITE LOCATION MAP**  
**BOB'S CORNER**  
**PROPOSED RESIDENTIAL DEVELOPMENT**  
**SAN DIEGO, CALIFORNIA**

P/W 1404-01

FIGURE 1

SOURCE MAP - TOPOGRAPHIC MAP OF THE  
 DEL MAR 7.5 MINUTE QUADRANGLE,  
 SAN DIEGO COUNTY, CALIFORNIA

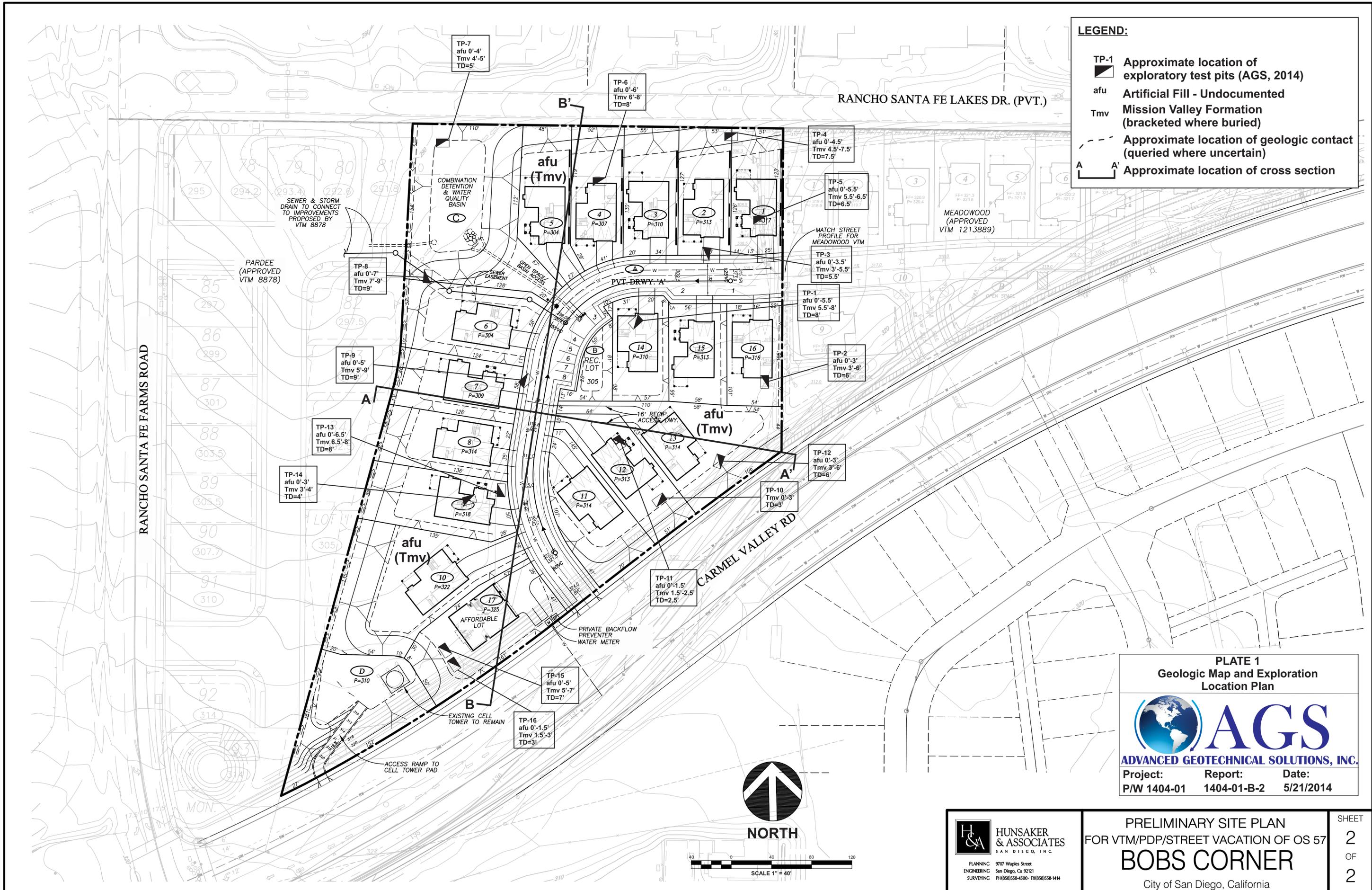


**AGS**

ADVANCED GEOTECHNICAL SOLUTIONS, INC.  
 9707 Waples Street, Suite 150  
 San Diego, California 92121  
 Telephone: (619) 850-3980 Fax: (714) 409-3287

**LEGEND:**

- TP-1  Approximate location of exploratory test pits (AGS, 2014)
- afu  Artificial Fill - Undocumented
- Tmv  Mission Valley Formation (bracketed where buried)
- - - Approximate location of geologic contact (queried where uncertain)
- A A'  Approximate location of cross section



**PLATE 1**  
**Geologic Map and Exploration**  
**Location Plan**



**AGS**  
**ADVANCED GEOTECHNICAL SOLUTIONS, INC.**

Project: P/W 1404-01    Report: 1404-01-B-2    Date: 5/21/2014



**HUNSAKER & ASSOCIATES**  
 SAN DIEGO, INC.

PLANNING 9707 Waples Street  
 ENGINEERING San Diego, Ca 92121  
 SURVEYING PH(658)558-4500 · FX(658)558-1414

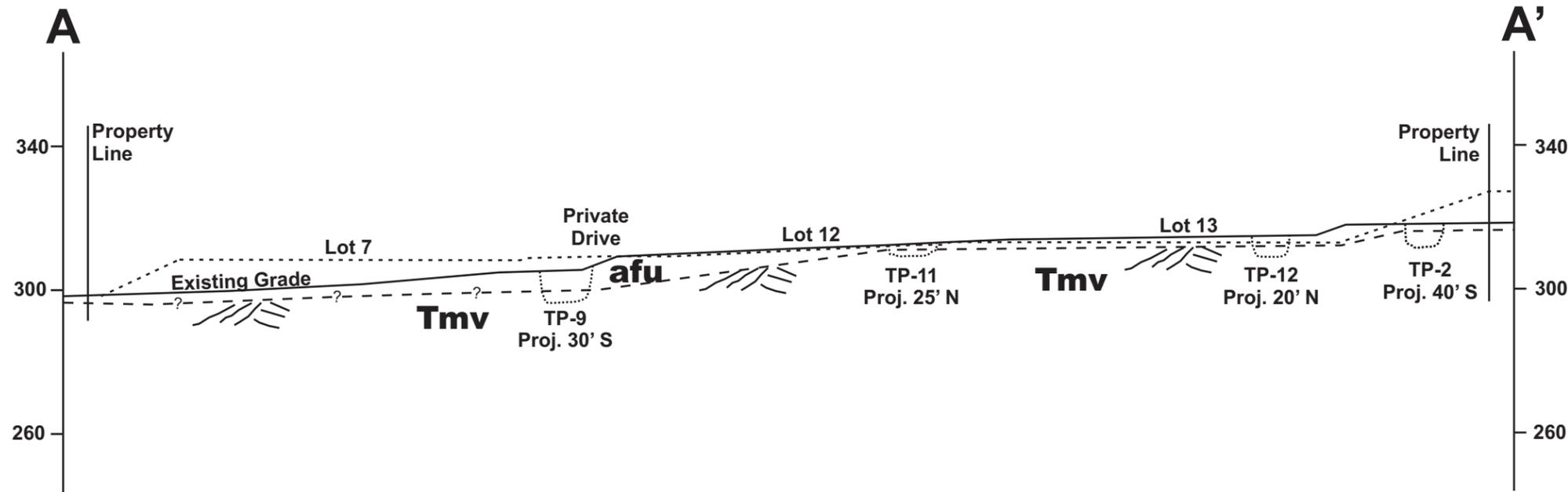
PRELIMINARY SITE PLAN  
 FOR VTM/PDP/STREET VACATION OF OS 57

**BOBS CORNER**

City of San Diego, California

SHEET	2
OF	2

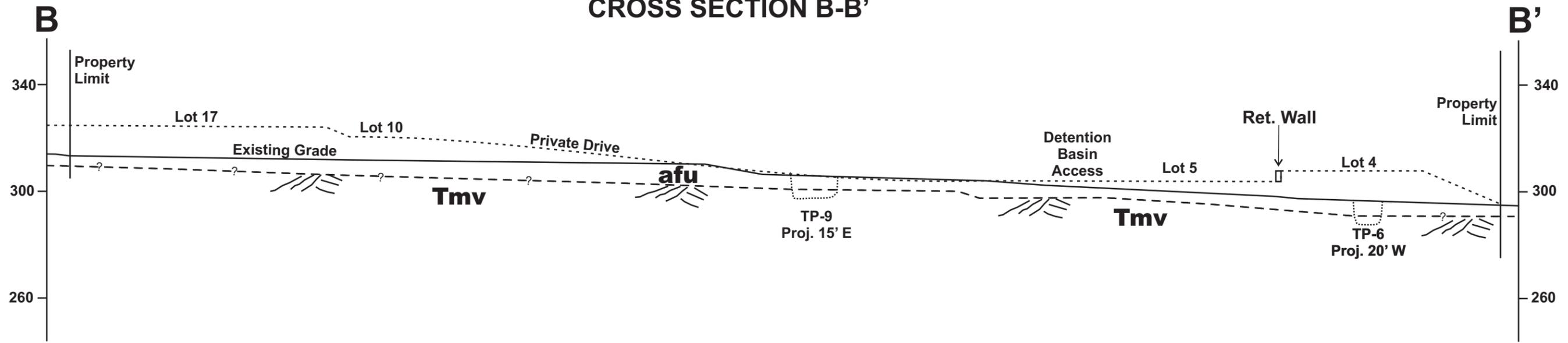
### CROSS SECTION A-A'



### LEGEND:

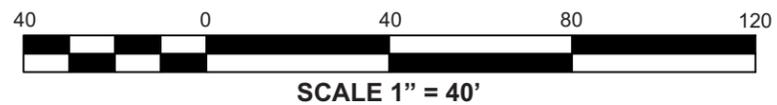
- afu Artificial Fill - Undocumented
- Tmv Mission Valley Formation
- - - Geologic Contact (queried where uncertain)
- U TP-6 Approximate Location of Exploratory Test Pit, AGS 2014 (Dotted where projected)

### CROSS SECTION B-B'



## PLATE 2

### Geologic Cross Sections



**APPENDIX A**  
**REFERENCES**

## REFERENCES

*American Concrete Institute, 2002, Building Code Requirements for Structural Concrete (ACI318M-02) and Commentary (ACI 318RM-02), ACI International, Farmington Hills, Michigan.*

*American Society for Testing and Materials (2008), Annual Book of ASTM Standards, Section 4, Construction, Volume 04.08, Soil and Rock (I), ASTM International, West Conshohocken, Pennsylvania.*

*American Society of Civil Engineers, 2013, Minimum Design Loads for Buildings and Other Structures (7-10, third printing).*

*California Building Standards Commission, 2013, California Building Code, Title 24, Part 2, Volumes 1 and 2.*

*City of San Diego Development Services Department, 2008, Seismic Safety Study, Geologic Hazards and Faults, Grid Tile 43, Scale 1":800', dated April 3, 2008.*

*Hunsaker and Associates, 2014, Preliminary Site Plan – Bob's Corner, City of San Diego, California, Sheet 2 of 2, 40-scale.*

*Jennings, C.W., 1994, Fault Activity Map of California and Adjacent Areas: California Geological Survey, California Geologic Data Map No. 6, Scale 1:750,000.*

*Kennedy, M.P., and Tan, S.S., 2008, Geologic Map of the San Diego 30' x 60' Quadrangle, California Regional Geologic Map Series, Scale 1:100,000, Map No. 3, Sheet 1 of 2.*

*Tan, S.S., 1995, Landslide Hazards in the Northern Part of the San Diego Metropolitan Area, San Diego County, California, California Division of Mines and Geology, Open File Report 95-04.*

*United States Geological Survey, U.S. Seismic Design Maps, World Wide Web, <http://earthquake.usgs.gov/hazards/designmaps/>.*

# **APPENDIX B**

**FIELD AND LAB DATA**

**TRENCH LOGS TP-1 THROUGH TP-16**

**LABORATORY TEST RESULTS**

Project Bob's Corner  
Date Excavated 4/7/2014  
Logged by JEH  
Equipment CAT 420F Backhoe

**LOG OF TEST PITS**

Test Pit No.	Depth (ft.)	USCS	Description
TP-1	0.0 – 5.5	SC-CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, dry, loose to firm.
		SM	@ 1.5 ft. SILTY SAND, light brown, slightly moist, loose; trace rounded cobbles to 3”.
		CL	@ 3.0 ft. CLAY, dark brown, slightly moist, firm to stiff.
	5.5 – 8.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY SANDSTONE, fine- to medium-grained, tan, slightly moist, highly weathered, soft. @ 6.5 ft. becomes moderately hard to hard
TOTAL DEPTH 8.0 FT. NO WATER, NO CAVING			
-----			
TP-2	0.0 – 3.0	SC-CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, dry, loose/ firm.
		CL	@ 3.0 ft. CLAY, dark brown, slightly moist, firm; occ. rounded cobbles to 4”.
	3.0 – 6.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY to CLAYEY SANDSTONE, fine- to medium-grained, mottled brown/orange/tan, slightly moist, highly weathered, moderately hard; caliche development. @ 4.5 ft. SILTY SANDSTONE, light brown with orange, slightly moist, moderately hard.
TOTAL DEPTH 6.0 FT. NO WATER, NO CAVING Bulk Sample Taken at 2’-3’			

**LOG OF TEST PITS CONTINUED**

Test Pit No.	Depth (ft.)	USCS	Description
TP-3	0.0 – 3.5	SC-CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, dry, loose/ firm.
		CL	@ 1.0 ft. CLAY, black to dark brown, slightly moist to moist, firm to stiff; occ. rounded cobbles.
	3.5 – 5.5		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY to CLAYEY SANDSTONE, fine- to medium-grained, mottled brown/orange/tan, slightly moist, highly weathered, soft to moderately hard. @ 4.5 ft. SILTY SANDSTONE, tan, slightly moist, moderately hard.
			TOTAL DEPTH 5.5 FT. NO WATER, NO CAVING
-----			
TP-4	0.0 – 4.5	CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> SANDY CLAY, dark brown, dry, soft. @ 1.0 ft. CLAY, dark brown, slightly moist, firm to stiff; trace rounded cobbles to 4". @ 3.0 ft. dark brown with abundant white carbonate/caliche spotting for 1.5 ft.
			<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY to CLAYEY SANDSTONE, fine- to medium-grained, mottled brown/orange/tan, slightly moist, highly weathered, soft to moderately hard; caliche development. @ 6.5 ft. SILTY SANDSTONE, tan, slightly moist, moderately hard; 0.5 ft. thick caliche zone.
			TOTAL DEPTH 7.5 FT. NO WATER, NO CAVING

**LOG OF TEST PITS CONTINUED**

Test Pit No.	Depth (ft.)	USCS	Description
TP-5	0.0 – 5.5	SC/CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, dry to slightly moist, loose/firm.
		CL	@ 3.0 ft. CLAY, dark gray brown, slightly moist to moist, firm to stiff.
	5.5 – 6.5		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY SANDSTONE, gray/orange/tan, slightly moist, soft to moderately hard.  TOTAL DEPTH 6.5 FT. NO WATER, NO CAVING
-----			
TP-6	0.0 – 6.0	SC/CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, dry, loose/soft; scattered aggregate base and rounded cobbles at surface.
		CL	@ 1.0 ft. CLAY, dark brown, slightly moist, firm to stiff; common rounded cobbles to 4". @ 3.0 ft. white carbonate spotting common for 2 ft.
	6.0 – 8.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY SANDSTONE, tan/gray/orange, slightly moist, highly weathered, soft. @ 7.0 ft. becomes moderately hard.  TOTAL DEPTH 8.0 FT. NO WATER, NO CAVING

**LOG OF TEST PITS CONTINUED**

Test Pit No.	Depth (ft.)	USCS	Description
TP-7	0.0 – 4.0	SC/CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, dry, loose/ firm.
		SM	@ 1.0 ft. SILTY SAND, orange brown, slightly moist, medium dense.
		SC	@ 2.0 ft. CLAYEY SAND, dark gray to dark brown, slightly moist, medium dense.
		CL	@ 3.0 ft. CLAY, dark brown, moist, stiff.
	4.0 – 5.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY SANDSTONE, light tan to orange tan, slightly moist, soft to moderately hard.  TOTAL DEPTH 5.0 FT. NO WATER, NO CAVING Bulk Sample Taken at 4'
-----			
TP-8	0.0 – 7.0	SC/CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, dry to slightly moist, loose/soft; occ. rounded cobbles to 4" from 0'-3'.
		CL	@ 3.0 ft. CLAY, dark brown, moist, stiff.
	7.0 – 9.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY to CLAYEY SANDSTONE, fine- to medium-grained, mottled orange with light gray, moist, highly weathered, soft to moderately hard. @ 8.0 ft. SILTY SANDSTONE, fine-grained, light tan to gray with orange, slightly moist, moderately hard; breaks into up to 6" fragments.  TOTAL DEPTH 9.0 FT. NO WATER, NO CAVING Bulk Sample Taken at 7'

**LOG OF TEST PITS CONTINUED**

Test Pit No.	Depth (ft.)	USCS	Description
TP-9	0.0 – 5.0	SC/CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, dry to slightly moist, loose/firm; occ. rounded cobbles to 5", scattered aggregate base at surface.
		CL	@ 3.0 ft. SANDY CLAY, dark brown, moist, stiff; rare 8" rounded cobbles.
	5.0 – 9.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SANDY SILTSTONE to CLAYSTONE, orange, moist, highly weathered, soft. @ 7.0 ft. SILTY SANDSTONE, fine-grained, gray/orange/tan, slightly moist, moderately hard; breaks into 6" fragments.
			TOTAL DEPTH 9.0 FT. NO WATER, NO CAVING Bulk Sample Taken at 0'-1'
-----			
TP-10	0.0 – 3.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY SANDSTONE, light tan with orange, slightly moist, highly weathered, soft; aggregate base at surface. @ 1.0' becomes moderately hard.
			TOTAL DEPTH 3.0 FT. NO WATER, NO CAVING Bulk Sample Taken at 1'

**LOG OF TEST PITS CONTINUED**

Test Pit No.	Depth (ft.)	USCS	Description
TP-11	0.0 – 1.5	CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> SANDY CLAY, brown, slightly moist, firm; with some gravel and cobble.
	1.5 – 2.5		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY SANDSTONE, light tan with orange, slightly moist, soft to moderately hard.  TOTAL DEPTH 2.5 FT. NO WATER, NO CAVING
-----			
TP-12	0.0 – 3.0	SC/CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, slightly moist, medium dense/firm; with scattered gravels and cobbles. @ 2.0 ft. moist.
	3.0 – 6.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY SANDSTONE, light tan with orange, slightly moist, highly weathered, soft. @ 4.0 ft. becomes moderately hard  TOTAL DEPTH 6.0 FT. NO WATER, NO CAVING

**LOG OF TEST PITS CONTINUED**

Test Pit No.	Depth (ft.)	USCS	Description
TP-13	0.0 – 6.5	SC/CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown, slightly moist, loose/firm; mulch at surface.
		SM	@ 3.0 ft. SILTY SAND, light brown, slightly moist, medium dense; with gravel and rounded cobbles.
		CL	@ 3.5 ft. SANDY CLAY, dark brown, moist, stiff.
	6.5 – 8.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY SANDSTONE, gray/orange/tan, slightly moist, highly weathered, soft. @ 7.0 ft. becomes moderately hard; clayey
			TOTAL DEPTH 8.0 FT. NO WATER, NO CAVING
-----			
TP-14	0.0 – 3.0	CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> SANDY CLAY, dark brown, moist, stiff; mulch at surface.
	3.0 – 4.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SILTY SANDSTONE, tan/gray/orange, moist, soft to moderately hard.
			TOTAL DEPTH 4.0 FT. NO WATER, NO CAVING Bulk Sample Taken at 2'

**LOG OF TEST PITS CONTINUED**

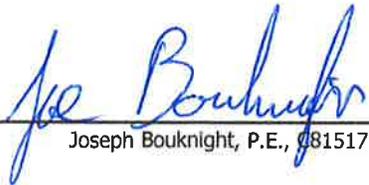
Test Pit No.	Depth (ft.)	USCS	Description
TP-15	0.0 – 5.0	SC/CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, brown to dark brown, slightly moist to moist, medium dense/stiff.
	5.0 – 7.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SANDSTONE, medium to coarse-grained, light tan to orange with some red, moist, highly weathered, soft. @ 6.0 ft. becomes moderately hard.  TOTAL DEPTH 7.0 FT. NO WATER, NO CAVING
-----			
TP-16	0.0 – 1.5	SC/CL	<b><u>ARTIFICIAL FILL – UNDOCUMENTED (afu):</u></b> CLAYEY SAND to SANDY CLAY, dark brown, slightly moist, loose to soft.
	1.5 – 3.0		<b><u>MISSION VALLEY FM. (Tmv):</u></b> SANDSTONE, medium to coarse-grained, light tan to orange with some red, moist, highly weathered, soft. @ 2.0 ft. becomes moderately hard.  TOTAL DEPTH 3.0 FT. NO WATER, NO CAVING

## Expansion Index (ASTM D4829)

G Force Lab No.	9911	Sample No:	TP-2
Date Sampled:	04/07/14	By:	Juli H
Date Submitted:	04/07/14	By:	Juli H
Sample Location:	On Site		
Sample Depth:	2-3'		
Sample Description:	Dk Brown Silty Clay (CL/CH)		

Initial Water Content, %	11.6%
Dry Density, pcf	104.1
Saturation, %	50.7%
Initial Dial Reading, in.	0.0000
Final Dial Reading, in.	0.1108
Final Water Content, %	26.4%
<b>Expansion Index</b>	<b>112</b>
<b>Potential Expansion</b>	<b>High</b>

Reviewed by: \_\_\_\_\_

  
Joseph Bouknight, P.E., 081517



## Expansion Index (ASTM D4829)

G Force Lab No.	9909	Sample No:	TP-14
Date Sampled:	04/07/14	By:	Juli H
Date Submitted:	04/07/14	By:	Juli H
Sample Location:	On Site		
Sample Depth:	2'		
Sample Description:	Dk Brown Sandy Clay (CL/CH)		

Initial Water Content, %	13.4%
Dry Density, pcf	97.3
Saturation, %	49.4%
Initial Dial Reading, in.	0.0000
Final Dial Reading, in.	0.1020
Final Water Content, %	32.2%
<b>Expansion Index</b>	<b>101</b>
<b>Potential Expansion</b>	<b>High</b>

Reviewed by: \_\_\_\_\_



Joseph Bouknicht, P.E., C81517

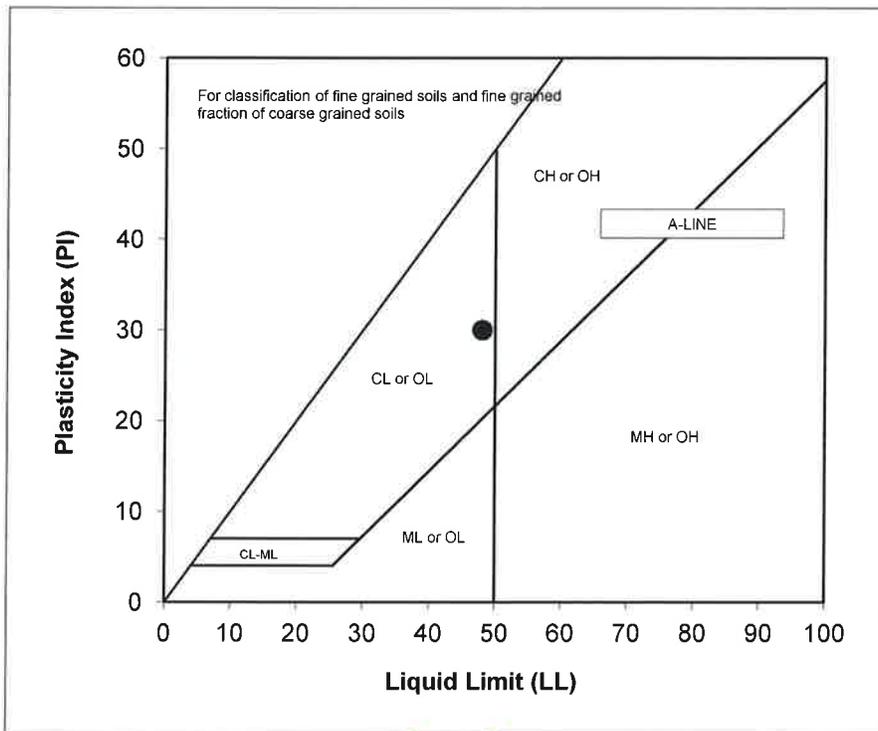


## Atterberg Limits

(ASTM D4318)

G Force Lab No.	9911	Boring Number: TP - 2
Date Sampled:	4/7/2014	By: Juli
Date Submitted:	4/7/2014	By: Juli
Sample Location:	On Site Test Pit	Depth: 2-3'
Boring Number:	TP - 2	
Sample Description:	Brown Sandy Clay CL	
Special Specimen Selection Process:	N/A	
Sample Drying Method:	Air Dry	
Estimated Retained on No. 40 Sieve (%):	20	
Liquid Limit Procedure Used:	Method A: Multipoint	

Liquid Limit	48
Plastic Limit	18
<b>Plasticity Index</b>	<b>30</b>
<b>Classification</b>	<b>CL</b>



Reviewed by: *Joe Bouhnight*  
 Joseph Bouhnight, P.E., C81517



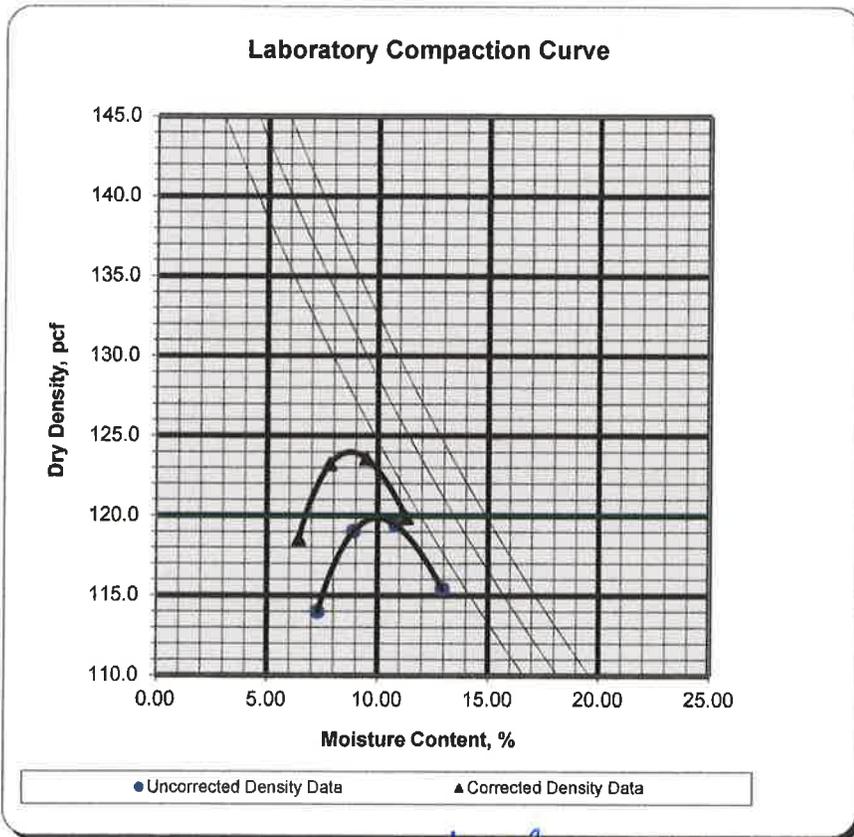
## LABORATORY COMPACTION CURVE

G Force Lab No.: **9910**  
 Sample Location: **TP-9**  
 Soil Description: **Brown Clayey Sand W/ gravel (SC)**  
 Source of Soil: **Test Pit On Site**

Depth, ft.: **0-1'**  
 Sampled By: **Juli H.**  
 Date Sampled: **4/7/2014**

Test Designation: **ASTM\_D1557**      **ASTM D4718, & ASTM C127**      Method **B**  
 % +3/4"      **10.9**      % +3/8"      **13.4**      % +#4      **14.5**  
 Oversize Correction Applied?      **Yes**  
 Method of Sample Preparation:      **Dry**  
 Type of Hammer Used:      **Manual**

**M/D Curve No. TP-9**



**Test Results**

Maximum Density, pcf	<b>119.8</b>
Optimum Moisture, %	<b>9.9</b>

**Oversize Corrected Results**

Maximum Density, pcf	<b>124.0</b>
Optimum Moisture, %	<b>8.7</b>

Reviewed by: *Joseph Bouknight*  
 Joseph Bouknight, P.E., CB1517



SAMPLE IDENTIFICATION	RESISTIVITY (ohm - cm)	pH	SOLUBLE SULFATE (%)	CHLORIDE (%)
Lab #9910, TP-9@1	840	7.72	<0.001	0.020

--

**ACI 318 Building Code Requirements for Structural Concrete -  
Table 4.3.1 Requirements for Concrete Exposed to Sulfate-Containing Solutions**

Sulfate Exposure	Water-Soluble Sulfate in Soil Percentage by Weight	Cement Type	Maximum Water-Cementitious Materials Ratio, By Weight, Normal Weight Aggregate Concrete(1)	Minimum f'c, Normal-Weight and Lightweight Aggregate Concrete, psi
Negligible	0.00-0.10	-	-	
Moderate	0.10-0.20	II,IP(MS),IS(MS)	0.50	4,000
Severe	0.20-2.00	V	0.45	4,500
Very Severe	Over 2.00	V plus pozzolan	0.45	4,500

**Caltrans Corrosion Criteria**

Corrosive Environment*	RESISTIVITY( ohms - cm)	pH	SOLUBLE SULFATE (%)	CHLORIDE (%)
	<1000**	<5.5	>0.2	>0.05

\* Corrosive environment as determined by the California Department of Transportation Division of Engineering Services, Materials Engineering and testing Services Corrosion Technology Branch, 2003 Corrosion Guidelines Version 1.0, September 2003

 <b>SOUTHERN CALIFORNIA SOIL &amp; TESTING, INC.</b>	G-Force #GF13745	
	BY: R. Tena	DATE: 5/2/2014
	JOB NUMBER: 1412005	

**APPENDIX C**  
**GENERAL EARTHWORK SPECIFICATIONS**  
**AND GRADING GUIDELINES**

## GENERAL EARTHWORK SPECIFICATIONS

### I. General

A. General procedures and requirements for earthwork and grading are presented herein. The earthwork and grading recommendations provided in the geotechnical report are considered part of these specifications, and where the general specifications provided herein conflict with those provided in the geotechnical report, the recommendations in the geotechnical report shall govern. Recommendations provided herein and in the geotechnical report may need to be modified depending on the conditions encountered during grading.

B. The contractor is responsible for the satisfactory completion of all earthwork in accordance with the project plans, specifications, applicable building codes, and local governing agency requirements. Where these requirements conflict, the stricter requirements shall govern.

C. It is the contractor's responsibility to read and understand the guidelines presented herein and in the geotechnical report as well as the project plans and specifications. Information presented in the geotechnical report is subject to verification during grading. The information presented on the exploration logs depict conditions at the particular time of excavation and at the location of the excavation. Subsurface conditions present at other locations may differ, and the passage of time may result in different subsurface conditions being encountered at the locations of the exploratory excavations. The contractor shall perform an independent investigation and evaluate the nature of the surface and subsurface conditions to be encountered and the procedures and equipment to be used in performing his work.

D. The contractor shall have the responsibility to provide adequate equipment and procedures to accomplish the earthwork in accordance with applicable requirements. When the quality of work is less than that required, the Geotechnical Consultant may reject the work and may recommend that the operations be suspended until the conditions are corrected.

E. Prior to the start of grading, a qualified Geotechnical Consultant should be employed to observe grading procedures and provide testing of the fills for conformance with the project specifications, approved grading plan, and guidelines presented herein. All remedial removals, clean-outs, removal bottoms, keyways, and subdrain installations should be observed and documented by the Geotechnical Consultant prior to placing fill. It is the contractor's responsibility to appraise the Geotechnical Consultant of their schedules and notify the Geotechnical Consultant when those areas are ready for observation.

F. The contractor is responsible for providing a safe environment for the Geotechnical Consultant to observe grading and conduct tests.

### II. Site Preparation

A. Clearing and Grubbing: Excessive vegetation and other deleterious material shall be sufficiently removed as required by the Geotechnical Consultant, and such materials shall be properly disposed of offsite in a method acceptable to the owner and governing agencies. Where applicable, the contractor may obtain permission from the Geotechnical Consultant, owner, and governing agencies to dispose of vegetation and other deleterious materials in designated areas onsite.

B. Unsuitable Soils Removals: Earth materials that are deemed unsuitable for the support of fill shall be removed as necessary to the satisfaction of the Geotechnical Consultant.

C. Any underground structures such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, pipelines, other utilities, or other structures located within the limits of grading shall be removed and/or abandoned in accordance with the requirements of the governing agency and to the satisfaction of the Geotechnical Consultant.

D. Preparation of Areas to Receive Fill: After removals are completed, the exposed surfaces shall be scarified to a depth of approximately 8 inches, watered or dried, as needed, to achieve a generally uniform moisture content that is at or near optimum moisture content. The scarified materials shall then be compacted to the project requirements and tested as specified.

E. All areas receiving fill shall be observed and approved by the Geotechnical Consultant prior to the placement of fill. A licensed surveyor shall provide survey control for determining elevations of processed areas and keyways.

### III. Placement of Fill

A. Suitability of fill materials: Any materials, derived onsite or imported, may be utilized as fill provided that the materials have been determined to be suitable by the Geotechnical Consultant. Such materials shall be essentially free of organic matter and other deleterious materials, and be of a gradation, expansion potential, and/or strength that is acceptable to the Geotechnical Consultant. Fill materials shall be tested in a laboratory approved by the Geotechnical Consultant, and import materials shall be tested and approved prior to being imported.

B. Generally, different fill materials shall be thoroughly mixed to provide a relatively uniform blend of materials and prevent abrupt changes in material type. Fill materials derived from benching should be dispersed throughout the fill area instead of placing the materials within only an equipment-width from the cut/fill contact.

C. Oversize Materials: Rocks greater than 8 inches in largest dimension shall be disposed of offsite or be placed in accordance with the recommendations by the Geotechnical Consultant in the areas that are designated as suitable for oversize rock placement. Rocks that are smaller than 8 inches in largest dimension may be utilized in the fill provided that they are not nested and are their quantity and distribution are acceptable to the Geotechnical Consultant.

D. The fill materials shall be placed in thin, horizontal layers such that, when compacted, shall not exceed 6 inches. Each layer shall be spread evenly and shall be thoroughly mixed to obtain a near uniform moisture content and uniform blend of materials.

E. Moisture Content: Fill materials shall be placed at or above the optimum moisture content or as recommended by the geotechnical report. Where the moisture content of the engineered fill is less than recommended, water shall be added, and the fill materials shall be blended so that a near uniform moisture content is achieved. If the moisture content is above the limits specified by the Geotechnical Consultant, the fill materials shall be aerated by discing, blading, or other methods until the moisture content is acceptable.

F. Each layer of fill shall be compacted to the project standards in accordance to the project specifications and recommendations of the Geotechnical Consultant. Unless otherwise specified by the Geotechnical Consultant, the fill shall be compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM Test Method: D1557-09.

G. Benching: Where placing fill on a slope exceeding a ratio of 5 to 1 (horizontal to vertical), the ground should be keyed or benched. The keyways and benches shall extend through all unsuitable materials into suitable materials such as firm materials or sound bedrock or as recommended by the Geotechnical Consultant. The minimum keyway width shall be 15 feet and extend into suitable materials, or as recommended by the geotechnical report and approved by the Geotechnical Consultant. The minimum keyway width for fill over cut slopes is also 15 feet, or as recommended by the geotechnical report and approved by the Geotechnical Consultant. As a general rule, unless otherwise recommended by the Geotechnical Consultant, the minimum width of the keyway shall be equal to 1/2 the height of the fill slope.

H. Slope Face: The specified minimum relative compaction shall be maintained out to the finish face of fill and stabilization fill slopes. Generally, this may be achieved by overbuilding the slope and cutting back to the compacted core. The actual amount of overbuilding may vary as field conditions dictate. Alternately, this may be achieved by backrolling the slope face with suitable equipment or other methods that produce the designated result. Loose soil should not be allowed to build up on the slope face. If present, loose soils shall be trimmed to expose the compacted slope face.

I. Slope Ratio: Unless otherwise approved by the Geotechnical Consultant and governing agencies, permanent fill slopes shall be designed and constructed no steeper than 2 to 1 (horizontal to vertical).

J. Natural Ground and Cut Areas: Design grades that are in natural ground or in cuts should be evaluated by the Geotechnical Consultant to determine whether scarification and processing of the ground and/or overexcavation is needed.

K. Fill materials shall not be placed, spread, or compacted during unfavorable weather conditions. When grading is interrupted by rain, filing operations shall not resume until the Geotechnical Consultant approves the moisture and density of the previously placed compacted fill.

#### IV. Cut Slopes

A. The Geotechnical Consultant shall inspect all cut slopes, including fill over cut slopes, and shall be notified by the contractor when cut slopes are started.

B. If adverse or potentially adverse conditions are encountered during grading, the Geotechnical Consultant shall investigate, evaluate, and make recommendations to mitigate the adverse conditions.

C. Unless otherwise stated in the geotechnical report, cut slopes shall not be excavated higher or steeper than the requirements of the local governing agencies. Short-term stability of the cut slopes and other excavations is the contractor's responsibility.

#### V. Drainage

A. Backdrains and Subdrains: Backdrains and subdrains shall be provided in fill as recommended by the Geotechnical Consultant and shall be constructed in accordance with the governing agency and/or recommendations of the Geotechnical Consultant. The location of subdrains, especially outlets, shall be surveyed and recorded by the Civil Engineer.

B. Top-of-slope Drainage: Positive drainage shall be established away from the top of slope. Site drainage shall not be permitted to flow over the tops of slopes.

C. Drainage terraces shall be constructed in compliance with the governing agency requirements and/or in accordance with the recommendations of the Geotechnical Consultant.

D. Non-erodible interceptor swales shall be placed at the top of cut slopes that face the same direction as the prevailing drainage.

#### VI. Erosion Control

A. All finish cut and fill slopes shall be protected from erosion and/or planted in accordance with the project specifications and/or landscape architect's recommendations. Such measures to protect the slope face shall be undertaken as soon as practical after completion of grading.

B. During construction, the contractor shall maintain proper drainage and prevent the ponding of water. The contractor shall take remedial measures to prevent the erosion of graded areas until permanent drainage and erosion control measures have been installed.

#### VII. Trench Excavation and Backfill

A. Safety: The contractor shall follow all OSHA requirements for safety of trench excavations. Knowing and following these requirements is the contractor's responsibility. All trench excavations or open cuts in excess of 5 feet in depth shall be shored or laid back. Trench excavations and open cuts exposing adverse geologic conditions may require further evaluation by the Geotechnical Consultant. If a contractor fails to provide safe access for compaction testing, backfill not tested due to safety concerns may be subject to removal.

B. Bedding: Bedding materials shall be non-expansive and have a Sand Equivalent greater than 30. Where permitted by the Geotechnical Consultant, the bedding materials can be densified by jetting.

C. Backfill: Jetting of backfill materials is generally not acceptable. Where permitted by the Geotechnical Consultant, the bedding materials can be densified by jetting provided the backfill materials are granular, free-draining and have a Sand Equivalent greater than 30.

#### VIII. Geotechnical Observation and Testing During Grading

A. Compaction Testing: Fill shall be tested by the Geotechnical Consultant for evaluation of general compliance with the recommended compaction and moisture conditions. The tests shall be taken in the compacted soils beneath the surface if the surficial materials are disturbed. The contractor shall assist the Geotechnical Consultant by excavating suitable test pits for testing of compacted fill.

B. Where tests indicate that the density of a layer of fill is less than required, or the moisture content not within specifications, the Geotechnical Consultant shall notify the contractor of the unsatisfactory conditions of the fill. The portions of the fill that are not within specifications shall be reworked until the required density and/or moisture content has been attained. No additional fill shall be placed until the last

lift of fill is tested and found to meet the project specifications and approved by the Geotechnical Consultant.

C. If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as adverse weather, excessive rock or deleterious materials being placed in the fill, insufficient equipment, excessive rate of fill placement, results in a quality of work that is unacceptable, the consultant shall notify the contractor, and the contractor shall rectify the conditions, and if necessary, stop work until conditions are satisfactory.

D. Frequency of Compaction Testing: The location and frequency of tests shall be at the Geotechnical Consultant's discretion. Generally, compaction tests shall be taken at intervals not exceeding two feet in fill height and 1,000 cubic yards of fill materials placed.

E. Compaction Test Locations: The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of the compaction test locations. The contractor shall coordinate with the surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations. Alternately, the test locations can be surveyed and the results provided to the Geotechnical Consultant.

F. Areas of fill that have not been observed or tested by the Geotechnical Consultant may have to be removed and recompacted at the contractor's expense. The depth and extent of removals will be determined by the Geotechnical Consultant.

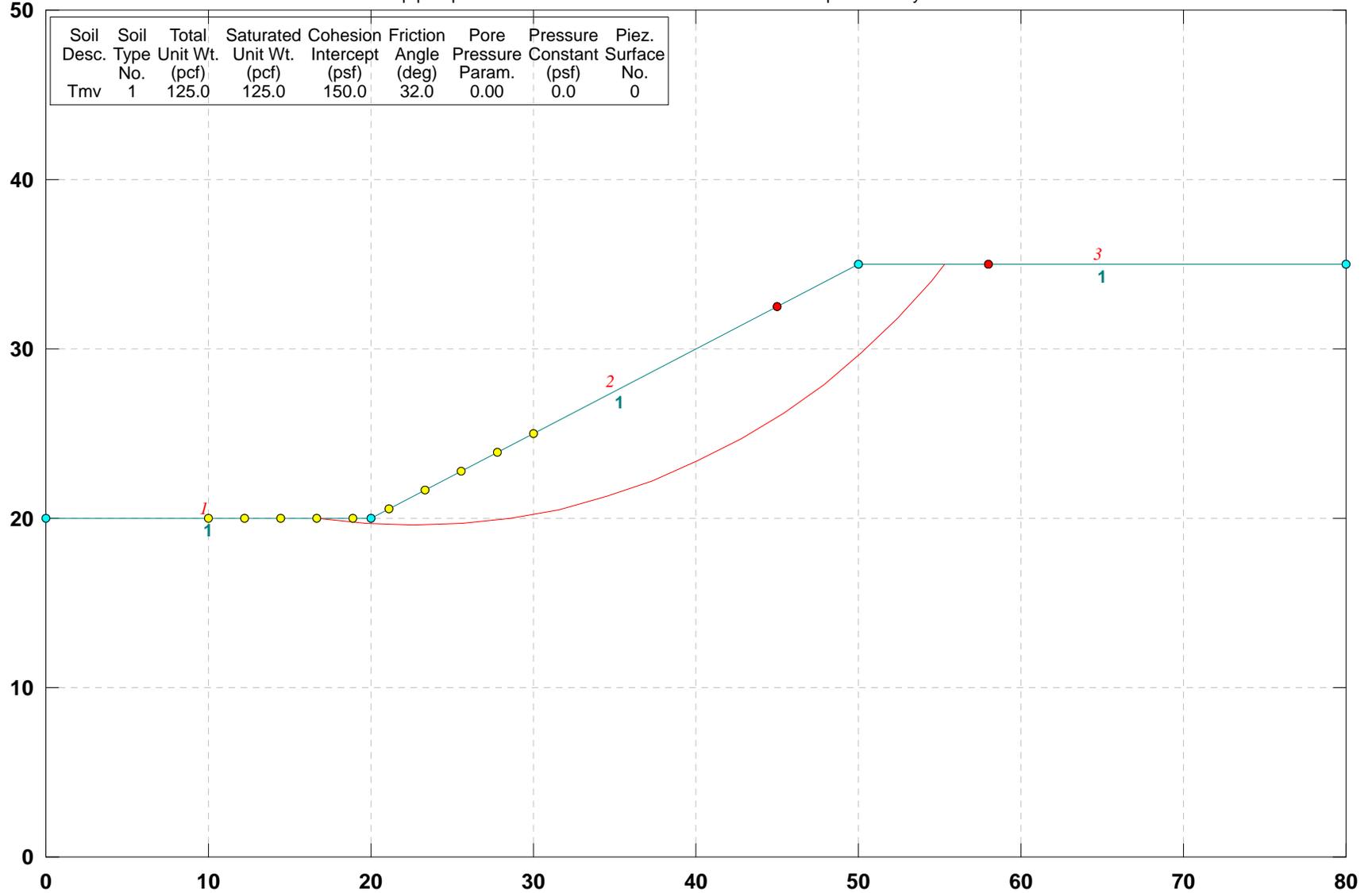
G. Observation and testing by the Geotechnical Consultant shall be conducted during grading in order for the Geotechnical Consultant to state that, in his opinion, grading has been completed in accordance with the approved geotechnical report and project specifications.

H. Reporting of Test Results: After completion of grading operations, the Geotechnical Consultant shall submit reports documenting their observations during construction and test results. These reports may be subject to review by the local governing agencies.

**APPENDIX D**  
**SLOPE STABILITY ANALYSES**

# 1404-01 Bob's Corner 15 ft. 2:1 Cut Slope (Static)

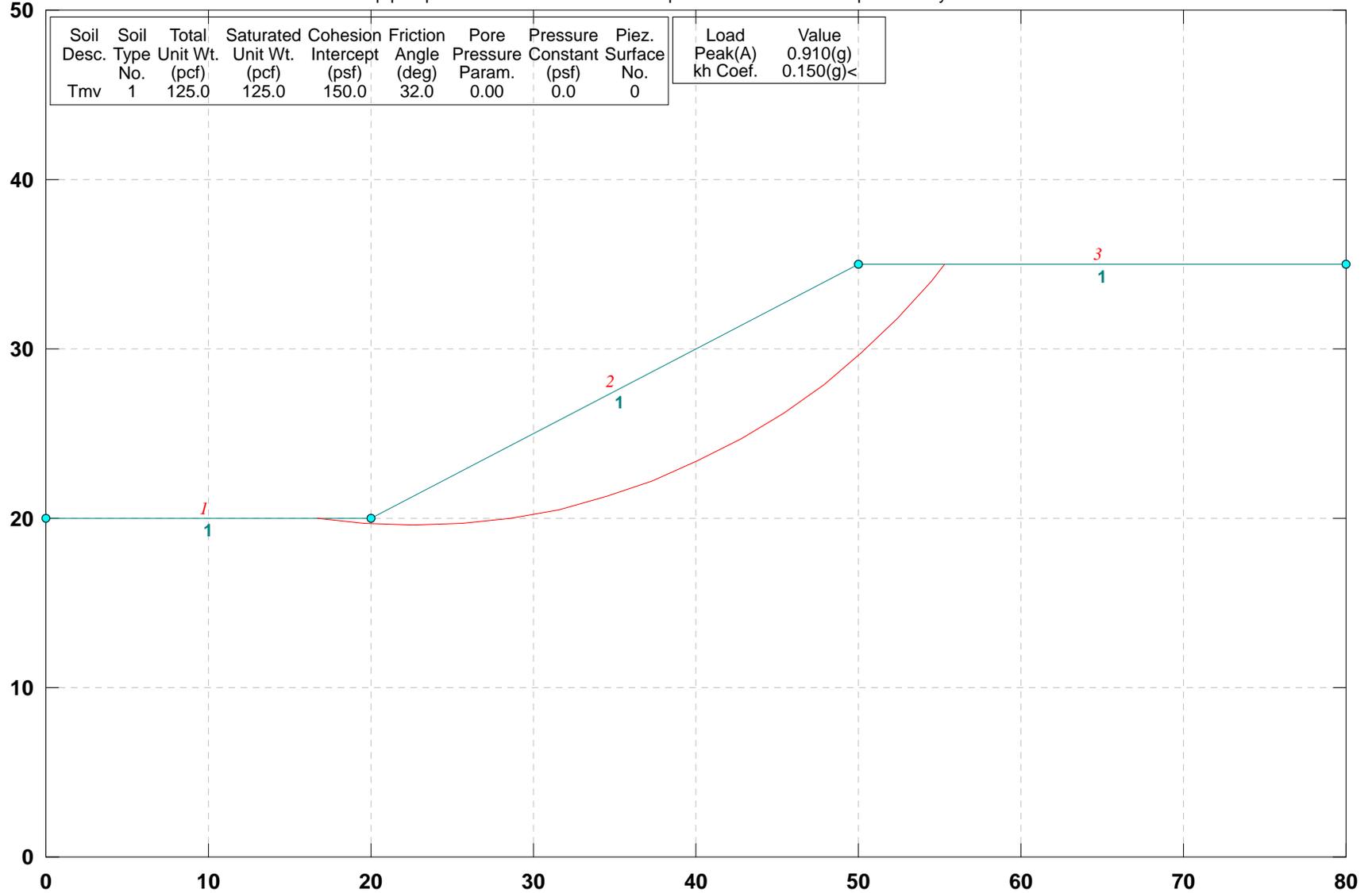
c:\users\nick\desktop\phillip\bob's corner\bob's corner cut static surface #1.pl2 Run By: AGS 5/20/2014 02:28PM



GSTABL7 v.2 FSmin=2.37  
 Safety Factors Are Calculated By The Modified Bishop Method

# 1404-01 Bob's Corner 15 ft. 2:1 Cut Slope (Pseudo-static)

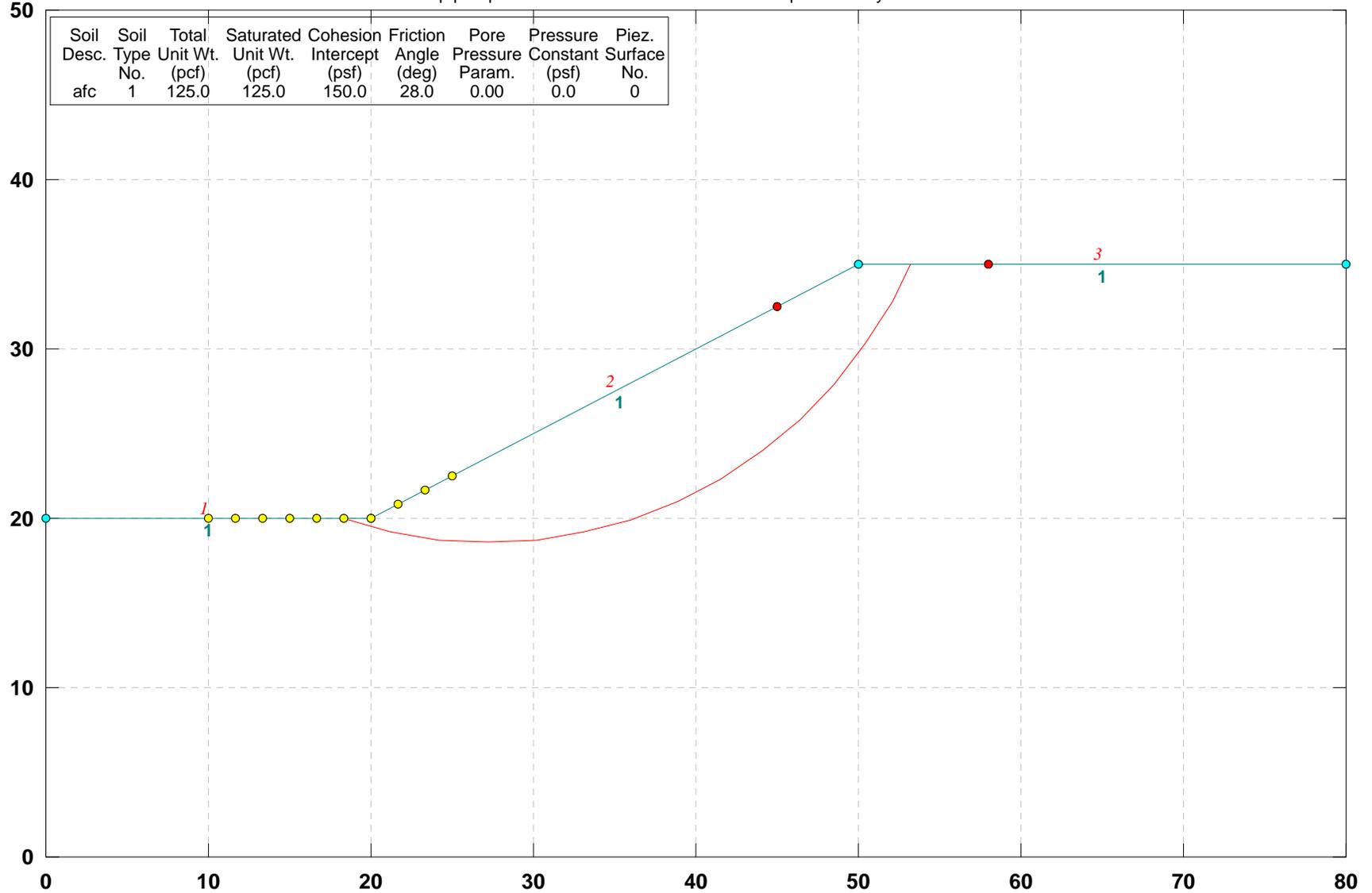
c:\users\nick\desktop\phillip\bob's corner\bob's corner cut pseudostatic surface #1.plt Run By: AGS 5/20/2014 02:30PM



GSTABL7 v.2 FSmin=1.72  
 Factor Of Safety Is Calculated By The Modified Bishop Method

# 1404-01 Bob's Corner 15 ft. 2:1 Fill Slope (Static)

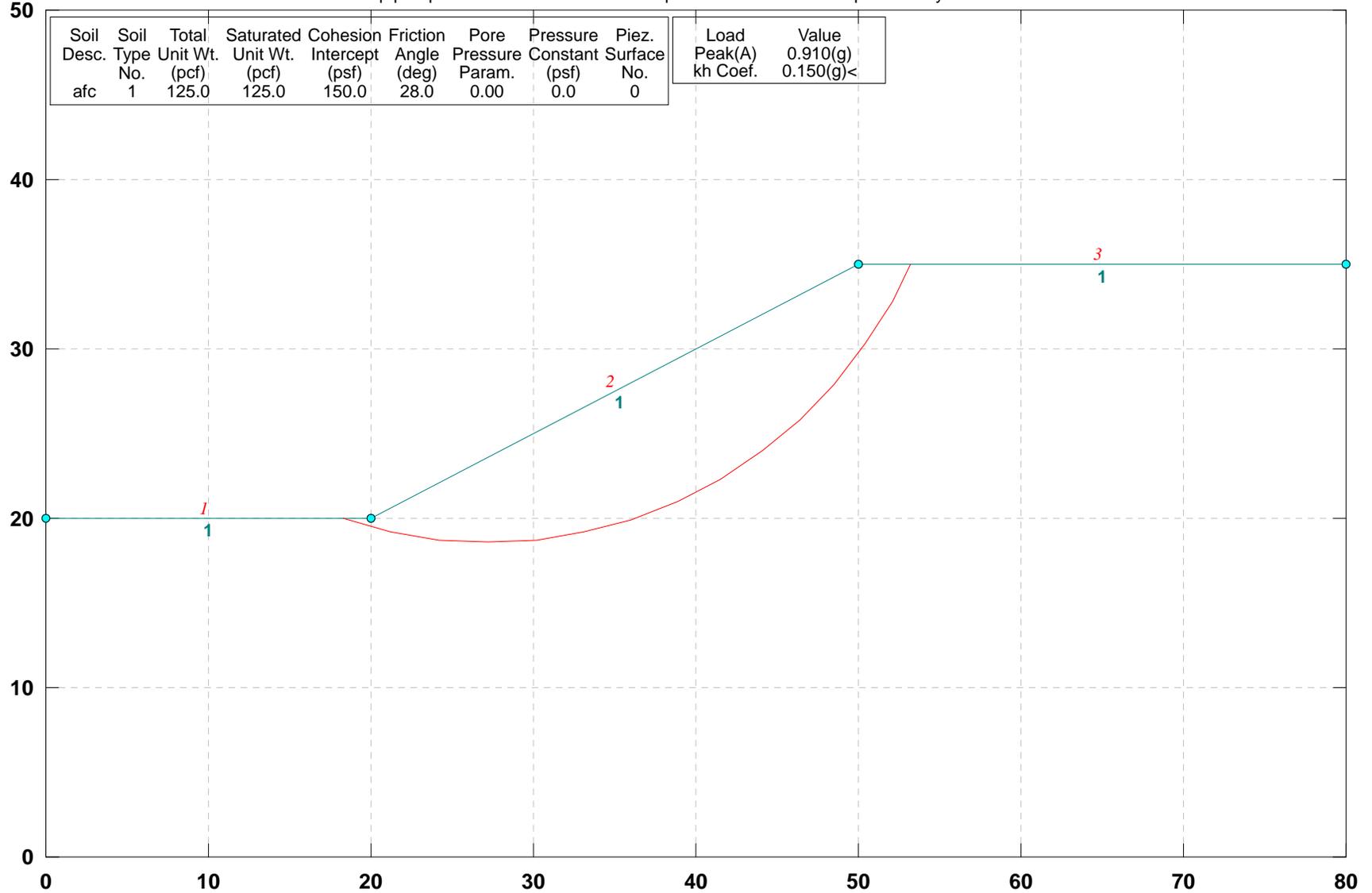
c:\users\nick\desktop\phillip\bob's corner\bob's corner surface #1.pl2 Run By: AGS 5/20/2014 02:31PM



GSTABL7 v.2 FSmin=2.11  
 Safety Factors Are Calculated By The Modified Bishop Method

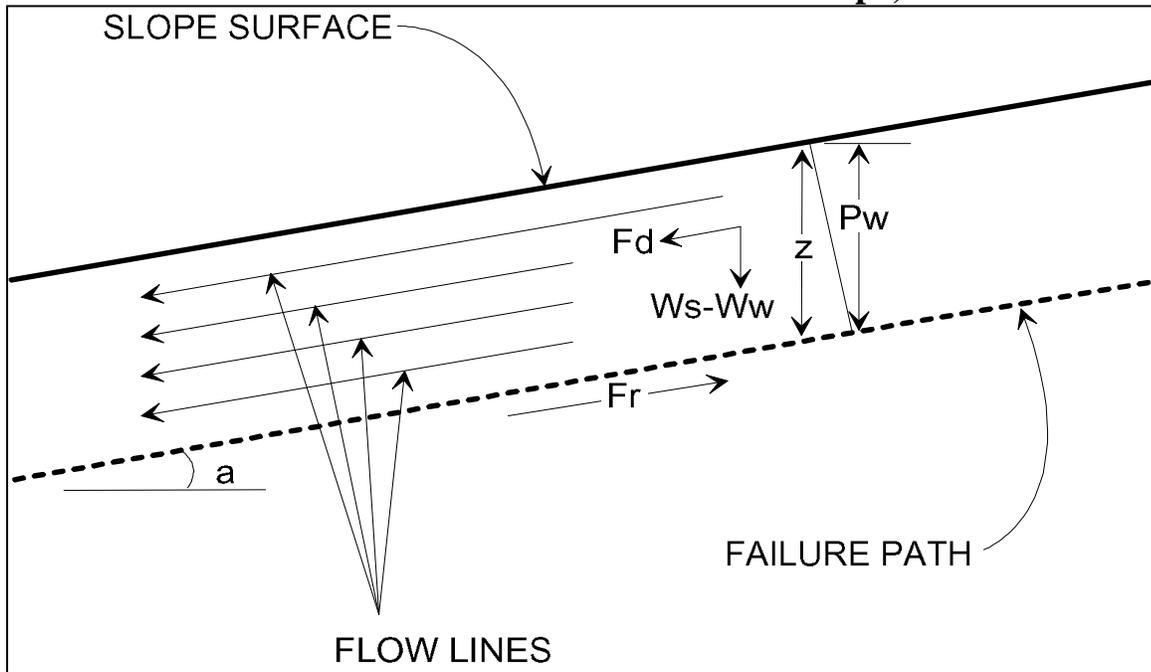
# 1404-01 Bob's Corner 15 ft. 2:1 Fill Slope (Pseudo-static)

c:\users\nick\desktop\phillip\bob's corner\bob's corner fill pseudostatic surface #1.plt Run By: AGS 5/20/2014 02:25PM



GSTABL7 v.2 FSmin=1.56  
 Factor Of Safety Is Calculated By The Modified Bishop Method

## SURFICIAL SLOPE STABILITY-15 ft Fill Slope, 2:1



- Assume: (1) Saturation To Slope Surface  
 (2) Sufficient Permeability To Establish Water Flow

$$P_w = \text{Water Pressure Head} = (z)(\cos^2(a))$$

$W_s$  = Saturated Soil Unit Weight

$W_w$  = Unit Weight of Water (62.4 lb/cu.ft.)

$u$  = Pore Water Pressure =  $(W_w)(z)(\cos^2(a))$

$z$  = Layer Thickness

$a$  = Angle of Slope

$\phi$  = Angle of Friction

$c$  = Cohesion

$$F_d = (0.5)(z)(W_s)(\sin(2a))$$

$$F_r = (z)(W_s - W_w)(\cos^2(a))(\tan(\phi)) + c$$

$$\text{Factor of Safety (FS)} = F_r / F_d$$

Given:

Ws (pcf)	z (ft)	a		phi		c (psf)
		(degrees)	(radians)	(degrees)	(radians)	
125	3	26.56505	0.46365	28	0.48869	150

Calculations:

Pw	u	Fd	Fr	FS
2.40	149.76	150.00	229.88	<b>1.53</b>

# **NOISE STUDY**

## **Meadowood 2 Residential Development City of San Diego**

**Prepared for:**

**Hall Land Company, Inc.  
740 Lomas Santa Fe Drive, Suite 204  
Solana Beach, CA 92075**

**Prepared by:**

***Ldn Consulting, Inc.***

**42428 Chisolm Trail  
Murrieta, CA 92562  
760-473-1253**

**May 28, 2015**

## TABLE OF CONTENTS

TABLE OF CONTENTS.....	II
LIST OF FIGURES.....	II
LIST OF TABLES.....	II
APPENDICES.....	II
GLOSSARY OF TERMS.....	III
EXECUTIVE SUMMARY.....	IV
<b>1.0 PROJECT INTRODUCTION.....</b>	<b>1</b>
1.1 PURPOSE OF THIS STUDY.....	1
1.2 PROJECT LOCATION.....	1
1.3 PROJECT SETTING.....	1
<b>2.0 ACOUSTICAL FUNDAMENTALS.....</b>	<b>3</b>
<b>3.0 SIGNIFICANCE THRESHOLDS AND STANDARDS.....</b>	<b>5</b>
<b>4.0 NOISE ENVIRONMENT.....</b>	<b>7</b>
4.1 EXISTING NOISE ENVIRONMENT ONSITE.....	7
4.2 FUTURE NOISE PREDICTION METHODOLOGY.....	9
<b>5.0 FINDINGS AND MITIGATION.....</b>	<b>11</b>

## LIST OF FIGURES

FIGURE ES-1: PROPOSED NOISE BARRIER LOCATION.....	V
FIGURE 1-1: PROJECT VICINITY MAP.....	2
FIGURE 4-1: AMBIENT MONITORING LOCATIONS.....	8
FIGURE 4-2: MODELED RECEPTOR LOCATIONS.....	10
FIGURE 5-1: PROPOSED NOISE BARRIER LOCATION.....	12

## LIST OF TABLES

TABLE 3-1: LAND USE - NOISE COMPATIBILITY GUIDELINES.....	6
TABLE 4-1: MEASURED AMBIENT NOISE LEVELS.....	7
TABLE 4-2: FUTURE TRAFFIC PARAMETERS.....	9
TABLE 5-1: FUTURE EXTERIOR NOISE LEVELS.....	11

## APPENDICES

FUTURE NOISE MODEL INPUT AND OUTPUT FILES.....	13
--	----

## **GLOSSARY OF TERMS**

**Sound Pressure Level (SPL):** a ratio of one sound pressure to a reference pressure ( $L_{ref}$ ) of 20  $\mu$ Pa. Because of the dynamic range of the human ear, the ratio is calculated logarithmically by  $20 \log (L/L_{ref})$ .

**A-weighted Sound Pressure Level (dBA):** Some frequencies of noise are more noticeable than others. To compensate for this fact, different sound frequencies are weighted more.

**Minimum Sound Level ( $L_{min}$ ):** Minimum SPL or the lowest SPL measured over the time interval using the A-weighted network and slow time weighting.

**Maximum Sound Level ( $L_{max}$ ):** Maximum SPL or the highest SPL measured over the time interval the A-weighted network and slow time weighting.

**Equivalent sound level ( $L_{eq}$ ):** the true equivalent sound level measured over the run time.  $L_{eq}$  is the A-weighted steady sound level that contains the same total acoustical energy as the actual fluctuating sound level.

**Day Night Sound Level (LDN):** Representing the Day/Night sound level, this measurement is a 24 –hour average sound level where 10 dB is added to all the readings that occur between 10 pm and 7 am. This is primarily used in community noise regulations where there is a 10 dB “Penalty” for night time noise. Typically LDN’s are measured using A weighting.

**Community Noise Exposure Level (CNEL):** The accumulated exposure to sound measured in a 24-hour sampling interval and artificially boosted during certain hours. For CNEL, samples taken between 7 pm and 10 pm are boosted by 5 dB; samples taken between 10 pm and 7 am are boosted by 10 dB.

**Octave Band:** An octave band is defined as a frequency band whose upper band-edge frequency is twice the lower band frequency.

**Third-Octave Band:** A third-octave band is defined as a frequency band whose upper band-edge frequency is 1.26 times the lower band frequency.

**Response Time (F,S,I):** The response time is a standardized exponential time weighting of the input signal according to fast (F), slow (S) or impulse (I) time response relationships. Time response can be described with a time constant. The time constants for fast, slow and impulse responses are 1.0 seconds, 0.125 seconds and 0.35 milliseconds, respectively.

## **EXECUTIVE SUMMARY**

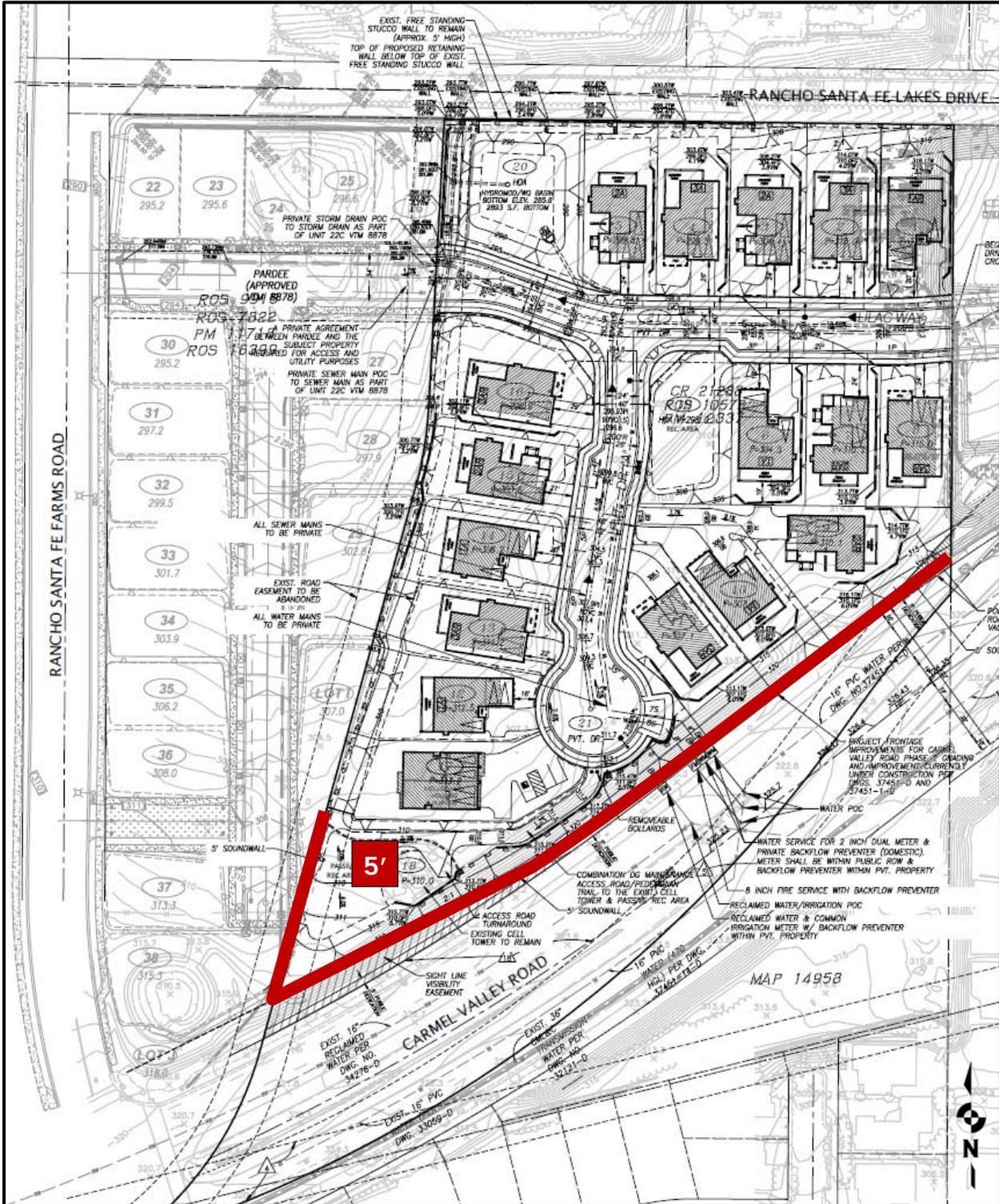
This noise study has been completed to determine the noise impacts associated with the development of the proposed residential project. The project known as "Meadowood 2" consists of 16 single family units and a duplex unit within approximately 5.7 gross acres in the City of San Diego CA. The project site is located north of Camel Valley Road approximately 200 feet east of the intersection of Camel Valley Road and Rancho Santa Fe Farms Road.

The results of this analysis indicate that future vehicle noise from Camel Valley Road and Rancho Santa Fe Farms Road are the principal source of community noise that could impact the site. All the residential units will comply with the City's 65 dBA standard with the proposed 5 foot high noise wall along Carmel Valley Road. Figure ES-1 on the following page shows the proposed project site and location of the barrier. The barrier must be constructed of a non-gapping material consisting of masonry, ½ inch thick glass, earthen berm or any combination of these materials.

The City of San Diego as part of its noise guidelines also states, consistent with Title 24 of the California Code of Regulations (CCR), a project is required to perform an interior assessment on the portions of a project site where building façade noise levels are above 60 dBA CNEL in order to ensure a 45 dBA CNEL interior noise level.

Therefore, the proposed project site will require a final noise study be prepared prior to the issuance of the first building permit for all lots. This final noise report would identify the interior noise requirements based upon the architectural floor plans showing the room dimensions and window, door and wall details.

Figure ES-1: Proposed Noise Barrier Location



## **1.0 PROJECT INTRODUCTION**

### 1.1 Purpose of this Study

The purpose of this Noise study is to determine potential onsite traffic noise impacts (if any) created from adjacent Camel Valley Road and nearby Rancho Santa Fe Farms Road. Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to bring those impacts to a level that would be considered less than significant.

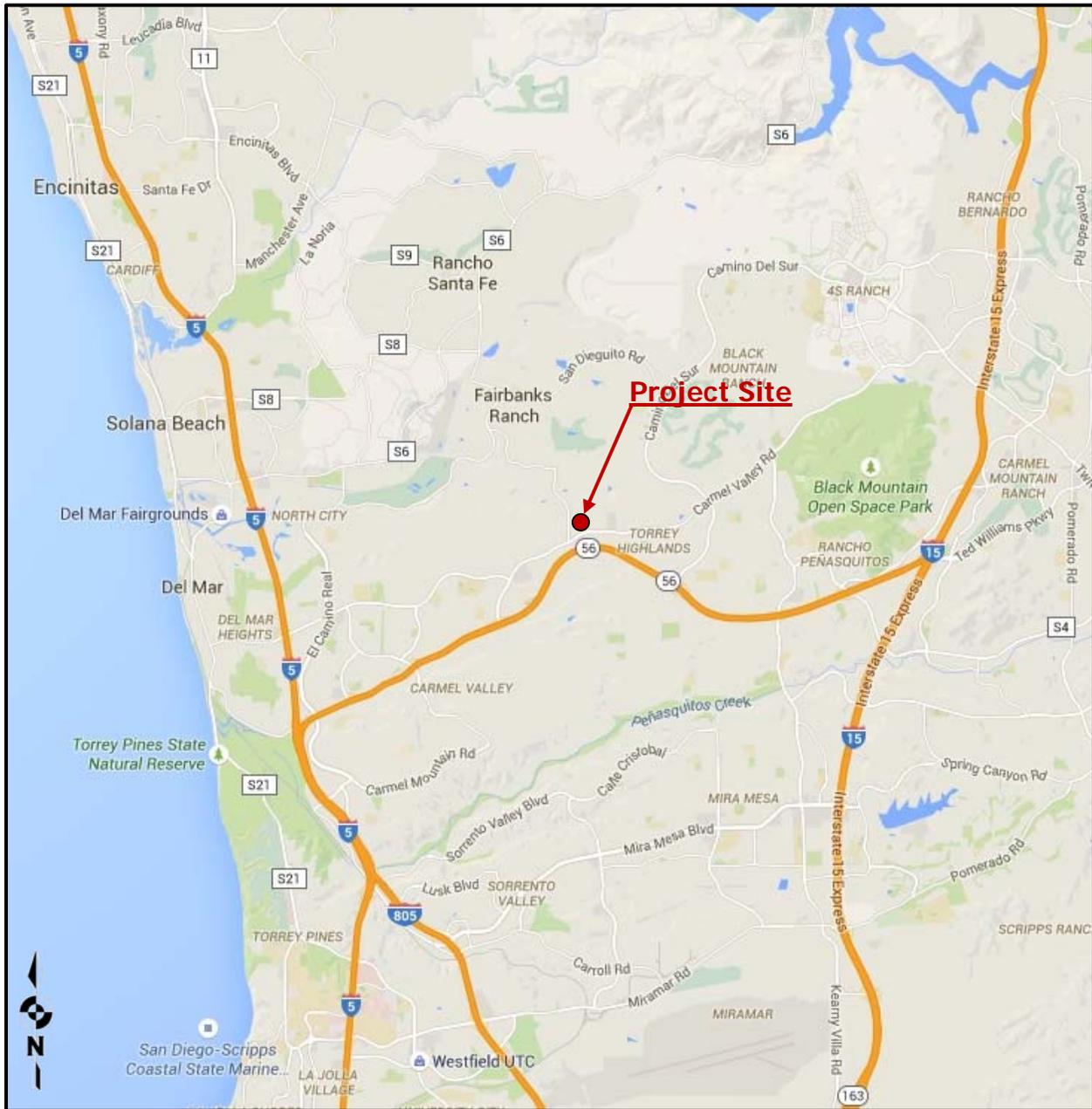
### 1.2 Project Location

The project site is located north of Camel Valley Road approximately 200 feet east of the intersection of Camel Valley Road and Rancho Santa Fe Farms Road. A general project vicinity map is shown in Figure 1-1 on the following page.

### 1.3 Project Setting

The proposed project consists of 16 single family units and a duplex unit on a minimum lot size of 5,000 square feet. The project consists of approximately 5.7 gross acres within the Pacific Highlands Ranch Subarea Plan in the City of San Diego CA. The existing site conditions are characterized as disturbed land that was formerly rough graded but has no structures onsite. Residential uses exist and/or are proposed adjacent to the site as can be seen in Figure ES-1 above.

Figure 1-1: Project Vicinity Map



Source: Google Maps, 2015

## **2.0 ACOUSTICAL FUNDAMENTALS**

Noise is defined as unwanted or annoying sound which interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs and when the noise occurs.

Sound is measured on a logarithmic scale consisting of sound pressure levels known as a decibel (dB). The sounds heard by humans typically do not consist of a single frequency but of a broadband of frequencies having different sound pressure levels. The method for evaluating all the frequencies of the sound is to apply an A-weighting to reflect how the human ear responds to the different sound levels at different frequencies. The A-weighted sound level adequately describes the instantaneous noise whereas the equivalent sound level depicted as  $L_{eq}$  represents a steady sound level containing the same total acoustical energy as the actual fluctuating sound level over a given time interval.

The Community Noise Equivalent Level (CNEL) is the 24 hour A-weighted average for sound, with corrections for evening and nighttime hours. The corrections require an addition of 5 decibels to sound levels in the evening hours between 7 p.m. and 10 p.m. and an addition of 10 decibels to sound levels at nighttime hours between 10 p.m. and 7 a.m. These additions are made to account for the increased sensitivity during the evening and nighttime hours when sound appears louder.

A vehicles noise level is from a combination of the noise produced by the engine, exhaust and tires. The cumulative traffic noise levels along a roadway segment are based on three primary factors: the amount of traffic, the travel speed of the traffic, and the vehicle mix ratio or number of medium and heavy trucks. The intensity of traffic noise is increased by higher traffic volumes, greater speeds and increased number of trucks.

Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. Mobile noise levels radiant in an almost oblique fashion from the source and drop off at a rate of 3 dBA for each doubling of distance under hard site conditions and at a rate of 4.5 dBA for soft site conditions.

Hard site conditions consist of concrete, asphalt and hard pack dirt while soft site conditions exist in areas having slight grade changes, landscaped areas and vegetation. On the other hand, fixed/point sources radiate outward uniformly as it travels away from the source. Their sound levels attenuate or drop off at a rate of 6 dBA for each doubling of distance.

The most effective noise reduction methods consist of controlling the noise at the source, blocking the noise transmission with barriers or relocating the receiver. Any or all of these methods may be required to reduce noise levels to an acceptable level.

### **3.0 SIGNIFICANCE THRESHOLDS AND STANDARDS**

The City of San Diego to control transportation related noise sources such as arterial roads, freeways, airports and railroads, the City of San Diego has established guidelines for acceptable community noise levels in the Noise Element of the General Plan. The relevant section of the Noise Element is provided below:

The City uses the Land Use - Noise Compatibility Guidelines as shown on Table NE-3 in the Noise Element of the General Plan (provided as Table 3-1 below) for evaluating land use noise compatibility when reviewing proposed land use development projects. A “compatible” land use indicates that standard construction methods will attenuate exterior noise to an acceptable indoor noise level and people can carry out outdoor activities with minimal noise interference. Evaluation of land use that falls into the “conditionally compatible” noise environment should have an acoustical study prepared. The acoustical study should include, with consideration of the type of noise source, the sensitivity of the noise receptor, and the degree to which the noise source may interfere with speech, sleep, or other activities characteristic of the land use. For land uses indicated as “conditionally compatible”, structures must be capable of attenuating exterior noise to the indoor noise level as shown in Table 3-1. For land uses indicated as “incompatible”, new construction should generally not be undertaken.

Additionally, if the project is proposed within the Airport Environs Overlay Zone (AEOZ) as defined in Chapter 13, Article 2, Division 3 of the San Diego Municipal Code, the potential exterior noise impacts from aircraft noise would not constitute a significant environmental impact. However, the City recommends that structures within an AEOZ must also follow the requirements as shown in Table 3-1.

California Noise Insulation Standards (California Code of Regulations, Title 24) establishes an interior noise standard of 45 dBA for multiple unit and hotel/motel structures. Acoustical studies must be prepared for multiple unit residential and hotel/motel structures that are proposed to be located within the Community Noise Equivalent Level (CNEL) noise contours of 60 dBA or greater. In addition, the City requires single unit residential structures located within the CNEL noise contours of 60 or greater to prepare an acoustical study. The studies must demonstrate that the building is designed to reduce interior noise to 45 dBA or lower (CNEL).

**Table 3-1: Land Use - Noise Compatibility Guidelines**

Land Use Category		Exterior Noise Exposure ( dBA CNEL)			
		60	65	70	75
<i>Open Space and Parks and Recreational</i>					
Community & Neighborhood Parks; Passive Recreation					
Regional Parks; Outdoor Spectator Sports, Golf Courses; Athletic Fields; Outdoor Spectator Sports, Water Recreational Facilities; Horse Stables; Park Maint. Facilities					
<i>Agricultural</i>					
Animal Raising, Maintain & Keeping; Commercial Stables					
<i>Residential</i>					
Single Units; Mobile Homes; Senior Housing			45		
Multiple Units; Mixed-Use Commercial/Residential; Live Work; Group Living Accommodations <i>*For uses affected by aircraft noise, refer to Policies NE-D.2. &amp; NE-D.3.</i>			45	45*	
<i>Institutional</i>					
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Places of Worship; Child Care Facilities			45		
Vocational or Professional Educational Facilities; Higher Education Institution Facilities (Community or Junior Colleges, Colleges, or Universities)			45	45	
Cemeteries					
<i>Sales</i>					
Building Supplies/Equipment; Food, Beverages & Groceries; Pets & Pet Supplies; Sundries, Pharmaceutical, & Convenience Sales; Wearing Apparel & Accessories				50	50
<i>Commercial Services</i>					
Building Services; Business Support; Eating & Drinking; Financial Institutions; Assembly & Entertainment; Radio & Television Studios; Golf Course Support				50	50
Visitor Accommodations			45	45	45
<i>Offices</i>					
Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters				50	50
<i>Vehicle and Vehicular Equipment Sales and Services Use</i>					
Commercial or Personal Vehicle Repair & Maintenance; Commercial or Personal Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking					
<i>Wholesale, Distribution, Storage Use Category</i>					
Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution					
<i>Industrial</i>					
Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking & Transportation Terminals; Mining & Extractive Industries					
Research & Development				50	
	Compatible	Indoor Uses	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level. Refer to Section I.		
		Outdoor Uses	Activities associated with the land use may be carried out.		
	Conditionally Compatible	Indoor Uses	Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas. Refer to Section I.		
		Outdoor Uses	Feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable. Refer to Section I.		
	Incompatible	Indoor Uses	New construction should not be undertaken.		
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.		

Source: City of San Diego Noise Element (2008)

## **4.0 NOISE ENVIRONMENT**

### 4.1 Existing Noise Environment Onsite

Noise measurements were taken using a Larson-Davis Model LxT Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200.

The ambient measurements were conducted on May 21, 2015 between 12:00 p.m. and 12:20 p.m. The results of the noise level measurements are presented in Table 4-1. The measurement was located near the central portion of project site free of obstruction. The monitoring locations were chosen due to site access. The overall sound levels were found to be roughly 60 dBA due to traffic along Carmel Valley Road. The statistical indicators Lmax, Lmin, L10, L50 and L90, are given for the monitoring location. As can be seen from the L90 data, 90% of the time the noise level is below 47 dBA. The noise monitoring locations can be seen in Figure 4-1 on the following page.

**Table 4-1: Measured Ambient Noise Levels**

Monitoring Location	Description	Time	Noise Levels (dBA)					
			Leq	Lmax	Lmin	L10	L50	L90
ML1	Along Carmel Valley Road	12:00 p.m.–12:20 p.m.	60.4	72.4	44.5	63.9	56.6	46.9
Source: Ldn Consulting, Inc. 5/21/15								



## 4.2 Future Noise Prediction Methodology

To determine the future noise environment and impact potentials the Caltrans Sound32 noise model was utilized. The critical model input parameters, which determine the projected vehicular traffic noise levels, include vehicle travel speeds, the percentages of automobiles, medium trucks and heavy trucks in the roadway volume, the site conditions (hard or soft) and the peak hour traffic volume. The peak hour traffic volumes range between 6-12% of the average daily traffic (ADT) and 10% is generally acceptable for noise modeling purposes.

The required coordinate information necessary for the Sound32 traffic noise prediction model input was taken from the preliminary site plans provided by Hunsaker & Associates received May 2015. To determine the future noise levels the preliminary site plans were used to identify the pad elevations, the roadway elevations, and the relationship between the noise source(s) and the receptor areas to evaluate the future potential noise impacts on the proposed development. Outdoor observers were located in the private areas and placed five feet above the finished pad elevation. The top of slopes were modeled to adjust for grade separation and any natural shielding from the roadways along with the proposed 5 foot high wall along Carmel Valley Road. In addition, the model includes a 5-foot barrier as proposed on the adjacent development to the east (*Source: Noise Study - Meadowood VTM, LDN Consulting dated June 14, 2013*).

Table 4-2 presents the roadway parameters used in the analysis including the average daily traffic volumes, vehicle speeds and the hourly traffic flow distribution (vehicle mix) for the future Buildout 2035 conditions provided by the SANDAG Traffic Prediction Model. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the Sound32 Model. The modeled observer locations for each unit's rear yard areas of the proposed project are presented in Figure 4-2.

**Table 4-2: Future Traffic Parameters**

Roadway	Average Daily Traffic (ADT) <sup>1</sup>	Peak Hour Volume <sup>2</sup>	Modeled Speeds (MPH)	Vehicle Mix % <sup>3</sup>		
				Auto	Medium Trucks	Heavy Trucks
Carmel Valley Road	26,800	2,680	55	96	2	2

<sup>1</sup> Source: SANDAG 2035 Traffic Prediction Model  
<sup>2</sup> 10% of the ADT  
<sup>3</sup> Typical Vehicle Mixed observed in City of San Diego



## **5.0 FINDINGS AND MITIGATION**

The Buildout analysis was modeled utilizing the roadway parameters described above in Section 4 for the future conditions. As a design feature the project is proposing a 5-foot high wall along Carmel Valley Road that has been incorporated into this analysis. The modeling results are quantitatively shown in Table 5-1. As can be seen in Table 5-1, the project complies with the City's 65 dBA standard with the proposed wall at the top of slope along Carmel Valley Road as shown in Figure 5-1. The barriers must be constructed of a non-gapping material consisting of masonry, ½ inch thick glass, earthen berm or any combination of these materials. The S32 model input and output files for the future conditions are provided in ***Attachment A***.

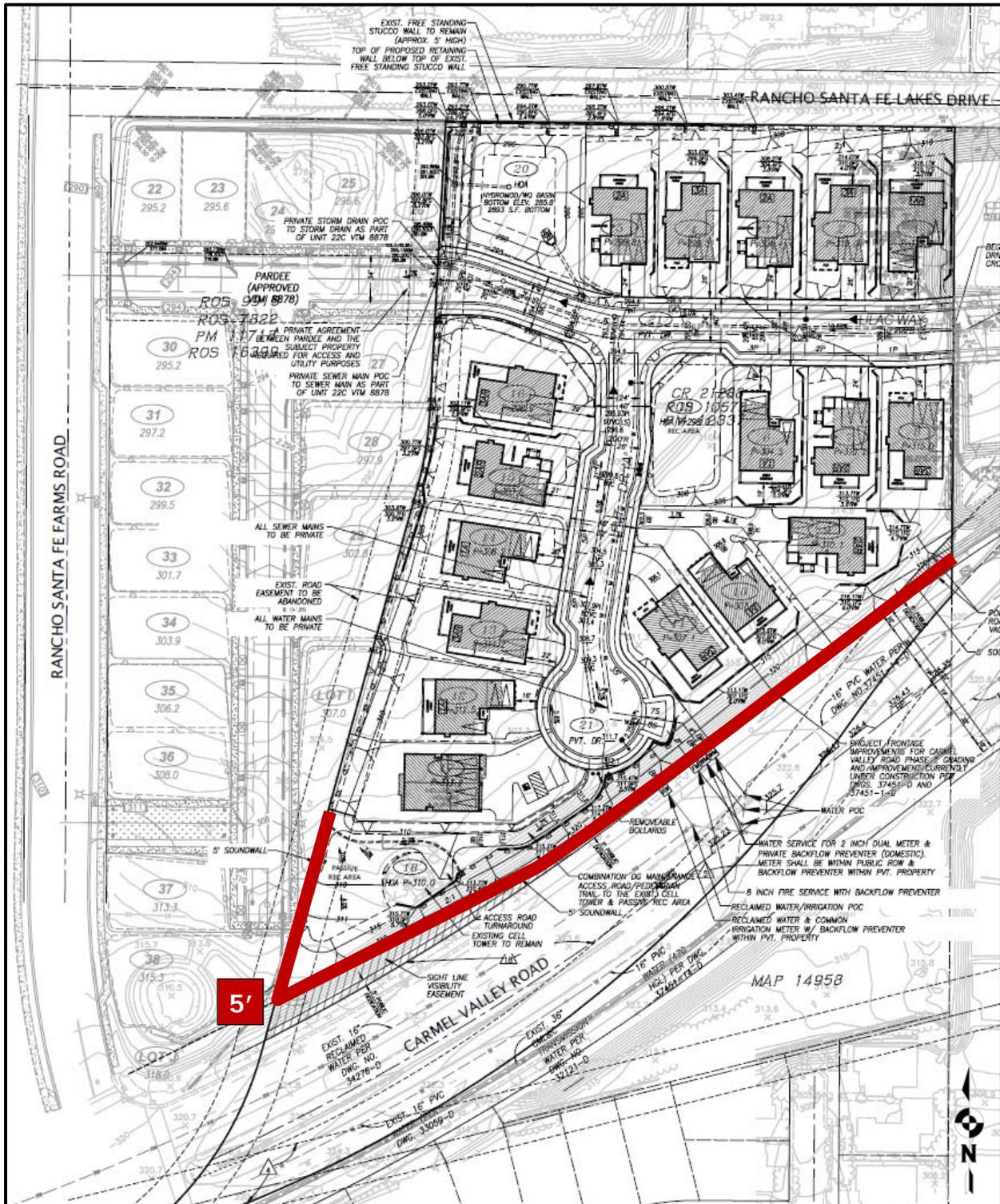
**Table 5-1: Future Exterior Noise Levels**

<b>Receptor Location (Lot #)</b>	<b>Noise Levels with 5-Foot Wall (dBA CNEL)</b>	<b>Upper Floor Noise Level (dBA CNEL)*</b>
1 (Lot 13)	63	64
2 (Lot 12)	63	65
3 (Lot 17)	63	66
4 (Lot 11)	58	62
5 (Lot 10)	58	62
6 (Lot 7)	61	63
7 (Lot 9)	58	64
8 (Lot 8)	61	66
9 (Lot 5)	61	61
10 (Lot 3)	61	61
11 (Lot 1)	63	63
12 (Rec Area)	61	--
13 (Rec Area)	60	--

\* Interior Noise Assessment required if façade noise level is above 60 dBA CNEL.

The City of San Diego as part of its noise guidelines also states, consistent with Title 24 of the California Code of Regulations (CCR), a project is required to perform an interior assessment on the portions of a project site where building façade noise levels are above 60 dBA CNEL in order to ensure a 45 dBA CNEL interior noise level. As seen in Table 5-1, building façades noise levels are above 60 dBA CNEL and the project site will require a final noise study be prepared prior to the issuance of the first building permit for all lots.

Figure 5-1: Proposed Noise Barrier Location



**ATTACHMENT A**

FUTURE NOISE MODEL INPUT AND  
OUTPUT FILES

Meadowood 2 Ground Level Mitigated

T-SANDAG 2035 PEAK HOUR, 1

2573 , 55 , 54 , 55 , 54 , 55

T-SANDAG 2035 PEAK HOUR, 2

538 , 40 , 11 , 40 , 11 , 40

L-CVR, 1

N,4,291,318,

N,348,418,321,

N,458,476,322,

N,540,525,323,

N,709,646,325.5,

N,820,732,326.5,

N,939,816,323,

N,1139,927,319,

N,1336,1009,314,

L-RSFFR, 2

N,221,1440,290,

N,216,593,313,

N,227,492,318,

N,257,385,320,

N,311,235,320,

N,339,91,320,

B-CVR BARRIER, 1 , 2 , 0 , 0

425.,656,313,318,

407.,661,313,318,

369.,522,320,325,

553.,613,324,329,

636.,674,325,330,

770.,777,326,331,

814.,810,326,331,

860.,842,324,329,

988.,923,322,327,

R, 1 , 65 , 10

476,786,316,LOT 13

R, 2 , 65 , 10

461,724,317.5,LOT 12

R, 3 , 65 , 10

450,686,318.,LOT 17

R, 4 , 65 , 10

700,767,312.,LOT 11

R, 5 , 65 , 10

728,788,312.5,LOT 10

R, 6 , 65 , 10

785,886,315.,LOT 7

R, 7 , 65 , 10

814,852,315.,LOT 9

R, 8 , 65 , 10

844,885,320.,LOT 8

R, 9 , 65 , 10

617,1135,302.,LOT 5

R, 10 , 65 , 10

723,1131,309.5,LOT 3

R, 11 , 65 , 10

830,1131,320.,LOT 1

R, 12 , 65 , 10

429,627,315.,REC AREA

R, 13 , 65 , 10

407,585,315.,REC AREA

C,C

SOUND32 - RELEASE 07/30/91

TITLE:

Meadowood 2 Ground Level Mitigated

REC REC ID DNL PEOPLE LEQ(CAL)

---

1	LOT 13	65.	10.	62.5
2	LOT 12	65.	10.	62.7
3	LOT 17	65.	10.	62.7
4	LOT 11	65.	10.	57.8
5	LOT 10	65.	10.	57.8
6	LOT 7	65.	10.	60.6
7	LOT 9	65.	10.	58.4
8	LOT 8	65.	10.	61.4
9	LOT 5	65.	10.	60.5
10	LOT 3	65.	10.	61.1
11	LOT 1	65.	10.	62.5
12	REC AREA	65.	10.	60.7
13	REC AREA	65.	10.	59.7

---

Meadowood 2 Second Level Facade

T-SANDAG 2035 PEAK HOUR, 1

2573 , 55 , 54 , 55 , 54 , 55

T-SANDAG 2035 PEAK HOUR, 2

538 , 40 , 11 , 40 , 11 , 40

L-CVR, 1

N,4,291,318,

N,348,418,321,

N,458,476,322,

N,540,525,323,

N,709,646,325.5,

N,820,732,326.5,

N,939,816,323,

N,1139,927,319,

N,1336,1009,314,

L-RSFFR, 2

N,221,1440,290,

N,216,593,313,

N,227,492,318,

N,257,385,320,

N,311,235,320,

N,339,91,320,

B-CVR BARRIER, 1 , 2 , 0 , 0

425.,656,313,318,

407.,661,313,318,

369.,522,320,325,

553.,613,324,329,

636.,674,325,330,

770.,777,326,331,

814.,810,326,331,

860.,842,324,329,

988.,923,322,327,

R, 1 , 65 ,10

476,786,326.,LOT 13

R, 2 , 65 ,10

461,724,327.5,LOT 12

R, 3 , 65 ,10

450,686,328.,LOT 17

R, 4 , 65 ,10

700,767,322.,LOT 11

R, 5 , 65 ,10

728,788,322.5,LOT 10

R, 6 , 65 ,10

785,886,325.,LOT 7

R, 7 , 65 ,10

814,852,325.,LOT 9

R, 8 , 65 ,10

844,885,330.,LOT 8

R, 9 , 65 ,10

617,1135,312.,LOT 5

R, 10 , 65 ,10

723,1131,319.5,LOT 3

R, 11 , 65 ,10

830,1131,330.,LOT 1

C,C

SOUND32 - RELEASE 07/30/91

TITLE:

Meadowood 2 Second Level Facade

REC REC ID DNL PEOPLE LEQ(CAL)

-----  
1 LOT 13 65. 10. 63.4  
2 LOT 12 65. 10. 64.7  
3 LOT 17 65. 10. 65.5  
4 LOT 11 65. 10. 61.8  
5 LOT 10 65. 10. 61.9  
6 LOT 7 65. 10. 63.4  
7 LOT 9 65. 10. 63.7  
8 LOT 8 65. 10. 66.4  
9 LOT 5 65. 10. 60.7  
10 LOT 3 65. 10. 61.4  
11 LOT 1 65. 10. 62.9  
-----

# *Ldn Consulting, Inc.*

*42428 Chisolm Trail, Murrieta CA 92562  
www.ldnconsulting.net*

*phone 760-473-1253  
fax 760-689-4943*

May 29, 2015

Sean Santa Cruz  
Hall Land Company, Inc.  
740 Lomas Santa Fe Drive, Suite 204  
Solana Beach, CA 92075

**Subject: Meadowood 2 Residential Development Interior Noise Assessment  
San Diego CA**

Dear Mr. Santa Cruz:

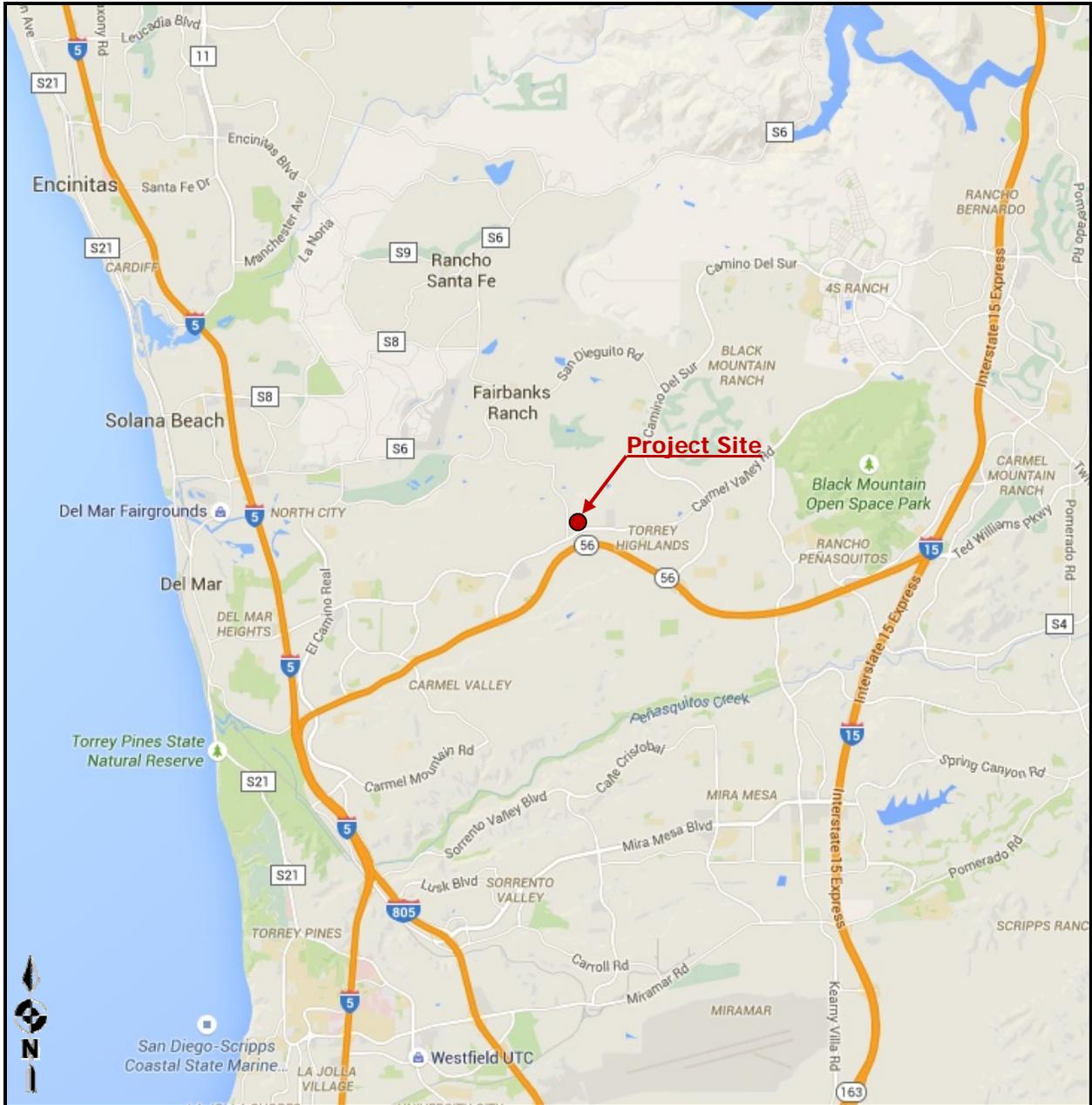
Ldn Consulting (Ldn) is pleased to submit the following interior noise impact analysis for the proposed Meadowood 2 Residential Development in San Diego CA. The purpose of the survey is to determine the estimated interior noise levels within the residential structures of proposed buildings and residential units of the proposed residential project in San Diego, CA. This analysis will recommend mitigation measures for compliance with the California Code of Regulations Title 24 and the City of San Diego guidelines and requirements for interior noise.

## **PROJECT LOCATION/DESCRIPTION**

The proposed project is located within the City of San Diego, CA. More specifically, the project site is located north of Camel Valley Road approximately 200 feet east of the intersection of Camel Valley Road and Rancho Santa Fe Farms Road. Access to the project site is from Carmel Valley Road. The project vicinity can be seen in Figure 1

The proposed project consists of 16 single family units and a duplex unit on a minimum lot size of 5,000 square feet. The project consists of approximately 5.7 gross acres within the Pacific Highlands Ranch Subarea Plan in the City of San Diego CA. The existing site conditions are characterized as disturbed land that was formerly rough graded but has no structures onsite. Residential uses exist adjacent to the site. The main source for noise is from vehicular traffic along Carmel Valley Road. A project site plan is shown in Figure 1–2 on Page 3 of this report.

**Figure 1: Project Vicinity Map**



Source: Google Maps, 2015

**Figure 2: Project Site Plan**



Source: Hunsaker & Associates, 2015

## **ACOUSTICAL FUNDAMENTALS**

Noise is defined as unwanted or annoying sound which interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs and when the noise occurs.

Sound is measured on a logarithmic scale consisting of sound pressure levels known as a decibel (dB). The sounds heard by humans typically do not consist of a single frequency but of a broadband of frequencies having different sound pressure levels. The method for evaluating all the frequencies of the sound is to apply an A-weighting to reflect how the human ear responds to the different sound levels at different frequencies. The A-weighted sound level adequately describes the instantaneous noise whereas the equivalent sound level depicted as  $L_{eq}$  represents a steady sound level containing the same total acoustical energy as the actual fluctuating sound level over a given time interval.

Mobile noise levels radiate in an almost oblique fashion from the source and drop off at a rate of 3 dBA for each doubling of distance under hard site conditions and at a rate of 4.5 dBA for soft site conditions. Hard site conditions consist of concrete, asphalt and hard pack dirt while soft site conditions exist in areas having slight grade changes, landscaped areas and vegetation.

The Community Noise Equivalent Level (CNEL) is the 24 hour A-weighted average for sound, with corrections for evening and nighttime hours. The corrections require an addition of 5 decibels to sound levels in the evening hours between 7 p.m. and 10 p.m. and an addition of 10 decibels to sound levels at nighttime hours between 10 p.m. and 7 a.m. These additions are made to account for the increased sensitivity during the evening and nighttime hours when sound appears louder. CNEL values do not represent the actual sound level heard at any particular time, but rather represents the total sound exposure.

Additionally, Sound Transmission Class (or STC) is an integer rating of how well airborne sound is attenuated by a building partition. STC is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations (see ASTM International Classification E413 and E90). The STC number is derived from tested sound attenuation values found at the 1/3 octave band frequencies. These transmission-loss (TL) values are then plotted and compared to a standard reference contour. Acoustical engineers fit these values to the appropriate TL Curve to determine a single STC value found at 500 Hertz. STC is roughly the decibel reduction in noise a partition can provide, abbreviated 'dB'.

If an 85 dB sound on one side of a wall is reduced to 50 dB on the other side, that partition is said to have an STC of 35. This number does not apply across the range of frequencies because the STC value is derived from a curve-fit from the tested 1/3 octave band frequencies. Any partition will have less TL at lower frequencies. For example, a wall with an STC of 35 may provide over 40 dB of attenuation at 3000 Hz but only 20 dB of attenuation at 125 Hz.

## **NOISE STANDARDS**

### **California's Title 24 Noise Standards**

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for multi-family residential buildings (Title 24, Part 2, California Code of Regulations or CCR). CCR Title 24 establishes standards, based on the U.S. Department of Housing and Urban Development (HUD) requirements, for interior room noise (attributable to outside noise sources). The regulations also specify that acoustical studies must be prepared whenever a multi-family residential or motel/hotel building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise sources create an exterior CNEL (or Ldn) of 60 dBA or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or Ldn) of at least 45 dBA.

### **City of San Diego Noise Standards**

The City of San Diego has adopted interior and exterior noise standards as part of the General Plan Noise Element for assessing the compatibility of land uses with transportation related noise impacts. For noise sensitive residential land uses, the City has adopted an exterior noise level goal of 65 dBA CNEL for the outdoor living areas and requires an interior noise level of less than 45 dBA CNEL. In the context of this noise analysis, the noise impacts associated with the project are controlled by the City Noise Element.

## **ANALYSIS PROCEDURES**

### **Exterior Noise Levels**

The primary source of noise impacts to the project site will be vehicular noise from Carmel Valley Road is the principal source of community noise that could impact the site. Based on the future traffic projections along these roadway, portions of the site will experience unmitigated exterior

noise levels at the building facades were identified to be as high as 66.4 or 67 dBA CNEL (*Source: Meadowood 2 Residential Development Noise Study – Ldn Consulting dated May 28, 2015*). The worst-case building façade noise level of 67 dBA CNEL will be utilized for the purposes of this analysis.

### **Interior Noise Levels**

The methodology used to determine the resultant interior noise levels is based upon the exterior noise level minus the sound transmission loss as identified in the American Society of Testing and Materials (ASTM) guidelines: E413 & E90. Standard building construction will provide a noise reduction of approximately 15 dBA with a windows open conditions and minimum 20 dBA noise reduction with the windows closed. The exterior noise levels at the proposed structures calculated in terms of dBA are converted to the six octave band sound pressure levels between: 125 Hertz - 4000 Hertz.

Acoustical modeling of the proposed project dwelling units was performed in accordance with the above guidelines and included combining the transmission loss for each of the building components that will reduce the interior noise levels. Building components typically include the windows, exterior doors, and exterior walls. The total noise reduction is dependent upon the transmission loss of each building component, their subsequent surface area, quality of the building/construction materials, a building façade and angle correction.

The interior noise level is also dependent on the acoustical energy absorbed within the room based upon the Noise Reduction Coefficients (NRC). NRC is a scalar representation of the amount of sound energy absorbed upon striking a particular surface and the arithmetic value average of sound absorption coefficients indicating a material's ability to absorb sound. The absorption coefficients for individual surface areas such as carpet, drywall and furnishings are used to calculate the interior room effects. The calculated building noise reduction includes both the room absorption characteristics and the transmission loss from the exterior wall assembly.

The interior noise reduction calculations were performed using Ldn's interior noise model. The model converts the exterior sound level to octave band frequencies and accounts for the transmission loss, correction factors and room absorption. The floor plans used for this analysis were provided by The McKinley Associates, Inc. dated April 6, 2015. The following construction details were utilized for each of the building assemblies to determine the noise reduction characteristics:

Exterior walls and roof assemblies must have a Sound Transmission Class (STC) rating of 46 or better. Exterior walls with this rating consist of 2"x 4" studs or larger, spaced 16" o.c. with R-13 insulation minimum and an exterior surface of 7/8" cement plaster (stucco). Interior wall and ceiling surfaces shall be at least 1/2" thick gypsum or plaster. Roof assemblies should have a minimum of 1/2" sheathing, R-19 insulation and sealed to prevent noise leaks. Exterior entry doors should be of solid core construction having a minimum STC rating of 26. Glass assemblies should be dual-paned and acoustical sealant applied around the exterior edges. The window assemblies are generally the weakest noise reducing component but are the most convenient and cost effective elements to change if additional attenuation is needed. The STC ratings for the glass assemblies was calculated in the interior noise model and provided in the findings below.

Bathrooms, kitchens, closets and corridors are not required to meet the 45 dBA CNEL standard and therefore were not modeled. All living areas where lower noise levels are essential for conversation and sleep should have carpeting installed; this includes bedrooms and living rooms. These rooms and were modeled to determine the interior noise reductions. If the modeled interior noise levels were found to be higher than 45 dBA CNEL in the living areas with the minimum assembly requirements described above additional modeling was performed to determine the minimum STC rating for the glass assemblies to further reduce interior noise levels below the acceptable interior threshold of 45 dBA CNEL.

## **FINDINGS**

The worst-case building façade noise levels were found to be 67 dBA CNEL for all floor areas. Basic calculations show that a windows open condition will only reduce the interior noise levels 15 dBA CNEL and not provide adequate interior noise mitigation. To meet the 45 dBA CNEL interior noise standard, an interior noise level reduction of 22 dBA CNEL or less is needed for the proposed project. Therefore a closed window and door condition is required to reduce interior noise levels to comply with CCR Title 24 and City of San Diego requirements. Units shall be provided with a continuously running fan to comply with indoor air quality per ASHRAE 62.2-2007.

Modeling was conducted for each unit type and floor plan based upon the worst-case exterior noise levels of 68 dBA CNEL, as identified in the exterior noise assessment (Ldn, 2015), to determine the required STC rating for the windows. The required noise reductions needed for all units having line of sight to the roadways in each building and the windows minimum STC Rating to meet the 45 dBA CNEL standard are provided in Table 1. The interior modeled results are provided as an attachment to this report.

Sean Santa Cruz  
 Hall Land Company, Inc.  
 740 Lomas Santa Fe Drive, Suite 204  
 Solana Beach, CA 92075

**Ldn Consulting, Inc.**  
 42428 Chisolm Trail, Murrieta CA 92562  
 phone 760-473-1253  
 Fax 760-689-4943

The necessary Sound Transmission Class (STC) ratings and transmission losses for the assemblies are also provided in Table 1 to reduce the interior noise levels at or below the 45 dBA CNEL standard. The minimum STC rating of 26 is needed for the window and glass door assemblies for all units.

**Table 1: Sound Transmission Class Ratings**

Assembly	STC Rating <sup>1</sup>	Octave Band Transmission Loss (Hz)					
		125	250	500	1000	2000	4000
Windows	<b>26</b>	21	20	23	25	29	32
Fixed Windows	<b>26</b>	17	16	22	31	35	27
Glass Doors	<b>26</b>	21	24	27	27	24	28

<sup>1</sup> STC Ratings used in Model

Interior noise levels will be at or below 45 dBA CNEL and no interior noise impacts are anticipated and no additional noise reductions are required for any units of the Meadowood 2 Residential development project with the incorporation of the STC ratings provided in Table 1. If you have any questions, please do not hesitate to contact me at (760) 473-1253.

Sincerely,

**Ldn Consulting, Inc.**

Jeremy Loudon, Principal

**Attachments:** Interior Noise Model Calculations

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	1							Project # 15-31		
Arch Plan:	1									
Room Type:	Greatroom									
<b>Exterior Noise Levels</b>										
				<b>Frequency (Hz.)</b>						
				<b>dBA CNEL*</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
<b>Exterior Assembly</b>	<b>Source</b>	<b>Area</b>	<b>STC</b>	<b>Transmission Loss (dB)</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Stucco	NBS W-50-71	684	46	27	42	44	46	49	54	
Windows	Milgard	82	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	144	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
<b>Interior Characteristics</b>	<b>Source</b>		<b>NRC</b>	<b>Absorption Coefficients</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Noise Reduction from Absorption based upon Floor Area				-25.7	-25.7	-25.7	-25.7	-25.7	-25.7	
Noise Level Increase for Defects and Exposed Surface Area				18.4	18.4	18.4	18.4	18.4	18.4	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									23.5	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>44</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	1							Project # 15-31		
Arch Plan:	1									
Room Type:	Den/Bed 4									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
				Transmission Loss (dB)						
				Frequency (Hz.)						
Exterior Assembly	Source	Area	STC	125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	270	46	27	42	44	46	49	54	
Windows	Milgard	50	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	40	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
				Absorption Coefficients						
				Frequency (Hz.)						
Interior Characteristics	Source		NRC	125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-22.0	-22.0	-22.0	-22.0	-22.0	-22.0	
Noise Level Increase for Defects and Exposed Surface Area				17.6	17.6	17.6	17.6	17.6	17.6	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									23.6	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>43</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	1							Project # 15-31		
Arch Plan:	1									
Room Type:	Bedroom 4									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
				Transmission Loss (dB)						
				Frequency (Hz.)						
Exterior Assembly	Source	Area	STC	125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	108	46	27	42	44	46	49	54	
Windows	Milgard	50	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	0	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
				Absorption Coefficients						
				Frequency (Hz.)						
Interior Characteristics	Source		NRC	125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-20.0	-20.0	-20.0	-20.0	-20.0	-20.0	
Noise Level Increase for Defects and Exposed Surface Area				15.7	15.7	15.7	15.7	15.7	15.7	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									24.6	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>42</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	2							Project # 15-31		
Arch Plan:	1									
Room Type:	Loft									
<b>Exterior Noise Levels</b>										
				<b>Frequency (Hz.)</b>						
				<b>dBA CNEL*</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
<b>Exterior Assembly</b>	<b>Source</b>	<b>Area</b>	<b>STC</b>	<b>Transmission Loss (dB)</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Stucco	NBS W-50-71	243	46	27	42	44	46	49	54	
Windows	Milgard	60	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	0	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
<b>Interior Characteristics</b>	<b>Source</b>		<b>NRC</b>	<b>Absorption Coefficients</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Noise Reduction from Absorption based upon Floor Area				-21.2	-21.2	-21.2	-21.2	-21.2	-21.2	
Noise Level Increase for Defects and Exposed Surface Area				16.2	16.2	16.2	16.2	16.2	16.2	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									24.8	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>42</b>	

\* Corrections for Façade Level was accounted for in the modeling.

## INTERIOR NOISE CALCULATIONS

Project Name:	Meadowood 2	Ldn Consulting, Inc.
Building (s)	All	
Floor Level	2	Date: 5/28/15
Arch Plan:	1	
Room Type:	Master Bedroom	Project # 15-31

### Exterior Noise Levels

	dBA CNEL*	Frequency (Hz.)					
		125	250	500	1000	2000	4000
		Exterior Noise Level (Traffic Spectrum)	67.0	53.0	57.7	60.5	62.8

### Transmission Loss (TL)

Exterior Assembly	Source	Area	STC	Transmission Loss (dB)					
				Frequency (Hz.)					
				125	250	500	1000	2000	4000
Stucco	NBS W-50-71	288	46	27	42	44	46	49	54
Windows	Milgard	75	26	21	20	23	25	29	32
Fixed Window	Milgard	0	26	17	16	22	31	35	27
Glass Doors	Milgard	0	26	21	24	27	27	24	28
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26

### Room Absorption (RA)

Interior Characteristics	Source	NRC	Absorption Coefficients					
			Frequency (Hz.)					
			125	250	500	1000	2000	4000
Carpet	Army TM 5-805-4	0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4	0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell	0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)		0.8	0.56	0.54	0.59	0.93	1.18	0.87

### Noise Reduction

	125	250	500	1000	2000	4000
Noise Reduction from Absorption based upon Floor Area	-22.5	-22.5	-22.5	-22.5	-22.5	-22.5
Noise Level Increase for Defects and Exposed Surface Area	16.4	16.4	16.4	16.4	16.4	16.4
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure						25.2
Building Façade Noise Level (dBA CNEL)						67.0

### Resultant Interior Noise Level (dBA CNEL)

**42**

\* Corrections for Façade Level was accounted for in the modeling.

## INTERIOR NOISE CALCULATIONS

Project Name:	Meadowood 2	Ldn Consulting, Inc.
Building (s)	All	Date: 5/28/15
Floor Level	2	
Arch Plan:	1	
Room Type:	Bedroom 2/3	Project # 15-31

### Exterior Noise Levels

	dBA CNEL*	Frequency (Hz.)					
		125	250	500	1000	2000	4000
		Exterior Noise Level (Traffic Spectrum)	67.0	53.0	57.7	60.5	62.8

### Transmission Loss (TL)

Exterior Assembly	Source	Area	STC	Transmission Loss (dB)					
				Frequency (Hz.)					
				125	250	500	1000	2000	4000
Stucco	NBS W-50-71	225	46	27	42	44	46	49	54
Windows	Milgard	50	26	21	20	23	25	29	32
Fixed Window	Milgard	0	26	17	16	22	31	35	27
Glass Doors	Milgard	0	26	21	24	27	27	24	28
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26

### Room Absorption (RA)

Interior Characteristics	Source	NRC	Absorption Coefficients					
			Frequency (Hz.)					
			125	250	500	1000	2000	4000
Carpet	Army TM 5-805-4	0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4	0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell	0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)		0.8	0.56	0.54	0.59	0.93	1.18	0.87

### Noise Reduction

	125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area	-20.1	-20.1	-20.1	-20.1	-20.1	-20.1	
Noise Level Increase for Defects and Exposed Surface Area	16.1	16.1	16.1	16.1	16.1	16.1	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure							24.4
Building Façade Noise Level (dBA CNEL)							67.0

### Resultant Interior Noise Level (dBA CNEL)

**43**

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	1							Project # 15-31		
Arch Plan:	2									
Room Type:	Greatroom									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
Exterior Assembly	Source	Area	STC	Transmission Loss (dB)						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	720	46	27	42	44	46	49	54	
Windows	Milgard	69	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	192	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
Interior Characteristics	Source	Area	NRC	Absorption Coefficients						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-26.2	-26.2	-26.2	-26.2	-26.2	-26.2	
Noise Level Increase for Defects and Exposed Surface Area				18.4	18.4	18.4	18.4	18.4	18.4	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									23.4	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>44</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	1							Project # 15-31		
Arch Plan:	2									
Room Type:	Den									
<b>Exterior Noise Levels</b>										
				<b>Frequency (Hz.)</b>						
				<b>dBA CNEL*</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
<b>Exterior Assembly</b>	<b>Source</b>	<b>Area</b>	<b>STC</b>	<b>Transmission Loss (dB)</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Stucco	NBS W-50-71	180	46	27	42	44	46	49	54	
Windows	Milgard	15	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	40	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
<b>Interior Characteristics</b>	<b>Source</b>		<b>NRC</b>	<b>Absorption Coefficients</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Noise Reduction from Absorption based upon Floor Area				-19.9	-19.9	-19.9	-19.9	-19.9	-19.9	
Noise Level Increase for Defects and Exposed Surface Area				17.0	17.0	17.0	17.0	17.0	17.0	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									23.8	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>43</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	2							Project # 15-31		
Arch Plan:	2									
Room Type:	Master Bedroom									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
Exterior Assembly	Source	Area	STC	Transmission Loss (dB)						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	396	46	27	42	44	46	49	54	
Windows	Milgard	79	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	0	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
Interior Characteristics	Source	Area	NRC	Absorption Coefficients						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-22.5	-22.5	-22.5	-22.5	-22.5	-22.5	
Noise Level Increase for Defects and Exposed Surface Area				16.5	16.5	16.5	16.5	16.5	16.5	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									24.8	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>42</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	2							Project # 15-31		
Arch Plan:	2									
Room Type:	Bedroom 3									
<b>Exterior Noise Levels</b>										
				<b>Frequency (Hz.)</b>						
				<b>dBA CNEL*</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
<b>Exterior Assembly</b>	<b>Source</b>	<b>Area</b>	<b>STC</b>	<b>Transmission Loss (dB)</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Stucco	NBS W-50-71	261	46	27	42	44	46	49	54	
Windows	Milgard	31	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	0	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
<b>Interior Characteristics</b>	<b>Source</b>		<b>NRC</b>	<b>Absorption Coefficients</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Noise Reduction from Absorption based upon Floor Area				-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	
Noise Level Increase for Defects and Exposed Surface Area				15.9	15.9	15.9	15.9	15.9	15.9	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									26.7	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>40</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	2							Project # 15-31		
Arch Plan:	2									
Room Type:	Bedroom 4									
<b>Exterior Noise Levels</b>										
				<b>Frequency (Hz.)</b>						
				<b>dBA CNEL*</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
				<b>Transmission Loss (dB)</b>						
				<b>Frequency (Hz.)</b>						
<b>Exterior Assembly</b>	<b>Source</b>	<b>Area</b>	<b>STC</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Stucco	NBS W-50-71	216	46	27	42	44	46	49	54	
Windows	Milgard	44	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	0	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
				<b>Absorption Coefficients</b>						
				<b>Frequency (Hz.)</b>						
<b>Interior Characteristics</b>	<b>Source</b>		<b>NRC</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Noise Reduction from Absorption based upon Floor Area				-20.1	-20.1	-20.1	-20.1	-20.1	-20.1	
Noise Level Increase for Defects and Exposed Surface Area				16.0	16.0	16.0	16.0	16.0	16.0	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									25.0	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>42</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	1							Project # 15-31		
Arch Plan:	3									
Room Type:	Greatroom									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
Exterior Assembly	Source	Area	STC	Transmission Loss (dB)						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	324	46	27	42	44	46	49	54	
Windows	Milgard	66	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	96	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
Interior Characteristics	Source	Area	NRC	Absorption Coefficients						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-23.8	-23.8	-23.8	-23.8	-23.8	-23.8	
Noise Level Increase for Defects and Exposed Surface Area				18.0	18.0	18.0	18.0	18.0	18.0	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									23.1	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>44</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	1							Project # 15-31		
Arch Plan:	3									
Room Type:	Den/Living									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
				Transmission Loss (dB)						
				Frequency (Hz.)						
Exterior Assembly	Source	Area	STC	125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	270	46	27	42	44	46	49	54	
Windows	Milgard	50	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	0	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	24	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
				Absorption Coefficients						
				Frequency (Hz.)						
Interior Characteristics	Source		NRC	125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-22.2	-22.2	-22.2	-22.2	-22.2	-22.2	
Noise Level Increase for Defects and Exposed Surface Area				17.4	17.4	17.4	17.4	17.4	17.4	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									24.1	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>43</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	1							Project # 15-31		
Arch Plan:	3									
Room Type:	Bedroom 5									
<b>Exterior Noise Levels</b>										
				<b>Frequency (Hz.)</b>						
				<b>dBA CNEL*</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
<b>Exterior Assembly</b>	<b>Source</b>	<b>Area</b>	<b>STC</b>	<b>Transmission Loss (dB)</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Stucco	NBS W-50-71	216	46	27	42	44	46	49	54	
Windows	Milgard	32	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	0	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
<b>Interior Characteristics</b>	<b>Source</b>		<b>NRC</b>	<b>Absorption Coefficients</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Noise Reduction from Absorption based upon Floor Area				-20.4	-20.4	-20.4	-20.4	-20.4	-20.4	
Noise Level Increase for Defects and Exposed Surface Area				15.8	15.8	15.8	15.8	15.8	15.8	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									26.4	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>41</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	2							Project # 15-31		
Arch Plan:	3									
Room Type:	Dining									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
				Transmission Loss (dB)						
				Frequency (Hz.)						
Exterior Assembly	Source	Area	STC	125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	234	46	27	42	44	46	49	54	
Windows	Milgard	20	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	108	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
				Absorption Coefficients						
				Frequency (Hz.)						
Interior Characteristics	Source		NRC	125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-23.1	-23.1	-23.1	-23.1	-23.1	-23.1	
Noise Level Increase for Defects and Exposed Surface Area				17.6	17.6	17.6	17.6	17.6	17.6	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									23.6	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>43</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	2							Project # 15-31		
Arch Plan:	3									
Room Type:	Master Bedroom									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
Exterior Assembly	Source	Area	STC	Transmission Loss (dB)						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	288	46	27	42	44	46	49	54	
Windows	Milgard	65	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	0	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
Interior Characteristics	Source	Area	NRC	Absorption Coefficients						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-22.8	-22.8	-22.8	-22.8	-22.8	-22.8	
Noise Level Increase for Defects and Exposed Surface Area				16.3	16.3	16.3	16.3	16.3	16.3	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									26.0	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>41</b>	

\* Corrections for Façade Level was accounted for in the modeling.

## INTERIOR NOISE CALCULATIONS

Project Name:	Meadowood 2	Ldn Consulting, Inc.
Building (s)	All	
Floor Level	2	Date: 5/28/15
Arch Plan:	3	
Room Type:	Loft	Project # 15-31

### Exterior Noise Levels

	dBA CNEL*	Frequency (Hz.)					
		125	250	500	1000	2000	4000
		Exterior Noise Level (Traffic Spectrum)	67.0	53.0	57.7	60.5	62.8

### Transmission Loss (TL)

Exterior Assembly	Source	Area	STC	Transmission Loss (dB)					
				Frequency (Hz.)					
				125	250	500	1000	2000	4000
Stucco	NBS W-50-71	234	46	27	42	44	46	49	54
Windows	Milgard	70	26	21	20	23	25	29	32
Fixed Window	Milgard	0	26	17	16	22	31	35	27
Glass Doors	Milgard	0	26	21	24	27	27	24	28
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26

### Room Absorption (RA)

Interior Characteristics	Source	NRC	Absorption Coefficients					
			Frequency (Hz.)					
			125	250	500	1000	2000	4000
Carpet	Army TM 5-805-4	0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4	0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell	0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)		0.8	0.56	0.54	0.59	0.93	1.18	0.87

### Noise Reduction

	125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area	-22.2	-22.2	-22.2	-22.2	-22.2	-22.2	
Noise Level Increase for Defects and Exposed Surface Area	16.2	16.2	16.2	16.2	16.2	16.2	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure							25.2
Building Façade Noise Level (dBA CNEL)							67.0

### Resultant Interior Noise Level (dBA CNEL)

42

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	2							Project # 15-31		
Arch Plan:	3									
Room Type:	Bedroom 4									
<b>Exterior Noise Levels</b>										
				<b>Frequency (Hz.)</b>						
				<b>dBA CNEL*</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
<b>Exterior Assembly</b>	<b>Source</b>	<b>Area</b>	<b>STC</b>	<b>Transmission Loss (dB)</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Stucco	NBS W-50-71	216	46	27	42	44	46	49	54	
Windows	Milgard	10	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	40	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
<b>Interior Characteristics</b>	<b>Source</b>		<b>NRC</b>	<b>Absorption Coefficients</b>						
				<b>Frequency (Hz.)</b>						
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	
Noise Reduction from Absorption based upon Floor Area				-20.1	-20.1	-20.1	-20.1	-20.1	-20.1	
Noise Level Increase for Defects and Exposed Surface Area				16.9	16.9	16.9	16.9	16.9	16.9	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									24.4	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>43</b>	

\* Corrections for Façade Level was accounted for in the modeling.

## INTERIOR NOISE CALCULATIONS

Project Name:	Meadowood 2	Ldn Consulting, Inc.
Building (s)	All	
Floor Level	1	Date: 5/28/15
Arch Plan:	Triplex	
Room Type:	Living	Project # 15-31

### Exterior Noise Levels

	dBA CNEL*	Frequency (Hz.)					
		125	250	500	1000	2000	4000
		Exterior Noise Level (Traffic Spectrum)	67.0	53.0	57.7	60.5	62.8

### Transmission Loss (TL)

Exterior Assembly	Source	Area	STC	Transmission Loss (dB)					
				Frequency (Hz.)					
				125	250	500	1000	2000	4000
Stucco	NBS W-50-71	387	46	27	42	44	46	49	54
Windows	Milgard	82	26	21	20	23	25	29	32
Fixed Window	Milgard	0	26	17	16	22	31	35	27
Glass Doors	Milgard	0	26	21	24	27	27	24	28
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26

### Room Absorption (RA)

Interior Characteristics	Source	NRC	Absorption Coefficients					
			Frequency (Hz.)					
			125	250	500	1000	2000	4000
Carpet	Army TM 5-805-4	0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4	0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell	0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)		0.8	0.56	0.54	0.59	0.93	1.18	0.87

### Noise Reduction

	125	250	500	1000	2000	4000
Noise Reduction from Absorption based upon Floor Area	-23.7	-23.7	-23.7	-23.7	-23.7	-23.7
Noise Level Increase for Defects and Exposed Surface Area	16.5	16.5	16.5	16.5	16.5	16.5
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure						25.9
Building Façade Noise Level (dBA CNEL)						67.0

### Resultant Interior Noise Level (dBA CNEL)

41

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	2							Project # 15-31		
Arch Plan:	Triplex									
Room Type:	Bedroom									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
Exterior Assembly	Source	Area	STC	Transmission Loss (dB)						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	234	46	27	42	44	46	49	54	
Windows	Milgard	45	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	0	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
Interior Characteristics	Source	Area	NRC	Absorption Coefficients						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	
Noise Level Increase for Defects and Exposed Surface Area				16.0	16.0	16.0	16.0	16.0	16.0	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									25.4	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>42</b>	

\* Corrections for Façade Level was accounted for in the modeling.

<b>INTERIOR NOISE CALCULATIONS</b>										
Project Name:	Meadowood 2							Ldn Consulting, Inc.		
Building (s)	All							Date: 5/28/15		
Floor Level	2							Project # 15-31		
Arch Plan:	Triplex									
Room Type:	Living									
<b>Exterior Noise Levels</b>										
				Frequency (Hz.)						
				dBA CNEL*	125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)				67.0	53.0	57.7	60.5	62.8	59.7	54.0
<b>Transmission Loss (TL)</b>										
Exterior Assembly	Source	Area	STC	Transmission Loss (dB)						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Stucco	NBS W-50-71	252	46	27	42	44	46	49	54	
Windows	Milgard	50	26	21	20	23	25	29	32	
Fixed Window	Milgard	0	26	17	16	22	31	35	27	
Glass Doors	Milgard	48	26	21	24	27	27	24	28	
Exterior Door	NBS Monograph 77	0	26	16	14	23	30	36	26	
<b>Room Absorption (RA)</b>										
Interior Characteristics	Source	Area	NRC	Absorption Coefficients						
				Frequency (Hz.)						
				125	250	500	1000	2000	4000	
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30	
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48	
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09	
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87	
<b>Noise Reduction</b>										
				125	250	500	1000	2000	4000	
Noise Reduction from Absorption based upon Floor Area				-23.6	-23.6	-23.6	-23.6	-23.6	-23.6	
Noise Level Increase for Defects and Exposed Surface Area				17.6	17.6	17.6	17.6	17.6	17.6	
Overall Reduction from Transmission Loss + Room Absorption - Surface Exposure									25.0	
Building Façade Noise Level (dBA CNEL)									67.0	
<b>Resultant Interior Noise Level (dBA CNEL)</b>									<b>42</b>	

\* Corrections for Façade Level was accounted for in the modeling.

# Phase I Environmental Site Assessment

**Bob's Corner  
San Diego, California**

*Prepared for:*

Marker Investments, LLC

*Prepared by:*

Rincon Consultants, Inc.  
April 25, 2014





**Rincon Consultants, Inc.**

5135 Avenida Encinas, Suite A  
Carlsbad, California 92008

760 918 9444

FAX 918 9449

info@rinconconsultants.com  
www.rinconconsultants.com

April 25, 2014  
Project 14-00183

Marc R. Perlman  
Marker Investments, LLC  
427 S. Cedros Avenue, Suite 201  
Solana Beach, CA 92075

**Subject: Phase I Environmental Site Assessment  
Bob's Corner - San Diego, California**

Dear Mr. Perlman:

This report presents the findings of a Phase I Environmental Site Assessment (ESA) completed by Rincon Consultants, Inc. for the Bob's Corner project located in San Diego, California. The Phase I ESA was performed in accordance with our proposal dated February 27, 2014 and contract dated February 28, 2014.

The accompanying report presents our findings and provides an opinion regarding the potential presence of environmental site conditions. Our work program for this project is intended to meet the guidelines outlined in the American Society for Testing and Materials (ASTM), Standard Practice for Environmental Site Assessments: *Phase I Environmental Site Assessment Process* (ASTM Standard E-1527-13). Our scope of services, pursuant to ASTM practice, did not include any inquiries with respect to asbestos containing building materials, biological agents, cultural and historic resources, ecological resources, endangered species, health and safety, indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment, industrial hygiene, lead-based paint, lead in drinking water, mold, radon, regulatory compliance, wetlands, or high voltage power lines.

Thank you for selecting Rincon for this project. If you have any questions, or if we can be of any future assistance, please contact us.

Sincerely,  
**RINCON CONSULTANTS, INC.**

  
Julie Welch Marshall  
Senior Project Manager

  
Michael P. Gialketsis  
President

*Table of Contents*  
*Phase I Environmental Site Assessment*  
*Bob's Corner*  
*San Diego, California*

Executive Summary .....	1
Introduction .....	2
Purpose .....	2
Detailed Scope of Services .....	3
Significant Assumptions, Limitations, Deviations, Exceptions, Special Terms and Conditions .....	4
User Reliance .....	4
Site Description .....	4
Location .....	4
Subject Property and Vicinity General Characteristics .....	5
Descriptions of Structures, Roads, Other Improvements on the Site .....	5
User Provided Information .....	5
Records Review .....	6
Physical Setting Sources .....	6
Topography .....	6
Geology and Hydrogeology .....	6
Site Geology .....	6
Regional Groundwater Occurrence and Quality .....	6
Standard Environmental Record Sources .....	7
Subject Property .....	7
Offsite Properties .....	7
Orphan Listings .....	8
Additional Environmental Record Sources .....	8
Review of Agency Files .....	8
Known or Suspect Contaminated Release Sites with Potential Vapor Migration .....	8
Review of State of California Division of Oil and Gas Records .....	8
Historical Use Information on the Property and the Adjoining Properties .....	9
Review of Historic Aerial Photographs .....	9
Review of City Directory Listings .....	9
Review of Fire Insurance Maps .....	9
Review of Historic Topographic Maps .....	9
Review of City of San Diego Building Permit Records .....	9
Summary of Historic Uses .....	9
Subject Property .....	9
Northern Adjacent Property .....	9
Eastern Adjacent Property .....	10
Southern Adjacent Property .....	10
Western Adjacent Property .....	10
Gaps in Historical Sources .....	10
Interviews .....	10



Interview with Owner .....	10
Interview with Site Manager .....	11
Interviews with Occupants .....	12
Interviews with Local Government Officials .....	12
Interviews with Others .....	12
Site Reconnaissance .....	12
Methodology and Limiting Conditions.....	12
Current Use of the Property and Adjacent Properties .....	12
Past Use of the Property and Adjacent Properties.....	12
Current or Past Uses in the Surrounding Areas.....	13
Geologic, Hydrogeologic, Hydrologic and Topographic Conditions.....	13
General Description of Structures .....	13
Interior and Exterior Observations .....	13
Storage Tanks.....	13
Drums .....	13
Hazardous Substances and Petroleum Products.....	13
Unidentified Substance Containers .....	13
Odors.....	13
Pools of Liquid.....	13
Indications of Polychlorinated Biphenyls (PCBs).....	14
Other Conditions of Concern.....	14
Evaluation .....	14
Findings .....	14
Opinions.....	14
Conclusions .....	15
Recommendations .....	15
Deviations.....	15
References .....	16
Signatures of Environmental Professionals.....	17
Qualifications of Environmental consultants.....	18

Figures

- Figure 1 - Vicinity Map
- Figure 2 - Site Map
- Figure 3 - Adjacent Land Use Map
- Figures 4 - Site Photographs

Appendices

- Appendix 1 - Interview Documentation
- Appendix 2 - Regulatory Records Documentation
- Appendix 3 - Historical Research Documentation



## EXECUTIVE SUMMARY

This report presents the findings of a Phase I Environmental Site Assessment (ESA) for the property located northeast of the intersection of Carmel Valley Road and Rancho Santa Fe Farms Road in San Diego, California (Figure 1, Vicinity Map). The subject property is currently developed with a single structure and cellular telephone tower in the southwest portion of the subject property.

Rincon Consultants performed a reconnaissance of the subject property on March 10, 2014. The purpose of the reconnaissance was to observe existing subject property conditions and to obtain information indicating the presence of recognized environmental conditions in connection with the subject property. During the site reconnaissance, the use, storage or disposal of hazardous materials on the subject property was not observed.

The subject property is located in an area that is primarily comprised of residential and vacant land uses. Properties in the vicinity of the subject property include single family homes and vacant land.

EDR was contracted to provide a database search of public lists of sites that generate, store, treat or dispose of hazardous materials or sites for which a release or incident has occurred. The EDR search was conducted for the subject property and included data from surrounding sites within a specified radius of the property. The subject property and adjacent properties were not listed in any of the databases searched by EDR.

Historical sources reviewed as part of the Phase I ESA include aerial photographs and topographic maps. The photos and maps reviewed indicate that the subject property was vacant land from 1904 to 1994, developed with structures and used for agricultural purposes in 2005, developed with two structures from 2009 to 2010, and developed with one structure interpreted to be a cell tower in 2012. In addition, one of the structures present from 2009 to 2010 is also interpreted to be a cell tower.

In addition, a previous phase II report was completed for the subject property by Christian Wheeler Engineering in 2013. This report indicated that slightly elevated levels of toxaphene were present onsite in shallow soils.

Based on the findings of this Phase I ESA, it is our opinion that there is 1 Recognized Environmental Condition (REC) in connection with the subject property as follows:

- Former use of the subject property for agricultural purposes and known levels of elevated toxaphene onsite in soil

Based on the elevated levels of toxaphene above residential California Human Health Screening Levels (CHHSLs) in onsite soils, Rincon recommends collecting additional samples at 2 and 3 feet below grade to determine the vertical extent of toxaphene impacted soil. Based on the results of the additional sampling, the type of remediation can be determined, if warranted.



Additionally, although not considered an REC, we recommend identification of fuel storage tanks at the cell tower structure, and if present, regular visual checks of the fuel storage tank in the future.

## INTRODUCTION

This report presents the findings of a Phase I ESA conducted for the property located at the northeast corner of Carmel Valley Road and Rancho Santa Fe Farms Road in San Diego, California. The Phase I ESA was performed by Rincon Consultants, Inc. for Marker Investments in general conformance with ASTM E 1527-13 and our proposal dated February 27, 2014. The following sections present our findings and provide our opinion as to the potential presence and impact of environmental site conditions.

## PURPOSE

The purpose of this Phase I ESA was to assess the environmental conditions of a property, taking into account commonly and reasonably ascertainable information and to qualify for Landowner Liability Protections under the Brownfields Amendments to CERCLA Liability.

A recognized environmental condition (REC) is defined pursuant to ASTM E 1527-13 as, *“the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; 3) under conditions that pose a material threat of a future release to the environment”*.

A Controlled REC is defined pursuant to ASTM E 1527-13 as, *“a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report”*.

A Historical REC is defined pursuant to ASTM E 1527-13 as, *“a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by regulatory authority, without subjecting the property to any required controls (for example, use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time the Phase I Environmental Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental*



*condition at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition”.*

## **DETAILED SCOPE OF SERVICES**

The scope of services conducted for this study is outlined below:

- Perform an on-site reconnaissance to identify obvious indicators of the existence of hazardous materials.
- Observe adjacent or nearby properties from public thoroughfares in an attempt to see if such properties are likely to use, store, generate, or dispose of hazardous materials.
- Obtain and review an environmental records database search from Environmental Data Resources (EDR), Inc. to obtain information about the potential for hazardous materials to exist at the subject property or at properties located in the vicinity of the subject property.
- Review files for the subject property and immediately adjacent properties as identified in the EDR report, as applicable.
- Review the current U.S. Geological Survey (USGS) topographic map to obtain information about the subject property's topography and uses of the subject property and properties in the vicinity of the subject property.
- Review additional pertinent record sources (e.g., California Division of Oil and Gas records, online databases of hazardous substance release sites), as necessary, to identify the presence of RECs at the subject property.
- Review reasonably ascertainable historical resources (e.g., aerial photographs, topographic maps, fire insurance maps, city directories) to assess the historical land use of the subject property and adjacent properties.
- Provide a property owner interview questionnaire to the property owner or a designated subject property representative identified to Rincon by CLIENT.
- Provide a user interview questionnaire to a representative of CLIENT, the user of the Phase I ESA.
- Conduct interviews with other property representatives (e.g., key site manager, occupants), as applicable.
- Review Client-provided information (e.g., previous environmental reports, title documentation), as applicable.

Our scope of services, pursuant to ASTM E 1527-13 practice, did not include any inquiries with respect to asbestos containing building materials, biological agents, cultural and historic resources, ecological resources, endangered species, health and safety, indoor air quality unrelated to release of hazardous substances or petroleum products into the environment, industrial hygiene, lead-based paint, lead in drinking water, mold, radon, regulatory compliance, wetlands, or high voltage power lines.



## **SIGNIFICANT ASSUMPTIONS, LIMITATIONS, DEVIATIONS, EXCEPTIONS, SPECIAL TERMS AND CONDITIONS**

Marker Investments has requested this assessment and will use the assessment to provide information for the purposes of purchasing said property. No other use or disclosure is intended or authorized by Rincon. Also, this report is issued with the understanding that it is to be used only in its entirety. It is intended for use only by the client, and no other person or entity may rely upon the report without the express written consent of Rincon.

This work has been performed in accordance with good commercial, customary, and generally accepted environmental investigation practices for similar investigations conducted at this time and in this geographic area. No guarantee or warranties, expressed or implied are provided. The findings and opinions conveyed in this report are based on findings derived from a site reconnaissance, review of an environmental database report, specified regulatory records and historical sources, and comments made by interviewees. This report is not intended as a comprehensive site characterization and should not be construed as such. Standard data sources relied upon during the completion of Phase I ESAs may vary with regard to accuracy and completeness. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary analysis.

Rincon has identified evidence that suggests that hazardous materials or petroleum products exist at the subject property at levels that could require mitigation. Additional research, including surface or subsurface sampling and analysis, can reduce Marker Investments' risks, but no techniques commonly employed can eliminate these risks altogether. In addition, in accordance with our authorized work scope and contract and the general provisions of ASTM E 1527-05 and ASTM E 1527-13, no attempt was made to check for the presence of asbestos, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, vapor intrusion or other indoor air quality, or high voltage power lines.

### **USER RELIANCE**

This Phase I ESA was prepared for use solely and exclusively by Marker Investments. This report shall not be relied upon by or transferred to any other party without the express written authorization of Rincon Consultants.

### **SITE DESCRIPTION**

#### **Location**

The subject property is located at the northeast corner of Carmel Valley Road and Rancho Santa Fe Farms Road in San Diego, California (Figure 2, Site Map).



## **Subject Property and Vicinity General Characteristics**

The subject property is currently developed with a single structure and cell tower located in the southwest corner.

The subject property is located in an area that is primarily comprised of residential and vacant land uses. Properties in the vicinity of the subject property include single family homes and vacant land. The current adjacent land uses are described in Table 1 and depicted on Figure 3, Adjacent Land Use Map.

**Table 1 - Current Uses of Adjacent Properties**

<b>Area</b>	<b>Use</b>
Northern Properties	Single family residences
Eastern Properties	Vacant land, then Carmel Valley Road
Southern Properties	Carmel Valley Road, then single family residences
Western Properties	Vacant land, then Rancho Santa Fe Farms Road

## **Descriptions of Structures, Roads, Other Improvements on the Site**

During the site reconnaissance, a single structure was observed in the southwest corner of the subject property. This structure was observed to be two stories, connected by a ladder and various support beams. The interior of the structure was unable to be observed.

A chain-link fence was noted around the northern, eastern and southern perimeter of the subject property, while a concrete brick fence lined the western perimeter.

Access to the subject property is available from a driveway on Carmel Valley Road and a break in the chain link fence on the northern portion of the subject property.

Water and sewer service is provided by the City of San Diego. San Diego Gas & Electric provides electrical and natural gas service. Solid waste collection and disposal services are provided by the City of San Diego Environmental Services Department in the vicinity of the subject property.

## **USER PROVIDED INFORMATION**

As described in ASTM E 1527-13 Section 6, Marker Investments was interviewed for actual knowledge pertaining to the subject property to help identify recognized environmental conditions in connection with the property. Marc Perlman, President of Marker Investments completed the User Questionnaire as provided by ASTM Appendix X3, prior to completion of the site reconnaissance. A copy of the completed questionnaire is included as Appendix 2. The following information is based on our review of the completed questionnaire.

Based on our review of the completed questionnaire, the user did not review the following sources of information and/or is unaware of information regarding the following:

- recorded land title records (or judicial records, where appropriate) that identify any environmental liens filed or recorded against the property
- recorded land title records (or judicial records, where appropriate) that identify any activity and land use limitations (AULs), such as engineering controls, land use



restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law

- Title Report that identifies information pertaining to environmental cleanup liens or activity and use limitations (AULs) for the subject property
- specialized knowledge or experience related to the property or nearby properties
- obvious indicators that point to the presence or likely presence of releases at the property
- pending, threatened, or past litigation relevant to hazardous substances or petroleum products, in, on, or from the site
- pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the site
- notice from any government entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products

Additionally, the user indicated that the purchase price being paid for the subject property reasonably reflects the fair market value of the property, and he is not aware of a reduction in value for the subject property relative to any known environmental issues. He also indicated that the subject property was formerly used for a retail nursery operation, but is unaware of specific chemicals, spills or other chemical releases, or environmental cleanups that have taken place at the subject property.

## **RECORDS REVIEW**

### **PHYSICAL SETTING SOURCES**

#### **Topography**

The current USGS topographic map (Del Mar Quadrangle, 1975) indicates that the subject property is situated at an elevation of about 306 feet above mean sea level with topography sloping down to the to the general southwest.

#### **Geology and Hydrogeology**

##### **Site Geology**

According to the USGS geologic map (San Diego Quadrangle, 2008), the subject property is underlain by the Mission Valley Formation, described as “poorly to moderately indurated, light-colored, medium- to fine-grained, marine, sandstone with cobble conglomerate lenses.”

##### **Regional Groundwater Occurrence and Quality**

According to the *Phase I Environmental Site Assessment, Meadowood Project, San Diego, California* prepared by Rincon Consultants and dated September 19, 2012, groundwater was reported to be between 31 and 39 feet below grade and flow towards the northwest at a property located approximately 3 miles to the east southeast of the Meadowood property. The Meadowood property is located adjacent to the east of the subject property.



## **STANDARD ENVIRONMENTAL RECORD SOURCES**

Environmental Data Resources, Inc. (EDR) was contracted to provide a database search of public lists of sites that generate, store, treat or dispose of hazardous materials or sites for which a release or incident has occurred. The EDR search was conducted for the subject property and included data from surrounding sites within specified radii of the property. A copy of the EDR report, which specifies the ASTM search distance for each public list, is included as Appendix 2. As shown on the attached EDR report, federal, state and county lists were reviewed as part of the research effort. Please refer to Appendix 2 for a complete listing of sites reported by EDR and a description of the databases reviewed.

The Map Findings Summary, included in the EDR report, provides a summary of the databases searched, the number of reported facilities within the search radii, and whether the facility is located onsite or adjacent to the subject property. The following information is based on our review of the Map Findings Summary and the information contained in the EDR report.

### **Subject Property**

The subject property was not listed on any of the regulatory databases reviewed.

### **Offsite Properties**

Offsite properties listed by EDR fall under two general categories of databases: those reporting unauthorized releases of hazardous substances (e.g., LUST, National Priority List [a.k.a. Superfund sites], and corrective action facilities), and databases of businesses permitted to use hazardous materials or generate hazardous wastes, for which an unauthorized release has not been reported to a regulatory agency.

Rincon reviewed the EDR Radius Map and select detailed listings to evaluate their potential to impact the subject property, based on the following factors:

- Reported distance of the facility from the subject property
- The nature of the database on which the facility is listed, and/or whether the facility was listed on a database reporting unauthorized releases of hazardous materials, petroleum products, or hazardous wastes
- Reported case type (e.g., soil only, failed UST test only)
- Reported substance released (e.g., chlorinated solvents, gasoline, metals)
- Reported regulatory agency status (e.g., case closed, "no further action")
- Location of the facility with respect to the reported groundwater flow direction (discussed in the Geology and Hydrogeology section of this report)

None of the adjacent properties are listed in any of the databases searched by EDR. In addition, no nearby or up-gradient release sites are listed within 1/8 mile of the subject property.



## **Orphan Listings**

EDR reported 20 orphan or unmapped site listings, which EDR is unable to plot due to insufficient address information. Based on Rincon's review of the limited address information or site descriptions for the orphan listings, none of the listings are expected to impact the subject property.

## **ADDITIONAL ENVIRONMENTAL RECORD SOURCES**

### **Review of Agency Files**

Because no EDR database-listed sites were interpreted to be of potential environmental concern to the subject property, no agency files were reviewed as part of this research effort.

### **Known or Suspect Contaminated Release Sites with Potential Vapor Migration**

The EDR report was reviewed to identify nearby known or suspect contaminated sites that have the potential for contaminated vapor originating from the nearby site to be migrating beneath the subject property. Based on the ASTM E 2600-10, *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*, the following minimum search distances were initially used to determine if contaminated soil vapors from a nearby known or suspect contaminated site have the potential to be migrating beneath the subject property:

- 1/10 mile (528 feet) for petroleum hydrocarbons
- 1/3 mile (1,760 feet) for other contaminants of concern (COCs)

If up-gradient known or suspect contaminated sites are located within the above referenced distances from the subject property, online resources are reviewed to determine the extent of the contaminated plume at those sites. The following describes search distances for contaminated plumes of petroleum hydrocarbons and other COCs.

#### *Petroleum Hydrocarbons*

Based on our review of the EDR report information as indicated above, there are no adjacent or up-gradient known or suspect petroleum hydrocarbon impacted soil or groundwater plumes located within 30 feet of the subject property.

#### *Other COCs*

Based on our review of the EDR report, there are no adjacent or up-gradient known or suspect contaminated soil or groundwater plumes located within 100 feet of the subject property.

### **Review of State of California Division of Oil and Gas Records**

A review of the Department of Conservation, Division of Oil, Gas & Geothermal Resources Online Mapping System indicates that no oil wells are located within 1 mile of the subject property.



## **HISTORICAL USE INFORMATION ON THE PROPERTY AND THE ADJOINING PROPERTIES**

The historic records review completed for this Phase I ESA includes aerial photographs and topographic maps as detailed in the following sections.

### **Review of Historic Aerial Photographs**

Aerial photographs from EDR's aerial photograph collection were obtained and reviewed. Copies of the aerial photographs are included in Appendix 3 (Historical Documents).

### **Review of City Directory Listings**

Because the subject property appears to be used for agricultural and residential purposes only, city directories for the subject property were not reviewed.

### **Review of Fire Insurance Maps**

As indicated in the attached report, no records were available for the subject property or adjacent properties.

### **Review of Historic Topographic Maps**

Historic topographic maps from EDR's map collection were reviewed. Copies of the historic topographic maps are included in Appendix 3.

### **Review of City of San Diego Building Permit Records**

Based on the fact that the subject property appears to have been used for residential and agricultural purposes only, building permits were not reviewed.

### **Summary of Historic Uses**

#### **Subject Property**

Based on our review of the documents listed above, it appears that the subject property was vacant land from 1904 to 1994, developed with structures and a nursery in 2005, developed with two structures from 2009 to 2010, and developed with one structure interpreted to be a cell tower in 2012. In addition, one of the structures present from 2009 to 2010 is also interpreted to be a cell tower. Fire insurance maps were not available for the subject property.

#### **Northern Adjacent Property**

Based on our review of the documents listed above, it appears that the northern properties were vacant in 1904, developed with a road, vacant land and body of water from 1953 to 1994, developed with a road, structures and body of water from 2005 to 2012. Fire insurance maps were not available for the northern adjacent properties.



### **Eastern Adjacent Property**

Based on our review of the documents listed above, it appears that the eastern properties were vacant from 1904 to 1980 and vacant and developed with a road from 1990 to 2012. Fire insurance maps were not available for the eastern adjacent properties.

### **Southern Adjacent Property**

Based on our review of the documents listed above, it appears that the southern properties were vacant from 1904 to 1967, vacant and developed with a dirt road from 1974 to 1980, developed with a road and used for agricultural purposes from 1990 to 1994 and developed with a road and multiple structures from 2005 to 2012. Fire insurance maps were not available for the southern adjacent properties.

### **Western Adjacent Property**

Based on our review of the documents listed above, it appears that the western properties were vacant in 1904, developed with a road and vacant land from 1953 to 1975, developed with a road and used for agricultural purposes in 1980 to 1990, vacant land and developed with a road from 1994 to 2010, and developed with a single structure and a road in 2012. Fire insurance maps were not available for the western adjacent properties.

### **Gaps in Historical Sources**

Several gaps of greater than 5 years were identified in the historical records reviewed, from 1904 to 1953, from 1953 to 1963, from 1967 to 1974, from 1980 to 1990 and from 1994 to 2005. These gaps are considered insignificant because the subject property land use appears to be similar in years before and after the specified data gaps.

## **INTERVIEWS**

Rincon Consultants performed one interview regarding the subject property and surrounding areas. The purpose of the interview was to discuss current and historical subject property conditions and to obtain information indicating the presence of recognized environmental conditions in connection with the property.

### **Interview with Owner**

An interview questionnaire was provided to the property owner, Robert Barczewski, prior to the site reconnaissance. A copy of the completed questionnaire is included in Appendix 2. The following information is based on information obtained during this interview and our review of the completed questionnaire. In addition, a representative of the owner was interviewed on April 7, 2014 via telephone regarding the presence of the cell tower and did not provide any information.

The property owner indicated the following:

- The subject property and adjoining properties were previously used for farm land.
- The subject property is currently vacant land.



- The northern adjoining property is currently developed with Rancho Lakes, a residential development.
- The eastern, southern and western adjoining properties are currently vacant land.
- Current ownership of the subject property began in 1984, when the property was bought from Deseret Trust.
- Pesticides and/or herbicides were not stored on the subject property.
- No hazardous waste is generated on the subject property.

The property owner also indicated that no industrial drums, sacks of chemicals, fill dirt, pits, ponds or lagoons, sumps, clarifiers or solvent degreasers, stained soil, storage tanks, vent pipes, fill pipes, or access ways, stained surfaces, transformers, capacitors or hydraulic equipment, or records indicating the presence of PCBs on the subject property.

The property owner indicated that he is not aware of any pending, threatened, or past litigation or administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property. In addition, he is not aware of any notice from any government entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

However, the property owner provided the following document pertaining to the subject property:

- *Report of Limited Pesticide Residue Sampling and Testing, APN 305-021-05, Northeast of Carmel Valley Road and Rancho Santa Fe Farms Road, San Diego, California* prepared by Christian Wheeler Engineering and dated October 7, 2013 - A review of this previous report indicated that the subject property was used by Springtime Growers to grow crops, then as a sales yard for Rancho Del Soil Nursery from approximately 2002 to 2007. This previous report also indicated that near surface soil sampling was conducted and reported levels of toxaphene in 8 out of the 10 samples analyzed, 5 of which were reported above regulatory limits. Christian Wheeler Engineering provided the following recommendations:
  - "Prior to the commencement of grading operations for the proposed construction, the upper 12 to 18 inches of material should be removed from the site and disposed of in an off-site facility,"
  - "Following the site preparation and grading recommendations presented in a site-specific geotechnical report, the uppermost two feet of soil on those portions of the site that will not be covered by structures, asphalt paving, or hardscape should be removed and disposed of in an off-site facility,"
  - "Subsequent to the construction of the buildings and the installation of the streets and hardscape areas, additional testing of any areas not covered by structures, paving, or hardscape should be performed to evaluate the presence of toxaphene residues in the soil."

### **Interview with Site Manager**

A site manager was not identified to Rincon.



### **Interviews with Occupants**

Because the subject property is currently vacant land, no occupants were interviewed.

### **Interviews with Local Government Officials**

Based on the fact that the subject property and adjacent properties were not listed on any of the databases searched by EDR, no governmental officials were interviewed.

During the preparation of this Phase I ESA, we reviewed the California State Water Resources Control Board's (SWRCBs) online GeoTracker database to determine if the subject property is listed in the database as an unauthorized release site. In addition, we also reviewed the Department of Toxic Substances Control's (DTSCs) online Envirostor database to determine if the subject property is listed as a hazardous waste permitted facility or cleanup site in the Envirostor database. The subject property was not listed in either database. Based on the fact that the subject property was not listed on either database, an agency interview was not deemed necessary.

### **Interviews with Others**

Rincon did not attempt to interview neighboring property owners or others as part of this research effort.

## **SITE RECONNAISSANCE**

Rincon Consultants performed a reconnaissance of the subject property on March 10, 2014. The purpose of the reconnaissance was to observe existing subject property conditions and to obtain information indicating the presence of recognized environmental conditions in connection with the property.

### **METHODOLOGY AND LIMITING CONDITIONS**

The site reconnaissance was conducted by 1) observing the subject property from public thoroughfares, 2) observing the adjacent properties from public thoroughfares, and 3) observing the subject property from dirt roads and walking paths.

### **CURRENT USE OF THE PROPERTY AND ADJACENT PROPERTIES**

The subject property is currently developed with a single cell tower structure. Adjacent properties include vacant land, roads, and single-family residences.

### **PAST USE OF THE PROPERTY AND ADJACENT PROPERTIES**

Based on our site reconnaissance, former past uses at the subject property and adjacent properties are not readily apparent.



## **CURRENT OR PAST USES IN THE SURROUNDING AREAS**

The subject property is surrounded by residential and vacant land uses as detailed in the Site Description section of this report. Past uses of the surrounding area are not readily apparent based on the site reconnaissance.

## **GEOLOGIC, HYDROGEOLOGIC, HYDROLOGIC AND TOPOGRAPHIC CONDITIONS**

Geologic, Hydrogeologic, Hydrologic and topographic information are as previously stated in the Physical Settings Section of this report.

## **GENERAL DESCRIPTION OF STRUCTURES**

Onsite structures are as described previously in the Site Description section of this report.

## **INTERIOR AND EXTERIOR OBSERVATIONS**

### **Storage Tanks**

During the site reconnaissance, no storage tanks were observed on the subject property.

### **Drums**

During the site reconnaissance, no drums were observed on the subject property.

### **Hazardous Substances and Petroleum Products**

No hazardous substances or petroleum products were identified at the subject property. However, access to the interior of the cell tower structure was not available. It should be noted that some cell tower structures include emergency generators and fuel storage onsite.

### **Unidentified Substance Containers**

Unidentified substance containers or unidentified containers that might contain hazardous substances were not observed during the site reconnaissance.

### **Odors**

During the site reconnaissance, Rincon did not identify any strong, pungent, or noxious odors.

### **Pools of Liquid**

During the site reconnaissance, Rincon did not identify any pools of liquid including standing surface water. In addition, sumps containing liquids likely to be hazardous substances or petroleum products were not observed.



## Indications of Polychlorinated Biphenyls (PCBs)

During the site reconnaissance, no transformers were observed on the subject property. However, transformers were observed on the adjacent property to the west.

## Other Conditions of Concern

During the site reconnaissance Rincon did not note any of the following interior or exterior observations:

- stains or corrosion
- clarifiers and sumps
- pits, ponds, and lagoons
- stained soil or stained pavement
- stressed vegetation
- waste water
- wells
- septic systems/effluent disposal system

*Heating/Cooling* – A heating/cooling system was observed near the cell tower structure.

*Solid Waste/Debris*– Small amounts of scattered debris including signs, old fences, wood, municipal waste and broken glass were observed in various areas throughout the subject property.

# EVALUATION

## FINDINGS

Known or suspect environmental conditions associated with the property include the following:

- Onsite presence of a cell tower, with unknown fuel storage
- Former use of the subject property for agricultural purposes
- Former use of adjacent properties for agricultural purposes

## OPINIONS

- A. *Cell tower located on the subject property* – The current property owner did not provide information regarding the cell tower or the potential presence of a fuel storage tank onsite. Additionally, access to the interior of the cell tower structure was not available. It should be noted that some cell tower structures include emergency generators, fuel storage or batteries onsite. Although hazardous materials may be present onsite, there has not been a regulatory report of a release at the cell tower structure, therefore, the onsite presence of a cell tower with hazardous materials storage is considered de minimis.
- B. *Former use of the subject property for agricultural purposes and known levels of elevated toxaphene onsite* – According to the historical resources reviewed and the information obtained from the owner questionnaire, the subject property was reportedly used for agricultural purposes in approximately 2005. In addition, according to the 2013 Christian



Wheeler Engineering pesticide report, the subject property was used for agricultural purposes by Springtime Growers prior to 2002. The 2013 pesticide report indicates that toxaphene was detected at 1 foot below grade at levels above the California Human Health Screening Level for toxaphene. Christian Wheeler Engineering also provided soil removal and additional sampling recommendations for future development of the site. Therefore, the former use of the subject property for agricultural purposes is considered a REC.

- C. *Former use of adjacent properties for agricultural purposes* - According to the historical sources reviewed, the southern and western adjacent properties were used for agricultural purposes from approximately 1980 to 1994. Based on the fact that the subject property did not appear to have been graded with these adjacent properties, the former agricultural use of the adjacent properties is considered de minimis.

## CONCLUSIONS

Rincon has performed a Phase I ESA in general conformance with the scope and limitations of ASTM E 1527-13 for the property located at the northeast corner of the intersection of Carmel Valley Road and Rancho Santa Fe Farms Road in San Diego, California. This assessment has revealed evidence of 1 recognized environmental condition in connection with the property.

### *Recognized Environmental Conditions*

1. Former use of the subject property for agricultural purposes and known levels of elevated toxaphene onsite

## RECOMMENDATIONS

Based on the elevated levels of toxaphene above residential California Human Health Screening Levels (CHHSLs) in onsite soils, Rincon recommends collecting additional samples at 2 and 3 feet below grade to determine the vertical extent of toxaphene impacted soil. Based on the results of the additional sampling, the type of remediation can be determined, if warranted.

Additionally, although not considered an REC, we recommend identification of fuel storage tanks at the cell tower structure, and if present, regular visual checks of the fuel storage tank in the future.

## DEVIATIONS

Deviations from ASTM E 1527-13 Practice were not encountered during the completion of this Phase I ESA.



## REFERENCES

The following published reference materials were used in preparation of this Phase I ESA:

Environmental database: Environmental Data Resources (EDR) report dated February 28, 2014.

Geology: USGS geologic map (San Diego Quadrangle, 2008)

Groundwater: Phase I Environmental Site Assessment, Meadowood Project, San Diego, California prepared by Rincon Consultants and dated September 19, 2012

Topography: USGS topographic map (Del Mar Quadrangle, 1975)

Oil and gas records: State of California, Division of Oil, Gas and Geothermal Resources website: <http://www.consrv.ca.gov/DOG/index.htm>.

Aerial photographs: Photos maintained by EDR.

Historic topographic maps: Maps maintained by EDR.

Other: *Report of Limited Pesticide Residue Sampling and Testing, APN 305-021-05, Northeast of Carmel Valley Road and Rancho Santa Fe Farms Road, San Diego, California* prepared by Christian Wheeler Engineering and dated October 7, 2013



## SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

The qualified environmental professionals that are responsible for preparing the report include Julie Welch Marshall and Walt Hamann. Their qualifications are summarized in the following section.

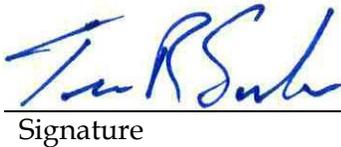
"We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in 312.10 of 40 CFR 312. We have the specific qualifications based on education, training and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312."

  
Signature

Julie Welch Marshall  
Name

April 25, 2014  
Date

Senior Project Manager  
Title

  
Signature

Torin Snyder, PG, CHG, TOR, QSD/QSP  
Name

April 25, 2014  
Date

Senior Hydrogeologist  
Title



## QUALIFICATIONS OF ENVIRONMENTAL CONSULTANTS

The environmental consultants responsible for conducting this Phase I ESA and preparing the report include Lauren Kodama, Julie Welch Marshall and Walt Hamann. Their qualifications are summarized below.

Environmental Professional Qualifications	X2.1.1 (2) (i) - Professional Engineer or Professional Geologist License or Registration, and 3 years of full-time relevant experience	X2.1.1 (2) (ii) - Licensed or certified by the Federal Government, State, Tribe, or U.S. Territory to perform environmental inquiries	X2.1.1 (2) (iii) – Baccalaureate or Higher Degree from and accredited institution of higher education in a discipline of engineering or science and the equivalent of 5 years of full-time relevant experience	X2.1.1 (2) (iii) – Equivalent of 10 years of full-time relevant experience
Julie Welch Marshall			BS Environmental Engineering	17 years
Torin Snyder	PG, CHG, TOR, QSD/QSP		BS Soil Science	13 years
Lauren Kodama			BS Environmental Studies	1 year

**Julie Welch Marshall** is a Senior Project Manager with Rincon Consultants. She holds a Bachelor of Science degree in environmental engineering from Rensselaer Polytechnic Institute, Troy, New York, a Hazardous Materials Management Certificate from the University of California, Santa Barbara Extension program, and a Business Management Certificate from the University of California, San Diego Extension program. Ms. Marshall’s responsibilities at Rincon include implementation of site assessments and development of site remediation programs within the Environmental Site Assessment and Remediation Group. Ms. Marshall has extensive experience performing Phase I and Phase II Environmental Site Assessments as well as Preliminary Endangerment Assessments. She has seventeen years of experience conducting research, assessment and remediation projects in California.

**Mr. Snyder** serves as a Senior Hydrogeologist for Rincon Consultants. Mr. Snyder holds a Bachelor of Science degree in Soil Science from California Polytechnic State University, San Luis Obispo, California. Mr. Snyder is a Professional Geologist (#8663), Certified Hydrogeologist (#950), Trainer of Record, Qualified SWPPP Developer and Practitioner (#649), and Certified Professional Soil Scientist (#28222). Mr. Snyder has over 13 years of professional experience preparing, managing and directing hydrology and groundwater projects. He is responsible for oversight and implementation of fieldwork, data collection, compilation, client and agency contact, report preparation, and project management. His experience includes hydrology and water quality, vadose zone hydrology environmental investigations, hydrogeology environmental investigations, hazardous waste investigations, and soil and groundwater remediation/ mitigation.

**Lauren G. Kodama** is an Environmental Scientist with Rincon Consultants. She holds a Bachelor of Science degree in Environmental Studies with an outside concentration of Ecology, Evolution, and Marine Biology from the University of California, Santa Barbara. Ms. Kodama



has experience working on Phase I Environmental Site Assessments for a variety of commercial, rural, and industrial properties. In addition, Ms. Kodama has been involved in working on large scale, multi-site projects. Ms. Kodama's responsibilities at Rincon include implementation of Phase I Environmental Site Assessment Reports.



# **Appendix 1**

---

*Interview Documentation*

**Property Owner Interview Questionnaire**

**Rincon Project 14-00183 – Bob's Corner, San Diego, CA**

This questionnaire should be completed by the current property owner or a designated representative of the current property owner. We respectfully request that you fill out and return this form via fax 760-918-9449 or email lkodama@rinconconsultants.com to us within one week from the date of this transmittal.

1)	<p><b>Was the subject property or any adjoining property ever used as:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><input type="checkbox"/> a gasoline or other fueling station</td> <td style="width: 50%; border: none;"><input type="checkbox"/> a junkyard or landfill</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> a motor vehicle repair facility</td> <td style="border: none;"><input type="checkbox"/> a waste treatment, storage, disposal, processing or recycling facility</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> a commercial printing facility</td> <td style="border: none;"><input type="checkbox"/> a machine shop</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> a dry cleaners</td> <td style="border: none;"><input type="checkbox"/> a manufacturing facility</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> a photo developing laboratory</td> <td style="border: none;"><input type="checkbox"/> an oil production facility (including oil wells)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> a metal plating facility</td> <td style="border: none;"><input type="checkbox"/> any other industrial use</td> </tr> </table> <p><input checked="" type="checkbox"/> a farm</p> <p>(please check all that apply and describe)</p> <p style="text-align: center; font-size: 1.2em;"><b>FARM AND ORNAMENTAL NURSERY</b></p>	<input type="checkbox"/> a gasoline or other fueling station	<input type="checkbox"/> a junkyard or landfill	<input type="checkbox"/> a motor vehicle repair facility	<input type="checkbox"/> a waste treatment, storage, disposal, processing or recycling facility	<input type="checkbox"/> a commercial printing facility	<input type="checkbox"/> a machine shop	<input type="checkbox"/> a dry cleaners	<input type="checkbox"/> a manufacturing facility	<input type="checkbox"/> a photo developing laboratory	<input type="checkbox"/> an oil production facility (including oil wells)	<input type="checkbox"/> a metal plating facility	<input type="checkbox"/> any other industrial use
<input type="checkbox"/> a gasoline or other fueling station	<input type="checkbox"/> a junkyard or landfill												
<input type="checkbox"/> a motor vehicle repair facility	<input type="checkbox"/> a waste treatment, storage, disposal, processing or recycling facility												
<input type="checkbox"/> a commercial printing facility	<input type="checkbox"/> a machine shop												
<input type="checkbox"/> a dry cleaners	<input type="checkbox"/> a manufacturing facility												
<input type="checkbox"/> a photo developing laboratory	<input type="checkbox"/> an oil production facility (including oil wells)												
<input type="checkbox"/> a metal plating facility	<input type="checkbox"/> any other industrial use												

2)	<p><b>Please describe the current land uses of the subject property and those surrounding your property. Please indicate all businesses/companies located on property.</b></p>					
2a	<p><b>Current use of Subject Property</b> (please check all that apply)</p> <table style="width: 100%; border: none;"> <tr><td style="width: 50%; border: none;"><input type="checkbox"/> Commercial (retail, offices, etc.)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Residential (single family or apartments)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Industrial (manufacturing, warehousing, processing)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Other-Please Describe</td></tr> </table>	<input type="checkbox"/> Commercial (retail, offices, etc.)	<input type="checkbox"/> Residential (single family or apartments)	<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)	<input type="checkbox"/> Other-Please Describe	<p>(please include a brief description of current operation)</p> <p style="text-align: center; font-size: 1.2em;"><b>None, VACANT LAND</b></p>
<input type="checkbox"/> Commercial (retail, offices, etc.)						
<input type="checkbox"/> Residential (single family or apartments)						
<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)						
<input type="checkbox"/> Other-Please Describe						
2b	<p><b>Current use of Northern Adjoining Properties</b> (please check all that apply)</p> <table style="width: 100%; border: none;"> <tr><td style="width: 50%; border: none;"><input type="checkbox"/> Commercial (retail, offices, etc.)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Residential (single family or apartments)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Industrial (manufacturing, warehousing, processing)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Other-Please Describe</td></tr> </table>	<input type="checkbox"/> Commercial (retail, offices, etc.)	<input checked="" type="checkbox"/> Residential (single family or apartments)	<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)	<input type="checkbox"/> Other-Please Describe	<p>(please include a brief description of current operation)</p> <p style="text-align: center; font-size: 1.2em;"><b>Rancho LAKES</b></p>
<input type="checkbox"/> Commercial (retail, offices, etc.)						
<input checked="" type="checkbox"/> Residential (single family or apartments)						
<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)						
<input type="checkbox"/> Other-Please Describe						
2c	<p><b>Current use of Southern Adjoining Properties</b> (please check all that apply)</p> <table style="width: 100%; border: none;"> <tr><td style="width: 50%; border: none;"><input type="checkbox"/> Commercial (retail, offices, etc.)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Residential (single family or apartments)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Industrial (manufacturing, warehousing, processing)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Other-Please Describe</td></tr> </table>	<input type="checkbox"/> Commercial (retail, offices, etc.)	<input type="checkbox"/> Residential (single family or apartments)	<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)	<input type="checkbox"/> Other-Please Describe	<p>(please include a brief description of current operation)</p> <p style="text-align: center; font-size: 1.2em;"><b>None, VACANT LAND</b></p>
<input type="checkbox"/> Commercial (retail, offices, etc.)						
<input type="checkbox"/> Residential (single family or apartments)						
<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)						
<input type="checkbox"/> Other-Please Describe						
2d	<p><b>Current use of Western Adjoining Properties</b> (please check all that apply)</p> <table style="width: 100%; border: none;"> <tr><td style="width: 50%; border: none;"><input type="checkbox"/> Commercial (retail, offices, etc.)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Residential (single family or apartments)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Industrial (manufacturing, warehousing, processing)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Other-Please Describe</td></tr> </table>	<input type="checkbox"/> Commercial (retail, offices, etc.)	<input type="checkbox"/> Residential (single family or apartments)	<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)	<input type="checkbox"/> Other-Please Describe	<p>(please include a brief description of current operation)</p> <p style="text-align: center; font-size: 1.2em;"><b>None, VACANT LAND</b></p>
<input type="checkbox"/> Commercial (retail, offices, etc.)						
<input type="checkbox"/> Residential (single family or apartments)						
<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)						
<input type="checkbox"/> Other-Please Describe						
2e	<p><b>Current use of Eastern Adjoining Properties</b> (please check all that apply)</p> <table style="width: 100%; border: none;"> <tr><td style="width: 50%; border: none;"><input type="checkbox"/> Commercial (retail, offices, etc.)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Residential (single family or apartments)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Industrial (manufacturing, warehousing, processing)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Other-Please Describe</td></tr> </table>	<input type="checkbox"/> Commercial (retail, offices, etc.)	<input type="checkbox"/> Residential (single family or apartments)	<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)	<input type="checkbox"/> Other-Please Describe	<p>(please include a brief description of current operation)</p> <p style="text-align: center; font-size: 1.2em;"><b>None, Vacant LAND</b></p>
<input type="checkbox"/> Commercial (retail, offices, etc.)						
<input type="checkbox"/> Residential (single family or apartments)						
<input type="checkbox"/> Industrial (manufacturing, warehousing, processing)						
<input type="checkbox"/> Other-Please Describe						

**Property Owner Interview Questionnaire**

Rincon Project 14-00183 – Bob's Corner, San Diego, CA

3)	<b>Please describe the previous land uses of your property and those surrounding your property. Include property ownership and dates of operation if known.</b>	
3a	<b>Previous use of Subject Property</b> (please check all that apply) <input type="checkbox"/> Commercial (retail, offices, etc.) <input type="checkbox"/> Residential (single family or apartments) <input type="checkbox"/> Industrial (manufacturing, warehousing, processing) <input checked="" type="checkbox"/> Other-Please Describe	(please include a brief description of previous operations, former property owners, and dates of operation)  <b>FARM LAND</b>
3b	<b>Previous use of Northern Adjoining Properties</b> (please check all that apply) <input type="checkbox"/> Commercial (retail, offices, etc.) <input type="checkbox"/> Residential (single family or apartments) <input type="checkbox"/> Industrial (manufacturing, warehousing, processing) <input checked="" type="checkbox"/> Other-Please Describe	(please include a brief description of previous operations)  <b>FARM LAND</b>
3c	<b>Previous use of Southern Adjoining Properties</b> (please check all that apply) <input type="checkbox"/> Commercial (retail, offices, etc.) <input type="checkbox"/> Residential (single family or apartments) <input type="checkbox"/> Industrial (manufacturing, warehousing, processing) <input checked="" type="checkbox"/> Other-Please Describe	(please include a brief description of previous operations)  <b>FARM LAND</b>
3d	<b>Previous use of Western Adjoining Properties</b> (please check all that apply) <input type="checkbox"/> Commercial (retail, offices, etc.) <input type="checkbox"/> Residential (single family or apartments) <input type="checkbox"/> Industrial (manufacturing, warehousing, processing) <input checked="" type="checkbox"/> Other-Please Describe	(please include a brief description of previous operations)  <b>FARM LAND</b>
3e	<b>Previous use of Eastern Adjoining Properties</b> (please check all that apply) <input type="checkbox"/> Commercial (retail, offices, etc.) <input type="checkbox"/> Residential (single family or apartments) <input type="checkbox"/> Industrial (manufacturing, warehousing, processing) <input checked="" type="checkbox"/> Other-Please Describe	(please include a brief description of previous operations)  <b>FARM LAND</b>
4)	<b>Who is the current owner of the facility?</b>	<b>N/A VACANT</b>
5)	<b>When did current ownership begin?</b>	<b>1984</b>
6)	<b>What is the age of the on-site facility?</b>	<b>N/A VACANT</b>
7)	<b>Who is the previous owner of the property?</b>	<b>DESERET TRUST</b>

**Property Owner Interview Questionnaire**

Rincon Project 14-00183 – Bob's Corner, San Diego, CA

8)	<b>Please indicate the property's current</b>	
	electrical service provider -	S D G E
	water service provider -	City San Diego
	natural gas service provider -	—
	sewer service provider -	C S D
	solid waste hauler -	—

9)	<b>To the best of your knowledge, has your facility previously or does your facility currently store or use any of the following in individual containers larger than 5 gallons in volume or 50 gallons in the aggregate? (if yes or unknown, include how many, type, and size)</b>	
	<input type="checkbox"/> Damaged or discarded automotive or industrial batteries	
	<input type="checkbox"/> Pesticides	
	<input type="checkbox"/> Paints	
	<input type="checkbox"/> Oils or solvents	
	<input type="checkbox"/> Motor vehicle fuel	
	<input type="checkbox"/> Pesticides or Herbicides	NURSERY STORAGE WAS NOT ON THIS PARCEL
<input type="checkbox"/> Other Chemicals or hazardous substances		

10)	<b>Please indicate any wastes generated at the facility.</b>		
	<b>Hazardous waste:</b>	<b>Quantity:</b>	<b>Disposal Method:</b>
		N/A	

11)	<b>Are there currently or to the best of your knowledge have there been previously, any industrial drums (typically 55 gallon) or sacks of chemicals located on the property or at the facility?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

**Property Owner Interview Questionnaire**

**Rincon Project 14-00183 – Bob's Corner, San Diego, CA**

12)	<b>Are there currently or to the best of your knowledge have there been previously, any evidence of fill dirt having been brought onto the property that originated from a contaminated site or that is of an unknown origin?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Unknown		
13)	<b>Are there currently or to the best of your knowledge have there been previously, any pits, ponds or lagoons located on the property in connection with waste treatment or waste disposal?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Unknown		
14)	<b>Are there currently or to the best of your knowledge have there been previously, any sumps, clarifiers, or solvent degreasers on the property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Unknown		
15)	<b>Are there currently or to the best of your knowledge have there been previously, any stained soil on the property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Unknown		
16)	<b>Are there currently or to the best of your knowledge have there been previously, any storage tanks (above or below ground) located on the property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Unknown		
17)	<b>Are there currently or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways (etc.) indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Unknown		

**Property Owner Interview Questionnaire**

Rincon Project 14-00183 – Bob's Corner, San Diego, CA

18)	<b>If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government agency?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

19)	<b>Are there currently or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water, or are emitting foul odors?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

20)	<b>To the best of your knowledge has your facility previously or does your facility currently, discharge wastewater on or adjacent to the property other than storm water into a sanitary sewer system?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

21)	<b>Have any of the following ever been dumped above grade, buried and/or burned on the property? (please check all that apply and describe if possible)</b>	
	<input type="checkbox"/> hazardous substances	
	<input type="checkbox"/> petroleum products	
	<input type="checkbox"/> unidentified waste materials	
	<input type="checkbox"/> tires	
	<input type="checkbox"/> automotive or industrial batteries	
	<input type="checkbox"/> other waste materials (please describe)	

22)	<b>Are there currently or to the best of your knowledge have there been previously, a transformer, capacitor or any hydraulic equipment on the property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

**Property Owner Interview Questionnaire**  
**Rincon Project 14-00183 – Bob's Corner, San Diego, CA**

23)	<b>Are there currently or to the best of your knowledge have there been previously any records indicating the presence of PCBs?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

24)	<b>Are there currently or to the best of your knowledge have there been previously any records indicating the presence of pesticides or herbicides?</b>	
	<input checked="" type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input type="checkbox"/> No	Report dated 10/7/2013 showing pesticide residue from prior to our ownership
<input type="checkbox"/> Unknown		

25)	<b>Do you have any environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

26)	<b>Have you been informed of the past or current existence of hazardous substances, petroleum products, or environmental violations with respect to the property or any facility located on the property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

27)	<b>Do you have any knowledge of any environmental site assessments of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

28)	<b>Do you know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release of any hazardous substances or petroleum products involving the property by any owner or occupant of the property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
	<input type="checkbox"/> Unknown	

**Property Owner Interview Questionnaire**

**Rincon Project 14-00183 – Bob's Corner, San Diego, CA**

29)	<b>Are there any site-specific geotechnical or geologic reports available for the subject property?</b>	
	Yes	if Yes or Unknown, please describe
	<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Unknown		

30)	<b>Is there a Title Report available for the subject property?</b>	
	<input type="checkbox"/> Yes	if Yes or Unknown, please describe
	<input type="checkbox"/> No	
<input checked="" type="checkbox"/> Unknown		

<b>This questionnaire was completed by (please print)</b>	
Name	Robert Barzewski
Title	TRUSTEE
Firm	—
Street Address	5629 Willowmere Lane
City, State, Zip Code	SAN DIEGO, CA 92130
Phone Number	858-755-1562
Fax Number	
What is the Preparer's relationship to the property (i.e., owner, occupant, property manager, employee, agent, consultant, etc.) ?	OWNER

Copies of the completed questionnaire should be faxed, emailed (preferably) or mailed to:

Rincon Consultants, Inc.  
 5135 Avenida Encinas, Suite A  
 Carlsbad, CA 92008  
 Attention: Environmental Site Assessment Division  
 Fax: (760) 918-9449  
 Email: lkodama@rinconconsultants.com

Preparer represents that to the best of the preparer's knowledge the above statements and facts are true and correct and to the best of the preparer's knowledge no material facts have been suppressed or misstated.

Signature Robert P. Barzewski Date 4/1/2014

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 must provide the following information to the environmental professional. Failure to conduct these inquiries could result in a determination that "all appropriate inquiries" is not complete.

We respectfully request that you fill out this form and e-mail it to Lauren Kodama at lkodama@RinconConsultants.com within one week from the date of this transmittal.

1. Why is the Phase I required or being performed?	PURCHASE OF PROPERTY
2. What type of property transaction is planned? (i.e. sale, purchase, exchange, etc.)	<del>SALE</del> PURCHASE
3. What is the entire site address?	APN 305-021-05 (VACANT LAND)
4. What is the Assessor's Parcel Number (s)?	↑
5. Are any considerations beyond the requirements of Practice E1527 to be considered? (i.e. lien search, asbestos & lead based paint, radon, etc.)	NO
6. Identify all parties who will rely on the Phase I report.	MARKER INVESTMENTS, LLC + BOB'S CORNER, LLC
7. Identify the Site Manager/Contact and how the contact can be reached.	CHRIS BARCZEWSKI R.C.BE.ME-Com 858-922-9870
8. Identify the Site Owner and how the owner can be reached.	↑



<p>9. Do you have copies of any available prior environmental site assessment reports, documents, correspondence, etc., concerning the any other knowledge or experience with the property that may be pertinent to the environmental professional (i.e. title report, previous Ph I and II ESAs, Environmental Impact Studies, etc. ).</p>	<p>NO</p>
---	-----------

1. Did a search of recorded land title records (or judicial records, where appropriate) identify any environmental liens filed or recorded against the property?

Please checkmark the most appropriate response:

- I have not reviewed the records and *do not know* if there are any filed or recorded environmental liens.
- I have reviewed the records, and *No, there aren't any* filed or recorded environmental liens.
- I have reviewed the records, and *Yes, there are* environmental liens. Explain:

2. Did a search of recorded land title records (or judicial records, where appropriate) identify any activity and land use limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?

Please checkmark the most appropriate response:

- I have not reviewed the records and *do not know* if there are any filed/recorded AULs or any AULs in place at the site.
- I have reviewed the records, and *No, there aren't any* filed/recorded AULs or any AULs in place at the site.
- I have reviewed the records, and *Yes, there are* AULs filed, recorded, and/or in place at the site. Explain:



3. Does the Title Report provide any information pertaining to environmental cleanup liens or activity and use limitations (AULs) for the subject property?

Please checkmark the most appropriate response:

- I have not reviewed the Title Report and *do not know* if it provides environmental cleanup liens or AULs information.
- I have reviewed the Title Report, and *No, it does not* provide environmental cleanup liens or AULs information.
- I have reviewed the Title Report, and *Yes, it does provide* environmental cleanup liens or AULs information. Explain:

4. Do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an *adjoining property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?

Please checkmark the most appropriate response:

- No, I do not* have any specialized knowledge and/or experience related to the property or nearby properties.
- Yes, I do* have specialized knowledge and/or experience related to the property or nearby properties. Explain:

5. As the user of this ESA, based on your knowledge and experience related to the property, are you aware of any information pertaining to a reduction in value for the subject property relative to any known environmental issues?

Please checkmark the most appropriate response:

- No, I do not* have any information about a reduction in property value relative to environmental issues.
- Yes, I do* have information about a reduction in property value relative to environmental issues. Explain:



6. Does the purchase price being paid for this property reasonably reflect the fair market value of the property?

Please checkmark the most appropriate response:

- Yes, I do believe the purchase price being paid for this property reasonably reflects the fair market value of the property. Skip to question #7.
- No, I do not believe the purchase price being paid for this property reasonably reflects the fair market value of the property. Proceed to question #6a.

a. If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? (40 CFR 312.29)

Please checkmark the most appropriate response:

- No, I have not considered the idea that known or believed contamination at the site has caused the lower purchase price.
- Yes, I have considered the idea that known or believed contamination at the site has caused the lower purchase price. Explain.

7. Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example,

a. Do you know the past uses of the property?

- I do not know.
- I do know. Explain: **RETAIL NURSERY OPERATION**

b. Do you know of specific chemicals are present or once were present at the property?

- I do not know.
- I do know. Explain:

c. Do you know of any spills or other chemical releases that have taken place at the property?

- I do not know.
- I do know. Explain:



d. Do you know of any environmental cleanups have taken place at the property?

I do not know.

I do know. Explain:

8. Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of releases at the property?

Please checkmark the most appropriate response:

No, I do not know and/or do not have any experience with any obvious indicators that point to the presence or likely presence of contamination at the property.

Yes, I do know of and/or *do have experience with* obvious indicators that point to the presence or likely presence of contamination at the property. Explain:

9. Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products, in, on, or from the site?

No, I am not aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products, in, on, or from the site.

Yes, I am aware of pending, threatened, or past litigation relevant to hazardous substances or petroleum products, in, on, or from the site. Explain:

10. Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the site?

No, I am not aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the site.

Yes, I am aware of pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the site. Explain:



11. Are you aware of any notice from any government entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?

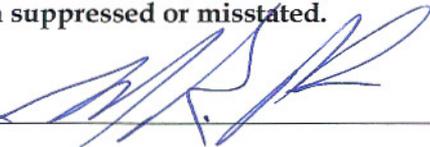
- No, I am not aware of any notice from any government entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.
- Yes, I am aware of a notice, or notices, from a government entity (or multiple government entities) regarding a possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products. Explain:

This questionnaire was completed by (please print):

Name	MARC PEELMAN
Title	PRESIDENT
Firm	MARKER INVESTMENTS, LLC
Street Address	427 S. CEDROS AVE, SUITE 201
City, State, Zip Code	SOLANA BEACH, CA 92075
Phone Number	858-755-3350
Fax Number	858-755-3040
What is the preparer's relationship to the property (i.e., seller, buyer, occupant, property manager, employee, agent, consultant, etc.)?	BUYER

The preparer represents that to the best of the preparer's knowledge the above statements and facts are true and correct, and to the best of the preparer's knowledge, no material facts have been suppressed or misstated.

Signature



Date

3/14/14

Please email this form to Lauren Kodama at [lkodama@RinconConsultants.com](mailto:lkodama@RinconConsultants.com). This form may also be mailed to the following address:

Rincon Consultants, Inc., Attention: Lauren Kodama  
5135 Avenida Encinas, Suite A, Carlsbad, California 92008



## **Appendix 2**

---

*Regulatory Records Documentation*

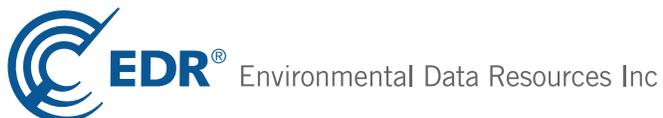
**Bobs Corner**

Carmel Valley Road and Rancho Santa Fe Lakes Dr  
San Diego, CA 92130

Inquiry Number: 03868975.2r

February 28, 2014

# The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://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 .....	8
Orphan Summary .....	32
Government Records Searched/Data Currency Tracking .....	GR-1
 <b><u>GEOCHECK ADDENDUM</u></b>	
Physical Setting Source Addendum .....	A-1
Physical Setting Source Summary .....	A-2
Physical Setting SSURGO Soil Map .....	A-5
Physical Setting Source Map .....	A-13
Physical Setting Source Map Findings .....	A-15
Physical Setting Source Records Searched .....	A-12

***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 2014 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 (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

CARMEL VALLEY ROAD AND RANCHO SANTA FE LAKES DR  
SAN DIEGO, CA 92130

#### COORDINATES

Latitude (North): 32.9697000 - 32° 58' 10.92"  
Longitude (West): 117.1770000 - 117° 10' 37.20"  
Universal Transverse Mercator: Zone 11  
UTM X (Meters): 483459.4  
UTM Y (Meters): 3647750.8  
Elevation: 306 ft. above sea level

#### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 32117-H2 DEL MAR, CA  
Most Recent Revision: 1975

#### AERIAL PHOTOGRAPHY IN THIS REPORT

Photo Year: 2012  
Source: USDA

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### 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

#### *Federal NPL site list*

NPL..... National Priority List

## EXECUTIVE SUMMARY

Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

### ***Federal CERCLIS list***

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System  
FEDERAL FACILITY..... Federal Facility Site Information listing

### ***Federal CERCLIS NFRAP site List***

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators  
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

### ***Federal institutional controls / engineering controls registries***

US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROL..... Sites with Institutional Controls  
LUCIS..... Land Use Control Information System

### ***Federal ERNS list***

ERNS..... Emergency Response Notification System

### ***State- and tribal - equivalent NPL***

RESPONSE..... State Response Sites

### ***State and tribal leaking storage tank lists***

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

### ***State and tribal registered storage tank lists***

UST..... Active UST Facilities  
AST..... Aboveground Petroleum Storage Tank Facilities  
INDIAN UST..... Underground Storage Tanks on Indian Land  
FEMA UST..... Underground Storage Tank Listing

### ***State and tribal voluntary cleanup sites***

VCP..... Voluntary Cleanup Program Properties

## EXECUTIVE SUMMARY

INDIAN VCP..... Voluntary Cleanup Priority Listing

### ADDITIONAL ENVIRONMENTAL RECORDS

#### **Local Brownfield lists**

US BROWNFIELDS..... A Listing of Brownfields Sites

#### **Local Lists of Landfill / Solid Waste Disposal Sites**

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations  
ODI..... Open Dump Inventory  
WMUDS/SWAT..... Waste Management Unit Database  
SWRCY..... Recycler Database  
HAULERS..... Registered Waste Tire Haulers Listing  
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

#### **Local Lists of Hazardous waste / Contaminated Sites**

US CDL..... Clandestine Drug Labs  
HIST Cal-Sites..... Historical Calsites Database  
SCH..... School Property Evaluation Program  
Toxic Pits..... Toxic Pits Cleanup Act Sites  
CDL..... Clandestine Drug Labs  
San Diego Co. HMMD..... Hazardous Materials Management Division Database  
US HIST CDL..... National Clandestine Laboratory Register

#### **Local Lists of Registered Storage Tanks**

CA FID UST..... Facility Inventory Database  
HIST UST..... Hazardous Substance Storage Container Database  
SWEEPS UST..... SWEEPS UST Listing

#### **Local Land Records**

LIENS 2..... CERCLA Lien Information  
LIENS..... Environmental Liens Listing  
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  
SPILLS 90..... SPILLS 90 data from FirstSearch

#### **Other Ascertainable Records**

RCRA NonGen / NLR..... RCRA - Non Generators  
DOT OPS..... Incident and Accident Data  
DOD..... Department of Defense Sites  
FUDS..... Formerly Used Defense Sites  
CONSENT..... Superfund (CERCLA) Consent Decrees

## EXECUTIVE SUMMARY

ROD.....	Records Of Decision
UMTRA.....	Uranium Mill Tailings Sites
US MINES.....	Mines Master Index File
TRIS.....	Toxic Chemical Release Inventory System
TSCA.....	Toxic Substances Control Act
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS.....	Section 7 Tracking Systems
ICIS.....	Integrated Compliance Information System
PADS.....	PCB Activity Database System
MLTS.....	Material Licensing Tracking System
RADINFO.....	Radiation Information Database
FINDS.....	Facility Index System/Facility Registry System
RAATS.....	RCRA Administrative Action Tracking System
RMP.....	Risk Management Plans
CA BOND EXP. PLAN.....	Bond Expenditure Plan
NPDES.....	NPDES Permits Listing
UIC.....	UIC Listing
Cortese.....	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings.....	CUPA Resources List
Notify 65.....	Proposition 65 Records
DRYCLEANERS.....	Cleaner Facilities
WIP.....	Well Investigation Program Case List
ENF.....	Enforcement Action Listing
HAZNET.....	Facility and Manifest Data
EMI.....	Emissions Inventory Data
INDIAN RESERV.....	Indian Reservations
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
LEAD SMELTERS.....	Lead Smelter Sites
EPA WATCH LIST.....	EPA WATCH LIST
2020 COR ACTION.....	2020 Corrective Action Program List
PROC.....	Certified Processors Database
PCB TRANSFORMER.....	PCB Transformer Registration Database
Financial Assurance.....	Financial Assurance Information Listing
US FIN ASSUR.....	Financial Assurance Information
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
WDS.....	Waste Discharge System
PRP.....	Potentially Responsible Parties
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
MWMP.....	Medical Waste Management Program Listing
COAL ASH DOE.....	Steam-Electric Plant Operation Data
HWT.....	Registered Hazardous Waste Transporter Database
HWP.....	EnviroStor Permitted Facilities Listing

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat.....	EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners.....	EDR Exclusive Historic Dry Cleaners

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

RGA LF.....	Recovered Government Archive Solid Waste Facilities List
-------------	--

# EXECUTIVE SUMMARY

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

### ***State- and tribal - equivalent CERCLIS***

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 11/06/2013 has revealed that there are 3 ENVIROSTOR sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>PACIFIC HIGHLANDS RANCH DEL MAR</i></b> Status: Active	<b><i>SO. OF TED WILLIAMS FWY</i></b>	<b><i>SSE 1/4 - 1/2 (0.255 mi.)</i></b>	<b><i>2</i></b>	<b><i>9</i></b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>PACIFIC HIGHLANDS RANCH HIGH A</i></b> Status: No Further Action	<b><i>FARMS ROAD/BLACK MOUNTAIN</i></b>	<b><i>SW 1/2 - 1 (0.737 mi.)</i></b>	<b><i>6</i></b>	<b><i>21</i></b>
<b><i>PACIFIC HIGHLANDS RANCH ELEMEN</i></b> Status: Certified	<b><i>PACIFIC HIGHLAND RANCH</i></b>	<b><i>WSW 1/2 - 1 (0.767 mi.)</i></b>	<b><i>7</i></b>	<b><i>24</i></b>

### ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, and dated 11/18/2013 has revealed that there is 1

## EXECUTIVE SUMMARY

SWF/LF site 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>
<b>EVERGREEN NURSERY</b>	<b>13650 CARMEL VALLEY RD</b>	<b>E 1/4 - 1/2 (0.425 mi.)</b>	<b>3</b>	<b>11</b>

### **State and tribal leaking storage tank lists**

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 12/16/2013 has revealed that there are 2 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>
<b>SPRINGTIME GROWERS, INC.</b>	<b>6858 BLACK MOUNTAIN RD</b>	<b>SW 1/8 - 1/4 (0.225 mi.)</b>	<b>1</b>	<b>8</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>SPRINGTIME GROWERS</b> Status: Completed - Case Closed	<b>6302 BLACK MOUNTAIN RD</b>	<b>WSW 1/4 - 1/2 (0.467 mi.)</b>	<b>A5</b>	<b>18</b>

SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 12/16/2013 has revealed that there is 1 SLIC site 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>
SPRINGTIME GROWERS, INC.	6302 BLACK MOUNTAIN ROA	WSW 1/4 - 1/2 (0.467 mi.)	A4	18

SAN DIEGO CO. SAM: 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.

A review of the SAN DIEGO CO. SAM list, as provided by EDR, and dated 03/23/2010 has revealed that there is 1 SAN DIEGO CO. SAM site 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>
<b>SPRINGTIME GROWERS</b>	<b>6302 BLACK MOUNTAIN RD</b>	<b>WSW 1/4 - 1/2 (0.467 mi.)</b>	<b>A5</b>	<b>18</b>

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### **Other Ascertainable Records**

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST],

## EXECUTIVE SUMMARY

the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSTES]. 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 is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

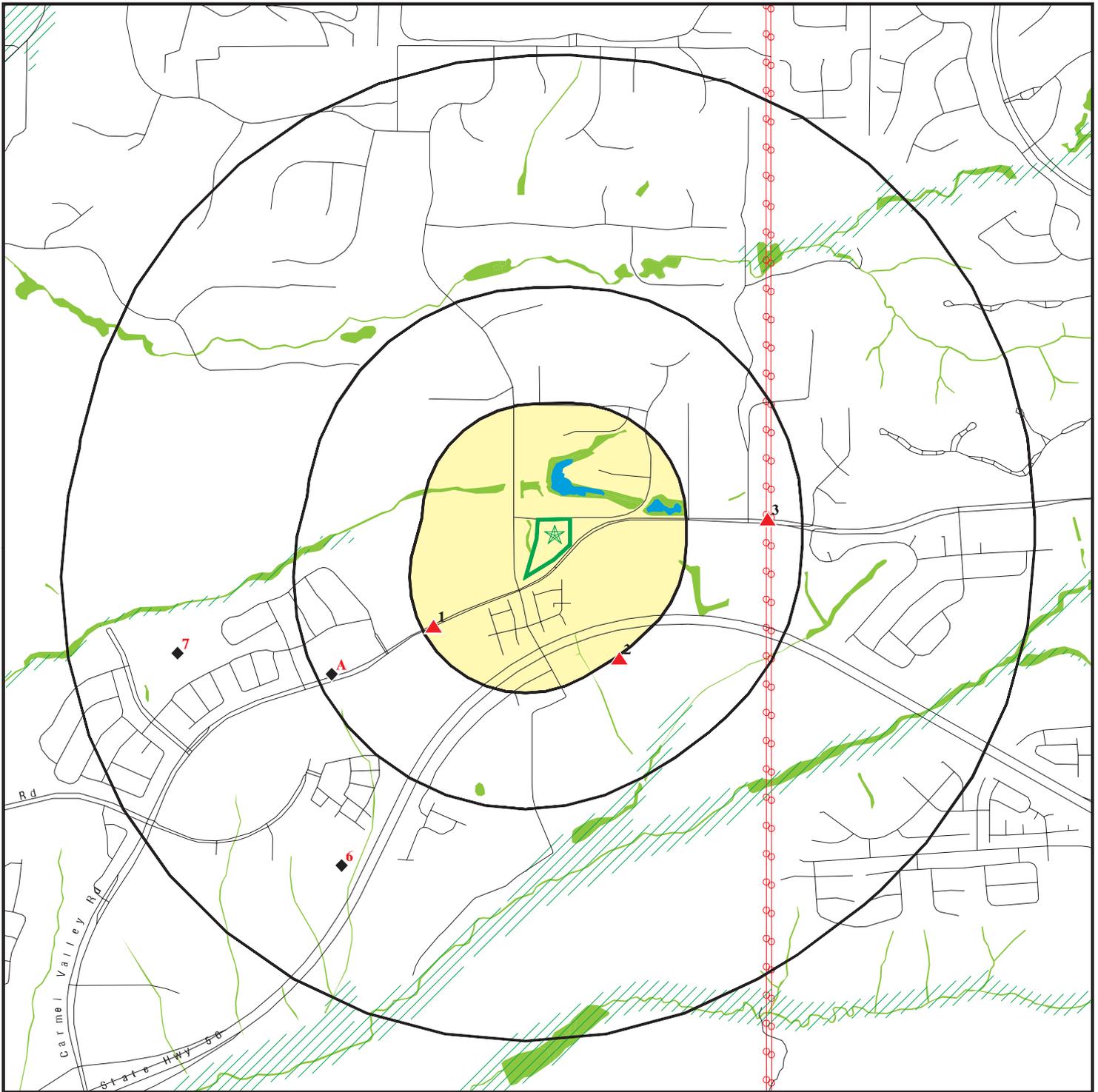
<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<i>SPRINGTIME GROWERS, INC.</i>	<i>6858 BLACK MOUNTAIN RD</i>	<i>SW 1/8 - 1/4 (0.225 mi.)</i>	<i>1</i>	<i>8</i>

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 20 records.

<u>Site Name</u>	<u>Database(s)</u>
SANTA FE RAILROAD	SPILLS 90
SR-56 MIDDLE	ENF, WDS
NORTH TORREY PINES RD BRIDGE RETRO	NPDES
CARMEL COUNTRY HIGHLANDS NGHBRHD 1	NPDES
PACIFIC HIGHLANDS RANCH UNIT NO 6	NPDES
SHAW LORENZ	NPDES
PAC HIGHLANDS RNCH UNITS 8 9	NPDES
TERRAZZO BOUGAINVILLEA	NPDES
SHELL OIL COMPANY #204 6770 4803	HAZNET
GARY'S CONSTRUCTION INC	HAZNET
CALTRANS DIST 11/CONSTR/EA11-2348U	HAZNET
CALTRANS D-11/EA11-2M0504	HAZNET
CALTRANS DIST 11/ENV ENG	HAZNET
CALTRANS D-11/EA11-2M0104	HAZNET
SELECT ELECTRIC	HAZNET
SDCTY MWWP PENASQUITOS PS	HAZNET
EBENSTEINER CO. INC.	San Diego Co. HMMD
RALPH D. MITZEL, INC.	San Diego Co. HMMD
PENASQUITOS PT FAMILY DENTISTRY	San Diego Co. HMMD
USMC RECRUIT DEPOT	EMI

# OVERVIEW MAP - 03868975.2r



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

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

National Wetland Inventory

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: Bobs Corner  
 ADDRESS: Carmel Valley Road and Rancho Santa Fe Lakes Dr  
 San Diego CA 92130  
 LAT/LONG: 32.9697 / 117.177

CLIENT: Rincon  
 CONTACT: Lauren G Kodama  
 INQUIRY #: 03868975.2r  
 DATE: February 28, 2014 8:27 pm

# DETAIL MAP - 03868975.2r



-  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
-  Oil & Gas pipelines from USGS
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory
-  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.

<p><b>SITE NAME:</b> Bobs Corner  <b>ADDRESS:</b> Carmel Valley Road and Rancho Santa Fe Lakes Dr                  San Diego CA 92130  <b>LAT/LONG:</b> 32.9697 / 117.177</p>	<p><b>CLIENT:</b> Rincon  <b>CONTACT:</b> Lauren G Kodama  <b>INQUIRY #:</b> 03868975.2r  <b>DATE:</b> February 28, 2014 8:29 pm</p>
---	--

## 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
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site List</i></b>								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	0.001		0	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent NPL RESPONSE</i></b>								
RESPONSE	1.000		0	0	0	0	NR	0
<b><i>State- and tribal - equivalent CERCLIS ENVIROSTOR</i></b>								
ENVIROSTOR	1.000		0	0	1	2	NR	3
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	1	NR	NR	1
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.500		0	1	1	NR	NR	2

## 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
SLIC	0.500		0	0	1	NR	NR	1
SAN DIEGO CO. SAM	0.500		0	0	1	NR	NR	1
INDIAN LUST	0.500		0	0	0	NR	NR	0
<b>State and tribal registered storage tank lists</b>								
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
FEMA UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US 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
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
San Diego Co. HMMD	0.001		0	NR	NR	NR	NR	0
US HIST CDL	0.001		0	NR	NR	NR	NR	0
<b>Local Lists of Registered Storage Tanks</b>								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
SWEEPS UST	0.250		0	0	NR	NR	NR	0
<b>Local Land Records</b>								
LIENS 2	0.001		0	NR	NR	NR	NR	0
LIENS	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	0.001		0	NR	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
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
SPILLS 90	0.001		0	NR	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		0	1	0	NR	NR	1
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	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
PROC	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	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
MWMP	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWP	1.000		0	0	0	0	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0

#### 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

1  
SW  
1/8-1/4  
0.225 mi.  
1187 ft.

**SPRINGTIME GROWERS, INC.**  
**6858 BLACK MOUNTAIN RD**  
**SAN DIEGO, CA 92130**

**HIST CORTESE**  
**LUST**  
**San Diego Co. HMMD**

**S101301889**  
**N/A**

**Relative:**  
**Higher**

HIST CORTESE:  
Region: CORTESE  
Facility County Code: 37  
Reg By: LTNKA  
Reg Id: 9UT1634

**Actual:**  
**314 ft.**

LUST REG 9:

Region: 9  
Status: Case Closed  
Case Number: 9UT1634  
Local Case: H02283-001  
Substance: Unleaded Gasoline  
Qty Leaked: 0  
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site  
Local Agency: San Diego  
How Found: Tank Closure  
How Stopped: Close Tank  
Source: Piping  
Cause: Corrosion  
Lead Agency: Local Agency  
Case Type: Soil only  
Date Found: 02/16/1990  
Date Stopped: 02/16/1990  
Confirm Date: 02/16/1990  
Submit Workplan: Not reported  
Prelim Assess: 04/24/1990  
Desc Pollution: Not reported  
Remed Plan: / /  
Remed Action: 2/16/90  
Began Monitor: Not reported  
Release Date: 02/16/1990  
Enforce Date: Not reported  
Closed Date: 7/15/94  
Enforce Type: Not reported  
Pilot Program: LOP  
Basin Number: 905.12  
GW Depth: 260  
Beneficial Use: Municipal groundwater use  
NPDES Number: Not reported  
Priority: 2B  
File Dispn: File discarded, case closed  
Interim Remedial Actions: Yes  
Cleanup and Abatement order Number: Not reported  
Waste Discharge Requirement Number: Not reported

SAN DIEGO CO. HMMD:

Facility Id: 199056  
Business Type: 6HKAG  
EPA Id Number: Not reported  
APN: 305-021-12-00  
Last HMMD Inspection: 08/09/1995

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**SPRINGTIME GROWERS, INC. (Continued)**

**S101301889**

Permit Status: INAC  
 Permit Expiration: 08/09/1995  
 Facility Owner: KEN COOK  
 Facility Address: 3150 S PO BOX 2767  
 Facility City: HILLSBORO  
 Facility State: OR  
 Facility Zip: 97123-9241  
 UST Owner: Not reported  
 Handle Regulated Hazmat: Not reported  
 Own Or Operate UST: Not reported  
 Subject To APSA: Not reported  
 Generate Haz Waste: Not reported  
 Treat Haz Waste: Not reported  
 Generate Medical Waste: Not reported

**2**  
**SSE**  
**1/4-1/2**  
**0.255 mi.**  
**1348 ft.**

**PACIFIC HIGHLANDS RANCH DEL MAR ELEMENTARY SCHOOL #2**  
**SO. OF TED WILLIAMS FWY & EAST OF CAMINITO MENDIOLA**  
**SAN DIEGO, CA 92130**

**SCH S113804698**  
**ENVIROSTOR N/A**

**Relative:**  
**Higher**

SCH:

**Actual:**  
**311 ft.**

Facility ID: 60001901  
 Site Type: School Investigation  
 Site Type Detail: School  
 Site Mgmt. Req.: NONE SPECIFIED  
 Acres: 10  
 National Priorities List: NO  
 Cleanup Oversight Agencies: SMBRP  
 Lead Agency: SMBRP  
 Lead Agency Description: DTSC - Site Cleanup Program  
 Project Manager: Aslam Shareef  
 Supervisor: Shahir Haddad  
 Division Branch: Southern California Schools & Brownfields Outreach  
 Site Code: 404887  
 Assembly: 77  
 Senate: 38  
 Special Program Status: Not reported  
 Status: Active  
 Status Date: 07/01/2013  
 Restricted Use: NO  
 Funding: Responsible Party  
 Latitude: 32.96588  
 Longitude: -117.1746  
 APN: NONE SPECIFIED  
 Past Use: NONE SPECIFIED  
 Potential COC: NONE SPECIFIED  
 Confirmed COC: NONE SPECIFIED  
 Potential Description: NONE SPECIFIED  
 Alias Name: 404887  
 Alias Type: Project Code (Site Code)  
 Alias Name: 60001901  
 Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE  
 Completed Sub Area Name: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH DEL MAR ELEMENTARY SCHOOL #2 (Continued)**

**S113804698**

Completed Document Type: Preliminary Endangerment Assessment Workplan  
Completed Date: 10/01/2013  
Comments: DTSC approved the Preliminary Environmental Assessment Technical Memorandum for implementation.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Fieldwork  
Completed Date: 10/10/2013  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Voluntary Cleanup Agreement  
Completed Date: 07/31/2013  
Comments: Executed Agreement sent to the Party

Future Area Name: Not reported  
Future Sub Area Name: Not reported  
Future Document Type: Not reported  
Future Due Date: Not reported  
Schedule Area Name: PROJECT WIDE  
Schedule Sub Area Name: Not reported  
Schedule Document Type: Preliminary Endangerment Assessment Report  
Schedule Due Date: 02/13/2014  
Schedule Revised Date: Not reported

**ENVIROSTOR:**

Site Type: School Investigation  
Site Type Detailed: School  
Acres: 10  
NPL: NO  
Regulatory Agencies: SMBRP  
Lead Agency: SMBRP  
Program Manager: Aslam Shareef  
Supervisor: Shahir Haddad  
Division Branch: Southern California Schools & Brownfields Outreach  
Facility ID: 60001901  
Site Code: 404887  
Assembly: 77  
Senate: 38  
Special Program: Not reported  
Status: Active  
Status Date: 07/01/2013  
Restricted Use: NO  
Site Mgmt. Req.: NONE SPECIFIED  
Funding: Responsible Party  
Latitude: 32.96588  
Longitude: -117.1746  
APN: NONE SPECIFIED  
Past Use: NONE SPECIFIED  
Potential COC: NONE SPECIFIED  
Confirmed COC: NONE SPECIFIED, NONE SPECIFIED  
Potential Description: NONE SPECIFIED  
Alias Name: 404887  
Alias Type: Project Code (Site Code)  
Alias Name: 60001901

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**PACIFIC HIGHLANDS RANCH DEL MAR ELEMENTARY SCHOOL #2 (Continued)**

**S113804698**

Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE  
 Completed Sub Area Name: Not reported  
 Completed Document Type: Preliminary Endangerment Assessment Workplan  
 Completed Date: 10/01/2013  
 Comments: DTSC approved the Preliminary Environmental Assessment Technical Memorandum for implementation.

Completed Area Name: PROJECT WIDE  
 Completed Sub Area Name: Not reported  
 Completed Document Type: Fieldwork  
 Completed Date: 10/10/2013  
 Comments: Not reported

Completed Area Name: PROJECT WIDE  
 Completed Sub Area Name: Not reported  
 Completed Document Type: Voluntary Cleanup Agreement  
 Completed Date: 07/31/2013  
 Comments: Executed Agreement sent to the Party

Future Area Name: Not reported  
 Future Sub Area Name: Not reported  
 Future Document Type: Not reported  
 Future Due Date: Not reported  
 Schedule Area Name: PROJECT WIDE  
 Schedule Sub Area Name: Not reported  
 Schedule Document Type: Preliminary Endangerment Assessment Report  
 Schedule Due Date: 02/13/2014  
 Schedule Revised Date: Not reported

**3**  
**East**  
**1/4-1/2**  
**0.425 mi.**  
**2246 ft.**

**EVERGREEN NURSERY**  
**13650 CARMEL VALLEY RD**  
**SAN DIEGO, CA 92130**

**SWF/LF** **S109279202**  
**San Diego Co. HMMD** **N/A**

**Relative:**  
**Higher**

SWF/LF (SWIS):  
 Region: STATE  
 Facility ID: 37-AB-0005  
 Lat/Long: 32.97063 / -117.17230  
 Owner Name: Evergreen Distributors, Inc  
 Owner Telephone: 8584811434  
 Owner Address: Not reported  
 Owner Address2: 13650 Carmel Valley Rd.  
 Owner City,St,Zip: San Diego, CA 92130  
 Operational Status: Active  
 Operator: Evergreen Distributors, Inc.  
 Operator Phone: 8584811434  
 Operator Address: Not reported  
 Operator Address2: P.O. Box 503130  
 Operator City,St,Zip: San Diego, CA 92150  
 Permit Date: 02/08/2005  
 Permit Status: Permitted  
 Permitted Acreage: 3  
 Activity: Composting Operation (Green Waste)  
 Regulation Status: Notification

**Actual:**  
**347 ft.**

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**EVERGREEN NURSERY (Continued)**

**S109279202**

Landuse Name: Agricultural  
GIS Source: Map  
Category: Composting  
Unit Number: 01  
Inspection Frequency: Quarterly  
Accepted Waste: Green Materials  
Closure Date: Not reported  
Closure Type: Not reported  
Disposal Acreage: Not reported  
SWIS Num: 37-AB-0005  
Waste Discharge Requirement Num: Not reported  
Program Type: Not reported  
Permitted Throughput with Units: 200  
Actual Throughput with Units: Cu Yards/day  
Permitted Capacity with Units: 10000  
Remaining Capacity: Not reported  
Remaining Capacity with Units: Cubic Yards

**LOS ANGELES CO. LF:**

Site ID: 2711  
Alt. Address: N/A  
Site Contact: Not reported  
Site Contact Phone: (858) 481-1434  
Site Email: Not reported  
Site Website: <http://www.evergreennursery.com/evergreen-system>  
Site Type: Out-of-County Facility  
Site SWIS Number: 37-AB-0005  
Operator Name: Unknown  
Operator Address: Not reported  
Operator City/State/Zip: Not reported  
Operator Contact: Not reported  
Operator Telephone: Not reported  
Operator Email: Not reported  
Owner Name: Unknown  
Owner Address: Not reported  
Owner City/State/Zip: Not reported  
Owner Contact: Not reported  
Owner Telephone: Not reported  
Owner Email: Not reported  
Beginning Operation Date: N/A  
Disposal Area(Acre): N/A  
Local Enforcement Agency: City of San Diego Development Services Department  
Maximun Depth Fill(Ft): N/A  
Permitted Capacity: 200  
Present Use: Composting Operation (Green Waste)  
Remaining Capacity(Million): N/A  
Status: Active  
Waste Accepted: Green Materials;  
Hours of Operation: Mon-Thur 7:30am to 5:00pm; Fri-Sat 7:30am to 6:00pm; Sun 9:00am to 5:00pm  
Area: N/A

**SAN DIEGO CO. HMMD:**

Facility Id: 102280  
Business Type: 6HK39  
EPA Id Number: CAL000020043  
APN: 306-010-22-00

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**EVERGREEN NURSERY (Continued)**

**S109279202**

Last HMMD Inspection: 08/08/2012  
Permit Status: OPEN  
Permit Expiration: 07/31/2013  
Facility Owner: EVERGREEN DISTRIBUTORS INC  
Facility Address: PO BOX 503130  
Facility City: SAN DIEGO  
Facility State: CA  
Facility Zip: 92150  
UST Owner: MARK COLLINS  
Handle Regulated Hazmat: Y  
Own Or Operate UST: Not reported  
Subject To APSA: Not reported  
Generate Haz Waste: Y  
Treat Haz Waste: Not reported  
Generate Medical Waste: Not reported

UST:

UST Name: UNDERGROUND TANK 102280 T001  
Last Update: 2012-11-02 14:17:38  
Permit Number: 102280  
Tank Type: SINGLE WALL  
Additional Id: 00001  
Capacity Gallons: 2500  
UST Contents: LEADED  
Other Content Info: LEADED  
Reg Status: REMOVED  
Remove Close Date: 1990-03-08 00:00:00  
Year Installed: Not reported  
Pipe Type: Not reported  
Delivery System: PRESSURE  
Monitor Code: 05  
UST Monitor Method: SW TANK DW PIPE W/ POS SHUTOFF-ALARM ON LLD W/ SIRS:SIR ANALY MONTHLY, TANK TEST BIENNIALY, PIPE TEST ANN 0.1 G/HR OR MO 0.2 G/HR

UST Name: UNDERGROUND TANK 102280 T002  
Last Update: 2012-11-02 14:17:38  
Permit Number: 102280  
Tank Type: SINGLE WALL  
Additional Id: 00002  
Capacity Gallons: 2500  
UST Contents: REGULAR UNLEADED  
Other Content Info: REGULAR UNLEADED  
Reg Status: REMOVED  
Remove Close Date: 1990-03-08 00:00:00  
Year Installed: Not reported  
Pipe Type: Not reported  
Delivery System: Not reported  
Monitor Code: 05  
UST Monitor Method: SW TANK DW PIPE W/ POS SHUTOFF-ALARM ON LLD W/ SIRS:SIR ANALY MONTHLY, TANK TEST BIENNIALY, PIPE TEST ANN 0.1 G/HR OR MO 0.2 G/HR

Active Permits:

Facility Id: 102280  
Update Date: 11/02/2012  
Case Number: Not reported  
Name: WASTE 221 WASTE OIL & MIXED OIL  
Other Information: WASTE OIL AND DIESEL FUEL

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**EVERGREEN NURSERY (Continued)**

**S109279202**

Material Waste: Waste  
Hazardous Categories 1: Not reported  
Hazardous Categories 2: Not reported

Facility Id: 102280  
Update Date: 11/02/2012  
Case Number: Not reported  
Name: WASTE 223 UNSPEC OIL CONTAINING WASTE  
Other Information: OILY ABSORBENT  
Material Waste: Waste  
Hazardous Categories 1: Not reported  
Hazardous Categories 2: Not reported

Facility Id: 102280  
Update Date: 11/02/2012  
Case Number: Not reported  
Name: WASTE 888 USED OIL FILTERS  
Other Information: USED OIL & GAS FILTERS  
Material Waste: Waste  
Hazardous Categories 1: Not reported  
Hazardous Categories 2: Not reported

Facility Id: 102280  
Update Date: 11/02/2012  
Case Number: MIXTURE  
Name: WASTE 342 ORGANIC LIQUIDS WITH METALS  
Other Information: CHEVRON SUPREME PREDILUTED 50/50 ANTIFREEZE/COOLANT  
Material Waste: Waste  
Hazardous Categories 1: Not reported  
Hazardous Categories 2: Not reported

Facility Id: 102280  
Update Date: 11/02/2012  
Case Number: Not reported  
Name: WASTE 135 UNSPECIFIED AQUEOUS SOL'N  
Other Information: AQUEOUS PARTS WASHER  
Material Waste: Waste  
Hazardous Categories 1: Not reported  
Hazardous Categories 2: Not reported

Facility Id: 102280  
Update Date: 11/02/2012  
Case Number: Not reported  
Name: WASTE 444 USED BATTERIES  
Other Information: SPENT LEAD ACID BATTERIES - BRODINGS - HAULER  
Material Waste: Waste  
Hazardous Categories 1: Not reported  
Hazardous Categories 2: Not reported

**Violations Active Permits:**

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 01/31/2005  
Violation Code: 6HV0202  
Violation: WASTE CONTAINER W/O LABELS  
Violation Citation: Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2);

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**EVERGREEN NURSERY (Continued)**

**S109279202**

66262.34(a)(3) & 66262.34(f)  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 06/23/2003  
Violation Code: 6HV0216  
Violation: HAZMATS WITHOUT PROPER LABELS  
Violation Citation: Hazardous materials have not been adequately labeled within 10 days & are now declared hazardous waste. HSC 25124(b)(3)(A) & 66262.34(f)

Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 01/31/2005  
Violation Code: 6HV0201  
Violation: WASTE CONTAINER NOT CLOSED  
Violation Citation: Hazardous waste containers are not kept closed while in storage. CCR 66265.173(a)

Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 03/02/2007  
Violation Code: 6HV0227  
Violation: HAZWASTE TANK/CONTAINER W/O LABEL/DATE  
Violation Citation: Failed to properly label/date hazardous waste container &/or tank. 66262.34(f)

Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 01/31/2005  
Violation Code: 6HV0301  
Violation: HAZWASTE:UNAUTHORIZED DISPOSAL  
Violation Citation: Disposal or causing the disposal of hazardous waste to an unauthorized point (ground, storm drain, sewer system, trash, or air). HSC 25189.5(a) or 25189(d)

Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 05/12/2010  
Violation Code: 6HV0215  
Violation: OIL FILTERS IMPROPERLY MANAGED  
Violation Citation: Used oil filters not properly drained, stored, or labeled prior to transport for the purpose of metal reclamation. CCR 66266.130

Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 01/31/2005  
Violation Code: 6HV0216  
Violation: HAZMATS WITHOUT PROPER LABELS  
Violation Citation: Hazardous materials have not been adequately labeled within 10 days & are now declared hazardous waste. HSC 25124(b)(3)(A) & 66262.34(f)

Activity: ACTIVE

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**EVERGREEN NURSERY (Continued)**

**S109279202**

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 03/02/2007  
Violation Code: 6HV0228  
Violation: CONTAINER NOT KEPT CLOSED  
Violation Citation: Failed to keep container closed. CFR 265.173  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 03/02/2007  
Violation Code: 6HV1018  
Violation: INVENTORY INCOMPLETE/NOT AMENDED  
Violation Citation: Inventory not amended for 100% increase of hazardous material onsite or inventory is incomplete. 25509, 25510  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 10/22/2008  
Violation Code: 6HV0228  
Violation: CONTAINER NOT KEPT CLOSED  
Violation Citation: Failed to keep container closed. CFR 265.173  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 06/23/2003  
Violation Code: 6HV0208  
Violation: STORAGE AREA: NO WEEKLY INSPECTION  
Violation Citation: Hazardous waste storage area is not being inspected weekly for deteriorated or leaking containers CCR 66265.174  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 05/12/2010  
Violation Code: 6HV0221  
Violation: DID NOT COMPLY W/SATELLITE REGS.  
Violation Citation: Failed to comply with satellite regulations. 66262.34(e)  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 03/02/2007  
Violation Code: 6HV0225  
Violation: ACCUMULATED HW>180 OR >270 DAYS  
Violation Citation: Accumulated waste too long (>180 or 270 days). 66262.34(d), CFR 262.34(e)&(f), &/or 25201(a) [>90 days for AHW waste]  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 10/22/2008  
Violation Code: 6HV0218  
Violation: FILTERS:FUEL/OIL NOT LABELED OR CLOSED  
Violation Citation: Failed to label &/or close drained used oil filters &/or used fuel

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**EVERGREEN NURSERY (Continued)**

**S109279202**

filters. 25250.22 and 66266.130( c)(3)  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 06/23/2003  
Violation Code: 6HV0201  
Violation: WASTE CONTAINER NOT CLOSED  
Violation Citation: Hazardous waste containers are not kept closed while in storage. CCR 66265.173(a)  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 06/23/2003  
Violation Code: 6HV0202  
Violation: WASTE CONTAINER W/O LABELS  
Violation Citation: Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2); 66262.34(a)(3) & 66262.34(f)  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 06/23/2003  
Violation Code: 6HV0301  
Violation: HAZWASTE:UNAUTHORIZED DISPOSAL  
Violation Citation: Disposal or causing the disposal of hazardous waste to an unauthorized point (ground, storm drain, sewer system, trash, or air). HSC 25189.5(a) or 25189(d)  
Activity: ACTIVE

Facility Id: 102280  
Update Date: 11/02/2012  
Inspection Date: 10/22/2008  
Violation Code: 6HV0227  
Violation: HAZWASTE TANK/CONTAINER W/O LABEL/DATE  
Violation Citation: Failed to properly label/date hazardous waste container &/or tank. 66262.34(f)  
Activity: ACTIVE

Facility Id: 199054  
Business Type: 6HKAG  
EPA Id Number: Not reported  
APN: 306-010-16-00  
Last HMMD Inspection: 08/03/2011  
Permit Status: EXEM  
Permit Expiration: 02/14/2002  
Facility Owner: MARK COLLINS  
Facility Address: P.O BOX 503130  
Facility City: SAN DIEGO  
Facility State: CA  
Facility Zip: 92150  
UST Owner: Not reported  
Handle Regulated Hazmat: Y  
Own Or Operate UST: Not reported

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**EVERGREEN NURSERY (Continued)**

**S109279202**

Subject To APSA: Not reported  
 Generate Haz Waste: Not reported  
 Treat Haz Waste: Not reported  
 Generate Medical Waste: Not reported

**A4**  
**WSW**  
**1/4-1/2**  
**0.467 mi.**  
**2464 ft.**

**SPRINGTIME GROWERS, INC.**  
**6302 BLACK MOUNTAIN ROAD**  
**SAN DIEGO, CA 92130**

**SLIC S108054503**  
**N/A**

**Site 1 of 2 in cluster A**

**Relative:**  
**Lower**

SLIC REG 9:  
 Region: 9  
 Facility Type: Not reported  
 Status: Closed  
 Code: 20-0552.02  
 Waste Discharger Id: Not reported  
 Local Case Num: Not reported  
 Responsible Party: SPRINGTIME GROWERS, INC.  
 Category: GENERAL  
 Class: SLIC  
 Order Number: Not reported  
 File Number: 1  
 Date Entered: 01/1993  
 End Date: 12/1993  
 Archive Box #: 0  
 Archive Box Storage: Not reported  
 Archive Box Storage Location: Not reported  
 Remarks: Not reported

**Actual:**  
**304 ft.**

**A5**  
**WSW**  
**1/4-1/2**  
**0.467 mi.**  
**2464 ft.**

**SPRINGTIME GROWERS**  
**6302 BLACK MOUNTAIN RD**  
**SAN DIEGO, CA 92130**

**LUST S104745454**  
**SWEEPS UST N/A**  
**San Diego Co. HMMD**  
**SAN DIEGO CO. SAM**

**Site 2 of 2 in cluster A**

**Relative:**  
**Lower**

LUST:  
 Region: STATE  
 Global Id: T0607300449  
 Latitude: 32.9704019  
 Longitude: -117.17377  
 Case Type: LUST Cleanup Site  
 Status: Completed - Case Closed  
 Status Date: 07/15/1994  
 Lead Agency: SAN DIEGO COUNTY LOP  
 Case Worker: Not reported  
 Local Agency: Not reported  
 RB Case Number: 9UT1634  
 LOC Case Number: H02283-001  
 File Location: Local Agency  
 Potential Media Affect: Soil  
 Potential Contaminants of Concern: Gasoline  
 Site History: Not reported

**Actual:**  
**304 ft.**

Click here to access the California GeoTracker records for this facility:

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGTIME GROWERS (Continued)**

**S104745454**

Status History:

Global Id: T0607300449  
Status: Open - Case Begin Date  
Status Date: 01/19/1990

Global Id: T0607300449  
Status: Completed - Case Closed  
Status Date: 07/15/1994

Regulatory Activities:

Global Id: T0607300449  
Action Type: Other  
Date: 01/01/1950  
Action: Leak Stopped

Global Id: T0607300449  
Action Type: Other  
Date: 01/01/1950  
Action: Leak Began

Global Id: T0607300449  
Action Type: ENFORCEMENT  
Date: 01/22/1990  
Action: Notice of Responsibility

Global Id: T0607300449  
Action Type: Other  
Date: 01/01/1950  
Action: Leak Reported

Global Id: T0607300449  
Action Type: Other  
Date: 01/01/1950  
Action: Leak Discovery

SWEEPS UST:

Status: Active  
Comp Number: 2283  
Number: 9  
Board Of Equalization: 44-021661  
Referral Date: Not reported  
Action Date: 06-26-92  
Created Date: 02-29-88  
Tank Status: Not reported  
Owner Tank Id: Not reported  
Swrcb Tank Id: Not reported  
Actv Date: Not reported  
Capacity: Not reported  
Tank Use: Not reported  
Stg: Not reported  
Content: Not reported  
Number Of Tanks: Not reported

Status: Not reported  
Comp Number: 2283

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGTIME GROWERS (Continued)**

**S104745454**

Number: Not reported  
Board Of Equalization: 44-021661  
Referral Date: Not reported  
Action Date: Not reported  
Created Date: Not reported  
Tank Status: Not reported  
Owner Tank Id: Not reported  
Swrcb Tank Id: 37-000-002283-000001  
Actv Date: Not reported  
Capacity: 2000  
Tank Use: M.V. FUEL  
Stg: PRODUCT  
Content: OTHER  
Number Of Tanks: 2

Status: Not reported  
Comp Number: 2283  
Number: Not reported  
Board Of Equalization: 44-021661  
Referral Date: Not reported  
Action Date: Not reported  
Created Date: Not reported  
Tank Status: Not reported  
Owner Tank Id: Not reported  
Swrcb Tank Id: 37-000-002283-000002  
Actv Date: Not reported  
Capacity: 1000  
Tank Use: M.V. FUEL  
Stg: PRODUCT  
Content: REG UNLEADED  
Number Of Tanks: Not reported

**SAN DIEGO CO. HMMD:**

Facility Id: 102283  
Business Type: 6HK39  
EPA Id Number: Not reported  
APN: 305-021-12-00  
Last HMMD Inspection: 08/31/1992  
Permit Status: INAC  
Permit Expiration: 09/30/1992  
Facility Owner: SPRINGTIME GROWERS INC.  
Facility Address: P.O. BOX 2767  
Facility City: DEL MAR  
Facility State: CA  
Facility Zip: 92014-  
UST Owner: SPRINGTIME GROWERS  
Handle Regulated Hazmat: Not reported  
Own Or Operate UST: Not reported  
Subject To APSA: Not reported  
Generate Haz Waste: Y  
Treat Haz Waste: Not reported  
Generate Medical Waste: Not reported

**UST:**

UST Name: UNDERGROUND TANK 102283 T001  
Last Update: 2012-11-02 14:17:38  
Permit Number: 102283

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SPRINGTIME GROWERS (Continued)**

**S104745454**

Tank Type: SINGLE WALL  
Additional Id: 1  
Capacity Gallons: 2000  
UST Contents: DIESEL  
Other Content Info: DIESEL  
Reg Status: REMOVED  
Remove Close Date: 1990-02-16 00:00:00  
Year Installed: 1978-01-01 00:00:00  
Pipe Type: Not reported  
Delivery System: Not reported  
Monitor Code: 05  
UST Monitor Method: SW TANK DW PIPE W/ POS SHUTOFF-ALARM ON LLD W/ SIRS:SIR ANALY MONTHLY, TANK TEST BIENNIALY, PIPE TEST ANN 0.1 G/HR OR MO 0.2 G/HR

UST Name: UNDERGROUND TANK 102283 T002  
Last Update: 2012-11-02 14:17:38  
Permit Number: 102283  
Tank Type: UNKNOWN  
Additional Id: 2  
Capacity Gallons: 1000  
UST Contents: REGULAR UNLEADED  
Other Content Info: REGULAR UNLEADED  
Reg Status: REMOVED  
Remove Close Date: 1990-02-16 00:00:00  
Year Installed: 1978-01-01 00:00:00  
Pipe Type: Not reported  
Delivery System: Not reported  
Monitor Code: 05  
UST Monitor Method: SW TANK DW PIPE W/ POS SHUTOFF-ALARM ON LLD W/ SIRS:SIR ANALY MONTHLY, TANK TEST BIENNIALY, PIPE TEST ANN 0.1 G/HR OR MO 0.2 G/HR

**SAN DIEGO CO. SAM:**

Case Number: H02283-001  
Agency: DEH Site Assessment & Mitigation  
**Funding: LOP - Federal Fund**  
Facility Type: Soils Only  
Facility Status: Closed Case  
Date: 7/15/1994  
Date Began: 2/16/1990

6  
SSW  
1/2-1  
0.737 mi.  
3892 ft.

**PACIFIC HIGHLANDS RANCH HIGH ADD. NO. 13  
FARMS ROAD/BLACK MOUNTAIN  
SAN DIEGO, CA 92130**

**SCH S105628886  
ENVIROSTOR N/A**

**Relative:  
Lower**

**SCH:**

**Actual:  
229 ft.**

Facility ID: 37010048  
Site Type: School Investigation  
Site Type Detail: School  
Site Mgmt. Req.: NONE SPECIFIED  
Acres: 13  
National Priorities List: NO  
Cleanup Oversight Agencies: SMBRP  
Lead Agency: SMBRP

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH HIGH ADD. NO. 13 (Continued)**

**S105628886**

Lead Agency Description: DTSC - Site Cleanup Program  
Project Manager: Not reported  
Supervisor: Shahir Haddad  
Division Branch: Southern California Schools & Brownfields Outreach  
Site Code: 404355  
Assembly: 77  
Senate: 39  
Special Program Status: Not reported  
Status: No Further Action  
Status Date: 06/19/2002  
Restricted Use: NO  
Funding: School District  
Latitude: 32.9594  
Longitude: -117.1849  
APN: NONE SPECIFIED  
Past Use: AGRICULTURAL - ROW CROPS  
Potential COC: Arsenic, Arsenic, Chlordane, DDD, DDE, DDT, Toxaphene, Aldrin, 1,2-Dibromo-3-chloropropane (DBCP, Dieldrin, Heptachlor, Hexachlorobenzene, HCH (gamma) Lindane, Methoxychlor, Mirex, Trifluralin  
Confirmed COC: 30575-NO, 30023-NO, 30043-NO, 30181-NO, 30207-NO, 30308-NO, 30311-NO, 30315-NO, 30367-NO, 30400-NO, 30001-NO, 30004-NO, 30006-NO, 30007-NO, 30008-NO, 31000-NO  
Potential Description: NMA  
Alias Name: 404269  
Alias Type: Project Code (Site Code)  
Alias Name: 404355  
Alias Type: Project Code (Site Code)  
Alias Name: 37010047  
Alias Type: Envirostor ID Number  
Alias Name: 37010048  
Alias Type: Envirostor ID Number  
Completed Info:  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Report  
Completed Date: 06/17/2002  
Comments: DTSC approved the Preliminary Endangerment Assessment (PEA) and determined neither an actual or a potential release of hazardous material, nor the presence of naturally occurring hazardous material indicated at the site pose a threat to human health or the environment under any land use. Therefore, DTSC concurred that no further environmental investigation or cleanup was required at this site, and approved the PEA.  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Cost Recovery Closeout Memo  
Completed Date: 06/19/2002  
Comments: Not reported  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Environmental Oversight Agreement  
Completed Date: 06/18/2002  
Comments: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH HIGH ADD. NO. 13 (Continued)**

**S105628886**

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

**ENVIROSTOR:**

Site Type: School Investigation  
Site Type Detailed: School  
Acres: 13  
NPL: NO  
Regulatory Agencies: SMBRP  
Lead Agency: SMBRP  
Program Manager: Not reported  
Supervisor: Shahir Haddad  
Division Branch: Southern California Schools & Brownfields Outreach  
Facility ID: 37010048  
Site Code: 404355  
Assembly: 77  
Senate: 39  
Special Program: Not reported  
Status: No Further Action  
Status Date: 06/19/2002  
Restricted Use: NO  
Site Mgmt. Req.: NONE SPECIFIED  
Funding: School District  
Latitude: 32.9594  
Longitude: -117.1849  
APN: NONE SPECIFIED  
Past Use: AGRICULTURAL - ROW CROPS  
Potential COC: Arsenic, Arsenic, Chlordane, DDD, DDE, DDT, Toxaphene, Aldrin, 1,2-Dibromo-3-chloropropane (DBCP, Dieldrin, Heptachlor, Hexachlorobenzene, HCH (gamma) Lindane, Methoxychlor, Mirex, Trifluralin  
Confirmed COC: Arsenic, Arsenic, Chlordane, DDD, DDE, DDT, Toxaphene, Aldrin, 1,2-Dibromo-3-chloropropane (DBCP, Dieldrin, Heptachlor, Hexachlorobenzene, HCH (gamma) Lindane, Methoxychlor, Mirex, Trifluralin, 30575-NO, 30023-NO, 30043-NO, 30181-NO, 30207-NO, 30308-NO, 30311-NO, 30315-NO, 30367-NO, 30400-NO, 30001-NO, 30004-NO, 30006-NO, 30007-NO, 30008-NO, 31000-NO  
Potential Description: NMA  
Alias Name: 404269  
Alias Type: Project Code (Site Code)  
Alias Name: 404355  
Alias Type: Project Code (Site Code)  
Alias Name: 37010047  
Alias Type: Envirostor ID Number  
Alias Name: 37010048  
Alias Type: Envirostor ID Number

**Completed Info:**

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH HIGH ADD. NO. 13 (Continued)**

**S105628886**

Completed Document Type: Preliminary Endangerment Assessment Report  
Completed Date: 06/17/2002  
Comments: DTSC approved the Preliminary Endangerment Assessment (PEA) and determined neither an actual or a potential release of hazardous material, nor the presence of naturally occurring hazardous material indicated at the site pose a threat to human health or the environment under any land use. Therefore, DTSC concurred that no further environmental investigation or cleanup was required at this site, and approved the PEA.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Cost Recovery Closeout Memo  
Completed Date: 06/19/2002  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Environmental Oversight Agreement  
Completed Date: 06/18/2002  
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

7  
WSW  
1/2-1  
0.767 mi.  
4049 ft.

**PACIFIC HIGHLANDS RANCH ELEMENTARY  
PACIFIC HIGHLAND RANCH PARKWAYS  
SOLANO BEACH, CA 92130**

**SCH S107736992  
ENVIROSTOR N/A**

Relative:  
Lower

SCH:

Actual:  
231 ft.

Facility ID: 70000053  
Site Type: School Cleanup  
Site Type Detail: School  
Site Mgmt. Req.: NONE SPECIFIED  
Acres: 11.7  
National Priorities List: NO  
Cleanup Oversight Agencies: SMBRP  
Lead Agency: SMBRP  
Lead Agency Description: DTSC - Site Cleanup Program  
Project Manager: Aslam Shareef  
Supervisor: Shahir Haddad  
Division Branch: Southern California Schools & Brownfields Outreach  
Site Code: 404647  
Assembly: 78  
Senate: 39  
Special Program Status: Not reported  
Status: Certified  
Status Date: 05/17/2011

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH ELEMENTARY (Continued)**

**S107736992**

Restricted Use: NO  
Funding: School District  
Latitude: 32.98931  
Longitude: -117.2687  
APN: 305-163-01  
Past Use: AGRICULTURAL - ROW CROPS, LDF  
Potential COC: Under Investigation, Arsenic, Chlordane, DDD, DDE, DDT, Endrin, Lead, Mercury (elemental, Methane, Silver, Toxaphene, Aldrin, Antimony and compounds, Barium and compounds, Beryllium and compounds, Cadmium and compounds, Cobalt, Copper and compounds, Dieldrin, Endosulfan, Heptachlor, Heptachlor epoxide, Methoxychlor, Molybdenum, Nickel, Selenium, Thallium and compounds, Vanadium and compounds, Zinc  
Confirmed COC: 30001-NO, 30004-NO, 30013-NO, 30014-NO, Methane, 30006-NO, 30007-NO, 30008-NO, 30010-NO, 30542-NO, 30058-NO, 30067-NO, 30108-NO, 30156-NO, 30207-NO, 30309-NO, 30515-NO, 30367-NO, 30402-NO, 30407-NO, 30587-NO, 30594-NO, 30021-NO, 30023-NO, 30261-NO, 31001-NO, 30043-NO, 30080-NO, 30154-NO, 30308-NO  
Potential Description: SOIL, SV  
Alias Name: 305-163-01  
Alias Type: APN  
Alias Name: 110033605150  
Alias Type: EPA (FRS #)  
Alias Name: 404647  
Alias Type: Project Code (Site Code)  
Alias Name: 70000053  
Alias Type: Envirostor ID Number  
Completed Info:  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Workplan  
Completed Date: 12/05/2005  
Comments: approved pea wp. field work scheduled 12/19-12/21  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Report  
Completed Date: 11/21/2006  
Comments: PEA approval letter submitted 11/21/06. Further action required due to methane issue. SSI to continue.  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Workplan  
Completed Date: 04/10/2006  
Comments: PEA Tech Memo approved. Sampling scheduled for 04/12/06.  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Workplan  
Completed Date: 07/26/2006  
Comments: Conditional Approval of SSI Workplan. 07/25/06  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Report  
Completed Date: 12/21/2006

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH ELEMENTARY (Continued)**

**S107736992**

Comments: SSI Approval letter requesting further action due to methane in fill material throughout site.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Other Report  
Completed Date: 02/02/2007  
Comments: Tech Memo SSI conditionally approved provided that the District addresses enclosed comments during the investigation.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Other Report  
Completed Date: 03/29/2007  
Comments: Final TM SSI approved 03/29/07.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Tech Memo  
Completed Date: 04/30/2007  
Comments: Import Fill Screening Evaluation Memo received 4/10/07.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Public Notice  
Completed Date: 12/17/2010  
Comments: Comment period from September 7, 2010 to October 6, 2010

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Fact Sheets  
Completed Date: 09/07/2010  
Comments: Final Fact Sheet uploaded. Comment period from September 7, 2010 to October 6, 2010.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Community Profile  
Completed Date: 10/24/2010  
Comments: The RAW implementation is underway

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Fieldwork  
Completed Date: 11/19/2007  
Comments: Converse consultants conducted a one time monitoring event at the site on 11/19/2007. Readings were collected from the semi-permanent probes onsite. Per Converse, the concentrations monitored were consistent with previous monitoring wells.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Tech Memo  
Completed Date: 01/21/2010  
Comments: DTSC approved Supplemental Site Investigation sampling strategy Technical Memorandum

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH ELEMENTARY (Continued)**

**S107736992**

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Report  
Completed Date: 03/18/2010  
Comments: DTSC approved the SSI report with a Further Action determination

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Removal Action Workplan  
Completed Date: 10/20/2010  
Comments: DTSC approved the Removal Action Workplan for implementation.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Other Report  
Completed Date: 06/29/2010  
Comments: Approved Sampling Management Plan

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Remedial Action Completion Report  
Completed Date: 03/09/2011  
Comments: DTSC approved the Removal Action Completion Report with a No Further Action determination

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Cost Recovery Closeout Memo  
Completed Date: 05/17/2011  
Comments: DTSC prepared project close out Cost Recovery Unit Memorandum.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Environmental Oversight Agreement  
Completed Date: 09/07/2005  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Certification  
Completed Date: 05/17/2011  
Comments: DTSC prepared project close out Cost Recovery Unit Memorandum.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: CEQA - Responsible Agency Review  
Completed Date: 10/25/2010  
Comments: Final version of NOE sent to OPEA for filing with OPR

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Voluntary Cleanup Agreement  
Completed Date: 01/23/2007  
Comments: Not reported

Future Area Name: Not reported  
Future Sub Area Name: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH ELEMENTARY (Continued)**

**S107736992**

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

**ENVIROSTOR:**

Site Type: School Cleanup  
Site Type Detailed: School  
Acres: 11.7  
NPL: NO  
Regulatory Agencies: SMBRP  
Lead Agency: SMBRP  
Program Manager: Aslam Shareef  
Supervisor: Shahir Haddad  
Division Branch: Southern California Schools & Brownfields Outreach  
Facility ID: 70000053  
Site Code: 404647  
Assembly: 78  
Senate: 39  
Special Program: Not reported  
Status: Certified  
Status Date: 05/17/2011  
Restricted Use: NO  
Site Mgmt. Req.: NONE SPECIFIED  
Funding: School District  
Latitude: 32.98931  
Longitude: -117.2687  
APN: 305-163-01  
Past Use: AGRICULTURAL - ROW CROPS, LDF  
Potential COC: Under Investigation, Arsenic, Chlordane, DDD, DDE, DDT, Endrin, Lead, Mercury (elemental, Methane, Silver, Toxaphene, Aldrin, Antimony and compounds, Barium and compounds, Beryllium and compounds, Cadmium and compounds, Cobalt, Copper and compounds, Dieldrin, Endosulfan, Heptachlor, Heptachlor epoxide, Methoxychlor, Molybdenum, Nickel, Selenium, Thallium and compounds, Vanadium and compounds, Zinc  
Confirmed COC: Under Investigation, Arsenic, Chlordane, DDD, DDE, DDT, Endrin, Lead, Mercury (elemental, Methane, Silver, Toxaphene, Aldrin, Antimony and compounds, Barium and compounds, Beryllium and compounds, Cadmium and compounds, Cobalt, Copper and compounds, Dieldrin, Endosulfan, Heptachlor, Heptachlor epoxide, Methoxychlor, Molybdenum, Nickel, Selenium, Thallium and compounds, Vanadium and compounds, Zinc, 30001-NO, 30004-NO, 30013-NO, 30014-NO, Methane, 30006-NO, 30007-NO, 30008-NO, 30010-NO, 30542-NO, 30058-NO, 30067-NO, 30108-NO, 30156-NO, 30207-NO, 30309-NO, 30515-NO, 30367-NO, 30402-NO, 30407-NO, 30587-NO, 30594-NO, 30021-NO, 30023-NO, 30261-NO, 31001-NO, 30043-NO, 30080-NO, 30154-NO, 30308-NO  
Potential Description: SOIL, SV  
Alias Name: 305-163-01  
Alias Type: APN  
Alias Name: 110033605150  
Alias Type: EPA (FRS #)  
Alias Name: 404647  
Alias Type: Project Code (Site Code)

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH ELEMENTARY (Continued)**

**S107736992**

Alias Name: 70000053  
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Workplan  
Completed Date: 12/05/2005  
Comments: approved pea wp. field work scheduled 12/19-12/21

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Report  
Completed Date: 11/21/2006  
Comments: PEA approval letter submitted 11/21/06. Further action required due to methane issue. SSI to continue.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Workplan  
Completed Date: 04/10/2006  
Comments: PEA Tech Memo approved. Sampling scheduled for 04/12/06.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Workplan  
Completed Date: 07/26/2006  
Comments: Conditional Approval of SSI Workplan. 07/25/06

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Report  
Completed Date: 12/21/2006  
Comments: SSI Approval letter requesting further action due to methane in fill material throughout site.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Other Report  
Completed Date: 02/02/2007  
Comments: Tech Memo SSI conditionally approved provided that the District addresses enclosed comments during the investigation.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Other Report  
Completed Date: 03/29/2007  
Comments: Final TM SSI approved 03/29/07.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Tech Memo  
Completed Date: 04/30/2007  
Comments: Import Fill Screening Evaluation Memo received 4/10/07.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Public Notice

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH ELEMENTARY (Continued)**

**S107736992**

Completed Date: 12/17/2010  
Comments: Comment period from September 7, 2010 to October 6, 2010

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Fact Sheets  
Completed Date: 09/07/2010  
Comments: Final Fact Sheet uploaded. Comment period from September 7, 2010 to October 6, 2010.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Community Profile  
Completed Date: 10/24/2010  
Comments: The RAW implementation is underway

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Fieldwork  
Completed Date: 11/19/2007  
Comments: Converse consultants conducted a one time monitoring event at the site on 11/19/2007. Readings were collected from the semi-permanent probes onsite. Per Converse, the concentrations monitored were consistent with previous monitoring wells.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Tech Memo  
Completed Date: 01/21/2010  
Comments: DTSC approved Supplemental Site Investigation sampling strategy Technical Memorandum

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Supplemental Site Investigation Report  
Completed Date: 03/18/2010  
Comments: DTSC approved the SSI report with a Further Action determination

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Removal Action Workplan  
Completed Date: 10/20/2010  
Comments: DTSC approved the Removal Action Workplan for implementation.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Other Report  
Completed Date: 06/29/2010  
Comments: Approved Sampling Management Plan

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Remedial Action Completion Report  
Completed Date: 03/09/2011  
Comments: DTSC approved the Removal Action Completion Report with a No Further Action determination

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PACIFIC HIGHLANDS RANCH ELEMENTARY (Continued)**

**S107736992**

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Cost Recovery Closeout Memo  
Completed Date: 05/17/2011  
Comments: DTSC prepared project close out Cost Recovery Unit Memorandum.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Environmental Oversight Agreement  
Completed Date: 09/07/2005  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Certification  
Completed Date: 05/17/2011  
Comments: DTSC prepared project close out Cost Recovery Unit Memorandum.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: CEQA - Responsible Agency Review  
Completed Date: 10/25/2010  
Comments: Final version of NOE sent to OPEA for filing with OPR

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Voluntary Cleanup Agreement  
Completed Date: 01/23/2007  
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

Count: 20 records.

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
DEL MAR	S113103548	SHELL OIL COMPANY #204 6770 4803	3060 CARMEL VALLEY RD	92014	HAZNET
DEL MAR	S110734928	NORTH TORREY PINES RD BRIDGE RETRO	S CARMEL VALLEY RD CAMINO DEL	92014	NPDES
DEL MAR	S113132331	GARY'S CONSTRUCTION INC	OLD CARMEL VALLEY RD PARCEL AP	92014	HAZNET
SAN DIEGO	S112935734	CALTRANS DIST 11/CONSTR/EA11-2348U	RTE 15(INTERSECT 56) PM 19.47	92129	HAZNET
SAN DIEGO	S113461988	CALTRANS D-11/EA11-2M0504	RTE 5 PM 20.88-24.00(VARIOUS)	92014	HAZNET
SAN DIEGO	S112942434	CALTRANS DIST 11/ENV ENG	RTE 5 PM 28.3-37.0	92130	HAZNET
SAN DIEGO	S113462426	CALTRANS D-11/EA11-2M0104	RTE 8,15,67,805 PM 2.36-67	92014	HAZNET
SAN DIEGO	S105940258	USMC RECRUIT DEPOT	BARNETT AV @ PACIFIC HWY		EMI
SAN DIEGO	S112926504	SELECT ELECTRIC	CARMEL VALLEY RD & GAMAY RD	00000	HAZNET
SAN DIEGO	S110732390	CARMEL COUNTRY HIGHLANDS NGHBRHD 1	CARMEL COUNTRY RD	92130	NPDES
SAN DIEGO	S106065887	EBENSTEINER CO. INC.	N CARMEL VALLEY RD	92130	San Diego Co. HMMMD
SAN DIEGO	S106065871	RALPH D. MITZEL, INC.	CARMEL VALLEY RD	92130	San Diego Co. HMMMD
SAN DIEGO	S109453251	PACIFIC HIGHLANDS RANCH UNIT NO 6	INTERS ZINNIA HILLS PL & CARME	92130	NPDES
SAN DIEGO	S106105549	SR-56 MIDDLE	SR-56 MIDDLE	92130	ENF, WDS
SAN DIEGO	S109458037	SHAW LORENZ	SE OF CARMEL MOUNTAIN RD	92129	NPDES
SAN DIEGO	S110735101	PAC HIGHLANDS RNCH UNITS 8 9	OLD CARMEL VALLEY RD	92130	NPDES
SAN DIEGO	S112286947	SANTA FE RAILROAD	1220 PACIFIC COAST HWY		SPILLS 90
SAN DIEGO	S106066236	PENASQUITOS PT FAMILY DENTISTRY	12798 RANCHO PENASQUITOS B	92129	San Diego Co. HMMMD
SAN DIEGO	S113109177	SDCTY MWWP PENASQUITOS PS	10150 SCRIPPS HWY PKWY	92129	HAZNET
SAN DIEGO	S109460691	TERRAZZO BOUGAINVILLEA	TOYON MESA COURT AND RANCHO TO	92130	NPDES

# 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

### ***Federal NPL site list***

#### **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: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: N/A
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 01/21/2014
Number of Days to Update: 78	Next Scheduled EDR Contact: 04/21/2014
	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: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: N/A
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 01/09/2014
Number of Days to Update: 78	Next Scheduled EDR Contact: 04/21/2014
	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.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal Delisted NPL site list***

### 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: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: N/A
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 01/09/2014
Number of Days to Update: 78	Next Scheduled EDR Contact: 04/21/2014
	Data Release Frequency: Quarterly

## ***Federal CERCLIS list***

### CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS 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). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 11/11/2013
Number of Days to Update: 94	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Quarterly

### 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: 05/31/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/08/2013	Telephone: 703-603-8704
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 01/10/2014
Number of Days to Update: 151	Next Scheduled EDR Contact: 04/21/2014
	Data Release Frequency: Varies

## ***Federal CERCLIS NFRAP site List***

### CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS 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 this 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. This 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 a potential NPL site.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 11/11/2013
Number of Days to Update: 94	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Quarterly

## ***Federal RCRA CORRACTS facilities list***

### CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: EPA  
Telephone: 800-424-9346  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

## ***Federal RCRA non-CORRACTS TSD facilities list***

### **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: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

## ***Federal RCRA generators list***

### **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: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

### **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: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

### **RCRA-CESQG: RCRA - 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). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal institutional controls / engineering controls registries***

### 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: 12/17/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/14/2014	Telephone: 703-603-0695
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 12/09/2013
Number of Days to Update: 14	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Varies

### US INST CONTROL: Sites with Institutional Controls

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: 12/17/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/14/2014	Telephone: 703-603-0695
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 12/09/2013
Number of Days to Update: 14	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Varies

### 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: 11/20/2013	Source: Department of the Navy
Date Data Arrived at EDR: 11/21/2013	Telephone: 843-820-7326
Date Made Active in Reports: 02/24/2014	Last EDR Contact: 02/14/2014
Number of Days to Update: 95	Next Scheduled EDR Contact: 06/02/2014
	Data Release Frequency: Varies

## ***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: 09/30/2013	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 10/01/2013	Telephone: 202-267-2180
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 02/07/2014
Number of Days to Update: 66	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Annually

## ***State- and tribal - equivalent NPL***

### 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: 11/06/2013	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/06/2013	Telephone: 916-323-3400
Date Made Active in Reports: 12/03/2013	Last EDR Contact: 02/06/2014
Number of Days to Update: 27	Next Scheduled EDR Contact: 05/19/2014
	Data Release Frequency: Quarterly

## ***State- and tribal - equivalent CERCLIS***

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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: 11/06/2013	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/06/2013	Telephone: 916-323-3400
Date Made Active in Reports: 12/03/2013	Last EDR Contact: 02/06/2014
Number of Days to Update: 27	Next Scheduled EDR Contact: 05/19/2014
	Data Release Frequency: Quarterly

## **State and tribal landfill and/or solid waste disposal site lists**

### 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: 11/18/2013	Source: Department of Resources Recycling and Recovery
Date Data Arrived at EDR: 11/21/2013	Telephone: 916-341-6320
Date Made Active in Reports: 01/02/2014	Last EDR Contact: 02/18/2014
Number of Days to Update: 42	Next Scheduled EDR Contact: 06/02/2014
	Data Release Frequency: Quarterly

## **State and tribal leaking storage tank lists**

### 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, Calaveras, 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

### 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

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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 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: Quarterly

## 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: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 12/16/2013	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/17/2013	Telephone: see region list
Date Made Active in Reports: 01/04/2014	Last EDR Contact: 12/17/2013
Number of Days to Update: 18	Next Scheduled EDR Contact: 03/31/2014
	Data Release Frequency: Quarterly

## 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 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

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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: Varies

## 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

## SLIC: Statewide SLIC Cases

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: 12/16/2013	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/17/2013	Telephone: 866-480-1028
Date Made Active in Reports: 01/16/2014	Last EDR Contact: 12/17/2013
Number of Days to Update: 30	Next Scheduled EDR Contact: 03/31/2014
	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: Quarterly

## 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: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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  
Date Data Arrived at EDR: 11/18/2004  
Date Made Active in Reports: 01/04/2005  
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)  
Telephone: 213-576-6600  
Last EDR Contact: 07/01/2011  
Next Scheduled EDR Contact: 10/17/2011  
Data Release Frequency: Varies

## 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  
Date Data Arrived at EDR: 04/05/2005  
Date Made Active in Reports: 04/21/2005  
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)  
Telephone: 916-464-3291  
Last EDR Contact: 09/12/2011  
Next Scheduled EDR Contact: 12/26/2011  
Data Release Frequency: Semi-Annually

## 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: Semi-Annually

## 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: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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	Source: California Regional Water Quality Control Board San Diego Region (9)
Date Data Arrived at EDR: 09/11/2007	Telephone: 858-467-2980
Date Made Active in Reports: 09/28/2007	Last EDR Contact: 08/08/2011
Number of Days to Update: 17	Next Scheduled EDR Contact: 11/21/2011
	Data Release Frequency: Annually

## INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/06/2013	Source: EPA Region 10
Date Data Arrived at EDR: 11/07/2013	Telephone: 206-553-2857
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 01/27/2014
Number of Days to Update: 29	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Quarterly

## 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: 02/13/2014	Source: EPA, Region 5
Date Data Arrived at EDR: 02/14/2014	Telephone: 312-886-7439
Date Made Active in Reports: 02/24/2014	Last EDR Contact: 01/27/2014
Number of Days to Update: 10	Next Scheduled EDR Contact: 05/12/2014
	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: 03/01/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2013	Telephone: 415-972-3372
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 01/27/2014
Number of Days to Update: 42	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Quarterly

## 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: 02/01/2013	Source: EPA Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 01/30/2014
Number of Days to Update: 184	Next Scheduled EDR Contact: 05/12/2014
	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: 08/27/2013	Source: EPA Region 7
Date Data Arrived at EDR: 08/27/2013	Telephone: 913-551-7003
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 01/27/2014
Number of Days to Update: 66	Next Scheduled EDR Contact: 05/12/2014
	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: 09/12/2011	Source: EPA Region 6
Date Data Arrived at EDR: 09/13/2011	Telephone: 214-665-6597
Date Made Active in Reports: 11/11/2011	Last EDR Contact: 02/21/2014
Number of Days to Update: 59	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/21/2013	Source: EPA Region 4
Date Data Arrived at EDR: 11/26/2013	Telephone: 404-562-8677
Date Made Active in Reports: 02/24/2014	Last EDR Contact: 01/27/2014
Number of Days to Update: 90	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Semi-Annually

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: 08/27/2012	Source: EPA Region 8
Date Data Arrived at EDR: 08/28/2012	Telephone: 303-312-6271
Date Made Active in Reports: 10/16/2012	Last EDR Contact: 01/27/2014
Number of Days to Update: 49	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Quarterly

## **State and tribal registered storage tank lists**

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/16/2013	Source: SWRCB
Date Data Arrived at EDR: 12/17/2013	Telephone: 916-341-5851
Date Made Active in Reports: 01/07/2014	Last EDR Contact: 12/17/2013
Number of Days to Update: 21	Next Scheduled EDR Contact: 03/31/2014
	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: 08/01/2009	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2009	Telephone: 916-327-5092
Date Made Active in Reports: 10/01/2009	Last EDR Contact: 01/03/2014
Number of Days to Update: 21	Next Scheduled EDR Contact: 04/21/2014
	Data Release Frequency: Quarterly

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: 02/01/2013	Source: EPA, Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 01/27/2014	Last EDR Contact: 01/30/2014
Number of Days to Update: 271	Next Scheduled EDR Contact: 05/12/2014
	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: 11/21/2013	Source: EPA Region 4
Date Data Arrived at EDR: 11/26/2013	Telephone: 404-562-9424
Date Made Active in Reports: 02/24/2014	Last EDR Contact: 01/27/2014
Number of Days to Update: 90	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Semi-Annually

# 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: 02/13/2014	Source: EPA Region 5
Date Data Arrived at EDR: 02/14/2014	Telephone: 312-886-6136
Date Made Active in Reports: 02/24/2014	Last EDR Contact: 01/27/2014
Number of Days to Update: 10	Next Scheduled EDR Contact: 05/12/2014
	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: 05/10/2011	Source: EPA Region 6
Date Data Arrived at EDR: 05/11/2011	Telephone: 214-665-7591
Date Made Active in Reports: 06/14/2011	Last EDR Contact: 01/27/2014
Number of Days to Update: 34	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Semi-Annually

## 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: 12/31/2012	Source: EPA Region 7
Date Data Arrived at EDR: 02/28/2013	Telephone: 913-551-7003
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 01/27/2014
Number of Days to Update: 43	Next Scheduled EDR Contact: 05/12/2014
	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: 07/29/2013	Source: EPA Region 8
Date Data Arrived at EDR: 08/01/2013	Telephone: 303-312-6137
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 01/27/2014
Number of Days to Update: 92	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Quarterly

## 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: 02/05/2013	Source: EPA Region 10
Date Data Arrived at EDR: 02/06/2013	Telephone: 206-553-2857
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 01/27/2014
Number of Days to Update: 65	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Quarterly

## 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: 07/29/2013	Source: EPA Region 9
Date Data Arrived at EDR: 07/30/2013	Telephone: 415-972-3368
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 01/27/2014
Number of Days to Update: 129	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010	Source: FEMA
Date Data Arrived at EDR: 02/16/2010	Telephone: 202-646-5797
Date Made Active in Reports: 04/12/2010	Last EDR Contact: 01/13/2014
Number of Days to Update: 55	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: Varies

## **State and tribal voluntary cleanup sites**

### 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: 09/17/2013	Source: EPA, Region 1
Date Data Arrived at EDR: 10/01/2013	Telephone: 617-918-1102
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 01/03/2014
Number of Days to Update: 66	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Varies

### 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: 04/20/2009
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: 11/06/2013	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/06/2013	Telephone: 916-323-3400
Date Made Active in Reports: 12/03/2013	Last EDR Contact: 02/06/2014
Number of Days to Update: 27	Next Scheduled EDR Contact: 05/19/2014
	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: 09/24/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/24/2013	Telephone: 202-566-2777
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 02/25/2014
Number of Days to Update: 73	Next Scheduled EDR Contact: 04/07/2014
	Data Release Frequency: Semi-Annually

### **Local Lists of Landfill / Solid Waste Disposal Sites**

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## 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  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 01/27/2014  
Next Scheduled EDR Contact: 05/12/2014  
Data Release Frequency: No Update Planned

## 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  
Date Data Arrived at EDR: 04/10/2000  
Date Made Active in Reports: 05/10/2000  
Number of Days to Update: 30

Source: State Water Resources Control Board  
Telephone: 916-227-4448  
Last EDR Contact: 02/10/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: No Update Planned

## SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 12/16/2013  
Date Data Arrived at EDR: 12/17/2013  
Date Made Active in Reports: 01/07/2014  
Number of Days to Update: 21

Source: Department of Conservation  
Telephone: 916-323-3836  
Last EDR Contact: 12/17/2013  
Next Scheduled EDR Contact: 03/31/2014  
Data Release Frequency: Quarterly

## HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 11/20/2013  
Date Data Arrived at EDR: 11/25/2013  
Date Made Active in Reports: 12/31/2013  
Number of Days to Update: 36

Source: Integrated Waste Management Board  
Telephone: 916-341-6422  
Last EDR Contact: 02/14/2014  
Next Scheduled EDR Contact: 06/02/2014  
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  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 11/04/2013  
Next Scheduled EDR Contact: 02/17/2014  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## **Local Lists of Hazardous waste / Contaminated Sites**

### **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: 12/04/2013	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 12/10/2013	Telephone: 202-307-1000
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 12/05/2013
Number of Days to Update: 65	Next Scheduled EDR Contact: 03/17/2014
	Data Release Frequency: Quarterly

### **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	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 08/03/2006	Telephone: 916-323-3400
Date Made Active in Reports: 08/24/2006	Last EDR Contact: 02/23/2009
Number of Days to Update: 21	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: 11/06/2013	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/06/2013	Telephone: 916-323-3400
Date Made Active in Reports: 12/03/2013	Last EDR Contact: 02/06/2014
Number of Days to Update: 27	Next Scheduled EDR Contact: 05/19/2014
	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	Source: State Water Resources Control Board
Date Data Arrived at EDR: 08/30/1995	Telephone: 916-227-4364
Date Made Active in Reports: 09/26/1995	Last EDR Contact: 01/26/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/27/2009
	Data Release Frequency: No Update Planned

### **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: 06/30/2013	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 09/03/2013	Telephone: 916-255-6504
Date Made Active in Reports: 10/10/2013	Last EDR Contact: 02/24/2014
Number of Days to Update: 37	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## US HIST CDL: National Clandestine Laboratory Register

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: 09/01/2007	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 11/19/2008	Telephone: 202-307-1000
Date Made Active in Reports: 03/30/2009	Last EDR Contact: 03/23/2009
Number of Days to Update: 131	Next Scheduled EDR Contact: 06/22/2009
	Data Release Frequency: No Update Planned

## **Local Lists of Registered Storage Tanks**

### 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

### UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009	Source: Department of Public Health
Date Data Arrived at EDR: 09/23/2009	Telephone: 707-463-4466
Date Made Active in Reports: 10/01/2009	Last EDR Contact: 12/02/2013
Number of Days to Update: 8	Next Scheduled EDR Contact: 03/17/2014
	Data Release Frequency: Annually

### 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

### 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	Source: State Water Resources Control Board
Date Data Arrived at EDR: 07/07/2005	Telephone: N/A
Date Made Active in Reports: 08/11/2005	Last EDR Contact: 06/03/2005
Number of Days to Update: 35	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

## **Local Land Records**

### 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.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/06/2013  
Date Data Arrived at EDR: 04/25/2013  
Date Made Active in Reports: 05/10/2013  
Number of Days to Update: 15

Source: Environmental Protection Agency  
Telephone: 202-564-6023  
Last EDR Contact: 01/27/2014  
Next Scheduled EDR Contact: 05/12/2014  
Data Release Frequency: Varies

## LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 01/17/2014  
Date Data Arrived at EDR: 01/21/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 21

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 12/09/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Varies

## 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: 12/09/2013  
Date Data Arrived at EDR: 12/10/2013  
Date Made Active in Reports: 01/03/2014  
Number of Days to Update: 24

Source: DTSC and SWRCB  
Telephone: 916-323-3400  
Last EDR Contact: 12/10/2013  
Next Scheduled EDR Contact: 03/24/2014  
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: 12/31/2013  
Date Data Arrived at EDR: 01/03/2014  
Date Made Active in Reports: 02/24/2014  
Number of Days to Update: 52

Source: U.S. Department of Transportation  
Telephone: 202-366-4555  
Last EDR Contact: 01/03/2014  
Next Scheduled EDR Contact: 01/13/2014  
Data Release Frequency: Annually

### 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: 10/14/2013  
Date Data Arrived at EDR: 10/30/2013  
Date Made Active in Reports: 12/03/2013  
Number of Days to Update: 34

Source: Office of Emergency Services  
Telephone: 916-845-8400  
Last EDR Contact: 01/30/2014  
Next Scheduled EDR Contact: 05/12/2014  
Data Release Frequency: Varies

### LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 12/16/2013  
Date Data Arrived at EDR: 12/17/2013  
Date Made Active in Reports: 01/04/2014  
Number of Days to Update: 18

Source: State Water Quality Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/17/2013  
Next Scheduled EDR Contact: 03/31/2014  
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 12/16/2013	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/17/2013	Telephone: 866-480-1028
Date Made Active in Reports: 01/04/2014	Last EDR Contact: 12/17/2013
Number of Days to Update: 18	Next Scheduled EDR Contact: 03/31/2014
	Data Release Frequency: Quarterly

## 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

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: 09/10/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/02/2013	Telephone: (415) 495-8895
Date Made Active in Reports: 12/16/2013	Last EDR Contact: 01/02/2014
Number of Days to Update: 75	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Varies

### DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 08/07/2012	Telephone: 202-366-4595
Date Made Active in Reports: 09/18/2012	Last EDR Contact: 02/06/2014
Number of Days to Update: 42	Next Scheduled EDR Contact: 05/19/2014
	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: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 01/15/2014
Number of Days to Update: 62	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: Semi-Annually

### 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.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2011  
Date Data Arrived at EDR: 02/26/2013  
Date Made Active in Reports: 03/13/2013  
Number of Days to Update: 15

Source: U.S. Army Corps of Engineers  
Telephone: 202-528-4285  
Last EDR Contact: 12/13/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Varies

## 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: 12/31/2013  
Date Data Arrived at EDR: 01/24/2014  
Date Made Active in Reports: 02/24/2014  
Number of Days to Update: 31

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 12/26/2013  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Varies

## 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: 11/25/2013  
Date Data Arrived at EDR: 12/12/2013  
Date Made Active in Reports: 02/24/2014  
Number of Days to Update: 74

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 12/12/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Annually

## 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.

Date of Government Version: 09/14/2010  
Date Data Arrived at EDR: 10/07/2011  
Date Made Active in Reports: 03/01/2012  
Number of Days to Update: 146

Source: Department of Energy  
Telephone: 505-845-0011  
Last EDR Contact: 02/25/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## 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.

Date of Government Version: 08/01/2013  
Date Data Arrived at EDR: 09/05/2013  
Date Made Active in Reports: 10/03/2013  
Number of Days to Update: 28

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 12/06/2013  
Next Scheduled EDR Contact: 03/17/2014  
Data Release Frequency: Semi-Annually

## 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.

Date of Government Version: 12/31/2011  
Date Data Arrived at EDR: 07/31/2013  
Date Made Active in Reports: 09/13/2013  
Number of Days to Update: 44

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 02/26/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Annually

## 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.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2006  
Date Data Arrived at EDR: 09/29/2010  
Date Made Active in Reports: 12/02/2010  
Number of Days to Update: 64

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 12/26/2013  
Next Scheduled EDR Contact: 04/07/2014  
Data Release Frequency: Every 4 Years

**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  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Quarterly

**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  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA  
Telephone: 202-566-1667  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
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  
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: 12/17/2007  
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.

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

**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.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2009  
Date Data Arrived at EDR: 12/10/2010  
Date Made Active in Reports: 02/25/2011  
Number of Days to Update: 77

Source: EPA  
Telephone: 202-564-4203  
Last EDR Contact: 01/28/2014  
Next Scheduled EDR Contact: 05/12/2014  
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: 07/20/2011  
Date Data Arrived at EDR: 11/10/2011  
Date Made Active in Reports: 01/10/2012  
Number of Days to Update: 61

Source: Environmental Protection Agency  
Telephone: 202-564-5088  
Last EDR Contact: 10/09/2014  
Next Scheduled EDR Contact: 04/28/2014  
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: 06/01/2013  
Date Data Arrived at EDR: 07/17/2013  
Date Made Active in Reports: 11/01/2013  
Number of Days to Update: 107

Source: EPA  
Telephone: 202-566-0500  
Last EDR Contact: 01/28/2014  
Next Scheduled EDR Contact: 04/28/2014  
Data Release Frequency: Annually

## 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: 07/22/2013  
Date Data Arrived at EDR: 08/02/2013  
Date Made Active in Reports: 11/01/2013  
Number of Days to Update: 91

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 12/09/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Quarterly

## 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: 09/30/2013  
Date Data Arrived at EDR: 10/09/2013  
Date Made Active in Reports: 11/01/2013  
Number of Days to Update: 23

Source: Environmental Protection Agency  
Telephone: 202-343-9775  
Last EDR Contact: 01/10/2014  
Next Scheduled EDR Contact: 04/21/2014  
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: 03/08/2013  
Date Data Arrived at EDR: 03/21/2013  
Date Made Active in Reports: 07/10/2013  
Number of Days to Update: 111

Source: EPA  
Telephone: (415) 947-8000  
Last EDR Contact: 12/10/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

## 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: 11/01/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/12/2013	Telephone: 202-564-8600
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 01/27/2014
Number of Days to Update: 63	Next Scheduled EDR Contact: 05/12/2014
	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: 12/31/2011	Source: EPA/NTIS
Date Data Arrived at EDR: 02/26/2013	Telephone: 800-424-9346
Date Made Active in Reports: 04/19/2013	Last EDR Contact: 11/25/2013
Number of Days to Update: 52	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Biennially

## 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

## UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 09/25/2013	Source: Department of Conservation
Date Data Arrived at EDR: 12/17/2013	Telephone: 916-445-2408
Date Made Active in Reports: 01/07/2014	Last EDR Contact: 12/17/2013
Number of Days to Update: 21	Next Scheduled EDR Contact: 03/31/2014
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/19/2013	Source: State Water Resources Control Board
Date Data Arrived at EDR: 11/21/2013	Telephone: 916-445-9379
Date Made Active in Reports: 01/02/2014	Last EDR Contact: 02/18/2014
Number of Days to Update: 42	Next Scheduled EDR Contact: 06/02/2014
	Data Release Frequency: Quarterly

## 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: 12/30/2013	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 12/31/2013	Telephone: 916-323-3400
Date Made Active in Reports: 02/11/2014	Last EDR Contact: 12/31/2013
Number of Days to Update: 42	Next Scheduled EDR Contact: 04/14/2014
	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 [CAL SITES]. 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

## 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: 10/21/1993	Source: State Water Resources Control Board
Date Data Arrived at EDR: 11/01/1993	Telephone: 916-445-3846
Date Made Active in Reports: 11/19/1993	Last EDR Contact: 12/17/2013
Number of Days to Update: 18	Next Scheduled EDR Contact: 04/07/2014
	Data Release Frequency: No Update Planned

## 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.

Date of Government Version: 09/10/2013	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 09/11/2013	Telephone: 916-327-4498
Date Made Active in Reports: 10/16/2013	Last EDR Contact: 12/09/2013
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Annually

## 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	Source: Los Angeles Water Quality Control Board
Date Data Arrived at EDR: 07/21/2009	Telephone: 213-576-6726
Date Made Active in Reports: 08/03/2009	Last EDR Contact: 12/26/2013
Number of Days to Update: 13	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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: 08/09/2013	Source: State Water Resources Control Board
Date Data Arrived at EDR: 08/13/2013	Telephone: 916-445-9379
Date Made Active in Reports: 10/08/2013	Last EDR Contact: 02/10/2014
Number of Days to Update: 56	Next Scheduled EDR Contact: 05/05/2014
	Data Release Frequency: Varies

## 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.

Date of Government Version: 12/31/2012	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 07/16/2013	Telephone: 916-255-1136
Date Made Active in Reports: 08/26/2013	Last EDR Contact: 01/17/2014
Number of Days to Update: 41	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: Annually

## EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2010	Source: California Air Resources Board
Date Data Arrived at EDR: 06/25/2013	Telephone: 916-322-2990
Date Made Active in Reports: 08/22/2013	Last EDR Contact: 12/26/2013
Number of Days to Update: 58	Next Scheduled EDR Contact: 04/07/2014
	Data Release Frequency: Varies

## 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: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 12/08/2006	Telephone: 202-208-3710
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 01/15/2014
Number of Days to Update: 34	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: Semi-Annually

## 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.

Date of Government Version: 03/07/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/09/2011	Telephone: 615-532-8599
Date Made Active in Reports: 05/02/2011	Last EDR Contact: 01/20/2014
Number of Days to Update: 54	Next Scheduled EDR Contact: 05/05/2014
	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	Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010	Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/02/2009
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	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: 04/15/2013	Source: EPA
Date Data Arrived at EDR: 07/03/2013	Telephone: 202-564-6023
Date Made Active in Reports: 09/13/2013	Last EDR Contact: 01/02/2014
Number of Days to Update: 72	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Quarterly

## WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007	Source: State Water Resources Control Board
Date Data Arrived at EDR: 06/20/2007	Telephone: 916-341-5227
Date Made Active in Reports: 06/29/2007	Last EDR Contact: 02/24/2014
Number of Days to Update: 9	Next Scheduled EDR Contact: 06/09/2014
	Data Release Frequency: Quarterly

## 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: 11/18/2013	Source: California Integrated Waste Management Board
Date Data Arrived at EDR: 11/19/2013	Telephone: 916-341-6066
Date Made Active in Reports: 12/31/2013	Last EDR Contact: 02/14/2014
Number of Days to Update: 42	Next Scheduled EDR Contact: 06/02/2014
	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: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 01/15/2014
Number of Days to Update: 339	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: N/A

## 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: 06/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/13/2013	Telephone: 617-520-3000
Date Made Active in Reports: 09/13/2013	Last EDR Contact: 02/10/2014
Number of Days to Update: 31	Next Scheduled EDR Contact: 05/26/2014
	Data Release Frequency: Quarterly

## 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.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/20/2013  
Date Data Arrived at EDR: 12/03/2013  
Date Made Active in Reports: 02/13/2014  
Number of Days to Update: 72

Source: Environmental Protection Agency  
Telephone: 202-566-1917  
Last EDR Contact: 02/14/2014  
Next Scheduled EDR Contact: 06/02/2014  
Data Release Frequency: Quarterly

## LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/29/2013  
Date Data Arrived at EDR: 02/14/2013  
Date Made Active in Reports: 02/27/2013  
Number of Days to Update: 13

Source: Environmental Protection Agency  
Telephone: 703-603-8787  
Last EDR Contact: 01/03/2014  
Next Scheduled EDR Contact: 04/21/2014  
Data Release Frequency: Varies

## 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: 11/11/2011  
Date Data Arrived at EDR: 05/18/2012  
Date Made Active in Reports: 05/25/2012  
Number of Days to Update: 7

Source: Environmental Protection Agency  
Telephone: 703-308-4044  
Last EDR Contact: 02/14/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Varies

## Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/28/2014  
Date Data Arrived at EDR: 01/30/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 12

Source: Department of Toxic Substances Control  
Telephone: 916-255-3628  
Last EDR Contact: 01/27/2014  
Next Scheduled EDR Contact: 05/05/2014  
Data Release Frequency: Varies

## PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 12/16/2013  
Date Data Arrived at EDR: 12/17/2013  
Date Made Active in Reports: 01/07/2014  
Number of Days to Update: 21

Source: Department of Conservation  
Telephone: 916-323-3836  
Last EDR Contact: 12/17/2013  
Next Scheduled EDR Contact: 03/31/2014  
Data Release Frequency: Quarterly

## US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/23/2013  
Date Data Arrived at EDR: 11/06/2013  
Date Made Active in Reports: 12/06/2013  
Number of Days to Update: 30

Source: EPA  
Telephone: 202-564-5962  
Last EDR Contact: 12/26/2013  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Annually

## PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011  
Date Data Arrived at EDR: 10/19/2011  
Date Made Active in Reports: 01/10/2012  
Number of Days to Update: 83

Source: Environmental Protection Agency  
Telephone: 202-566-0517  
Last EDR Contact: 01/30/2014  
Next Scheduled EDR Contact: 05/12/2014  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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: 08/17/2010	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/03/2011	Telephone: N/A
Date Made Active in Reports: 03/21/2011	Last EDR Contact: 12/13/2013
Number of Days to Update: 77	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Varies

## 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: 09/20/2013	Source: Department of Public Health
Date Data Arrived at EDR: 12/11/2013	Telephone: 916-558-1784
Date Made Active in Reports: 01/04/2014	Last EDR Contact: 12/09/2013
Number of Days to Update: 24	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Varies

## COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 01/13/2014
Number of Days to Update: 76	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: Varies

## 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: 01/13/2014	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/14/2014	Telephone: 916-440-7145
Date Made Active in Reports: 02/11/2014	Last EDR Contact: 01/14/2014
Number of Days to Update: 28	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: Quarterly

## HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/25/2013	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/26/2013	Telephone: 916-323-3400
Date Made Active in Reports: 12/31/2013	Last EDR Contact: 02/25/2014
Number of Days to Update: 35	Next Scheduled EDR Contact: 06/09/2014
	Data Release Frequency: Quarterly

## 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: 10/23/2013	Source: EPA
Date Data Arrived at EDR: 11/06/2013	Telephone: 202-564-5962
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 12/26/2013
Number of Days to Update: 30	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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 US Hist Auto Stat: EDR Exclusive Historic Gas 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 US Hist Cleaners: EDR Exclusive Historic Dry 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 US Hist Cleaners: EDR Proprietary Historic Dry Cleaners - Cole

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: N/A  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR US Hist Auto Stat: EDR Proprietary Historic Gas Stations - Cole

Date of Government Version: N/A	Source: N/A
Date Data Arrived at EDR: N/A	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: N/A
Number of Days to Update: N/A	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

## EDR RECOVERED GOVERNMENT ARCHIVES

### *Exclusive Recovered Govt. Archives*

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

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

## COUNTY RECORDS

ALAMEDA COUNTY:

### 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: 01/22/2014	Source: Alameda County Environmental Health Services
Date Data Arrived at EDR: 01/23/2014	Telephone: 510-567-6700
Date Made Active in Reports: 02/11/2014	Last EDR Contact: 12/30/2013
Number of Days to Update: 19	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Semi-Annually

### Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/22/2014	Source: Alameda County Environmental Health Services
Date Data Arrived at EDR: 01/23/2014	Telephone: 510-567-6700
Date Made Active in Reports: 02/12/2014	Last EDR Contact: 12/30/2013
Number of Days to Update: 20	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Semi-Annually

AMADOR COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility List

### Cupa Facility List

Date of Government Version: 12/05/2013  
Date Data Arrived at EDR: 12/10/2013  
Date Made Active in Reports: 01/03/2014  
Number of Days to Update: 24

Source: Amador County Environmental Health  
Telephone: 209-223-6439  
Last EDR Contact: 12/09/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Varies

## BUTTE COUNTY:

### CUPA Facility Listing

#### Cupa facility list.

Date of Government Version: 08/01/2013  
Date Data Arrived at EDR: 08/02/2013  
Date Made Active in Reports: 08/22/2013  
Number of Days to Update: 20

Source: Public Health Department  
Telephone: 530-538-7149  
Last EDR Contact: 01/13/2014  
Next Scheduled EDR Contact: 04/28/2014  
Data Release Frequency: No Update Planned

## CALVERAS COUNTY:

### CUPA Facility Listing

#### Cupa Facility Listing

Date of Government Version: 09/30/2013  
Date Data Arrived at EDR: 10/01/2013  
Date Made Active in Reports: 11/26/2013  
Number of Days to Update: 56

Source: Calveras County Environmental Health  
Telephone: 209-754-6399  
Last EDR Contact: 12/30/2013  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

## COLUSA COUNTY:

### CUPA Facility List

#### Cupa facility list.

Date of Government Version: 12/05/2013  
Date Data Arrived at EDR: 12/05/2013  
Date Made Active in Reports: 01/27/2014  
Number of Days to Update: 53

Source: Health & Human Services  
Telephone: 530-458-0396  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Varies

## CONTRA COSTA COUNTY:

### Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/18/2013  
Date Data Arrived at EDR: 11/19/2013  
Date Made Active in Reports: 12/31/2013  
Number of Days to Update: 42

Source: Contra Costa Health Services Department  
Telephone: 925-646-2286  
Last EDR Contact: 02/05/2014  
Next Scheduled EDR Contact: 05/19/2014  
Data Release Frequency: Semi-Annually

## DEL NORTE COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility List

Cupa Facility list

Date of Government Version: 01/09/2013  
Date Data Arrived at EDR: 01/10/2013  
Date Made Active in Reports: 02/25/2013  
Number of Days to Update: 46

Source: Del Norte County Environmental Health Division  
Telephone: 707-465-0426  
Last EDR Contact: 11/04/2013  
Next Scheduled EDR Contact: 02/17/2014  
Data Release Frequency: Varies

## EL DORADO COUNTY:

### CUPA Facility List

CUPA facility list.

Date of Government Version: 11/18/2013  
Date Data Arrived at EDR: 11/19/2013  
Date Made Active in Reports: 01/14/2014  
Number of Days to Update: 56

Source: El Dorado County Environmental Management Department  
Telephone: 530-621-6623  
Last EDR Contact: 02/04/2014  
Next Scheduled EDR Contact: 05/19/2014  
Data Release Frequency: Varies

## FRESNO COUNTY:

### 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: 12/31/2013  
Date Data Arrived at EDR: 01/14/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 28

Source: Dept. of Community Health  
Telephone: 559-445-3271  
Last EDR Contact: 01/13/2014  
Next Scheduled EDR Contact: 04/28/2014  
Data Release Frequency: Semi-Annually

## HUMBOLDT COUNTY:

### CUPA Facility List

CUPA facility list.

Date of Government Version: 12/16/2013  
Date Data Arrived at EDR: 12/17/2013  
Date Made Active in Reports: 01/07/2014  
Number of Days to Update: 21

Source: Humboldt County Environmental Health  
Telephone: N/A  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## IMPERIAL COUNTY:

### CUPA Facility List

Cupa facility list.

Date of Government Version: 01/27/2014  
Date Data Arrived at EDR: 01/28/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 14

Source: San Diego Border Field Office  
Telephone: 760-339-2777  
Last EDR Contact: 01/27/2014  
Next Scheduled EDR Contact: 05/12/2014  
Data Release Frequency: Varies

## INYO COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility List

Cupa facility list.

Date of Government Version: 09/10/2013  
Date Data Arrived at EDR: 09/11/2013  
Date Made Active in Reports: 10/14/2013  
Number of Days to Update: 39

Source: Inyo County Environmental Health Services  
Telephone: 760-878-0238  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## KERN COUNTY:

### Underground Storage Tank Sites & Tank Listing Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010  
Date Data Arrived at EDR: 09/01/2010  
Date Made Active in Reports: 09/30/2010  
Number of Days to Update: 29

Source: Kern County Environment Health Services Department  
Telephone: 661-862-8700  
Last EDR Contact: 02/10/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Quarterly

## KINGS COUNTY:

### 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: 12/12/2013  
Date Data Arrived at EDR: 12/13/2013  
Date Made Active in Reports: 01/07/2014  
Number of Days to Update: 25

Source: Kings County Department of Public Health  
Telephone: 559-584-1411  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## LAKE COUNTY:

### CUPA Facility List

Cupa facility list

Date of Government Version: 01/23/2013  
Date Data Arrived at EDR: 01/25/2013  
Date Made Active in Reports: 02/27/2013  
Number of Days to Update: 33

Source: Lake County Environmental Health  
Telephone: 707-263-1164  
Last EDR Contact: 01/20/2014  
Next Scheduled EDR Contact: 05/05/2014  
Data Release Frequency: Varies

## LOS ANGELES COUNTY:

### San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

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: EPA Region 9  
Telephone: 415-972-3178  
Last EDR Contact: 12/17/2013  
Next Scheduled EDR Contact: 04/07/2014  
Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/28/2013	Source: Department of Public Works
Date Data Arrived at EDR: 06/17/2013	Telephone: 626-458-3517
Date Made Active in Reports: 08/21/2013	Last EDR Contact: 01/13/2014
Number of Days to Update: 65	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: Semi-Annually

## List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/20/2014	Source: La County Department of Public Works
Date Data Arrived at EDR: 01/21/2014	Telephone: 818-458-5185
Date Made Active in Reports: 02/11/2014	Last EDR Contact: 01/21/2014
Number of Days to Update: 21	Next Scheduled EDR Contact: 05/05/2014
	Data Release Frequency: Varies

## City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009	Source: Engineering & Construction Division
Date Data Arrived at EDR: 03/10/2009	Telephone: 213-473-7869
Date Made Active in Reports: 04/08/2009	Last EDR Contact: 01/20/2014
Number of Days to Update: 29	Next Scheduled EDR Contact: 05/05/2014
	Data Release Frequency: Varies

## Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/30/2013	Source: Community Health Services
Date Data Arrived at EDR: 02/21/2013	Telephone: 323-890-7806
Date Made Active in Reports: 03/25/2013	Last EDR Contact: 01/20/2014
Number of Days to Update: 32	Next Scheduled EDR Contact: 05/05/2014
	Data Release Frequency: Annually

## City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 10/21/2013	Source: City of El Segundo Fire Department
Date Data Arrived at EDR: 10/25/2013	Telephone: 310-524-2236
Date Made Active in Reports: 11/27/2013	Last EDR Contact: 01/20/2014
Number of Days to Update: 33	Next Scheduled EDR Contact: 05/05/2014
	Data Release Frequency: Semi-Annually

## City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003	Source: City of Long Beach Fire Department
Date Data Arrived at EDR: 10/23/2003	Telephone: 562-570-2563
Date Made Active in Reports: 11/26/2003	Last EDR Contact: 01/30/2014
Number of Days to Update: 34	Next Scheduled EDR Contact: 05/12/2014
	Data Release Frequency: Annually

## City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 07/15/2013	Source: City of Torrance Fire Department
Date Data Arrived at EDR: 07/18/2013	Telephone: 310-618-2973
Date Made Active in Reports: 08/20/2013	Last EDR Contact: 01/13/2014
Number of Days to Update: 33	Next Scheduled EDR Contact: 04/28/2014
	Data Release Frequency: Semi-Annually

MADERA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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: 12/09/2013  
Date Data Arrived at EDR: 12/10/2013  
Date Made Active in Reports: 02/20/2014  
Number of Days to Update: 72

Source: Madera County Environmental Health  
Telephone: 559-675-7823  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## MARIN COUNTY:

### Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 01/03/2014  
Date Data Arrived at EDR: 01/09/2014  
Date Made Active in Reports: 02/12/2014  
Number of Days to Update: 34

Source: Public Works Department Waste Management  
Telephone: 415-499-6647  
Last EDR Contact: 01/03/2014  
Next Scheduled EDR Contact: 04/21/2014  
Data Release Frequency: Semi-Annually

## MERCED COUNTY:

### CUPA Facility List

CUPA facility list.

Date of Government Version: 11/21/2013  
Date Data Arrived at EDR: 11/25/2013  
Date Made Active in Reports: 02/24/2014  
Number of Days to Update: 91

Source: Merced County Environmental Health  
Telephone: 209-381-1094  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## MONO COUNTY:

### CUPA Facility List

CUPA Facility List

Date of Government Version: 12/02/2013  
Date Data Arrived at EDR: 12/03/2013  
Date Made Active in Reports: 01/02/2014  
Number of Days to Update: 30

Source: Mono County Health Department  
Telephone: 760-932-5580  
Last EDR Contact: 12/02/2013  
Next Scheduled EDR Contact: 03/17/2014  
Data Release Frequency: Varies

## MONTEREY COUNTY:

### CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 01/09/2014  
Date Data Arrived at EDR: 01/10/2014  
Date Made Active in Reports: 02/14/2014  
Number of Days to Update: 35

Source: Monterey County Health Department  
Telephone: 831-796-1297  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## NAPA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011  
Date Data Arrived at EDR: 12/06/2011  
Date Made Active in Reports: 02/07/2012  
Number of Days to Update: 63

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269  
Last EDR Contact: 12/02/2013  
Next Scheduled EDR Contact: 03/17/2014  
Data Release Frequency: No Update Planned

## Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008  
Date Data Arrived at EDR: 01/16/2008  
Date Made Active in Reports: 02/08/2008  
Number of Days to Update: 23

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269  
Last EDR Contact: 12/02/2013  
Next Scheduled EDR Contact: 03/17/2014  
Data Release Frequency: No Update Planned

## NEVADA COUNTY:

### CUPA Facility List

CUPA facility list.

Date of Government Version: 11/06/2013  
Date Data Arrived at EDR: 11/07/2013  
Date Made Active in Reports: 12/04/2013  
Number of Days to Update: 27

Source: Community Development Agency  
Telephone: 530-265-1467  
Last EDR Contact: 02/14/2014  
Next Scheduled EDR Contact: 05/19/2014  
Data Release Frequency: Varies

## ORANGE COUNTY:

### List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 11/04/2013  
Date Data Arrived at EDR: 11/13/2013  
Date Made Active in Reports: 12/04/2013  
Number of Days to Update: 21

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 02/10/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Annually

### List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/04/2013  
Date Data Arrived at EDR: 11/13/2013  
Date Made Active in Reports: 12/04/2013  
Number of Days to Update: 21

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 02/10/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Quarterly

### List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/04/2013  
Date Data Arrived at EDR: 11/13/2013  
Date Made Active in Reports: 12/04/2013  
Number of Days to Update: 21

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 02/10/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Quarterly

## PLACER COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/09/2013  
Date Data Arrived at EDR: 12/10/2013  
Date Made Active in Reports: 01/07/2014  
Number of Days to Update: 28

Source: Placer County Health and Human Services  
Telephone: 530-745-2363  
Last EDR Contact: 12/09/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Semi-Annually

## RIVERSIDE COUNTY:

### Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/14/2014  
Date Data Arrived at EDR: 01/15/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 27

Source: Department of Environmental Health  
Telephone: 951-358-5055  
Last EDR Contact: 12/19/2013  
Next Scheduled EDR Contact: 04/07/2014  
Data Release Frequency: Quarterly

### Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 01/14/2014  
Date Data Arrived at EDR: 01/15/2014  
Date Made Active in Reports: 02/12/2014  
Number of Days to Update: 28

Source: Department of Environmental Health  
Telephone: 951-358-5055  
Last EDR Contact: 12/19/2013  
Next Scheduled EDR Contact: 04/07/2014  
Data Release Frequency: Quarterly

## SACRAMENTO COUNTY:

### Toxic Site Clean-Up List

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/21/2013  
Date Data Arrived at EDR: 01/09/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 33

Source: Sacramento County Environmental Management  
Telephone: 916-875-8406  
Last EDR Contact: 01/06/2014  
Next Scheduled EDR Contact: 04/21/2014  
Data Release Frequency: Quarterly

### 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: 11/21/2013  
Date Data Arrived at EDR: 01/09/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 33

Source: Sacramento County Environmental Management  
Telephone: 916-875-8406  
Last EDR Contact: 01/06/2014  
Next Scheduled EDR Contact: 04/21/2014  
Data Release Frequency: Quarterly

## SAN BERNARDINO COUNTY:

### Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/26/2013  
Date Data Arrived at EDR: 11/27/2013  
Date Made Active in Reports: 12/31/2013  
Number of Days to Update: 34

Source: San Bernardino County Fire Department Hazardous Materials Division  
Telephone: 909-387-3041  
Last EDR Contact: 02/10/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Quarterly

## SAN DIEGO COUNTY:

### 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: 09/23/2013  
Date Data Arrived at EDR: 09/24/2013  
Date Made Active in Reports: 10/17/2013  
Number of Days to Update: 23

Source: Hazardous Materials Management Division  
Telephone: 619-338-2268  
Last EDR Contact: 12/09/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Quarterly

### Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2013  
Date Data Arrived at EDR: 11/19/2013  
Date Made Active in Reports: 12/31/2013  
Number of Days to Update: 42

Source: Department of Health Services  
Telephone: 619-338-2209  
Last EDR Contact: 02/14/2014  
Next Scheduled EDR Contact: 05/12/2014  
Data Release Frequency: Varies

### 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: 12/09/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: No Update Planned

## SAN FRANCISCO COUNTY:

### Local Oversight Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

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: 02/10/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Quarterly

### Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010  
Date Data Arrived at EDR: 03/10/2011  
Date Made Active in Reports: 03/15/2011  
Number of Days to Update: 5

Source: Department of Public Health  
Telephone: 415-252-3920  
Last EDR Contact: 02/10/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Quarterly

## SAN JOAQUIN COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/18/2013  
Date Data Arrived at EDR: 12/19/2013  
Date Made Active in Reports: 01/08/2014  
Number of Days to Update: 20

Source: Environmental Health Department  
Telephone: N/A  
Last EDR Contact: 12/17/2013  
Next Scheduled EDR Contact: 04/07/2014  
Data Release Frequency: Semi-Annually

## SAN LUIS OBISPO COUNTY:

### CUPA Facility List

Cupa Facility List.

Date of Government Version: 11/21/2013  
Date Data Arrived at EDR: 11/25/2013  
Date Made Active in Reports: 02/27/2014  
Number of Days to Update: 94

Source: San Luis Obispo County Public Health Department  
Telephone: 805-781-5596  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## SAN MATEO COUNTY:

### Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 01/13/2014  
Date Data Arrived at EDR: 01/14/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 28

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 12/16/2013  
Next Scheduled EDR Contact: 03/31/2014  
Data Release Frequency: Annually

### Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/12/2013  
Date Data Arrived at EDR: 12/17/2013  
Date Made Active in Reports: 01/07/2014  
Number of Days to Update: 21

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 12/12/2013  
Next Scheduled EDR Contact: 03/31/2014  
Data Release Frequency: Semi-Annually

## SANTA BARBARA COUNTY:

### 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: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## SANTA CLARA COUNTY:

### Cupa Facility List

Cupa facility list

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/03/2013  
Date Data Arrived at EDR: 12/04/2013  
Date Made Active in Reports: 01/27/2014  
Number of Days to Update: 54

Source: Department of Environmental Health  
Telephone: 408-918-1973  
Last EDR Contact: 12/02/2013  
Next Scheduled EDR Contact: 03/17/2014  
Data Release Frequency: Varies

## 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

## LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 12/02/2013  
Date Data Arrived at EDR: 12/03/2013  
Date Made Active in Reports: 01/02/2014  
Number of Days to Update: 30

Source: Department of Environmental Health  
Telephone: 408-918-3417  
Last EDR Contact: 12/02/2013  
Next Scheduled EDR Contact: 03/17/2014  
Data Release Frequency: Annually

## Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/12/2013  
Date Data Arrived at EDR: 11/15/2013  
Date Made Active in Reports: 01/03/2014  
Number of Days to Update: 49

Source: City of San Jose Fire Department  
Telephone: 408-535-7694  
Last EDR Contact: 02/10/2014  
Next Scheduled EDR Contact: 05/26/2014  
Data Release Frequency: Annually

## SANTA CRUZ COUNTY:

### CUPA Facility List

CUPA facility listing.

Date of Government Version: 12/09/2013  
Date Data Arrived at EDR: 12/10/2013  
Date Made Active in Reports: 01/03/2014  
Number of Days to Update: 24

Source: Santa Cruz County Environmental Health  
Telephone: 831-464-2761  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## SHASTA COUNTY:

### CUPA Facility List

Cupa Facility List.

Date of Government Version: 12/03/2013  
Date Data Arrived at EDR: 12/04/2013  
Date Made Active in Reports: 01/02/2014  
Number of Days to Update: 29

Source: Shasta County Department of Resource Management  
Telephone: 530-225-5789  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Varies

## SOLANO COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 12/16/2013  
Date Data Arrived at EDR: 12/18/2013  
Date Made Active in Reports: 01/08/2014  
Number of Days to Update: 21

Source: Solano County Department of Environmental Management  
Telephone: 707-784-6770  
Last EDR Contact: 12/12/2013  
Next Scheduled EDR Contact: 03/31/2014  
Data Release Frequency: Quarterly

## Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 12/16/2013  
Date Data Arrived at EDR: 12/19/2013  
Date Made Active in Reports: 01/08/2014  
Number of Days to Update: 20

Source: Solano County Department of Environmental Management  
Telephone: 707-784-6770  
Last EDR Contact: 12/12/2013  
Next Scheduled EDR Contact: 03/31/2014  
Data Release Frequency: Quarterly

## SONOMA COUNTY:

### Cupa Facility List

Cupa Facility list

Date of Government Version: 12/31/2013  
Date Data Arrived at EDR: 01/02/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 40

Source: County of Sonoma Fire & Emergency Services Department  
Telephone: 707-565-1174  
Last EDR Contact: 12/30/2013  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Varies

## Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/03/2014  
Date Data Arrived at EDR: 01/03/2014  
Date Made Active in Reports: 02/11/2014  
Number of Days to Update: 39

Source: Department of Health Services  
Telephone: 707-565-6565  
Last EDR Contact: 12/30/2013  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

## SUTTER COUNTY:

### Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 12/10/2013  
Date Data Arrived at EDR: 12/11/2013  
Date Made Active in Reports: 01/04/2014  
Number of Days to Update: 24

Source: Sutter County Department of Agriculture  
Telephone: 530-822-7500  
Last EDR Contact: 12/09/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Semi-Annually

## TUOLUMNE COUNTY:

### CUPA Facility List

Cupa facility list

Date of Government Version: 11/04/2013  
Date Data Arrived at EDR: 11/06/2013  
Date Made Active in Reports: 12/04/2013  
Number of Days to Update: 28

Source: Division of Environmental Health  
Telephone: 209-533-5633  
Last EDR Contact: 01/27/2014  
Next Scheduled EDR Contact: 05/12/2014  
Data Release Frequency: Varies

## VENTURA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 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: 10/29/2013	Source: Ventura County Environmental Health Division
Date Data Arrived at EDR: 11/21/2013	Telephone: 805-654-2813
Date Made Active in Reports: 01/14/2014	Last EDR Contact: 02/18/2014
Number of Days to Update: 54	Next Scheduled EDR Contact: 06/02/2014
	Data Release Frequency: Quarterly

## 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: 01/03/2014
Number of Days to Update: 49	Next Scheduled EDR Contact: 04/21/2014
	Data Release Frequency: Annually

## 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: 02/17/2014
Number of Days to Update: 37	Next Scheduled EDR Contact: 06/02/2014
	Data Release Frequency: Quarterly

## 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: 10/02/2013	Source: Ventura County Resource Management Agency
Date Data Arrived at EDR: 10/30/2013	Telephone: 805-654-2813
Date Made Active in Reports: 11/27/2013	Last EDR Contact: 10/28/2013
Number of Days to Update: 28	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Quarterly

## Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/26/2013	Source: Environmental Health Division
Date Data Arrived at EDR: 12/18/2013	Telephone: 805-654-2813
Date Made Active in Reports: 01/08/2014	Last EDR Contact: 12/16/2013
Number of Days to Update: 21	Next Scheduled EDR Contact: 03/31/2014
	Data Release Frequency: Quarterly

## YOLO COUNTY:

### Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 12/18/2013	Source: Yolo County Department of Health
Date Data Arrived at EDR: 12/24/2013	Telephone: 530-666-8646
Date Made Active in Reports: 01/08/2014	Last EDR Contact: 12/17/2013
Number of Days to Update: 15	Next Scheduled EDR Contact: 04/07/2014
	Data Release Frequency: Annually

## YUBA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility List

CUPA facility listing for Yuba County.

Date of Government Version: 12/06/2013  
Date Data Arrived at EDR: 12/10/2013  
Date Made Active in Reports: 01/04/2014  
Number of Days to Update: 25

Source: Yuba County Environmental Health Department  
Telephone: 530-749-7523  
Last EDR Contact: 12/06/2013  
Next Scheduled EDR Contact: 02/17/2014  
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: 07/30/2013  
Date Data Arrived at EDR: 08/19/2013  
Date Made Active in Reports: 10/03/2013  
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection  
Telephone: 860-424-3375  
Last EDR Contact: 02/21/2014  
Next Scheduled EDR Contact: 06/02/2014  
Data Release Frequency: Annually

### NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2011  
Date Data Arrived at EDR: 07/19/2012  
Date Made Active in Reports: 08/28/2012  
Number of Days to Update: 40

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 01/17/2014  
Next Scheduled EDR Contact: 04/28/2014  
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: 11/01/2013  
Date Data Arrived at EDR: 11/07/2013  
Date Made Active in Reports: 11/18/2013  
Number of Days to Update: 11

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 02/07/2014  
Next Scheduled EDR Contact: 05/19/2014  
Data Release Frequency: Annually

### PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2012  
Date Data Arrived at EDR: 07/24/2013  
Date Made Active in Reports: 08/19/2013  
Number of Days to Update: 26

Source: Department of Environmental Protection  
Telephone: 717-783-8990  
Last EDR Contact: 01/20/2014  
Next Scheduled EDR Contact: 05/05/2014  
Data Release Frequency: Annually

### RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2012  
Date Data Arrived at EDR: 06/21/2013  
Date Made Active in Reports: 08/05/2013  
Number of Days to Update: 45

Source: Department of Environmental Management  
Telephone: 401-222-2797  
Last EDR Contact: 02/24/2014  
Next Scheduled EDR Contact: 06/09/2014  
Data Release Frequency: Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2012

Date Data Arrived at EDR: 08/09/2013

Date Made Active in Reports: 09/27/2013

Number of Days to Update: 49

Source: Department of Natural Resources

Telephone: N/A

Last EDR Contact: 12/11/2013

Next Scheduled EDR Contact: 03/31/2014

Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

## Electric Power Transmission Line Data

Source: Rextag Strategies Corp.

Telephone: (281) 769-2247

U.S. Electric Transmission and Power Plants Systems Digital GIS Data

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, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

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.

## Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## STREET AND ADDRESS INFORMATION

© 2010 Tele Atlas 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<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

BOBS CORNER  
CARMEL VALLEY ROAD AND RANCHO SANTA FE LAKES DR  
SAN DIEGO, CA 92130

### **TARGET PROPERTY COORDINATES**

Latitude (North):	32.9697 - 32° 58' 10.92"
Longitude (West):	117.177 - 117° 10' 37.20"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	483459.4
UTM Y (Meters):	3647750.8
Elevation:	306 ft. above sea level

### **USGS TOPOGRAPHIC MAP**

Target Property Map:	32117-H2 DEL MAR, CA
Most Recent Revision:	1975

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 principal 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).

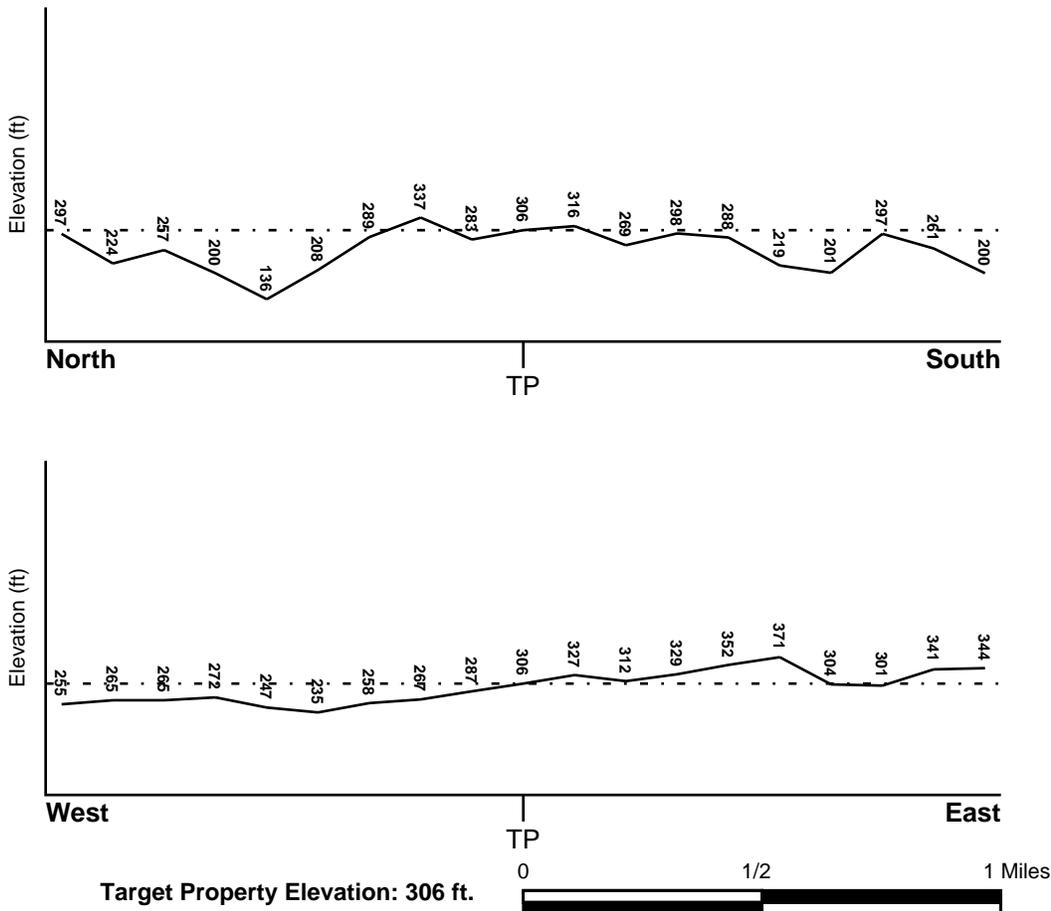
## TOPOGRAPHIC INFORMATION

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

Target Property County  
SAN DIEGO, CA

FEMA Flood  
Electronic Data  
YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06073C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

## NATIONAL WETLAND INVENTORY

NWI Quad at Target Property  
DEL MAR

NWI Electronic  
Data Coverage  
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>
Not Reported		

## 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**

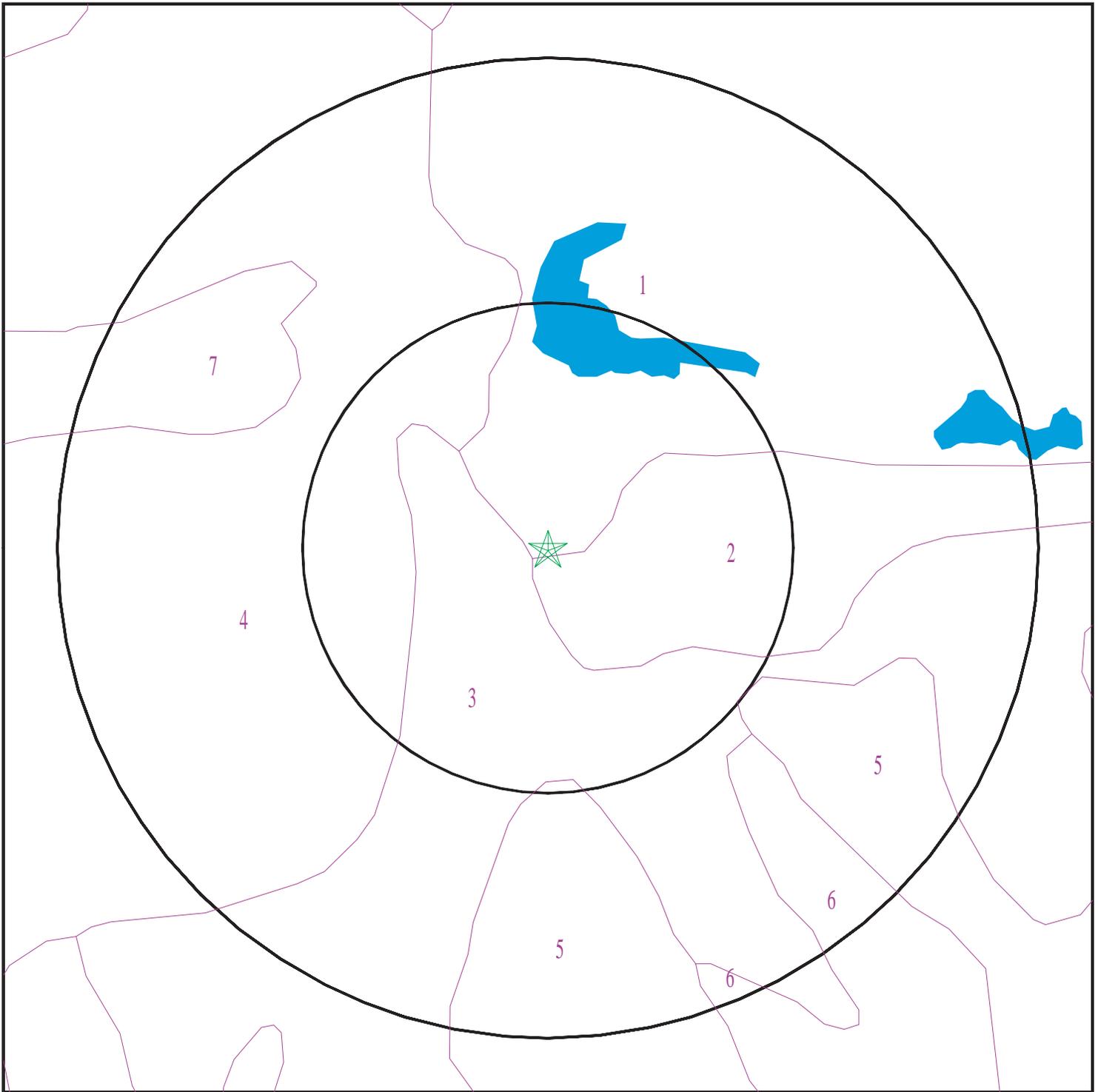
Era:	Cenozoic
System:	Tertiary
Series:	Eocene
Code:	Te (decoded above as Era, System & Series)

#### **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 - 03868975.2r



- ★ Target Property
- SSURGO Soil
- Water



SITE NAME: Bobs Corner  
ADDRESS: Carmel Valley Road and Rancho Santa Fe Lakes Dr  
San Diego CA 92130  
LAT/LONG: 32.9697 / 117.177

CLIENT: Rincon  
CONTACT: Lauren G Kodama  
INQUIRY #: 03868975.2r  
DATE: February 28, 2014 8:30 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: DIABLO

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

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	14 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.6
2	14 inches	31 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.6
3	31 inches	35 inches	weathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

#### Soil Map ID: 2

Soil Component Name: DIABLO

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well 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	14 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.6
2	14 inches	31 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.6
3	31 inches	35 inches	weathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

### Soil Map ID: 3

Soil Component Name: HUERHUERO

Soil Surface Texture: loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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	11 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6 Min: 5.1
2	11 inches	55 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 7.4
3	55 inches	72 inches	stratified sand to sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

### Soil Map ID: 4

Soil Component Name: LAS FLORES

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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	14 inches	loamy fine 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: 42 Min: 14	Max: 6.5 Min: 5.6
2	14 inches	22 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.42 Min: 0.01	Max: 7.3 Min: 6.1
3	22 inches	38 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 7.3 Min: 6.6
4	38 inches	48 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.6
5	48 inches	51 inches	weathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

### Soil Map ID: 5

Soil Component Name: OLIVENHAIN

Soil Surface Texture: cobbly loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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	9 inches	cobbly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6 Min: 5.6
2	9 inches	27 inches	very cobbly clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 0.42 Min: 0.01	Max: 5.5 Min: 5.1
3	27 inches	44 inches	cobbly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 14 Min: 4	Max: 5.5 Min: 5.1

### Soil Map ID: 6

Soil Component Name: LINNE

Soil Surface Texture: clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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	14 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
2	14 inches	37 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
3	37 inches	40 inches	weathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

### Soil Map ID: 7

Soil Component Name: LAS FLORES

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

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	14 inches	loamy fine 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: 42 Min: 14	Max: 6.5 Min: 5.6

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
2	14 inches	22 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 7.3 Min: 6.1
3	22 inches	38 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 7.3 Min: 6.6
4	38 inches	48 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.6
5	48 inches	51 inches	weathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

### 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 0.001 miles
State Database	1.000

### **FEDERAL USGS WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

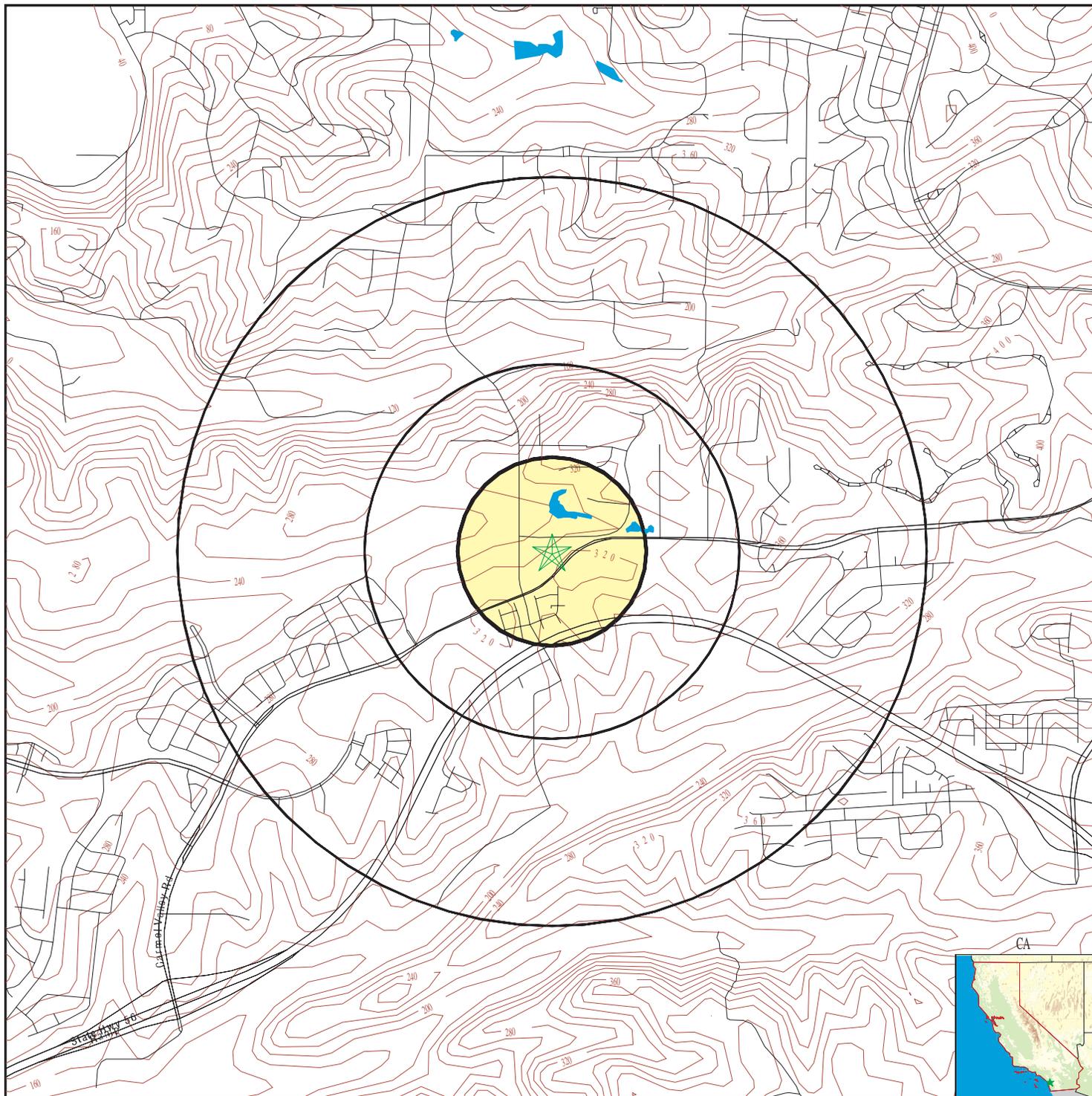
MAP ID	WELL ID	LOCATION FROM TP
<u>                    </u>	<u>                    </u>	<u>                    </u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

## STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
<u>                    </u>	<u>                    </u>	<u>                    </u>
No Wells Found		

# PHYSICAL SETTING SOURCE MAP - 03868975.2r



- 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: Bobs Corner  
 ADDRESS: Carmel Valley Road and Rancho Santa Fe Lakes Dr  
 San Diego CA 92130  
 LAT/LONG: 32.9697 / 117.177

CLIENT: Rincon  
 CONTACT: Lauren G Kodama  
 INQUIRY #: 03868975.2r  
 DATE: February 28, 2014 8:30 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

State Database: CA Radon

### Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92130	28	0

Federal EPA Radon Zone for SAN DIEGO 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 Zip Code: 92130

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.600 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.

### Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

## HYDROLOGIC INFORMATION

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**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.

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> 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 Services

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 Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, 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.

### STATE RECORDS

#### 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.

## OTHER STATE DATABASE INFORMATION

#### California Oil and Gas Well Locations

Source: Department of Conservation

Telephone: 916-323-1779

Oil and Gas well locations in the state.

### RADON

#### State Database: CA Radon

Source: Department of Health Services

Telephone: 916-324-2208

Radon Database for California

#### 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 IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### 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

© 2010 Tele Atlas 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.

## **Appendix 3**

---

*Historical Research Documentation*



**Bobs Corner**

Carmel Valley Road and Rancho Santa Fe Lakes Dr  
San Diego, CA 92130

Inquiry Number: 3868975.8

March 05, 2014

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th Floor  
Shelton, Connecticut 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# EDR Aerial Photo Decade Package

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.

**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.**

***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 2014 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.

**Date EDR Searched Historical Sources:**

Aerial Photography March 05, 2014

**Target Property:**

Carmel Valley Road and Rancho Santa Fe Lakes Dr  
San Diego, CA 92130

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
1953	Aerial Photograph. Scale: 1"=500'	Flight Year: 1953	Park
1963	Aerial Photograph. Scale: 1"=500'	Flight Year: 1963	Cartwright
1974	Aerial Photograph. Scale: 1"=500'	Flight Year: 1974	AMI
1980	Aerial Photograph. Scale: 1"=500'	Flight Year: 1980	USGS
1990	Aerial Photograph. Scale: 1"=500'	Flight Year: 1990	AMI
1994	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1994	EDR
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	EDR
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	EDR
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	EDR
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	EDR



INQUIRY #: 3868975.8

YEAR: 1953

| = 500'





INQUIRY #: 3868975.8

YEAR: 1963

| = 500'





INQUIRY #: 3868975.8

YEAR: 1974

| = 500'





INQUIRY #: 3868975.8

YEAR: 1980

| = 500'





INQUIRY #: 3868975.8

YEAR: 1990

| = 500'





INQUIRY #: 3868975.8

YEAR: 1994

| = 500'





INQUIRY #: 3868975.8

YEAR: 2005

| = 500'



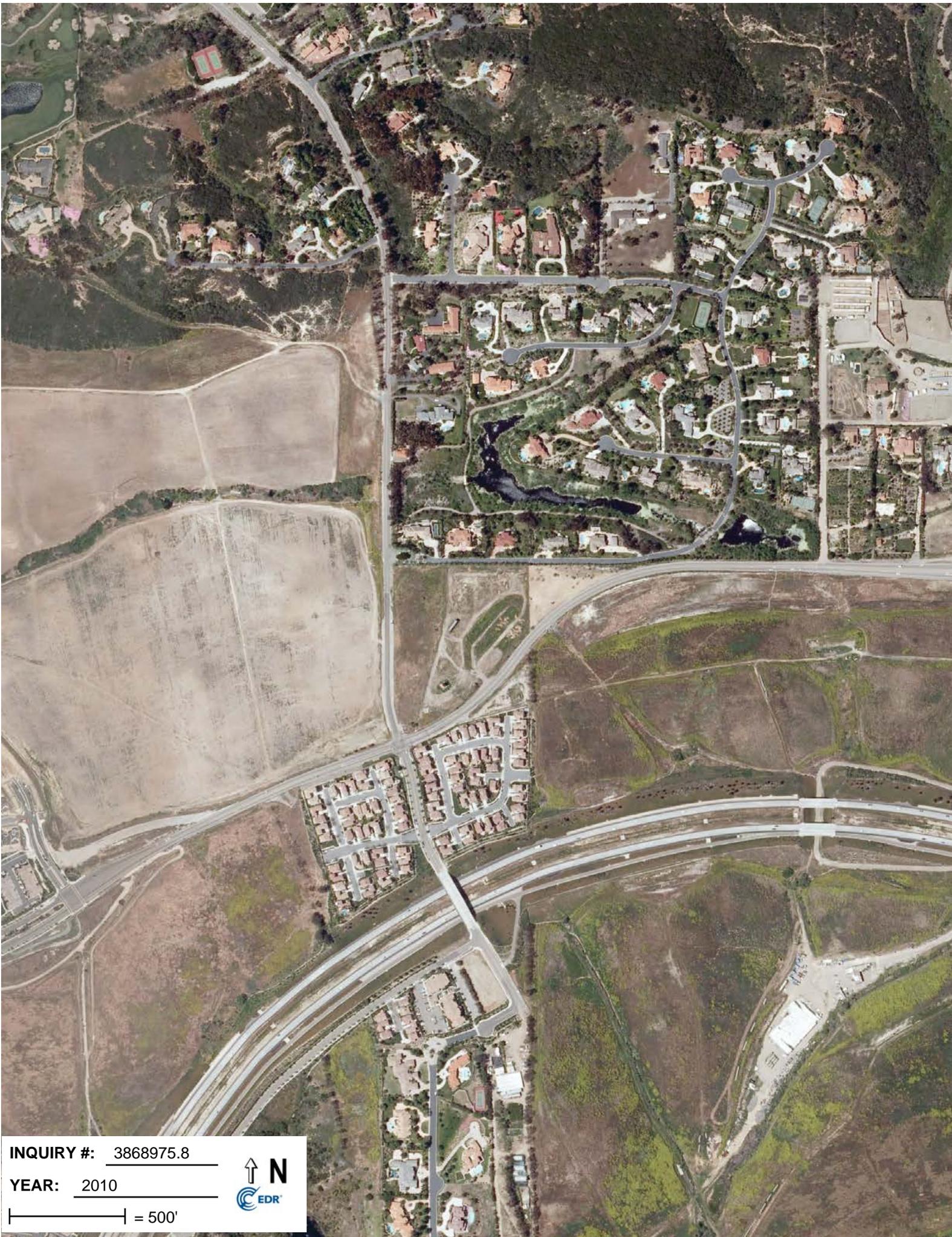


INQUIRY #: 3868975.8

YEAR: 2009

| = 500'





**INQUIRY #:** 3868975.8

**YEAR:** 2010

 = 500'





INQUIRY #: 3868975.8

YEAR: 2012

| = 500'





**Bobs Corner**

Carmel Valley Road and Rancho Santa Fe Lakes Dr  
San Diego, CA 92130

Inquiry Number: 3868975.4

March 03, 2014

# EDR Historical Topographic Map Report



6 Armstrong Road, 4th Floor  
Shelton, Connecticut 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

***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 2014 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.

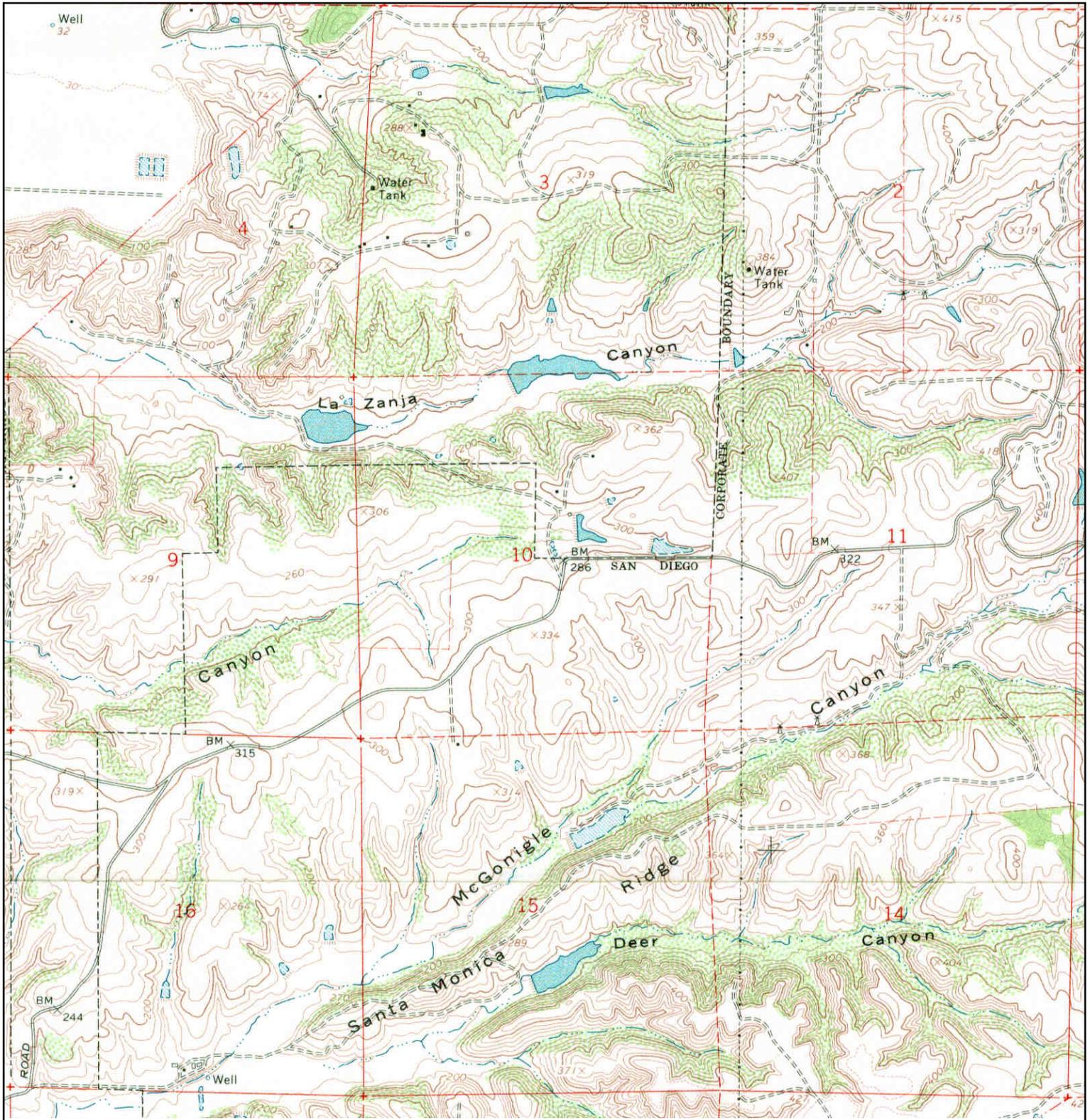
# Historical Topographic Map



Unsurveyed Area on the Topographic Map

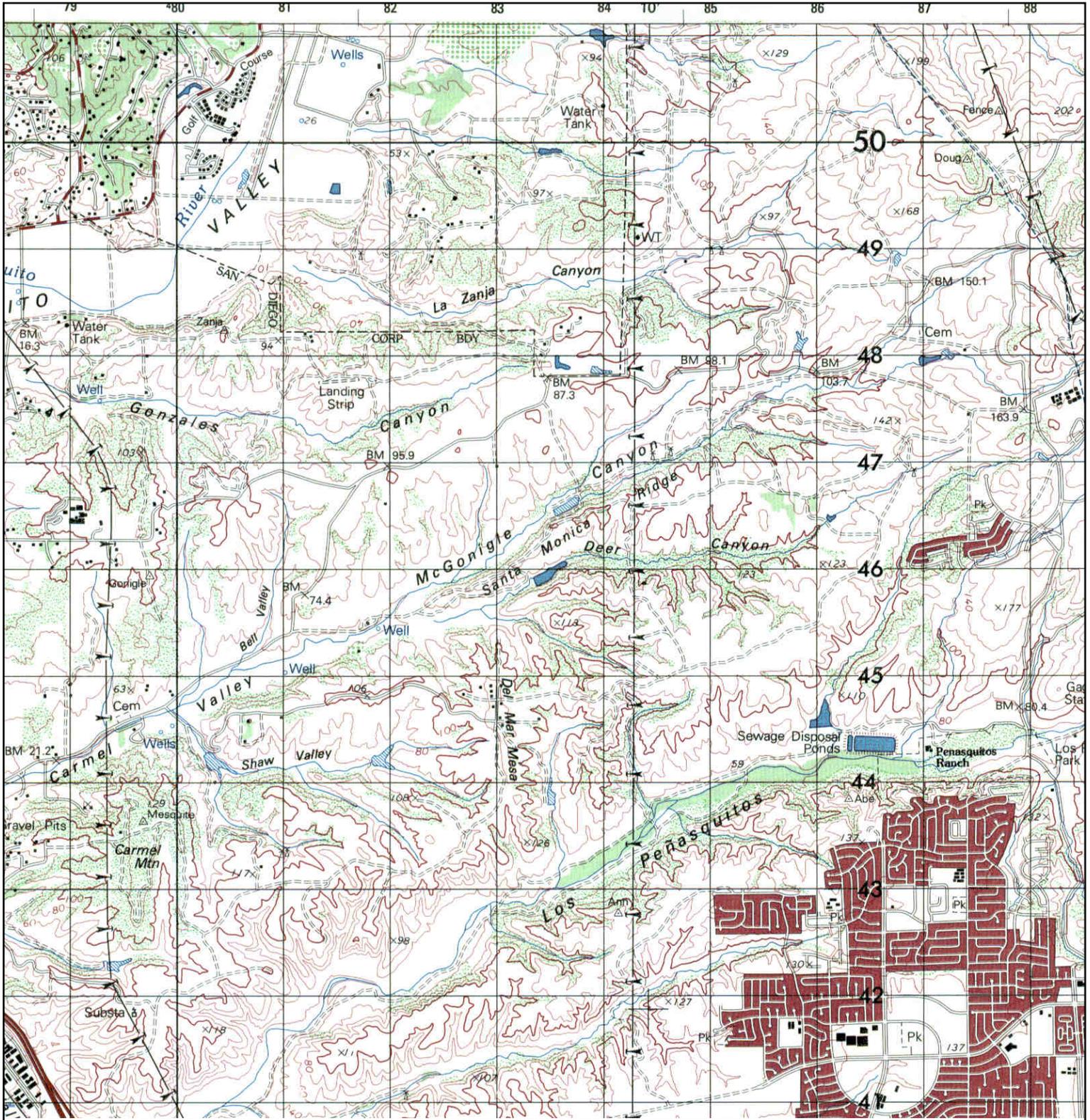
	<b>TARGET QUAD</b>	<b>SITE NAME:</b> Bobs Corner	<b>CLIENT:</b> Rincon
	<b>NAME:</b> SOUTHERN CA SHEET 2	<b>ADDRESS:</b> Carmel Valley Road and Rancho Santa Fe Lakes Dr	<b>CONTACT:</b> Lauren G Kodama
	<b>MAP YEAR:</b> 1904	San Diego, CA 92130	<b>INQUIRY#:</b> 3868975.4
	<b>SERIES:</b> 60	<b>LAT/LONG:</b> 32.9697 / -117.177	<b>RESEARCH DATE:</b> 03/03/2014
	<b>SCALE:</b> 1:250000		

# Historical Topographic Map



	<b>TARGET QUAD</b> NAME: DEL MAR MAP YEAR: 1967	SITE NAME: Bobs Corner ADDRESS: Carmel Valley Road and Rancho Santa Fe Lakes Dr San Diego, CA 92130	CLIENT: Rincon CONTACT: Lauren G Kodama INQUIRY#: 3868975.4 RESEARCH DATE: 03/03/2014
	SERIES: 7.5 SCALE: 1:24000	LAT/LONG: 32.9697 / -117.177	

# Historical Topographic Map



 <b>N</b>	<b>TARGET QUAD</b>	<b>SITE NAME:</b> Bobs Corner	<b>CLIENT:</b> Rincon
	<b>NAME:</b> LA JOLLA	<b>ADDRESS:</b> Carmel Valley Road and Rancho Santa Fe Lakes Dr	<b>CONTACT:</b> Lauren G Kodama
	<b>MAP YEAR:</b> 1975	San Diego, CA 92130	<b>INQUIRY#:</b> 3868975.4
	<b>SERIES:</b> 15	<b>LAT/LONG:</b> 32.9697 / -117.177	<b>RESEARCH DATE:</b> 03/03/2014
	<b>SCALE:</b> 1:50000		

# Historical Topographic Map



<p>N</p> 	<p><b>TARGET QUAD</b></p> <p>NAME: DEL MAR</p> <p>MAP YEAR: 1994</p>	<p>SITE NAME: Bobs Corner</p> <p>ADDRESS: Carmel Valley Road and Rancho Santa Fe Lakes Dr</p> <p>San Diego, CA 92130</p>	<p>CLIENT: Rincon</p> <p>CONTACT: Lauren G Kodama</p> <p>INQUIRY#: 3868975.4</p> <p>RESEARCH DATE: 03/03/2014</p>
	<p>SERIES: 7.5</p> <p>SCALE: 1:24000</p>	<p>LAT/LONG: 32.9697 / -117.177</p>	



**Bobs Corner**

Carmel Valley Road and Rancho Santa Fe Lakes Dr  
San Diego, CA 92130

Inquiry Number: 3868975.3

February 28, 2014

## Certified Sanborn® Map Report



6 Armstrong Road, 4th Floor  
Shelton, Connecticut 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# Certified Sanborn® Map Report

2/28/14

**Site Name:**

Bobs Corner  
Carmel Valley Road and  
San Diego, CA 92130

**Client Name:**

Rincon  
180 North Ashwood Avenue  
Ventura, CA 93003-0000



EDR Inquiry # 3868975.3

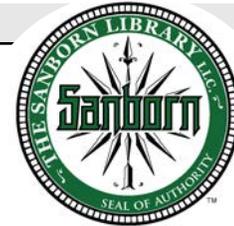
Contact: Lauren G Kodama

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Rincon 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](http://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:

**Site Name:** Bobs Corner  
**Address:** Carmel Valley Road and Rancho Santa Fe  
**City, State, Zip:** San Diego, CA 92130  
**Cross Street:**  
**P.O. #** 14-00183  
**Project:** Bob s Corner  
**Certification #** B039-46FC-A867



Sanborn® Library search results  
Certification # B039-46FC-A867

## 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

Rincon (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 2014 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.

**Bobs Corner**

Carmel Valley Road and Rancho Santa Fe Lakes Dr  
San Diego, CA 92130

Inquiry Number: 3868975.5  
March 03, 2014

# 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 2013 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 1903 through 2013. 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 is licensed to reproduce certain City Directory works. Reproduction of City Directories without permission of the publisher may be a violation of copyright.

Data by

**infoUSA**<sup>®</sup>

Copyright©2008  
All Rights Reserved

### 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>
2013	Cole Information Services	-	-	-	-
2008	Cole Information Services	-	X	X	-
2006	Haines Company, Inc.	-	X	X	X
2000	Haines Company, Inc.	-	X	X	-
1995	PACIFIC BELL WHITE PAGES	-	-	-	-
1992	PACIFIC BELL WHITE PAGES	-	X	X	-
1991	PACIFIC BELL WHITE PAGES	-	X	X	-
1989	Pacific Bell	-	X	X	-
1985	PACIFIC BELL WHITE PAGES	-	X	X	-
1984	R. L. Polk & Co.	-	-	-	-
1980	Pacific Telephone	-	X	X	-
1976	Luskey Brothers & Co., Inc.	-	-	-	-
1975	R. L. Polk & Co.	-	-	-	-
1971	Community Directory Co.	-	-	-	-
1970	John M. Ducey	-	-	-	-

## EXECUTIVE SUMMARY

<u>Year</u>	<u>Source</u>	<u>TP</u>	<u>Adjoining</u>	<u>Text Abstract</u>	<u>Source Image</u>
1966	R. L. Polk & Co.	-	-	-	-
1965	Community Directory Co.	-	-	-	-
1962	Community Directory Co.	-	-	-	-
1961	R. L. Polk & Co.	-	-	-	-
1960	The Pacific Telephone Telegraph Co.	-	-	-	-
1956	R. L. Polk & Co.	-	-	-	-
1955	R. L. Polk & Co.	-	-	-	-
1952	R. L. Polk & Co. of California	-	-	-	-
1950	The Pacific Telephone & Telegraph Co.	-	-	-	-
1948	San Diego Directory Co.	-	-	-	-
1945	San Diego Directory Co.	-	-	-	-
1943	San Diego Directory Co.	-	-	-	-
1940	San Diego Directory Co.	-	-	-	-
1938	San Diego Directory Co.	-	-	-	-
1933	San Diego Directory Co.	-	-	-	-
1927	San Diego Directory Co.	-	-	-	-
1921	San Diego Directory Co. Inc.	-	-	-	-
1907	San Diego Directory Co.	-	-	-	-
1903	San Diego Directory Co.	-	-	-	-

## FINDINGS

### TARGET PROPERTY INFORMATION

#### ADDRESS

Carmel Valley Road and Rancho Santa Fe Lakes Dr  
San Diego, CA 92130

#### FINDINGS DETAIL

Target Property research detail.

# FINDINGS

## ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

### BLACK MOUNTAIN RD

#### 6658 BLACK MOUNTAIN RD

<u>Year</u>	<u>Uses</u>	<u>Source</u>	
2006	a FRYER Don	Haines Company, Inc.	Image pg. A1

#### 6666 BLACK MOUNTAIN RD

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2000	No Current Listing	Haines Company, Inc.
1989	Ashley Phil	Pacific Bell
1985	ASHLEY PHIL	PACIFIC BELL WHITE PAGES
1980	ASHLEY PHIL	Pacific Telephone

#### 6667 BLACK MOUNTAIN RD

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1985	HALL DOUGLAS B	PACIFIC BELL WHITE PAGES

#### 6668 BLACK MOUNTAIN RD

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2000	No Current Listing	Haines Company, Inc.
1985	SANTA FE SUR SIS OTC	PACIFIC BELL WHITE PAGES

#### 6674 BLACK MOUNTAIN RD

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2000	No Current Listing	Haines Company, Inc.
1985	DIEHL JERRY W	PACIFIC BELL WHITE PAGES
1980	DIEHL JERRY W	Pacific Telephone

#### 6858 BLACK MOUNTAIN RD

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1992	Springtime Growers	PACIFIC BELL WHITE PAGES
1991	From San Diego Telephones Call .....	PACIFIC BELL WHITE PAGES
	Springtime Growers	PACIFIC BELL WHITE PAGES
	Sprink Thos & Karen .....	PACIFIC BELL WHITE PAGES
	Sprinkle H Allen & Elizabeth .....	PACIFIC BELL WHITE PAGES
	.....	

## FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Springtime Growers	PACIFIC BELL WHITE PAGES
1989	Springtime Growers	Pacific Bell
1985	SPRINGTIME GROWERS	PACIFIC BELL WHITE PAGES
1980	EVERGREEN NURSERY	Pacific Telephone
	EVERGREEN LANDSCAPE NURSERY	Pacific Telephone

### RANCHO DEL ACACIA WAY

#### 6647 RANCHO DEL ACACIA WAY

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2006	a GAER Eric	Haines Company, Inc. <span style="float: right;">Image pg. A2</span>

#### 6651 RANCHO DEL ACACIA WAY

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2006	a LUND Erik	Haines Company, Inc. <span style="float: right;">Image pg. A2</span>

#### 6655 RANCHO DEL ACACIA WAY

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2008	UNIQUE MARKETING CORP	Cole Information Services
2006	KASSARDJIAN Nora 00 a	Haines Company, Inc. <span style="float: right;">Image pg. A2</span>

#### 6659 RANCHO DEL ACACIA WAY

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2006	a RAZHAS Vygandas	Haines Company, Inc. <span style="float: right;">Image pg. A2</span>

### RANCHO DEL ORO DR

#### 7277 RANCHO DEL ORO DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1989	Houston Ron & Kathy	Pacific Bell

### RANCHO DR

#### 9451 RANCHO DR

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Peters Carol	PACIFIC BELL WHITE PAGES

## FINDINGS

### **RANCHO SANTA FE FARMS DR**

#### **14186 RANCHO SANTA FE FARMS DR**

<b><u>Year</u></b>	<b><u>Uses</u></b>	<b><u>Source</u></b>	
2006	o SANIMehdi	Haines Company, Inc.	Image pg. A3

#### **14249 RANCHO SANTA FE FARMS DR**

<b><u>Year</u></b>	<b><u>Uses</u></b>	<b><u>Source</u></b>	
2006	MANAGEMENT LLC	Haines Company, Inc.	Image pg. A3
	WISDOM Gabriel	Haines Company, Inc.	Image pg. A3
	WOOLLI	Haines Company, Inc.	Image pg. A3
	AMERMONEY	Haines Company, Inc.	Image pg. A3

### **RANCHO SANTA FE LAKES DR**

#### **14044 RANCHO SANTA FE LAKES DR**

<b><u>Year</u></b>	<b><u>Uses</u></b>	<b><u>Source</u></b>	
2006	HOURI Raphael	Haines Company, Inc.	Image pg. A3

### **RANCHO VIEJO DR**

#### **9645 RANCHO VIEJO DR**

<b><u>Year</u></b>	<b><u>Uses</u></b>	<b><u>Source</u></b>	
1985	BLUE FOX FARMS	PACIFIC BELL WHITE PAGES	
	BLUE FOX FARMS	PACIFIC BELL WHITE PAGES	

## FINDINGS

### 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

Carmel Valley Road and  
Rancho Santa Fe Lakes Dr

#### Address Not Identified in Research Source

2013, 2008, 2006, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975,  
1971, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945,  
1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903

### 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.

#### Address Researched

14044 RANCHO SANTA FE  
LAKES DR

14186 RANCHO SANTA FE  
FARMS DR

14249 RANCHO SANTA FE  
FARMS DR

6647 RANCHO DEL ACACIA  
WAY

6651 RANCHO DEL ACACIA  
WAY

6655 RANCHO DEL ACACIA  
WAY

6655 RANCHO DEL ACACIA  
WAY

6658 BLACK MOUNTAIN RD

6659 RANCHO DEL ACACIA  
WAY

6666 BLACK MOUNTAIN RD

6667 BLACK MOUNTAIN RD

#### Address Not Identified in Research Source

2013, 2008, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2006, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2000, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2006, 1995, 1992, 1991, 1984, 1976, 1975, 1971, 1970, 1966, 1965,  
1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933,  
1927, 1921, 1907, 1903

2013, 2008, 2006, 2000, 1995, 1992, 1991, 1989, 1984, 1980, 1976, 1975, 1971,  
1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943,  
1940, 1938, 1933, 1927, 1921, 1907, 1903

## FINDINGS

### **Address Researched**

6668 BLACK MOUNTAIN RD

6674 BLACK MOUNTAIN RD

6858 BLACK MOUNTAIN RD

7277 RANCHO DEL ORO DR

9451 RANCHO DR

9645 RANCHO VIEJO DR

### **Address Not Identified in Research Source**

2013, 2008, 2006, 1995, 1992, 1991, 1989, 1984, 1980, 1976, 1975, 1971, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2006, 1995, 1992, 1991, 1989, 1984, 1976, 1975, 1971, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2006, 2000, 1995, 1984, 1976, 1975, 1971, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2006, 2000, 1995, 1992, 1991, 1985, 1984, 1980, 1976, 1975, 1971, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2006, 2000, 1995, 1992, 1989, 1985, 1984, 1980, 1976, 1975, 1971, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903

2013, 2008, 2006, 2000, 1995, 1992, 1991, 1989, 1984, 1980, 1976, 1975, 1971, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903

## **Source Page Images Appendix**





RANCHO SANTA FE FARMS DR 2006

THE HAINES DIRECTORY

SAN DIEGO NORTH

SAN RANCHO SANTA FE RD

2833 \* CHASE Thomas OO 4
2837 \* CHASTAIN Tom 760-638-9991
\* 2 BUS 42 RES 7 NEW

RANCHO ROBLE RD
92026 ESCONDIDO
WEALTH CODE 6
X RD
MOUNTAIN MEADOW

10138 \* TOMSON John OO 8
\* TOMSON JOHN 760-751-4083 +6
10152 \* FRESTON James OO 4
10157 \* RICHTER James 760-751-4447 7
10170 \* STRAND Penelope OO 4

\* 1 BUS 4 RES 1 NEW
RANCHO ROSE WAY
(04) 92075 OCEANSIDE
WEALTH CODE 5

1454 MCBRIDE Joshua 760-295-5496 4
STAFFERI Chelsea 760-295-5822 4
1492 MARSHALL Nanci 760-295-4388 +6
1493 MCROONEY John 760-295-4032 4
1464 GULLEN Cheryl 760-295-8885 4
1496 LALONDE T 760-295-6224 +6

RANCHO RYAN RD
92028 FALLBROOK
WEALTH CODE 5
X HILLCREST LN

1115 \* HARRISON C 760-401-9621 4
1120 \* CONNOR Dina A 760-403-8521 2
1125 \* MARTINEZ Damaris 760-403-8521 2
1128 \* ROSE Joseph OO 4

RANCHO SANTA FE CT
(02) 92065 RAMONA
WEALTH CODE 6
X SUNDANCE DR

17825 \* SACOCCO Michele A 760-768-6283 +8
X AMARILLO RD
17879 \* HERNANDEZ Ernesto 760-768-2544 4

\* 0 BUS 2 RES 1 NEW
RANCHO SANTA FE CT
(02) 92065 RAMONA
WEALTH CODE 6

19002 \* SINOFF Barry OO 3
19028 \* ALPHE David OO 3
19045 \* HANCOCK Cheryl OO 4
\* 0 BUS 3 RES 0 NEW

RANCHO SANTA FE FARMS RD 92067
RANCHO SANTA FE
P O BOXES ONLY
NO DELIVERY BY ADDRESS

X BLACK MOUNTAIN RD
6401 WITT Jerry 858-796-0911 2
8402 \* FORRESTER T OO 4
8407 SILVANTO Gerald 858-796-8658 1

X NIEMANN RANCH RD
14421 \* MARLEY Michael OO 4
14430 \* MEARS Robert 858-799-8528 2
14460 \* ORTEGA N Xavier OO 4
14471 \* TESTINI Michael OO 4

X RANCHO DIEGUENO RD
14955 \* SHAN Joseph OO 4
14960 \* HERNANDEZ Alma OO 1
15032 \* PETRILLO Ronald 858-795-8242 4

15055 \* LAFLAUR Thomas OO 4
\* 1 BUS 43 RES 4 NEW

RANCHO SANTA FE FARMS RD (06) 92130
SAN DIEGO
15351 GRANADOS David 858-259-8153 +6
\* 0 BUS 1 RES 1 NEW

RANCHO SANTA FE LAKES DR (01) 92067
RANCHO SANTA FE
P O BOXES ONLY
NO DELIVERY BY ADDRESS

RANCHO SANTA FE RD
(04) 92009 CARLSBAD
WEALTH CODE 8.3
X MANCHESTER AVE

208 \* RUMK Werner OO 6
210 \* MCGRORTON John OO 4
218 \* ROBERTSON Edna OO 0
226 \* SCITTE William OO 0

\* 12 BUS 0 RES 2 NEW
RANCHO SANTA FE RD
92024 ENCINITAS
WEALTH CODE 8.3

X MANCHESTER AVE
208 \* RUMK Werner OO 6
210 \* MCGRORTON John OO 4
218 \* ROBERTSON Edna OO 0

X CALIFORNIA ST
1115 \* CARLSON Gary G 760-942-2433
X RANCHO STE FE RD
RA
\* 22 BUS 91 RES 8 NEW

N RANCHO SANTA FE RD
92069 SAN MARCOS
WEALTH CODE 0
100 . . . BUILDING

X WOODWIND DR
335 \* WASHINGTON Rudolf Paul 760-942-9762 1
309 \* OMAHAT Paul 760-942-2160 +6

X 7TH ST
X RANCH VIEW TER
416 \* BOB AND SHARON LITS 760-436-0445 +6

X WHISPER WIND DR
502 \* WOLFE Robert 760-942-2327
504 \* PETERIS Edward OO 0

X 8TH ST
X CHEROKEE ST
272 OWEN Jnr R 760-735-1898
290 \* SHARPER WERNER 760-947-3665 +6

X LA MIRADA DR
\* 33 BUS 3 RES 5 NEW

571 XXXX OO 4
572 \* WATTS Robert OO 4
575 \* FORESTER Fred 760-942-4752 8

X 9TH ST
602 \* PINTIS Christopher 760-940-8697 9
619 \* OBERSTE Mully OO 3
620 \* TRICH Paul OO 4

X LONE JACK RD
920 \* HAN SAN 760-630-1097 +6
900 \* PERKINS Gary James OO 4

X 13TH ST
940 \* DUMPA D 760-633-2858 4
950 \* XXXX OO 4

X MORNING SUN DR
X OLIVE CREST DR
1085 \* WILLIAMS Priscilla OO 4
1089 \* SCHULTZ King J 760-942-1741

X CALIFORNIA ST
1115 \* CARLSON Gary G 760-942-2433
X RANCHO STE FE RD
RA
\* 22 BUS 91 RES 8 NEW

N RANCHO SANTA FE RD
92069 SAN MARCOS
WEALTH CODE 0
100 . . . BUILDING

X WOODWIND DR
335 \* WASHINGTON Rudolf Paul 760-942-9762 1
309 \* OMAHAT Paul 760-942-2160 +6

X 7TH ST
X RANCH VIEW TER
416 \* BOB AND SHARON LITS 760-436-0445 +6

X WHISPER WIND DR
502 \* WOLFE Robert 760-942-2327
504 \* PETERIS Edward OO 0

X 8TH ST
X CHEROKEE ST
272 OWEN Jnr R 760-735-1898
290 \* SHARPER WERNER 760-947-3665 +6

X LA MIRADA DR
\* 33 BUS 3 RES 5 NEW

S RANCHO SANTA FE RD
92024 ENCINITAS
WEALTH CODE 9
X ENCINITAS BLVD
X MANCHESTER AVE
101 \* ENCINITAS UN SC 760-944-4391 +6

102 . . . BUILDING
\* A O EDWARDS E 760-943-2933 4
\* SONS INC OO 3

X LONE JACK RD
920 \* HAN SAN 760-630-1097 +6
900 \* PERKINS Gary James OO 4

X 13TH ST
940 \* DUMPA D 760-633-2858 4
950 \* XXXX OO 4

X MORNING SUN DR
X OLIVE CREST DR
1085 \* WILLIAMS Priscilla OO 4
1089 \* SCHULTZ King J 760-942-1741

X CALIFORNIA ST
1115 \* CARLSON Gary G 760-942-2433
X RANCHO STE FE RD
RA
\* 22 BUS 91 RES 8 NEW

N RANCHO SANTA FE RD
92069 SAN MARCOS
WEALTH CODE 0
100 . . . BUILDING

X WOODWIND DR
335 \* WASHINGTON Rudolf Paul 760-942-9762 1
309 \* OMAHAT Paul 760-942-2160 +6

X 7TH ST
X RANCH VIEW TER
416 \* BOB AND SHARON LITS 760-436-0445 +6

X WHISPER WIND DR
502 \* WOLFE Robert 760-942-2327
504 \* PETERIS Edward OO 0

X 8TH ST
X CHEROKEE ST
272 OWEN Jnr R 760-735-1898
290 \* SHARPER WERNER 760-947-3665 +6

X LA MIRADA DR
\* 33 BUS 3 RES 5 NEW

NOVEM Rem 760-951-0639 4
\* OCA Giovanni 760-951-0208 3
\* PADRON Anibal 760-951-8291 +6

150 . . . BUILDING
\* A O EDWARDS E 760-943-2933 4
\* SONS INC OO 3

X LONE JACK RD
920 \* HAN SAN 760-630-1097 +6
900 \* PERKINS Gary James OO 4

X 13TH ST
940 \* DUMPA D 760-633-2858 4
950 \* XXXX OO 4

X MORNING SUN DR
X OLIVE CREST DR
1085 \* WILLIAMS Priscilla OO 4
1089 \* SCHULTZ King J 760-942-1741

X CALIFORNIA ST
1115 \* CARLSON Gary G 760-942-2433
X RANCHO STE FE RD
RA
\* 22 BUS 91 RES 8 NEW

N RANCHO SANTA FE RD
92069 SAN MARCOS
WEALTH CODE 0
100 . . . BUILDING

X WOODWIND DR
335 \* WASHINGTON Rudolf Paul 760-942-9762 1
309 \* OMAHAT Paul 760-942-2160 +6

X 7TH ST
X RANCH VIEW TER
416 \* BOB AND SHARON LITS 760-436-0445 +6

X WHISPER WIND DR
502 \* WOLFE Robert 760-942-2327
504 \* PETERIS Edward OO 0

X 8TH ST
X CHEROKEE ST
272 OWEN Jnr R 760-735-1898
290 \* SHARPER WERNER 760-947-3665 +6

X LA MIRADA DR
\* 33 BUS 3 RES 5 NEW

\* 339 \* HANCO 760-471-5398 +6
\* URBAN BOARD 760-744-4050 3

X COMMODORE DR
\* 365 \* ARBONIA 760-752-7840 0
\* INTERNATIONAL HOLDING GROUP 760-471-8536 2

\* 371 \* AUTO CLINIC 760-491-8332
\* LACOR WORLD 760-471-4559 9
\* LEI LIONS DOG 760-510-1133 4

X LA ROSA DR
\* 375 \* MANASTOS 760-471-9691 1

X LA COLUSA DR
\* 452 \* CHAVEZ Martin OO 4

X 1ST ST
\* 500 . . . APARTMENTS

X SAN CRUCES AVE
\* 500 . . . APARTMENTS

500 \* VILLANO Vincent 760-599-1396 +6
544 \* LARSON D . . . 760-727-3268 8
560 \* CHAVEZ Jose OO 4

X GRAND AVENUE
\* 201 \* WFC SAN MARCOS 760-744-3472 4

X LA MIRADA DR
\* 309 \* 88 CENT STORE 760-471-4283 3

X SECURITY PL
\* 821 \* ADVANCE AMERICA 760-747-2889 4

\* 641 \* 24 HOUR FITNESS 760-951-7700 1
650 . . . PALOMAR E MBL PK



Project No. 09967-06-01  
November 21, 2014

Mr. Sean Santa Cruz  
Hallmark Communities, Inc.  
740 Lomas Santa Fe Drive  
Solana Beach, California 92075

Subject: SUMMARY OF ADDITIONAL SITE INVESTIGATION  
BOB'S CORNER PROPERTY  
SAN DIEGO, CALIFORNIA

Dear Mr. Santa Cruz:

In accordance with your request, and our proposal dated September 24, 2014, we have conducted an Additional Site Investigation (ASI) at the property referred to as Bob's Corner (the Site) located northeast of the intersection of Rancho Santa Fe Farms Road and Carmel Valley Road in San Diego, California (Figure 1). The purpose of this work was to further evaluate the extent of soil containing pesticides, specifically toxaphene, at concentrations exceeding residential health risk-based screening levels, initially identified during shallow soil sampling by Christian Wheeler in September 2013. The ASI was conducted as part of Hallmark Communities' due diligence process prior to site acquisition for redevelopment with single-family homes.

### **SITE DESCRIPTION AND BACKGROUND**

The Site consists of 4.5-acres of vacant land (with the exception of a cellular tower in the southwestern corner of the Site) that was historically used for agricultural purposes. The approximate site boundaries are shown on Figure 2.

Review of Christian Wheeler's *Report of Limited Pesticide Residue Sampling and Testing*, dated October 7, 2013, indicates that initial assessment of pesticides in soil on the Site consisted of advancing ten borings (P1 through P10 on Figure 2) to a depth of 1-foot, collection of soil samples at depth intervals of 0.5 to 1-foot, and analysis of the soil samples for organochlorine pesticides (OCPs) by Environmental Protection Agency (EPA) Test Method 8081A.

Toxaphene was detected in the soil samples at concentrations up to 1,360 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ). Toxaphene concentrations reported for samples collected from borings P4, P6, P7, P9, and P10 exceeded the residential California Human Health Screening Level (CHHSL) for this compound of 460  $\mu\text{g}/\text{kg}$  (Figure 2). A copy of the Christian Wheeler report is attached.

Subsequent to the Christian Wheeler investigation, Rincon Consultants Inc. (Rincon) prepared a *Phase I Environmental Site Assessment*, dated April 25, 2014, for the Site. The assessment included a summary of the investigation by Christian Wheeler and based on the elevated concentrations of toxaphene identified in shallow soil samples collected from the Site, Rincon recommended conducting additional assessment to further define the extent of toxaphene-impacted soil.

## ADDITIONAL SOIL SAMPLING AND ANALYSIS

On October 7 and November 4, 2014, we retained the services of Hillside Excavating to excavate 15 shallow potholes (B1 through B15) across the Site using a backhoe up to depths of 4 feet (Figure 2). The potholes were located in the vicinity of previous borings by Christian Wheeler and portions of the Site that did not appear to have been previously investigated.

We collected soil samples from each pothole at depths ranging from 0.5 to 4 feet and submitted select samples to an offsite laboratory for analysis of OCPs by EPA Test Method 8081A. Analytical results are summarized below and on attached Table 1. The laboratory analytical reports and chain-of-custody documentation are also attached.

- Chlordane was detected in the 2-foot sample collected from pothole B12 at a concentration of 150 µg/kg.
- Heptachlor epoxide was detected in the 2-foot sample collected from pothole B12 at a concentration of 1.9 µg/kg
- Toxaphene was detected in samples collected from potholes B2 through B4, B7 through B10, B12, and B13 at concentrations up to 1,500 µg/kg.
- Other OCPs were not detected at concentrations above the laboratory reporting limit in the samples analyzed.

## CONCLUSIONS AND RECOMMENDATIONS

As summarized on Table 1, toxaphene concentrations reported for soil samples collected from potholes B3, B4, B7, B8, B10, and B13 exceed the residential CHHSL for this compound. The remaining OCPs detected in the samples do not exceed their respective CHHSLs or a CHHSL has not been established for the compound. As shown on Figure 2, the vertical extent of toxaphene concentrations in soil on the Site that exceed the residential CHHSL ranges from 2 to 4 feet. Based on the data collected to date, we estimate that approximately 9,900 cubic yards of toxaphene-impacted soil is present on the Site that will require mitigation prior to site redevelopment with single-family homes.

It is our opinion that the Site has been sufficiently characterized and that additional assessment is not warranted at this time. We recommend enrolling in the Voluntary Assistance Program at the County of San Diego - Department of Environmental Health (DEH) for oversight of the mitigation of toxaphene-impacted soils on the Site. Based on the estimated volume of impacted soil and the cost associated with offsite disposal of this material, it is our opinion that the most feasible mitigation option would be onsite burial of the impacted soil in deep fills. We recommend preparing a workplan that describes the selected mitigation method and submitting the workplan to the DEH for review and comment.

We appreciate the opportunity to assist you with this project. Please contact the undersigned if you have questions or we can be of additional service.

Sincerely,

**GEOCON INCORPORATED**



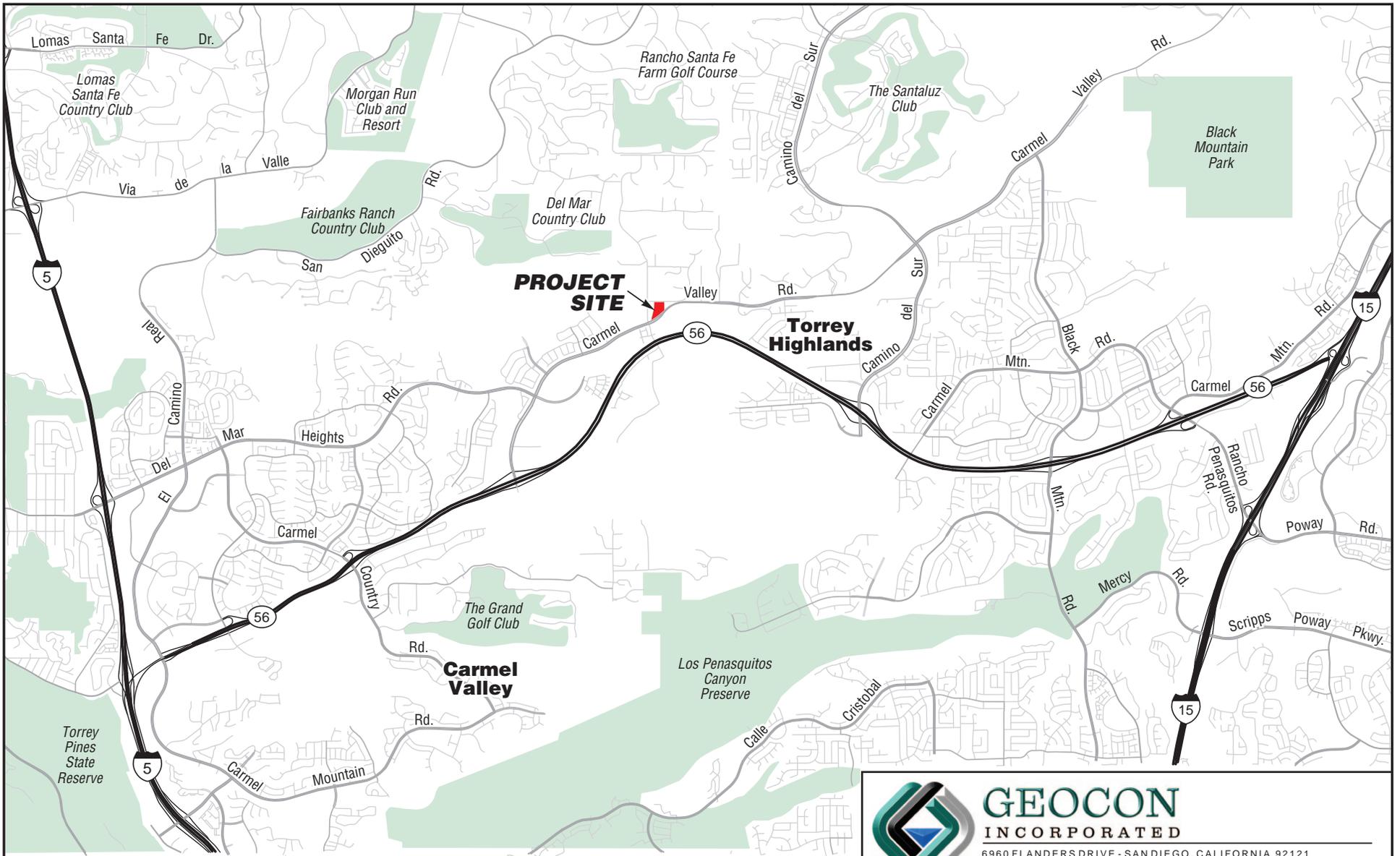
Matthew Lesh, PG  
Senior Project Geologist



Benjamin G. Eastman, PG  
Senior Geologist

(1) Addressee

Attachments: Figure 1 – Vicinity Map  
Figure 2 – Site Plan  
Table 1 – Summary of Soil Analytical Data – Pesticides  
Laboratory Analytical Reports  
Christian Wheeler's *Report of Limited Pesticide Residue Sampling and Testing*, dated  
October 7, 2013



**GEOCON**  
INCORPORATED

6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121  
PHONE 858 558-6900 - FAX 858 558-6159

Bob's Corner Property

San Diego,  
California

**VICINITY MAP**

09967-06-01

November 2014

Figure 1



October 16, 2014

Matt Lesh  
Geocon, Inc.  
6960 Flanders Drive  
San Diego, CA 92121  
Tel: (619) 818-0216  
Fax:(858) 558-8437

ELAP No.: 1838  
CSDLAC No.: 10196  
ORELAP No.: CA300003  
TCEQ No. : T104704502

Re: ATL Work Order Number : 1402994

Client Reference : BOB'S CORNER PROPERTY, 09967-06-01

Enclosed are the results for sample(s) received on October 08, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

### SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-0.5'	1402994-01	Soil	10/07/14 9:55	10/08/14 11:30
B1-2.0'	1402994-02	Soil	10/07/14 10:00	10/08/14 11:30
B2-0.5'	1402994-03	Soil	10/07/14 9:40	10/08/14 11:30
B2-2.0'	1402994-04	Soil	10/07/14 9:45	10/08/14 11:30
B3-0.5'	1402994-05	Soil	10/07/14 9:30	10/08/14 11:30
B3-2.0'	1402994-06	Soil	10/07/14 9:35	10/08/14 11:30
B4-0.5'	1402994-07	Soil	10/07/14 9:20	10/08/14 11:30
B4-2.0'	1402994-08	Soil	10/07/14 9:25	10/08/14 11:30
B5-0.5'	1402994-09	Soil	10/07/14 8:05	10/08/14 11:30
B5-2.0'	1402994-10	Soil	10/07/14 8:10	10/08/14 11:30
B6-0.5'	1402994-11	Soil	10/07/14 9:10	10/08/14 11:30
B6-2.0'	1402994-12	Soil	10/07/14 9:15	10/08/14 11:30
B7-0.5'	1402994-13	Soil	10/07/14 8:45	10/08/14 11:30
B7-2.0'	1402994-14	Soil	10/07/14 8:50	10/08/14 11:30
B8-0.5'	1402994-15	Soil	10/07/14 8:15	10/08/14 11:30
B8-2.0'	1402994-16	Soil	10/07/14 8:20	10/08/14 11:30
B9-0.5'	1402994-17	Soil	10/07/14 8:55	10/08/14 11:30
B9-2.0'	1402994-18	Soil	10/07/14 9:00	10/08/14 11:30
B10-0.5'	1402994-19	Soil	10/07/14 8:30	10/08/14 11:30
B10-2.0'	1402994-20	Soil	10/07/14 8:35	10/08/14 11:30



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B1-0.5'**

**Lab ID: 1402994-01**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:33	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:33	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 19:33	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:33	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 19:33	
Toxaphene	ND	50	1	B4J0346	10/13/2014	10/13/14 19:33	
<i>Surrogate: Decachlorobiphenyl</i>	<i>65.9 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/13/14 19:33</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>53.4 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/13/14 19:33</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
 Report To : Matt Lesh  
 Reported : 10/16/2014

**Client Sample ID B1-2.0'**

**Lab ID: 1402994-02**

## Organochlorine Pesticides by EPA 8081

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:00	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:00	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 18:00	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:00	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 18:00	
Toxaphene	ND	50	1	B4J0346	10/13/2014	10/13/14 18:00	
<i>Surrogate: Decachlorobiphenyl</i>	<i>72.2 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/13/14 18:00</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>65.3 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/13/14 18:00</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
 Report To : Matt Lesh  
 Reported : 10/16/2014

**Client Sample ID B2-0.5'**

**Lab ID: 1402994-03**

## Organochlorine Pesticides by EPA 8081

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:11	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:11	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 18:11	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:11	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:11	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 18:11	
<b>Toxaphene</b>	<b>440</b>	<b>50</b>	<b>1</b>	<b>B4J0346</b>	<b>10/13/2014</b>	<b>10/13/14 18:11</b>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>67.7 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	10/13/14 18:11	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>61.3 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	10/13/14 18:11	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
 Report To : Matt Lesh  
 Reported : 10/16/2014

**Client Sample ID B2-2.0'**

**Lab ID: 1402994-04**

## Organochlorine Pesticides by EPA 8081

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:21	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:21	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 18:21	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:21	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 18:21	
Toxaphene	ND	50	1	B4J0346	10/13/2014	10/13/14 18:21	
<i>Surrogate: Decachlorobiphenyl</i>	<i>65.9 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/13/14 18:21</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>64.6 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/13/14 18:21</i>	



# Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B3-0.5'**

**Lab ID: 1402994-05**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:31	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:31	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 18:31	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:31	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:31	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 18:31	
<b>Toxaphene [2C]</b>	<b>370</b>	<b>50</b>	<b>1</b>	<b>B4J0346</b>	<b>10/13/2014</b>	<b>10/13/14 18:31</b>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>74.2 %</i>	<i>29 - 143</i>		<i>B4J0346</i>	<i>10/13/2014</i>	<i>10/13/14 18:31</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>63.9 %</i>	<i>52 - 114</i>		<i>B4J0346</i>	<i>10/13/2014</i>	<i>10/13/14 18:31</i>	



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B3-2.0'**

**Lab ID: 1402994-06**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:02	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:02	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 19:02	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:02	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:02	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 19:02	
<b>Toxaphene</b>	<b>680</b>	500	10	B4J0346	10/13/2014	10/14/14 12:26	D6
<i>Surrogate: Decachlorobiphenyl</i>	<i>95.4 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/14/14 12:26</i>	D6
<i>Surrogate: Decachlorobiphenyl</i>	<i>73.5 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/13/14 19:02</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>64.1 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/13/14 19:02</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>80.3 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/14/14 12:26</i>	D6



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B4-0.5'**

**Lab ID: 1402994-07**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:13	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:13	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 19:13	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:13	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:13	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 19:13	
<b>Toxaphene</b>	<b>1500</b>	500	10	B4J0346	10/13/2014	10/14/14 18:32	D6
<i>Surrogate: Decachlorobiphenyl</i>	<i>109 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/14/14 18:32</i>	D6
<i>Surrogate: Decachlorobiphenyl</i>	<i>76.3 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/13/14 19:13</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>95.3 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/14/14 18:32</i>	D6
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>67.2 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/13/14 19:13</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
 Report To : Matt Lesh  
 Reported : 10/16/2014

**Client Sample ID B4-2.0'**

**Lab ID: 1402994-08**

## Organochlorine Pesticides by EPA 8081

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:23	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:23	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 19:23	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 19:23	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 19:23	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 19:23	
<b>Toxaphene [2C]</b>	<b>250</b>	50	1	B4J0346	10/13/2014	10/13/14 19:23	
<i>Surrogate: Decachlorobiphenyl</i>	<i>79.1 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/13/14 19:23</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>70.7 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/13/14 19:23</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B5-0.5'**

**Lab ID: 1402994-09**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:42	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:42	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 18:42	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:42	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 18:42	
Toxaphene	ND	50	1	B4J0346	10/13/2014	10/13/14 18:42	
<i>Surrogate: Decachlorobiphenyl</i>	<i>70.9 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/13/14 18:42</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>57.8 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/13/14 18:42</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B5-2.0'**

**Lab ID: 1402994-10**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:52	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:52	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/13/14 18:52	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/13/14 18:52	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/13/14 18:52	
Toxaphene	ND	50	1	B4J0346	10/13/2014	10/13/14 18:52	
<i>Surrogate: Decachlorobiphenyl</i>	<i>66.9 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/13/14 18:52</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>60.1 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/13/14 18:52</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B6-0.5'**

**Lab ID: 1402994-11**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:36	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:36	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 12:36	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:36	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 12:36	
Toxaphene	ND	50	1	B4J0346	10/13/2014	10/14/14 12:36	
<i>Surrogate: Decachlorobiphenyl</i>	<i>74.2 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/14/14 12:36</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>65.3 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/14/14 12:36</i>	



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B6-2.0'**

**Lab ID: 1402994-12**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:49	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:49	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 13:49	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:49	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 13:49	
Toxaphene	ND	50	1	B4J0346	10/13/2014	10/14/14 13:49	
<i>Surrogate: Decachlorobiphenyl</i>	78.9 %	29 - 143		B4J0346	10/13/2014	10/14/14 13:49	
<i>Surrogate: Tetrachloro-m-xylene</i>	73.2 %	52 - 114		B4J0346	10/13/2014	10/14/14 13:49	



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B7-0.5'**

**Lab ID: 1402994-13**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:00	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:00	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 14:00	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:00	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:00	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 14:00	
<b>Toxaphene [2C]</b>	<b>570</b>	50	1	B4J0346	10/13/2014	10/14/14 14:00	
<i>Surrogate: Decachlorobiphenyl</i>	<i>87.4 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/14/14 14:00</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>73.0 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/14/14 14:00</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B7-2.0'**

**Lab ID: 1402994-14**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:47	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:47	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 12:47	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:47	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 12:47	
Toxaphene	ND	50	1	B4J0346	10/13/2014	10/14/14 12:47	
<i>Surrogate: Decachlorobiphenyl</i>	<i>56.3 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/14/14 12:47</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>47.4 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/14/14 12:47</i>	S2



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
Report To : Matt Lesh  
Reported : 10/16/2014

**Client Sample ID B8-0.5'**  
**Lab ID: 1402994-15**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:57	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:57	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 12:57	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 12:57	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 12:57	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 12:57	
<b>Toxaphene</b>	<b>480</b>	50	1	B4J0346	10/13/2014	10/14/14 12:57	
<i>Surrogate: Decachlorobiphenyl</i>	<i>67.5 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/14/14 12:57</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>51.4 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/14/14 12:57</i>	S10



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
 Report To : Matt Lesh  
 Reported : 10/16/2014

**Client Sample ID B8-2.0'**

**Lab ID: 1402994-16**

## Organochlorine Pesticides by EPA 8081

Analyst: BD/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:08	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:08	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 13:08	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:08	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:08	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 13:08	
<b>Toxaphene [2C]</b>	<b>190</b>	<b>50</b>	<b>1</b>	<b>B4J0346</b>	<b>10/13/2014</b>	<b>10/14/14 13:08</b>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>75.2 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	10/14/14 13:08	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>63.8 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	10/14/14 13:08	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B9-0.5'**

**Lab ID: 1402994-17**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:10	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:10	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 14:10	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 14:10	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 14:10	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 14:10	
<b>Toxaphene [2C]</b>	<b>120</b>	<b>50</b>	<b>1</b>	<b>B4J0346</b>	<b>10/13/2014</b>	<b>10/14/14 14:10</b>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>70.6 %</i>	<i>29 - 143</i>		<i>B4J0346</i>	<i>10/13/2014</i>	<i>10/14/14 14:10</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>61.9 %</i>	<i>52 - 114</i>		<i>B4J0346</i>	<i>10/13/2014</i>	<i>10/14/14 14:10</i>	



# Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

**Client Sample ID B9-2.0'**

**Lab ID: 1402994-18**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:18	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:18	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 13:18	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:18	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 13:18	
Toxaphene	ND	50	1	B4J0346	10/13/2014	10/14/14 13:18	
<i>Surrogate: Decachlorobiphenyl</i>	<i>52.2 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/14/14 13:18</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>45.2 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/14/14 13:18</i>	S2



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
 Report To : Matt Lesh  
 Reported : 10/16/2014

**Client Sample ID B10-0.5'**

**Lab ID: 1402994-19**

## Organochlorine Pesticides by EPA 8081

Analyst: BD/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:29	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:29	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 13:29	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:29	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:29	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 13:29	
<b>Toxaphene [2C]</b>	<b>240</b>	<b>50</b>	<b>1</b>	<b>B4J0346</b>	<b>10/13/2014</b>	<b>10/14/14 13:29</b>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>82.3 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	10/14/14 13:29	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>66.2 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	10/14/14 13:29	



# Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
Report To : Matt Lesh  
Reported : 10/16/2014

**Client Sample ID B10-2.0'**

**Lab ID: 1402994-20**

## Organochlorine Pesticides by EPA 8081

Analyst: BD/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:39	
4,4'-DDE	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:39	
4,4'-DDT	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Aldrin	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
alpha-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
alpha-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
beta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Chlordane	ND	8.5	1	B4J0346	10/13/2014	10/14/14 13:39	
delta-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Dieldrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Endosulfan I	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Endosulfan II	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Endosulfan sulfate	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Endrin	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Endrin aldehyde	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Endrin ketone	ND	2.0	1	B4J0346	10/13/2014	10/14/14 13:39	
gamma-BHC	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
gamma-Chlordane	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Heptachlor	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Heptachlor epoxide	ND	1.0	1	B4J0346	10/13/2014	10/14/14 13:39	
Methoxychlor	ND	5.0	1	B4J0346	10/13/2014	10/14/14 13:39	
<b>Toxaphene</b>	<b>710</b>	500	10	B4J0346	10/13/2014	10/14/14 19:13	
<i>Surrogate: Decachlorobiphenyl</i>	<i>87.4 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/14/14 19:13</i>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>70.4 %</i>	<i>29 - 143</i>		B4J0346	10/13/2014	<i>10/14/14 13:39</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>64.3 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/14/14 19:13</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>55.3 %</i>	<i>52 - 114</i>		B4J0346	10/13/2014	<i>10/14/14 13:39</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
 Report To : Matt Lesh  
 Reported : 10/16/2014

## QUALITY CONTROL SECTION

### Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

#### Batch B4J0346 - GCSEMI\_PCB/PEST

##### Blank (B4J0346-BLK1)

Prepared: 10/13/2014 Analyzed: 10/13/2014

4,4'-DDD	ND	2.0				NR			
4,4'-DDD [2C]	ND	2.0				NR			
4,4'-DDE	ND	2.0				NR			
4,4'-DDE [2C]	ND	2.0				NR			
4,4'-DDT	ND	2.0				NR			
4,4'-DDT [2C]	ND	2.0				NR			
Aldrin	ND	1.0				NR			
Aldrin [2C]	ND	1.0				NR			
alpha-BHC	ND	1.0				NR			
alpha-BHC [2C]	ND	1.0				NR			
alpha-Chlordane	ND	1.0				NR			
alpha-Chlordane [2C]	ND	1.0				NR			
beta-BHC	ND	1.0				NR			
beta-BHC [2C]	ND	1.0				NR			
Chlordane	ND	8.5				NR			
Chlordane [2C]	ND	8.5				NR			
delta-BHC	ND	1.0				NR			
delta-BHC [2C]	ND	1.0				NR			
Dieldrin	ND	2.0				NR			
Dieldrin [2C]	ND	2.0				NR			
Endosulfan I	ND	1.0				NR			
Endosulfan I [2C]	ND	1.0				NR			
Endosulfan II	ND	2.0				NR			
Endosulfan II [2C]	ND	2.0				NR			
Endosulfan sulfate	ND	2.0				NR			
Endosulfan Sulfate [2C]	ND	2.0				NR			
Endrin	ND	2.0				NR			
Endrin [2C]	ND	2.0				NR			
Endrin aldehyde	ND	2.0				NR			
Endrin aldehyde [2C]	ND	2.0				NR			
Endrin ketone	ND	2.0				NR			
Endrin ketone [2C]	ND	2.0				NR			
gamma-BHC	ND	1.0				NR			
gamma-BHC [2C]	ND	1.0				NR			
gamma-Chlordane	ND	1.0				NR			
gamma-Chlordane [2C]	ND	1.0				NR			
Heptachlor	ND	1.0				NR			
Heptachlor [2C]	ND	1.0				NR			
Heptachlor epoxide	ND	1.0				NR			



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

### Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	------------	--------------	-------

**Batch B4J0346 - GCSEMI\_PCB/PEST (continued)**

**Blank (B4J0346-BLK1) - Continued**

Prepared: 10/13/2014 Analyzed: 10/13/2014

Heptachlor epoxide [2C]	ND	1.0			NR				
Methoxychlor	ND	5.0			NR				
Methoxychlor [2C]	ND	5.0			NR				
Toxaphene	ND	50			NR				
Toxaphene [2C]	ND	50			NR				
<hr/>									
<i>Surrogate: Decachlorobiphenyl</i>	<i>11.14</i>		<i>16.6667</i>		<i>66.8</i>	<i>29 - 143</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>11.67</i>		<i>16.6667</i>		<i>70.0</i>	<i>29 - 143</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>11.59</i>		<i>16.6667</i>		<i>69.5</i>	<i>52 - 114</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>12.57</i>		<i>16.6667</i>		<i>75.4</i>	<i>52 - 114</i>			

**LCS (B4J0346-BS1)**

Prepared: 10/13/2014 Analyzed: 10/13/2014

4,4'-DDT	10.8825	2.0	16.6667		65.3	50 - 110			
4,4'-DDT [2C]	8.92750	2.0	16.6667		53.6	50 - 110			
Aldrin	12.7235	1.0	16.6667		76.3	59 - 101			
Aldrin [2C]	13.3052	1.0	16.6667		79.8	59 - 101			
Dieldrin	13.2765	2.0	16.6667		79.7	55 - 101			
Dieldrin [2C]	13.4368	2.0	16.6667		80.6	55 - 101			
Endrin	13.5887	2.0	16.6667		81.5	49 - 109			
Endrin [2C]	13.3505	2.0	16.6667		80.1	49 - 109			
gamma-BHC	12.4340	1.0	16.6667		74.6	62 - 102			
gamma-BHC [2C]	12.7088	1.0	16.6667		76.3	62 - 102			
Heptachlor	13.4653	1.0	16.6667		80.8	50 - 123			
Heptachlor [2C]	12.8372	1.0	16.6667		77.0	50 - 123			
<hr/>									
<i>Surrogate: Decachlorobiphenyl</i>	<i>11.50</i>		<i>16.6667</i>		<i>69.0</i>	<i>29 - 143</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>11.46</i>		<i>16.6667</i>		<i>68.7</i>	<i>29 - 143</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>11.84</i>		<i>16.6667</i>		<i>71.0</i>	<i>52 - 114</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>12.12</i>		<i>16.6667</i>		<i>72.7</i>	<i>52 - 114</i>			

**Matrix Spike (B4J0346-MS1)**

Source: 1402994-09

Prepared: 10/13/2014 Analyzed: 10/13/2014

4,4'-DDT	9.57367	2.0	16.6667	ND	57.4	32 - 161			
4,4'-DDT [2C]	8.71450	2.0	16.6667	ND	52.3	32 - 161			
Aldrin	11.4628	1.0	16.6667	ND	68.8	51 - 137			
Aldrin [2C]	12.2397	1.0	16.6667	ND	73.4	51 - 137			
Dieldrin	11.2810	2.0	16.6667	ND	67.7	39 - 150			
Dieldrin [2C]	12.2397	2.0	16.6667	ND	73.4	39 - 150			
Endrin	12.1243	2.0	16.6667	ND	72.7	41 - 160			
Endrin [2C]	12.6055	2.0	16.6667	ND	75.6	41 - 160			
gamma-BHC	11.2823	1.0	16.6667	ND	67.7	63 - 126			
gamma-BHC [2C]	11.9333	1.0	16.6667	ND	71.6	63 - 126			
Heptachlor	11.9863	1.0	16.6667	ND	71.9	32 - 177			
Heptachlor [2C]	11.9065	1.0	16.6667	ND	71.4	32 - 177			



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06

Report To : Matt Lesh

Reported : 10/16/2014

### Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

**Batch B4J0346 - GCSEMI\_PCB/PEST (continued)**

**Matrix Spike (B4J0346-MS1) - Continued**

**Source: 1402994-09**

Prepared: 10/13/2014 Analyzed: 10/13/2014

<i>Surrogate: Decachlorobiphenyl</i>	10.03		16.6667		60.2	29 - 143			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	10.08		16.6667		60.5	29 - 143			
<i>Surrogate: Tetrachloro-m-xylene</i>	9.898		16.6667		59.4	52 - 114			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	11.02		16.6667		66.1	52 - 114			

**Matrix Spike Dup (B4J0346-MSD1)**

**Source: 1402994-09**

Prepared: 10/13/2014 Analyzed: 10/13/2014

4,4'-DDT	9.39550	2.0	16.6667	ND	56.4	32 - 161	1.88	20	
4,4'-DDT [2C]	8.39833	2.0	16.6667	ND	50.4	32 - 161	3.70	20	
Aldrin	11.2155	1.0	16.6667	ND	67.3	51 - 137	2.18	20	
Aldrin [2C]	11.8682	1.0	16.6667	ND	71.2	51 - 137	3.08	20	
Dieldrin	11.0197	2.0	16.6667	ND	66.1	39 - 150	2.34	20	
Dieldrin [2C]	11.7355	2.0	16.6667	ND	70.4	39 - 150	4.21	20	
Endrin	11.8678	2.0	16.6667	ND	71.2	41 - 160	2.14	20	
Endrin [2C]	12.0950	2.0	16.6667	ND	72.6	41 - 160	4.13	20	
gamma-BHC	11.2075	1.0	16.6667	ND	67.2	63 - 126	0.665	20	
gamma-BHC [2C]	11.6398	1.0	16.6667	ND	69.8	63 - 126	2.49	20	
Heptachlor	11.8700	1.0	16.6667	ND	71.2	32 - 177	0.975	20	
Heptachlor [2C]	11.3900	1.0	16.6667	ND	68.3	32 - 177	4.43	20	
<i>Surrogate: Decachlorobiphenyl</i>	9.998		16.6667		60.0	29 - 143			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	9.819		16.6667		58.9	29 - 143			
<i>Surrogate: Tetrachloro-m-xylene</i>	9.866		16.6667		59.2	52 - 114			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	10.75		16.6667		64.5	52 - 114			



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : BOB'S CORNER PROPERTY, 09967-06  
Report To : Matt Lesh  
Reported : 10/16/2014

### Notes and Definitions

S2	Surrogate recovery was below laboratory acceptance limit. Reextraction and/or reanalysis confirms low recovery caused by matrix effects.
S10	Surrogate recovery outside of laboratory acceptance limit possibly due to matrix interference.
D6	Sample required dilution due to high concentration of target analyte.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

#### Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Instruction: Complete all shaded areas.

Company: **Geocon Consultants, Inc.** Address: 6960 Flanders Drive, San Diego, CA 92121  
 Tel: (858) 558-6100 Fax: (858) 558-8437  
 State: CA Zip: 92121  
 SEND REPORT TO:  Same as SEND REPORT TO

Attn: **MATT LESH** Email: **LESHE@GEOCONINC.COM**  
 Company: **Geocon Consultants, Inc.**  
 Address: 6960 Flanders Drive, San Diego, CA 92121

Project Name: **BOB'S CORNER PROPERTY** Quote No: **09967-06-01**  
 Project No.: **09967-06-01** PO #: **S. KEEFER**  
 Sampler: **S. KEEFER**

ITEM	Lab No.	Sample ID / Location	Sample Description	Special Instructions/Comments:	
				Date	Time
1	1402994-01	B6-0.5'		10/7/14	9:10
2	-11	B6-2.0'			9:15
3	-13	B7-0.5'			8:45
4	-14	B7-2.0'			8:50
5	-15	B8-0.5'			8:15
6	-15	B8-2.0'			8:20
7	-17	B9-0.5'			8:55
8	-18	B9-2.0'			9:00
9	-19	B10-0.5'			8:30
10	-20	B10-2.0'			8:35

Encircle or Write Requested Analysis	Encircle Sample Matrix		Container	REMARKS
	(SOIL) SEDIMENT / SLUDGE	AQUEOUS / LAYERED - OIL		
8260 / 624 (Volatiles)				
8015 (GRO)				
8015 (DRO)				
8270 (Semi-volatiles)				
8081 (Organochlorine Pesticides)				
6010 / 7000 (Title 22 Metals)				
TO-15				
SOILS / WIFE / FILTER				
WATER - DRINKING / GROUND				
WATER - STORM / WASTE				
AQUEOUS / LAYERED - OIL				
TAT				
Type: 1=Tube, 2=Can, 3=Filter, 4=Pin, 5=Bag, 6=Tedlar, 7=Canister				
Material: 1=Glass, 2=Plastic, 3=Metal				
Preservative: 1=HCl, 2=HNO3, 3=H2SO4, 4=HC, 5=Zn (Ac2), 6=NaOH, 7=NA2S2O3				

Method of Transport:  ATL  OnTrac  
 Condition:  Y  N  N  
 1. CHILLED  5. # OF SAMPLES MATCH COC   
 2. HEADSPACE (VOLUME)  6. PRESERVED   
 3. CONTAINER INTACT  7. COOLER TEMP. (deg. C): **5.5**  
 4. SEALED  8.

QA/QC:  Routine  Legal  RWQCB  Level IV

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Submitter Print Name: **SEAN KEEFER** Signature: *[Signature]*  
 Date: **10/8/14** Time: **11:30**

Received by: **Edward Rodriguez** Signature: *[Signature]*  
 Date: **10/8/14** Time: **11:30**

Received by: **Edward Rodriguez** Signature: *[Signature]*  
 Date: **10/8/14** Time: **16:10**

Received by: **Edward Rodriguez** Signature: *[Signature]*  
 Date: **10/8/14** Time: **16:10**

November 12, 2014

Matt Lesh  
Geocon, Inc.  
6960 Flanders Drive  
San Diego, CA 92121  
Tel: (619) 818-0216  
Fax:(858) 558-8437

ELAP No.: 1838  
CSDLAC No.: 10196  
ORELAP No.: CA300003  
TCEQ No. : T104704502

Re: ATL Work Order Number : 1403359

Client Reference : Bob's Corner Property, 09967-06-01

Enclosed are the results for sample(s) received on November 04, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/12/2014

### SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B11-3.0'	1403359-01	Soil	11/04/14 8:10	11/04/14 14:42
B12-0.5'	1403359-03	Soil	11/04/14 8:25	11/04/14 14:42
B12-2.0'	1403359-04	Soil	11/04/14 8:30	11/04/14 14:42
B13-0.5'	1403359-07	Soil	11/04/14 8:55	11/04/14 14:42
B13-2.0'	1403359-08	Soil	11/04/14 9:00	11/04/14 14:42
B14-3.0'	1403359-11	Soil	11/04/14 9:30	11/04/14 14:42
B15-0.5'	1403359-13	Soil	11/04/14 9:50	11/04/14 14:42
B15-2.0'	1403359-14	Soil	11/04/14 9:55	11/04/14 14:42



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/12/2014

**Client Sample ID B11-3.0'**  
**Lab ID: 1403359-01**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:49	
4,4'-DDE	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:49	
4,4'-DDT	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Aldrin	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
alpha-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
alpha-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
beta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Chlordane	ND	8.5	1	B4K0116	11/06/2014	11/07/14 10:49	
delta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Dieldrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Endosulfan I	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Endosulfan II	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Endosulfan sulfate	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Endrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Endrin aldehyde	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Endrin ketone	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:49	
gamma-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
gamma-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Heptachlor	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Heptachlor epoxide	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Methoxychlor	ND	5.0	1	B4K0116	11/06/2014	11/07/14 10:49	
Toxaphene	ND	50	1	B4K0116	11/06/2014	11/07/14 10:49	
<hr/>							
<i>Surrogate: Decachlorobiphenyl</i>	<i>89.9 %</i>	<i>29 - 143</i>		B4K0116	11/06/2014	<i>11/07/14 10:49</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>77.0 %</i>	<i>52 - 114</i>		B4K0116	11/06/2014	<i>11/07/14 10:49</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/12/2014

**Client Sample ID B12-0.5'**

**Lab ID: 1403359-03**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:31	
4,4'-DDE	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:31	
4,4'-DDT	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Aldrin	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
alpha-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
alpha-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
beta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Chlordane	ND	8.5	1	B4K0116	11/06/2014	11/07/14 11:31	
delta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Dieldrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Endosulfan I	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Endosulfan II	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Endosulfan sulfate	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Endrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Endrin aldehyde	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Endrin ketone	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:31	
gamma-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
gamma-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Heptachlor	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Heptachlor epoxide	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:31	
Methoxychlor	ND	5.0	1	B4K0116	11/06/2014	11/07/14 11:31	
<b>Toxaphene [2C]</b>	<b>270</b>	<b>50</b>	<b>1</b>	<b>B4K0116</b>	<b>11/06/2014</b>	<b>11/07/14 11:31</b>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>77.8 %</i>	<i>29 - 143</i>		<i>B4K0116</i>	<i>11/06/2014</i>	<i>11/07/14 11:31</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>64.4 %</i>	<i>52 - 114</i>		<i>B4K0116</i>	<i>11/06/2014</i>	<i>11/07/14 11:31</i>	



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/12/2014

**Client Sample ID B12-2.0'**

**Lab ID: 1403359-04**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:41	
4,4'-DDE	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:41	
4,4'-DDT	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Aldrin	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
alpha-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
<b>alpha-Chlordane</b>	<b>20</b>	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
beta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
<b>Chlordane [2C]</b>	<b>150</b>	8.5	1	B4K0116	11/06/2014	11/07/14 11:41	
delta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Dieldrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Endosulfan I	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Endosulfan II	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Endosulfan sulfate	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Endrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Endrin aldehyde	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Endrin ketone	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:41	
gamma-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
<b>gamma-Chlordane</b>	<b>11</b>	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Heptachlor	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
<b>Heptachlor epoxide</b>	<b>1.9</b>	1.0	1	B4K0116	11/06/2014	11/07/14 11:41	
Methoxychlor	ND	5.0	1	B4K0116	11/06/2014	11/07/14 11:41	
<b>Toxaphene [2C]</b>	<b>160</b>	50	1	B4K0116	11/06/2014	11/07/14 11:41	
<i>Surrogate: Decachlorobiphenyl</i>	<i>68.0 %</i>	<i>29 - 143</i>		B4K0116	11/06/2014	<i>11/07/14 11:41</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>52.3 %</i>	<i>52 - 114</i>		B4K0116	11/06/2014	<i>11/07/14 11:41</i>	



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/12/2014

**Client Sample ID B13-0.5'**  
**Lab ID: 1403359-07**

### Organochlorine Pesticides by EPA 8081

Analyst: BD/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:20	
4,4'-DDE	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:20	
4,4'-DDT	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Aldrin	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
alpha-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
alpha-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
beta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Chlordane	ND	8.5	1	B4K0116	11/06/2014	11/07/14 11:20	
delta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Dieldrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Endosulfan I	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Endosulfan II	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Endosulfan sulfate	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Endrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Endrin aldehyde	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Endrin ketone	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:20	
gamma-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
gamma-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Heptachlor	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Heptachlor epoxide	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:20	
Methoxychlor	ND	5.0	1	B4K0116	11/06/2014	11/07/14 11:20	
<b>Toxaphene [2C]</b>	<b>220</b>	<b>50</b>	<b>1</b>	<b>B4K0116</b>	<b>11/06/2014</b>	<b>11/07/14 11:20</b>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>74.8 %</i>	<i>29 - 143</i>		<i>B4K0116</i>	<i>11/06/2014</i>	<i>11/07/14 11:20</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>70.7 %</i>	<i>52 - 114</i>		<i>B4K0116</i>	<i>11/06/2014</i>	<i>11/07/14 11:20</i>	



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/12/2014

**Client Sample ID B13-2.0'**

**Lab ID: 1403359-08**

### Organochlorine Pesticides by EPA 8081

Analyst: BD/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:52	
4,4'-DDE	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:52	
4,4'-DDT	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Aldrin	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
alpha-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
alpha-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
beta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Chlordane	ND	8.5	1	B4K0116	11/06/2014	11/07/14 11:52	
delta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Dieldrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Endosulfan I	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Endosulfan II	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Endosulfan sulfate	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Endrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Endrin aldehyde	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Endrin ketone	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:52	
gamma-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
gamma-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Heptachlor	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Heptachlor epoxide	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:52	
Methoxychlor	ND	5.0	1	B4K0116	11/06/2014	11/07/14 11:52	
<b>Toxaphene</b>	<b>620</b>	250	5	B4K0116	11/06/2014	11/07/14 13:37	
<i>Surrogate: Decachlorobiphenyl</i>	<i>82.9 %</i>	<i>29 - 143</i>		B4K0116	11/06/2014	<i>11/07/14 13:37</i>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>75.7 %</i>	<i>29 - 143</i>		B4K0116	11/06/2014	<i>11/07/14 11:52</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>66.4 %</i>	<i>52 - 114</i>		B4K0116	11/06/2014	<i>11/07/14 13:37</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>63.5 %</i>	<i>52 - 114</i>		B4K0116	11/06/2014	<i>11/07/14 11:52</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/12/2014

**Client Sample ID B14-3.0'**

**Lab ID: 1403359-11**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:59	
4,4'-DDE	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:59	
4,4'-DDT	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Aldrin	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
alpha-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
alpha-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
beta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Chlordane	ND	8.5	1	B4K0116	11/06/2014	11/07/14 10:59	
delta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Dieldrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Endosulfan I	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Endosulfan II	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Endosulfan sulfate	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Endrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Endrin aldehyde	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Endrin ketone	ND	2.0	1	B4K0116	11/06/2014	11/07/14 10:59	
gamma-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
gamma-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Heptachlor	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Heptachlor epoxide	ND	1.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Methoxychlor	ND	5.0	1	B4K0116	11/06/2014	11/07/14 10:59	
Toxaphene	ND	50	1	B4K0116	11/06/2014	11/07/14 10:59	
<i>Surrogate: Decachlorobiphenyl</i>	<i>92.4 %</i>	<i>29 - 143</i>		B4K0116	11/06/2014	<i>11/07/14 10:59</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>80.2 %</i>	<i>52 - 114</i>		B4K0116	11/06/2014	<i>11/07/14 10:59</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
 Report To : Matt Lesh  
 Reported : 11/12/2014

**Client Sample ID B15-0.5'**  
**Lab ID: 1403359-13**

## Organochlorine Pesticides by EPA 8081

Analyst: BD/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0116	11/06/2014	11/07/14 12:02	
4,4'-DDE	ND	2.0	1	B4K0116	11/06/2014	11/07/14 12:02	
4,4'-DDT	ND	2.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Aldrin	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
alpha-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
alpha-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
beta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Chlordane	ND	8.5	1	B4K0116	11/06/2014	11/07/14 12:02	
delta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Dieldrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Endosulfan I	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Endosulfan II	ND	2.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Endosulfan sulfate	ND	2.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Endrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Endrin aldehyde	ND	2.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Endrin ketone	ND	2.0	1	B4K0116	11/06/2014	11/07/14 12:02	
gamma-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
gamma-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Heptachlor	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Heptachlor epoxide	ND	1.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Methoxychlor	ND	5.0	1	B4K0116	11/06/2014	11/07/14 12:02	
Toxaphene	ND	50	1	B4K0116	11/06/2014	11/07/14 12:02	
<i>Surrogate: Decachlorobiphenyl</i>	<i>68.3 %</i>	<i>29 - 143</i>		B4K0116	11/06/2014	<i>11/07/14 12:02</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>61.5 %</i>	<i>52 - 114</i>		B4K0116	11/06/2014	<i>11/07/14 12:02</i>	



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
 Report To : Matt Lesh  
 Reported : 11/12/2014

**Client Sample ID B15-2.0'**

**Lab ID: 1403359-14**

## Organochlorine Pesticides by EPA 8081

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:10	
4,4'-DDE	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:10	
4,4'-DDT	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Aldrin	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
alpha-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
alpha-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
beta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Chlordane	ND	8.5	1	B4K0116	11/06/2014	11/07/14 11:10	
delta-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Dieldrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Endosulfan I	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Endosulfan II	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Endosulfan sulfate	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Endrin	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Endrin aldehyde	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Endrin ketone	ND	2.0	1	B4K0116	11/06/2014	11/07/14 11:10	
gamma-BHC	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
gamma-Chlordane	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Heptachlor	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Heptachlor epoxide	ND	1.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Methoxychlor	ND	5.0	1	B4K0116	11/06/2014	11/07/14 11:10	
Toxaphene	ND	50	1	B4K0116	11/06/2014	11/07/14 11:10	
<i>Surrogate: Decachlorobiphenyl</i>	<i>90.6 %</i>	<i>29 - 143</i>		B4K0116	11/06/2014	<i>11/07/14 11:10</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>78.6 %</i>	<i>52 - 114</i>		B4K0116	11/06/2014	<i>11/07/14 11:10</i>	



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/12/2014

### QUALITY CONTROL SECTION

#### Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

#### Batch B4K0116 - GCSEMI\_PCB/PEST

##### Blank (B4K0116-BLK1)

Prepared: 11/6/2014 Analyzed: 11/6/2014

4,4'-DDD	ND	2.0			NR				
4,4'-DDD [2C]	ND	2.0			NR				
4,4'-DDE	ND	2.0			NR				
4,4'-DDE [2C]	ND	2.0			NR				
4,4'-DDT	ND	2.0			NR				
4,4'-DDT [2C]	ND	2.0			NR				
Aldrin	ND	1.0			NR				
Aldrin [2C]	ND	1.0			NR				
alpha-BHC	ND	1.0			NR				
alpha-BHC [2C]	ND	1.0			NR				
alpha-Chlordane	ND	1.0			NR				
alpha-Chlordane [2C]	ND	1.0			NR				
beta-BHC	ND	1.0			NR				
beta-BHC [2C]	ND	1.0			NR				
Chlordane	ND	8.5			NR				
Chlordane [2C]	ND	8.5			NR				
delta-BHC	ND	1.0			NR				
delta-BHC [2C]	ND	1.0			NR				
Dieldrin	ND	2.0			NR				
Dieldrin [2C]	ND	2.0			NR				
Endosulfan I	ND	1.0			NR				
Endosulfan I [2C]	ND	1.0			NR				
Endosulfan II	ND	2.0			NR				
Endosulfan II [2C]	ND	2.0			NR				
Endosulfan sulfate	ND	2.0			NR				
Endosulfan Sulfate [2C]	ND	2.0			NR				
Endrin	ND	2.0			NR				
Endrin [2C]	ND	2.0			NR				
Endrin aldehyde	ND	2.0			NR				
Endrin aldehyde [2C]	ND	2.0			NR				
Endrin ketone	ND	2.0			NR				
Endrin ketone [2C]	ND	2.0			NR				
gamma-BHC	ND	1.0			NR				
gamma-BHC [2C]	ND	1.0			NR				
gamma-Chlordane	ND	1.0			NR				
gamma-Chlordane [2C]	ND	1.0			NR				
Heptachlor	ND	1.0			NR				
Heptachlor [2C]	ND	1.0			NR				
Heptachlor epoxide	ND	1.0			NR				



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/12/2014

### Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	-----	--------------	-------

#### Batch B4K0116 - GCSEMI\_PCB/PEST (continued)

##### Blank (B4K0116-BLK1) - Continued

Prepared: 11/6/2014 Analyzed: 11/6/2014

Heptachlor epoxide [2C]	ND	1.0			NR				
Methoxychlor	ND	5.0			NR				
Methoxychlor [2C]	ND	5.0			NR				
Toxaphene	ND	50			NR				
Toxaphene [2C]	ND	50			NR				
<i>Surrogate: Decachlorobiphenyl</i>	<i>14.25</i>		<i>16.6667</i>		<i>85.5</i>	<i>29 - 143</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>14.54</i>		<i>16.6667</i>		<i>87.2</i>	<i>29 - 143</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>13.37</i>		<i>16.6667</i>		<i>80.2</i>	<i>52 - 114</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>13.59</i>		<i>16.6667</i>		<i>81.5</i>	<i>52 - 114</i>			

##### LCS (B4K0116-BS1)

Prepared: 11/6/2014 Analyzed: 11/6/2014

4,4'-DDT	12.2030	2.0	16.6667		73.2	50 - 110			
4,4'-DDT [2C]	13.8705	2.0	16.6667		83.2	50 - 110			
Aldrin	14.6140	1.0	16.6667		87.7	59 - 101			
Aldrin [2C]	14.9070	1.0	16.6667		89.4	59 - 101			
Dieldrin	14.5875	2.0	16.6667		87.5	55 - 101			
Dieldrin [2C]	14.6360	2.0	16.6667		87.8	55 - 101			
Endrin	15.0998	2.0	16.6667		90.6	49 - 109			
Endrin [2C]	14.8622	2.0	16.6667		89.2	49 - 109			
gamma-BHC	13.9517	1.0	16.6667		83.7	62 - 102			
gamma-BHC [2C]	14.4835	1.0	16.6667		86.9	62 - 102			
Heptachlor	14.6827	1.0	16.6667		88.1	50 - 123			
Heptachlor [2C]	14.8640	1.0	16.6667		89.2	50 - 123			
<i>Surrogate: Decachlorobiphenyl</i>	<i>15.64</i>		<i>16.6667</i>		<i>93.8</i>	<i>29 - 143</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>15.98</i>		<i>16.6667</i>		<i>95.9</i>	<i>29 - 143</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>14.22</i>		<i>16.6667</i>		<i>85.3</i>	<i>52 - 114</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>14.30</i>		<i>16.6667</i>		<i>85.8</i>	<i>52 - 114</i>			

##### Matrix Spike (B4K0116-MS1)

Source: 1403356-02

Prepared: 11/6/2014 Analyzed: 11/6/2014

4,4'-DDT	7.83433	2.0	16.6667	ND	47.0	32 - 161			
4,4'-DDT [2C]	11.9098	2.0	16.6667	ND	71.5	32 - 161			
Aldrin	12.3850	1.0	16.6667	ND	74.3	51 - 137			
Aldrin [2C]	12.3963	1.0	16.6667	ND	74.4	51 - 137			
Dieldrin	12.7825	2.0	16.6667	ND	76.7	39 - 150			
Dieldrin [2C]	10.9428	2.0	16.6667	ND	65.7	39 - 150			
Endrin	13.3222	2.0	16.6667	ND	79.9	41 - 160			
Endrin [2C]	13.5145	2.0	16.6667	ND	81.1	41 - 160			
gamma-BHC	11.8223	1.0	16.6667	ND	70.9	63 - 126			
gamma-BHC [2C]	12.3237	1.0	16.6667	ND	73.9	63 - 126			
Heptachlor	19.6383	1.0	16.6667	9.76483	59.2	32 - 177			
Heptachlor [2C]	19.1965	1.0	16.6667	9.32950	59.2	32 - 177			



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/12/2014

### Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	-----	--------------	-------

**Batch B4K0116 - GCSEMI\_PCB/PEST (continued)**

**Matrix Spike (B4K0116-MS1) - Continued**

**Source: 1403356-02**

Prepared: 11/6/2014 Analyzed: 11/6/2014

<i>Surrogate: Decachlorobiphenyl</i>	12.69		16.6667		76.2	29 - 143			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	12.57		16.6667		75.4	29 - 143			
<i>Surrogate: Tetrachloro-m-xylene</i>	11.02		16.6667		66.1	52 - 114			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	11.27		16.6667		67.6	52 - 114			

**Matrix Spike Dup (B4K0116-MSD1)**

**Source: 1403356-02**

Prepared: 11/6/2014 Analyzed: 11/6/2014

4,4'-DDT	8.41300	2.0	16.6667	ND	50.5	32 - 161	7.12	20	
4,4'-DDT [2C]	12.7073	2.0	16.6667	ND	76.2	32 - 161	6.48	20	
Aldrin	12.7117	1.0	16.6667	ND	76.3	51 - 137	2.60	20	
Aldrin [2C]	12.6972	1.0	16.6667	ND	76.2	51 - 137	2.40	20	
Dieldrin	13.1265	2.0	16.6667	ND	78.8	39 - 150	2.66	20	
Dieldrin [2C]	10.9612	2.0	16.6667	ND	65.8	39 - 150	0.167	20	
Endrin	13.7220	2.0	16.6667	ND	82.3	41 - 160	2.96	20	
Endrin [2C]	14.4172	2.0	16.6667	ND	86.5	41 - 160	6.46	20	
gamma-BHC	12.3630	1.0	16.6667	ND	74.2	63 - 126	4.47	20	
gamma-BHC [2C]	12.6342	1.0	16.6667	ND	75.8	63 - 126	2.49	20	
Heptachlor	20.5268	1.0	16.6667	9.76483	64.6	32 - 177	4.42	20	
Heptachlor [2C]	19.9290	1.0	16.6667	9.32950	63.6	32 - 177	3.74	20	

<i>Surrogate: Decachlorobiphenyl</i>	13.15		16.6667		78.9	29 - 143			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	12.06		16.6667		72.4	29 - 143			
<i>Surrogate: Tetrachloro-m-xylene</i>	11.28		16.6667		67.7	52 - 114			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	11.48		16.6667		68.9	52 - 114			



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/12/2014

### Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

**CHAIN OF CUSTODY RECORD**

Page 1 of 2

Instruction: Complete all shaded areas.

For Laboratory Use Only

ATCCOC Ver: 2013071

Method of Transport		Sample Conditions Upon Receipt			
<input type="checkbox"/> Client	<input checked="" type="checkbox"/> Mail	Condition	Y	N	Y
<input type="checkbox"/> FedEx	<input type="checkbox"/> OnTrac	1. CHILLED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> GSO	<input type="checkbox"/> Other:	2. HEADSPACE (VOA) N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>		3. CONTAINER INTACT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		4. SEALED	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		5. # OF SAMPLES MATCH COC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		6. PRESERVED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		7. COOLER TEMP. deg. C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Company: **Geocon Consultants, Inc.** Address: 6960 Flanders Drive, San Diego, CA 92121  
 State: CA Zip: 92121  
 Tel: (858) 558-6100 Fax: (858) 558-8437  
 SEND INVOICE TO:  same as SEND REPORT TO

Attn: **MATT LESH** Email: **leshegeoconinc.com**  
 Company: **Geocon Consultants, Inc.**  
 Address: 6960 Flanders Drive, San Diego, CA 92121  
 State: CA Zip: 92121

Project Name: **BOB'S CORNER PROPERTY** Quote No: **P**  
 Project No.: **09967-06-01** PO #:   
 Sampler: **S. KEEFER**

ITEM	Lab No.	Sample ID / Location	Sample Description	Date	Time
1	1403359-1	B11-3.0'		11/4/14	8:10
2	-2	B11-4.0'			8:15
3	-3	B12-0.5'			8:25
4	-4	B12-2.0'			8:30
5	-5	B12-3.0'			8:35
6	-6	B12-4.0'			8:45
7	-7	B13-0.5'			8:55
8	-8	B13-2.0'			9:00
9	-9	B13-3.0'			9:05
10	-10	B13-4.0'			9:10

Encircle or Write Requested Analysis		Encircle Sample Matrix		Container		REMARKS
8260 / 624 (Volatiles)	8015 (GRO)	8015 (DRO)	8270 (Semi-volatiles)	8081 (Organochlorine Pesticides)	6010 / 7000 (Title 22 Metals)	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Signature: **Sean Keffer** Submitter Print Name: **Sean Keffer**  
 Date: **11/4/14** Time: **1412**  
 Date: **11/4/14** Time: **1653**

Received by: **Sean Keffer** Date: **11/4/14** Time: **1412**  
 Received by: **Edna Rodriguez** Date: **11/4/14** Time: **1653**  
 Received by: **Edna Rodriguez** Date: **11/4/14** Time: **1653**

**CHAIN OF CUSTODY RECORD**  
 Page 2 of 2

For Laboratory Use Only  
 ATLCC Ver: 20130711

Method of Transport  
 ATL  
 FedEx  
 UPS  
 Other:

Sample Conditions Upon Receipt  
 Condition: Y N  
 1. CHILLED    
 2. HEADSPACE (VDA)    
 3. CONTAINER INTACT    
 4. SEALED

5. # OF SAMPLES MATCH COC    
 6. PRESERVED    
 7. COOLER TEMP. Log C: 1, 2, 3

Company: **Geocon Consultants, Inc.**  
 Address: 6960 Flanders Drive  
 City: San Diego State: CA Zip: 92121  
 Tel: (858) 558-6100 Fax: (858) 558-8437

SEND REPORT TO:  same as SEND REPORT TO

Attn: **MATT LESH** Email: **leshegeoconinc.com**  
 Company: **Geocon Consultants, Inc.**  
 Address: 6960 Flanders Drive  
 City: San Diego State: CA Zip: 92121

Project Name: **Bob's Corner Property**  
 Project No.: **09967-06-01**  
 Sampler: **S. KEEFER**

ITEM	Lab No.	Sample ID / Location	Date	Time
1	1403359-11	B14-3.0'	11/4/14	9:30
2	-12	B14-4.0'		9:35
3	-13	B15-0.5'		9:50
4	-14	B15-2.0'		9:55
5	-15	B15-3.0'		10:05
6	-16	B15-4.0'		10:20

Encircle or Write Requested Analysis		Encircle Sample Matrix		Container	QA/QC
8260 / 624 (Vials)		SOIL / SEDIMENT / SLUDGE		5-ltr; 6-Trdler; 7 = Canister; 8-10L; 11-15L; 16-20L	<input type="checkbox"/> Routine <input type="checkbox"/> Caltran <input type="checkbox"/> Legal <input type="checkbox"/> RWQCB <input type="checkbox"/> Level IV
8015 (GRO)					
8015 (DRO)					
8270 (Semi-volatiles)					
8082 (PCBs)					
6010 / 7000 (Title 22 Metals)					
TO-15					

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Signature: **Sean Keffer** Date: **11/4/14**  
 Submitter Print Name: **Sean Keffer** Signature: **Edward Rodriguez** Date: **11/4/14**  
 Time: **16:53** Time: **16:53**

Special Instructions/Comments:  
 H = HOLD  
 7. Samples will be disposed of after 14 calendar days after receipt of samples.  
 8. Hard copy reports will be disposed of after 45 calendar days from report date.  
 9. Storage and Report Fees: Complimentary storage for forty-five (45) calendar days from receipt of samples; \$3/sample/month if extended storage is requested.  
 - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; \$20/sample/week if extended storage is requested.  
 - Hard copy and regenerated reports/EDDs: \$17.50 per hard copy report requested; \$50.00 per regenerated/reforms' ed report; \$35 per reprocessed EDD.  
 10. Rush TCI/STLC samples: add 2 days to analysis TAT for extraction on procedure.  
 11. Unanalyzed samples will incur a disposal fee of \$7 per sample.



November 13, 2014

Matt Lesh  
Geocon, Inc.  
6960 Flanders Drive  
San Diego, CA 92121  
Tel: (619) 818-0216  
Fax:(858) 558-8437

ELAP No.: 1838  
CSDLAC No.: 10196  
ORELAP No.: CA300003  
TCEQ No. : T104704502

Re: ATL Work Order Number : 1403359

Client Reference : Bob's Corner Property, 09967-06-01

Enclosed are the results for sample(s) received on November 04, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read "Eddie Rodriguez", followed by the initials "ER" in a smaller, less distinct script.

Eddie Rodriguez  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

*3275 Walnut Avenue, Signal Hill, CA 90755 • Tel: 562-989-4045 • Fax: 562-989-4040*  
*www.atlglobal.com*



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/13/2014

### SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B13-3.0'	1403359-09	Soil	11/04/14 9:05	11/04/14 14:42



# Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/13/2014

**Client Sample ID B13-3.0'**

**Lab ID: 1403359-09**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0267	11/13/2014	11/13/14 14:40	
4,4'-DDE	ND	2.0	1	B4K0267	11/13/2014	11/13/14 14:40	
4,4'-DDT	ND	2.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Aldrin	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
alpha-BHC	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
alpha-Chlordane	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
beta-BHC	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Chlordane	ND	8.5	1	B4K0267	11/13/2014	11/13/14 14:40	
delta-BHC	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Dieldrin	ND	2.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Endosulfan I	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Endosulfan II	ND	2.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Endosulfan sulfate	ND	2.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Endrin	ND	2.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Endrin aldehyde	ND	2.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Endrin ketone	ND	2.0	1	B4K0267	11/13/2014	11/13/14 14:40	
gamma-BHC	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
gamma-Chlordane	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Heptachlor	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Heptachlor epoxide	ND	1.0	1	B4K0267	11/13/2014	11/13/14 14:40	
Methoxychlor	ND	5.0	1	B4K0267	11/13/2014	11/13/14 14:40	
<b>Toxaphene [2C]</b>	<b>950</b>	250	5	B4K0267	11/13/2014	11/13/14 14:59	
<i>Surrogate: Decachlorobiphenyl</i>	<i>90.5 %</i>	<i>29 - 143</i>		B4K0267	11/13/2014	<i>11/13/14 14:40</i>	
<i>Surrogate: Decachlorobiphenyl</i>	<i>124 %</i>	<i>29 - 143</i>		B4K0267	11/13/2014	<i>11/13/14 14:59</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>71.2 %</i>	<i>52 - 114</i>		B4K0267	11/13/2014	<i>11/13/14 14:40</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>74.7 %</i>	<i>52 - 114</i>		B4K0267	11/13/2014	<i>11/13/14 14:59</i>	



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/13/2014

### QUALITY CONTROL SECTION

#### Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

#### Batch B4K0267 - GCSEMI\_PCB/PEST

##### Blank (B4K0267-BLK1)

Prepared: 11/13/2014 Analyzed: 11/13/2014

4,4'-DDD	ND	2.0			NR				
4,4'-DDD [2C]	ND	2.0			NR				
4,4'-DDE	ND	2.0			NR				
4,4'-DDE [2C]	ND	2.0			NR				
4,4'-DDT	ND	2.0			NR				
4,4'-DDT [2C]	ND	2.0			NR				
Aldrin	ND	1.0			NR				
Aldrin [2C]	ND	1.0			NR				
alpha-BHC	ND	1.0			NR				
alpha-BHC [2C]	ND	1.0			NR				
alpha-Chlordane	ND	1.0			NR				
alpha-Chlordane [2C]	ND	1.0			NR				
beta-BHC	ND	1.0			NR				
beta-BHC [2C]	ND	1.0			NR				
Chlordane	ND	8.5			NR				
Chlordane [2C]	ND	8.5			NR				
delta-BHC	ND	1.0			NR				
delta-BHC [2C]	ND	1.0			NR				
Dieldrin	ND	2.0			NR				
Dieldrin [2C]	ND	2.0			NR				
Endosulfan I	ND	1.0			NR				
Endosulfan I [2C]	ND	1.0			NR				
Endosulfan II	ND	2.0			NR				
Endosulfan II [2C]	ND	2.0			NR				
Endosulfan sulfate	ND	2.0			NR				
Endosulfan Sulfate [2C]	ND	2.0			NR				
Endrin	ND	2.0			NR				
Endrin [2C]	ND	2.0			NR				
Endrin aldehyde	ND	2.0			NR				
Endrin aldehyde [2C]	ND	2.0			NR				
Endrin ketone	ND	2.0			NR				
Endrin ketone [2C]	ND	2.0			NR				
gamma-BHC	ND	1.0			NR				
gamma-BHC [2C]	ND	1.0			NR				
gamma-Chlordane	ND	1.0			NR				
gamma-Chlordane [2C]	ND	1.0			NR				
Heptachlor	ND	1.0			NR				
Heptachlor [2C]	ND	1.0			NR				
Heptachlor epoxide	ND	1.0			NR				



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/13/2014

### Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	------------	--------------	-------

**Batch B4K0267 - GCSEMI\_PCB/PEST (continued)**

**Blank (B4K0267-BLK1) - Continued**

Prepared: 11/13/2014 Analyzed: 11/13/2014

Heptachlor epoxide [2C]	ND	1.0			NR				
Methoxychlor	ND	5.0			NR				
Methoxychlor [2C]	ND	5.0			NR				
Toxaphene	ND	50			NR				
Toxaphene [2C]	ND	50			NR				
<i>Surrogate: Decachlorobiphenyl</i>	<i>14.16</i>		<i>16.6667</i>		<i>84.9</i>	<i>29 - 143</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>14.79</i>		<i>16.6667</i>		<i>88.7</i>	<i>29 - 143</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>13.01</i>		<i>16.6667</i>		<i>78.1</i>	<i>52 - 114</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>13.48</i>		<i>16.6667</i>		<i>80.9</i>	<i>52 - 114</i>			

**LCS (B4K0267-BS1)**

Prepared: 11/13/2014 Analyzed: 11/13/2014

4,4'-DDT	11.2172	2.0	16.6667		67.3	50 - 110			
4,4'-DDT [2C]	10.3088	2.0	16.6667		61.9	50 - 110			
Aldrin	13.9970	1.0	16.6667		84.0	59 - 101			
Aldrin [2C]	14.5127	1.0	16.6667		87.1	59 - 101			
Dieldrin	14.1172	2.0	16.6667		84.7	55 - 101			
Dieldrin [2C]	14.2707	2.0	16.6667		85.6	55 - 101			
Endrin	14.4277	2.0	16.6667		86.6	49 - 109			
Endrin [2C]	14.4783	2.0	16.6667		86.9	49 - 109			
gamma-BHC	13.2170	1.0	16.6667		79.3	62 - 102			
gamma-BHC [2C]	13.6882	1.0	16.6667		82.1	62 - 102			
Heptachlor	14.6243	1.0	16.6667		87.7	50 - 123			
Heptachlor [2C]	13.6742	1.0	16.6667		82.0	50 - 123			
<i>Surrogate: Decachlorobiphenyl</i>	<i>14.75</i>		<i>16.6667</i>		<i>88.5</i>	<i>29 - 143</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>14.84</i>		<i>16.6667</i>		<i>89.0</i>	<i>29 - 143</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>13.01</i>		<i>16.6667</i>		<i>78.1</i>	<i>52 - 114</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>13.28</i>		<i>16.6667</i>		<i>79.7</i>	<i>52 - 114</i>			

**Matrix Spike (B4K0267-MS1)**

Source: 1403425-86

Prepared: 11/13/2014 Analyzed: 11/13/2014

4,4'-DDT	10.4500	2.0	16.6667	ND	62.7	32 - 161			
4,4'-DDT [2C]	12.8073	2.0	16.6667	ND	76.8	32 - 161			
Aldrin	15.5772	1.0	16.6667	ND	93.5	51 - 137			
Aldrin [2C]	15.7133	1.0	16.6667	ND	94.3	51 - 137			
Dieldrin	15.3643	2.0	16.6667	ND	92.2	39 - 150			
Dieldrin [2C]	14.1947	2.0	16.6667	ND	85.2	39 - 150			
Endrin	16.1107	2.0	16.6667	ND	96.7	41 - 160			
Endrin [2C]	15.7595	2.0	16.6667	ND	94.6	41 - 160			
gamma-BHC	14.7855	1.0	16.6667	ND	88.7	63 - 126			
gamma-BHC [2C]	15.2902	1.0	16.6667	ND	91.7	63 - 126			
Heptachlor	16.5603	1.0	16.6667	ND	99.4	32 - 177			
Heptachlor [2C]	15.1897	1.0	16.6667	ND	91.1	32 - 177			



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/13/2014

### Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

**Batch B4K0267 - GCSEMI\_PCB/PEST (continued)**

**Matrix Spike (B4K0267-MS1) - Continued**

**Source: 1403425-86**

Prepared: 11/13/2014 Analyzed: 11/13/2014

<i>Surrogate: Decachlorobiphenyl</i>	15.33		16.6667		92.0	29 - 143		
<i>Surrogate: Decachlorobiphenyl [2C]</i>	15.28		16.6667		91.7	29 - 143		
<i>Surrogate: Tetrachloro-m-xylene</i>	13.11		16.6667		78.7	52 - 114		
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	13.38		16.6667		80.3	52 - 114		

**Matrix Spike Dup (B4K0267-MSD1)**

**Source: 1403425-86**

Prepared: 11/13/2014 Analyzed: 11/13/2014

4,4'-DDT	10.3522	2.0	16.6667	ND	62.1	32 - 161	0.941	20
4,4'-DDT [2C]	12.8267	2.0	16.6667	ND	77.0	32 - 161	0.151	20
Aldrin	15.4538	1.0	16.6667	ND	92.7	51 - 137	0.795	20
Aldrin [2C]	15.5913	1.0	16.6667	ND	93.5	51 - 137	0.779	20
Dieldrin	15.1735	2.0	16.6667	ND	91.0	39 - 150	1.25	20
Dieldrin [2C]	14.0288	2.0	16.6667	ND	84.2	39 - 150	1.18	20
Endrin	15.9383	2.0	16.6667	ND	95.6	41 - 160	1.08	20
Endrin [2C]	15.5903	2.0	16.6667	ND	93.5	41 - 160	1.08	20
gamma-BHC	14.7150	1.0	16.6667	ND	88.3	63 - 126	0.478	20
gamma-BHC [2C]	15.2508	1.0	16.6667	ND	91.5	63 - 126	0.258	20
Heptachlor	16.5993	1.0	16.6667	ND	99.6	32 - 177	0.235	20
Heptachlor [2C]	15.1988	1.0	16.6667	ND	91.2	32 - 177	0.0603	20
<i>Surrogate: Decachlorobiphenyl</i>	14.91		16.6667		89.5	29 - 143		
<i>Surrogate: Decachlorobiphenyl [2C]</i>	13.92		16.6667		83.5	29 - 143		
<i>Surrogate: Tetrachloro-m-xylene</i>	13.12		16.6667		78.7	52 - 114		
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	13.39		16.6667		80.3	52 - 114		



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/13/2014

### Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

November 17, 2014

Matt Lesh  
Geocon, Inc.  
6960 Flanders Drive  
San Diego, CA 92121  
Tel: (619) 818-0216  
Fax:(858) 558-8437

ELAP No.: 1838  
CSDLAC No.: 10196  
ORELAP No.: CA300003  
TCEQ No. : T104704502

Re: ATL Work Order Number : 1403359

Client Reference : Bob's Corner Property, 09967-06-01

Enclosed are the results for sample(s) received on November 04, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/17/2014

### SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B13-4.0'	1403359-10	Soil	11/04/14 9:10	11/04/14 14:42



# Certificate of Analysis

Geocon, Inc.  
 6960 Flanders Drive  
 San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/17/2014

**Client Sample ID B13-4.0'**

**Lab ID: 1403359-10**

**Organochlorine Pesticides by EPA 8081**

**Analyst: BD/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B4K0384	11/15/2014	11/15/14 20:04	
4,4'-DDE	ND	2.0	1	B4K0384	11/15/2014	11/15/14 20:04	
4,4'-DDT	ND	2.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Aldrin	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
alpha-BHC	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
alpha-Chlordane	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
beta-BHC	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Chlordane	ND	8.5	1	B4K0384	11/15/2014	11/15/14 20:04	
delta-BHC	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Dieldrin	ND	2.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Endosulfan I	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Endosulfan II	ND	2.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Endosulfan sulfate	ND	2.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Endrin	ND	2.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Endrin aldehyde	ND	2.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Endrin ketone	ND	2.0	1	B4K0384	11/15/2014	11/15/14 20:04	
gamma-BHC	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
gamma-Chlordane	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Heptachlor	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Heptachlor epoxide	ND	1.0	1	B4K0384	11/15/2014	11/15/14 20:04	
Methoxychlor	ND	5.0	1	B4K0384	11/15/2014	11/15/14 20:04	
<b>Toxaphene [2C]</b>	<b>87</b>	50	1	B4K0384	11/15/2014	11/15/14 20:04	
<i>Surrogate: Decachlorobiphenyl</i>	<i>100 %</i>	<i>29 - 143</i>		B4K0384	11/15/2014	<i>11/15/14 20:04</i>	
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>84.2 %</i>	<i>52 - 114</i>		B4K0384	11/15/2014	<i>11/15/14 20:04</i>	



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/17/2014

### QUALITY CONTROL SECTION

#### Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

**Batch B4K0384 - GCSEMI\_PCB/PEST\_S**

**Blank (B4K0384-BLK1)**

Prepared: 11/15/2014 Analyzed: 11/15/2014

4,4'-DDD	ND	2.0			NR				
4,4'-DDD [2C]	ND	2.0			NR				
4,4'-DDE	ND	2.0			NR				
4,4'-DDE [2C]	ND	2.0			NR				
4,4'-DDT	ND	2.0			NR				
4,4'-DDT [2C]	ND	2.0			NR				
Aldrin	ND	1.0			NR				
Aldrin [2C]	ND	1.0			NR				
alpha-BHC	ND	1.0			NR				
alpha-BHC [2C]	ND	1.0			NR				
alpha-Chlordane	ND	1.0			NR				
alpha-Chlordane [2C]	ND	1.0			NR				
beta-BHC	ND	1.0			NR				
beta-BHC [2C]	ND	1.0			NR				
Chlordane	ND	8.5			NR				
Chlordane [2C]	ND	8.5			NR				
delta-BHC	ND	1.0			NR				
delta-BHC [2C]	ND	1.0			NR				
Dieldrin	ND	2.0			NR				
Dieldrin [2C]	ND	2.0			NR				
Endosulfan I	ND	1.0			NR				
Endosulfan I [2C]	ND	1.0			NR				
Endosulfan II	ND	2.0			NR				
Endosulfan II [2C]	ND	2.0			NR				
Endosulfan sulfate	ND	2.0			NR				
Endosulfan Sulfate [2C]	ND	2.0			NR				
Endrin	ND	2.0			NR				
Endrin [2C]	ND	2.0			NR				
Endrin aldehyde	ND	2.0			NR				
Endrin aldehyde [2C]	ND	2.0			NR				
Endrin ketone	ND	2.0			NR				
Endrin ketone [2C]	ND	2.0			NR				
gamma-BHC	ND	1.0			NR				
gamma-BHC [2C]	ND	1.0			NR				
gamma-Chlordane	ND	1.0			NR				
gamma-Chlordane [2C]	ND	1.0			NR				
Heptachlor	ND	1.0			NR				
Heptachlor [2C]	ND	1.0			NR				
Heptachlor epoxide	ND	1.0			NR				



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/17/2014

### Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	------------	--------------	-------

**Batch B4K0384 - GCSEMI\_PCB/PEST\_S (continued)**

**Blank (B4K0384-BLK1) - Continued**

Prepared: 11/15/2014 Analyzed: 11/15/2014

Heptachlor epoxide [2C]	ND	1.0			NR				
Methoxychlor	ND	5.0			NR				
Methoxychlor [2C]	ND	5.0			NR				
Toxaphene	ND	50			NR				
Toxaphene [2C]	ND	50			NR				
<i>Surrogate: Decachlorobiphenyl</i>	<i>13.74</i>		<i>16.6667</i>		<i>82.4</i>	<i>29 - 143</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>13.76</i>		<i>16.6667</i>		<i>82.6</i>	<i>29 - 143</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>12.14</i>		<i>16.6667</i>		<i>72.9</i>	<i>52 - 114</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>12.56</i>		<i>16.6667</i>		<i>75.4</i>	<i>52 - 114</i>			

**LCS (B4K0384-BS1)**

Prepared: 11/15/2014 Analyzed: 11/15/2014

4,4'-DDT	11.2798	2.0	16.6667		67.7	50 - 110			
4,4'-DDT [2C]	10.0718	2.0	16.6667		60.4	50 - 110			
Aldrin	14.6805	1.0	16.6667		88.1	59 - 101			
Aldrin [2C]	14.7837	1.0	16.6667		88.7	59 - 101			
Dieldrin	14.8052	2.0	16.6667		88.8	55 - 101			
Dieldrin [2C]	14.3047	2.0	16.6667		85.8	55 - 101			
Endrin	15.2675	2.0	16.6667		91.6	49 - 109			
Endrin [2C]	14.2353	2.0	16.6667		85.4	49 - 109			
gamma-BHC	13.9593	1.0	16.6667		83.8	62 - 102			
gamma-BHC [2C]	14.2092	1.0	16.6667		85.3	62 - 102			
Heptachlor	16.0925	1.0	16.6667		96.6	50 - 123			
Heptachlor [2C]	14.2883	1.0	16.6667		85.7	50 - 123			
<i>Surrogate: Decachlorobiphenyl</i>	<i>15.64</i>		<i>16.6667</i>		<i>93.8</i>	<i>29 - 143</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>15.26</i>		<i>16.6667</i>		<i>91.6</i>	<i>29 - 143</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>12.87</i>		<i>16.6667</i>		<i>77.2</i>	<i>52 - 114</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>12.96</i>		<i>16.6667</i>		<i>77.8</i>	<i>52 - 114</i>			

**Matrix Spike (B4K0384-MS1)**

Source: 1403525-42

Prepared: 11/15/2014 Analyzed: 11/15/2014

4,4'-DDT	9.67917	2.0	16.6667	ND	58.1	32 - 161			
4,4'-DDT [2C]	12.5585	2.0	16.6667	ND	75.4	32 - 161			
Aldrin	15.0497	1.0	16.6667	ND	90.3	51 - 137			
Aldrin [2C]	15.1503	1.0	16.6667	ND	90.9	51 - 137			
Dieldrin	15.5098	2.0	16.6667	0.525167	89.9	39 - 150			
Dieldrin [2C]	13.7543	2.0	16.6667	0.480333	79.6	39 - 150			
Endrin	15.8835	2.0	16.6667	ND	95.3	41 - 160			
Endrin [2C]	15.3385	2.0	16.6667	ND	92.0	41 - 160			
gamma-BHC	14.2220	1.0	16.6667	ND	85.3	63 - 126			
gamma-BHC [2C]	15.0633	1.0	16.6667	ND	90.4	63 - 126			
Heptachlor	15.4997	1.0	16.6667	ND	93.0	32 - 177			
Heptachlor [2C]	14.8840	1.0	16.6667	ND	89.3	32 - 177			



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01

Report To : Matt Lesh

Reported : 11/17/2014

### Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

**Batch B4K0384 - GCSEMI\_PCB/PEST\_S (continued)**

**Matrix Spike (B4K0384-MS1) - Continued**

**Source: 1403525-42**

Prepared: 11/15/2014 Analyzed: 11/15/2014

<i>Surrogate: Decachlorobiphenyl</i>	16.30		16.6667		97.8	29 - 143			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	16.42		16.6667		98.5	29 - 143			
<i>Surrogate: Tetrachloro-m-xylene</i>	12.81		16.6667		76.9	52 - 114			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	13.24		16.6667		79.4	52 - 114			

**Matrix Spike Dup (B4K0384-MSD1)**

**Source: 1403525-42**

Prepared: 11/15/2014 Analyzed: 11/15/2014

4,4'-DDT	9.81683	2.0	16.6667	ND	58.9	32 - 161	1.41	20	
4,4'-DDT [2C]	12.9897	2.0	16.6667	ND	77.9	32 - 161	3.38	20	
Aldrin	15.2168	1.0	16.6667	ND	91.3	51 - 137	1.10	20	
Aldrin [2C]	15.4908	1.0	16.6667	ND	92.9	51 - 137	2.22	20	
Dieldrin	15.6958	2.0	16.6667	0.525167	91.0	39 - 150	1.19	20	
Dieldrin [2C]	14.1102	2.0	16.6667	0.480333	81.8	39 - 150	2.55	20	
Endrin	16.1022	2.0	16.6667	ND	96.6	41 - 160	1.37	20	
Endrin [2C]	15.9212	2.0	16.6667	ND	95.5	41 - 160	3.73	20	
gamma-BHC	14.3023	1.0	16.6667	ND	85.8	63 - 126	0.563	20	
gamma-BHC [2C]	15.3653	1.0	16.6667	ND	92.2	63 - 126	1.98	20	
Heptachlor	15.6025	1.0	16.6667	ND	93.6	32 - 177	0.661	20	
Heptachlor [2C]	15.0983	1.0	16.6667	ND	90.6	32 - 177	1.43	20	

<i>Surrogate: Decachlorobiphenyl</i>	16.77		16.6667		101	29 - 143			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	15.81		16.6667		94.8	29 - 143			
<i>Surrogate: Tetrachloro-m-xylene</i>	12.90		16.6667		77.4	52 - 114			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	13.41		16.6667		80.5	52 - 114			



## Certificate of Analysis

Geocon, Inc.  
6960 Flanders Drive  
San Diego , CA 92121

Project Number : Bob's Corner Property, 09967-06-01  
Report To : Matt Lesh  
Reported : 11/17/2014

### Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



CHRISTIAN WHEELER  
ENGINEERING

October 7, 2013

The Barczewski Family Trust  
Post Office Box 8630  
Rancho Santa Fe, California 92067  
Attention: Chris Barczewski

CWE 2130448.03R

**Subject: Report of Limited Pesticide Residue Sampling and Testing  
APN 305-021-05, Northeast of Carmel Valley Road and Rancho Santa Fe Farms  
Road, San Diego, California**

Dear Mr. Barczewski:

At your request and in accordance with our proposal dated September 3, 2013, we have performed sampling and testing of the near-surface soils at the project site for pesticide residues.

The subject site consists of a trapezoidal-shaped parcel of land located adjacent to and north of Carmel Valley Road in the Carmel Valley area of the city of San Diego. The site is bounded on the north by developed residential property and on the east and west by open, undeveloped land. The 4.05-acre property is identified as Assessor's Parcel Number 305-021-05 and as a Portion of Parcel 1 of Parcel Map 12337. The site was used by a sales yard for Rancho Del Sol Nursery from approximately 2002 through 2007. Prior to the use by Rancho Del Sol Nursery, the property had been used by Springtime Growers to grow crops but had apparently been left unused for several years between the termination of the use by Springtime Growers and the beginning of the use by Rancho Del Sol Nursery.

### **SCOPE OF SERVICES**

Our preliminary environmental evaluation consisted of surface reconnaissance, limited subsurface exploration, obtaining representative soil samples, laboratory testing, analysis of the field and laboratory data and review of relevant literature. More specifically, the intent of our proposed investigation is to:

- Review the previous environmental documents and historic aerial photographs of the site to determine which portions of the site may have been used for agricultural purposes.

- Obtain samples of the near-surface soils at approximately 10 locations throughout the site and submit the samples to an approved environmental testing laboratory under Chain of Custody procedures.
- Evaluate, by laboratory tests, the presence of pesticide residues in the near-surface soils.
- Recommend an appropriate procedure for the mitigation of pesticide-impacted soils, if necessary.
- Present our findings and professional opinions in a report, which will include in addition to our conclusions and recommendations, a plot plan and a summary of the laboratory test results.

## **SAMPLING PROCEDURE**

The samples were obtained by the use of hand equipment at ten selected areas at the site. The sampling locations were chosen so that samples would be obtained from representative areas of the entire site. The locations of the areas where samples were obtained are shown on Plate No. 1. Samples were taken at depth of approximately one foot at all locations. The samples were placed in clean glass jars, sealed, and transported in a cooler to an approved environmental testing laboratory, and submitted under Chain of Custody procedures.

## **RESULTS OF LABORATORY TESTING**

Residues of toxaphene were encountered in eight of the ten test samples obtained at the site. Toxaphene residues were encountered at levels above regulatory limits in five of the ten samples, but toxaphene was not detected or the levels were below regulatory limits in the other five samples. Toxaphene is an organic insecticide that has been banned for use in the United States since 1990 due to associated human health risks. Rancho Del Sol Nursery did not use toxaphene so the toxaphene residues are apparently associated with the use by Springtime Growers several decades ago. It can be noted that toxaphene can be relatively slow to degrade under certain environmental conditions and can remain in soil for several years or decades after application has ceased.

Regional Screening Levels (RSLs) are considered by the Environmental Protection Agency (EPA) to be concentrations of hazardous chemicals in soil that are at a threshold of concern for risks to human health. The RSL for toxaphene in soils of residential properties is 440 ug/kg, or parts per billion (ppb). A summary of the RSL and the laboratory test results of soils samples from the subject site are presented in the table below. A complete copy of the test results is presented at the rear of this report.

<b><u>RSL</u></b>		<b><u>TOXAPHENE</u></b>
Parts per billion (ppb)		440
<b><u>Sample Location</u></b>	<b><u>Approximate Depth of Sample</u></b>	<b><u>TOXAPHENE (ppb)</u></b>
P1	0.5-1.0'	Not detected
P2	05-1.0'	ND
P3	0.5-1.0'	313
P4	0.5-1.0'	959
P5	0.5-1.0'	223
P6	0.5-1.0'	460
P7	0.5-1.0'	1360
P8	0.5-1.0'	389
P9	0.5-1.0'	470
P10	0.5-1.0'	861

It is our opinion that even though the test results indicate that toxaphene residues are present in the uppermost one foot of the surficial materials at the site, the concentrations likely diminish rapidly with depth and that the site preparations for the proposed residential development, there will be no significant risk to occupants or workers at the site.

No residues of pesticides or insecticides other than toxaphene were detected in any of the test samples. No residues of any of the chemicals used by Rancho Del Sol Nursery were detected in the samples tested.

## **RECOMMENDATIONS**

Based on the laboratory test results, it is our opinion that the uppermost soils at the site pose a minor, though measurable, potential risk to the health and safety of future workers and residents and remedial measures should be considered. Rancho Del Sol Nursery did not use toxaphene so the relatively low toxaphene residues are apparently associated with the use by Springtime Growers several decades ago. This risk is defined as an excess lifetime cancer risk of one in a population of one million. To mitigate the presence of pesticide-impacted soils, we recommend using one of the following options.

- Prior to the commencement of grading operations for the proposed construction, the upper 12 to 18 inches of material should be removed from the site and disposed of in an off-site facility. It is our opinion that after removal of these soils, no additional testing for pesticide residues would be necessary.

- Following the site preparation and grading recommendations presented in a site-specific geotechnical report, the uppermost two feet of soil on those portions of the site that will not be covered by structures, asphalt paving, or hardscape should be removed and disposed of in an off-site facility. Any toxaphene residues in the soil beneath the portions of the site covered by structures, asphalt, or hardscape will probably be below regulatory limits due to the processing during site preparation operations and will likely not be a concern to residents or workers since there will be no contact between the soil and the residents and workers.
- Subsequent to the construction of the buildings and the installation of the streets and hardscape areas, additional testing of any areas not covered by structures, paving, or hardscape should be performed to evaluate the presence of toxaphene residues in the soil. Recommendations for the disposal of any toxaphene-contaminated soil will be provided at that time.

Christian Wheeler Engineering appreciates this opportunity to be of professional service. If you have any questions regarding this report, please do not hesitate to contact this office.

Respectfully submitted,

CHRISTIAN WHEELER ENGINEERING



Curtis R. Burdett, C.E.G. #1090

cc: pmdevcon@sbcglobal.net





CWE LEGEND	
	SOIL SAMPLE LOCATION

**SITE PLAN**

CARMEL VALLEY ROAD SITE SAN DIEGO, CALIFORNIA			
DATE:	OCTOBER 2013	JOB NO.:	2130448.03
BY:	JW/MLM	PLATE NO.:	1





17 September 2013

Christian Wheeler Engineering  
Attn: Curtis Burdett  
3980 Home Avenue  
San Diego, CA 92105

**EMA Log #: 13I0184**

**Project Name: 2130448**

Enclosed are the results of analyses for samples received by the laboratory on 09/06/13 14:09. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.

A handwritten signature in black ink, appearing to read 'Dan Verdon', is written over a light gray grid background.

**Dan Verdon**  
**Laboratory Director**

CA ELAP Certification #: 2564

Client Name: Christian Wheeler Engineering  
Project Name: 2130448

EMA Log #: 13I0184

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S1 0.5-1.0	13I0184-01	Soil	09/06/13 09:00	09/06/13 14:09
S2 0.5-1.0	13I0184-02	Soil	09/06/13 09:15	09/06/13 14:09
S3 0.5-1.0	13I0184-03	Soil	09/06/13 09:30	09/06/13 14:09
S4 0.5-1.0	13I0184-04	Soil	09/06/13 10:00	09/06/13 14:09
S5 0.5-1.0	13I0184-05	Soil	09/06/13 10:15	09/06/13 14:09
S6 0.5-1.0	13I0184-06	Soil	09/06/13 10:30	09/06/13 14:09
S7 0.5-1.0	13I0184-07	Soil	09/06/13 11:00	09/06/13 14:09
S8 0.5-1.0	13I0184-08	Soil	09/06/13 11:15	09/06/13 14:09
S9 0.5-1.0	13I0184-09	Soil	09/06/13 11:45	09/06/13 14:09
S10 0.5-1.0	13I0184-10	Soil	09/06/13 12:00	09/06/13 14:09

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 13I0184

**Organochlorine Pesticides by EPA Method 8081B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S1 0.5-1.0 (13I0184-01) Soil</b>									<b>R-06</b>
<b>Sampled: 09/06/13 09:00 Received: 09/06/13 14:09</b>									
Aldrin	ND	20.0	ug/kg	10	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	20.0	"	"	"	"	"	"	
beta-BHC	ND	20.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	20.0	"	"	"	"	"	"	
delta-BHC	ND	20.0	"	"	"	"	"	"	
alpha-Chlordane	ND	50.0	"	"	"	"	"	"	
gamma-Chlordane	ND	50.0	"	"	"	"	"	"	
Chlordane (Total)	ND	50.0	"	"	"	"	"	"	
4,4'-DDD	ND	20.0	"	"	"	"	"	"	
4,4'-DDE	ND	20.0	"	"	"	"	"	"	
4,4'-DDT	ND	20.0	"	"	"	"	"	"	
Dieldrin	ND	20.0	"	"	"	"	"	"	
Endosulfan I	ND	20.0	"	"	"	"	"	"	
Endosulfan II	ND	20.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	20.0	"	"	"	"	"	"	
Endrin	ND	20.0	"	"	"	"	"	"	
Endrin aldehyde	ND	20.0	"	"	"	"	"	"	
Endrin ketone	ND	20.0	"	"	"	"	"	"	
Heptachlor	ND	20.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	20.0	"	"	"	"	"	"	
Methoxychlor	ND	50.0	"	"	"	"	"	"	
Toxaphene	ND	250	"	"	"	"	"	"	
Surrogate: TCMX		68 %		26-146	"	"	"	"	

<b>S2 0.5-1.0 (13I0184-02) Soil</b>									<b>R-06</b>
<b>Sampled: 09/06/13 09:15 Received: 09/06/13 14:09</b>									
Aldrin	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	10.0	"	"	"	"	"	"	
beta-BHC	ND	10.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	10.0	"	"	"	"	"	"	
delta-BHC	ND	10.0	"	"	"	"	"	"	
alpha-Chlordane	ND	25.0	"	"	"	"	"	"	
gamma-Chlordane	ND	25.0	"	"	"	"	"	"	
Chlordane (Total)	ND	25.0	"	"	"	"	"	"	
4,4'-DDD	ND	10.0	"	"	"	"	"	"	
4,4'-DDE	ND	10.0	"	"	"	"	"	"	
4,4'-DDT	ND	10.0	"	"	"	"	"	"	
Dieldrin	ND	10.0	"	"	"	"	"	"	
Endosulfan I	ND	10.0	"	"	"	"	"	"	
Endosulfan II	ND	10.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	10.0	"	"	"	"	"	"	
Endrin	ND	10.0	"	"	"	"	"	"	
Endrin aldehyde	ND	10.0	"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 13I0184

**Organochlorine Pesticides by EPA Method 8081B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S2 0.5-1.0 (13I0184-02) Soil</b>									<b>R-06</b>
<b>Sampled: 09/06/13 09:15 Received: 09/06/13 14:09</b>									
Endrin ketone	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
Heptachlor	ND	10.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	10.0	"	"	"	"	"	"	
Methoxychlor	ND	25.0	"	"	"	"	"	"	
Toxaphene	ND	125	"	"	"	"	"	"	
<i>Surrogate: TCMX</i>		62 %	26-146		"	"	"	"	
<b>S3 0.5-1.0 (13I0184-03) Soil</b>									<b>R-06</b>
<b>Sampled: 09/06/13 09:30 Received: 09/06/13 14:09</b>									
Aldrin	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	10.0	"	"	"	"	"	"	
beta-BHC	ND	10.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	10.0	"	"	"	"	"	"	
delta-BHC	ND	10.0	"	"	"	"	"	"	
alpha-Chlordane	ND	25.0	"	"	"	"	"	"	
gamma-Chlordane	ND	25.0	"	"	"	"	"	"	
Chlordane (Total)	ND	25.0	"	"	"	"	"	"	
4,4'-DDD	ND	10.0	"	"	"	"	"	"	
4,4'-DDE	ND	10.0	"	"	"	"	"	"	
4,4'-DDT	ND	10.0	"	"	"	"	"	"	
Dieldrin	ND	10.0	"	"	"	"	"	"	
Endosulfan I	ND	10.0	"	"	"	"	"	"	
Endosulfan II	ND	10.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	10.0	"	"	"	"	"	"	
Endrin	ND	10.0	"	"	"	"	"	"	
Endrin aldehyde	ND	10.0	"	"	"	"	"	"	
Endrin ketone	ND	10.0	"	"	"	"	"	"	
Heptachlor	ND	10.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	10.0	"	"	"	"	"	"	
Methoxychlor	ND	25.0	"	"	"	"	"	"	
<b>Toxaphene</b>	<b>313</b>	125	"	"	"	"	"	"	
<i>Surrogate: TCMX</i>		90 %	26-146		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 13I0184

**Organochlorine Pesticides by EPA Method 8081B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S4 0.5-1.0 (13I0184-04) Soil</b>									<b>R-06</b>
Sampled: 09/06/13 10:00 Received: 09/06/13 14:09									
Aldrin	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	10.0	"	"	"	"	"	"	
beta-BHC	ND	10.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	10.0	"	"	"	"	"	"	
delta-BHC	ND	10.0	"	"	"	"	"	"	
alpha-Chlordane	ND	25.0	"	"	"	"	"	"	
gamma-Chlordane	ND	25.0	"	"	"	"	"	"	
Chlordane (Total)	ND	25.0	"	"	"	"	"	"	
4,4'-DDD	ND	10.0	"	"	"	"	"	"	
4,4'-DDE	ND	10.0	"	"	"	"	"	"	
4,4'-DDT	ND	10.0	"	"	"	"	"	"	
Dieldrin	ND	10.0	"	"	"	"	"	"	
Endosulfan I	ND	10.0	"	"	"	"	"	"	
Endosulfan II	ND	10.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	10.0	"	"	"	"	"	"	
Endrin	ND	10.0	"	"	"	"	"	"	
Endrin aldehyde	ND	10.0	"	"	"	"	"	"	
Endrin ketone	ND	10.0	"	"	"	"	"	"	
Heptachlor	ND	10.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	10.0	"	"	"	"	"	"	
Methoxychlor	ND	25.0	"	"	"	"	"	"	
<b>Toxaphene</b>	<b>959</b>	125	"	"	"	"	"	"	
<i>Surrogate: TCMX</i>		78 %	26-146		"	"	"	"	
<b>S5 0.5-1.0 (13I0184-05) Soil</b>									<b>R-06</b>
Sampled: 09/06/13 10:15 Received: 09/06/13 14:09									
Aldrin	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	10.0	"	"	"	"	"	"	
beta-BHC	ND	10.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	10.0	"	"	"	"	"	"	
delta-BHC	ND	10.0	"	"	"	"	"	"	
alpha-Chlordane	ND	25.0	"	"	"	"	"	"	
gamma-Chlordane	ND	25.0	"	"	"	"	"	"	
Chlordane (Total)	ND	25.0	"	"	"	"	"	"	
4,4'-DDD	ND	10.0	"	"	"	"	"	"	
4,4'-DDE	ND	10.0	"	"	"	"	"	"	
4,4'-DDT	ND	10.0	"	"	"	"	"	"	
Dieldrin	ND	10.0	"	"	"	"	"	"	
Endosulfan I	ND	10.0	"	"	"	"	"	"	
Endosulfan II	ND	10.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	10.0	"	"	"	"	"	"	
Endrin	ND	10.0	"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 13I0184

**Organochlorine Pesticides by EPA Method 8081B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S5 0.5-1.0 (13I0184-05) Soil</b>									<b>R-06</b>
Sampled: 09/06/13 10:15 Received: 09/06/13 14:09									
Endrin aldehyde	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
Endrin ketone	ND	10.0	"	"	"	"	"	"	
Heptachlor	ND	10.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	10.0	"	"	"	"	"	"	
Methoxychlor	ND	25.0	"	"	"	"	"	"	
<b>Toxaphene</b>	<b>223</b>	125	"	"	"	"	"	"	
<i>Surrogate: TCMX</i>		66 %	26-146	"	"	"	"	"	
<b>S6 0.5-1.0 (13I0184-06) Soil</b>									<b>R-06</b>
Sampled: 09/06/13 10:30 Received: 09/06/13 14:09									
Aldrin	ND	20.0	ug/kg	10	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	20.0	"	"	"	"	"	"	
beta-BHC	ND	20.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	20.0	"	"	"	"	"	"	
delta-BHC	ND	20.0	"	"	"	"	"	"	
alpha-Chlordane	ND	50.0	"	"	"	"	"	"	
gamma-Chlordane	ND	50.0	"	"	"	"	"	"	
Chlordane (Total)	ND	50.0	"	"	"	"	"	"	
4,4'-DDD	ND	20.0	"	"	"	"	"	"	
4,4'-DDE	ND	20.0	"	"	"	"	"	"	
4,4'-DDT	ND	20.0	"	"	"	"	"	"	
Dieldrin	ND	20.0	"	"	"	"	"	"	
Endosulfan I	ND	20.0	"	"	"	"	"	"	
Endosulfan II	ND	20.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	20.0	"	"	"	"	"	"	
Endrin	ND	20.0	"	"	"	"	"	"	
Endrin aldehyde	ND	20.0	"	"	"	"	"	"	
Endrin ketone	ND	20.0	"	"	"	"	"	"	
Heptachlor	ND	20.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	20.0	"	"	"	"	"	"	
Methoxychlor	ND	50.0	"	"	"	"	"	"	
<b>Toxaphene</b>	<b>466</b>	250	"	"	"	"	"	"	
<i>Surrogate: TCMX</i>		63 %	26-146	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 13I0184

**Organochlorine Pesticides by EPA Method 8081B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S7 0.5-1.0 (13I0184-07) Soil</b>									<b>R-06</b>
Sampled: 09/06/13 11:00 Received: 09/06/13 14:09									
Aldrin	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	10.0	"	"	"	"	"	"	
beta-BHC	ND	10.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	10.0	"	"	"	"	"	"	
delta-BHC	ND	10.0	"	"	"	"	"	"	
alpha-Chlordane	ND	25.0	"	"	"	"	"	"	
gamma-Chlordane	ND	25.0	"	"	"	"	"	"	
Chlordane (Total)	ND	25.0	"	"	"	"	"	"	
4,4'-DDD	ND	10.0	"	"	"	"	"	"	
4,4'-DDE	ND	10.0	"	"	"	"	"	"	
4,4'-DDT	ND	10.0	"	"	"	"	"	"	
Dieldrin	ND	10.0	"	"	"	"	"	"	
Endosulfan I	ND	10.0	"	"	"	"	"	"	
Endosulfan II	ND	10.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	10.0	"	"	"	"	"	"	
Endrin	ND	10.0	"	"	"	"	"	"	
Endrin aldehyde	ND	10.0	"	"	"	"	"	"	
Endrin ketone	ND	10.0	"	"	"	"	"	"	
Heptachlor	ND	10.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	10.0	"	"	"	"	"	"	
Methoxychlor	ND	25.0	"	"	"	"	"	"	
<b>Toxaphene</b>	<b>1360</b>	125	"	"	"	"	"	"	
<i>Surrogate: TCMX</i>		78 %	26-146		"	"	"	"	
<b>S8 0.5-1.0 (13I0184-08) Soil</b>									<b>R-06</b>
Sampled: 09/06/13 11:15 Received: 09/06/13 14:09									
Aldrin	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	10.0	"	"	"	"	"	"	
beta-BHC	ND	10.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	10.0	"	"	"	"	"	"	
delta-BHC	ND	10.0	"	"	"	"	"	"	
alpha-Chlordane	ND	25.0	"	"	"	"	"	"	
gamma-Chlordane	ND	25.0	"	"	"	"	"	"	
Chlordane (Total)	ND	25.0	"	"	"	"	"	"	
4,4'-DDD	ND	10.0	"	"	"	"	"	"	
4,4'-DDE	ND	10.0	"	"	"	"	"	"	
4,4'-DDT	ND	10.0	"	"	"	"	"	"	
Dieldrin	ND	10.0	"	"	"	"	"	"	
Endosulfan I	ND	10.0	"	"	"	"	"	"	
Endosulfan II	ND	10.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	10.0	"	"	"	"	"	"	
Endrin	ND	10.0	"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 13I0184

**Organochlorine Pesticides by EPA Method 8081B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S8 0.5-1.0 (13I0184-08) Soil</b>									<b>R-06</b>
Sampled: 09/06/13 11:15 Received: 09/06/13 14:09									
Endrin aldehyde	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
Endrin ketone	ND	10.0	"	"	"	"	"	"	
Heptachlor	ND	10.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	10.0	"	"	"	"	"	"	
Methoxychlor	ND	25.0	"	"	"	"	"	"	
<b>Toxaphene</b>	<b>389</b>	125	"	"	"	"	"	"	
<i>Surrogate: TCMX</i>		88 %	26-146	"	"	"	"	"	
<b>S9 0.5-1.0 (13I0184-09) Soil</b>									<b>R-06</b>
Sampled: 09/06/13 11:45 Received: 09/06/13 14:09									
Aldrin	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	10.0	"	"	"	"	"	"	
beta-BHC	ND	10.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	10.0	"	"	"	"	"	"	
delta-BHC	ND	10.0	"	"	"	"	"	"	
alpha-Chlordane	ND	25.0	"	"	"	"	"	"	
gamma-Chlordane	ND	25.0	"	"	"	"	"	"	
Chlordane (Total)	ND	25.0	"	"	"	"	"	"	
4,4'-DDD	ND	10.0	"	"	"	"	"	"	
4,4'-DDE	ND	10.0	"	"	"	"	"	"	
4,4'-DDT	ND	10.0	"	"	"	"	"	"	
Dieldrin	ND	10.0	"	"	"	"	"	"	
Endosulfan I	ND	10.0	"	"	"	"	"	"	
Endosulfan II	ND	10.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	10.0	"	"	"	"	"	"	
Endrin	ND	10.0	"	"	"	"	"	"	
Endrin aldehyde	ND	10.0	"	"	"	"	"	"	
Endrin ketone	ND	10.0	"	"	"	"	"	"	
Heptachlor	ND	10.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	10.0	"	"	"	"	"	"	
Methoxychlor	ND	25.0	"	"	"	"	"	"	
<b>Toxaphene</b>	<b>470</b>	125	"	"	"	"	"	"	
<i>Surrogate: TCMX</i>		80 %	26-146	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 13I0184

**Organochlorine Pesticides by EPA Method 8081B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S10 0.5-1.0 (13I0184-10) Soil</b>									<b>R-06</b>
<b>Sampled: 09/06/13 12:00</b>									<b>Received: 09/06/13 14:09</b>
Aldrin	ND	10.0	ug/kg	5	3091033	09/10/13	09/13/13	EPA 8081	
alpha-BHC	ND	10.0	"	"	"	"	"	"	
beta-BHC	ND	10.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	10.0	"	"	"	"	"	"	
delta-BHC	ND	10.0	"	"	"	"	"	"	
alpha-Chlordane	ND	25.0	"	"	"	"	"	"	
gamma-Chlordane	ND	25.0	"	"	"	"	"	"	
Chlordane (Total)	ND	25.0	"	"	"	"	"	"	
4,4'-DDD	ND	10.0	"	"	"	"	"	"	
4,4'-DDE	ND	10.0	"	"	"	"	"	"	
4,4'-DDT	ND	10.0	"	"	"	"	"	"	
Dieldrin	ND	10.0	"	"	"	"	"	"	
Endosulfan I	ND	10.0	"	"	"	"	"	"	
Endosulfan II	ND	10.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	10.0	"	"	"	"	"	"	
Endrin	ND	10.0	"	"	"	"	"	"	
Endrin aldehyde	ND	10.0	"	"	"	"	"	"	
Endrin ketone	ND	10.0	"	"	"	"	"	"	
Heptachlor	ND	10.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	10.0	"	"	"	"	"	"	
Methoxychlor	ND	25.0	"	"	"	"	"	"	
<b>Toxaphene</b>	<b>861</b>	125	"	"	"	"	"	"	
Surrogate: TCMX		84 %		26-146	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 1310184

### Organochlorine Pesticides by EPA Method 8081B - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 3091033**

**Blank (3091033-BLK1)**

Prepared: 09/10/13 Analyzed: 09/13/13

Aldrin	ND	2.00	ug/kg							
alpha-BHC	ND	2.00	"							
beta-BHC	ND	2.00	"							
gamma-BHC (Lindane)	ND	2.00	"							
delta-BHC	ND	2.00	"							
alpha-Chlordane	ND	5.00	"							
gamma-Chlordane	ND	5.00	"							
Chlordane (Total)	ND	5.00	"							
4,4'-DDD	ND	2.00	"							
4,4'-DDE	ND	2.00	"							
4,4'-DDT	ND	2.00	"							
Dieldrin	ND	2.00	"							
Endosulfan I	ND	2.00	"							
Endosulfan II	ND	2.00	"							
Endosulfan sulfate	ND	2.00	"							
Endrin	ND	2.00	"							
Endrin aldehyde	ND	2.00	"							
Endrin ketone	ND	2.00	"							
Heptachlor	ND	2.00	"							
Heptachlor epoxide	ND	2.00	"							
Methoxychlor	ND	5.00	"							
Toxaphene	ND	25.0	"							
<i>Surrogate: TCMX</i>	<i>19.3</i>		<i>"</i>	<i>16.7</i>		<i>116</i>	<i>26-146</i>			

**LCS (3091033-BS1)**

Prepared: 09/10/13 Analyzed: 09/13/13

Aldrin	19.7	2.00	ug/kg	16.7		118	42-122			
gamma-BHC (Lindane)	19.2	2.00	"	16.7		115	32-127			
4,4'-DDT	20.8	2.00	"	16.7		125	25-160			
Dieldrin	18.8	2.00	"	16.7		113	36-146			
Endrin	19.1	2.00	"	16.7		114	30-147			
Heptachlor	17.8	2.00	"	16.7		107	34-111			
<i>Surrogate: TCMX</i>	<i>18.4</i>		<i>"</i>	<i>16.7</i>		<i>110</i>	<i>26-146</i>			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 13I0184

**Organochlorine Pesticides by EPA Method 8081B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 3091033**

**LCS Dup (3091033-BSD1)**

Prepared: 09/10/13 Analyzed: 09/13/13

Aldrin	18.9	2.00	ug/kg	16.7	114	42-122	4	30	
gamma-BHC (Lindane)	19.0	2.00	"	16.7	114	32-127	0.6	30	
4,4'-DDT	20.9	2.00	"	16.7	125	25-160	0.6	30	
Dieldrin	18.2	2.00	"	16.7	109	36-146	3	30	
Endrin	17.9	2.00	"	16.7	107	30-147	6	30	
Heptachlor	17.8	2.00	"	16.7	107	34-111	0.3	30	
<i>Surrogate: TCMX</i>	<i>18.0</i>		<i>"</i>	<i>16.7</i>	<i>108</i>	<i>26-146</i>			

**Duplicate (3091033-DUP1)**

Source: 13I0184-01

Prepared: 09/10/13 Analyzed: 09/14/13

**R-06**

Aldrin	ND	20.0	ug/kg		ND			30	
alpha-BHC	ND	20.0	"		ND			30	
beta-BHC	ND	20.0	"		ND			30	
gamma-BHC (Lindane)	ND	20.0	"		ND			30	
delta-BHC	ND	20.0	"		ND			30	
alpha-Chlordane	ND	50.0	"		ND			30	
gamma-Chlordane	ND	50.0	"		ND			30	
Chlordane (Total)	ND	50.0	"		ND			30	
4,4'-DDD	ND	20.0	"		ND			30	
4,4'-DDE	ND	20.0	"		ND			30	
4,4'-DDT	ND	20.0	"		ND			30	
Dieldrin	ND	20.0	"		ND			30	
Endosulfan I	ND	20.0	"		ND			30	
Endosulfan II	ND	20.0	"		ND			30	
Endosulfan sulfate	ND	20.0	"		ND			30	
Endrin	ND	20.0	"		ND			30	
Endrin aldehyde	ND	20.0	"		ND			30	
Endrin ketone	ND	20.0	"		ND			30	
Heptachlor	ND	20.0	"		ND			30	
Heptachlor epoxide	ND	20.0	"		ND			30	
Methoxychlor	ND	50.0	"		ND			30	
Toxaphene	ND	250	"		ND			30	
<i>Surrogate: TCMX</i>	<i>11.6</i>		<i>"</i>	<i>16.7</i>	<i>70</i>	<i>26-146</i>			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Christian Wheeler Engineering  
 Project Name: 2130448

EMA Log #: 13I0184

### Organochlorine Pesticides by EPA Method 8081B - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 3091033**

<b>Matrix Spike (3091033-MS1)</b>	<b>Source: 13I0184-01</b>			Prepared: 09/10/13		Analyzed: 09/14/13				
Aldrin	15.4	10.0	ug/kg	16.7	ND	92	42-122			
gamma-BHC (Lindane)	14.3	10.0	"	16.7	ND	86	32-127			
4,4'-DDT	17.1	10.0	"	16.7	ND	102	25-160			
Dieldrin	15.7	10.0	"	16.7	ND	94	36-146			
Endrin	17.1	10.0	"	16.7	ND	103	30-147			
Heptachlor	16.0	10.0	"	16.7	ND	96	34-111			
<i>Surrogate: TCMX</i>	<i>14.2</i>		<i>"</i>	<i>16.7</i>		<i>85</i>	<i>26-146</i>			

<b>Matrix Spike Dup (3091033-MSD1)</b>	<b>Source: 13I0184-01</b>			Prepared: 09/10/13		Analyzed: 09/14/13				
Aldrin	15.6	10.0	ug/kg	16.7	ND	94	42-122	2	30	
gamma-BHC (Lindane)	15.5	10.0	"	16.7	ND	93	32-127	8	30	
4,4'-DDT	16.0	10.0	"	16.7	ND	96	25-160	7	30	
Dieldrin	16.2	10.0	"	16.7	ND	97	36-146	3	30	
Endrin	16.5	10.0	"	16.7	ND	99	30-147	4	30	
Heptachlor	16.5	10.0	"	16.7	ND	99	34-111	3	30	
<i>Surrogate: TCMX</i>	<i>14.3</i>		<i>"</i>	<i>16.7</i>		<i>86</i>	<i>26-146</i>			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Christian Wheeler Engineering  
Project Name: 2130448

EMA Log #: 13I0184

### Notes and Definitions

R-06 Sample dilution was necessary due to nature of the matrix.

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



EnviroMatrix Analytical, Inc.

4340 Viewridge Ave., Ste. A - San Diego, CA 92123 - Phone (858) 560-7717 - Fax (858) 560-7763

**CHAIN-OF-CUSTODY RECORD**

EMA LOG #: V3T0174

Client: CHRISTIAN WHEELER ENGINEERING  
 Attn: CURTIS BURDET  
 Samplers(s): J WASHBURN  
 Address: 3980 HOME AVENUE  
SAN DIEGO CA  
 Phone: 619-550-1700 Fax:  
 Email: WASHBURN@CHRISTIANWHEELER.COM  
 Billing Address:

ID #	Client Sample ID	Sample Date	Sample Time	Sample Matrix	Container # / Type
1	51 0.5-1.0	9/6/13	900	S	
2	52 0.5-1.0		915		
3	53 0.5-1.0		930		
4	54 0.5-1.0		1000		
5	55 0.5-1.0		1015		
6	56 0.5-1.0		1030		
7	57 0.5-1.0		1100		
8	58 0.5-1.0		1115		
9	59 0.5-1.0		1145		
10	5/0 0.5-1.0		1200		

Project ID:  
 Project #: 2130448 PO #:

Matrix Codes: A = Air, DW = Drinking Water, GW = Groundwater, SW = Storm Water  
 WW = Wastewater, S = Soil, SED = Sediment, SD = Solid, T = Tissue, O = Oil, L = Liquid  
 Shipped By:  Courier  UPS  FedEx  USPS  Client Drop Off  Other  
 Turn-Around-Time:  Same Day  24 hr  48 hr  3 day  4 day  5 day  STD (7 day)  
 Reporting Requirements:  Fax  PDF  Excel  Geotracker/EDF  Hard Copy  EDT  
 Sample Disposal:  By Laboratory  Return to Client: P/U or Delivery  Archive

**Sample Integrity**  
 Correct Containers: Yes No N/A  
 Custody Seals Intact: Yes No N/A  
 COC/Labels Agree: Yes No N/A  
 Containers Properly Preserved: Yes No N/A  
 Temp @ Receipt:  
 Sampled By: Client EMA Autosampler

Project/Sample Comments:

T = 20°C

Requested Analysis		RELINQUISHED BY	DATE/TIME	RECEIVED BY
<input type="checkbox"/> Oil & Grease <input type="checkbox"/> 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/> 1664	<input type="checkbox"/> 8015B (TPH) <input type="checkbox"/> Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Ext	Signature: <u>CHRISTIAN WHEELER</u>	9/6/13	Signature: <u>MA JAY</u>
<input type="checkbox"/> 62/48260 (VOC) Full BTX MTBE Oxy Nap	<input type="checkbox"/> 625 / 8270 (SVOC) <input type="checkbox"/> PAH only	Print: <u>CHRISTIAN WHEELER</u>	14:09	Print: <u>FRYAN CAMPANA</u>
<input type="checkbox"/> 608 / 8081 (Organochlorine Pesticides)	<input type="checkbox"/> 608 / 8082 (Polychlorinated Biphenyls)	Company: <u>CHRISTIAN WHEELER</u>		Company: <u>EMA</u>
<input type="checkbox"/> 8141 (Organophosphorus Pesticides)	<input type="checkbox"/> TBT (Organotin Compounds)	Signature		Signature
<input type="checkbox"/> pH <input type="checkbox"/> EC <input type="checkbox"/> TSS <input type="checkbox"/> TDS	<input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> TKN <input type="checkbox"/> NH3	Print		Print
<input type="checkbox"/> CAC Title 22/CAM17 Metals <input type="checkbox"/> TLLC <input type="checkbox"/> STLC	<input type="checkbox"/> TCLP (RCRA) <input type="checkbox"/> Metals <input type="checkbox"/> Organics	Company:		Company:
<input type="checkbox"/> Cd <input type="checkbox"/> Cr <input type="checkbox"/> Cu <input type="checkbox"/> Pb <input type="checkbox"/> Ni <input type="checkbox"/> Ag <input type="checkbox"/> Zn <input type="checkbox"/> Dissolved	<input type="checkbox"/> Coliform, <input type="checkbox"/> Total (MTF) <input type="checkbox"/> Fecal (MTF)	Signature		Signature
<input type="checkbox"/> Enterococcus, <input type="checkbox"/> MTF <input type="checkbox"/> Enterolert	<input type="checkbox"/> Heterotrophic Plate Count (HPC)	Print		Print
<input type="checkbox"/> BOD <input type="checkbox"/> COD <input type="checkbox"/> Cyanide		Company:		Company:

\*Additional costs may apply, consult a project manager for details.  
 \*EMA reserves the right to return any samples that do not match our waste profile.  
 NOTE: By relinquishing samples to EMA, Inc., client agrees to pay for the services requested on this COC form and any additional analyses performed on this project. Payment for services is due within 30 days from date of invoice. Samples will be disposed of 7 days after report has been finalized unless otherwise noted. All work is subject to EMA's terms and conditions.

**PRIVATE WATER SYSTEM EVALUATION  
FOR THE  
MEADOWOOD-2 PROJECT IN THE  
CITY OF SAN DIEGO**

Revised September 24, 2015



**Prepared by:  
Dexter Wilson Engineering, Inc.  
2234 Faraday Avenue  
Carlsbad, CA 92008  
760-438-4422**

Job No. 840-003

September 24, 2015

840-003

Hallmark Communities, Inc.  
740 Lomas Santa Fe Drive Suite 204  
Solana Beach, CA 92075

Attention: Sean Santa Cruz, VP Planning and Development

Subject: Meadowood-2 Private Water System

**Introduction**

This report is an update of the June 4, 2015 report of the same name. This update is based on a revised site plan which includes 16 detached dwelling units plus a four-plex building. Also, this revision incorporates City of San Diego comments on the June 4, 2015 study. The comments were to revise the means of making the service lateral connections to the existing 16" 470 Pressure Zone water main in Carmel Valley Road, and providing a computer model hydraulic calculation for the fire flow analysis. Both of these comments have been addressed in this revised report.

The Meadowood-2 project is located in the Carmel Valley area of the City of San Diego. The project is located adjacent to Rancho Santa Fe Farms Road between Carmel Valley Road and Rancho Santa Fe Lakes Drive. Access to the project will be from Rancho Santa Fe Farms Road and a future road that will connect to Carmel Valley Road to the east of the proposed development.

The Meadowood-2 project is proposing to construct 16 single family detached residences and one four-plex building for a total of 20 dwelling units. The proposed building pads range in elevation from 297 feet to 315 feet.

The purpose of this letter-report is to provide our recommendations for private domestic and private fire protection water system configuration and line sizing to provide adequate service to the homes within this project.

### **Existing Water System**

The Meadowood-2 project is within the City's Rancho del Sol 470 Pressure Zone system. The 470 Pressure Zone in this area is supplied by the two existing pressure reducing stations both of which are located on Rancho Santa Fe Farms Road just south of Carmel Valley Road. A future pressure reducing station will be located approximately 2,200 feet east of Rancho Santa Fe Farms Road south of Carmel Valley Road across from existing Clarkview Lane. All of these pressure reducing stations are supplied by the 610 Pressure Zone.

Water service to the Meadowood-2 project will be provided by connecting to the existing 16-inch 470 Zone water line in Carmel Valley Road. Based on the range of pad elevations for the project, maximum static pressures will range from 60 to 67 psi.

### **Domestic Water System Meter Sizing**

The master meter size for the Meadowood-2 project was determined based on the total number of fixture units that will be supplied through the meter. The fixture unit counts for each building were obtained from the floor plans of the proposed housing units. Appendix A of this report includes a spreadsheet calculation of the water fixture units for all the proposed dwellings. Table 1 presents a summary of the Water Fixture Unit data.

<b>TABLE 1 MEADOWOOD 2 WATER FIXTURE UNIT SUMMARY</b>			
<b>Plan</b>	<b>Water Fixture Units</b>	<b>Quantity</b>	<b>Total Water Fixture Units</b>
Plan 1	42	5 Units	210
Plan 2	42	5 Units	210
Plan 3	46	6 Units	276
Four-Plex Unit	107.5	1 Bldg.	107.5
<b>TOTAL</b>			<b>803.5</b>

Using the Uniform Plumbing Code, the total Water Fixture Units for the buildings was converted to the maximum expected demand for the project. Chart A-2.1 from the Uniform Plumbing Code has been included in Appendix A of this report and indicates that 803.5 total Water Fixture Units converts to a maximum demand of approximately 178 gpm.

Once the maximum demand for the project was established, the required meter size was determined using the City of San Diego criteria which permits maximum capacity of a water meter to be less than or equal to 80 percent of the safe maximum operating capacity flowrates presented in Table 1 of AWWA C701 Cold Water Meters - Turbine Type. Based on this criteria, a single 3" water meter with an allowable capacity of 280 gpm is adequate for this development. It is the City of San Diego's practice to install dual 2-inch meters in lieu of a single 3-inch meter. Each 2" meter will have its own 2" water service lateral.

### **Domestic Water System Pipe Sizing**

The private domestic water system for the Meadowood-2 project has been sized in accordance with the Uniform Plumbing Code and the Installation Standard for PVC Cold Water Building Supply and Yard Piping (IAPMO IS 8-2006). The Installation Standard requires that the maximum pipeline velocity be limited to eight (8) feet per second (fps). To comply with this requirement, we calculated the maximum flowrate for different pipe sizes based on a velocity of 8 fps and used Chart A-2.1 from Appendix A of the Uniform Plumbing Code to determine the maximum allowable number of water fixture units for each pipe size.

Table 2 summarizes the maximum number of Water Fixture Units that can be served by a given pipe diameter. This table was used as a guide to size the private domestic lines within the project.

<b>Number of Fixture Units</b>	<b>Minimum System Pipe Size<sup>1</sup></b>
0 – 14	¾ -inch
15 – 29	1-inch
30 – 53	1 ¼-inch
54 – 105	1 ½-inch
106 – 270	2-inch
271 – 500	2 ½-inch
501 – 780	3-inch
781 - 1,920	4-inch
1,921 - 3,575	5-inch
3,576 - 6,175	6-inch

<sup>1</sup> Based on a maximum allowable pipe velocity of 8 fps.

An analysis was done to determine the pressure losses in the domestic water system for different sizes of building supply piping to maintain enough pressure going to each house in event of a fire sprinkler flow demand. This analysis was modeled using the hydraulic grade line of 470 at the project's entrance and included the meter and backflow pressure losses as well as the friction losses in the lengths of building supply pipe and the pressure loss due to change in elevation.

Among the building supply pipe sizes tested were 1 1/2-inch, 2-inch, and 2 1/2-inch. It was found that the pressure delivered by 1 1/2-inch building supply piping was inadequate while the pressure gain from using 2-inch to using 2 1/2-inch building supply piping was not large enough to warrant the upsize from 2" to 2.5. Thus 2-inch pipe was chosen as the recommended building supply size; the results of the pressure loss calculations are shown in Appendix B.

As shown in Exhibit A at the back of this report, the recommended private domestic water line sizes consist of a 4-inch main line downstream of the two 2" master meters and 2-inch building supply lines to each individual dwelling unit. The building supply lines to each dwelling unit have been sized to accommodate the fire sprinkler flow for each unit.

### **Private Fire Protection System Piping**

The Meadowood 2 project includes a single fire hydrant within the project site. This fire hydrant will be connected to a private fire protection water system which will be independent of the private domestic water system. The private fire protection system for Meadowood 2 will have a single 8" fire service connection to the 16" 470 Pressure Zone public water main in Carmel Valley Road.

The private fire protection system was sized based on a fire flow of 1,500 gpm considering that only a single fire hydrant is required for the project. In order to establish the required fire protection system pipe sizing, a water system computer model was generated for the project's fire protection system piping. The single fire hydrant fire flow scenario was modeled which provided data upon which the recommended pipe sizing is based.

**Model Development.** Analysis using the KYPIPE computer software program developed by the University of Kentucky determined residual pressures throughout the fire protection system. This computer software utilizes the Hazen-Williams equation for determining headloss in pipes. The Hazen-Williams "C" value used for all pipe sizes in our analysis is 120.

**Fitting and Valve Losses.** To simulate minor losses through pipe fittings and valves, equivalent lengths of piping were added to the straight pipe lengths and included in the hydraulic model.

**Backflow Assembly Losses.** The pressure loss through the reduced pressure principle detector check assembly device was modeled as a minor loss using a "k" value large enough to result in the expected pressure loss through this device. Appendix C presents a candidate reduced pressure principle detector check assembly backflow preventer device. The manufacturer's literature includes charts which show pressure loss through the backflow

preventer as a function of flow. These charts were used to approximate the pressure loss which is reflected in the computer modeling and shows up as minor loss calculated in feet.

**Hydraulic Grade Line Available.** The private fire protection system was modeled with a hydraulic grade line of 460 feet. This hydraulic grade line was used as a conservative value considering that the computer model begins at a supply point to the 470 Pressure Zone in this area. This supply point is the existing 610 Zone/470 Zone Pressure Reducing Station located on Rancho Santa Fe Farms Road just south of Carmel Valley Road. While the downstream setpoint for the Pressure Reducing Station is 470 feet, our computer modeling input grade line reduced that value by 10 feet to account for unknown system conditions.

The private fire protection system has been designed to provide a minimum residual pressure greater than 20 psi under a fire flow scenario.

**Fire Protection System Analysis.** Appendix D presents the computer modeling results for the private fire protection system. Exhibit B at the back of this report shows the Node and Pipe Diagram for the private fire protection system. The fire flow requirement of 1,500 gpm was modeled at the single fire hydrant locations within the Meadowood 2 project. The 1,500 gpm fire flow requirement is achieved with greater than 20 psi residual pressure. Minimum residual pressures are greater than 45 psi.

The private fire protection system will be connected to the 16" 470 Zone public water main in Carmel Valley Road as shown in Exhibit B. The connection includes an 8" lateral and an 8" reduced pressure principle detector check assembly in accordance with City of San Diego requirements.

### **Conclusions and Recommendations**

1. The Meadowood-2 project will be served by the City of San Diego's Rancho del Sol 470 Pressure Zone.
2. The onsite private water system, both domestic and fire protection, for the Meadowood-2 project will connect to the existing 16" 470 HGL water main in Carmel Valley Road.

3. The recommended pipe sizes are shown on Exhibit A and Exhibit B at the back of this report.
4. Two 2" meters and two 2" backflow preventers will be required for the domestic system.
5. Sub-meters are recommended for each of the 20 residential units.
6. The private fire protection system connection to the public water system will include an 8-inch reduced pressure principle detector check backflow preventer assembly in accordance with the City of San Diego Public Utilities Department standards.
7. The building supply piping for each residential dwelling unit has been sized to accommodate the fire sprinkler flow. The actual sizing of the fire sprinkler lateral, after it branches off the domestic building supply, is to be done by a fire sprinkler consultant or fire sprinkler design-builder.
8. Pad elevations within the project range from 297 feet to 315 feet resulting in a range of maximum static water pressures of 60 psi to 67 psi. Typical working pressure will be approximately 10 psi less due to the pressure loss through the backflow assembly.
9. This report presents the sizing and a general schematic layout of the proposed private domestic water system. The design engineer for these systems should incorporate valves, fittings, and appurtenances as needed for proper installation and long-term operation of the private water systems.
10. If PVC pipe is used for the water lines within the project, we recommend pipes 4-inch through 12-inch diameter to be AWWA C900, DR 18, Pressure Class 235 for domestic system piping. Pipes smaller than 4-inch in diameter should be solvent welded Schedule 40 PVC; as an alternative, copper piping may be used.

Sean Santa Cruz  
September 24, 2015

---

Thank you for the opportunity to provide professional engineering services for this project.  
If you should have any questions please feel free to contact us.

Dexter Wilson Engineering, Inc.



Andrew Owen, P.E.

AO:ps

Attachments

**APPENDIX A**

**RESULTS FROM CHART A-2.1  
FROM THE UNIFORM PLUMBING CODE**

Water Fixture Unit Calculations

23, 2015

Plan 1			Plan 2			Plan 3			Plan 4 (Four-plex)		
FIXTURE	TOTAL		FIXTURE	TOTAL		FIXTURE	TOTAL		FIXTURE	TOTAL	
QUANTITY	UNITS	FIXTURE	QUANTITY	UNITS	FIXTURE	QUANTITY	UNITS	FIXTURE	QUANTITY	UNITS	FIXTURE
EACH	UNITS		EACH	UNITS		EACH	UNITS		EACH	UNITS	
1	4	4	1	4	4	1	4	4	4	4	16
3	4	12	3	4	12	4	4	16	8	4	32
1	2	2	1	2	2	1	2	2	0	2	0
1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	4	1.5	6
0	1	0	0	1	0	0	1	0	0	1	0
1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	4	1.5	6
1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	0	1.5	0
6	1	6	6	1	6	6	1	6	12	1	12
4	2.5	10	4	2.5	10	4	2.5	10	12	2.5	30
1	2.5	2.5	1	2.5	2.5	1	2.5	2.5	1	2.5	2.5
1	1	1	1	1	1	1	1	1	3	1	3
		42			42			46			107.5

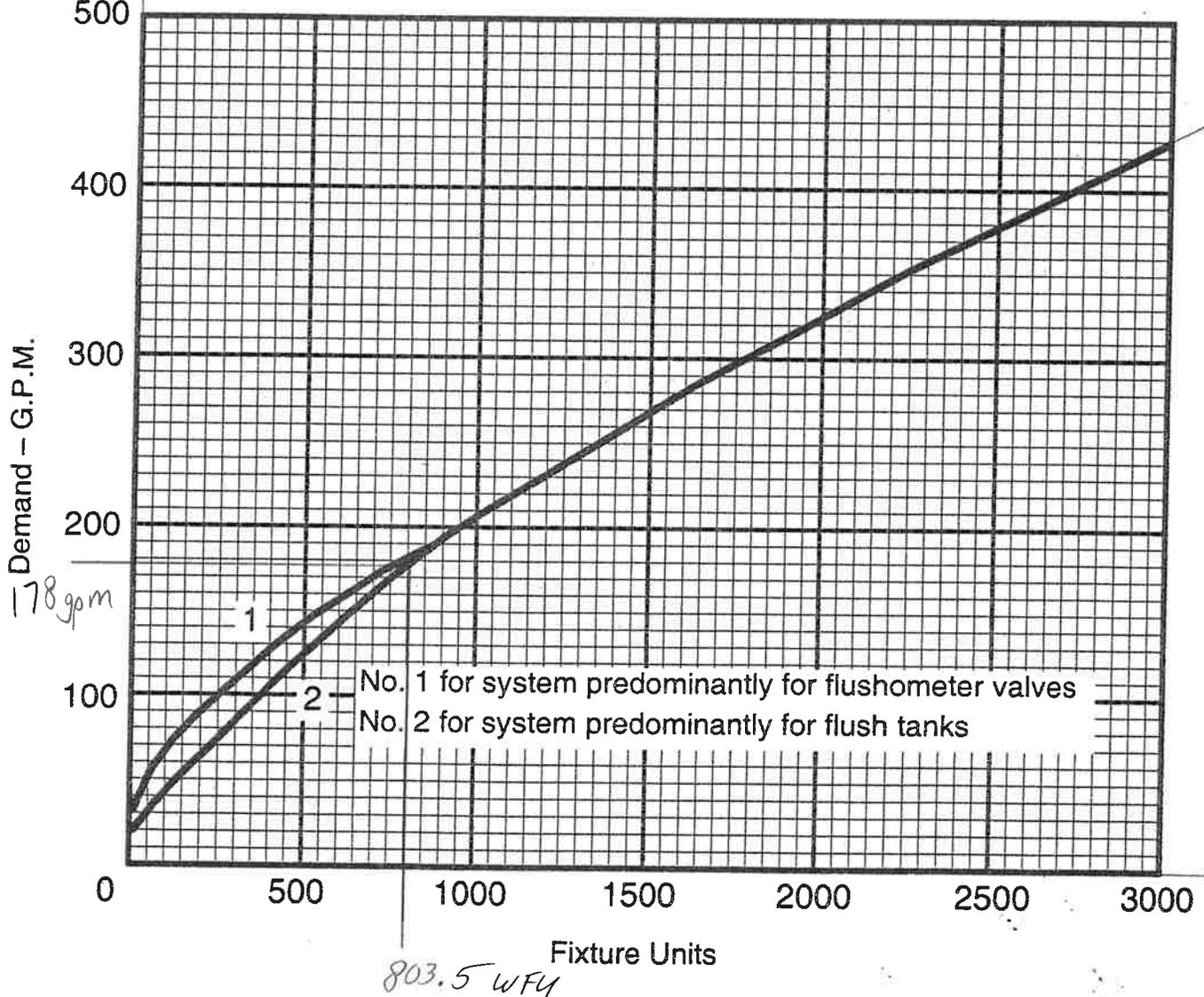
Plan # of Units Total WFU

1	5	210
2	5	210
3	6	276

From Chart A-2 of the 2013 California Plumbing Code:  
803.5 WFU ≈ 178 gpm

UNIFORM PLUM

**CHART A-2**  
Estimate Curves for Demand Load



Meadowood 2 in the City of San Diego

## **APPENDIX B**

### **PRESSURE LOSS CALCULATIONS FOR BUILDING SUPPLY PIPING RESULTING IN AVAILABLE PRESSURE AT THE BASE OF THE RISER FOR EACH BUILDING**

## Pressure Loss to Lots Through Two Meters for Meadowood-2

Prepared by: Dexter Wilson Engineering

Job No: 840-003

Building Fire Sprinkler Demand (gpm)	31
Total Demand (gpm)	67.8
Hydraulic Grade Line (feet)	470
Reduce Available Pressure by	10%

Meter Pipe Length (feet)	Meter Pipe Size (inch)	Meter Pipe Loss (psi)	Meter Size (inch)	Meter Loss (psi)	Backflow Preventer Loss (psi)	Subtotal Loss <sup>1</sup> (psi)
45	2	0.5	2	1.0	9.0	10.5

Lot No.	Main Loss <sup>2</sup> (psi)	Building Supply Length (feet)	Building Supply Size (inch)	Building Supply Loss (psi)	Total Pressure Loss (psi)	Pad Elevation (feet)	Pad Static Pressure (psi)	Available Static Pressure (psi)	Pressure at Building Riser (psi)	Lot No.
1	0.56	50	2	0.6	11.6	314.3	67.5	60.7	49.1	1
2	0.54	50	2	0.6	11.6	309.0	69.8	62.8	51.2	2
3	0.50	50	2	0.6	11.5	304.4	71.8	64.6	53.0	3
4	0.46	50	2	0.6	11.5	299.5	73.9	66.5	55.0	4
5	0.42	50	2	0.6	11.5	296.8	75.0	67.5	56.1	5
6	0.50	45	2	0.5	11.5	304.3	71.8	64.6	53.1	6
7	0.54	45	2	0.5	11.5	309.9	69.4	62.4	50.9	7
8	0.56	45	2	0.5	11.6	315.0	67.2	60.4	48.9	8
9	0.32	130	2	1.4	12.2	310.1	69.3	62.4	50.1	9
10	0.32	70	2	0.8	11.6	307.6	70.4	63.3	51.7	10
11	0.25	50	2	0.6	11.3	307.1	70.6	63.5	52.2	11
12	0.15	70	2	0.8	11.4	312.5	68.2	61.4	50.0	12
13	0.19	55	2	0.6	11.3	311.2	68.8	61.9	50.6	13
14	0.26	55	2	0.6	11.4	308.2	70.1	63.1	51.7	14
15	0.32	55	2	0.6	11.4	303.6	72.1	64.9	53.5	15
16	0.37	60	2	0.7	11.5	298.9	74.1	66.7	55.2	16
17	0.13	85	2	0.9	11.6	311.1	68.8	62.0	50.4	17

1. Subtotal Loss is based on 33.9 GPM.

2. Main line losses were calculated separately.

## Main Line Losses for Meadowood 2

Flow Demand (gpm)	178
EDUs	20
Peaking Factor	4
Individual Demand (gpm)	1.8
Number of Building Laterals	17
Total Flow Demand (gpm)	67.8

$$\text{Individual Demand} = \frac{(\text{Total Demand} - \text{Fire Sprinkler Demand})}{\text{Effective Dwelling Units}} \times \frac{1}{\text{Peaking Factor}}$$

$$\text{Total Flow Demand} = \text{Individual Demand} \times (\text{Effective Dwelling Units} - 1) + \text{Fire Sprinkler Demand}$$

Line Designation <sup>2</sup>	Preceding Lateral Count <sup>2</sup>	Flow Rate <sup>1</sup> (gpm)	Pipe Length (feet)	Pipe Size (inch)	Friction Losses (psi)	Pipe Segment Losses (psi)
A	0	67.8	70	4	0.13	0.13
B	1	62.2	10	4	0.02	0.02
C	2	60.4	30	4	0.04	0.04
D	3	58.6	40	4	0.06	0.06
E	4	56.7	10	4.0	0.0	0.0
F	5	54.9	45	4.0	0.1	0.1
G	7	51.2	5	4.0	0.0	0.0
H	8	49.4	50	4.0	0.1	0.1
I	9	47.5	60	4.0	0.1	0.1
J	10	45.7	40	4.0	0.0	0.0
K	11	43.9	50	4.0	0.0	0.0
L	13	40.2	50	4.0	0.0	0.0
M	15	36.5	40	4.0	0.0	0.0

Lot No.	Contained Pipe Segments	Mainline Pressure Loss
1	ABCDEFGHIJKLM	0.56
2	ABCDEFGHJKLM	0.54
3	ABCDEFGHIJK	0.50
4	ABCDEFGHIJ	0.46
5	ABCDEFGHI	0.42
6	ABCDEFGHIJK	0.50
7	ABCDEFGHIJKL	0.54
8	ABCDEFGHIJKLM	0.56
9	ABCDEF	0.32
10	ABCDEF	0.32
11	ABCD	0.25
12	AB	0.15
13	ABC	0.19
14	ABCDE	0.26
15	ABCDEF	0.32
16	ABCDEFGH	0.37
17	A	0.13

1. Flow Rate calculated as a portion of the total flow through that pipe with a 2.0 gpm demand being subtracted for each passing lateral.
2. Preceding Lateral Count and Line Designation are not based on finalized designs.

**APPENDIX C**

**CANDIDATE BACKFLOW PREVENTER  
FOR THE PRIVATE FIRE SERVICE**



# Model 375ADA

## Reduced Pressure Detector Assembly

### Application

Designed for installation on water lines in fire protection systems to protect against both backsiphonage and backpressure of contaminated water into the potable water supply. The Model 375ADA shall provide protection where a potential health hazard exists. Incorporates metered by-pass to detect leaks and unauthorized water use.

### Standards Compliance

- ASSE® Listed 1047 (2 1/2" - 8")
  - CSA® Certified (2-1/2" - 8")
  - AWWA Compliant C550
  - UL® Classified
  - C-UL® Classified
  - FM® Approved
  - Approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California.
  - NYC MEA 104-05-M
  - NSF® Listed-Standard 61, Annex G\*
- \*(0.25% MAX. WEIGHTED AVERAGE LEAD CONTENT)

### Materials

Main valve body	Ductile Iron ASTM A 536 Grade 4
Access covers	Ductile Iron ASTM A 536 Grade 4
Coatings	FDA Approved fusion epoxy finish
Internals	Stainless steel, 300 Series NORYL™, NSF Listed
Fasteners & Springs	Stainless Steel, 300 Series
Elastomers	EPDM (FDA approved) Buna Nitrile (FDA approved)
Polymers	NORYL™, NSF Listed
Sensing line	Stainless steel, braided hose

### Features

Sizes:	2 1/2", 3", 4", 6", 8", 10"
Maximum working water pressure	175 PSI
Maximum working water temperature	140°F
Hydrostatic test pressure	350 PSI
End connections (Grooved for steel pipe)	AWWA C606 ANSI B16.1 Class 125

\*2 1/2" & 3" sizes use 4" body & reducer coupling

### Dimensions & Weights (do not include pkg.)

MODEL 375ADA SIZE	WEIGHT								
	WITHOUT GATES		WITH OS&Y GATES (GXF)		WITH OS&Y GATES (GXG)		WITH BUTTERFLY VALVES (GXG)		
	in.	mm	lbs.	kg	lbs.	kg	lbs.	kg	
2 1/2	65	112	50.8	214	97	206	93.5	131	59.4
3	80	111	50	231	104.8	221	100.3	132	60
4	100	98	45	252	114	226	103	130	59
6	150	151	69	387	176	357	162	203	92
8	200	321	146	797	362	773	351	429	195
10	250	374	170	1059	480	937	425	546	248

MODEL 375ADA SIZE	DIMENSION (approximate)																				
	A		A WITH BUTTERFLY VALVES		B LESS GATE VALVES		C		D		E OS&Y OPEN		E OS&Y CLOSED		E WITH BUTTERFLY VALVES		F		H		
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
2 1/2	65	35 1/8	892	32 1/8	816	20 1/8	511	4 1/2	114	9	229	16 3/8	416	13 7/8	352	8	203	11	279	9 5/8	247
3	80	36 1/8	918	33	838	20 1/8	511	4 1/2	114	9	229	18 7/8	479	15 5/8	397	8	203	11	279	9 5/8	247
4	100	38 1/4	972	33 1/4	845	19 7/8	505	4 1/2	114	9	229	22 3/4	578	18 1/4	464	9 1/8	232	11	279	9 5/8	247
6	150	47 1/4	1200	40 1/4	1022	25 7/8	657	5 1/2	140	10 1/2	267	30 1/8	765	23 3/4	603	10 1/8	257	12 3/8	314	13	330
8	200	62	1575	55	1397	38 1/2	978	10	254	12	305	37 3/4	959	29 1/4	743	11 15/16	303	15 3/8	391	17 5/16	440
10	250	64 5/8	1642	58 1/2	1485	38 1/2	978	10	254	12	305	45 3/4	1162	35 3/8	899	13 5/16	338	15 3/8	391	17 1/8	435



(with OS&Y gates)



(with BGVIC valves)

### Options

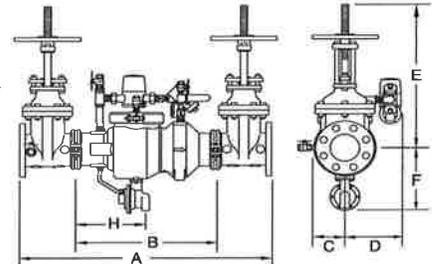
(Suffixes can be combined)

- with OS & Y gate valves (standard)
- L - less shut-off valves (flanged body connections)
- LM - less water meter
- with remote reading meter
- with gallon meter (standard)
- with cu ft/min meter
- G - with groove end gate valves
- FG - with flanged inlet gate connection and grooved outlet gate connection
- MS - with Integral Relief Valve Monitor Switch
- BGVIC - with grooved end butterfly valves with integral supervisory switches
- PI - with Post Indicator Gate Valve

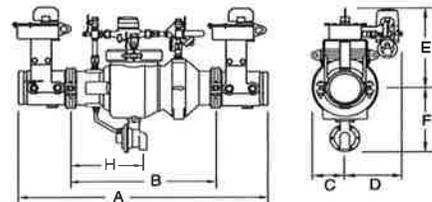
### Accessories

- Air gap (Model AG)
- Repair kit (rubber only)
- Thermal expansion tank (Model XT)
- OS & Y Gate valve tamper switch (OSY-40)
- QT-SET Quick Test Fitting Set

MODEL 375ADA with standard OS&Y



MODEL 375ADA with BGVIC option



Attention: Model 375ADA (grooved body) and Model 375DA (flange body) have different lay lengths.

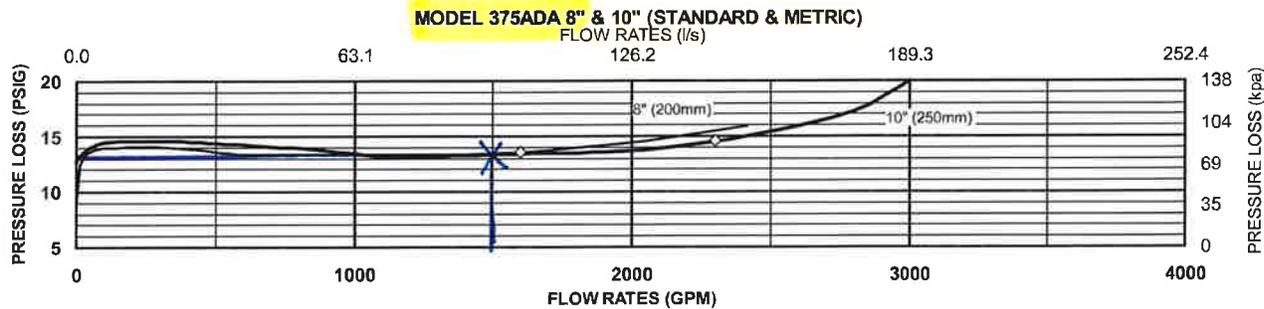
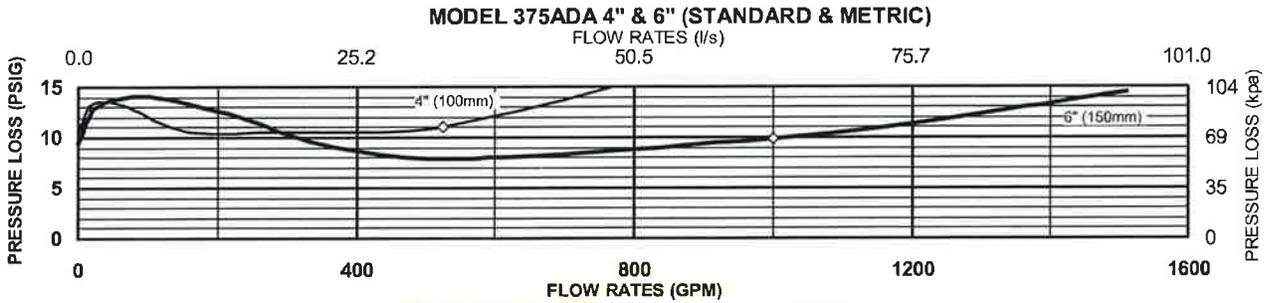
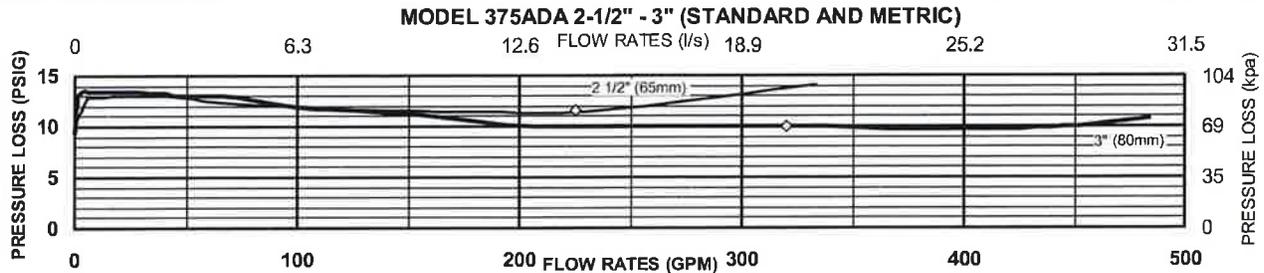
Relief Valve discharge port:  
2 1/2"- 6" - 2.75 sq. in.  
8" - 10" - 3.69 sq. in.

Zurn Industries, LLC | Wilkins  
1747 Commerce Way, Paso Robles, CA U.S.A. 93446 Ph. 855-663-9876, Fax 805-238-5766  
In Canada | Zurn Industries Limited  
3544 Nashua Drive, Mississauga, Ontario L4V 1L2 Ph. 905-405-8272, Fax 905-405-1292  
www.zurn.com

Rev. C  
Date: 5/14  
Document No. BF-375ADA  
Patent No. 5, 913, 331  
Product No. Model 375ADA

**Flow Characteristics**

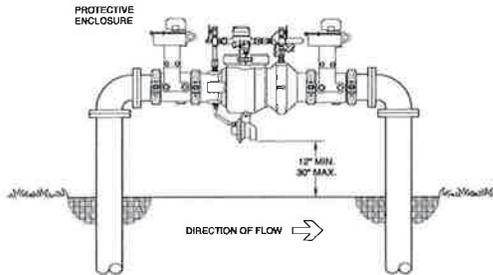
◇ Rated Flow (established by approval agencies)



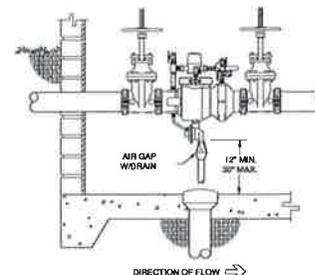
**Typical Installation**

Local codes shall govern installation requirements. To be installed in accordance with the manufacturer's instructions and the latest edition of the Uniform Plumbing Code. Unless otherwise specified, the assembly shall be mounted at a minimum of 12" (305mm) and a maximum of 30" (762mm) above adequate drains with sufficient side clearance for testing and maintenance. The installation shall be made so that no part of the unit can be submerged.

Pipe size	Capacity thru Schedule 40 Pipe (GPM)			
	5 ft/sec	7.5 ft/sec	10 ft/sec	15 ft/sec
2 1/2"	75	112	149	224
3"	115	173	230	346
4"	198	298	397	595
6"	450	675	900	1351
8"	780	1169	1559	2339
10"	1229	1843	2458	3687
12"	1763	2644	3525	5288



OUTDOOR INSTALLATION (MODEL 375ADA with BGVIC option)



INDOOR INSTALLATION (MODEL 375ADA with G option)

**Specifications**

The Reduced Pressure Detector Backflow Prevention Assembly shall be ASSE® Listed 1047, and supplied with full port OS & Y gate valves. The main body and access cover shall be epoxy coated ductile iron (ASTM A 536 Grade 4), the seat ring and check valve shall be NORYL™, the stem shall be stainless steel (ASTM A 276) and the seat disc elastomers shall be EPDM. The checks and the relief valve shall be accessible for maintenance without removing the device from the line. The Reduced Pressure Detector Backflow Prevention Assembly shall be a WILKINS Model 375ADA.

## **APPENDIX D**

### **COMPUTER MODELING RESULTS**

#### **PRIVATE FIRE PROTECTION SYSTEM ANALYSIS**

##### **NODE AND PIPE DIAGRAM REFERENCE:**

Exhibit B at the back of the report.

##### **CONDITIONS MODELED:**

1. Fire flow of 1,500 gpm at Node 18.

FLOWRATE IS EXPRESSED IN GPM AND PRESSURE IN PSIG

A SUMMARY OF THE ORIGINAL DATA FOLLOWS

PIPE NO.	NODE NOS.	LENGTH (FEET)	DIAMETER (INCHES)	ROUGHNESS	MINOR LOSS K	FIXED GRADE
22	0 3	150.0	16.0	120.0	.00	460.00
25	3 6	500.0	16.0	120.0	.00	
28	6 9	90.0	16.0	120.0	.00	
31	9 12	140.0	8.0	120.0	.00	
34	12 15	20.0	8.0	120.0	22.00	
37	15 18	410.0	8.0	120.0	.00	

JUNCTION NUMBER	DEMAND	ELEVATION	CONNECTING PIPES
3	.00	320.00	22 25
6	.00	325.00	25 28
9	.00	326.00	28 31
12	.00	316.00	31 34
15	.00	316.00	34 37
18	1500.00	298.00	37

OUTPUT SELECTION: ALL RESULTS ARE OUTPUT EACH PERIOD

THIS SYSTEM HAS 6 PIPES WITH 6 JUNCTIONS , 0 LOOPS AND 1 FGNS

THE RESULTS ARE OBTAINED AFTER 2 TRIALS WITH AN ACCURACY = .00000

**Meadowood 2 in the City of San Diego  
 Private Fire Protection System Analysis  
 Service from the 470 Pressure Zone**

**September 23, 2015  
 Dexter Wilson Engineering, Inc.  
 Job No. 840-003**

**Meadowood 2 in the City of San Diego  
 Private Fire Protection System Analysis  
 Fire flow 1500 gpm**

**840003A**

PIPE NO.	NODE NOS.	FLOWRATE	HEAD LOSS	PUMP HEAD	MINOR LOSS	VELOCITY	HL/1000
22	0 3	1500.00	.23	.00	.00	2.39	1.54
25	3 6	1500.00	.77	.00	.00	2.39	1.54
28	6 9	1500.00	.14	.00	.00	2.39	1.54
31	9 12	1500.00	6.29	.00	.00	9.57	44.89
34	12 15	1500.00	.90	.00	31.31	9.57	44.89
37	15 18	1500.00	18.41	.00	.00	9.57	44.89

JUNCTION NUMBER	DEMAND	GRADE LINE	ELEVATION	PRESSURE
3	.00	459.77	320.00	60.57
6	.00	459.00	325.00	58.07
9	.00	458.86	326.00	57.57
12	.00	452.58	316.00	59.18
15	.00	420.37	316.00	45.23
18	1500.00	401.97	298.00	45.05

THE NET SYSTEM DEMAND = 1500.00

SUMMARY OF INFLOWS(+) AND OUTFLOWS(-) FROM FIXED GRADE NODES

PIPE NUMBER	FLOWRATE
22	1500.00

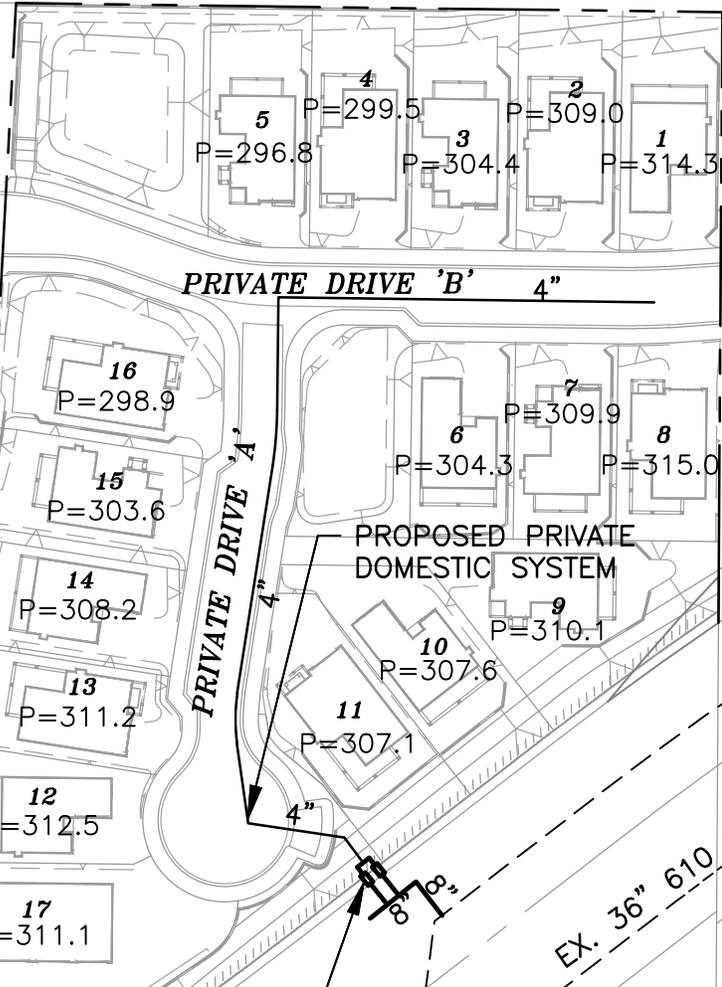
THE NET FLOW INTO THE SYSTEM FROM FIXED GRADE NODES = 1500.00

THE NET FLOW OUT OF THE SYSTEM INTO FIXED GRADE NODES = .00

RANCHO SANTA FE LAKES DRIVE



SCALE: 1" = 100'



PROPOSED PRIVATE DOMESTIC SYSTEM

TWO 2" DOMESTIC SERVICE WATER METERS AND BACKFLOW PREVENTERS

EX. 36" 610 NORTH CITY ZONE

CARMEL VALLEY ROAD  
EX. 16" 470 RANCHO DEL SOL ZONE

**LEGEND**

- — — — — PROJECT BOUNDARY
- - - - - EXISTING PUBLIC WATER LINES
- PROPOSED PUBLIC WATER LINES
- PROPOSED PRIVATE WATER LINES

**NOTE:** ALL LATERALS TO DWELLING UNITS TO BE 2".

DEXTER WILSON ENGINEERING, INC.  
CONSULTING ENGINEERS  
(760) 438-4422

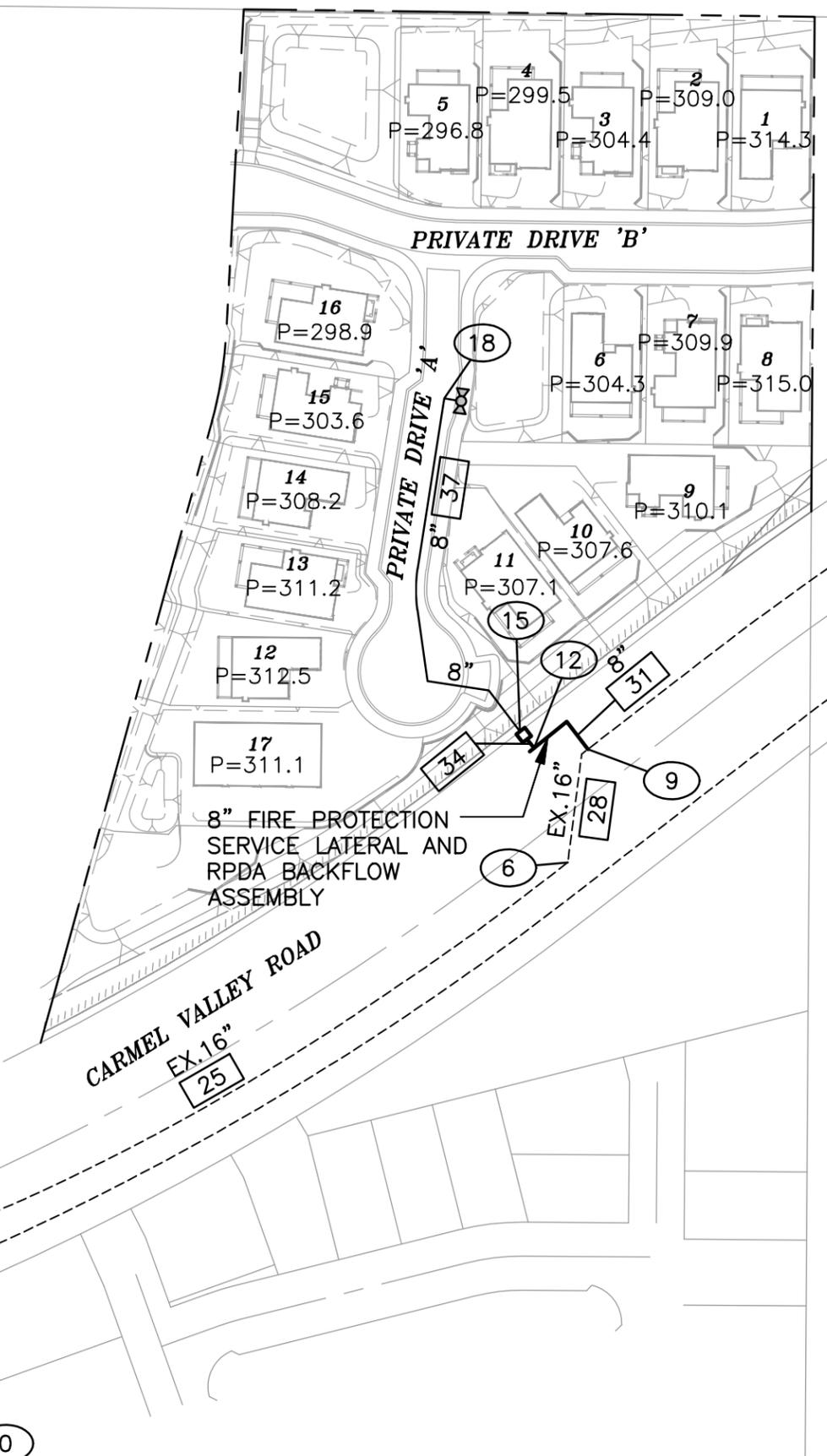
**EXHIBIT A  
PRIVATE DOMESTIC  
WATER SYSTEM**

MEADOWOOD-2 PROJECT

\\ARTIC\DWG\840003\EXHIBIT A.DWG 09-23-15 14:05:31 LAYOUT: LAYOUT1

\\ARTIC\DWG\840003\EXHIBIT B.DWG 09-23-15 13:19:44 LAYOUT: LAYOUT1

RANCHO SANTA FE LAKES DRIVE



8" FIRE PROTECTION SERVICE LATERAL AND RPDA BACKFLOW ASSEMBLY

EX. 16" 470 RANCHO DEL SOL ZONE  
EX. 36" 610 NORTH CITY ZONE



SCALE: 1" = 100'  
0 100 FEET

**LEGEND**

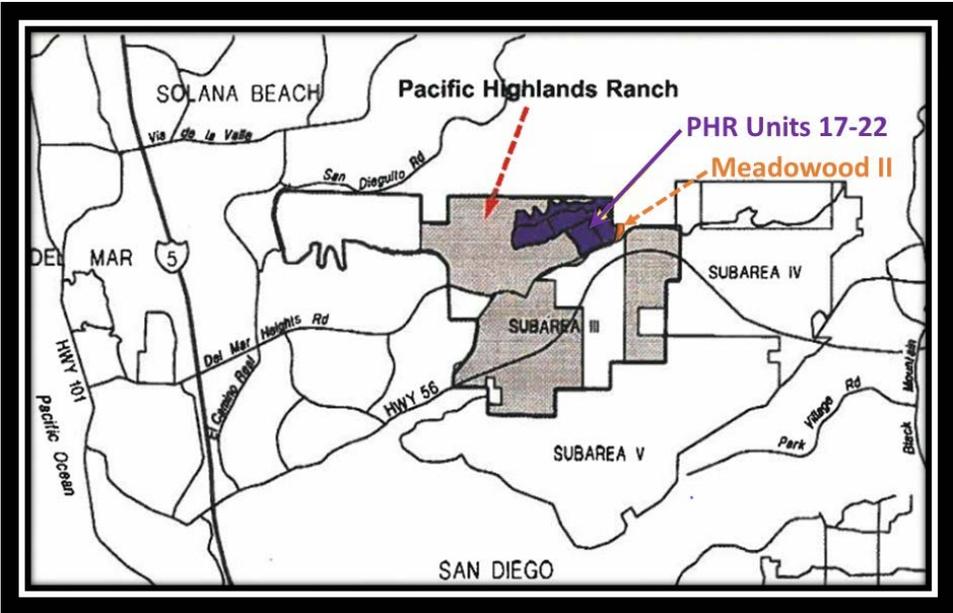
- PROJECT BOUNDARY
- - - - - EXISTING PUBLIC WATER LINES
- PROPOSED PUBLIC WATER LINES
- PROPOSED PRIVATE WATER LINES
- ( 3 ) COMPUTER MODEL NODE NUMBER
- [ 34 ] COMPUTER MODEL PIPE NUMBER

EXISTING 610/470 PRESSURE REDUCING STATION

RANCHO SANTA FE FARMS RD.

DEXTER WILSON ENGINEERING, INC.  
CONSULTING ENGINEERS  
(760) 438-4422

**EXHIBIT B**  
**PRIVATE FIRE PROTECTION SYSTEM**  
MEADOWOOD-2 PROJECT



**HALL LAND COMPANY**

**Pacific Highlands Ranch  
Units 17 through 22  
Sewer Study Addendum  
For Meadowood II**



September 14, 2015

Mr. Alejandro Ruiz  
Development Services Department  
122 First Avenue, 4th Floor, MS401  
San Diego, CA 92101

**Subject: Pacific Highlands Ranch Units 17 - 22 Sewer Study Addendum for Meadowood II**

West Coast Civil is pleased to submit three copies of the Pacific Highlands Ranch Units 17 - 22 Sewer Study Addendum for Meadowood II Development for Hall Land Company. The Meadowood II development project (Project) located at 6500 Carmel Valley Road, APN 305-021-05. The Project is a part of the Pacific Highlands Ranch development. The Project will consist of 16 single-family dwelling units and a triplex with 3 attached town homes.

**INTRODUCTION**

The Pacific Highlands Ranch Units 17-22 Sewer Study, May 2003 by PBS&J (2003 Sewer Study) had identified the Project as being within the Carmel Valley Trunk Sewer Basin and outside the scope of their study which included the Gonzalez Canyon Trunk Sewer draining to Sewer Pump Station 79. Currently, the Project is planned to connect to the planned sewer in Pacific Highlands Ranch Unit 22 and sewer through the Gonzalez Canyon Trunk Sewer to Sewer Pump Station 79.

The purpose of the sewer study addendum is to identify the proposed on-site sewer system and verify that existing and planned wastewater facilities can adequately convey the additional wastewater flows from the Project.

This study expands on the following previously approved documents:

- Pacific Highlands Ranch Units 17-22 Sewer Study, May 2003 by PBS&J
- Sewer Master Plan for the Pacific Highlands Ranch Sub Area III, February 2000 by John Powell and Associates

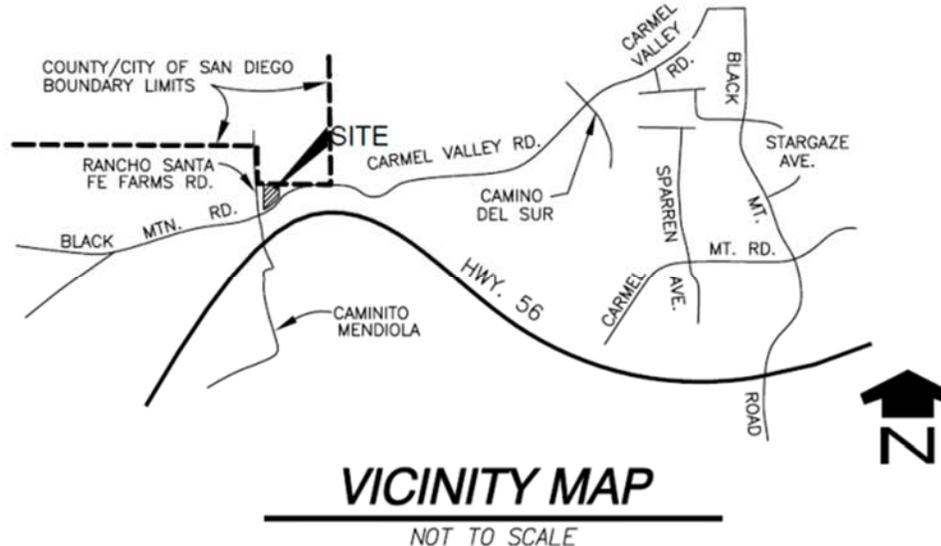
This study provides:

- An estimate of Project wastewater flows
- A detailed layout and sizing of the proposed on-site sewer system
- An updated off-site sewer analyses

## BACKGROUND

The Project is located on the north side of Carmel Valley Road just east of Rancho Santa Fe Farms Road, north of Highway 56, and adjacent to the Pacific Highlands Ranch Units 17-22. Figure 1 presents the Project Vicinity. The May 2003 Pacific Highlands Ranch Units 17-22 Sewer Study identified that the Project Site was outside of the Gonzalez Canyon Trunk Sewer Basin and within the Carmel Valley Trunk Sewer Basin. 2) Can you also include the zoning information: General Plan Designation: The Project is designated as Low Density Residential per the Pacific Highlands Ranch Community Plan; Zoning: RS-1-14 per Pacific Highlands Ranch Subarea Plan.

**Figure 1 Project Vicinity**



## PROJECT WASTEWATER FLOWS

The Project is on a 4.5 acre site and is zoned for up to 22 Single-Family Dwelling Units. Current development planning estimates that the Project will consist of 16 Single-Family Dwelling Units and a triplex with 3 attached town homes. To be conservative the wastewater flows for the Project were estimated based on the maximum zoning estimate of 22 Equivalent Dwelling Units (EDUs). The estimated average daily flow from the project is 6,160 gpd.

Project Wastewater Flows were estimated using the following City of San Diego Design Criteria:

- 80 gallons per day (gpd) per capita for Sewer Generation
- 3.5 persons per household

## ONSITE SEWER SYSTEM

The onsite sewer system for the Project consists of 4 manholes and approximately 665 feet of 8-inch diameter sewer main. The onsite sewer system will connect to the planned Pacific Highlands Ranch Unit 22 development (Unit 22), and both project have been coordinating closely. Unit 22 is planning to provide an invert elevation of approximately 286.0 feet at the closest manhole to the property line along Lilac Way.

The onsite sewer system was sized in accordance with the following City of San Diego Design Criteria:

- Manhole Depths ranging from 5 to 10 feet
- Minimum 8-inch pipe diameter
- Peaking Factor =  $6.2945 \times (\text{population})^{-0.1342}$
- Manning's "n" = 0.013
- Minimum Velocity of 2 feet per second, where slope < 1.0%
- Maximum depth to diameter (d/D) ratio of 0.5

The onsite sewer system is presented on Exhibit A.

Table 1 presents the proposed onsite manholes and their rim and invert elevations and depth of cover.

<b>Table 1 Proposed Onsite Manholes</b>			
Name	RIM Elevation	Invert Elevation	Depth of Cover
22	295.0 ft.	286.0 ft.	9.1 ft.
A	295.0 ft.	286.9 ft.	8.1 ft.
B	293.0 ft.	288.0 ft.	5.0 ft.
C	308.0 ft.	301.0 ft.	7.0 ft.
D	310.0 ft.	303.0 ft.	7.0 ft.

Table 2 presents the proposed onsite sewers. Onsite sewer sizing calculations are provided in Appendix D.

<b>Table 2 Proposed Onsite Sewers</b>					
Name	Upstream Manhole	Downstream Manhole	Diameter	Length	Slope
1	A	22	8 in.	73.6 ft.	1.3%
2	B	A	8 in.	81.6 ft.	1.3%
3	C	B	8 in.	285.5 ft.	4.6%
4	D	B	8 in.	223.0 ft.	6.7%

Detailed onsite hydraulic calculations provided in Appendix D

## OFFSITE SEWER SYSTEM

The 2003 Sewer Study had identified the Project as being within the Carmel Valley Trunk Sewer Basin and outside the scope of their study which included the Gonzalez Canyon Trunk Sewer draining to Sewer Pump Station 79. With the Project now planned to connect to Unit 22 and sewer through the Gonzalez Canyon Trunk Sewer to Sewer Pump Station 79, the 2003 Sewer Study's hydraulic analyses was revised.

The 2003 Sewer Study estimated 2,503 EDUs in the Gonzalez Canyon Trunk Sewer. The additional 22 EDUs from this Project represent less than a 1.0 percent increase in estimated flow. With the addition of the Project the Gonzalez Canyon Trunk Sewer would service a total of 2,525 EDUs.

Because the Project is adding less than a 1.0 percent increase in flow, this study focused on a simple update to the sewer system sizing calculation performed in the approved 2003 Sewer Study. The system analyses updated focused on a comparison of the 2003 Sewer Study's estimated pipeline d/D's to the increase in d/D when the Project is included.

The following steps were taken to update the hydraulic calculations:

- The 2003 Sewer Study Exhibit and Appendix C Summary Tables was reviewed to identify only those sewers that would receive additional flows (Downstream Sewers) from the Project.
- Appendix B – 2003 Sewer Study Analyses Summary (of this Study) was created to show only the Downstream Sewers and all hydraulic calculations were verified.
- Appendix A - Cumulative Offsite Sewer Analyses (of this Study) was created to present the hydraulic results of the Downstream Sewers with the additional Project flows.

For reference purposes the following have been provided:

- The 2003 Sewer Study Exhibit is provided in a pocket at the back of the report.
- The 2003 Sewer Study is provided in Appendix C of this study

A comparison summary of the results of the hydraulic analyses are presented in Table 3.

Main Sewer Segments	2003 Sewer Study Range of d/D	Cumulative Project Range of d/D
PHR Units 17-22	0.05 – 0.29	0.12 – 0.30
PHR Units 5-11	0.28 – 0.47	0.28 - 0.48
Gonzalez Canyon Trunk Sewer	0.27 – 0.55	0.27 – 0.55

Detailed offsite hydraulic calculations for the Cumulative Project are provided in Appendix A  
2003 Sewer Study detailed offsite hydraulic calculations provided in Appendix B

The results of the hydraulic analyses for the off-site sewer system within Pacific Highlands Ranch and the Gonzalez Canyon Trunk Sewer, with the revised flows, indicate that a few portions of the trunk sewer will continue to have a d/D ratio of slightly above 0.5 consistent with the findings of the 2003 Sewer Study.

## RESULTS AND CONCLUSIONS

The Project is a small 19 unit development encompassing 16 single family dwelling units and a multifamily triplex that was originally planned to drain to the Carmel Valley Trunk Sewer. Current site planning has shifted the sewer drainage of this property to the Gonzalez Trunk Sewer basin via the planned Pacific Highlands Ranch Unit 22. The following are the key findings from the study;

- The onsite system is sized in accordance with the City's design guidelines.
- The proposed offsite sewer system has sufficient capacity to serve the Project.

It is our pleasure to serve the City of San Diego's Development Services Department. If you should have any questions or concerns, please feel free to contact me via telephone at 619.518.3109 or via email at [kyle@westcoastcivil.com](mailto:kyle@westcoastcivil.com).

Respectfully Submitted,



Kyle McCarty, P.E.  
Project Manager  
West Coast Civil



### Attachments:

Response to Comments

Exhibit A – Onsite Sewer System

Appendix A – Cumulative Offsite Sewer Analyses

Appendix B – 2003 Sewer Study Analyses Summary

Appendix C - May 2003 Pacific Highlands Ranch Units 17-22 Sewer Study

Appendix D – Onsite Sewer Analyses

Exhibit – 2003 Sewer Study Exhibit

## Response to Comments

### **Comment 1:**

The Meadowood project proposes to connect private sewer to the Pardee's Pacific Highlands Ranch (PHR) Unit 22C. The City of San Diego entered into a participation agreement with Pardee for design and construction of the Pump Station 79 upgrade per document filed in the Office of the City Clerk of San Diego on September 18, 2007 as Document No. 303003. Please provide a document indicating that Pardee is in agreement for your project flow to go into their project.

Response: The Applicant already provided this as part of the submittal, and it was not deemed relevant for the inclusion in the Sewer Study.

### **Comment 2:**

Please revise the approved sewer study exhibit for Pacific Highlands Ranch Units 17-22, Figure 4, to include the proposed development. Show and label clearly the point of connection, where the proposed flows will discharge to the Unit 22.

Response: The point of connection is at manhole 22-3. A note has been added to that manhole (the furthest east manhole on the page) shown on approved sewer study exhibit for Pacific Highlands Ranch Units 17-22, Figure 4 – reference Exhibit B.

### **Comment 3:**

On the sewer exhibit provide:

- a. Manhole numbers, reach or pipe segments numbers, for ease of comparison with the flow data in the Sewer Study Summary Table.
- b. Label the proposed on-site sewer system as private, and the off-site sewer as public.
- c. Label pipes with size, type, flow direction and slope.

Response: Exhibit A Onsite Sewer System was added and the items referenced above were provided.

### **Comment 4:**

The manhole numbers and reaches in the Sewer Study Summary Table, Appendixes A and B, have to comply with the sewer exhibits, those were not provided. Revise the study and include necessary exhibits.

Response: Appendix A and B were revised and notes were added. Please note that mapping for offsite sewers (outside of PHR Units 17-22) were not provided.

### **Comment 5:**

In the Sewer Study Summary Table "Remarks" field Appendixes "A", identify from which line the onsite flow will be generated.

Response: Remarks were added to Appendix A.

**Comment 6:**

At the time of plan check provide an Encroachment Maintenance and Removal Agreement (EMRA) for all private encroachments within the public sewer easement(s) and/or within the public right of way.

Response: It is our understanding that there are no locations where an EMRA is needed for this Project. The onsite sewer system is intended to be a private system.

## Exhibit A

### Onsite Sewer System Exhibit



## Appendix A

### Cumulative Off-site Sewer Analyses

**Appendix A - Offsite Sewer Analyses with Project Flows**

**SEWER STUDY SUMMARY**

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow		Line Size (inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total		(mgd)	(cfs)						
3	22-3	22-4	3.5	3	10.5	87.5	3.45	0.02	0.04	8	1	0.08	0.12	1.6	Meadowood II Connection
4	22-4	22-8	3.5	2	7	199.5	3.09	0.05	0.08	8	1	0.11	0.17	1.9	
8	22-8	22-9	3.5	0	0	234.5	3.03	0.06	0.09	8	2.4	0.10	0.15	2.8	
9	22-9	22-10	3.5	0	0	234.5	3.03	0.06	0.09	8	1.6	0.11	0.16	2.4	
10	22-10	22-11	3.5	0	0	234.5	3.03	0.06	0.09	8	2	0.10	0.15	2.6	
11	22-11	22-12	3.5	0	0	234.5	3.03	0.06	0.09	8	1	0.12	0.18	2.0	
12	22-12	22-13	3.5	0	0	234.5	3.03	0.06	0.09	8	1	0.12	0.18	2.0	
13	22-13	21-10	3.5	0	0	234.5	3.03	0.06	0.09	8	1	0.12	0.18	2.0	
25	21-10	21-11	3.5	85	297.5	532.0	2.71	0.12	0.18	8	1.5	0.16	0.23	2.9	
26	21-11	21-18	3.5	17	59.5	591.5	2.67	0.13	0.20	8	1.6	0.16	0.24	3.0	
35	21-18	21-23	3.5	0	0	980.0	2.50	0.20	0.30	8	1.9	0.19	0.29	3.6	
36	21-23	6-3	3.5	6	21	1064.0	2.47	0.21	0.33	8	1.9	0.20	0.30	3.7	
157	6-3	6-14	3.5	290	1015	1260.0	2.41	0.24	0.38	8	0.5	0.31	0.46	2.4	PHR Units 5-11 Sewer Study
158	6-14	6-15	3.5	4	14	1715.0	2.32	0.32	0.49	10	0.5	0.32	0.39	2.5	
159	6-15	6-16	3.5	4	14	1844.5	2.29	0.34	0.52	10	0.5	0.33	0.40	2.6	
160	6-16	6-17	3.5	9	31.5	1921.5	2.28	0.35	0.54	10	0.5	0.34	0.41	2.6	
161	6-17	6-18	3.5	13	45.5	1967.0	2.27	0.36	0.55	10	1.3	0.27	0.32	3.7	
162	6-18	6-19	3.5	0	0	2289.5	2.23	0.41	0.63	10	2.5	0.24	0.29	4.8	
163	6-19	6-20	3.5	0	0	2289.5	2.23	0.41	0.63	10	2	0.26	0.31	4.5	
164	6-20	6-21	3.5	0	0	2289.5	2.23	0.41	0.63	10	2.5	0.24	0.29	4.8	
165	6-21	6-22	3.5	0	0	2289.5	2.23	0.41	0.63	10	1.1	0.30	0.36	3.6	
166	6-22	6-23	3.5	0	0	2289.5	2.23	0.41	0.63	10	1.5	0.28	0.33	4.0	
167	6-23	6-24	3.5	0	0	2289.5	2.23	0.41	0.63	10	1	0.31	0.37	3.5	
168	6-24	R-5	3.5	0	0	2289.5	2.23	0.41	0.63	10	0.38	0.40	0.48	2.4	
173	R-5	R-6	3.5	0	0	3685.7	2.09	0.62	0.95	12	0.7	0.39	0.39	3.4	
174	R-6	R-10	3.5	0	0	3685.7	2.09	0.62	0.95	12	2.3	0.28	0.28	5.2	
177	R-10	R-11	3.5	0	0	6314.2	1.95	0.98	1.52	12	2.3	0.36	0.36	5.9	
178	R-11	R-12	3.5	0	0	6314.2	1.95	0.98	1.52	12	2.8	0.34	0.34	6.3	
179	R-12	R-13	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.7	0.51	0.51	3.8	
180	R-13	R-14	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.7	0.51	0.51	3.8	
181	R-14	R-15	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.7	0.51	0.51	3.8	
182	R-15	R-16	3.5	0	0	6314.2	1.95	0.98	1.52	12	1.7	0.39	0.39	5.3	
183	R-16	R-17	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.7	0.51	0.51	3.8	
184	R-17	R-18	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.7	0.51	0.51	3.8	
185	R-18	15-3	3.5	0	0	6314.2	1.95	0.98	1.52	12	4.5	0.30	0.30	7.5	
186	15-3	15-4	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.65	0.52	0.52	3.7	
187	15-4	15-5	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.65	0.52	0.52	3.7	
188	15-5	15-6	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.65	0.52	0.52	3.7	
189	15-6	15-7	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.65	0.52	0.52	3.7	
190	15-7	15-8	3.5	0	0	6314.2	1.95	0.98	1.52	12	1.19	0.43	0.43	4.6	
191	15-8	15-9	3.5	0	0	6314.2	1.95	0.98	1.52	12	0.8	0.49	0.49	4.0	
192	15-9	15	3.5	482	1687	8001.2	1.88	1.21	1.87	12	11.1	0.27	0.27	11.0	
193	15	16	3.5	0	0	8001.2	1.88	1.21	1.87	12	1.1	0.50	0.50	4.8	
194	16	17	3.5	0	0	8001.2	1.88	1.21	1.87	12	1.1	0.50	0.50	4.8	
195	17	DM72	3.5	0	0	8001.2	1.88	1.21	1.87	12	2.97	0.38	0.38	6.9	

**Appendix A - Offsite Sewer Analyses with Project Flows**

**SEWER STUDY SUMMARY**

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow		Line Size (inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total		(mgd)	(cfs)						
D72	DM72	DM73	3.5	281	983.5	8984.7	1.86	1.33	2.06	12	1	0.55	0.55	4.7	Offsite PHR
D73	DM73	DM74	3.5	0	0	8984.7	1.86	1.33	2.06	12	1	0.55	0.55	4.7	
D74	DM74	DM75	3.5	0	0	8984.7	1.86	1.33	2.06	12	1	0.55	0.55	4.7	
D75	DM75	DM76	3.5	0	0	8984.7	1.86	1.33	2.06	12	1	0.55	0.55	4.7	
D76	DM76	DM77	3.5	0	0	8984.7	1.86	1.33	2.06	12	1	0.55	0.55	4.7	
D77	DM77	DM78	3.5	0	0	8984.7	1.86	1.33	2.06	12	1	0.55	0.55	4.7	
D78	DM78	DM79	3.5	0	0	8984.7	1.86	1.33	2.06	12	1	0.55	0.55	4.7	
D79	DM79	DM80	3.5	0	0	8984.7	1.86	1.33	2.06	12	1	0.55	0.55	4.7	
D80	DM80	DM52	3.5	0	0	8984.7	1.86	1.33	2.06	12	1	0.55	0.55	4.7	
D81	DM52	MH6	3.5	101	353.5	9338.2	1.85	1.38	2.13	12	1.55	0.49	0.49	5.6	
OF1	MH6	MH5	3.5	344	1204	10542.2	1.82	1.53	2.37	15	0.8	0.56	0.45	4.5	
OF2	MH5	MH4	3.5	0	0	10542.2	1.82	1.53	2.37	15	0.8	0.56	0.45	4.5	
OF3	MH4	MH3	3.5	0	0	10542.2	1.82	1.53	2.37	15	0.8	0.56	0.45	4.5	
OF4	MH3	MH2	3.5	0	0	10542.2	1.82	1.53	2.37	15	0.8	0.56	0.45	4.5	
OF5	MH2	MH1	3.5	0	0	10542.2	1.82	1.53	2.37	15	0.8	0.56	0.45	4.5	
OF6	MH1	MH146	3.5	0	0	10542.2	1.82	1.53	2.37	15	0.8	0.56	0.45	4.5	
OF7	MH146	MH26	3.5	0	0	10542.2	1.82	1.53	2.37	15	1.2	0.50	0.40	5.2	
OF8	MH26	MH25	3.5	0	0	10542.2	1.82	1.53	2.37	15	2.76	0.40	0.32	7.0	
			3.5	0	0	10542.2	1.82	1.53	2.37	15	1.4	0.48	0.38	5.5	
OF9	MH25	MH24	3.5	0	0	10542.2	1.82	1.53	2.37	15	0.65	0.59	0.47	4.1	
			3.5	0	0	10542.2	1.82	1.53	2.37	15	0.8	0.56	0.45	4.5	
OF10	MH24	MH6	3.5	0	0	10542.2	1.82	1.53	2.37	15	0.8	0.56	0.45	4.5	
OF11	MH6	MH4	3.5	0	0	10657.7	1.81	1.55	2.39	15	0.8	0.56	0.45	4.5	
OF12	MH4	MH3	3.5	0	0	11389.2	1.80	1.64	2.53	15	1.1	0.53	0.42	5.1	
OF13	MH3	MH2	3.5	0	0	11389.2	1.80	1.64	2.53	15	0.8	0.58	0.46	4.6	
OF14	MH2	MH1	3.5	0	0	11389.2	1.80	1.64	2.53	15	0.8	0.58	0.46	4.6	
OF15	MH1	MH41	3.5	204.6	716.1	12105.3	1.78	1.73	2.67	15	0.89	0.58	0.46	4.8	
OF16	MH41	MH56	3.5	0	0	12105.3	1.78	1.73	2.67	15	0.89	0.58	0.46	4.8	
OF17	MH56	MH40	3.5	0	0	12105.3	1.78	1.73	2.67	15	0.89	0.58	0.46	4.8	
OF18	MH40	MH40A	3.5	0	0	12105.3	1.78	1.73	2.67	15	0.5	0.69	0.55	3.9	
OF19	MH40A	MH39	3.5	0	0	12105.3	1.78	1.73	2.67	15	0.5	0.69	0.55	3.9	
OF20	MH39	MH55	3.5	0	0	12105.3	1.78	1.73	2.67	15	0.5	0.69	0.55	3.9	
OF21	MH55	MH38	3.5	9	31.5	12136.8	1.78	1.73	2.68	15	0.5	0.69	0.55	3.9	
OF22	MH38	MH36	3.5	0	0	12136.8	1.78	1.73	2.68	15	0.5	0.69	0.55	3.9	
OF23	MH36	MH34	3.5	0	0	12136.8	1.78	1.73	2.68	15	0.76	0.61	0.49	4.5	
OF24	MH34	MH33	3.5	0	0	12136.8	1.78	1.73	2.68	18	0.68	0.57	0.38	4.3	
OF25	MH33	MH34	3.5	0	0	12136.8	1.78	1.73	2.68	18	0.4	0.66	0.44	3.6	
OF26	MH34	MH51	3.5	0	0	12136.8	1.78	1.73	2.68	18	0.48	0.63	0.42	3.8	
OF27	MH51	MH52	3.5	0	0	12136.8	1.78	1.73	2.68	18	0.5	0.62	0.42	3.9	
OF28	MH52	PS79	3.5	0	0	12136.8	1.78	1.73	2.68	18	1.73	0.45	0.30	6.0	

## Appendix B

### 2003 Sewer Study Analyses Summary

**Appendix B - Excerpts from May 2003 PHR 17-22 Sewer Study**

**SEWER STUDY SUMMARY**

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow		Line Size (inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total		(mgd)	(cfs)						
3	22-3	22-4	3.5	3	10.5	10.5	4.59	0.00	0.01	8	1	0.03	0.05	0.9	
4	22-4	22-8	3.5	2	7	122.5	3.30	0.03	0.05	8	1	0.09	0.14	1.7	
8	22-8	22-9	3.5	0	0	157.5	3.19	0.04	0.06	8	2.4	0.08	0.12	2.5	
9	22-9	22-10	3.5	0	0	157.5	3.19	0.04	0.06	8	1.6	0.09	0.14	2.2	
10	22-10	22-11	3.5	0	0	157.5	3.19	0.04	0.06	8	2	0.09	0.13	2.3	
11	22-11	22-12	3.5	0	0	157.5	3.19	0.04	0.06	8	1	0.10	0.15	1.8	
12	22-12	22-13	3.5	0	0	157.5	3.19	0.04	0.06	8	1	0.10	0.15	1.8	
13	22-13	21-10	3.5	0	0	157.5	3.19	0.04	0.06	8	1	0.10	0.15	1.8	
25	21-10	21-11	3.5	85	297.5	455.0	2.77	0.10	0.16	8	1.5	0.15	0.22	2.8	
26	21-11	21-18	3.5	17	59.5	514.5	2.72	0.11	0.17	8	1.6	0.15	0.23	2.9	
35	21-18	21-23	3.5	0	0	903.0	2.53	0.18	0.28	8	1.9	0.19	0.28	3.6	
36	21-23	6-3	3.5	6	21	987.0	2.50	0.20	0.30	8	1.9	0.19	0.29	3.6	
157	6-3	6-14	3.5	290	1015	1183.0	2.44	0.23	0.36	8	0.5	0.30	0.45	2.3	
158	6-14	6-15	3.5	4	14	1638.0	2.33	0.31	0.47	10	0.5	0.32	0.38	2.5	
159	6-15	6-16	3.5	4	14	1767.5	2.31	0.33	0.50	10	0.5	0.33	0.39	2.5	
160	6-16	6-17	3.5	9	31.5	1844.5	2.29	0.34	0.52	10	0.5	0.33	0.40	2.6	
161	6-17	6-18	3.5	13	45.5	1890.0	2.29	0.35	0.54	10	1.3	0.26	0.31	3.6	
162	6-18	6-19	3.5	0	0	2212.5	2.24	0.40	0.61	10	2.5	0.24	0.28	4.8	
163	6-19	6-20	3.5	0	0	2212.5	2.24	0.40	0.61	10	2	0.25	0.30	4.4	
164	6-20	6-21	3.5	0	0	2212.5	2.24	0.40	0.61	10	2.5	0.24	0.28	4.8	
165	6-21	6-22	3.5	0	0	2212.5	2.24	0.40	0.61	10	1.1	0.29	0.35	3.6	
166	6-22	6-23	3.5	0	0	2212.5	2.24	0.40	0.61	10	1.5	0.27	0.33	4.0	
167	6-23	6-24	3.5	0	0	2212.5	2.24	0.40	0.61	10	1	0.30	0.36	3.4	
168	6-24	R-5	3.5	0	0	2212.5	2.24	0.40	0.61	10	0.38	0.39	0.47	2.4	
173	R-5	R-6	3.5	0	0	3608.7	2.10	0.61	0.94	12	0.7	0.39	0.39	3.4	
174	R-6	R-10	3.5	0	0	3608.7	2.10	0.61	0.94	12	2.3	0.28	0.28	5.2	
177	R-10	R-11	3.5	0	0	6237.2	1.95	0.97	1.50	12	2.3	0.36	0.36	5.9	
178	R-11	R-12	3.5	0	0	6237.2	1.95	0.97	1.50	12	2.8	0.34	0.34	6.3	
179	R-12	R-13	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.7	0.50	0.50	3.8	
180	R-13	R-14	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.7	0.50	0.50	3.8	
181	R-14	R-15	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.7	0.50	0.50	3.8	
182	R-15	R-16	3.5	0	0	6237.2	1.95	0.97	1.50	12	1.7	0.39	0.39	5.3	
183	R-16	R-17	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.7	0.50	0.50	3.8	
184	R-17	R-18	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.7	0.50	0.50	3.8	
185	R-18	15-3	3.5	0	0	6237.2	1.95	0.97	1.50	12	4.5	0.30	0.30	7.5	
186	15-3	15-4	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.65	0.51	0.51	3.7	
187	15-4	15-5	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.65	0.51	0.51	3.7	
188	15-5	15-6	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.65	0.51	0.51	3.7	
189	15-6	15-7	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.65	0.51	0.51	3.7	
190	15-7	15-8	3.5	0	0	6237.2	1.95	0.97	1.50	12	1.19	0.43	0.43	4.6	
191	15-8	15-9	3.5	0	0	6237.2	1.95	0.97	1.50	12	0.8	0.48	0.48	4.0	
192	15-9	15	3.5	482	1687	7924.2	1.89	1.20	1.85	12	11.1	0.27	0.27	11.0	
193	15	16	3.5	0	0	7924.2	1.89	1.20	1.85	12	1.1	0.50	0.50	4.7	
194	16	17	3.5	0	0	7924.2	1.89	1.20	1.85	12	1.1	0.50	0.50	4.7	
195	17	DM72	3.5	0	0	7924.2	1.89	1.20	1.85	12	2.97	0.38	0.38	6.8	

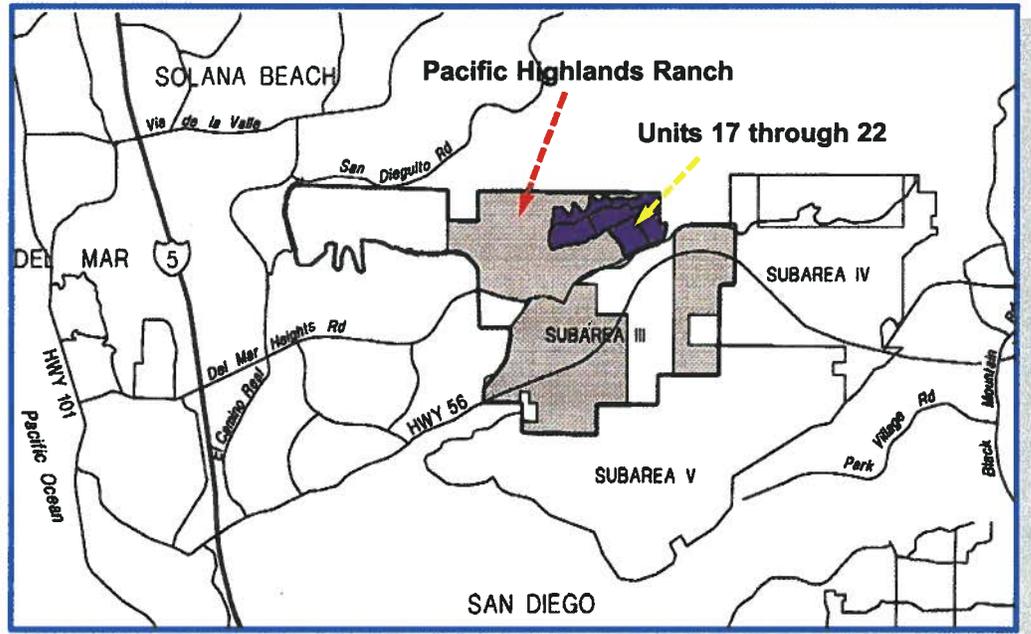
**Appendix B - Excerpts from May 2003 PHR 17-22 Sewer Study**

**SEWER STUDY SUMMARY**

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow		Line Size (inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total		(mgd)	(cfs)						
D72	DM72	DM73	3.5	281	983.5	8907.7	1.86	1.32	2.05	12	1	0.54	0.54	4.7	
D73	DM73	DM74	3.5	0	0	8907.7	1.86	1.32	2.05	12	1	0.54	0.54	4.7	
D74	DM74	DM75	3.5	0	0	8907.7	1.86	1.32	2.05	12	1	0.54	0.54	4.7	
D75	DM75	DM76	3.5	0	0	8907.7	1.86	1.32	2.05	12	1	0.54	0.54	4.7	
D76	DM76	DM77	3.5	0	0	8907.7	1.86	1.32	2.05	12	1	0.54	0.54	4.7	
D77	DM77	DM78	3.5	0	0	8907.7	1.86	1.32	2.05	12	1	0.54	0.54	4.7	
D78	DM78	DM79	3.5	0	0	8907.7	1.86	1.32	2.05	12	1	0.54	0.54	4.7	
D79	DM79	DM80	3.5	0	0	8907.7	1.86	1.32	2.05	12	1	0.54	0.54	4.7	
D80	DM80	DM52	3.5	0	0	8907.7	1.86	1.32	2.05	12	1	0.54	0.54	4.7	
D81	DM52	MH6	3.5	101	353.5	9261.2	1.85	1.37	2.12	12	1.55	0.49	0.49	5.6	
OF1	MH6	MH5	3.5	344	1204	10465.2	1.82	1.52	2.35	15	0.8	0.56	0.44	4.5	
OF2	MH5	MH4	3.5	0	0	10465.2	1.82	1.52	2.35	15	0.8	0.56	0.44	4.5	
OF3	MH4	MH3	3.5	0	0	10465.2	1.82	1.52	2.35	15	0.8	0.56	0.44	4.5	
OF4	MH3	MH2	3.5	0	0	10465.2	1.82	1.52	2.35	15	0.8	0.56	0.44	4.5	
OF5	MH2	MH1	3.5	0	0	10465.2	1.82	1.52	2.35	15	0.8	0.56	0.44	4.5	
OF6	MH1	MH146	3.5	0	0	10465.2	1.82	1.52	2.35	15	0.8	0.56	0.44	4.5	
OF7	MH146	MH26	3.5	0	0	10465.2	1.82	1.52	2.35	15	1.2	0.50	0.40	5.2	
OF8	MH26	MH25	3.5	0	0	10465.2	1.82	1.52	2.35	15	2.76	0.40	0.32	7.0	
			3.5	0	0	10465.2	1.82	1.52	2.35	15	1.4	0.48	0.38	5.5	
OF9	MH25	MH24	3.5	0	0	10465.2	1.82	1.52	2.35	15	0.65	0.59	0.47	4.1	
			3.5	0	0	10465.2	1.82	1.52	2.35	15	0.8	0.56	0.44	4.5	
OF10	MH24	MH6	3.5	0	0	10465.2	1.82	1.52	2.35	15	0.8	0.56	0.44	4.5	
OF11	MH6	MH4	3.5	0	0	10580.7	1.81	1.54	2.38	15	0.8	0.56	0.45	4.5	
OF12	MH4	MH3	3.5	0	0	11312.2	1.80	1.63	2.52	15	1.1	0.53	0.42	5.1	
OF13	MH3	MH2	3.5	0	0	11312.2	1.80	1.63	2.52	15	0.8	0.58	0.46	4.5	
OF14	MH2	MH1	3.5	0	0	11312.2	1.80	1.63	2.52	15	0.8	0.58	0.46	4.5	
OF15	MH1	MH41	3.5	204.6	716.1	12028.3	1.78	1.72	2.66	15	0.89	0.58	0.46	4.8	
OF16	MH41	MH56	3.5	0	0	12028.3	1.78	1.72	2.66	15	0.89	0.58	0.46	4.8	
OF17	MH56	MH40	3.5	0	0	12028.3	1.78	1.72	2.66	15	0.89	0.58	0.46	4.8	
OF18	MH40	MH40A	3.5	0	0	12028.3	1.78	1.72	2.66	15	0.5	0.68	0.55	3.9	
OF19	MH40A	MH39	3.5	0	0	12028.3	1.78	1.72	2.66	15	0.5	0.68	0.55	3.9	
OF20	MH39	MH55	3.5	0	0	12028.3	1.78	1.72	2.66	15	0.5	0.68	0.55	3.9	
OF21	MH55	MH38	3.5	9	31.5	12059.8	1.78	1.72	2.66	15	0.5	0.69	0.55	3.9	
OF22	MH38	MH36	3.5	0	0	12059.8	1.78	1.72	2.66	15	0.5	0.69	0.55	3.9	
OF23	MH36	MH34	3.5	0	0	12059.8	1.78	1.72	2.66	15	0.76	0.60	0.48	4.5	
OF24	MH34	MH33	3.5	0	0	12059.8	1.78	1.72	2.66	18	0.68	0.57	0.38	4.3	
OF25	MH33	MH34	3.5	0	0	12059.8	1.78	1.72	2.66	18	0.4	0.66	0.44	3.6	
OF26	MH34	MH51	3.5	0	0	12059.8	1.78	1.72	2.66	18	0.48	0.63	0.42	3.8	
OF27	MH51	MH52	3.5	0	0	12059.8	1.78	1.72	2.66	18	0.5	0.62	0.41	3.9	
OF28	MH52	PS79	3.5	0	0	12059.8	1.78	1.72	2.66	18	1.73	0.45	0.30	6.0	

## Appendix C

### May 2003 Pacific Highlands Ranch Units 17-22 Sewer Study



## PARDEE HOMES

# Pacific Highlands Ranch Sewer Study Units 17 through 22



An employee-owned company

May 22, 2003

Ms. Barbara Salvini  
Land Development Review Section  
600 B Street, Suite 800  
San Diego, CA 92101-4502

**SUBJECT: PACIFIC HIGHLANDS RANCH UNITS 17 THROUGH 22 SEWER STUDY**

Dear Ms. Salvini:

PBS&J is pleased to submit three (3) copies of the revised Pacific Highlands Ranch (PHR) Units 17 Through 22 Sewer Study (Units 17-22). This revision was prepared in response to City of San Diego (City) review comments dated March 21, 2003. The review comments and the response to City comments are presented in Appendix A.

This study expands on the approved *Sewer Master Plan for the Pacific Highlands Ranch – Subarea III (Sewer Master Plan)* prepared by John Powell & Associates, Inc., in February 2000. Since the approval of the *Sewer Master Plan*, more information on land use in Units 17-22 has become available through the processing of a preliminary tentative map. Approximately 763 equivalent dwelling units (EDUs) are planned for Units 17-22. These EDUs combined with the EDUs identified in the approved PHR Units 5-11 Sewer Study (PBS&J, May 2002), indicate that a total of approximately 2,503 EDUs will drain to Gonzales Canyon Trunk Sewer from PHR, including off-site areas draining through PHR. A total of approximately 2,406 EDUs were assumed in the *Sewer Master Plan* as draining to Gonzales Canyon Trunk Sewer. Since the time the *Sewer Master Plan* was developed, density shifts within the PHR project has resulted in slightly more EDU's of flow to Gonzales Canyon. These slightly higher flows, however, do not significantly impact existing or previously planned sewer reaches.

This report provides background to the PHR Units 17-22 development, existing sewer facilities, sewage design criteria and sewage generation, sewer design criteria and environmental constraints, hydraulic analyses of the existing and proposed facilities, and recommendations.

## INTRODUCTION

PBS&J has been authorized by Pardee Homes to prepare this sewer study for Units 17-22 of the Pacific Highlands Ranch Development (Project). The purpose of this

study is to determine the on-site sewer facilities required for the Project and to review potential impacts to existing off-site sewer facilities that were evaluated in the *Sewer Master Plan*. The study identifies recommended pipe sizes and alignments, and provides calculated peak depth of flow (dn), dn/D ratio, and pipe velocities.

## BACKGROUND

The PHR Development is located within Subarea III of the City's North City Future Urbanizing Area as depicted in Figure 1. It is surrounded by the communities of Fairbanks Ranch on the north, Torrey Highlands (Subarea IV) to the east, Del Mar Mesa (Subarea V) to the south, and Carmel Valley to the west. Subarea III includes a Multiple Habitat Preservation Area (MHPA) and a portion of the proposed State Route 56.

The Project lies within the Gonzales Canyon drainage basin as depicted in Figure 2, and will be served by a proposed extension to the existing Gonzales Canyon Trunk Sewer that will be constructed as part of Units 5-11. The sizing and alignment of this sewer was identified in the PHR *Units 5-11 Sewer Study* approved by the City on May 31, 2002. Units 17-22 sewer flows will comprise approximately 30 percent of the projected Gonzales Canyon basin flow from the Pacific Highlands Ranch Development at build-out.

Similar to Units 5-11, Units 17-22 will be located north of the proposed Carmel Valley Road re-alignment as shown in Figure 3 and just west of Rancho Santa Fe Farms Road. Units 17-21 are designated as single-family (SF) residential areas. A 1.5-acre recreational is proposed within Unit 19. Unit 22 is being planned for residential use (86 SF units) with an alternative land use for a 10-acre school site and 32 SF residential units.

A comparison of the number of dwelling units between those assumed in the *Sewer Master Plan* and those estimated in this report is presented in Table 1 to verify the previous sizing of backbone facilities. Based on EDUs estimated for Units 5-11, there would be 638 remaining EDUs from Units 17-22 according to the *Sewer Master Plan* assumptions. However, there are 764 EDUs planned for Units 17-22. The total number of PHR and off-site EDUs discharging to the Gonzales Canyon Trunk sewer identified in the *Sewer Master Plan* was 2,406. Based on this study, there are 2,503 EDUs discharging to the Gonzales Canyon Trunk Sewer, including approximately 25 EDUs that were identified as discharging to the Carmel Valley Trunk Sewer in the *Sewer Master Plan* that would be better served by Gonzales Canyon Trunk Sewer. The 5 percent increase in flow being conveyed to the proposed sewer facilities in Units 5-11 and to the Gonzales Canyon Trunk Sewer was caused by shifts in residential density within the PHR development. The impact of the additional flows to the proposed Units 5-11 sewer facilities and to the Gonzales Canyon Trunk Sewer is not significant and no existing facilities exceeded capacity.

**EXISTING SEWER FACILITIES**

At present, there are no existing sewer facilities within the Unit 17-22 project boundary, although sewer facilities for Units 5-11 are being designed and will be under construction in a few months. Off-site sewer facilities are located in Gonzales Canyon from PHR Unit 1.

The flows from Units 17-22 will discharge to the proposed sewer mains identified in the approved *PHR Units 5-11 Sewer Study*. The approved Unit 5-11 Sewer study included 1,162 EDUs from Units 5-11 and 736 EDUs from Units 17-22 in sizing the backbone facilities.

**TABLE 1  
 GONZALEZ CANYON TRUNK SEWER PROPOSED EDUS**

REVISED FLOWS <sup>1</sup>			SEWER MASTER PLAN	
UNIT	NET ACRE (acres)	EDUs	UNIT <sup>5</sup>	EDUs
<b>Units 17-23</b>				
17	-	164	6	195
18	0	69	5	201
19	0	160	6	
19 (Rec Fac)	1.2	11	6	
20	0	56	5	
21	0	190	22	242
22	0	32	22	
School Site	8	71	22	
Fire Station	1.2	11	Note 6	
<i>Subtotal</i>		<b>764</b>		<b>638</b>
<b>Not A Part of Units 17-23</b>				
1 <sup>3</sup>		97	1	121
5 <sup>2</sup>		169	14	135
6 <sup>2</sup>		147	19,20	278
7 <sup>2</sup>		138	7	143
8 <sup>2</sup>		189	6	189
9a & 9b <sup>2</sup>		262	5	262
10 <sup>2</sup>		93	8	104
11 <sup>2</sup>		93	20	
School <sup>2</sup>		71	School	71
Park <sup>2</sup>		0	Park	0
30 <sup>4</sup>		15	30 <sup>4</sup>	Note 6
34 <sup>3</sup>	43.2	385	34	385
Offsite <sup>4</sup>		80		80
<i>Subtotal</i>		<b>1,739</b>		<b>1,768</b>
<b>Total</b>		<b>2,503</b>		<b>2,406</b>

1 Revised flows based on most recent information  
 2 Per approved *PHR Units 5-11 Sewer Study* (PBS&J May 2002)  
 3 Per approved *PHR Unit 1 Sewer Study* (John Powell & Associates, Inc. Mar. 2000)  
 4 Per approved *PHR Subarea III Sewer Master Plan* (John Powell & Associates, Inc. Mar. 2000)  
 5 Unit designations refer subdivision in *Sewer Master Plan* see Appendix B  
 6 Discharged to Carmel Valley Trunk Sewer in the Master Plan.

**Gonzales Canyon Backbone Facilities**

The existing Gonzales Canyon Trunk Sewer varies between 15-inches and 18-inches diameter. The trunk sewer terminates at Pump Station 79 near San Dieguito Drive and El Camino Real. The Pump Station 79's dual 8-inch force mains discharge to the gravity sewer in El Camino Real to Pump Station 65.

**SEWAGE GENERATION AND DESIGN CRITERIA**

The following City of San Diego's *Design Guide* criteria were used for this analysis:

Sewage generation ( <i>Figure II-2</i> )	80 gallons per day (gpd) per capita
Persons per Dwelling Unit	3.5
Peaking Factor ( <i>Figure II-2</i> )	$6.2945 \times (\text{population})^{-0.1342}$
Manning's "n"	0.013
Minimum velocity	2 feet per second (fps)
Maximum dn/D ratio:	0.5 (for all mains)
Net acres	$0.8 \times \text{gross acres}$

Sewage generation for the project area was estimated from the proposed Project Tentative Map dated 12-03-01 provided by Latitude 33 and the *Design Guide*. The design criterion are consistent with that used in the *Sewer Master Plan*. The proposed sewage generation for the Project area is summarized in Table 2. The average daily flow is estimated to be approximately 213,500 gpd.

**TABLE 2  
 PROJECT SEWAGE FLOWS**

UNIT	LAND USE	ACERAGE (acres)	NET AREA (acres)	DWELLING UNITS <sup>3</sup>	EQUIVALENT DWELLING UNITS	POPULATION	SEWAGE GENERATION (gpd) <sup>1</sup>
17	SF		-	164	164	574	45,920
18	SF			69	69	241.5	19,320
19	SF			160	160	560	44,800
19	Rec Fac <sup>2</sup>	1.5	1.2	10.7	10.7	37.4	2,990
20	SF			56	56	196	15,680
21	SF			190	190	665	53,200
22	SF			32	32	112	8,960
22	School	10	8.0	71.2	71.2	249.2	19,936
22	Fire Station	1.5	1.2	10.7	10.7	37.4	2,990
<b>Total</b>		<b>13.0</b>	<b>10.4</b>	<b>764</b>	<b>764</b>	<b>2,672</b>	<b>213,797</b>

1. Based on 80 gpd/person
2. Recreational Facility land use assumes 8.9 EDU/net acre
3. Dwelling unit counts for Units 17-22 based on information provided by Latitude 33 (1/30/02)
4. School site alternative has more EDUs than all residential alternative. School site EDU based on 10 gross acres and City guidelines of 8.9 DU/net acre.

Another update from the *Sewer Master Plan* is the addition of a recreational facility in Unit 19. The recreational facility is approximately 1.5 gross acres and will include swimming facilities. The estimated sewage generation rate for this facility was assumed to be 8.9 DU/net acre; therefore, the expected sewage flow from the facility is 2,990 gallons per day (gpd).

## **GENERAL CRITERIA AND ENVIRONMENTAL CONSTRAINTS**

The following design criteria and constraints apply to the Project and should be incorporated in design documents where appropriate. No environmental assessments have been included as part of this study.

- Discharge to the Gonzales Canyon Trunk Sewer from Units 17-22 will be by gravity flow.
- Gravity mains will be in public streets where feasible. Easements will be provided for gravity mains in private streets.
- Side yard easement mains will, whenever feasible, run adjacent to the property line, and access will be provided to mains and manholes.
- Any sewer main easements in side yards are to be paved, 10-foot (minimum) on both sides, or the sewer main is to be constructed of PVC with steel casing. Greater easement widths will be required for sewer mains deeper than 10 feet.
- Access to all manholes is required for canyon slopes, and for all other developments with off-site sewer facilities.
- Access roads, when not paved, must be 12-foot wide, topped with decomposed granite designed for H-20 loading, and must additionally be equivalent to the Fire Department standards for loading. No asphalt is allowed in canyons.
- Show connectivity of access roads to a paved street.
- Pipes at turns in streets must be at allowable deflection for a curve or certain appropriate manholes to make the curves.
- Manholes in canyon areas will be permanently sealed to eliminate odor problems and the potential for vandalism.
- No sewer mains shall be constructed under any landscaped medians. Medians over sewer mains, manholes, and laterals are not allowed.

- Environmental requirements may be identified for individual development or for offsite improvements.
- Portions of sewer mains in the canyons near wetlands and in side yards will be concrete encased high strength V.C. where they do not coincide with the centerline of the improved access road.
- Concrete stream crossings shall be colored to match adjacent soil.
- Sewer main protection will be incorporated at stream crossings.
- Easements for all proposed sewer lines will be shown on the improvement plans.
- All proposed private sewer facilities located within a single lot shall be designed to meet the requirements of the California Uniform Plumbing Code and a plumbing permit shall be obtained.
- An Encroachment Removal Permit Agreement for, and prior to, proposed improvements of any kind, including landscaping and enriched paving, to be installed in or over easements shall be required. Disclosure will be made to all buyers.
- Mitigating efforts to protect the MSCP or open space and view corridors will be made as follows:
  - Sewers will be located within existing disturbed areas where possible.
  - Mitigation to control off-site transportation of sediment during construction.
  - Post-construction revegetation measures shall be implemented to restore native plant materials.

## **HYDRAULIC ANALYSIS AND PROPOSED SEWER FACILITIES**

The results of the hydraulic analyses are presented in Table 1 of Appendix C and graphically depicted in Figure 4. To provide the most critical sewer analysis the land use in Unit 22 was assumed to be the school site plus 32 SFDU. Presented in Table 2 of Appendix C are the revised hydraulic analysis summary tables for the Units 5-11 sewer facilities and existing portions of the Gonzales Canyon Trunk Sewer based on revised flows.

The sewage flow patterns presented in the *Sewer Master Plan* indicated that sewage generated from development south of Carmel Valley Road is expected to drain to the Carmel Valley Trunk Sewer. No additional flows south of Carmel Valley Road are included in this study since they are planned to be conveyed to the Carmel Valley Trunk Sewer.

For manholes with depths greater than 15-feet, a Deviation from Standards form has been provided in Appendix D. Provided in Appendix E are proposed cross-sections of the proposed streets and driveways showing proposed easements and separation of facilities.

## RESULTS AND CONCLUSIONS

The proposed on-site sewer facilities for Pacific Highlands Ranch Units 17-22 meet the *Design Guide* requirements. The dn/D ratio is less than 0.5 for all segments, and the velocity during peak flow is greater than 2.0 feet per second (fps) except where the *Design Guide* allows an exception for the velocity criteria for slopes greater than 1 percent.

The results of the hydraulic analysis for the off-site PHR 5-11 sewer facilities and the existing Gonzales Canyon Trunk Sewer, with the revised flows, indicate that a few portions of the trunk sewer will continue to have dn/D ratios that slightly exceed 0.5. This is consistent with the approved *Sewer Master Plan*. Based on the hydraulic analysis, the existing Gonzales Canyon Trunk Sewer has sufficient capacity to convey the revised flow.

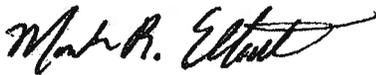
The combined flow from the Project, existing flows, Rancho Pacifica flow, and Pacific Highlands Ranch Units 1 and 5-11 flow will ultimately exceed the existing design capacity of Pump Station 79. Pump Station 79 is currently being upgraded under the City's Capital Improvement Project (CIP) No. 469999. The proposed pump station upgraded capacity was determined to be 3.86 MGD in the *Final Pump Station 79 Preliminary Design Report* (July 2001). Based on this capacity, the pump station will be able to accommodate all future basin flows.

The expected date of completion for the capacity upgrades to Pump Station 79 is December 2004. Initial occupancy of Units 17-22 units is expected to begin after the pump station upgrades have been completed. Hence, pump station capacity is not anticipated to prohibit Project development. As part of the map conditions for Units 5-11 and Units 17-22, a separate report will be submitted to the City regarding the PHR fair share construction costs for Pump Station 79.

Ms. Barbara Salvini  
May 22, 2003  
Page 8 of 8

As always, it is our pleasure to serve the City's Land Development Review Section. Please do not hesitate to call Gail Masutani or me at (760) 753-1120 should you have any questions.

Respectfully submitted,



Mark B. Elliott  
Project Director



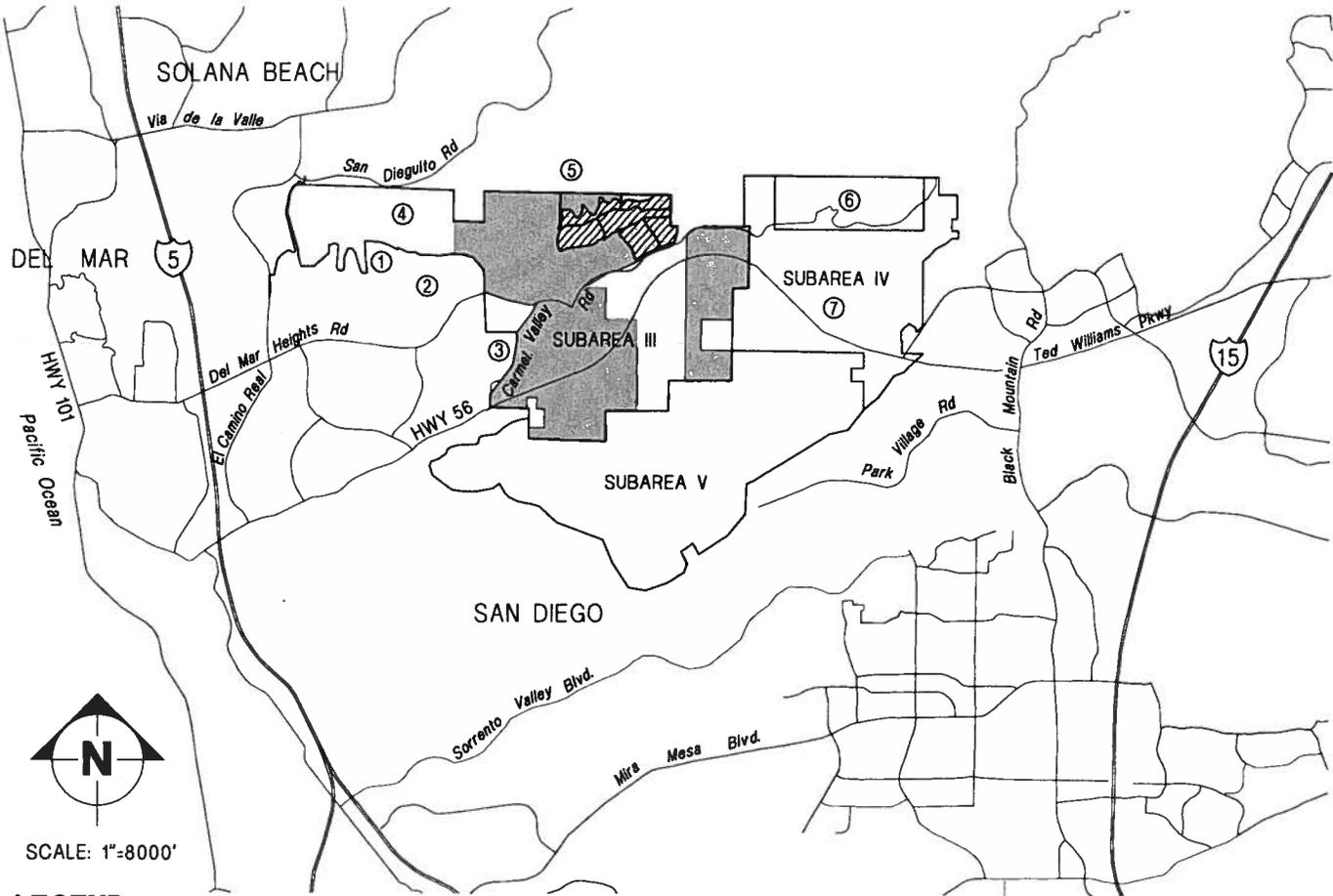
MBE/GKM/mac

Attachments:

- |            |  |
|------------|--|
| Figure 1   | Project Location   |
| Figure 2   | Drainage Basins  |
| Figure 3   | Proposed Land Use  |
| Figure 4   | Proposed Sewer Facilities – Units 17-22                            |
| Appendix A | City Review Comments dated March 21, 2003 and Response to Comments |
| Appendix B | Sewer Master Plan Land Use (Figure 2.1)                            |
| Appendix C | Sewer Summary Tables   |
| Appendix D | Deviation from Standards Form                                      |
| Appendix E | Proposed Cross-Sections  |

- c: Scott Lillibridge, Pardee (San Diego)  
Beth Fischer, Pardee (San Diego)  
Kaveh Haghighi, Latitude 33 (Two Copies)  
Gail Masutani, PBS&J

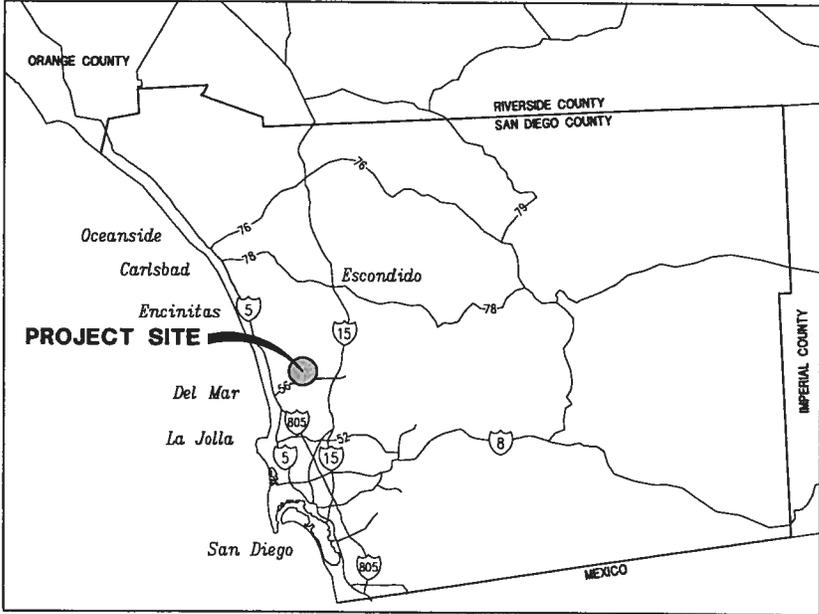
I:\admin\072\491007\Reports\SW May03 2003 PHR 17-22 Sewer Study.doc



SCALE: 1"=8000'

**LEGEND**

- SUBAREA III (NCFUA)
- PACIFIC HIGHLANDS RANCH PROJECT AREA
- ▨ UNITS 17 THROUGH 22 PACIFIC HIGHLANDS RANCH
- ① EXISTING NEIGHBORHOOD 7
- ② EXISTING NEIGHBORHOOD 4A
- ③ SEABREEZE FARMS
- ④ RANCHO PACIFICA
- ⑤ FAIRBANKS RANCH
- ⑥ FAIRBANKS HIGHLANDS
- ⑦ TORREY HIGHLANDS

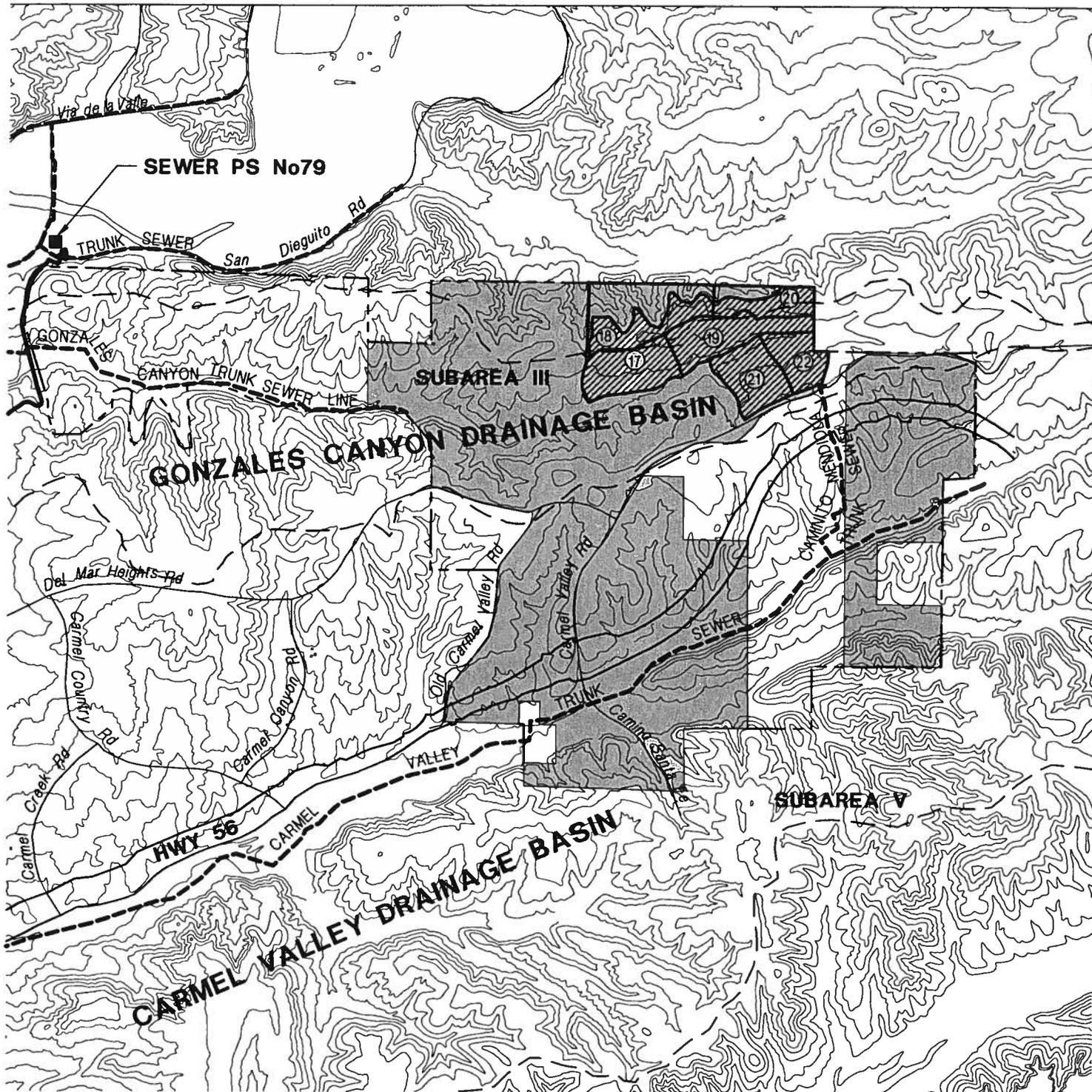


LOCATION MAP

**PROJECT LOCATION**

FIGURE 1





**LEGEND**

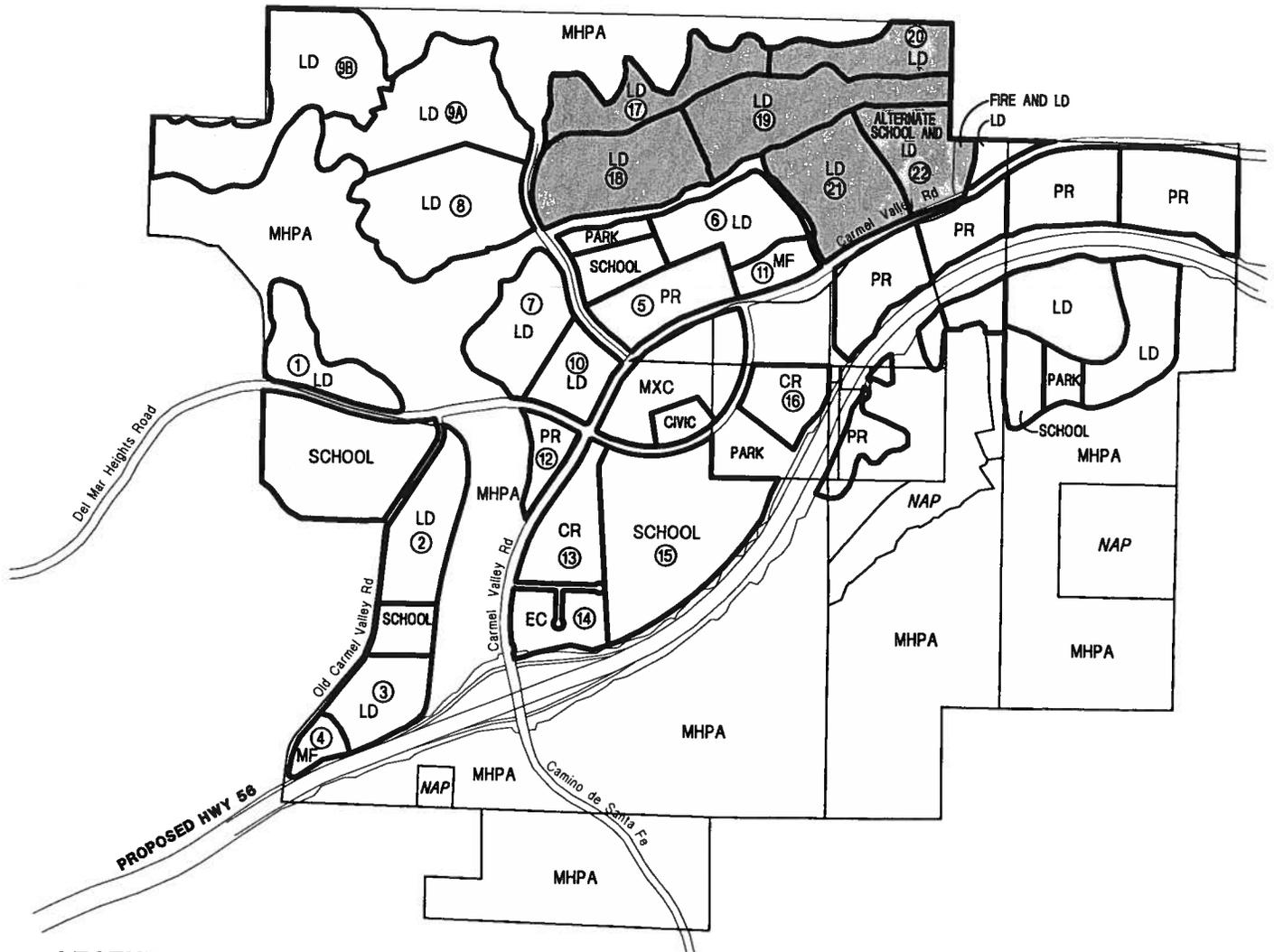
- DRAINAGE BASIN BOUNDARY
- EXISTING GRAVITY SEWER
- FORCE MAIN
- SUBAREA BOUNDARY
- PACIFIC HIGHLANDS RANCH
- ▨ PROJECT AREA
- ⑰ UNIT DESIGNATION



SCALE: 1"=3000'

**DRAINAGE BASINS**

FIGURE 2



**LEGEND**

- PROJECT BOUNDARY
- UNITS 17 TO 22
- CR CORE RESIDENTIAL
- MF MULTI-FAMILY RESIDENTIAL
- LD LOW DENSITY RESIDENTIAL
- PR PERIFERAL RESIDENTIAL
- EC EMPLOYMENT CENTER
- CIVIC TOWN GREEN WITH LIBRARY
- MHPA MULTIPLE HABITAT PRESERVATION AREA
- MXC MIXED USE CORE
- FIRE FIRE STATION
- NAP NOT A PART
- ①⑦ UNIT NUMBER



SCALE: 1"=2000'

SOURCE: LATITUDE 33

**PROPOSED LAND USE**

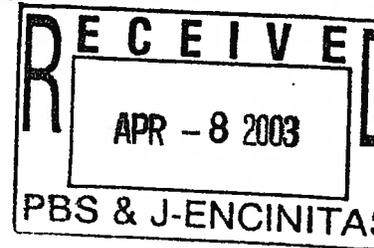
FIGURE 3

---

**APPENDIX A**  
**CITY REVIEW COMMENTS AND RESPONSE TO COMMENTS**



THE CITY OF SAN DIEGO



March 21, 2003

Ms. Gail K. Masutani, PE  
Powell/PBSJ  
175 Calle Magdalena, Suite 101  
Encinitas, CA 92024

Subject: Sewer Study - Revised Pacific Highlands Ranch Units #17-22 (WO 420084)

Dear Ms. Masutani:

We have reviewed the subject sewer study dated March 7, 2003, which was received March 7, 2003. Our comments are as follows:

1. Modify the cross sections to show the dimensions between the sewer and all utilities and other improvements. Not all cross sections are dimensioned. Provide additional cross sections for alleys and for those sewer easements with paving and dimensions.
2. Maintain 10' edge to edge separation between the sewer main and any other wet utility. The State of California Health Department has informed us that they will not give waivers for new construction. Contact Randy Bernard at 525-4354 of the State of California Department of Public Health for review of the plans and to submit any deviation from separation standards requests.
3. Insure that no sewer mains are under any landscaped medians at the center of the cul-de-sacs or at entrances to the private driveways. Medians over sewer mains, manholes, and laterals, are not allowed. Redesign to eliminate the medians or move the sewer mains.
4. No structures or landscaping that would inhibit vehicular access will be installed in or over any sewer easement. No shrubs more than 2 feet in height at maturity are allowed within any sewer easements. No trees are allowed within 10 feet of any Public Sewer Mains or Sewer Laterals. No pressurized landscape irrigation mains or electrical facilities are allowed within any Sewer Easements.
5. Per input from the Metropolitan Wastewater Department's Operation and Maintenance Division; this area of the City has the highest inflow and infiltration of any other City area. Since ultimate flow discharge points have changed from the original sewer master plan for Pacific Highlands Ranch you will be required to tapewrap all joints (not yet built) in the drainage basin of the Gonzalez Canyon Trunk Sewer, that fall within your jurisdiction for engineering.
6. Unit #17: For that easement between Lots 72 and 73: Any sewer easements in side yards are to be paved 10 feet on both sides of the sewer. If there is no manhole, or if 10' total paving is desired, the sewer main may be PVC in steel sleeve concrete encased, in lieu of pavement.



Ms. Gail K. Masutani, PE

March 21, 2003

Page 2

7. Unit #17: Section 2.2.6 of the sewer design guide states that long skew crossings under utilities shall be avoided. Sewer shall cross utilities as close to perpendicular as possible. Skew angles of less than 75 degrees shall be avoided and shall require a request for design deviation and approval by the Wastewater Section Senior Civil Engineer Bobbi Salvini. This applies to the sewer mains at the intersections of Public Streets "J" and "K", and Public Streets "T" and "H".
8. Unit #19: Section 2.2.6 of the sewer design guide states that long skew crossings under utilities shall be avoided. Sewer shall cross utilities as close to perpendicular as possible. Skew angles of less than 75 degrees shall be avoided and shall require a request for design deviation and approval by the Wastewater Section Senior Civil Engineer Bobbi Salvini. This applies to the sewer main at the intersection of Public Streets "B" and "E".
9. Unit #19: Show that the sewer main to serve Lot "A" crossing Public Street "C" will be steel sleeved up to Street "G" in that it crosses landscaped areas.
10. Unit #19: Show that paved driveable access will be provided to the manhole in the lot between Lots 124 and 125 for sewer maintenance and operation issues. Provide a cross section of the easement and a sewer profile to verify easement width for that lot.
11. Unit #20: Show that paved driveable access will be provided to the manhole in Lot "D" between Lots 4 and 40 for sewer maintenance and operation issues.
12. Unit #22: The easement between Lots 36 and 37 needs to have dimensions shown.
13. Unit #22: A manhole is required at the southerly end of Private Driveway "P".
14. Unit #22: For that section of main in an easement between Manholes # 22-9 and 22-12 show a cross sectional detail that includes paving, dimensions, egress points, and the footing of the geo-grid wall, with the sewer excavated. Provide calculations for slope stability.
15. Deviation From Standards Request Form: There are concerns over the 20' depth of the proposed sewers. Input from our operation and maintenance sections encourages depths of no greater than 15' where possible. Allowances are made for extenuating circumstances, however, maintaining ambiance of the canyon area needs to be discussed with the Senior Civil Engineer, Barbara Salvini. Please set up a meeting and be prepared to bring in design plans to show further justification for this request.

Please address and incorporate the above items and revise the sewer study. Resubmit three bound copies signed and stamped by a California Licensed Civil Engineer, for our subsequent review.

Ms. Gail K. Masutani, PE  
March 21, 2003  
Page 3

If you have any questions or require any additional information please call me at 533-5106 or Assistant Engineer Janet Buttmann at 533-7410.

Sincerely,

  
BARBARA A.B. SALVINI  
Senior Civil Engineer

JMB

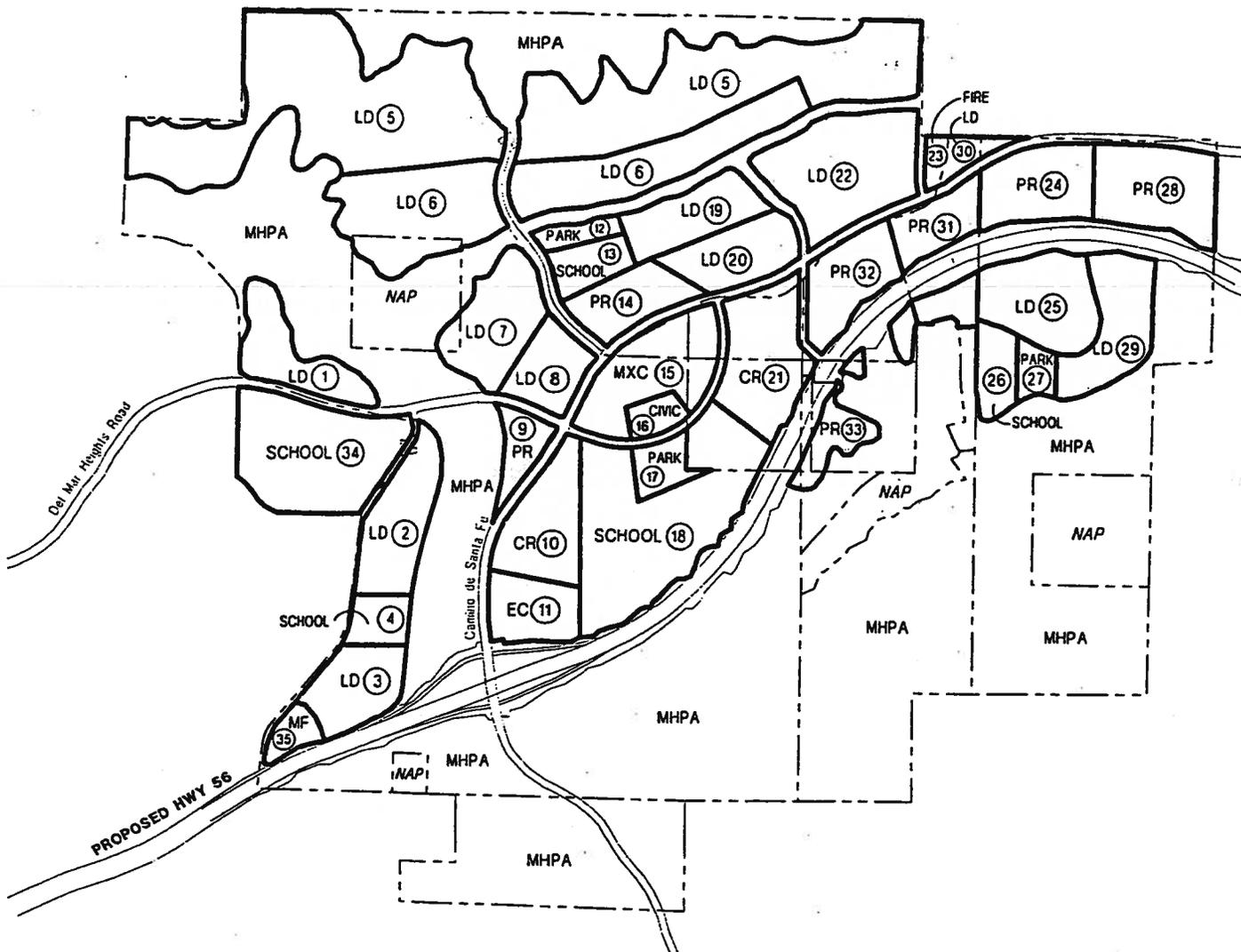
cc: Chris Toth, Deputy Director, Metropolitan Wastewater Department  
Isam Hireish, Senior Civil Engineer, Metropolitan Wastewater Department  
Hushmand Yazdani, Associate Engineer-Civil, Development Services Department  
Paul Buehler, Associate Engineer-Civil, Development Services Department  
Janet Buttmann, Assistant Engineer-Civil, Development Services Department

**PHR UNITS 17-22 SEWER STUDY  
RESPONSE TO COMMENTS  
(City Of San Diego Letter Dated March 21, 2003)**

<b>Comment</b>	<b>Response</b>
1. Modify cross-sections to show the dimensions between the sewer and all utilities and other improvements..	Dimensions have been added to all cross sections.
2. Maintain 10-ft separation between the sewer main and other wet utilities.	A 10-foot separation between sewer and other wet utilities has been shown on the cross sections and will be addressed during the design phase.
3. Insure that no sewer mains are under any landscaped medians at the center of the cul-de-sacs or at entrances to private driveways. Medians over sewer mains, manholes, and laterals, are not allowed.	Sewer mains have been removed from under raised medians.
4. No structures or landscaping that would inhibit vehicular access will be installed in or over any sewer easement.	This criterion has been added to the "General Criteria and Environmental Constraints" section of the report.
5. Tapewrap all sewer joints, not yet built in Gonzales Canyon, will be required.	Proposed sewer mains in this Project are not in Gonzales Canyon, therefore, this note is not applicable. The proposed sewer mains in Gonzales Canyon within the PHR Sewer Master Plan were presented in the approved sewer studies for Unit 1 and Units 5-11.
<b>Unit #17</b>	
6. Easement between Lots 72 and 73: Sewer easements in side yards are to be paved 10-feet on both sides of the sewer or may be PVC in steel sleeve concrete encased, in lieu of pavement.	This area has been revised so that the sewer is now located within the street right-of-way, not in a sewer easement between two lots.
7. Long skew crossings under utilities shall be avoided. Sewer shall cross utilities as close to perpendicular as possible. Skew angles of less than 75 degrees shall be avoided and shall require a request for design deviation and approval by the Wastewater Section Senior Civil Engineer Bobbi Salvini. This applies to sewer mains at the intersections of Public Streets "J" and "K", and "I" and "H".	The layout of Unit 17 has been slightly altered to eliminate both skewed crossings at Public Streets "J" and "K", and "I" and "H".

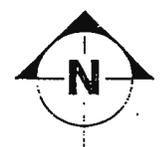
<p><b>Unit #19</b></p> <p>8. Long skew crossings under utilities shall be avoided. Sewer shall cross utilities as close to perpendicular as possible. Skew angles of less than 75 degrees shall be avoided and shall require a request for design deviation and approval by the Wastewater Section Senior Civil Engineer Bobbi Salvini. This applies to sewer mains at the intersections of Public Streets "B" and "E".</p> <p>9. Show that the sewer main to serve Lot "A" crossing Public Street "C" will be steel sleeved up to Street "G" in that it crosses landscaped areas.</p> <p>10. Show that drivable access will be provided to the manhole between Lots 124 and 125 for sewer maintenance and operation issues. Provide a cross section of the easement and a sewer profile to verify easement width for that lot.</p>	<p>The water line has been moved so that the skewed crossing at the intersection of Public Streets "B" and "E" have been eliminated.</p> <p>A note has been added to Figure 4 that the sewer will be steel sleeved up to Street "G".</p> <p>Driveable access will be provided to the manhole between Lots 124 and 125. Easement width is 20 feet. The manhole depths are MH 19-18 6.0 feet, MH 19-19 9.4 ft, and MH 19-20 8.2 feet; therefore, the easement width is sufficient. The sewer main will be steel sleeved from MH 19-18 to MH 19-20. No cross-section will be provided.</p>
<p><b>Unit #20</b></p> <p>11. Show that paved drivable access will be provided to the manhole in Lot "D" between Lots 4 and 40 for sewer maintenance and operation issues.</p>	<p>This segment of the proposed sewer is within a trail system/public amenity. The sewer will be steel sleeved for its entire length since the area will be heavily landscaped.</p>
<p><b>Unit #22</b></p> <p>12. Show easement dimensions between Lots 36 and 37.</p>	<p>A 20-foot wide easement has been added.</p>
<p>13. A manhole is required at the southerly end of Private Driveway "P".</p>	<p>Manhole 22-2 has been provided at the southerly end of Private Driveway "P".</p>
<p>14. For that section of main in an easement between Manholes 22-9 and 22-12, show a cross sectional detail that includes paving, dimensions, egress points, and the footing of the geo-grid wall, with the sewer excavated. Provide calculations for slope stability.</p>	<p>The sewer access for the trail/public amenity area will be similar to that proposed in the approved PHR Unit 5-11 Sewer Study. A schematic cross-section of the trails area with the geogrid wall has been provided in Appendix E. Calculations for slope stability will be provided during final design.</p>
<p>15. Please set up meeting with Bobbi Salvini to discuss sewer depths greater than 20 feet and be prepared to bring in design plans to show further justification for deep sewers.</p>	<p>A meeting with Bobbi Salvini will not be necessary because the slopes in Unit 17 were revised to eliminate sewers depths greater than 20 feet. A revised Deviation from Standards has been submitted in Appendix D.</p>

**APPENDIX B**  
**SEWER MASTER PLAN LAND (FIGURE 2.1)**



**LEGEND**

- PROJECT BOUNDARY
- CR CORE RESIDENTIAL
- MF MULTI-FAMILY RESIDENTIAL
- LD LOW DENSITY RESIDENTIAL
- PR PERIFERAL RESIDENTIAL
- EC EMPLOYMENT CENTER
- CIVIC TOWN GREEN WITH LIBRARY
- MHPA MULTIPLE HABITAT PRESERVATION AREA
- MXC MIXED USE CORE
- FIRE FIRE STATION
- NAP NOT A PART
- (35) AREA NUMBER SEE TABLE 3.3



SCALE: 1"=2000'

SEWER MASTER PLAN  
FOR THE PACIFIC HIGHLANDS RANCH-  
SUBAREA III  
**LAND USE**  
FIGURE 2.1

SOURCE: LATITUDE 33

**POWELL**

John Powell & Associates, Inc.  
Professional Engineers  
72 Cole Avenue, Suite 201  
Brentwood, CA 94005  
725-753-6211

**APPENDIX C**  
**SEWER SUMMARY TABLES**

**UNITS 17-22**  
**SEWER SUMMARY TABLES**

**TABLE 1**  
**SEWER STUDY SUMMARY**  
**UNITS 17-22 SEWER STUDY**

For: Latitude 33/Pardee  
 By: PBS&J

Job No.: 491007.01 1002

04/28/2003

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow (mgd)	Peak Design Flow (cfs)	Line Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total									
Units 22															
1	22-1	21-1	3.5	13	45.5	45.5	3.77	0.01	0.02	8	2	0.05	0.08	1.68	
2	22-2	22-4	3.5	30	105	105.0	3.37	0.03	0.04	8	6.9	0.05	0.08	3.22	4+11(Fire Station)+15(Unit 30)
3	22-3	22-4	3.5	3	10.5	10.5	4.59	0.00	0.01	8	1	0.03	0.05	0.91	
4	22-4	22-8	3.5	2	7	122.5	3.30	0.03	0.05	8	1	0.09	0.14	1.71	Includes flow from Line 2
5	22-5	22-6	3.5	10	35	35.0	3.91	0.01	0.02	8	4.8	0.04	0.06	2.16	
6	22-6	22-7	3.5	0	0	35.0	3.91	0.01	0.02	8	1	0.06	0.08	1.25	
7	22-7	22-8	3.5	0	0	35.0	3.91	0.01	0.02	8	7.6	0.03	0.05	2.50	
8	22-8	22-9	3.5	0	0	157.5	3.19	0.04	0.06	8	2.4	0.08	0.12	2.47	Includes flow from Line 4
9	22-9	22-10	3.5	0	0	157.5	3.19	0.04	0.06	8	1.6	0.09	0.14	2.14	
10	22-10	22-11	3.5	0	0	157.5	3.19	0.04	0.06	8	2	0.09	0.13	2.31	
11	22-11	22-12	3.5	0	0	157.5	3.19	0.04	0.06	8	1	0.10	0.16	1.83	
12	22-12	22-13	3.5	0	0	157.5	3.19	0.04	0.06	8	1	0.10	0.16	1.83	
13	22-13	21-10	3.5	0	0	157.5	3.19	0.04	0.06	8	1	0.10	0.15	1.82	

**TABLE 1**  
**SEWER STUDY SUMMARY**  
**UNITS 17-22 SEWER STUDY**

Job No.: 491007.01 1002

For: Latitude 33/Pardee  
 By: PBS&J

04/28/2003

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served In-Line	Population Served Total	Peak/Ave Ratio	Peak Design Flow (mgd)	Peak Design Flow (cfs)	Line Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
14	21-19	21-20	3.5	5	17.5	17.5	4.29	0.01	0.01	8	1	0.04	0.06	1.03	
15	21-1	21-2	3.5	7	24.5	70.0	3.56	0.02	0.03	8	2.6	0.06	0.09	2.06	Includes flow from Line 1
16	21-2	21-3	3.5	8	28	98.0	3.40	0.03	0.04	8	2	0.07	0.11	2.05	
17	21-3	21-20	3.5	4	14	112.0	3.34	0.03	0.05	8	3.3	0.07	0.11	2.63	
18	21-20	6-1a	3.5	0	0	129.5	3.28	0.03	0.05	8	3.5	0.07	0.11	2.68	Includes flow from Line 14
19	21-4	21-5	3.5	14	49	49.0	3.73	0.01	0.02	8	4.4	0.04	0.07	2.26	
20	21-5	21-15	3.5	11	38.5	87.5	3.45	0.02	0.04	8	4.4	0.06	0.08	2.62	
21	21-6	21-7	3.5	14	49	49.0	3.73	0.01	0.02	8	4.7	0.04	0.07	2.31	
22	21-7	21-16	3.5	11	38.5	87.5	3.45	0.02	0.04	8	4.7	0.06	0.08	2.70	
23	21-8	21-9	3.5	11	38.5	38.5	3.86	0.01	0.02	8	4.8	0.04	0.06	2.18	
24	21-9	21-17	3.5	14	49	87.5	3.45	0.02	0.04	8	4.8	0.06	0.08	2.71	
25	21-10	21-11	3.5	85	297.5	455.0	2.77	0.10	0.16	8	1.5	0.15	0.22	2.75	Includes flow from Line 13
26	21-11	21-18	3.5	17	59.5	514.5	2.72	0.11	0.17	8	1.6	0.15	0.23	2.90	& 71 EDUs (school in Unit 22)
27	21-21	21-22	3.5	8	28	28.0	4.02	0.01	0.01	8	4.4	0.04	0.05	1.95	
28	21-22	21-23	3.5	10	35	63.0	3.61	0.02	0.03	8	4.5	0.05	0.07	2.43	
29	21-12	21-13	3.5	9	31.5	31.5	3.96	0.01	0.02	8	4.5	0.04	0.06	2.05	
30	21-13	21-14	3.5	5	17.5	49.0	3.73	0.01	0.02	8	5.7	0.04	0.06	2.48	
31	21-14	21-15	3.5	4	14	63.0	3.61	0.02	0.03	8	1	0.07	0.11	1.44	
32	21-15	21-16	3.5	5	17.5	168.0	3.16	0.04	0.07	8	1.6	0.09	0.14	2.18	Includes flow from Line 20
33	21-16	21-17	3.5	6	21	276.5	2.96	0.07	0.10	8	2.2	0.11	0.16	2.78	Includes flow from Line 22
34	21-17	21-18	3.5	7	24.5	388.5	2.83	0.09	0.14	8	4	0.11	0.16	3.74	Includes flow from Line 24
35	21-18	21-23	3.5	0	0	903.0	2.53	0.18	0.28	8	1.9	0.19	0.28	3.55	Includes flow from Line 26
36	21-23	6-3	3.5	6	21	987.0	2.50	0.20	0.30	8	1.9	0.19	0.29	3.63	Includes flow from Line 28

TABLE 1

SEWER STUDY SUMMARY  
UNITS 17-22 SEWER STUDY

Job No.: 491007.01 1002

For: Latitude 33/Pardee  
By: PBS&J

04/28/2003

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow (mgd)	Peak Design Flow (cfs)	Line-Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total									
<b>Unit 20</b>															
37	20-1	20-2	3.5	13	45.5	45.5	3.77	0.01	0.02	8	1	0.06	0.09	1.32	
38	20-2	20-7	3.5	83	290.5	336.0	2.88	0.08	0.12	8	1.7	0.12	0.19	2.66	3+80 offsite units
39	20-3	20-4	3.5	3	10.5	10.5	4.59	0.00	0.01	8	1.1	0.03	0.05	0.94	
40	20-4	20-5	3.5	4	14	24.5	4.10	0.01	0.01	8	1	0.05	0.07	1.14	
41	20-5	20-6	3.5	7	24.5	49.0	3.73	0.01	0.02	8	1	0.06	0.10	1.36	
42	20-6	20-7	3.5	6	21	70.0	3.56	0.02	0.03	8	1	0.07	0.11	1.48	
43	20-7	20-8	3.5	4	14	420.0	2.80	0.09	0.15	8	1	0.16	0.23	2.34	Includes flow from Line 38
44	20-8	20-9	3.5	4	14	434.0	2.79	0.10	0.15	8	1	0.16	0.24	2.36	
45	20-9	20-10	3.5	3	10.5	444.5	2.78	0.10	0.15	8	1	0.16	0.24	2.37	
46	20-10	20-11	3.5	7	24.5	469.0	2.76	0.10	0.16	8	1	0.16	0.25	2.40	
47	20-11	20-12	3.5	2	7	476.0	2.75	0.10	0.16	8	0.6	0.19	0.28	2.01	
48	20-12	19-10	3.5	0	0	476.0	2.75	0.10	0.16	8	0.6	0.19	0.28	2.01	

**TABLE 1**  
**SEWER STUDY SUMMARY**  
**UNITS 17-22 SEWER STUDY**

Job No.: 491007.01 1002  
 For: Latitude 33/Pardee  
 By: PBS&J  
 04/28/2003

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow		Line Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comment
					In-Line	Total		(mgd)	(gfs)						
<b>Unit 19</b>															
49	19-1	19-2	3.5	6	21	21.0	4.18	0.01	0.01	8	1.9	0.04	0.06	1.35	
50	19-2	19-3	3.5	2	7	28.0	4.02	0.01	0.01	8	1	0.05	0.08	1.18	
51	19-3	19-18	3.5	8	28	56.0	3.67	0.02	0.03	8	2.4	0.06	0.08	1.91	
52	19-4	19-6	3.5	11	38.5	38.5	3.86	0.01	0.02	8	1	0.06	0.09	1.27	Recreation facility
53	19-14	19-15	3.5	10	35	35.0	3.91	0.01	0.02	8	1	0.06	0.08	1.23	
54	19-15	19-16	3.5	10	35	70.0	3.56	0.02	0.03	8	2.3	0.06	0.09	1.98	
55	19-16	19-17	3.5	8	28	98.0	3.40	0.03	0.04	8	1.3	0.08	0.12	1.77	
56	19-17	19-18	3.5	10	35	133.0	3.27	0.03	0.05	8	1.3	0.09	0.13	1.91	
57	19-18	19-19	3.5	0	0	189.0	3.12	0.05	0.07	8	1	0.11	0.17	1.91	Includes flow from Line 51
58	19-19	19-20	3.5	0	0	189.0	3.12	0.05	0.07	8	2.9	0.09	0.13	2.77	
59	19-20	19-21	3.5	11	38.5	227.5	3.04	0.06	0.09	8	1	0.12	0.18	2.01	
60	19-21	19-22	3.5	12	42	269.5	2.97	0.06	0.10	8	1.4	0.12	0.18	2.36	
61	19-22	19-23	3.5	7	24.5	294.0	2.94	0.07	0.11	8	1.2	0.13	0.19	2.28	
62	19-23	19-24	3.5	10	35	329.0	2.89	0.08	0.12	8	1.2	0.13	0.20	2.34	
63	19-13	19-12	3.5	2	7	7.0	4.85	0.00	0.00	8	1	0.03	0.05	0.85	
64	19-9	19-10	3.5	12	42	42.0	3.81	0.01	0.02	8	4.3	0.04	0.06	2.16	
65	19-10	19-11	3.5	13	45.5	563.5	2.69	0.12	0.19	8	1.19	0.17	0.25	2.68	Includes flow from Line 48
66	19-11	19-12	3.5	12	42	605.5	2.66	0.13	0.20	8	1	0.18	0.28	2.56	
67	19-12	19-24	3.5	4	14	626.5	2.65	0.13	0.21	8	3.7	0.13	0.20	4.11	Includes flow from Line 63
68	19-24	19-25	3.5	5	17.5	973.0	2.50	0.19	0.30	8	1	0.23	0.34	2.87	Includes flow from Line 62
69	19-5	19-6	3.5	3	10.5	10.5	4.59	0.00	0.01	8	1	0.03	0.05	0.91	
70	19-6	19-7	3.5	1	3.5	52.5	3.70	0.02	0.02	8	2	0.06	0.08	1.75	Includes flow from Line 52
71	19-7	19-8	3.5	3	10.5	63.0	3.61	0.02	0.03	8	3.3	0.05	0.08	2.18	
72	19-8	19-25	3.5	8	28	91.0	3.44	0.03	0.04	8	4	0.06	0.09	2.56	
73	19-25	17-13	3.5	5	17.5	1081.5	2.46	0.21	0.33	10	1	0.22	0.26	2.89	Includes flow from Line 68

TABLE 1

SEWER STUDY SUMMARY  
UNITS 17-22 SEWER STUDY

Job No.: 491007.01 1002

For: Latitude 33/Pardee  
By: PBS&J

04/28/2003

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow (mgd)	Flow (cfs)	Line Size (inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total									
<b>Unit 18</b>															
74	18-3	18-4	3.5	5	17.5	17.5	4.29	0.01	0.01	8	1	0.04	0.07	1.06	
75	18-6	18-7	3.5	8	28	28.0	4.02	0.01	0.01	8	1	0.05	0.08	1.17	
76	18-9	18-10	3.5	12	42	42.0	3.81	0.01	0.02	8	1.4	0.06	0.08	1.45	
77	18-1	18-2	3.5	11	38.5	38.5	3.86	0.01	0.02	8	1.7	0.05	0.08	1.54	
78	18-2	18-4	3.5	4	14	52.5	3.70	0.02	0.02	8	1	0.07	0.10	1.38	
79	18-4	18-5	3.5	7	24.5	94.5	3.42	0.03	0.04	8	2	0.07	0.11	2.03	Includes flow from Line 33
80	18-5	18-7	3.5	5	17.5	112.0	3.34	0.03	0.05	8	1	0.09	0.13	1.68	
81	18-7	18-8	3.5	8	28	168.0	3.16	0.04	0.07	8	1	0.11	0.16	1.86	Includes flow from Line 34
82	18-8	18-10	3.5	8	28	196.0	3.10	0.05	0.08	8	1	0.11	0.17	1.93	
83	18-10	R7	3.5	1	3.5	241.5	3.01	0.06	0.09	8	1	0.12	0.18	2.03	Includes flow from Line 35

**TABLE 1**  
**SEWER STUDY SUMMARY**  
**UNITS 17-22 SEWER STUDY**

Job No.: 622043.01 1001

For: Latitude 33/Pardee  
 By: PBS&J

04/28/2003

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served In-Line	Population Served Total	Peak/Ave Ratio	Peak (mgd)	Design Flow (cfs)	Line Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
Unit 17															
84	17-1	17-17	3.5	15	52.5	52.5	3.70	0.02	0.02	8	4.6	0.05	0.07	2.34	
85	17-2	17-12	3.5	8	28	28.0	4.02	0.01	0.01	8	1	0.05	0.08	1.17	
86	17-3	17-4	3.5	9	31.5	31.5	3.96	0.01	0.02	8	1	0.05	0.08	1.21	
87	17-4	17-22	3.5	12	42	73.5	3.54	0.02	0.03	8	1.5	0.07	0.10	1.71	
88	17-22	17-8	3.5	4	14	87.5	3.45	0.02	0.04	8	1.5	0.07	0.11	1.80	
89	17-5	17-6	3.5	11	38.5	38.5	3.86	0.01	0.02	8	1	0.06	0.09	1.26	
90	17-6	17-7	3.5	9	31.5	70.0	3.56	0.02	0.03	8	1.5	0.07	0.10	1.71	
91	17-7	17-8	3.5	9	31.5	101.5	3.39	0.03	0.04	8	2	0.07	0.11	2.08	
92	17-8	17-20	3.5	6	21	210.0	3.07	0.05	0.08	8	5.5	0.08	0.12	3.56	Includes flow from Line 88
93	17-11	17-10	3.5	3	10.5	10.5	4.59	0.00	0.01	8	1	0.03	0.05	0.92	
94	17-9	17-10	3.5	15	52.5	52.5	3.70	0.02	0.02	8	1	0.07	0.10	1.37	
95	17-10	17-12	3.5	6	21	84.0	3.47	0.02	0.04	8	4.3	0.06	0.08	2.58	Includes flow from Line 93
96	17-12	17-13	3.5	4	14	126.0	3.29	0.03	0.05	8	3.7	0.07	0.10	2.72	Includes flow from Line 85
97	17-13	17-14	3.5	12	42	1249.5	2.42	0.24	0.37	10	1.1	0.23	0.27	3.10	Includes flow from Line 73
98	17-14	17-15	3.5	8	28	1277.5	2.41	0.25	0.38	10	0.7	0.26	0.31	2.65	
99	17-15	17-16	3.5	1	3.5	1281.0	2.41	0.25	0.38	10	0.7	0.26	0.31	2.66	
100	17-16	17-17	3.5	1	3.5	1284.5	2.41	0.25	0.38	10	0.7	0.26	0.31	2.66	
101	17-17	17-18	3.5	3	10.5	1347.5	2.39	0.26	0.40	10	0.7	0.26	0.32	2.69	Includes flow from Line 84
102	17-18	17-19	3.5	13	45.5	1393.0	2.38	0.27	0.41	10	0.6	0.28	0.34	2.56	
103	17-19	17-20	3.5	12	42	1435.0	2.37	0.27	0.42	10	0.55	0.29	0.35	2.50	
104	17-20	R-8a	3.5	1	3.5	1648.5	2.33	0.31	0.48	10	0.4	0.34	0.40	2.30	Includes flow from Line 92

**UNITS 5-11**  
**SEWER SUMMARY TABLES**

**TABLE 2  
SEWER STUDY SUMMARY  
PACIFIC HIGHLANDS RANCH UNITS 5-11 SEWER STUDY**

04/28/03

Job No.: 72/491007.01 1002

Line No.	From MH	To MH	Population per DU	In-Line DU	Population In-Line	Population: Served Total	Line Size (inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
1	10-2	10-3	3.5	6	21	21.0	8	1	0.04	0.07	1.08	
2	10-1	10-3a	3.5	2	7	7.0	8	4.1	0.02	0.03	1.30	
2a	10-3a	10-3b	3.5	2	7	14.0	8	4.1	0.03	0.04	1.60	
2b	10-3b	10-3	3.5	6	21	35.0	8	4.1	0.04	0.06	2.00	
3	10-3	10-10	3.5	2	7	63.0	8	4.9	0.05	0.07	2.49	Includes flow from Line 1
4	7-4	10-6	3.5	4	14	14.0	8	1	0.04	0.06	0.97	Includes 2 DU from Unit 7
5	10-7	10-8	3.5	14	49	49.0	8	2	0.05	0.08	1.72	
6	10-1a	10-4	3.5	15	52.5	52.5	8	1	0.07	0.10	1.38	
7	10-4	10-5	3.5	15	52.5	105.0	8	1	0.09	0.13	1.65	
8	10-5	10-6	3.5	8	28	133.0	8	1	0.10	0.14	1.74	
9	10-6	10-8	3.5	4	14	161.0	8	1	0.10	0.16	1.84	Includes flow from Line 4
10	10-8	10-9	3.5	14	49	259.0	8	1.4	0.12	0.18	2.33	Includes flow from Line 5
11	10-9	10-10	3.5	3	10.5	269.5	8	1	0.13	0.19	2.10	
12	10-10	R1	3.5	0	0	332.5	8	3.4	0.10	0.16	3.40	MHGL6 in Sewer Master Plan
13	7-1	7-2	3.5	4	14	14.0	8	2	0.03	0.05	1.21	
14	7-2	7-7	3.5	12	42	56.0	8	4.6	0.05	0.07	2.36	
15	7-2	7-8	3.5	11	38.5	94.5	8	4.6	0.06	0.09	2.70	
16	7-8	7-9	3.5	12	42	136.5	8	2	0.08	0.12	2.24	
17	7-3	7-4	3.5	4	14	14.0	8	1	0.04	0.06	0.97	
18	7-4	7-5	3.5	17	59.5	73.5	8	2.5	0.06	0.09	2.07	
19	7-5	7-6	3.5	11	38.5	112.0	8	3.9	0.06	0.10	2.69	
20	7-6	7-9	3.5	4	14	126.0	8	3.9	0.07	0.10	2.76	
21	7-9	7-13	3.5	8	28	230.5	8	5.5	0.09	0.13	3.88	Includes flow from Line 16
22												not used
23	7-1	7-10	3.5	10	35	35.0	8	4.8	0.04	0.06	2.11	
24	7-10	7-12	3.5	15	52.5	87.5	8	4.9	0.06	0.08	2.74	
25	7-12	7-13	3.5	28	98	185.5	8	4.6	0.08	0.11	3.25	8+16 EDUs from Rec Fac & L2
26	7-13	R3	3.5	0	0	476.0	8	1	0.16	0.25	2.42	Includes flow from Line 21

**TABLE 2  
SEWER STUDY SUMMARY  
PACIFIC HIGHLANDS RANCH UNITS 5-11 SEWER STUDY**

For: Latitude 33 and Pardee Construction  
By: Powell/PBS&J

Job No.: 72/491007.01 1002

04/28/03

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow		Line Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total		(mgd)	(cfs)						
<b>UNIT 8 (To R-Line)</b>															
27	8-4	8-5	3.5	3	10.5	10.5	4.59	0.0039	0.0060	8	3.9	0.03	0.04	1.47	
28	8-5	8-6	3.5	5	17.5	28.0	4.02	0.0090	0.0140	8	1	0.05	0.07	1.15	
29	8-6	8-7	3.5	12	42	70.0	3.56	0.0199	0.0308	8	1	0.07	0.11	1.47	
30	8-7	8-8	3.5	13	45.5	115.5	3.33	0.0307	0.0476	8	1	0.09	0.13	1.68	
31	8-1	8-2	3.5	7	24.5	24.5	4.10	0.0080	0.0124	8	1.8	0.04	0.06	1.39	
32	8-2	8-3	3.5	16	56	80.5	3.49	0.0225	0.0348	8	1.8	0.07	0.10	1.88	
33	8-3	8-8	3.5	7	24.5	105.0	3.37	0.0283	0.0438	8	1.8	0.08	0.11	2.02	
34	8-8	8-9	3.5	4	14	234.5	3.03	0.0568	0.0878	8	3.5	0.09	0.13	3.13	Includes flow from Line 30
35	8-9	8-10	3.5	10	35	289.5	2.97	0.0640	0.0991	8	3.6	0.09	0.14	3.29	
36	8-10	8-11	3.5	13	45.5	315.0	2.91	0.0733	0.1134	8	3.6	0.10	0.15	3.42	
37	8-11	8-12	3.5	8	28	343.0	2.88	0.0789	0.1221	8	3.6	0.10	0.16	3.49	
38	8-13	8-24	3.5	3	10.5	10.5	4.59	0.0039	0.0060	8	8.3	0.02	0.03	1.85	
39	8-17	8-18	3.5	3	10.5	10.5	4.59	0.0039	0.0060	8	4.2	0.02	0.03	1.44	
40	8-15	8-16	3.5	11	38.5	38.5	3.86	0.0119	0.0184	8	4.6	0.04	0.06	2.12	
41	8-16	8-18	3.5	6	21	59.5	3.64	0.0173	0.0268	8	3.9	0.05	0.07	2.26	
42	8-18	8-19	3.5	0	0	70.0	3.56	0.0199	0.0308	8	1	0.07	0.11	1.49	Includes flow from Line 39
43															not used
44	8-10	8-14	3.5	8	28	28.0	4.02	0.0090	0.0140	8	5.3	0.04	0.05	2.12	
45	8-14	8-25	3.5	5	17.5	45.5	3.77	0.0137	0.0212	8	7.3	0.04	0.06	2.61	
46	8-19	8-20	3.5	9	31.5	101.5	3.39	0.0275	0.0425	8	3	0.07	0.10	2.38	Includes flow from Line 42
47	8-20	8-21	3.5	7	24.5	126.0	3.29	0.0332	0.0513	8	3	0.07	0.11	2.54	
48	8-16a	8-21	3.5	12	42	42.0	3.81	0.0128	0.0198	8	5.2	0.04	0.06	2.30	
49	8-21	8-23	3.5	3	10.5	178.5	3.14	0.0448	0.0694	8	6.4	0.07	0.10	3.60	Includes flow from Line 47
50	R-9	8-22	3.5	5	17.5	5593.2	1.98	0.8847	1.3689	12	0.6	0.50	0.50	3.52	Includes flow from L 17&176
51	8-22	8-23	3.5	3	10.5	5603.7	1.98	0.8861	1.3711	12	0.6	0.50	0.50	3.52	
52	8-23	8-12	3.5	4	14	5796.2	1.97	0.9124	1.4118	12	0.65	0.50	0.50	3.65	Includes flow from Line 49
53	8-12	8-24	3.5	6	21	6160.2	1.95	0.9618	1.4882	12	0.65	0.51	0.51	3.70	Includes flow from Line 37
54	8-24	8-25	3.5	6	21	6191.7	1.95	0.9661	1.4948	12	0.65	0.51	0.51	3.71	Includes flow from Line 38
55	8-25	R-10	3.5	0	0	6237.2	1.95	0.9722	1.5043	12	9.2	0.25	0.25	9.72	Includes flow from Line 45
<b>Unit 9a (partial, to Upper Trunk)</b>															
56	9a-1a	9a-2	3.5	6	21	21.0	4.18	0.0070	0.0109	8	1	0.04	0.07	1.08	
57	9a-2	9a-5	3.5	4	14	35.0	3.91	0.0109	0.0169	8	1	0.06	0.08	1.24	



**TABLE 2  
SEWER STUDY SUMMARY  
PACIFIC HIGHLANDS RANCH UNITS 5-11 SEWER STUDY**

Job No.: 72/491007.01 1002  
For: Latitude 33 and Pardee Construction  
By: Powell/PBS&J  
04/28/03

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served In-Line	Population Served Total	Peak/Ave Ratio	Peak Design Flow		Line Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
								(mgd)	(cfs)						
<i>Units 9a and 9b (To Rancho Pacifica outlet)</i>															
61	9a-20	9a-12a	3.5	3	10.5	10.5	4.59	0.0039	0.0060	8	1	0.04	0.06	1.03	
62	9a-3a	9a-21	3.5	6	21	21.0	4.18	0.0070	0.0109	8	2.5	0.04	0.05	1.49	
63	9a-21	9a-22	3.5	12	42	63.0	3.61	0.0182	0.0282	8	1.2	0.07	0.10	1.53	
64	9a-22	9a-23	3.5	7	24.5	87.5	3.45	0.0242	0.0374	8	4.3	0.06	0.09	2.61	
65	9a-23	9b-1	3.5	5	17.5	105.0	3.37	0.0283	0.0438	8	6.5	0.06	0.08	3.15	
66	9a-12	9a-12a	3.5	4	14	14.0	4.42	0.0049	0.0077	8	1	0.04	0.06	0.97	
66a	9a-12a	9a-14	3.5	0	0	24.5	4.10	0.0080	0.0124	8	1	0.05	0.07	1.12	Includes flow from Line 61
67	9a-18	9a-19	3.5	2	7	7.0	4.85	0.0027	0.0042	8	1	0.03	0.04	0.81	
68	9a-13	9a-14	3.5	6	21	21.0	4.18	0.0070	0.0109	8	1	0.04	0.07	1.08	
69	9a-14	9a-15	3.5	4	14	59.5	3.64	0.0173	0.0268	8	1	0.07	0.10	1.42	Includes flow from Line 66a
70	9a-15	9a-16	3.5	5	17.5	77.0	3.51	0.0216	0.0335	8	1	0.08	0.11	1.51	
71	9a-16	9a-17	3.5	8	28	105.0	3.37	0.0283	0.0438	8	1	0.09	0.13	1.64	
72	9a-17	9a-19	3.5	5	17.5	122.5	3.30	0.0324	0.0501	8	1	0.09	0.14	1.71	
73	9a-19	9b-11	3.5	6	21	150.5	3.21	0.0387	0.0598	8	6.2	0.07	0.10	3.42	Includes flow from Line 67
74	9b-2	9b-3	3.5	7	24.5	24.5	4.10	0.0080	0.0124	8	5.7	0.03	0.05	2.04	
75	9b-3	9b-4	3.5	2	7	31.5	3.96	0.0100	0.0154	8	6.7	0.03	0.05	2.33	
76	9b-4	9b-5	3.5	5	17.5	49.0	3.73	0.0146	0.0226	8	4	0.05	0.07	2.20	
77	9b-5	9b-10	3.5	5	17.5	66.5	3.58	0.0191	0.0295	8	4.9	0.05	0.07	2.54	
78	9b-6	9b-7	3.5	4	14	14.0	4.42	0.0049	0.0077	8	1	0.04	0.06	0.97	
79	9b-7	9b-8	3.5	4	14	28.0	4.02	0.0090	0.0140	8	3.5	0.04	0.06	1.81	
80	9b-8	9b-9	3.5	3	10.5	38.5	3.86	0.0119	0.0184	8	6.9	0.04	0.05	2.48	
81	9b-9	9b-10	3.5	10	35	73.5	3.54	0.0208	0.0322	8	1	0.07	0.11	1.49	
82	9b-10	9b-11a	3.5	0	0	140.0	3.24	0.0363	0.0562	8	3.7	0.07	0.11	2.79	Includes flow from Line 77
83	9a-6	9a-7	3.5	5	17.5	17.5	4.29	0.0060	0.0093	8	1	0.04	0.06	1.03	
84	9a-8	9a-9	3.5	5	17.5	17.5	4.29	0.0060	0.0093	8	1	0.04	0.06	1.03	

**TABLE 2  
SEWER STUDY SUMMARY  
PACIFIC HIGHLANDS RANCH UNITS 5-11 SEWER STUDY**

For: Latitude 33 and Pardee Construction  
By: Powell/PBS&J

Job No.: 72/491007.01 1002

04/28/03

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow (mgd)	Peak Design Flow (cfs)	Line Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total									
<i>Units 9a and 9b (To Rancho Pacifica outlet)</i>															
85	9a-1	9a-7	3.5	8	28.0	0.0140	4.02	0.0090	0.0140	8	1.4	0.05	0.07	1.33	
86	9a-7	9a-9	3.5	3	56.0	0.0164	3.67	0.0164	0.0254	8	1	0.07	0.10	1.40	Includes flow from Line 83
87	9a-9	9a-10	3.5	7	98.0	0.0267	3.40	0.0267	0.0413	8	1	0.08	0.13	1.61	Includes flow from Line 84
88	9a-10	9a-11	3.5	8	126.0	0.0332	3.29	0.0332	0.0513	8	1	0.09	0.14	1.72	
89	9a-11	9b-1	3.5	2	133.0	0.0347	3.27	0.0347	0.0538	8	1	0.10	0.14	1.74	
89a	9b-1	9b-11a	3.5	5	255.5	0.0611	2.99	0.0611	0.0946	8	1	0.13	0.19	2.06	Includes flow from Line 65
90	9b-11a	9b-11	3.5	4	409.5	2.81	2.81	0.0920	0.1423	8	1	0.15	0.23	2.33	Includes flow from Line 82
91	9b-11	9b-12	3.5	4	574.0	2.68	2.68	0.1232	0.1907	8	1	0.18	0.27	2.53	Includes flow from Line 73
92	9b-12	9b-13	3.5	7	598.5	2.67	2.67	0.1278	0.1977	8	1	0.18	0.27	2.56	
93	9b-13	9b-18	3.5	2	605.5	2.66	2.66	0.1291	0.1997	8	1	0.18	0.27	2.56	
94	9b-24	9b-27	3.5	6	21.0	0.0070	4.18	0.0070	0.0109	8	4.2	0.03	0.05	1.80	
95	9b-20	9b-21	3.5	5	17.5	0.0060	4.29	0.0060	0.0093	8	12.5	0.02	0.03	2.49	
96															
97	9b-25	9b-26	3.5	6	21.0	0.0070	4.18	0.0070	0.0109	8	14.3	0.02	0.04	2.74	not used
98	9b-26	9b-27	3.5	3	31.5	0.0100	3.96	0.0100	0.0154	8	8	0.03	0.05	2.48	
99	9b-27	9b-28	3.5	1	56.0	0.0164	3.67	0.0164	0.0254	8	6	0.04	0.07	2.61	Includes flow from Line 94
100	9b-14	9b-15	3.5	6	21.0	0.0070	4.18	0.0070	0.0109	8	1.5	0.04	0.06	1.26	
101	9b-15	9b-16	3.5	3	31.5	0.0100	3.96	0.0100	0.0154	8	6.3	0.03	0.05	2.26	
102	9b-16	9b-17	3.5	7	56.0	0.0164	3.67	0.0164	0.0254	8	6.3	0.04	0.06	2.65	
103	9b-17	9b-18	3.5	8	84.0	0.0233	3.47	0.0233	0.0361	8	6.3	0.05	0.08	2.93	
104	9b-18	9b-19	3.5	5	707.0	0.1476	2.61	0.1476	0.2284	8	3.1	0.15	0.22	3.99	Includes flow from Line 93
105	9b-19	9b-21	3.5	4	721.0	0.1501	2.60	0.1501	0.2323	8	1	0.20	0.30	2.68	
106	9b-21	9b-22	3.5	2	745.5	0.1545	2.59	0.1545	0.2391	8	1	0.20	0.30	2.70	Includes flow from Line 95
107	9b-22	9b-23	3.5	4	759.5	0.1570	2.58	0.1570	0.2430	8	1	0.20	0.30	2.71	
108	9b-23	9b-23a	3.5	2	766.5	0.1583	2.58	0.1583	0.2449	8	4.6	0.14	0.21	4.68	
108a	9b-23a	9b-28	3.5	0	766.5	0.1583	2.58	0.1583	0.2449	8	5	0.14	0.20	4.82	
109	9b-28	9b-29	3.5	5	840.0	0.1714	2.55	0.1714	0.2651	8	1	0.21	0.32	2.78	Includes flow from Line 99
110	9b-29	G8	3.5	0	840.0	0.1714	2.55	0.1714	0.2651	8	3.2	0.16	0.24	4.21	
<i>Rancho Pacifica Line</i>															
G8	G8-1	G8-1	3.5	0	840.0	0.1714	2.55	0.1714	0.2651	8	0.45	0.26	0.39	2.08	MH 9b-23 = MH G8
	G8-1	D70	3.5	0	840.0	0.1714	2.55	0.1714	0.2651	8	0.45	0.26	0.39	2.08	DMHE
	D70	D72	3.5	41	983.5	0.1964	2.50	0.1964	0.3039	8	0.4	0.29	0.44	2.07	DMHE
	DM71	DM72	3.5	0	983.5	0.1964	2.50	0.1964	0.3039	8	0.4	0.29	0.44	2.07	DMHE

**TABLE 2  
SEWER STUDY SUMMARY  
PACIFIC HIGHLANDS RANCH UNITS 5-11 SEWER STUDY**

Job No.: 72/491007.01 1002

For: Latitude 33 and Pardee Construction  
By: Powell/PBS&J

04/28/03

Line No.	From MH	To MH	Population per DU	In- ne DU	Population Served		Peak/Ave Ratio	Peak (mgd)	Design Flow (cfs)	Lin Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total									
<i>Unit 5 (To R-line)</i>															
111	5-1	5-2	3.2	17	54.4	54.4	3.68	0.0160	0.0248	8	2.8	0.05	0.08	1.99	
112	5-2	5-10	3.2	5	16	70.4	3.56	0.0200	0.0310	8	1.6	0.07	0.10	1.74	
113	5-4	5-5	3.2	4	12.8	12.8	4.47	0.0046	0.0071	8	4.8	0.03	0.04	1.68	
114	5-7	5-8	3.2	2	6.4	6.4	4.91	0.0025	0.0039	8	5.1	0.02	0.03	1.45	
115	5-11	5-15	3.2	16	51.2	51.2	3.71	0.0152	0.0235	8	2.8	0.05	0.08	1.96	
116	5-12	5-18	3.2	21	67.2	67.2	3.58	0.0192	0.0298	8	3.6	0.05	0.08	2.30	
117	5-3	5-5	3.2	4	12.8	12.8	4.47	0.0046	0.0071	8	2.6	0.03	0.05	1.34	
118	5-5	5-6	3.2	0	25.6	25.6	4.07	0.0083	0.0129	8	1	0.05	0.07	1.15	Includes flow from Line 113
119	5-6	5-8	3.2	2	6.4	32.0	3.95	0.0101	0.0157	8	1	0.05	0.08	1.19	
120	5-8	5-9	3.2	6	19.2	57.6	3.65	0.0168	0.0261	8	1	0.07	0.10	1.42	Includes flow from Line 114
121	5-9	5-10	3.2	5	16	73.6	3.54	0.0208	0.0322	8	1	0.07	0.11	1.49	
122	5-10	5-14	3.2	0	144.0	144.0	3.23	0.0372	0.0576	8	1.1	0.10	0.14	1.83	Includes flow from Line 112
122a	5-18a	5-18	3.2	7	22.4	22.4	4.15	0.0074	0.0115	8	1	0.04	0.07	1.08	
123	5-13a	5-14	3.2	4	12.8	12.8	4.47	0.0046	0.0071	8	3.3	0.03	0.04	1.47	
124	5-14	5-15	3.2	8	25.6	182.4	3.13	0.0457	0.0707	8	1	0.11	0.16	1.89	Includes flow from Line 122
125	5-15	5-16	3.2	0	233.6	233.6	3.03	0.0566	0.0876	8	1	0.12	0.18	2.02	Includes flow from Line 115
126	5-16	5-17	3.2	5	16	249.6	3.00	0.0599	0.0927	8	1	0.12	0.19	2.05	
127	5-17	5-18	3.2	0	249.6	249.6	3.00	0.0599	0.0927	8	1	0.12	0.19	2.05	
128	5-18	R1	3.2	0	339.2	339.2	2.88	0.0781	0.1209	8	1	0.14	0.21	2.22	Includes flow from Line 116

**TABLE 2  
SEWER STUDY SUMMARY  
PACIFIC HIGHLANDS RANCH UNITS 5-11 SEWER STUDY**

Job No.: 72/491007.01 1002

For: Latitude 33 and Pardee Construction  
By: Powell/PBS&J

04/28/03

Line No.	From MH	To MH	Population % per DU	n-line DU	Population Served		Peak/Ave Ratio	Reak/Design Flow (mgd)	Reak/Design Flow (cfs)	Line Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total									
129	5-19	5-20	3.2	12	38.4	38.4	3.86	0.0119	0.0183	8	2.5	0.05	0.07	1.74	
130	5-20	5-21	3.2	11	35.2	73.6	3.54	0.0208	0.0322	8	3.3	0.06	0.09	2.29	
131	5-21	5-27	3.2	5	16	89.6	3.44	0.0247	0.0382	8	1	0.08	0.12	1.58	
132	5-23	5-25	3.2	4	12.8	12.8	4.47	0.0046	0.0071	8	1	0.04	0.06	0.97	
133	5-24	5-25	3.2	4	12.8	12.8	4.47	0.0046	0.0071	8	6	0.03	0.04	1.83	
134	5-25	5-26	3.2	12	38.4	64.0	3.60	0.0184	0.0285	8	1.7	0.06	0.09	1.73	Includes flow from Line 132
135	5-26	5-27	3.2	5	16	80.0	3.50	0.0224	0.0346	8	2.1	0.07	0.10	1.99	
136	5-27	5-29	3.2	0	0	169.6	3.16	0.0429	0.0664	8	1.8	0.09	0.14	2.28	Includes flow from Line 131
137a	5-22a	5-22	3.2	8	25.6	25.6	4.07	0.0083	0.0129	8	3.1	0.04	0.06	1.70	
137	5-22	5-31	3.2	0	0	25.6	4.07	0.0083	0.0129	8	3.3	0.04	0.06	1.75	
138	5-30	5-31	3.2	5	16	16.0	4.34	0.0056	0.0086	8	5	0.03	0.04	1.81	
139	5-31	5-32	3.2	2	6.4	48.0	3.74	0.0144	0.0222	8	2	0.05	0.08	1.69	Includes flow from Line 137
140	5-13	5-28	3.2	4	12.8	12.8	4.47	0.0046	0.0071	8	2	0.03	0.05	1.24	
141	5-28	5-29	3.2	4	12.8	25.6	4.07	0.0083	0.0129	8	1.9	0.04	0.06	1.39	
142	5-29	5-32	3.2	0	0	195.2	3.10	0.0484	0.0749	8	2	0.10	0.14	2.47	Includes flow from Line 136
143	5-32	6-13	3.2	4	12.8	256.0	2.99	0.0612	0.0948	8	10	0.07	0.11	4.64	Includes flow from Line 139

**TABLE 2  
SEWER STUDY SUMMARY  
PACIFIC HIGHLANDS RANCH UNITS 5-11 SEWER STUDY**

Job No.: 72/491007.01 1002

For: Latitude 33 and Pardee Construction  
By: Powell/PBS&J

04/28/03

Line No.	From MH	To MH	Population per DU	#In-Line DU	Population Served		Peak/Ave Ratio	Reak/Design Flow (mgd)	Reak/Design Flow (Gis)	Line Size (Inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total									
<b>Unit 6</b>															
144	6-1	6-7	3.5	11	38.5	38.5	3.86	0.0119	0.0184	8	1.9	0.05	0.07	1.58	
145a	6-5a	6-5	3.5	3	10.5	10.5	4.59	0.0039	0.0060	8	1	0.04	0.05	0.92	
145	6-4	6-5	3.5	8	28.0	28.0	4.02	0.0090	0.0140	8	2.3	0.04	0.06	1.57	
146	6-5	6-9	3.5	11	38.5	77.0	3.51	0.0216	0.0335	8	4.8	0.05	0.08	2.61	Includes flow from Line 145a
147	6-9	6-16	3.5	11	38.5	115.5	3.33	0.0307	0.0476	8	4.8	0.06	0.09	2.91	
148															not used
149	6-7	6-8	3.5	107	374.5	413.0	2.80	0.0927	0.1434	8	4.2	0.11	0.16	3.87	Includes flow from Line 144
150	6-8	6-14	3.5	8	28	441.0	2.78	0.0981	0.1518	8	5	0.11	0.16	4.18	and Unit 11
151	6-10	6-11	3.5	7	24.5	24.5	4.10	0.0090	0.0124	8	6.8	0.03	0.05	2.17	
152	6-11	6-16	3.5	6	21	45.5	3.77	0.0137	0.0212	8	4.4	0.04	0.06	2.21	
153	6-12	6-13	3.5	13	45.5	45.5	3.77	0.0137	0.0212	8	3.8	0.04	0.07	2.10	
154	6-13	6-18	3.5	6	21	322.5	2.90	0.0748	0.1157	8	2.6	0.11	0.17	3.07	Includes flow from Line 143
155	6-1a	6-2	3.5	42	147	147.0	3.22	0.0379	0.0586	8	4.2	0.07	0.11	2.96	5 + 37 from Unit 22
156	6-2	6-3	3.5	6	21	168.0	3.16	0.0425	0.0658	8	4	0.08	0.11	3.03	
157	6-3	6-14	3.5	290	1015	1183.0	2.44	0.2305	0.3566	8	0.5	0.30	0.45	2.34	8+282 from Unit 22
158	6-14	6-15	3.5	4	14	1638.0	2.33	0.3055	0.4727	10	0.5	0.32	0.38	2.50	Includes flow from Line 150
159	6-15	6-16	3.5	4	14	1767.5	2.31	0.3263	0.5049	10	0.5	0.33	0.39	2.54	Includes flow from Line 147
160	6-16	6-17	3.5	9	31.5	1844.5	2.29	0.3386	0.5239	10	0.5	0.33	0.40	2.57	Includes flow from Line 152
161	6-17	6-18	3.5	13	45.5	1890.0	2.29	0.3458	0.5351	10	1.3	0.26	0.31	3.65	
162	6-18	6-19	3.5	0	0	2212.5	2.24	0.3963	0.6132	10	2.5	0.24	0.28	4.80	Includes flow from Line 154
163	6-19	6-20	3.5	0	0	2212.5	2.24	0.3963	0.6132	10	2	0.25	0.30	4.43	
164	6-20	6-21	3.5	0	0	2212.5	2.24	0.3963	0.6132	10	2.5	0.24	0.28	4.80	
165	6-21	6-22	3.5	0	0	2212.5	2.24	0.3963	0.6132	10	1.1	0.29	0.35	3.57	
166	6-22	6-23	3.5	0	0	2212.5	2.24	0.3963	0.6132	10	1.5	0.27	0.32	4.00	
167	6-23	6-24	3.5	0	0	2212.5	2.24	0.3963	0.6132	10	1	0.30	0.36	3.45	
168	6-24	R5	3.5	0	0	2212.5	2.24	0.3963	0.6132	10	0.38	0.39	0.47	2.42	

**TABLE 2  
SEWER STUDY SUMMARY  
PACIFIC HIGHLANDS RANCH UNITS 5-11 SEWER STUDY**

For: Latitude 33 and Pardee Construction  
By: Powell/PBS&J

Job No.: 72/491007.01 1002

04/28/03

Line No.	From MH	To MH	Population per DU	In-Line DU	Population Served		Peak/Ave Ratio	Peak Design Flow (mgd)	Line Size (inches)	Design Slope (%)	dn (feet)	dn/D	Velocity (fps)	Comments
					In-Line	Total								
<b>Lower Trunk</b>														
169	R1	R2	3.5	0	0.0	671.7	2.63	0.1412	8	3.7	0.14	0.21	4.19	Includes flow from L12 & L128
170	R2	R3	3.5	0	0.0	671.7	2.63	0.1412	8	5.8	0.12	0.19	4.91	
171	R3	R4	3.5	71	248.5	1396.2	2.38	0.2660	8	3	0.20	0.30	4.67	Flow from L26 + School (71DU)
172	R4	R5	3.5	0	0.0	1396.2	2.38	0.2660	8	2	0.22	0.33	4.04	
173	R5	R6	3.5	0	0.0	3608.7	2.10	0.6053	12	0.7	0.38	0.38	3.37	Includes flow from Line 168
174	R6	R9	3.5	0	0.0	3608.7	2.10	0.6053	12	2.3	0.28	0.28	5.17	To Line 47
<b>Upper Trunk</b>														
175	R7	8	3.5	69	241.5	318.5	2.90	0.0740	8	1.6	0.12	0.19	2.58	Includes flow from Line 60
175a	R8	R8a	3.5	471	1648.5	1967.0	2.27	0.3580	8	4.9	0.21	0.31	6.05	471 EDUs from Units 17-22
176	R8a	R9	3.5	0	0.0	1967.0	2.27	0.3580	8	4.9	0.21	0.31	6.05	
<b>Gonzales Canyon Trunk Sewer</b>														
177	R10	R11	3.5	0	0	6237.2	1.95	0.9722	12	2.3	0.36	0.36	5.90	
178	R11	R12	3.5	0	0	6237.2	1.95	0.9722	12	2.8	0.34	0.34	6.34	
179	R12	R13	3.5	0	0	6237.2	1.95	0.9722	12	0.7	0.50	0.50	3.81	
180	R13	R14	3.5	0	0	6237.2	1.95	0.9722	12	0.7	0.50	0.50	3.81	
181	R14	R15	3.5	0	0	6237.2	1.95	0.9722	12	0.7	0.50	0.50	3.81	
182	R15	R16	3.5	0	0	6237.2	1.95	0.9722	12	1.7	0.39	0.39	5.29	
183	R16	R17	3.5	0	0	6237.2	1.95	0.9722	12	0.7	0.50	0.50	3.81	
184	R17	R18	3.5	0	0	6237.2	1.95	0.9722	12	0.7	0.50	0.50	3.81	
185	R18	15-3	3.5	0	0	6237.2	1.95	0.9722	12	4.5	0.30	0.30	7.52	Unit 1 Sewer Study
15-3	15-4	15-4	3.5	0	0	6237.2	1.95	0.9722	12	0.65	0.51	0.51	3.71	
15-4	15-5	15-5	3.5	0	0	6237.2	1.95	0.9722	12	0.65	0.51	0.51	3.71	
15-5	15-6	15-6	3.5	0	0	6237.2	1.95	0.9722	12	0.65	0.51	0.51	3.71	
15-6	15-7	15-7	3.5	0	0	6237.2	1.95	0.9722	12	1.19	0.43	0.43	4.64	
15-7	15-8	15-8	3.5	0	0	6237.2	1.95	0.9722	12	0.8	0.48	0.48	4.01	
15-8	15-9	15-9	3.5	0	0	6237.2	1.95	0.9722	12	11.1	0.27	0.27	11.01	Unit 1 and School
15-9	15	15	3.5	482	1687	7924.2	1.89	1.1961	12	1.1	0.50	0.50	4.76	
15	16	16	3.5	0	0	7924.2	1.89	1.1961	12	1.1	0.50	0.50	4.76	
16	17	17	3.5	0	0	7924.2	1.89	1.1961	12	1.1	0.50	0.50	4.76	
17	DM72	DM72	3.5	0	0	7924.2	1.89	1.1961	12	2.97	0.38	0.38	6.86	MH1 = MH DM72 SMP

**TABLE 3  
SEWER STUDY SUMMARY  
PACIFIC HIGHLANDS RANCH UNITS 5-11 SEWER STUDY**

Job No.: 72/491007.01 1002 For: Latitude 33 and Pardee Construction By: Powell/PBS&J 04/28/03

Line	From	To	Population per DU	In-Line DU's	Population In-Line	Population Served Total	Peak/Ave Ratio	Peak Design Flow (mgd)	Peak Design Flow (cfs)	Line Size (Inches)	Design Slope (%)	d (feet)	d/D	Velocity (fps)	Comments
<b>Gonzales Canyon Trunk Sewer</b>															
D72	DM72	DM73	3.5	281	983.5	8907.7	1.86	1.324	2.048	12	1	0.54	0.54	4.70	239+41 and line 209
D73	DM73	DM74	3.5	0	0	8907.7	1.86	1.324	2.048	12	1	0.54	0.54	4.70	
D74	DM74	DM75	3.5	0	0	8907.7	1.86	1.324	2.048	12	1	0.54	0.54	4.70	
D75	DM75	DM76	3.5	0	0	8907.7	1.86	1.324	2.048	12	1	0.54	0.54	4.70	
D76	DM76	DM77	3.5	0	0	8907.7	1.86	1.324	2.048	12	1	0.54	0.54	4.70	
D77	DM77	DM78	3.5	0	0	8907.7	1.86	1.324	2.048	12	1	0.54	0.54	4.70	
D78	DM78	DM79	3.5	0	0	8907.7	1.86	1.324	2.048	12	1	0.54	0.54	4.70	
D79	DM79	DM80	3.5	0	0	8907.7	1.86	1.324	2.048	12	1	0.54	0.54	4.70	
D80	DM80	DM82	3.5	0	0	8907.7	1.86	1.324	2.048	12	1	0.54	0.54	4.70	
D81	DM82	MH6	3.5	101	353.5	9261.2	1.85	1.369	2.118	12	1	0.54	0.54	4.70	DMHE NBHD7+NBHD4A 23061-2-D
OF1	MH6	MH5	3.5	344	1204	10465.2	1.82	1.522	2.355	15	1.55	0.49	0.49	5.59	
OF2	MH5	MH4	3.5	0	0	10465.2	1.82	1.522	2.355	15	0.8	0.55	0.44	4.48	
OF3	MH4	MH3	3.5	0	0	10465.2	1.82	1.522	2.355	15	0.8	0.55	0.44	4.48	
OF4	MH3	MH2	3.5	0	0	10465.2	1.82	1.522	2.355	15	0.8	0.55	0.44	4.48	
OF5	MH2	MH1	3.5	0	0	10465.2	1.82	1.522	2.355	15	0.8	0.55	0.44	4.48	
OF6	MH1	MH146	3.5	0	0	10465.2	1.82	1.522	2.355	15	0.8	0.55	0.44	4.48	
OF7	MH146	MH26	3.5	0	0	10465.2	1.82	1.522	2.355	15	1.2	0.50	0.40	5.19	
OF8	MH26	MH25	3.5	0	0	10465.2	1.82	1.522	2.355	15	2.76	0.40	0.32	7.02	
OF9	MH25	MH24	3.5	0	0	10465.2	1.82	1.522	2.355	15	1.4	0.48	0.38	5.49	DMHE + existing existing
OF10	MH24	MH6	3.5	0	0	10465.2	1.82	1.522	2.355	15	0.65	0.59	0.47	4.15	
OF11	MH6	MH5	3.5	0	0	10465.2	1.82	1.522	2.355	15	0.8	0.55	0.44	4.48	
OF12	MH5	MH3	3.5	33	115.5	10580.7	1.82	1.522	2.355	15	0.8	0.55	0.44	4.48	
OF13	MH3	MH2	3.5	209	731.5	11312.2	1.80	1.628	2.377	15	0.8	0.56	0.45	4.49	
OF14	MH2	MH1	3.5	0	0	11312.2	1.80	1.628	2.519	15	1.1	0.53	0.42	5.12	
OF15	MH1	MH41	3.5	0	0	11312.2	1.80	1.628	2.519	15	0.8	0.58	0.46	4.56	
OF16	MH41	MH56	3.5	204.6	716.1	12028.3	1.78	1.717	2.656	15	0.89	0.58	0.46	4.81	
OF17	MH56	MH40	3.5	0	0	12028.3	1.78	1.717	2.656	15	0.89	0.58	0.46	4.81	
OF18	MH40	MH40A	3.5	0	0	12028.3	1.78	1.717	2.656	15	0.89	0.58	0.46	4.81	118 SF + 101 MF
OF19	MH40A	MH39	3.5	0	0	12028.3	1.78	1.717	2.656	15	0.5	0.68	0.55	3.87	
OF20	MH39	MH55	3.5	0	0	12028.3	1.78	1.717	2.656	15	0.5	0.68	0.55	3.87	
OF21	MH55	MH38	3.5	9	31.5	12059.8	1.78	1.721	2.662	15	0.5	0.68	0.55	3.87	
OF22	MH38	MH36	3.5	0	0	12059.8	1.78	1.721	2.662	15	0.5	0.68	0.55	3.87	
OF23	MH36	MH34	3.5	0	0	12059.8	1.78	1.721	2.662	15	0.5	0.68	0.55	3.87	
OF24	MH34	MH33	3.5	0	0	12059.8	1.78	1.721	2.662	18	0.76	0.60	0.48	4.53	
OF25	MH33	MH33	3.5	0	0	12059.8	1.78	1.721	2.662	18	0.4	0.66	0.44	4.32	
OF26	MH33	MH51	3.5	0	0	12059.8	1.78	1.721	2.662	18	0.48	0.63	0.42	3.56	
OF27	MH51	MH52	3.5	0	0	12059.8	1.78	1.721	2.662	18	0.5	0.62	0.41	3.81	EI Camino Real
OF28	MH52	PS	3.5	0	0	12059.8	1.78	1.721	2.662	18	1.73	0.45	0.30	6.05	

MH numbers correspond to Field Sewer Book MH ID (see Appendix C)

**APPENDIX D**  
**DEVIATION FROM STANDARDS FORM**

CITY OF SAN DIEGO  
LAND DEVELOPMENT REVIEW  
DEVIATION FROM STANDARDS

CASE/PERMIT/WO NUMBER: \_\_\_\_\_ COORD: \_\_\_\_\_

PROJECT DESCRIPTION/LOCATION: Pacific Highlands Ranch – Units 17-22,  
Gonzales Canyon

ENGINEER OF WORK: \_\_\_\_\_ RCE NO. \_\_\_\_\_  
(Print Name)

ENGINEER OF WORK: \_\_\_\_\_ EXP. DATE: \_\_\_\_\_  
(Signature)

(PLACE RCE STAMP  
HERE)

**DESCRIPTION OF DEVIATION:**

Section 1.3.1.3 of the City's Sewer Design Guide requires a design deviation for manholes exceeding 15-feet in depth. The following manholes (and associated sewer depths) occur within the Project Area: 17-16 (16.7'), 17-17 (19.9'), 17-18 (17.3'), 17-20 (14.0'), 18-10 (18.4'), 19-10 (19.6'), 20-11 (17.9').

**REASON FOR DEVIATION:**

In trying to preserve the ambiance of the canyon mesa areas and because of the underlying topography, the providing meandering and undulating streets. Deep manholes occur where the sewer main bucks proposed grading.

**MITIGATION MEASURES FOR DEVIATION:**

Mitigation measures for sewers include:

1) Provided easement shall be a minimum of 45 feet (all streets are a minimum of 45-feet wide).

2) Design engineer shall determine pipe class for the required depth and loading.

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
DEPUTY CITY ENGINEER

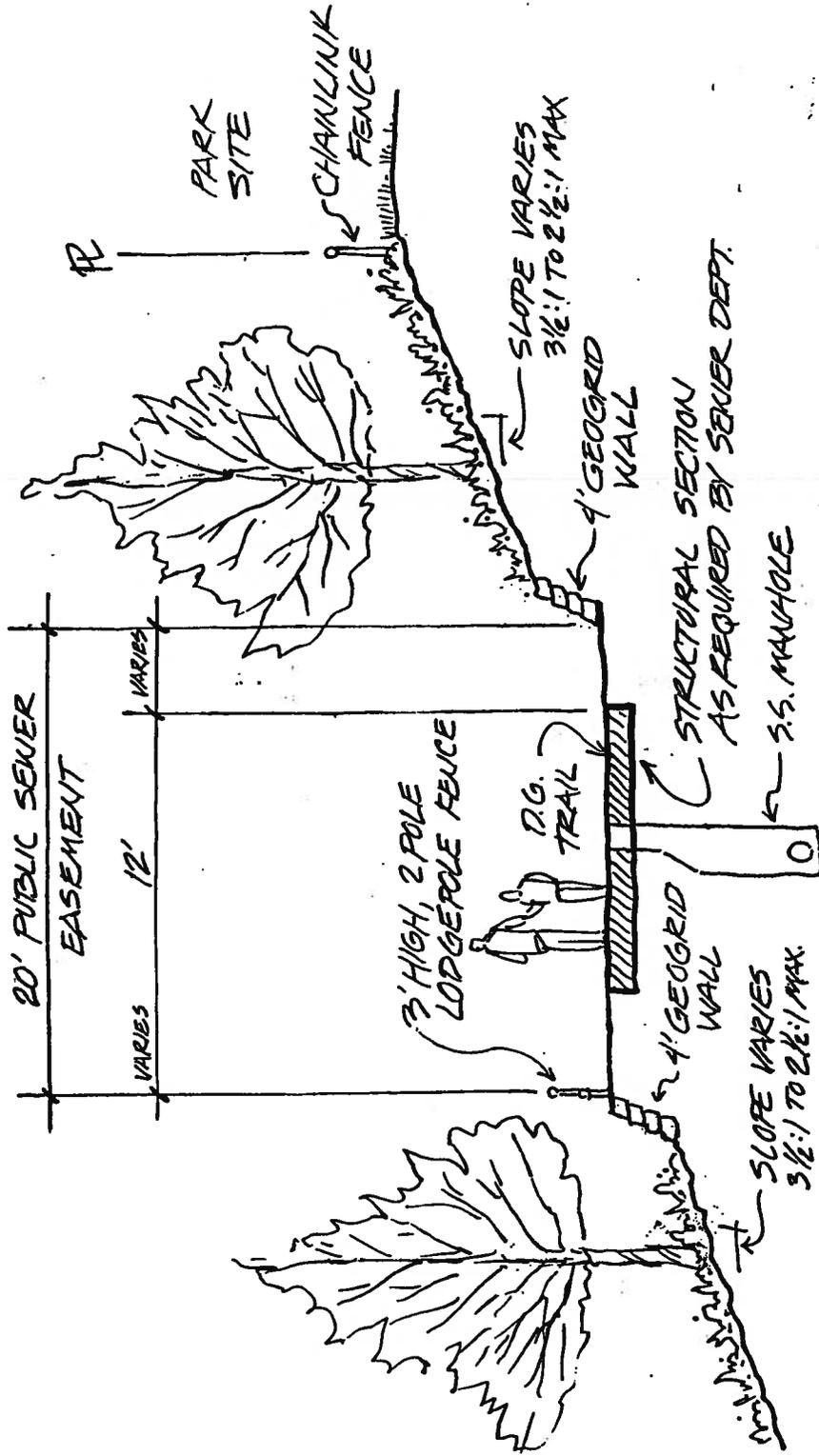
DEPUTY DIRECTOR: \_\_\_\_\_ DATE: \_\_\_\_\_

(PLACE RCE STAMP  
HERE)

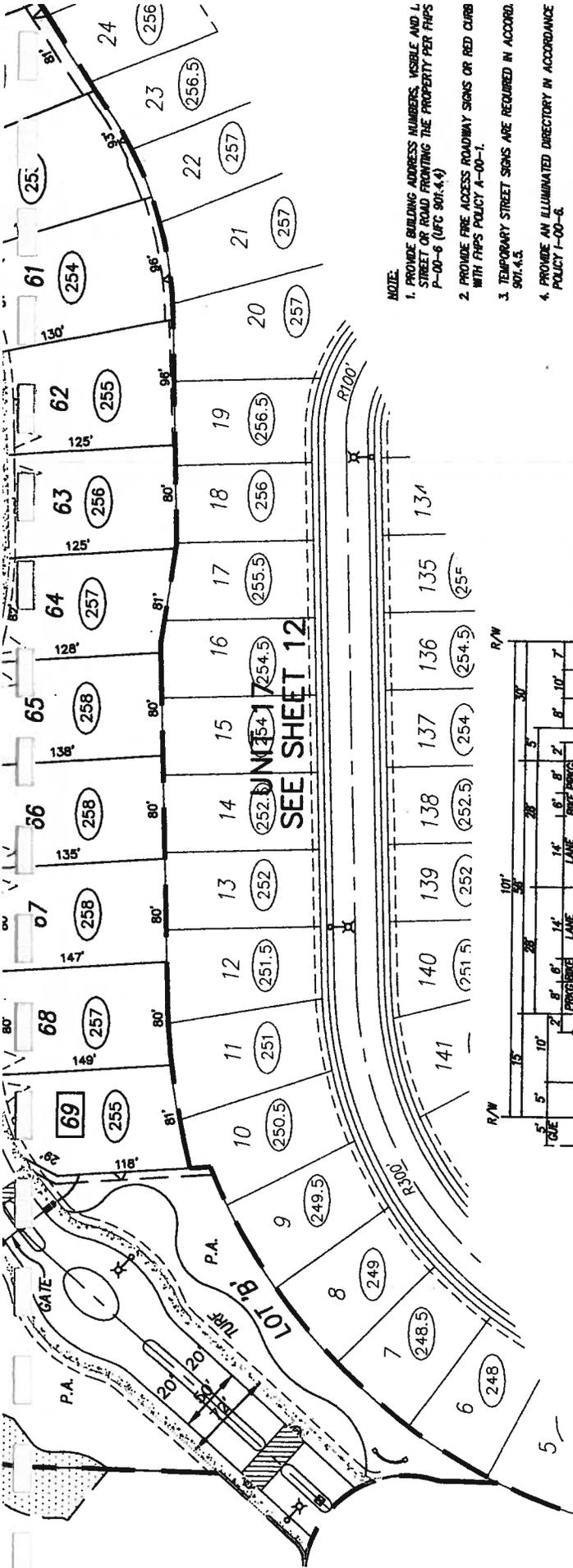
**APPENDIX E**  
**PROPOSED CROSS-SECTIONS**

PACIFIC HIGHLANDS RANCH  
URBAN AMENITY  
TRAIL / SEWER EASEMENT

#1

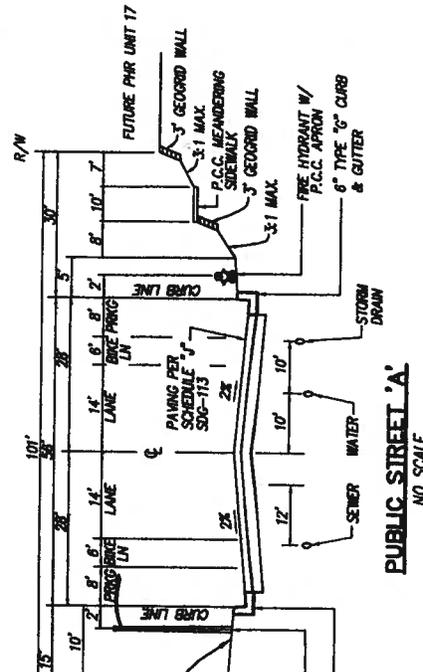




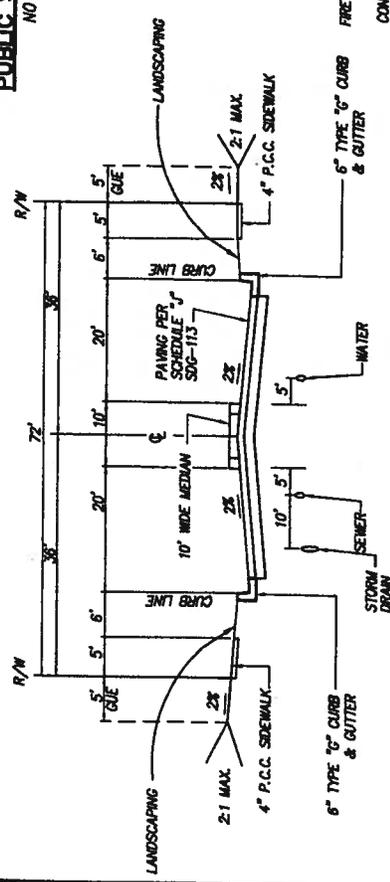


- NOTE:**
1. PROVIDE BUILDING ADDRESS NUMBERS, VISIBLE AND L STREET OR ROAD FRONTING THE PROPERTY PER FHPS P-00-6 (MFC 901.4.4)
  2. PROVIDE FIRE ACCESS ROADWAY SIGNS OR RED CURB WITH FHPS POLICY A-00-1.
  3. TEMPORARY STREET SIGNS ARE REQUIRED IN ACCORD. 901.4.5.
  4. PROVIDE AN ILLUMINATED DIRECTORY IN ACCORDANCE POLICY I-00-6.
  5. AN APPROVED VEHICLE STROBE DETECTOR SYSTEM W/ KEYSWITCH OVERRIDE, SATISFACTORY TO THE FIRE MAR, PROVIDED ON ALL VEHICLE MAIN ENTRY AND EMERGEN POINTS TO THE PROJECTS.

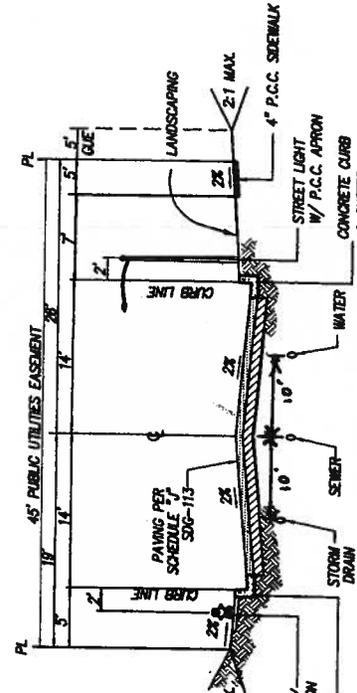
**SEE SHEET 12**



**PUBLIC STREET 'A'**  
NO SCALE



**PRIVATE DRIVEWAY 'A'**  
**ENTRY TO UNIT 18**  
NO SCALE

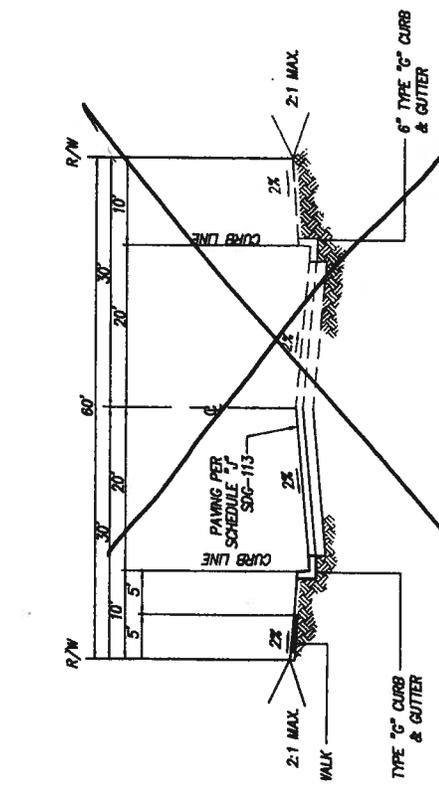
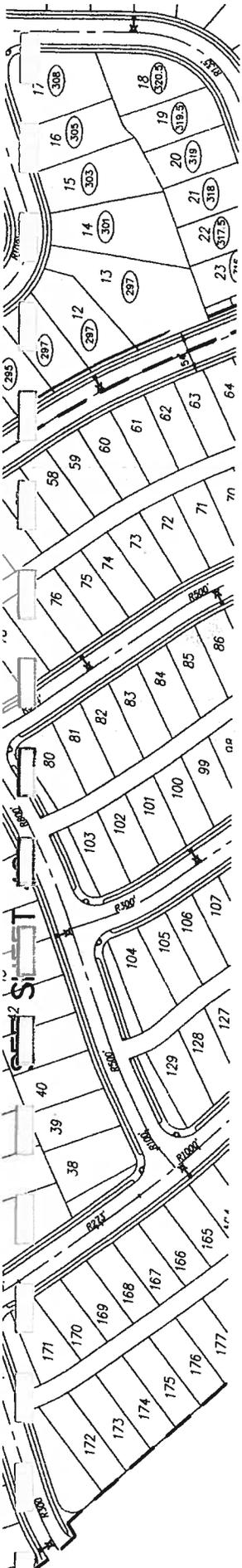


**UNIT 18**  
**DRIVEWAY SECTION (PRIVATE)**  
NO SCALE

**NOTE: PARKING PERMITTED ON ONLY ONE SIDE OF THE STREET. RED CURBS OR FIRE LANE SIGNS REQUIRED.**

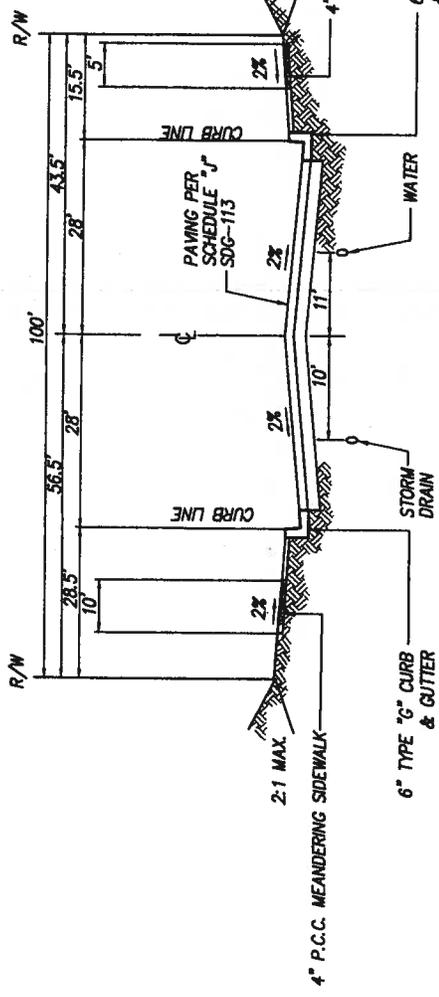
**TYPICAL**

41-085



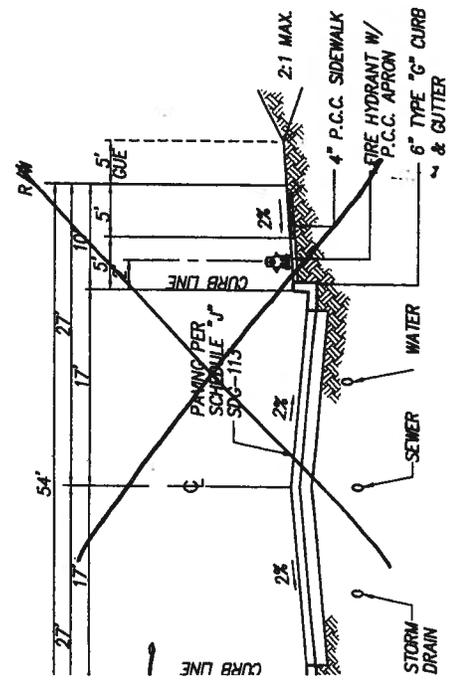
**RANCHO SANTA FE FARMS RD SECTION**

NO SCALE



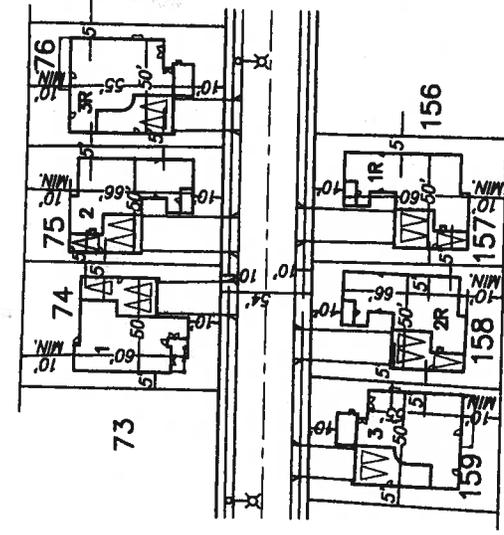
**PUBLIC STREET 'C' SECTION NORTH BOUND**

NO SCALE

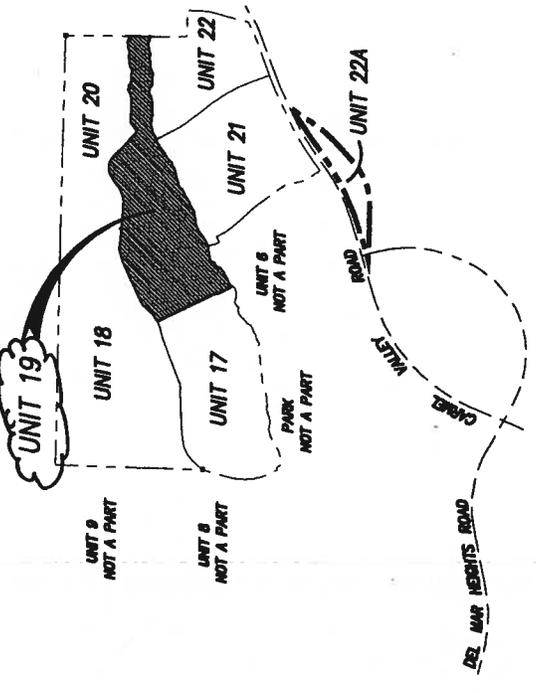


**TYPICAL SECTION E. F. G.H. I. J**

NO SCALE



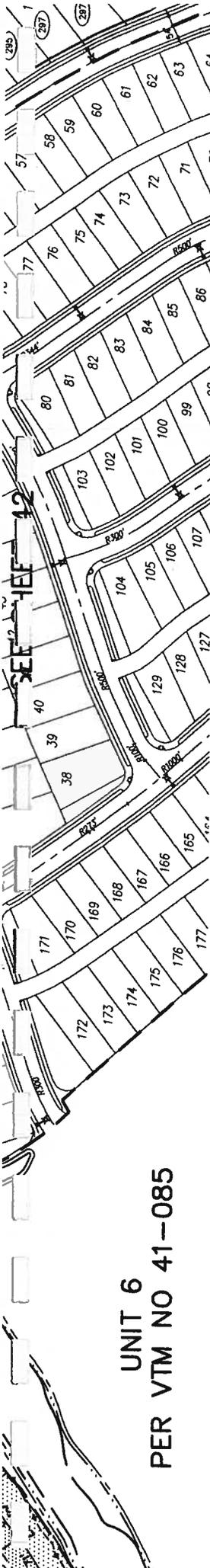
**PACIFIC HIGHLANDS RANCH**



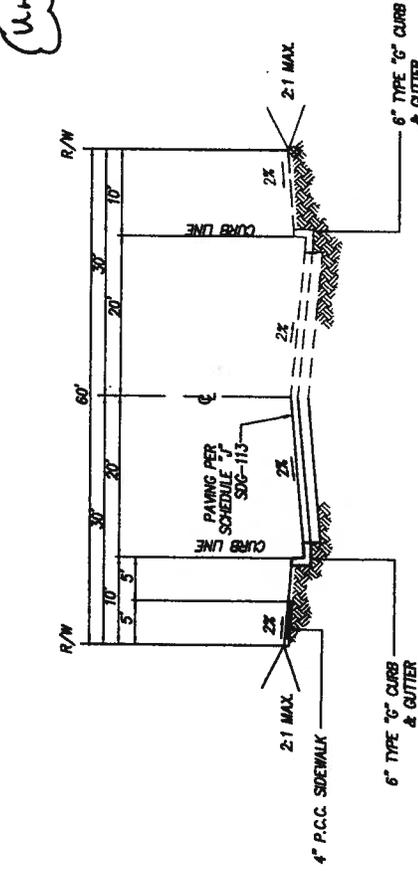
**KEY MAP**

NOT TO SCALE

**UNIT 6**  
**PER VTM NO 41-085**

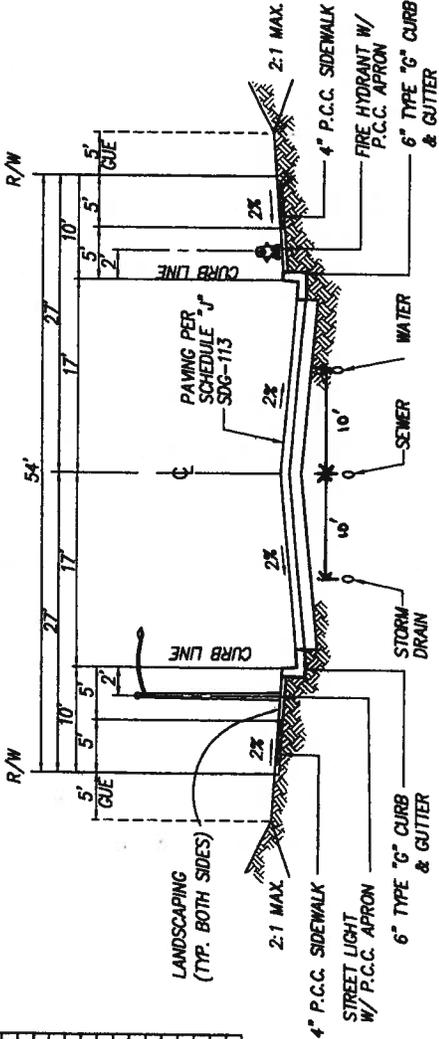


LOT NO.	AREA (SF)	AREA (AC)
151	7740	0.178
152	7742	0.178
153	8718	0.200
154	10081	0.231
155	7890	0.183
156	8474	0.194
157	8300	0.190
158	8300	0.190
159	8510	0.195
160	7292	0.167
A	74708	1.720
B	11383	0.261
C	25112	0.578
D	60370	1.386
E	62048	1.424
F	1496	0.034
G	1693	0.039
H	1714	0.039
I	599	0.014
J	1123	0.026
K	1132	0.026
L	10850	0.248



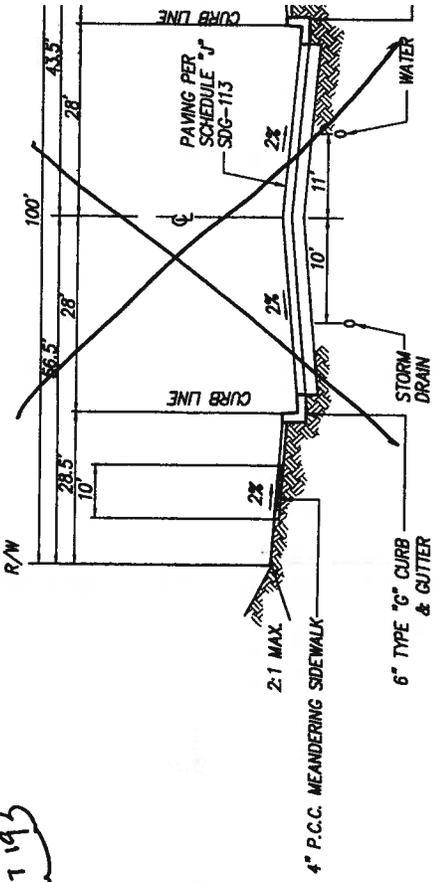
**RANCHO SANTA FE FARMS RD SECTION**

NO SCALE



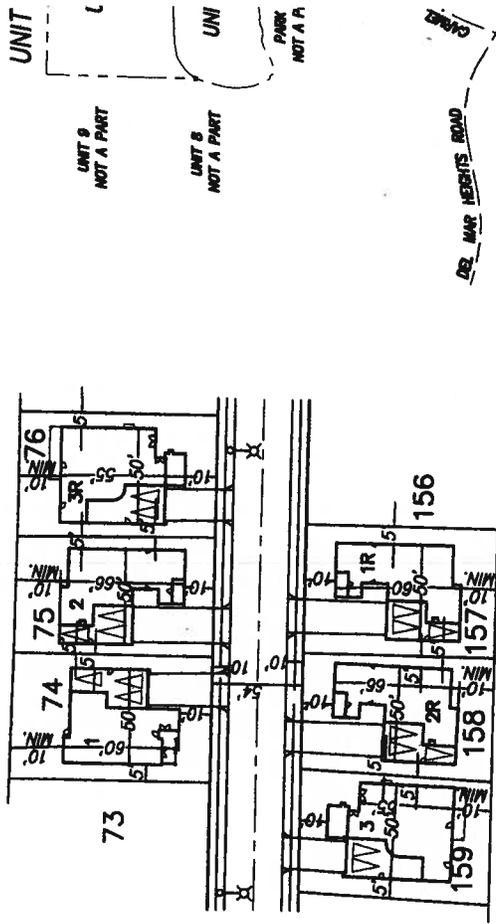
**TYPICAL SECTION**  
**PUBLIC STREET E. F. G. H. I. J**

NO SCALE



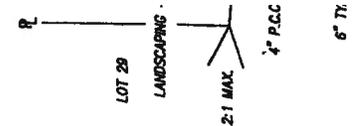
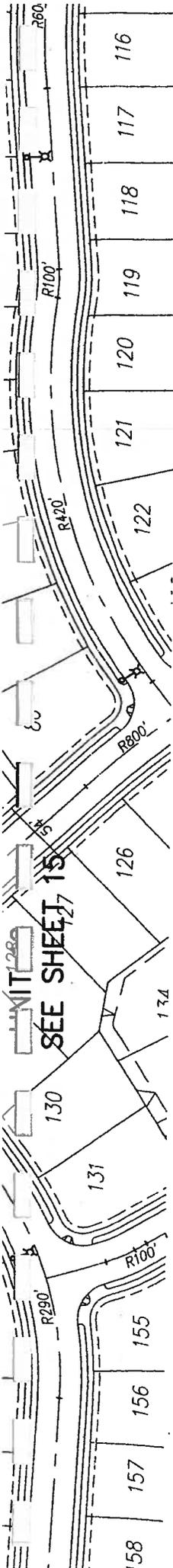
**PUBLIC STREET 'C' SECTION**  
**NORTH BOUND**

NO SCALE



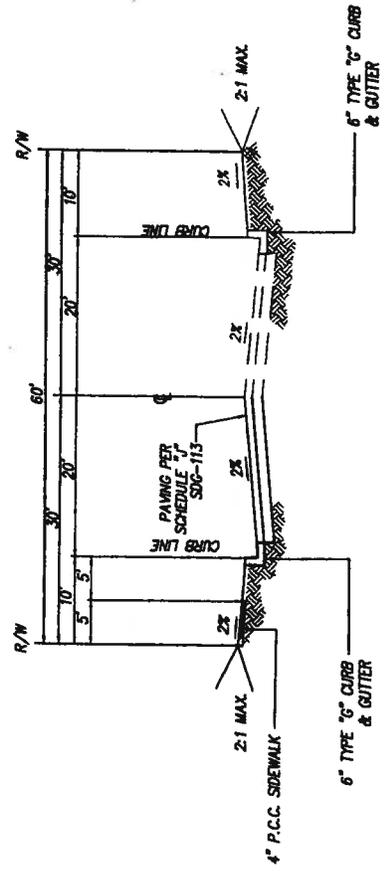
**TYPICAL HOUSE PLOTTING**

NOT TO SCALE



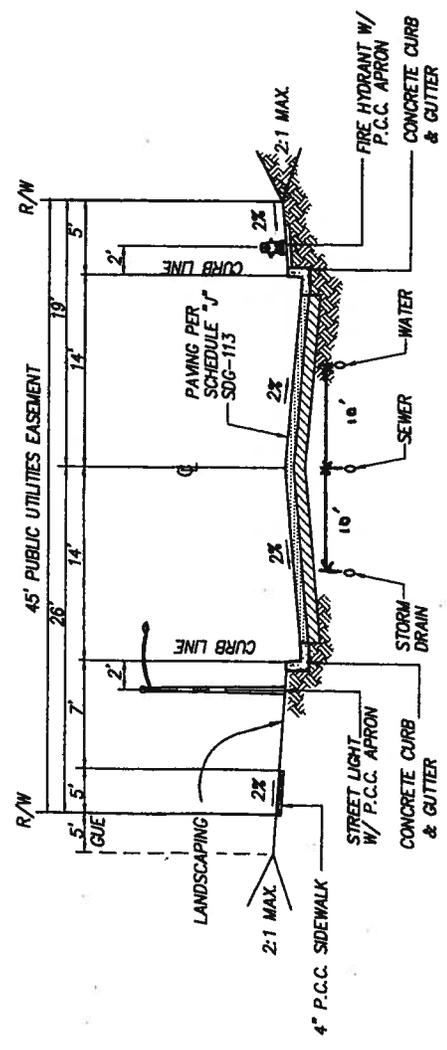
Uplift 20'

LOT NO.	AREA (SF)	AREA (AC)
A	2057	0.047
B	1366	0.031
C	1760	0.040
D	1265	0.029
E	113911	0.262
F	1188	0.028
G	479641	11.011



**RANCHO SANTA FE FARMS RD SECTION**

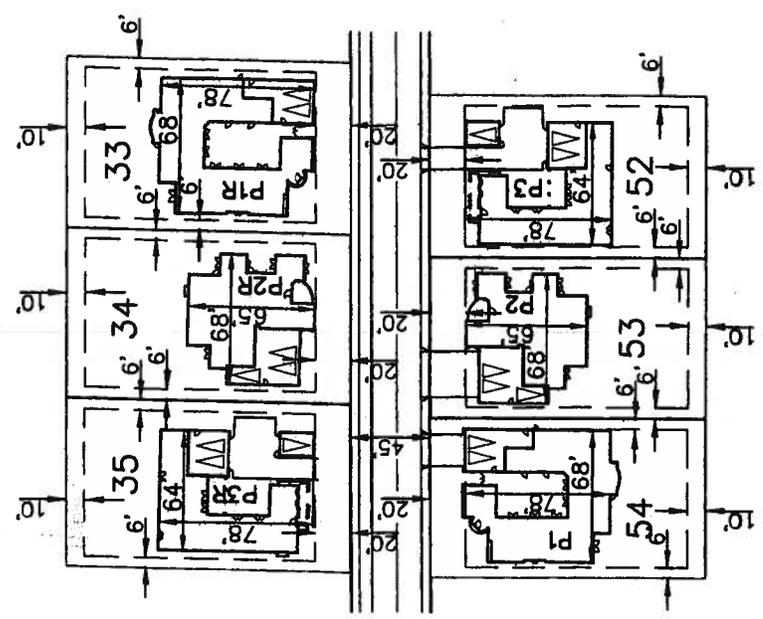
NO SCALE



**TYPICAL SECTION PRIVATE DRIVEWAY E. F. F. G.**

NO SCALE

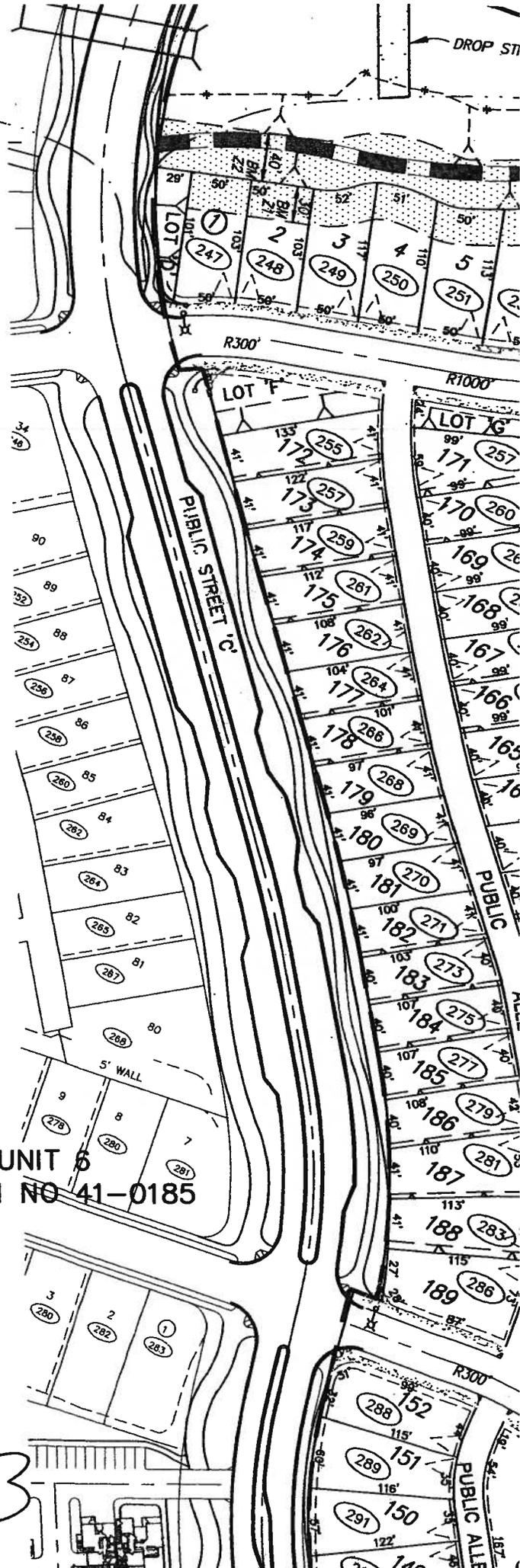
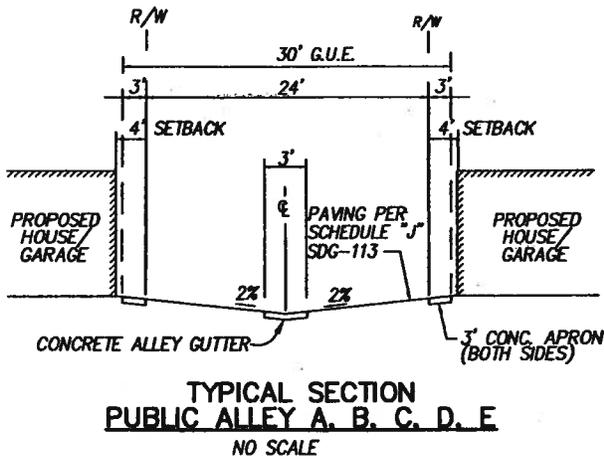
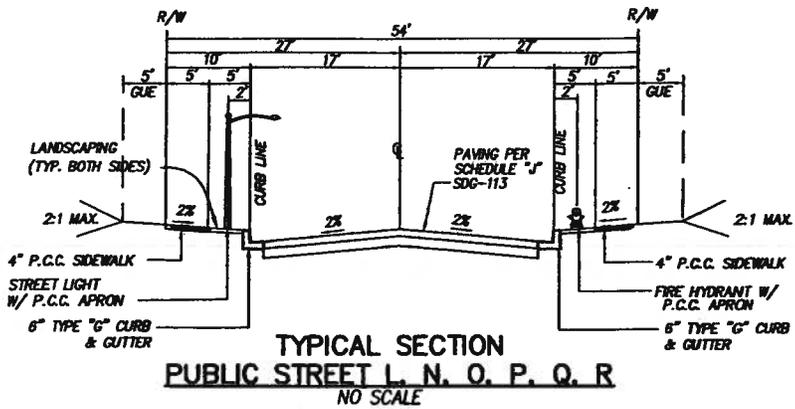
NOTE: PARKING PERMITTED ON ONLY ONE SIDE OF THE STREET.  
RED CURBS OR FIRE LANE SIGNS REQUIRED.



**TYPICAL HOUSE PLOTTING**

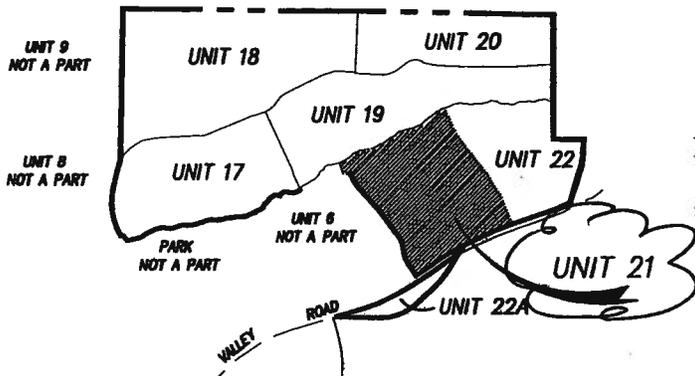
NOT TO SCALE

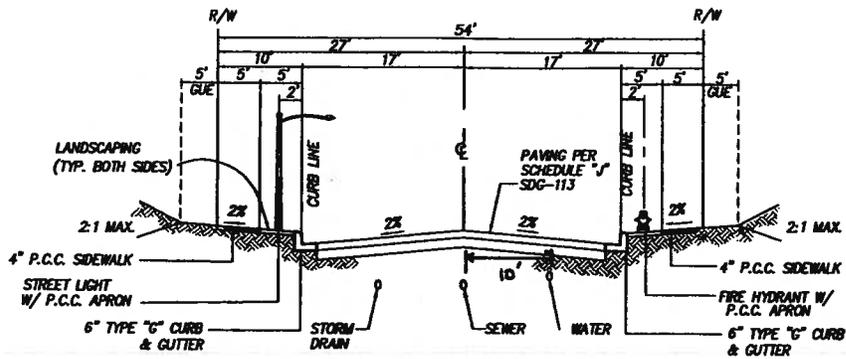




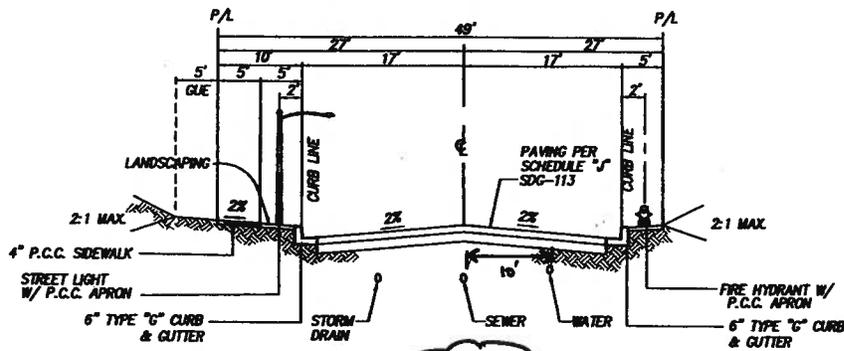
**UNIT 6  
PER TM NO 41-0185**

**PACIFIC HIGHLANDS RANCH**

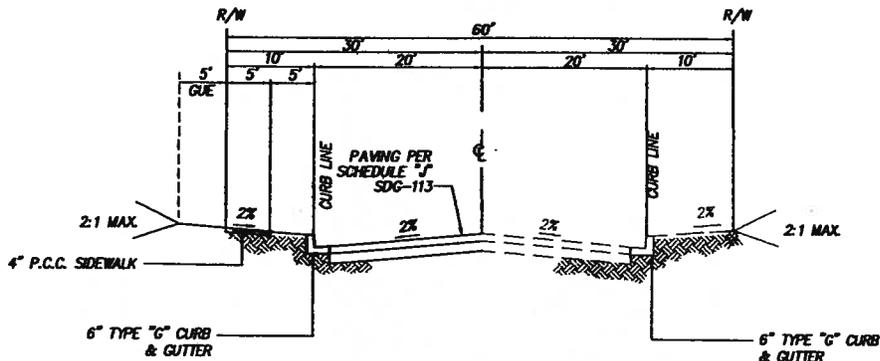




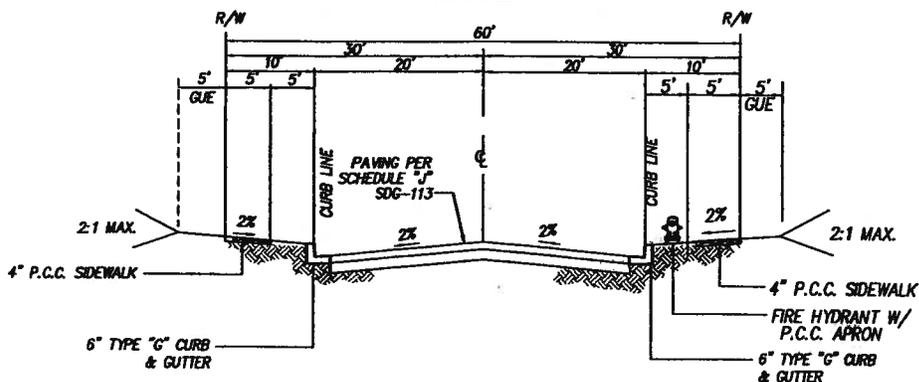
TYPICAL SECTION  
PUBLIC STREET O. R. S. I  
NO SCALE



UNIT 22  
PRIVATE DRIVEWAY SECTION O. P  
NO SCALE



NORTH OF SUBDIVISION BDRY.  
RANCHO SANTA FE FARMS RD SECTION  
NO SCALE



RANCHO SANTA FE FARMS RD SECTION  
SOUTH OF SUBDIVISION BDRY.  
NO SCALE

LOT NO.	AREA (SF)	AREA (AC)
1	6504	0.149
2	8700	0.200
3	6831	0.157
4	6493	0.149
5	5724	0.131
6	5734	0.132
7	5786	0.133
8	6112	0.140
9	6228	0.143
10	6138	0.141
11	6144	0.141
12	7760	0.178
13	13980	0.321
14	10883	0.245
15	6882	0.159
16	6858	0.153
17	9237	0.212
18	6828	0.159
19	5877	0.135
20	5289	0.121
21	5200	0.119
22	5100	0.117
23	5325	0.122
24	6396	0.147
25	5885	0.135
26	5904	0.136
27	5925	0.136
28	6070	0.139
29	7870	0.183
30	9327	0.214
31	9386	0.215
32	5816	0.134
33	5513	0.127
34	5521	0.127
35	5401	0.124
36	5228	0.120
37	5235	0.120
38	5241	0.120
39	5248	0.120
40	6802	0.156
41	6227	0.143
42	6575	0.151
43	6429	0.148

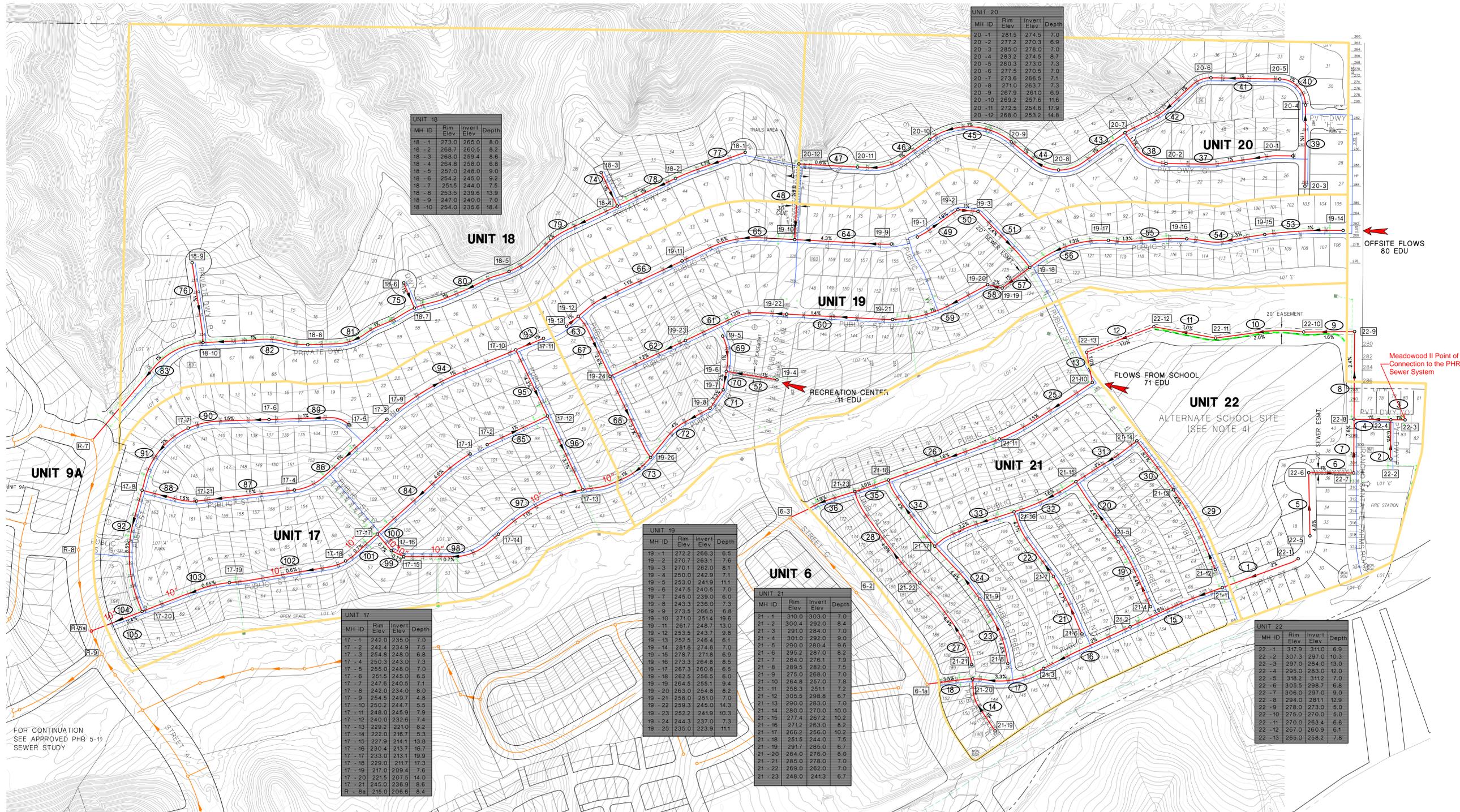
## Appendix D

### Onsite Sewer Analyses

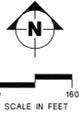


## Exhibit B

### 2003 Sewer Study Exhibit



FOR CONTINUATION  
SEE APPROVED PHR 5-11  
SEWER STUDY



- NOTE:**
- ALL PIPELINES SHOWN ARE 8 INCHES UNLESS OTHERWISE NOTED.
  - WATER, SEWER, AND STORM DRAIN FACILITIES ARE SHOWN IN APPROXIMATE LOCATIONS. FINAL DESIGN SHALL LOCATE FACILITIES PER CITY'S DESIGN REQUIREMENTS. A 10 FOOT EDGE-TO-EDGE SEPARATION BETWEEN SEWER AND ALL OTHER WET FACILITIES SHALL BE REQUIRED.
  - ACCESS ROADS SHALL BE GRADED LEVEL FOR A MINIMUM OF 20 FEET WIDE IN DESIGNATED OPEN SPACE. THE IMPROVED ROADBED SECTION SHALL BE A MINIMUM OF 12 FEET WIDE, TOPPED WITH MATERIAL CONDUCTIVE WITH GOALS OF OPEN SPACE OR MSCP MITIGATION. SEE CITY OF SAN DIEGO PROPOSED SEWER DESIGN GUIDE SECTION 3.2.3.2. PAVING MUST BE DESIGNATED FOR H-20 LOADING, AND MUST BE EQUIVALENT TO THE FIRE DEPARTMENT STANDARDS FOR LOADING. NO ASPHALT IN CANYONS.
  - UNIT 22 LAND USE IS EITHER 86 SF EDU OR SCHOOL SITE WITH 32 SF EDU. SCHOOL SITE OPTION REPRESENTS WORST-CASE FOR SEWAGE GENERATION.
  - ALL EASEMENTS IN PRIVATE DRIVEWAYS SHALL BE 45 FEET MINIMUM.

- SUBDIVISION BOUNDARY
- PACIFIC HIGHLANDS RANCH UNIT BOUNDARY
- SEWER MAIN AND DIRECTION OF FLOW (UNITS 17-22)
- PROPOSED SEWER MAIN AND DIRECTION OF FLOW (OTHER UNITS)
- PROPOSED SEWER MAIN WITH STEEL SLEEVE
- PROPOSED WATER PIPE
- GEO GRID WALL
- LINE DESIGNATION (SEE APPENDIX B)
- 10" PIPELINE DIAMETER

**PROPOSED SEWER FACILITIES  
UNITS 17-22**

FIGURE 4

**Water Quality Technical Report  
(WQTR)  
For  
Meadowood II**

**December 14, 2015**

Prepared for:

Hallmark Communities  
740 Lomas Santa Fe Drive, Suite 204  
Solana Beach CA 92075

Prepared by:

Hunsaker & Associates - San Diego, Inc.  
9707 Waples Street  
San Diego, CA 92121  
Telephone: (858) 558-4500

This Water Quality Technical Report (WQTR) has been prepared under the direction of the following Registered Civil Engineer. The Registered Civil Engineer (Engineer) attests to the technical information contained herein and the engineering data upon which the following design, recommendations, conclusions and decisions are based. The selection, sizing, and design of stormwater treatment and other control measures in this report meet the requirements of Water Quality Regional Control Board Order R9-2007-0001 and subsequent amendments.



  
Raymond L. Martin, RCE #48670

# Table of Contents

1. Introduction.....	1
1.1. Project Description .....	1
1.2. Pre-Project Condition .....	1
1.3. Proposed Condition .....	1
2. Pollutants and Conditions of Concern.....	2
2.1. Watershed.....	2
2.2. Impaired Water Bodies .....	2
2.3. Impacts to Hydrologic Regime .....	2
2.4. Pollutants .....	2
2.5. Drainage Study .....	2
2.6. Geologic Study.....	2
2.7. Hydromodification Management Plan .....	3
3. Best Management Practices.....	4
3.1. Low Impact Development BMPs .....	4
3.2. Source Control BMPs .....	4
3.3. Structural Treatment (Permanent) BMPs.....	4
3.4. Maintenance .....	6
Appendix.....	7
1 – Vicinity Map	
2 – Exhibits	
3 – Sizing Design Calculations and BMP/LID Design Details	
4 – Maintenance Plan	
5 – City Forms	
6 – Hydromodification Mitigation Plan	

# 1. Introduction

## **1.1.** *Project Description*

Meadowood II is a 4.5 acre site, located in the City of San Diego, California. The property abuts Carmel Valley Road's planned realignment to its ultimate alignment. There is proposed Meadowood II residential development with 9 lots to east of the property. An undeveloped lot previously used for commercial agricultural purposes and zoned for residential development is west of the site. The property is bounded by an existing masonry wall constructed with the adjacent Rancho Santa Fe Lakes Drive. Please see the vicinity map in Appendix 1.

## **1.2.** *Pre-Project Condition*

The property is partially paved with the current alignment of Carmel Valley Road and the remainder of the property is seasonally vegetated. Sediment, oil and grease, and contaminants associated with vehicle traffic are the expected contaminants leaving the site. The runoff from the property in existing conditions drains to an existing sump inlet near the northwest corner in the adjacent property located east of Rancho Santa Fe Farms Road.

## **1.3.** *Proposed Condition*

The Meadowood II site will be subdivided into 21 lots with streets and infrastructure. Onsite drainage improvements will include two hydromodification/bioretention basins to manage runoff prior to discharge.

The runoff from the property in developed condition will be attenuated and treated by two onsite detention ponds before discharging to proposed storm drain system to an existing stormdrain system adjacent to Rancho Santa Fe Farms Road.

## 2. Pollutants and Conditions of Concern

### 2.1. Watershed

This project is located within Solana Beach Hydrologic Sub-Area (HSA 905.11), a part of the larger San Dieguito River (HSA 905) watershed.

### 2.2. Impaired Water Bodies

The surface waters that the proposed project discharges to, San Dieguito River, is listed for indicator bacteria impairments.

### 2.3. Impacts to Hydrologic Regime

The proposed project has no negative impact on the hydrologic regime of this watershed. Please refer to the *Meadowbrook Drainage Study* (February 2015) for a complete explanation of these impacts.

### 2.4. Pollutants

As a result of the proposed land use, anticipated and potential pollutants are:

Land Use Type Categories	General Pollutant categories								
	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Detached Residential Development	X	X			X	X	X	X	X
Streets, highways & Freeways	X	P <sup>(1)</sup>	X	X <sup>(4)</sup>	X	P <sup>(5)</sup>		X	

X = anticipated  
P = potential  
(1) A potential pollutant if landscaping exists on-site.  
(4) Including petroleum hydrocarbons.  
(5) Including solvents.

### 2.5. Drainage Study

Please refer to the *Meadowbrook Drainage Study* (February 2015).

### 2.6. Geologic Study

A geologic study shall be performed during final engineering. Hydrologic Soil Group "D" is to be assumed for this site. Type 'D' soils have very slow infiltration rates and chiefly have layers that impede downward movement of water. Infiltration is therefore not recommended for this site.

No infiltration facilities will be proposed for this site. Therefore, groundwater is not an issue for this development

## **2.7.**     *Hydromodification Management Plan*

Hydromodification Management is provided in one onsite bioretention basin, and is calculated with a continuous simulation SWMM model. Please see Appendix 6

### 3. Best Management Practices

This project has incorporated a few permanent and operational source control BMP features in the site design. The exhibit in Attachment B was prepared per the City of San Diego Stormwater Standards and details the source control BMPs to be used on this project.

Since this project has no primary pollutants of concern (only secondary pollutants of concern), the treatment that is proposed meets the treatment requirements of the project.

#### **3.1. Low Impact Development BMPs**

##### 3.1.1. Optimize the Site Layout

- Optimize the site layout and reduce the need for grading

##### 3.1.2. Minimize Impervious Footprint

- Increase building density
- Construct streets, sidewalks and parking lot aisles to the minimum widths necessary.

##### 3.1.3. Disperse Runoff to Adjacent Landscaping

- Drain rooftops to adjacent landscaping
- Drain impervious parking, sidewalks, walkways, trails and patios to adjacent landscaping

##### 3.1.4. Design and Implementation of Pervious Surfaces

- No recommendations.

##### 3.1.5. Construction Considerations

- No recommendations

##### 3.1.6. Additional Considerations

- No recommendations

#### **3.2. Source Control BMPs**

##### 3.2.1. Maintenance bays

- No proposed Maintenance Bays

##### 3.2.2. Vehicle and Equipment Wash Areas

- No proposed Vehicle and Equipment Wash Areas

##### 3.2.3. Outdoor Processing Areas

- No proposed Outdoor Processing Areas

##### 3.2.4. Retail and Non-Retail Fueling Areas

- No proposed Fueling Areas

##### 3.2.5. Steep Hillside Landscaping

- No proposed Maintenance Bays

##### 3.2.6. Use Efficient Irrigation Systems & Landscape Design

- Implement rain shutoff devices to prevent irrigation during and after precipitation events in accordance with Section 2.3-4 of the City of San Diego's Landscape Standards (see Suggested Resources in Appendix A).
- Reduce irrigation contribution to dry-weather runoff by avoiding spray irrigation patterns where overspray to paved surfaces or drain inlets will occur.

- To avoid overwatering and potential irrigation runoff, design irrigation systems to each landscape area's specific water requirement.
  - Implement flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- 3.2.7. Design Trash Storage Areas to Reduce Pollution §  
Implement trash containers with lids.
- 3.2.8. Design Outdoor Material Storage Areas to Reduce Pollution Contribution §  
No proposed Material Storage Areas
- 3.2.9. Design Loading Docks to Reduce Pollution Contribution §  
No proposed Loading Docks
- 3.2.10. Employ Integrated Pest Management §  
Implement
- 3.2.11. Provide Stormwater Conveyance System Stamping and Signage  
§ Implement inlet stencil with "No dumping – flows to bay" or similar.  
§ Post signs and prohibitive language (with graphical icons) which prohibit illegal dumping at trailheads, parks, building entrances and public access points along channels and creeks within the project area
- 3.2.12. Manage Fire Sprinkler System Discharges  
§ Contain discharges from sprinkler systems' operational maintenance and testing and convey discharges to the sanitary sewer system.
- 3.2.13. Manage Air Conditioning Condensate  
§ Direct air conditioning condensate to landscaping areas
- 3.2.14. Use Non-Toxic Roofing Materials Where Feasible
- Avoid the use of galvanized steel or copper for roofs, gutters, and downspouts
  - If using such materials, reduce the potential for leaching of metals by applying a coating or patina
  - Avoid composite roofing materials that contain copper
- 3.2.15. Other

### **3.3. Structural Treatment (Permanent) BMPs**

One combination basins have been selected as Structural Treatment BMPs for this project. This basin will mitigate water quality impacts using bioretention, the preferred method of treatment, per the SUSMP. The basins will also achieve flow control goals (hydromodification).

The basins were designed using flow-based calculations for the 85<sup>th</sup> percentile flow rate. This is done by applying a 4% factor to the effective area of the proposed project.

Effective Area = 10% x pervious area + 100% impervious area

4% area factor = (0.2in/hr (85<sup>th</sup> percentile precip)) / (5in/hr (bioretention infiltration))

The Basins will not infiltrate and provide storage for more than 1.5 times the design capture volume (DCV). The BMP design meets the requirements of Regional Water Quality Control Board Order R9-2013-0001.

### **3.4.**     *Maintenance*

Responsible Party for Long-term Maintenance:

Company Name: Hallmark Communities

Street Address: 740 Lomas Santa Fe Drive, Suite 204

City / State / Zip: Solana Beach, CA 92075

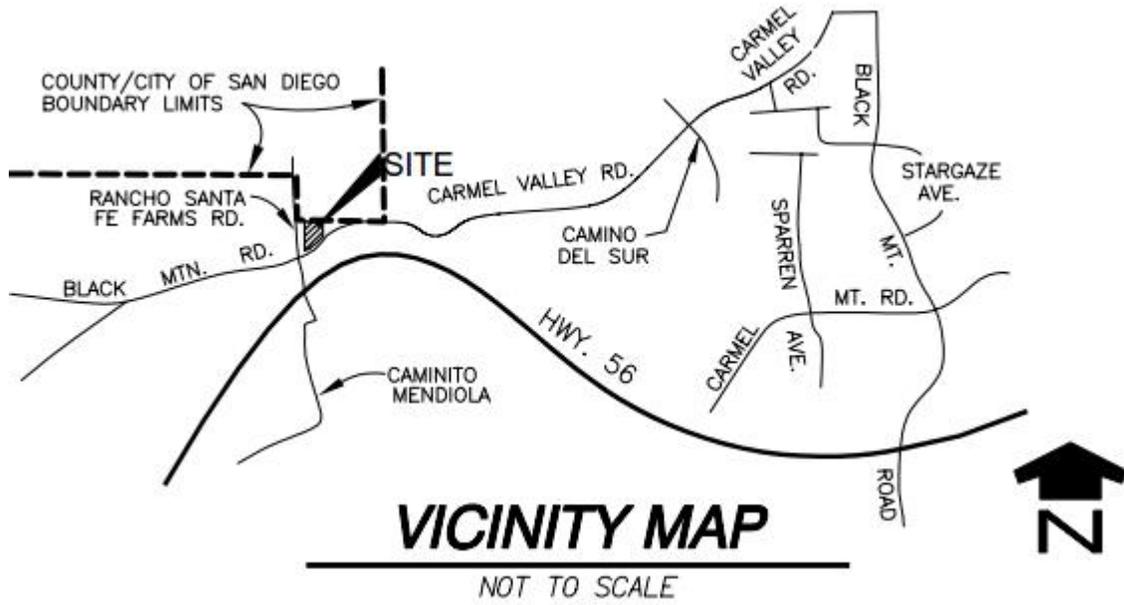
Maintenance Funding Source:

Maintenance of the site BMPs will be the responsibility Hallmark Communities and to be funded by Hallmark Communities until a formal agreement with a local HOA is developed. A maintenance plan will be developed and will include the following information:

- Specification of routine and non-routine maintenance activities to be performed.
- A schedule for maintenance activities.
- Name, qualifications, and contact information for the parties responsible for maintaining the BMPs.

# Appendix

# Appendix 1 – Vicinity Map



## Appendix 2 – Exhibits

- Drainage Management Area Exhibit
- BMP Exhibit



PROJECT NAME: Meadowood II  
 PROJECT LOCATION: San Diego, CA  
 85TH PERCENTILE PRECIPITATION DEPTH (IN): 0.65  
 BIORETENTION FLOWRATE (IN/HR): 5

DMAs DRAINING TO IMPs								
DMA NAME	IMP TYPE	SURFACE TYPE	DMA AREA (SQ FT)*	DMA AREA (AC)	DMA RUNOFF FACTOR	DESIGN CAPTURE VOLUME (CU FT)	REQUIRED TREATMENT VOLUME (CU FT)**	PROVIDED VOLUME (CU FT)
1	BIORETENTION AREA	PERVIOUS	76,666	1.8	0.1	6979	10469	10516
		IMPERVIOUS	121,185	2.8	1			
2	BIORETENTION AREA	PERVIOUS	5,312	0.1	0.1	408	612.73	1785
		IMPERVIOUS	7,010	0.2	1			
3	SELF MITIGATING	PERVIOUS	22,259	0.5	0.1	-		-
		IMPERVIOUS	0	0.0	1			

\* From Watershed Boundaries/DMA Areas delineated on the Water Quality Exhibit.

\*\* Required Treatment Volume is 1.5 times the Design Capture Volume

## Appendix 4 – Maintenance Plan

### Maintenance Program for Vegetated Swales

Inspection Frequency/Indications:	<u>Regular Inspections</u> □ Before wet season begins (September); □ After wet season (April). <u>Performance Inspections</u> □ After rainfall events greater than 0.5 inch
Maintenance Indications	Maintenance Activities
□ Damage to slopes, inlet, outlet, or other structures	□ Repair slopes, inlet, outlet, or other structures
□ Barren areas or badly established vegetation	□ Re-plant or re-seed barren areas or badly established vegetation, use erosion control mats if necessary
□ Over-grown vegetation, emergent woody vegetation and/or weeds	□ Trim vegetation to 6 inches, remove emergent woody vegetation and weeds
□ Sediment accumulation over 3 inches	□ Remove sediment accumulation
□ Trash and litter present in swale	□ Remove trash and debris
□ Rodent burrows that inhibit function of facility	□ Abate rodents and other vectors as necessary
□ Standing water in facility	□ Drain standing water
Waste Disposal	Sediment, other pollutants, and all other waste shall be properly disposed of in a licensed landfill or by another appropriate disposal method in accordance with local, state, and federal regulations.

### Maintenance Funding

Funding for all water quality treatment areas will be provided by Hallmark Communities for the Meadowbrook development until a formal agreement has been developed by Hallmark Communities and approved by the City of San Diego. The agreement will establish a Homeowners Association which will be responsible to perform the maintenance activities and to ensure adequate funding into perpetuity.

Prior to the issuance of any construction permit, the subdivider shall incorporate any construction Best Management Practices necessary to comply with Chapter 14, Article 2, Division 1 (Grading Regulations) of the San Diego Municipal Code, into the construction plans or specifications.

The City of San Diego Storm Water Standards requires maintenance of BMPs in perpetuity to ensure the proper function and operation of these BMPs. Costs for this maintenance will be the responsibility of Hallmark Communities at the time of inception and by the HOA once the association is established.

Please contact Hallmark Communities with any project-specific funding inquiries.

Hallmark Communities  
 740 Lomas Santa Fe Drive, Suite 204  
 Solana Beach CA 92075

# Appendix 5 – City Forms

# Appendix 6 –Hydromodification Mitigation Plan

# Hydromodification Management Plan

## INTRODUCTION

This report summarizes the approach used to model the proposed Meadowood II project site in San Diego, CA using the Environmental Protection Agency (EPA) Storm Water Management Model 5.1 (SWMM). SWMM models were prepared for the pre and post developed conditions at the site in order to determine if the proposed bioretention facilities have sufficient footprint to meet the current Hydromodification Management Plan (HMP) requirements from the Regional Water Quality Control Board (RWQCB).

## SWMM MODEL DEVELOPMENT

Two (2) SWMM models were prepared for this study, one for point of compliance (POC) in existing conditions and one for POC in the proposed condition. For all SWMM models, flow duration curves were prepared to demonstrate that the proposed bioretention & detention basin footprint will be sufficient to meet the current HMP requirements.

The inputs required to develop SWMM models include rainfall, watershed characteristics, and BMP configurations. The Oceanside Rain Gage from the Project Clean Water website was used for this study, since it is the most representative of the project site precipitation among the three gages used for modeling the characteristics of the San Diego County by the approved calculator (Lindbergh, Wohlford and Oceanside).

Evaporation for the site was modeled using average monthly values from the San Diego County hourly dataset. The site was modeled with hydrologic soil group D soils as determined from both the San Diego County Hydrology Manual soil map and the USGS Survey web-based Soil Survey Map. Other SWMM inputs for the subareas are discussed in the attachment to this document where the selection of the parameters is explained in detail.

## BIORETENTION MODELING

Developed storm water runoff is routed through two (2) bioretention basins, one located near the westerly Points of Compliance for the project the other located behind Lot 17. The basins were modeled using the bioretention LID module within SWMM. The bioretention module can model the underground gravel storage layer, underdrain with an orifice plate, amended soil layer, and a surface storage pond up to the elevation of the invert of the bottom orifice. A separate diversion and detention basin were used to model the portion of the storage pond between the base orifice invert elevations and the spillway elevation from the bioretention basin, according to the assumptions explained in the appendix. Once runoff has been routed through the respective basin outlet structures, it is conveyed via a storm drain pipe to each POC.

### Basin Discussion:

Flow control in the basin is achieved using multiple orifices on a concrete riser box. The size, number and location of the orifices are presented in the Basin Table below. Each basin also contains an emergency overflow riser that is only utilized in storm events equal to or larger than the 100 year storm. Sizing and further peak flow discussion is in the "Drainage Report for Meadowood II".

Basin Table

	BR-1	BR-2
Spillway Height (ft)*	3.5	3.5
Spillway Size (sqft)	2.3	2.3
Amended Soil Depth (in)	18	18
Class 2 Perm. Depth (in)	12	12
Approx. Dimensions (L x W)	55' x 52'	40' x 25'
Top Orifice		
No. of Orifices	-	2
Diameter (in)	-	1
Invert Height (ft)*	1	2.5
Middle Orifice		
No. of Orifices	4	-
Diameter (in)	4	-
Invert Height (ft)*	0.50	0.50
Bottom Orifice		
No. of Orifices	-	-
Diameter (in)	-	-
Invert Height (ft)*	0.33	0.33
Sub-Drain Orifice		
No. of Orifices	1	1
Diameter (in)	0.75	0.75

\*From finish grade

## FLOW DURATION CURVE COMPARISON

The Flow Duration Curves (FDC) for the site were compared at POCs 1 by exporting the hourly runoff time series results from SWMM to a spreadsheet. The FDC was compared between 10% of the existing condition  $Q_2$  (based on accepting an assumption of high susceptibility for downstream channel erosion as required if no soils tests are completed) up to the existing condition  $Q_{10}$ . The  $Q_2$  and  $Q_{10}$  were determined using a partial duration statistical analysis of the runoff time series in an Excel spreadsheet using the Cunnane plotting position method (which is the preferred plotting methodology in the HMP Permit). As the SWMM Model is a statistical analysis based on the Weibull Plotting Position Method, the Weibull Method was also used within the spreadsheet to ensure that the results were similar to those obtained by the SWMM Model.

The range between 10% of  $Q_2$  and  $Q_{10}$  was divided into 100 equal time intervals; the number of hours that each flow rate was exceeded was counted from the hourly series. Additionally, the intermediate peaks with a return period "i" were obtained ( $Q_i$  with  $i=3$  to 9). For the purpose of the plot, the values were presented as percentage of time exceeded for each flow rate.

The FDC comparison at POCs 1-2 are illustrated in Figures 1-2 in both normal and logarithmic scale. POC 1 corresponds with the point located downstream of the discharge of Basin #1. POC 2 corresponds with the point located downstream of the discharge of Basin #2. Attachment 10 provides detailed drainage exhibit for the post-developed condition.

As can be seen in Figures 1 & 2, the FDC for the proposed condition with two (2) separate basins is within 110% of the curve for the existing condition. The additional runoff volume generated from developing the site will be released to the downstream storm drain at a flow rate below the 10%  $Q_2$  lower threshold. Additionally, the project will not increase peak flow rates between the  $Q_2$  and the  $Q_{10}$ , as shown in the graphic and also in the attached table.

## SUMMARY & CONCLUSION

A summary of existing and proposed areas draining to each point of compliance (POC) are shown in the table below. The increase in area draining to each POC is attributed grading and development of the property. Two bioretention basins are proposed to mitigate increased flow frequencies as a result of development.

Area Summary

	Existing (AC)	Proposed (AC)
POC 1	10.4	9.8
TOTAL	10.4	9.8

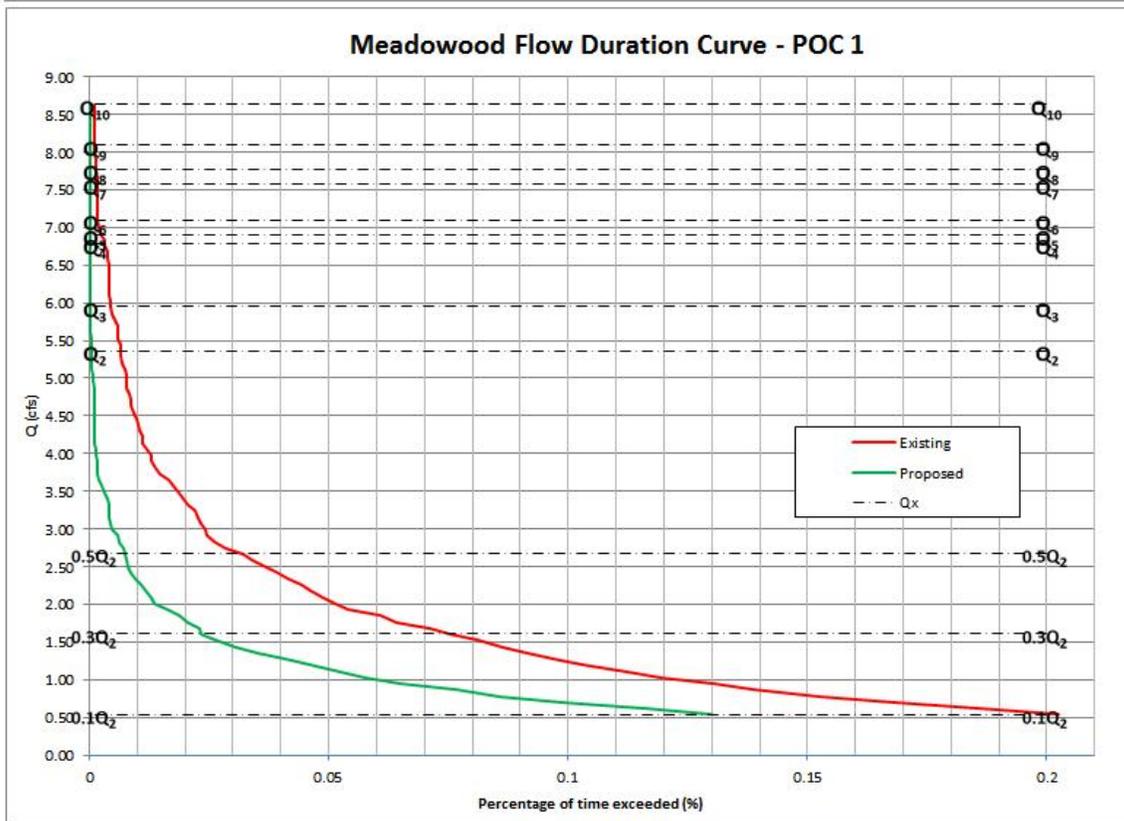
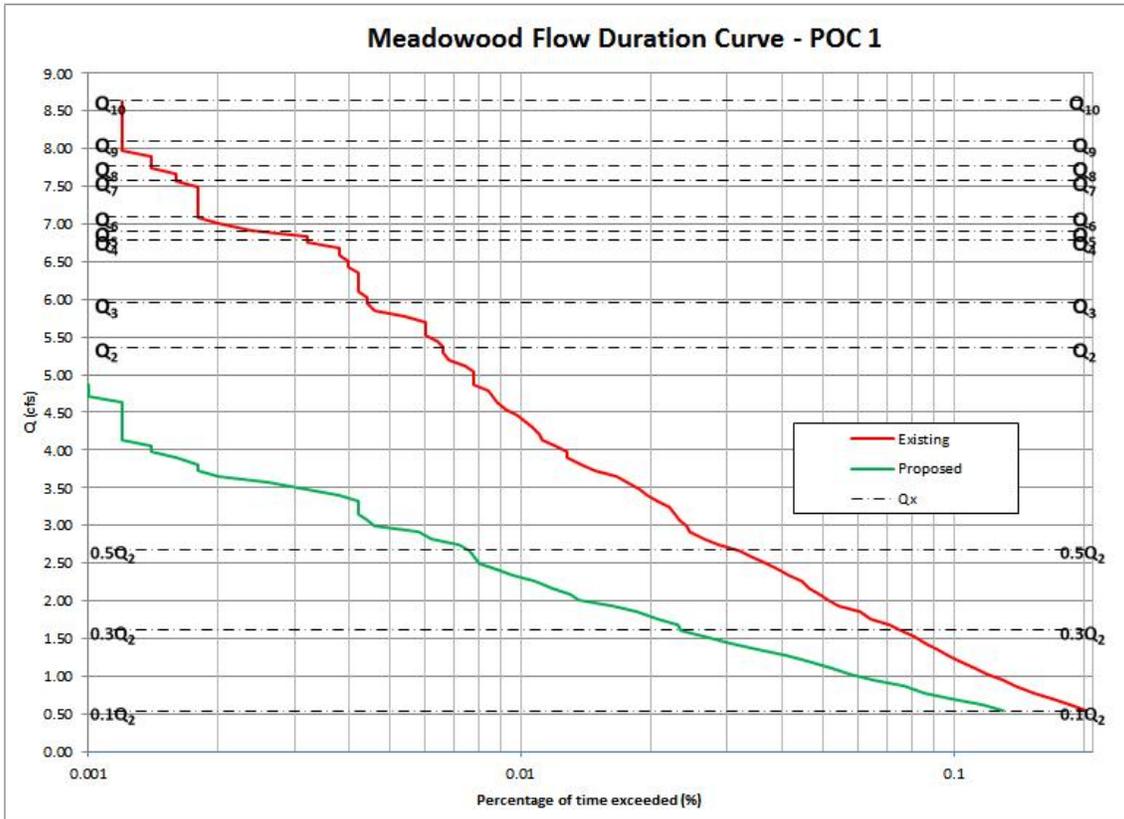
This study has demonstrated that the proposed bioretention footprint at the Meadowood II site is sufficient to meet the current HMP criteria if the bioretention cross-section areas and volumes recommended within this attachment are incorporated within the proposed project site.

#### KEY ASSUMPTIONS

1. D Soils are representative of the existing conditions for a majority of the site.

#### ATTACHMENTS

1. Q<sub>2</sub> to Q<sub>10</sub> Summary Table
2. Flow Duration Curve Analysis, Plots (log and natural "x" scale) and Tables.
3. List of the "n" largest Peaks: Pre-Development and Post-Development Conditions
4. Elevation vs. Area Curves and Elevations vs. Discharge Curves to be used in SWMM
5. Bioretention Details
6. SWMM Input Data (Existing and Proposed Models)
7. SWMM Screenshots and Explanation of Significant Variables
8. Drying Time of the Surface Layer of Bio-retention cells
9. USGS Soil Map of Project Site
10. Hydromodification Watershed Maps



Figures 1a and 1b. – POC 1 Flow Duration Curve Comparison (logarithmic and normal “x” scale)

ATTACHMENT 1 – Q<sub>2</sub> to Q<sub>10</sub> Summary Table

BASIN 1 – Q<sub>2</sub> to Q<sub>10</sub> Summary Tables

Return Period (yr)	Existing Condition Q (cfs)	Proposed Condition Q (cfs)	Reduction (cfs)
10	8.64	4.56	4.08
9	8.09	4.19	3.90
8	7.77	3.99	3.78
7	7.58	3.88	3.69
6	7.10	3.67	3.43
5	6.90	3.57	3.33
4	6.79	3.49	3.30
3	5.95	3.09	2.86
2	5.37	2.82	2.55

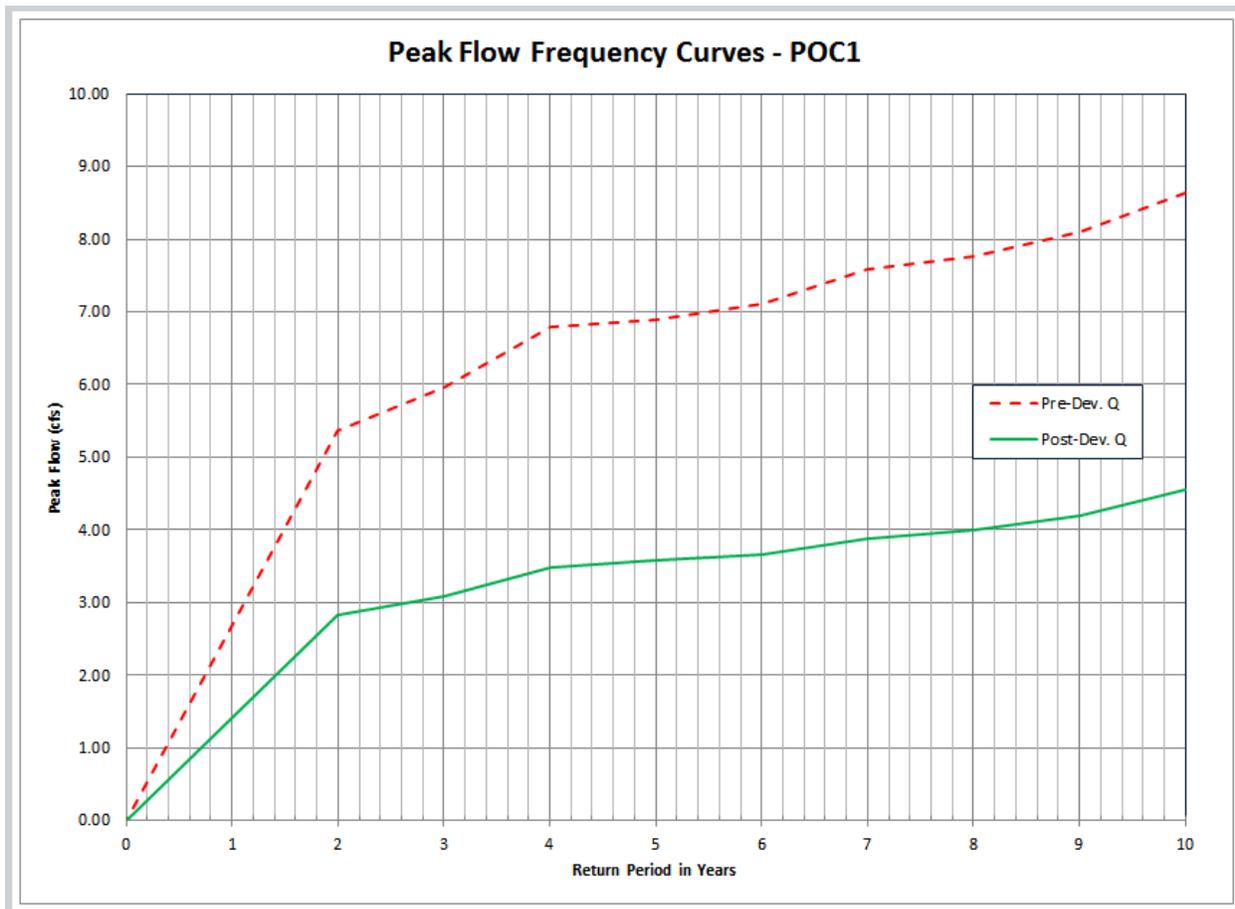


Figure 1c – POC1 Peak Flow Frequency Curve

## ATTACHMENT 2 - Flow Duration Curve Analysis, Plot & Table

Flow duration curve shall not exceed the existing conditions by more than 10% neither in peak flow nor duration.

The figure on the following page illustrates that the flow duration curve in post-development conditions after the proposed BMPs is below the existing flow duration curve. The flow duration curve table following the curve shows that if the interval  $0.10Q_2 - Q_{10}$  is divided in 100 sub-intervals, then a) the post development divided by pre-development durations are never larger than 110% (the permit allows up to 110%); and b) there are no more than 10 intervals in the range 101%-110% which would imply an excess over 10% of the length of the curve (the permit allows less than 10% of excesses measured as 101-110%).

Consequently, the design passes the hydromodification test.

It is important to note that the flow duration curve can be expressed in the "x" axis as percentage of time, hours per year, total number of hours, or any other similar time variable. As those variables only differ by a multiplying constant, their plot in logarithmic scale is going to look exactly the same and compliance can be observed regardless of the variable selected. The selection of a logarithmic scale in lieu of the normal scale is preferred, as differences between the pre-development and post-development curves can be seen more clearly in the entire range of analysis. Both graphics are presented for reference.

In terms of the "y" axis, the peak flow value is the variable of choice. As an additional analysis performed by H&A, not only the range of analysis is clearly depicted (10% of  $Q_2$  to  $Q_{10}$ ) but also all intermediate flows are shown (30% of  $Q_2$ , 50% of  $Q_2$ ,  $Q_2$ ,  $Q_3$ ,  $Q_4$ ,  $Q_5$ ,  $Q_6$ ,  $Q_7$ ,  $Q_8$  and  $Q_9$ ) in order to demonstrate compliance at any range  $Q_x - Q_{x+1}$ . It must be pointed out that one of the limitations of both the SWMM and SDHM models is that the intermediate analysis is not performed (to obtain  $Q_i$  from  $i = 2$  to 10). H&A performed the analysis using the Cunnane Plotting position Method (the preferred method in the HMP permit) from the "n" largest independent peak flows obtained from the continuous time series.

The largest "n" peak flows are attached in this appendix, as well as the values of  $Q_i$  with a return period "i", from  $i=2$  to 10. The  $Q_i$  values are also added into the flow-duration plot.

POC 1 - Flow Duration Curve Data for Meadowood II, San Diego, CA

Q2 = 5.37 cfs Fraction 10 %  
 Q10 = 8.64 cfs  
 Step = 0.0818 cfs  
 Count = 499681 hours  
 57.00 years

Interval	Existing Condition			Detention Optimized			Pass or Fail?
	Q (cfs)	Hours > Q	% time	Hours>Q	% time	Post/Pre	
1	0.537	1012	2.03E-01	650	1.30E-01	64%	Pass
2	0.618	929	1.86E-01	581	1.16E-01	63%	Pass
3	0.700	843	1.69E-01	495	9.91E-02	59%	Pass
4	0.782	763	1.53E-01	429	8.59E-02	56%	Pass
5	0.864	693	1.39E-01	383	7.66E-02	55%	Pass
6	0.946	652	1.30E-01	325	6.50E-02	50%	Pass
7	1.028	597	1.19E-01	288	5.76E-02	48%	Pass
8	1.109	563	1.13E-01	262	5.24E-02	47%	Pass
9	1.191	515	1.03E-01	230	4.60E-02	45%	Pass
10	1.273	485	9.71E-02	205	4.10E-02	42%	Pass
11	1.355	458	9.17E-02	176	3.52E-02	38%	Pass
12	1.437	432	8.65E-02	153	3.06E-02	35%	Pass
13	1.518	406	8.13E-02	132	2.64E-02	33%	Pass
14	1.600	377	7.54E-02	117	2.34E-02	31%	Pass
15	1.682	356	7.12E-02	115	2.30E-02	32%	Pass
16	1.764	320	6.40E-02	103	2.06E-02	32%	Pass
17	1.846	304	6.08E-02	93	1.86E-02	31%	Pass
18	1.928	270	5.40E-02	81	1.62E-02	30%	Pass
19	2.009	257	5.14E-02	68	1.36E-02	26%	Pass
20	2.091	244	4.88E-02	65	1.30E-02	27%	Pass
21	2.173	231	4.62E-02	59	1.18E-02	26%	Pass
22	2.255	222	4.44E-02	54	1.08E-02	24%	Pass
23	2.337	208	4.16E-02	48	9.61E-03	23%	Pass
24	2.418	197	3.94E-02	44	8.81E-03	22%	Pass
25	2.500	185	3.70E-02	40	8.01E-03	22%	Pass
26	2.582	170	3.40E-02	39	7.80E-03	23%	Pass
27	2.664	160	3.20E-02	38	7.60E-03	24%	Pass
28	2.746	143	2.86E-02	36	7.20E-03	25%	Pass
29	2.828	132	2.64E-02	31	6.20E-03	23%	Pass
30	2.909	123	2.46E-02	29	5.80E-03	24%	Pass

Interval	Existing Condition			Detention Optimized			Pass or Fail?
	Q (cfs)	Hours > Q	% time	Hours>Q	% time	Post/Pre	
31	2.991	121	2.42E-02	23	4.60E-03	19%	Pass
32	3.073	116	2.32E-02	22	4.40E-03	19%	Pass
33	3.155	113	2.26E-02	21	4.20E-03	19%	Pass
34	3.237	110	2.20E-02	21	4.20E-03	19%	Pass
35	3.319	103	2.06E-02	21	4.20E-03	20%	Pass
36	3.400	98	1.96E-02	19	3.80E-03	19%	Pass
37	3.482	94	1.88E-02	16	3.20E-03	17%	Pass
38	3.564	88	1.76E-02	13	2.60E-03	15%	Pass
39	3.646	83	1.66E-02	10	2.00E-03	12%	Pass
40	3.728	74	1.48E-02	9	1.80E-03	12%	Pass
41	3.809	69	1.38E-02	9	1.80E-03	13%	Pass
42	3.891	64	1.28E-02	8	1.60E-03	13%	Pass
43	3.973	64	1.28E-02	7	1.40E-03	11%	Pass
44	4.055	60	1.20E-02	7	1.40E-03	12%	Pass
45	4.137	56	1.12E-02	6	1.20E-03	11%	Pass
46	4.219	55	1.10E-02	6	1.20E-03	11%	Pass
47	4.300	53	1.06E-02	6	1.20E-03	11%	Pass
48	4.382	51	1.02E-02	6	1.20E-03	12%	Pass
49	4.464	49	9.81E-03	6	1.20E-03	12%	Pass
50	4.546	46	9.21E-03	6	1.20E-03	13%	Pass
51	4.628	44	8.81E-03	6	1.20E-03	14%	Pass
52	4.709	43	8.61E-03	5	1.00E-03	12%	Pass
53	4.791	42	8.41E-03	5	1.00E-03	12%	Pass
54	4.873	39	7.80E-03	5	1.00E-03	13%	Pass
55	4.955	39	7.80E-03	4	8.01E-04	10%	Pass
56	5.037	39	7.80E-03	4	8.01E-04	10%	Pass
57	5.119	37	7.40E-03	3	6.00E-04	8%	Pass
58	5.200	34	6.80E-03	3	6.00E-04	9%	Pass
59	5.282	33	6.60E-03	3	6.00E-04	9%	Pass
60	5.364	33	6.60E-03	3	6.00E-04	9%	Pass
61	5.446	32	6.40E-03	2	4.00E-04	6%	Pass
62	5.528	30	6.00E-03	2	4.00E-04	7%	Pass
63	5.609	30	6.00E-03	1	2.00E-04	3%	Pass
64	5.691	30	6.00E-03	1	2.00E-04	3%	Pass
65	5.773	27	5.40E-03	1	2.00E-04	4%	Pass
66	5.855	23	4.60E-03	1	2.00E-04	4%	Pass
67	5.937	22	4.40E-03	1	2.00E-04	5%	Pass
68	6.019	22	4.40E-03	0	0.00E+00	0%	Pass
69	6.100	21	4.20E-03	0	0.00E+00	0%	Pass

Interval	Existing Condition			Detention Optimized			Pass or Fail?
	Q (cfs)	Hours > Q	% time	Hours>Q	% time	Post/Pre	
70	6.182	21	4.20E-03	0	0.00E+00	0%	Pass
71	6.264	21	4.20E-03	0	0.00E+00	0%	Pass
72	6.346	21	4.20E-03	0	0.00E+00	0%	Pass
73	6.428	20	4.00E-03	0	0.00E+00	0%	Pass
74	6.510	20	4.00E-03	0	0.00E+00	0%	Pass
75	6.591	19	3.80E-03	0	0.00E+00	0%	Pass
76	6.673	19	3.80E-03	0	0.00E+00	0%	Pass
77	6.755	16	3.20E-03	0	0.00E+00	0%	Pass
78	6.837	16	3.20E-03	0	0.00E+00	0%	Pass
79	6.919	12	2.40E-03	0	0.00E+00	0%	Pass
80	7.000	10	2.00E-03	0	0.00E+00	0%	Pass
81	7.082	9	1.80E-03	0	0.00E+00	0%	Pass
82	7.164	9	1.80E-03	0	0.00E+00	0%	Pass
83	7.246	9	1.80E-03	0	0.00E+00	0%	Pass
84	7.328	9	1.80E-03	0	0.00E+00	0%	Pass
85	7.410	9	1.80E-03	0	0.00E+00	0%	Pass
86	7.491	9	1.80E-03	0	0.00E+00	0%	Pass
87	7.573	8	1.60E-03	0	0.00E+00	0%	Pass
88	7.655	8	1.60E-03	0	0.00E+00	0%	Pass
89	7.737	7	1.40E-03	0	0.00E+00	0%	Pass
90	7.819	7	1.40E-03	0	0.00E+00	0%	Pass
91	7.900	7	1.40E-03	0	0.00E+00	0%	Pass
92	7.982	6	1.20E-03	0	0.00E+00	0%	Pass
93	8.064	6	1.20E-03	0	0.00E+00	0%	Pass
94	8.146	6	1.20E-03	0	0.00E+00	0%	Pass
95	8.228	6	1.20E-03	0	0.00E+00	0%	Pass
96	8.310	6	1.20E-03	0	0.00E+00	0%	Pass
97	8.391	6	1.20E-03	0	0.00E+00	0%	Pass
98	8.473	6	1.20E-03	0	0.00E+00	0%	Pass
99	8.555	6	1.20E-03	0	0.00E+00	0%	Pass
100	8.637	6	1.20E-03	0	0.00E+00	0%	Pass

ATTACHMENT 3 - List of Peak Events and Determination of Q2 & Q10

T	Cunnane	Weibull	Peaks	Date	Position	Period of Return	
						Weibull	Cunnane
10	4.56	4.68					
9	4.19	4.37	2.07	2/11/2003	57	1.02	1.01
8	3.99	4.03	2.099	8/16/1977	56	1.04	1.03
7	3.88	3.91	2.149	4/28/2005	55	1.05	1.05
6	3.67	3.72	2.156	2/7/1993	54	1.07	1.07
5	3.57	3.57	2.175	4/27/1960	53	1.09	1.09
4	3.49	3.50	2.209	2/28/1991	52	1.12	1.11
3	3.09	3.10	2.209	3/19/1981	51	1.14	1.13
2	2.82	2.82	2.215	2/27/1991	50	1.16	1.15
			2.25	2/12/1992	49	1.18	1.18
			2.263	2/22/2008	48	1.21	1.20
Note:			2.267	12/22/1982	47	1.23	1.23
Cunnane is the preferred			2.289	1/16/1972	46	1.26	1.25
method by the HMP permit.			2.304	3/15/1986	45	1.29	1.28
			2.351	2/14/1998	44	1.32	1.31
			2.377	2/14/1986	43	1.35	1.34
			2.382	3/16/1963	42	1.38	1.38
			2.397	3/11/1995	41	1.41	1.41
			2.439	1/27/1980	40	1.45	1.44
			2.44	1/5/2008	39	1.49	1.48
			2.487	1/18/1993	38	1.53	1.52
			2.491	1/16/1978	37	1.57	1.56
			2.544	2/3/1994	36	1.61	1.61
			2.615	12/1/1961	35	1.66	1.65
			2.675	2/16/1998	34	1.71	1.70
			2.704	10/20/2004	33	1.76	1.75
			2.749	2/18/1993	32	1.81	1.81
			2.776	11/15/1952	31	1.87	1.87
			2.805	11/11/1985	30	1.93	1.93
			2.819	1/28/1983	29	2.00	2.00
			2.82	2/16/1980	28	2.07	2.07
			2.836	2/22/1998	27	2.15	2.15
			2.876	1/27/2008	26	2.23	2.23
			2.942	2/26/1983	25	2.32	2.33
			2.983	12/29/1991	24	2.42	2.42
			2.985	11/22/1965	23	2.52	2.53
			2.991	2/3/1998	22	2.64	2.65
			2.992	12/18/1970	21	2.76	2.78
			3.023	2/9/1978	20	2.90	2.92
			3.143	3/2/1980	19	3.05	3.08
			3.368	4/1/1958	18	3.22	3.25
			3.433	3/17/1982	17	3.41	3.45
			3.453	2/27/1978	16	3.63	3.67
			3.47	1/16/1952	15	3.87	3.92
			3.531	2/19/1980	14	4.14	4.21
			3.564	10/29/2000	13	4.46	4.54
			3.571	1/13/1993	12	4.83	4.93
			3.578	2/17/2005	11	5.27	5.40
			3.656	10/27/2004	10	5.80	5.96
			3.855	2/23/1969	9	6.44	6.65
			3.93	2/3/1958	8	7.25	7.53
			4.072	2/25/2003	7	8.29	8.67
			4.639	9/23/1986	6	9.67	10.21
			4.882	1/4/1995	5	11.60	12.43
			5.062	1/15/1979	4	14.50	15.89
			5.384	10/1/1983	3	19.33	22.00
			5.555	1/4/1978	2	29.00	35.75
			5.993	4/14/2003	1	58.00	95.33

## ATTACHMENT 4 - Elevation vs. Area Curves vs. Discharge Curves to be used in SWMM

### Elevation vs. Area

For the portion of the flow diverted in the LID Control to the receiving detention basin, a pond is used to route the hydrographs. The elevation vs area curve in the model is calculated in Excel and imported into the model at a 0.1 ft interval range.

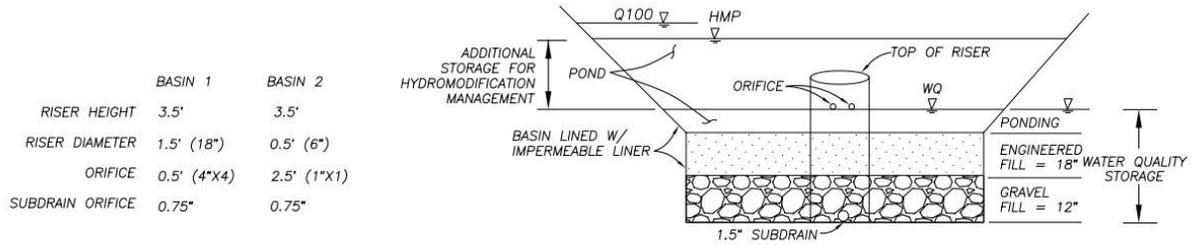
### Elevation vs Discharge

The total discharge peak flow is imported from an Excel spreadsheet that calculated the elevation vs discharge of the multiple outlet system.

The orifices have been selected to maximize their size while still restricting flows to conform to the required 10% of the Q2 event flow as mandated in the Final Hydromodification Management Plan by Brown & Caldwell, dated March 2011. While we acknowledge that these orifices are small, to increase the size of these outlets would impact the basins' ability to restrict flows beneath the HMP thresholds, thus preventing the BMP from conformance with HMP requirements.

In order to prevent blockage of the orifices, a debris screen will be fitted to the base invert of the lower orifices located within the detention basin. Regular maintenance of the riser and orifices will be performed to ensure potential blockages are minimized. A detail of the orifice and riser structure is provided in Attachment 5 of this attachment. The stage-storage and stage-discharge calculations have been provided on the following pages.

# ATTACHMENT 5 - Bio Retention Details



**WQ BIOFILTRATION BASIN CROSS SECTION -TYPICAL**

NOT TO SCALE

ATTACHMENT 6 - SWMM Input Data (Existing and Proposed Models)

EX		
POC 1		
	Area 1	Area 2
Soil Type	D	D
Area (AC)	8.82	1.57
Flowpath (ft)	750	485
Width (ft)	512	141
% Slope	5	5
%Impervious	8%	41%
Suction Head (in)	9	9
Conductivity (in/hr)	0.025	0.025
Initial Deficit	0.30	0.30

PR						
POC 1						
	Area 1	BR-1	Area 2	BR-2	Area 3	Area 4
Soil Type	D	A	D	A	D	D
Area (AC)	4.42	0.126	0.255	0.027	1.57	3.68
Flowpath (ft)	500	-	180		485	750
Width (ft)	385	10	62	10	141	214
% Slope	5	0	2	0	5	5
%Impervious	63%	0	63%	0	41%	17%
Suction Head (in)	9	3	9	3	9	9
Conductivity (in/hr)	0.025	0.15	0.025	0.15	0.025	0.025
Initial Deficit	0.30	0.32	0.30	0.32	0.30	0.30

## ATTACHMENT 7 - SWMM Screens and Explanation of Significant Variables

Attached, the reader can see the screens associated with the EPA-SWMM Model in both pre-development and post-development conditions. Each portion, i.e., sub-catchments, outfalls, storage units, LID controls for the bio-retention cells, ponding on top of the bio-retention (modeled as a storage unit), weir as a discharge, and outfalls (point of compliance), are also shown.

Variables for modeling are associated with typical recommended values by the EPA-SWMM model, typical values found in technical literature (such as Maidment's Handbook of Hydrology). Recommended values for the SWMM model have been attained from the interim Orange County criteria established for their SWMM calibration. Currently, no recommended values have been established by the San Diego County HMP Permit for the SWMM Model.

Soil characteristics of the existing soils were determined from the USGS sources.

Some values incorporated within the SWMM model have been determined from the professional experience of H&A using conservative assumption that have a tendency to increase the size of the needed BMP and also generate a long-term runoff as a percentage of rainfall similar to those measured in gage stations in Southern California by the USGS.

Description of model parameters and assumptions:

N-Imperv – Manning's N for impervious surfaces

0.012 (typical)

N-Perv – Manning's N for pervious surfaces

0.05 (typical)

Dstore-Imperv – Depth of depression storage on impervious area (in)

0.02 (typical)

Dstore-Perv – Depth of depression storage on pervious area (in)

0.1 (typical)

%Zero-Imperv – Percentage of impervious area with no depression storage (%)

25 (typical)

Suction Head – Soil capillary suction head (in)

Conductivity – Soil saturated hydraulic conductivity (in/hr)

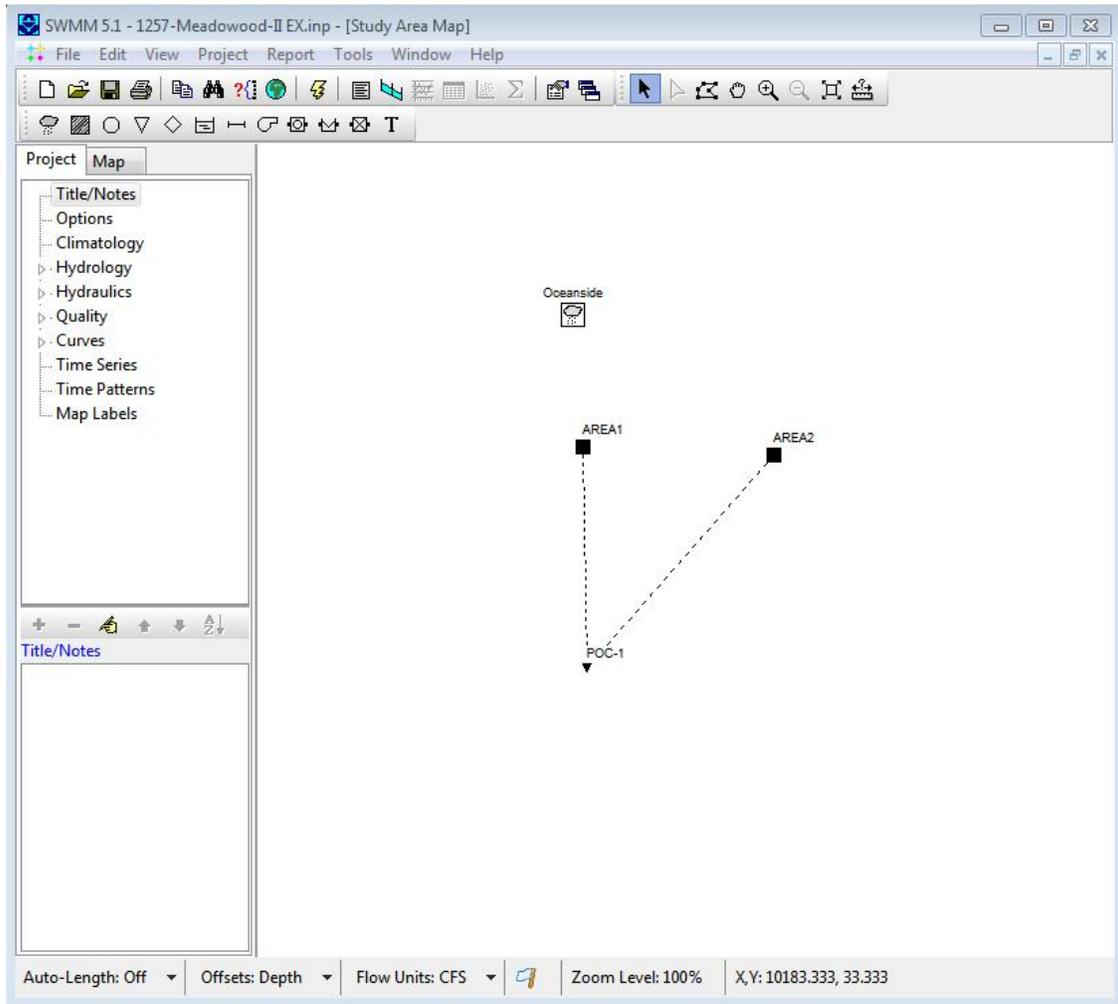
-75% of these values if subcatchment is graded/compacted

Initial Deficit – Initial moisture deficit (fraction)

Soil Type	Suction Head	Conductivity	Initial Deficit
A	1.5	0.3	0.33
B	3	0.2	0.32
C	6	0.1	0.31
D	9	0.025	0.30

NOTE : These values are based on Maidment's Handbook of Hydrology, Orange County calibrations for SWMM and recommended values from the EPA SWMM program.

# POC 1 – Pre-Developed Condition



Property	Value
Name	Oceanside
X-Coordinate	3609.694
Y-Coordinate	7882.653
Description	
Tag	
Rain Format	INTENSITY
Time Interval	1:00
Snow Catch Factor	1.0
Data Source	TIMESERIES
<b>TIME SERIES:</b>	
- Series Name	Oceanside
<b>DATA FILE:</b>	
- File Name	*
- Station ID	*
- Rain Units	IN
User-assigned name of rain gage	

Property	Value
Name	POC-1
X-Coordinate	3762.755
Y-Coordinate	3558.673
Description	
Tag	
Inflows	NO
Treatment	NO
Invert El.	0
Tide Gate	NO
Type	FREE
<b>Fixed Outfall</b>	
Fixed Stage	0
<b>Tidal Outfall</b>	
Curve Name	*
<b>Time Series Outfall</b>	
Series Name	*
User-assigned name of outfall	

Property	Value
Name	AREA1
X-Coordinate	3724.490
Y-Coordinate	6288.265
Description	Latitude 33 and Meadowwood II Existing
Tag	
Rain Gage	Oceanside
Outlet	POC-1
Area	8.82
Width	512
% Slope	5
% Imperv	8
N-Imperv	0.012
N-Perv	0.05
Dstore-Imperv	0.02
Dstore-Perv	0.1
%Zero-Imperv	25
Subarea Routing	OUTLET
Percent Routed	100
Infiltration	GREEN_AMPT
Groundwater	NO
Snow Pack	
LID Controls	0
Land Uses	0
Initial Buildup	NONE
Curb Length	0

User-assigned name of subcatchment

Property	Value
Name	AREA2
X-Coordinate	6058.673
Y-Coordinate	6186.224
Description	Meadowwood I Developed
Tag	
Rain Gage	Oceanside
Outlet	POC-1
Area	1.57
Width	141
% Slope	5
% Imperv	41
N-Imperv	0.012
N-Perv	0.05
Dstore-Imperv	0.02
Dstore-Perv	0.1
%Zero-Imperv	25
Subarea Routing	OUTLET
Percent Routed	100
Infiltration	GREEN_AMPT
Groundwater	NO
Snow Pack	
LID Controls	0
Land Uses	0
Initial Buildup	NONE
Curb Length	0

User-assigned name of subcatchment

Infiltration Editor

Infiltration Method: GREEN\_AMPT

Property	Value
Suction Head	9
Conductivity	.025
Initial Deficit	.3

Soil capillary suction head (inches or mm)

OK Cancel Help

Infiltration Editor

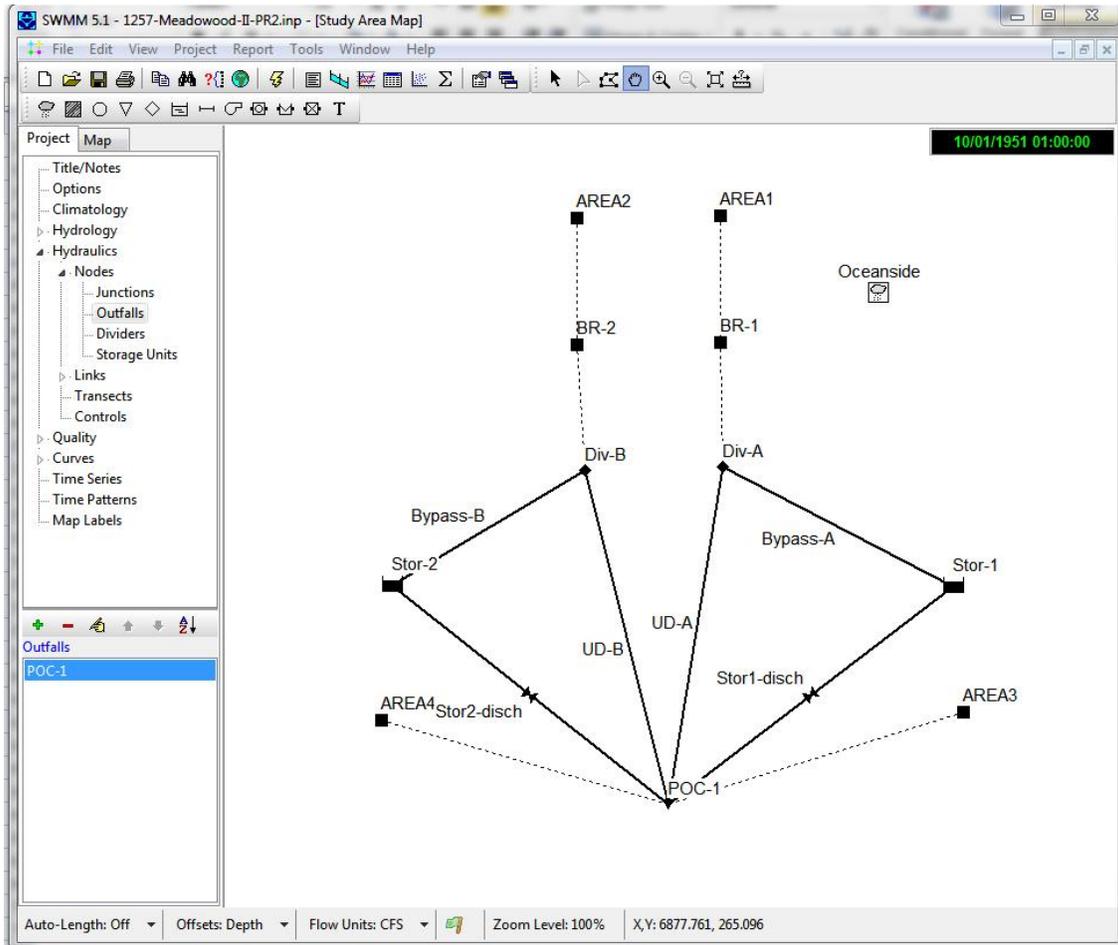
Infiltration Method: GREEN\_AMPT

Property	Value
Suction Head	9
Conductivity	.025
Initial Deficit	.3

Soil capillary suction head (inches or mm)

OK Cancel Help

# POC 1 – Developed Condition



Property	Value
Name	Oceanside
X-Coordinate	6732.378
Y-Coordinate	8100.358
Description	
Tag	
Rain Format	INTENSITY
Time Interval	1:00
Snow Catch Factor	1.0
Data Source	TIMESERIES
<b>TIME SERIES:</b>	
- Series Name	Oceanside
<b>DATA FILE:</b>	
- File Name	*
- Station ID	*
- Rain Units	IN
User-assigned name of rain gage	

Property	Value
Name	POC-1
X-Coordinate	4030.612
Y-Coordinate	1581.633
Description	
Tag	
Inflows	NO
Treatment	NO
Invert El.	0
Tide Gate	NO
Type	FREE
<b>Fixed Outfall</b>	
Fixed Stage	0
<b>Tidal Outfall</b>	
Curve Name	*
<b>Time Series Outfall</b>	
Series Name	*
User-assigned name of outfall	

Divider Div-A	
Property	Value
Name	Div-A
X-Coordinate	4008.363
Y-Coordinate	5937.873
Description	
Tag	
Inflows	NO
Treatment	NO
Invert El.	0
Max. Depth	.167
Initial Depth	0
Surcharge Depth	0
Ponded Area	2892
Diverted Link	Bypass-A
Type	CUTOFF
<b>Cutoff Divider</b>	
Cutoff Flow	.05676
<b>Tabular Divider</b>	
Curve Name	*
<b>Weir Divider</b>	
Min. Flow	0
Max. Depth	0
Coefficient	0
User-assigned name of divider	

Storage Unit Stor-1	
Property	Value
Name	Stor-1
X-Coordinate	7652.284
Y-Coordinate	4365.482
Description	
Tag	
Inflows	NO
Treatment	NO
Invert El.	0
Max. Depth	3
Initial Depth	0
Ponded Area	2673
Evap. Factor	1
Seepage Loss	NO
Storage Curve	TABULAR
<b>Functional Curve</b>	
Coefficient	1000
Exponent	0
Constant	0
<b>Tabular Curve</b>	
Curve Name	Storage-1
User-assigned name of storage unit	

Conduit UD-A	
Property	Value
Name	UD-A
Inlet Node	Div-A
Outlet Node	POC-1
Description	
Tag	
Shape	DUMMY
Max. Depth	0
Length	1
Roughness	0.01
Inlet Offset	0
Outlet Offset	0
Initial Flow	0
Maximum Flow	0
Entry Loss Coeff.	0
Exit Loss Coeff.	0
Avg. Loss Coeff.	0
Seepage Loss Rate	0
Flap Gate	NO
Culvert Code	
User-assigned name of Conduit	

Conduit Bypass-A	
Property	Value
Name	Bypass-A
Inlet Node	Div-A
Outlet Node	Stor-1
Description	
Tag	
Shape	DUMMY
Max. Depth	0
Length	1
Roughness	0.01
Inlet Offset	0
Outlet Offset	0
Initial Flow	0
Maximum Flow	0
Entry Loss Coeff.	0
Exit Loss Coeff.	0
Avg. Loss Coeff.	0
Seepage Loss Rate	0
Flap Gate	NO
Culvert Code	
User-assigned name of Conduit	

Property	Value
Name	AREA1
X-Coordinate	3992.347
Y-Coordinate	9311.224
Description	
Tag	
Rain Gage	Oceanside
Outlet	BR-1
Area	4.42
Width	385
% Slope	5
% Imperv	63
N-Imperv	.012
N-Perv	0.05
Dstore-Imperv	.02
Dstore-Perv	.1
%Zero-Imperv	25
Subarea Routing	OUTLET
Percent Routed	100
Infiltration	GREEN_AMPT ...
Groundwater	NO
Snow Pack	
LID Controls	0
Land Uses	0
Initial Buildup	NONE
Curb Length	0

Infiltration parameters (click to edit)

Infiltration Editor

Infiltration Method: GREEN\_AMPT

Property	Value
Suction Head	9
Conductivity	.025
Initial Deficit	.30

Soil capillary suction head (inches or mm)

OK Cancel Help

Property	Value
Name	AREA2
X-Coordinate	2869.114
Y-Coordinate	9066.241
Description	Meadowood II - Affordable Housing
Tag	
Rain Gage	Oceanside
Outlet	BR-2
Area	0.30
Width	130
% Slope	2
% Imperv	55
N-Imperv	0.012
N-Perv	0.05
Dstore-Imperv	0.02
Dstore-Perv	0.1
%Zero-Imperv	25
Subarea Routing	OUTLET
Percent Routed	100
Infiltration	GREEN_AMPT ...
Groundwater	NO
Snow Pack	
LID Controls	0
Land Uses	0
Initial Buildup	NONE
Curb Length	0

Infiltration parameters (click to edit)

Infiltration Editor

Infiltration Method: GREEN\_AMPT

Property	Value
Suction Head	3.0
Conductivity	0.5
Initial Deficit	4

Soil capillary suction head (inches or mm)

OK Cancel Help

Subcatchment AREA3

Property	Value
Name	AREA3
X-Coordinate	7793.367
Y-Coordinate	2755.102
Description	Meadowwood 1
Tag	
Rain Gage	Oceanside
Outlet	POC-1
Area	1.57
Width	141
% Slope	5
% Imperv	41
N-Imperv	.012
N-Perv	0.05
Dstore-Imperv	.02
Dstore-Perv	.1
%Zero-Imperv	25
Subarea Routing	OUTLET
Percent Routed	100
Infiltration	GREEN_AMPT ...
Groundwater	NO
Snow Pack	
LID Controls	0
Land Uses	0
Initial Buildup	NONE
Curb Length	0

Infiltration parameters (click to edit)

Subcatchment AREA4

Property	Value
Name	AREA4
X-Coordinate	387.071
Y-Coordinate	2649.641
Description	Lattitude 33 Lot
Tag	
Rain Gage	Oceanside
Outlet	POC-1
Area	3.68
Width	214
% Slope	5
% Imperv	17
N-Imperv	.012
N-Perv	.05
Dstore-Imperv	.02
Dstore-Perv	.1
%Zero-Imperv	25
Subarea Routing	OUTLET
Percent Routed	100
Infiltration	GREEN_AMPT ...
Groundwater	NO
Snow Pack	
LID Controls	0
Land Uses	0
Initial Buildup	NONE
Curb Length	0

Infiltration parameters (click to edit)

Infiltration Editor

Infiltration Method: GREEN\_AMPT

Property	Value
Suction Head	9
Conductivity	.025
Initial Deficit	.3

Soil capillary suction head (inches or mm)

OK Cancel Help

Infiltration Editor

Infiltration Method: GREEN\_AMPT

Property	Value
Suction Head	9
Conductivity	.025
Initial Deficit	.3

Soil capillary suction head (inches or mm)

OK Cancel Help

Subcatchment BR-1

Property	Value
Name	BR-1
X-Coordinate	4704.709
Y-Coordinate	7486.034
Description	
Tag	
Rain Gage	Oceanside
Outlet	Div-A
Area	.13
Width	10
% Slope	0
% Imperv	0
N-Imperv	0.012
N-Perv	0.1
Dstore-Imperv	.02
Dstore-Perv	.1
%Zero-Imperv	25
Subarea Routing	OUTLET
Percent Routed	100
Infiltration	GREEN_AMPT ...
Groundwater	NO
Snow Pack	
LID Controls	1
Land Uses	0
Initial Buildup	NONE
Curb Length	0

Infiltration parameters (click to edit)

Subcatchment BR-2

Property	Value
Name	BR-2
X-Coordinate	2869.114
Y-Coordinate	7446.129
Description	
Tag	
Rain Gage	Oceanside
Outlet	Div-B
Area	0.03
Width	10
% Slope	0
% Imperv	0
N-Imperv	0.012
N-Perv	0.1
Dstore-Imperv	0.02
Dstore-Perv	0.1
%Zero-Imperv	25
Subarea Routing	OUTLET
Percent Routed	100
Infiltration	GREEN_AMPT ...
Groundwater	NO
Snow Pack	
LID Controls	0
Land Uses	0
Initial Buildup	NONE
Curb Length	0

Infiltration parameters (click to edit)

Infiltration Editor

Infiltration Method: GREEN\_AMPT

Property	Value
Suction Head	3
Conductivity	0.15
Initial Deficit	0.32

Soil capillary suction head (inches or mm)

OK Cancel Help

Infiltration Editor

Infiltration Method: GREEN\_AMPT

Property	Value
Suction Head	3.0
Conductivity	0.15
Initial Deficit	0.32

Soil capillary suction head (inches or mm)

OK Cancel Help

## EXPLANATION OF SELECTED VARIABLES

Parameters for the pre- and post-developed models include soil types B & D in accordance with the San Diego County Hydrology Manual and the USGS Soil Survey Map (attached at the end of this appendix). Suction head, conductivity and initial deficit corresponds to average values expected for the soil types, according to sources consulted, professional experience, and approximate values obtained by the interim Orange County modeling approach.

H&A selected infiltration values, such that the percentage of total precipitation that becomes runoff, is realistic for soil type D and slightly smaller than measured values for Southern California watersheds.

Selection of a Kinematic Approach: As the continuous model is based on hourly rainfall, and the time of concentration for the pre-development and post-development conditions is significantly smaller than 60 minutes, precise routing of the flows through the impervious surfaces, the underdrain pipe system, and the discharge pipe was considered unnecessary. The truncation error of the precipitation into hourly steps is much more significant than the precise routing in a system where the time of concentration is much smaller than 1 hour.

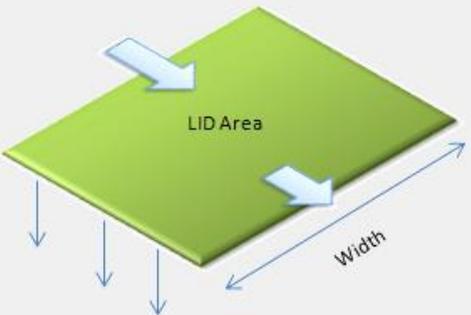
Sub-catchments BR-1 and BR-2

The area of Prop-X + BR-X must be equal to the area of the development tributary to that particular bio-retention facility. Five (5) decimal places were given regarding the areas of the bio-retention to insure that the area used by the program for the LID subroutine corresponds exactly with these tributaries.

# BIORETENTION 1

**LID Usage Editor**

LID Control Name: **BR-1**



**LID Occupies Full Subcatchment**

Area of Each Unit (sq ft or sq m): **3789**

Number of Units: **1**

% of Subcatchment Occupied: **66.9**

Surface Width per Unit (ft or m): **0**

% Initially Saturated: **1**

% of Impervious Area Treated: **100**

**Return all Outflow to Pervious Area**

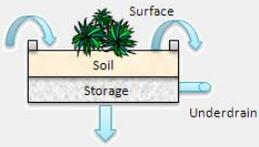
Detailed Report File (Optional):

**OK** **Cancel** **Help**

**LID Control Editor**

Control Name: **BR-1**

LID Type: **Bio-Retention Cell**



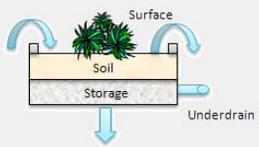
Surface	Soil	Storage	Underdrain
Berm Height (in. or mm)	24		
Vegetation Volume Fraction	0		
Surface Roughness (Mannings n)	0.15		
Surface Slope (percent)	0		

**OK** **Cancel** **Help**

**LID Control Editor**

Control Name: **BR-1**

LID Type: **Bio-Retention Cell**



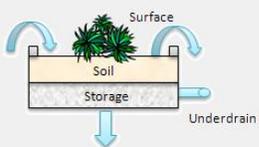
Surface	Soil	Storage	Underdrain
Thickness (in. or mm)	18		
Porosity (volume fraction)	0.4		
Field Capacity (volume fraction)	0.2		
Wilting Point (volume fraction)	0.1		
Conductivity (in/hr or mm/hr)	5		
Conductivity Slope	5		
Suction Head (in. or mm)	1.5		

**OK** **Cancel** **Help**

**LID Control Editor**

Control Name: **BR-1**

LID Type: **Bio-Retention Cell**



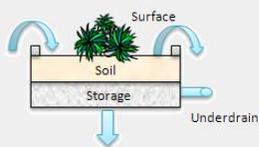
Surface	Soil	Storage	Underdrain
Thickness (in. or mm)	12		
Void Ratio (Voids / Solids)	0.67		
Seepage Rate (in/hr or mm/hr)	0		
Clogging Factor	0		

**OK** **Cancel** **Help**

**LID Control Editor**

Control Name: **BR-1**

LID Type: **Bio-Retention Cell**



Surface	Soil	Storage	Underdrain
Flow Coefficient*	.2590		
Flow Exponent	0.5		
Offset Height (in. or mm)	0		

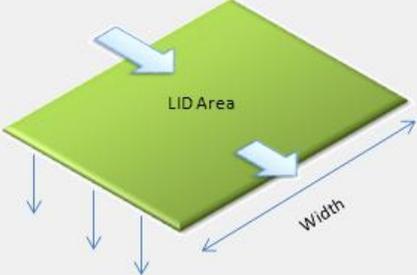
\*Units are for flow in either in/hr or mm/hr; use 0 if there is no underdrain.

**OK** **Cancel** **Help**

# BIORETENTION 2

**LID Usage Editor**

LID Control Name: **BR-2**



**LID Area**  
Width

LID Occupies Full Subcatchment

Area of Each Unit (sq ft or sq m): **313**

Number of Units: **1**

% of Subcatchment Occupied: **24.0**

Surface Width per Unit (ft or m): **0**

% Initially Saturated: **1**

% of Impervious Area Treated: **100**

Send Drain Flow To:  
(Leave blank to use outlet of current subcatchment)

Return all Outflow to Pervious Area

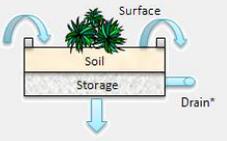
Detailed Report File (Optional)

**OK** **Cancel** **Help**

**LID Control Editor**

Control Name: **BR-2**

LID Type: **Bio-Retention Cell**



**Surface** | **Soil** | **Storage** | **Drain**

Berm Height (in. or mm): **24**

Vegetation Volume Fraction: **0.0**

Surface Roughness (Mannings n): **0.15**

Surface Slope (percent): **0**

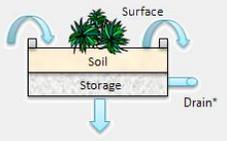
\*Optional

**OK** **Cancel** **Help**

**LID Control Editor**

Control Name: **BR-2**

LID Type: **Bio-Retention Cell**



**Surface** | **Soil** | **Storage** | **Drain**

Thickness (in. or mm): **18**

Porosity (volume fraction): **0.4**

Field Capacity (volume fraction): **0.2**

Wilting Point (volume fraction): **0.1**

Conductivity (in/hr or mm/hr): **5**

Conductivity Slope: **5**

Suction Head (in. or mm): **1.5**

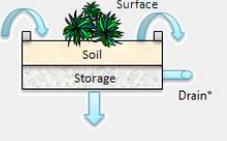
\*Optional

**OK** **Cancel** **Help**

**LID Control Editor**

Control Name: **BR-2**

LID Type: **Bio-Retention Cell**



**Surface** | **Soil** | **Storage** | **Drain**

Thickness (in. or mm): **12**

Void Ratio (Voids / Solids): **0.67**

Seepage Rate (in/hr or mm/hr): **0**

Clogging Factor: **0**

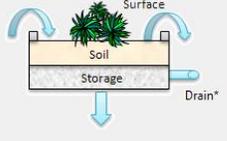
\*Optional

**OK** **Cancel** **Help**

**LID Control Editor**

Control Name: **BR-2**

LID Type: **Bio-Retention Cell**



**Surface** | **Soil** | **Storage** | **Drain**

Flow Coefficient\*: **0.259**

Flow Exponent: **0.5**

Offset Height (in. or mm): **0**

[Drain Advisor](#)

\*Units are for flow in either in/hr or mm/hr; use 0 if there is no drain.

**OK** **Cancel** **Help**

## LID Control Editor: Explanation of Significant Variables

### Height:

The storage depth variable within the SWMM model is representative of the storage volume provided beneath the engineered soil and mulch components of the bioretention facility. This storage volume is comprised of a gravel located bed beneath a layer of engineered soil.

### Porosity:

A porosity value of 0.4 has been selected for the model. The amended soil is to be highly sandy in content in order to have a saturated hydraulic conductivity of approximately 5 in/hr.

H&A considers such a value to be slightly high; however, in order to comply with the HMP Permit, the value recommended by the Copermittees for the porosity of amended soil is 0.4, per Appendix A of the Final Hydromodification Management Plan by Brown & Caldwell, dated March 2011.

### Void Ratio:

The ratio of the void volume divided by the soil volume is directly related to porosity as  $n/(1-n)$ . As the underdrain layer is composed of gravel, a porosity value of 0.4 has been selected, which results in a void ratio of  $0.4/(1-0.4) = 0.67$  for the gravel detention layer.

### Clogging factor:

A clogging factor was not used (0 indicates that there is not clogging assumed within the model). The reason for this is related to the fairness of a comparison with the SDHM model and the HMP sizing tables: a clogging factor was not considered, and instead, a conservative value of infiltration was recommended.

### Drain (Flow) coefficient:

The flow coefficient in the SWMM Model is the coefficient needed to transform the orifice equation into a general power law equation of the form:

$$q = C(H - H_D)^n \quad (1)$$

where  $q$  is the peak flow in in/hr,  $n$  is the exponent (typically 0.5 for orifice equation),  $H_D$  is the elevation of the centroid of the orifice in inches (assumed equal to the invert of the orifice for small orifices and in our design equal to 0) and  $H$  is the depth of the water in inches.

The general orifice equation can be expressed as:

$$Q = \frac{\pi}{4} C_g \frac{D^2}{144} \sqrt{2g \frac{(H - H_D)}{12}} \quad (2)$$

where Q is the peak flow in cfs, D is the diameter in inches, c g is the typical discharge coefficient for orifices (0.61-0.63 for thin walls and around 0.75-0.8 for thick walls), g is the acceleration of gravity in ft/s<sup>2</sup>, and H and H<sub>D</sub> are defined above and are also used in inches in Equation (2).

Cutoff Flow:

This is the only significant variable in the diversion, as the type of diversion is defined by this value. Any excess of flow over this value will be diverted into a pond subroutine (the surface stage of the bio-retention basin) and routed there. The determination of this value equates to the value obtained with equation (2) above, plus 1%, when H = depth of gravel layer and H<sub>D</sub>=0 (orifice situated at the datum). Thus, once flows exceed the maximum discharge the LID orifice experiences a head of the storage depth, ponding occurs within the bioretention basin, routing these additional flows via the pond riser.

Property	Value
Name	Div-A
X-Coordinate	4728.651
Y-Coordinate	5897.845
Description	
Tag	
Inflows	NO
Treatment	NO
Invert El.	0
Max. Depth	.167
Initial Depth	0
Surcharge Depth	0
Ponded Area	2892
Diverted Link	Bypass-A
Type	CUTOFF
<b>Cutoff Divider</b>	
Cutoff Flow	.05676
<b>Tabular Divider</b>	
Curve Name	*
<b>Weir Divider</b>	
Min. Flow	0
Max. Depth	0
Coefficient	0
Discharge coefficient for a WEIR divider	

Property	Value
Name	Div-B
X-Coordinate	2972.865
Y-Coordinate	5841.979
Description	
Tag	
Inflows	NO
Treatment	NO
Invert El.	0
Max. Depth	0.167
Initial Depth	0
Surcharge Depth	0
Ponded Area	312
Diverted Link	Bypass-B
Type	CUTOFF
<b>Cutoff Divider</b>	
Cutoff Flow	0.05676
<b>Tabular Divider</b>	
Curve Name	*
<b>Weir Divider</b>	
Min. Flow	0
Max. Depth	0
Coefficient	0
Discharge coefficient for a WEIR divider	

Note:

The complete storage and rating curves and the respective explanation is shown at the end of this appendix. A variable area vs. elevation storage curve was used for the final model, and a discharge that is a function of the outlet structure in the surface was used also.

## BASIN 1

Property	Value
Name	Stor-1
X-Coordinate	7652.284
Y-Coordinate	4365.482
Description	
Tag	
Inflows	NO
Treatment	NO
Invert El.	0
Max. Depth	3
Initial Depth	0
Ponded Area	2673
Evap. Factor	1
Seepage Loss	NO
Storage Curve	TABULAR
<b>Functional Curve</b>	
Coefficient	1000
Exponent	0
Constant	0
<b>Tabular Curve</b>	
Curve Name	Storage-1
User-assigned name of storage unit	

Curve Name	Storage-1	
Description		
	Depth (ft)	Area (ft <sup>2</sup> )
1	0	3789
2	0.05	3813
3	0.1	3838
4	0.15	3862
5	0.2	3886
6	0.25	3911
7	0.3	3935
8	0.35	3959
9	0.4	3984
10	0.45	4008
11	0.5	4033

Property	Value
Name	Stor1-disch
Inlet Node	Stor-1
Outlet Node	POC-1
Description	
Tag	
Inlet Offset	0
Flap Gate	NO
Rating Curve	TABULAR/DEPTH
<b>Functional Curve</b>	
Coefficient	10.0
Exponent	0.5
<b>Tabular Curve</b>	
Curve Name	Stor1-Disch
Name of rating curve that relates outflow to either depth or head (after specifying a curve, you can double-click to edit it)	

Curve Name	Stor1-Disch	
Description		
	Head (ft)	Outflow (CFS)
1	0	0.000
2	0.05	0.003
3	0.1	0.010
4	0.15	0.018
5	0.2	0.022
6	0.25	0.026
7	0.3	0.029
8	0.35	0.032
9	0.4	0.035
10	0.45	0.037
11	0.5	0.040

# BASIN 2

Storage Unit Stor-2

Property	Value
Name	Stor-2
X-Coordinate	514.765
Y-Coordinate	4373.504
Description	
Tag	
Inflows	NO
Treatment	NO
Invert El.	0
Max. Depth	3
Initial Depth	0
Ponded Area	0
Evap. Factor	0
Seepage Loss	NO
Storage Curve	TABULAR
<b>Functional Curve</b>	
Coefficient	1000
Exponent	0
Constant	0
<b>Tabular Curve</b>	
Curve Name	Storage-2

Name of storage curve to use (after specifying a curve, you can double-click to edit it)

Storage Curve Editor

Curve Name: Storage-2

Description:

	Depth (ft)	Area (ft2)
1	0	313
2	0.05	322
3	0.1	330
4	0.15	339
5	0.2	348
6	0.25	356
7	0.3	365
8	0.35	374
9	0.4	383
10	0.45	391
11	0.5	400

Buttons: View..., Load..., Save..., OK, Cancel, Help

Outlet Stor2-disch

Property	Value
Name	Stor2-disch
Inlet Node	Stor-2
Outlet Node	POC-1
Description	
Tag	
Inlet Offset	0
Flap Gate	NO
Rating Curve	TABULAR/DEPTH
<b>Functional Curve</b>	
Coefficient	10.0
Exponent	0.5
<b>Tabular Curve</b>	
Curve Name	Stor2-Disch

Name of rating curve that relates outflow to either depth or head (after specifying a curve, you can double-click to edit it)

Rating Curve Editor

Curve Name: Stor2-Disch

Description:

	Head (ft)	Outflow (CFS)
1	0	0.057
2	0.05	0.107
3	0.1	0.157
4	0.15	0.207
5	0.2	0.257
6	0.25	0.307
7	0.3	0.357
8	0.35	0.407
9	0.4	0.457
10	0.45	0.507
11	0.5	0.557

Buttons: View..., Load..., Save..., OK, Cancel, Help

## ATTACHMENT 8 - Drying Time of the Surface Layer of Bio-retention cells

The LID subroutine of the SWMM Model does not increase the discharge of the lower LID orifice once the storage layer is full (in other words, it does not consider the influence of the pressure in the amended soil layer). The discharge of the lower LID orifice when the surface layer is full is considered constant by the model and equal to the discharge of the lower orifice when the storage layer is full (equal to the cutoff flows).

The drying time interval between an elevation  $y_i$  and another elevation  $y_i - \Delta y$  can be obtained by:

$$\Delta t_i (\text{hours}) = \frac{(Q(y_i) + Q(y_i - \Delta y))}{7200 (V(y_i) - V(y_i - \Delta y))} = \frac{Q_{ave}}{3600 \Delta V}$$

$$t = \sum_{i=1}^n \Delta t_i (\text{hours})$$

$Q_{ave}$  represents the average discharge between elevation  $y_i$  and  $y_{i+1}$  obtained by  $\frac{Q(y_i) + Q(y_i - \Delta y)}{2}$  where  $\Delta V$  represents the fraction of the volume that must be discharged at a peak flow  $Q_{ave}(V(y_i) - V(y_i - \Delta y))$ .

The volume and the discharge change as the elevation changes; the calculation takes into account this change.

Drawdown Table for Basin 1

Ponding Depth (FT)	Q <sub>out</sub> Total (CFS)	V in basin (CU FT)	Total Drawdown Time (HR)
5.00	32.400	20716	0.0
4.95	30.950	20442	0.0
4.90	29.525	20169	0.0
4.85	28.124	19898	0.0
4.80	26.748	19628	0.0
4.75	25.398	19360	0.0
4.70	24.074	19092	0.0
4.65	22.777	18827	0.0
4.60	21.508	18562	0.0
4.55	20.266	18299	0.0
4.50	19.052	18038	0.0
4.45	17.869	17778	0.0
4.40	16.715	17519	0.0
4.35	15.592	17261	0.0
4.30	14.500	17005	0.0
4.25	13.442	16750	0.1
4.20	12.417	16497	0.1
4.15	11.427	16245	0.1
4.10	10.474	15994	0.1
4.05	9.558	15745	0.1
4.00	8.682	15497	0.1
3.95	7.848	15251	0.1
3.90	7.057	15006	0.1
3.85	6.313	14762	0.1
3.80	5.618	14519	0.1
3.75	4.977	14278	0.1
3.70	4.394	14038	0.1
3.65	3.878	13799	0.2
3.60	3.438	13562	0.2
3.55	3.092	13326	0.2
3.50	2.891	13091	0.2
3.45	2.865	12858	0.2
3.40	2.840	12626	0.3
3.35	2.814	12395	0.3
3.30	2.788	12166	0.3
3.25	2.761	11938	0.3
3.20	2.734	11711	0.4
3.15	2.707	11485	0.4
3.10	2.680	11261	0.4

Ponding Depth (FT)	Q <sub>out</sub> Total (CFS)	V in basin (CU FT)	Total Drawdown Time (HR)
3.05	2.653	11038	0.4
3.00	2.625	10817	0.5
2.95	2.597	10596	0.5
2.90	2.568	10378	0.5
2.85	2.540	10161	0.5
2.80	2.510	9945	0.5
2.75	2.481	9731	0.6
2.70	2.451	9518	0.6
2.65	2.421	9307	0.6
2.60	2.391	9097	0.6
2.55	2.360	8889	0.7
2.50	2.328	8683	0.7
2.45	2.297	8477	0.7
2.40	2.264	8274	0.7
2.35	2.232	8072	0.8
2.30	2.199	7871	0.8
2.25	2.165	7672	0.8
2.20	2.131	7474	0.8
2.15	2.096	7278	0.9
2.10	2.060	7084	0.9
2.05	2.024	6890	0.9
2.00	1.988	6699	0.9
1.95	1.950	6509	1.0
1.90	1.912	6320	1.0
1.85	1.873	6132	1.0
1.80	1.834	5945	1.1
1.75	1.793	5759	1.1
1.70	1.752	5575	1.1
1.65	1.709	5392	1.1
1.60	1.666	5210	1.2
1.55	1.621	5029	1.2
1.50	1.575	4849	1.2
1.45	1.527	4671	1.3
1.40	1.478	4494	1.3
1.35	1.427	4318	1.3
1.30	1.375	4143	1.4
1.25	1.320	3969	1.4
1.20	1.263	3797	1.4
1.15	1.203	3625	1.5

Ponding Depth (FT)	Q <sub>out</sub> Total (CFS)	V in basin (CU FT)	Total Drawdown Time (HR)
1.10	1.140	3455	1.5
1.05	1.073	3286	1.6
1.00	1.001	3118	1.6
0.95	0.924	2952	1.7
0.90	0.840	2786	1.7
0.85	0.735	2622	1.8
0.80	0.575	2459	1.8
0.75	0.425	2297	1.9
0.70	0.290	2136	2.1
0.65	0.176	1976	2.2
0.60	0.089	1817	2.6
0.55	0.034	1659	3.3
0.50	0.015	1503	5.1
0.45	0.015	1347	8.0
0.40	0.015	1193	10.9
0.35	0.015	1040	13.8
0.30	0.015	888	16.7
0.25	0.015	737	19.5
0.20	0.015	588	22.4
0.15	0.015	439	25.2
0.10	0.015	292	28.0
0.05	0.015	145	30.7
0.00	0.015	0	33.5

Drawdown Computations Table for Basin 2

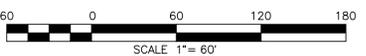
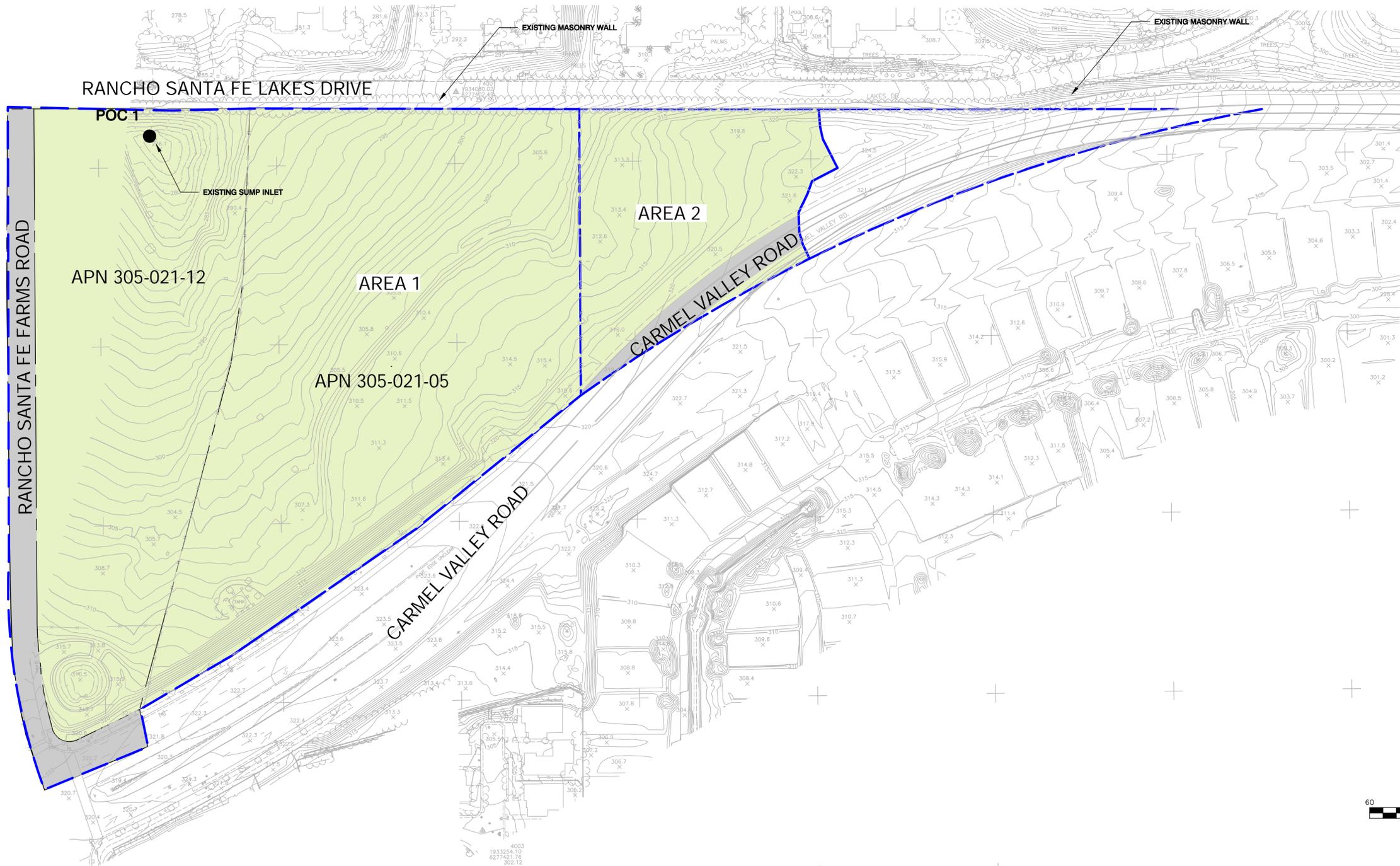
Ponding Depth (FT)	Qout Total (CFS)	V in basin (CU FT)	Total Drawdown Time (HR)
4	3.744	2838	0.0
3.95	3.203	2779	0.0
3.9	2.691	2720	0.0
3.85	2.210	2662	0.0
3.8	1.763	2605	0.0
3.75	1.351	2548	0.0
3.7	0.979	2492	0.0
3.65	0.650	2437	0.1
3.6	0.373	2383	0.1
3.55	0.158	2329	0.2
3.5	0.041	2276	0.3
3.45	0.040	2224	0.7
3.4	0.039	2172	1.0
3.35	0.039	2121	1.4
3.3	0.038	2071	1.7
3.25	0.037	2022	2.1
3.2	0.036	1973	2.5
3.15	0.036	1925	2.9
3.1	0.035	1878	3.2
3.05	0.034	1831	3.6
3	0.033	1785	4.0
2.95	0.032	1740	4.4
2.9	0.031	1695	4.8
2.85	0.030	1651	5.2
2.8	0.028	1608	5.6
2.75	0.027	1565	6.0
2.7	0.025	1522	6.5
2.65	0.023	1480	7.0
2.6	0.021	1439	7.5
2.55	0.017	1398	8.1
2.5	0.015	1358	8.8
2.45	0.015	1318	9.5
2.4	0.015	1279	10.3
2.35	0.015	1241	11.0
2.3	0.015	1203	11.7
2.25	0.015	1165	12.4
2.2	0.015	1128	13.1
2.15	0.015	1092	13.8
2.1	0.015	1056	14.5
2.05	0.015	1021	15.2
2	0.015	987	15.8

Ponding Depth (FT)	Qout Total (CFS)	V in basin (CU FT)	Total Drawdown Time (HR)
1.95	0.015	953	16.4
1.9	0.015	919	17.1
1.85	0.015	886	17.7
1.8	0.015	853	18.3
1.75	0.015	821	18.9
1.7	0.015	790	19.5
1.65	0.015	759	20.1
1.6	0.015	728	20.7
1.55	0.015	698	21.3
1.5	0.015	668	21.8
1.45	0.015	639	22.4
1.4	0.015	611	22.9
1.35	0.015	583	23.4
1.3	0.015	555	24.0
1.25	0.015	528	24.5
1.2	0.015	501	25.0
1.15	0.015	475	25.5
1.1	0.015	450	26.0
1.05	0.015	425	26.4
1	0.015	400	26.9
0.95	0.015	376	27.4
0.9	0.015	352	27.8
0.85	0.015	329	28.2
0.8	0.015	306	28.7
0.75	0.015	284	29.1
0.7	0.015	262	29.5
0.65	0.015	240	29.9
0.6	0.015	219	30.3
0.55	0.015	198	30.7
0.5	0.015	178	31.1
0.45	0.015	158	31.5
0.4	0.015	139	31.8
0.35	0.015	120	32.2
0.3	0.015	102	32.5
0.25	0.015	84	32.9
0.2	0.015	66	33.2
0.15	0.015	49	33.5
0.1	0.015	32	33.9
0.05	0.015	16	34.2
0	0.015	0	34.5

ATTACHMENT 9 – Hydromodification Watershed Maps

# LEGEND

- PROJECT BOUNDARY
- DRAINAGE BOUNDARY
- PERVIOUS
- IMPERVIOUS



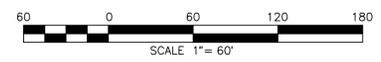
PREPARED BY:  
 **HUNSAKER & ASSOCIATES**  
 SAN DIEGO, INC.  
 PLANNING 9707 Waples Street  
 ENGINEERING San Diego, Ca 92121  
 SURVEYING PH(619)558-4500 - FX(619)558-1414

**EXISTING CONDITION  
 HYDROMODIFICATION EXHIBIT  
 MEADOWOOD II**

**SHEET  
 1  
 OF  
 2**

# LEGEND

- PROJECT BOUNDARY
- DRAINAGE BOUNDARY
- SELF TREATING
- PERVIOUS
- IMPERVIOUS
- ROOFS
- STREETS/PARKING



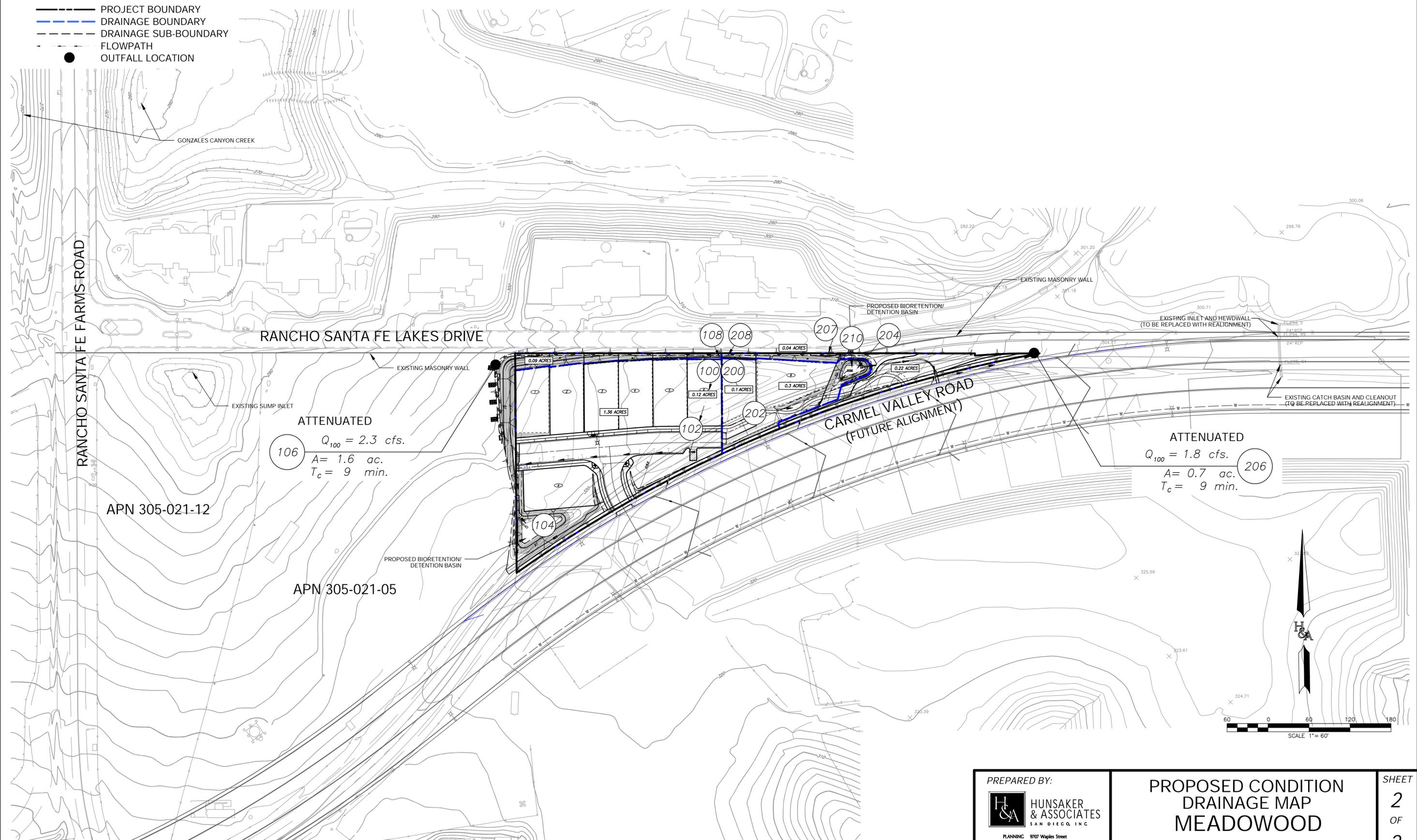
PREPARED BY:  
**HUNSAKER & ASSOCIATES**  
 SAN DIEGO, INC.  
 PLANNING 9707 Waples Street  
 ENGINEERING San Diego, Ca 92121  
 SURVEYING PH(858)558-4500 - FX(858)558-1414

**PROPOSED CONDITION  
 HYDROMODIFICATION EXHIBIT**  
**MEADOWOOD II**  
 SAN DIEGO, CALIFORNIA

SHEET  
**2**  
 OF  
**2**

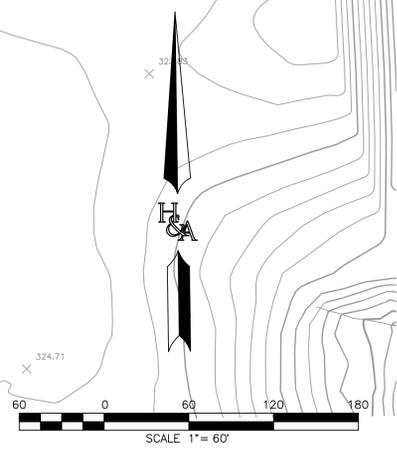
# LEGEND

-  PROJECT BOUNDARY
-  DRAINAGE BOUNDARY
-  DRAINAGE SUB-BOUNDARY
-  FLOWPATH
-  OUTFALL LOCATION



ATTENUATED  
 $Q_{100} = 2.3 \text{ cfs.}$   
 $A = 1.6 \text{ ac.}$   
 $T_c = 9 \text{ min.}$

ATTENUATED  
 $Q_{100} = 1.8 \text{ cfs.}$   
 $A = 0.7 \text{ ac.}$   
 $T_c = 9 \text{ min.}$



PREPARED BY:



**HUNSAKER & ASSOCIATES**  
SAN DIEGO, INC.

PLANNING 9707 Waples Street  
 ENGINEERING San Diego, Ca 92121  
 SURVEYING PH(619)558-4500 FX(619)558-1414

**PROPOSED CONDITION  
 DRAINAGE MAP  
 MEADOWOOD**

SAN DIEGO, CALIFORNIA

SHEET  
**2**  
 OF  
**2**

# MEADOWOOD II Drainage Study

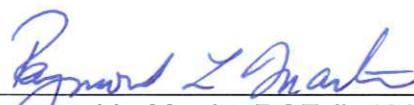
City of San Diego, CA

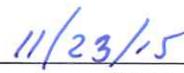
Prepared by:  
Hunsaker & Associates - San Diego, Inc.  
9707 Waples Street  
San Diego, CA 92121  
Telephone: (858) 558-4500

Prepared for:  
Hallmark Communities  
740 Lomas Santa Fe Drive, Suite 204  
Solana Beach CA 92075

Preparation/Revision Date:  
November 23, 2015



  
Raymond L. Martin, RCE # 48670  
Hunsaker & Associates  
San Diego, Inc.

  
Date

## Contents

1	Scope .....	1
2	Existing Conditions .....	1
3	Project Description.....	2
4	Methodology .....	3
4.1	Hydrology .....	3
5	Results and Conclusions .....	5
6	Watershed Information .....	6
7	Appendices.....	7

## List of Appendices

Appendix 1 – Hydrology Calculations and Exhibits

Appendix 2 – Hydraulic Calculations

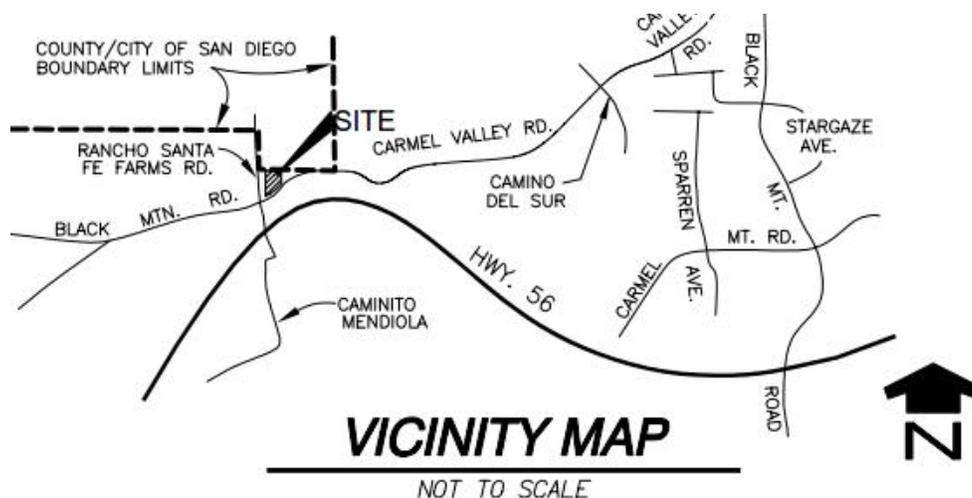
Appendix 3 – Pacific Highlands Ranch (PHR) Unit 22C - Hydraulic Analysis

# 1 Scope

The purpose of this study is to provide hydrology and hydraulic calculations in support of a proposed development will subdivide the site into 21 lots in the City of San Diego, California. This report will quantify proposed runoff for the 100-year frequency storm event and size storm drain infrastructure to safely convey stormwater through the site. Treatment of storm water runoff from the site has been addressed in a separate report - the "Water Quality Technical Report for Meadowood II".

# 2 Existing Conditions

Meadowood II is a 4.5 acre site, located in the City of San Diego, California. The property abuts Carmel Valley Road's planned realignment to its ultimate alignment. There is proposed Meadowood residential development with 9 lots to east of the property. Another undeveloped lot previously used for commercial agricultural purposes and zoned for residential development is to west of the site adjacent to Rancho Santa Fe Farms Road. The property is bounded by an existing masonry wall constructed with the adjacent Rancho Santa Fe Lakes Drive. Please see vicinity map below.



The runoff from the property in existing conditions drains to an existing sump inlet near the northwest corner in the adjacent property located east of Rancho Santa Fe Farms Road and drains to Gonzales Canyon Creek.

The project is tributary to the San Dieguito River as a part of the San Dieguito Hydrologic Unit, Solano Beach Hydrologic Area (905.11). The site is not mapped within any special flood hazard areas. The site is not required to obtain either a 404 or 401 permit from the US Army Corps of Engineers nor the Regional Water Quality Control Board as per Biological Resources Technical Report, Meadowood II Project prepared by Dudek dated November 2015

According to the City of San Diego Drainage Design Manual, type "D" soils are assumed for the entire site. Type "D" soils are categorized as having a slow infiltration rate when thoroughly wet.

### **3 Proposed Conditions**

The proposed development will create 21 lots with 17 for residential, 1 for cell tower, 1 for recreational, 1 for bioretention Basin 1, and 1 for a private street within the 4.5 acre site. There will be 4 units of inclusionary housing on Lot 17 which drains to bioretention basin 2 on the southwest of the lot.

Drainage patterns will remain generally unchanged and no diversions are proposed. Onsite drainage improvements will include water quality/hydromodification basins with a storm drain system to safely convey through the project. Catch basins and storm drain pipes will be provided onsite to convey runoff to the existing drainage system through the proposed the Pacific Highlands Ranch (PHR) Unit 22C and drains to Gonzales Canyon Creek.

#### **Drainage Routing and Improvements;**

All onsite runoff will be collected in a bioretention areas designed to mitigate for water quality and hydromodification. The bioretention Basin 1 will be located near the north westerly and bioretention Basin 2 will be near south westerly project boundary. The runoff from basin 2 drains to the vegetated swale along the western boundary of the project site. Drainage patterns will remain generally unchanged, and all mitigated runoff will drain to the proposed 24" storm drain through the PHR Unit 22C west of the project. The runoff from Meadowood east of the project is about 2.3cfs and conveyed through an 18" storm drain under proposed Lilac Way and connects to the proposed 24" storm drain through PHR unit 22C with a max capacity of 24 cfs.

## 4 Methodology

### 4.1 Hydrology

The Rational Method as described in the June 2003 San Diego County Hydrology Manual (SDCHM), Section 3, was used for the hydrologic calculations for this project. The Rational Method formula is expressed as follows:

$$Q = C I A$$

$$I = 7.44P_6T_c^{-0.645}$$

$$T_c = T_t + T_i$$

$$T_t = (11.9 * L^3 / \Delta E)^{0.385}$$

Where:

Q = Peak discharge, in cubic feet per second (cfs).

C = Runoff coefficient, proportion of the rainfall that runs off the surface. The C coefficient was obtained from Table 3-1 of the SDCHM. It has no units and is based on the soil group and the development type for the drainage sub-area.

A = Drainage area contributing to the design location (ac).

I = Average rainfall intensity (in/hr). The formula can be found on Figure 3-2 of the SDCHM.

P<sub>6</sub> = 6-hour precipitation (in). This value was taken from the 6-hour isopluvial maps found in Appendix B of the SDCHM.

T<sub>i</sub> = Initial time of concentration, from Table 3-2 of the SDCHM.

T<sub>t</sub> = Travel time (min), from Figure 3-4 of the SDCHM.

L = Longest flow path distance (mi).

ΔE = Change in elevation along flowpath (ft).

### 4.2 Hydraulics

The hydrology calculations discussed above provide peak flowrates which are entered into a separate program called Hydraflow Storm Sewer to perform hydraulic analysis and design of storm drain lines.

In order to provide adequate flood control, increases in peak flow rates at the outfall location for this site were mitigated using the design of the proposed basin. Mitigation within the basin was modeled using RickRatHydro as an input to Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2011.

RickRatHydro was used to produce a hydrograph for the project drainage areas, based on the area, time of concentration, P<sub>6</sub> value, runoff coefficient, and peak flow rate.

The hydrograph was then imported into Hydraflow Hydrographs and was routed through the proposed basin by using an iteration of outlet structures, until the resulting outlet structure provided a flow rate to the outfall that was equal to or less than that during the existing condition, and the water surface elevation was below the top of the basin.

## 5 Results and Conclusions

The following tabulates the results for the project hydrology for the project.

### Summary of Total Pre vs. Post Developed Conditions

Drainage Basin	Existing			Proposed			
	Node	Area	Q (cfs)	Node	Area	Q (cfs)^	Q (cfs)*
West	104	1.2	2.1	126	0.8	2.0	2.0
South East	204	2.2	5.0	106	3.6	8.7	4.7
North	302	1.1	2.3	204	0.2	0.5	0.5
TOTAL	-	4.5	9.4	-	4.5	10.7	7.2

^ Runoff rates before flood attenuation

\* Runoff rates after flood attenuation

As illustrated above, development of the Meadowood II project site decrease the runoff rate from 9.4 cfs to an anticipated 7.2 cfs in developed conditions. Based on the attenuation provided by the hydromodification basin the peak flow is reduce to 4.7cfs, lower than pre-project flowrates.

### Conclusions;

The project does not increase runoff in the 100-year storm event by utilizing onsite flood attenuation.

The total expected 100yr peak runoff in the 24" storm drain through PHR Unit 22C is about 22cfs, which includes runoff from Meadowood (2.3cfs), Meadowood II(7.2cfs) and PHR Unit 22C (12.6cfs). Hydraulic analysis data from the Drainage Study for PHR Unit 22C is included in Appendix 3.

Since there will be no increase in runoff, there will be no negative impacts to downstream drainage facilities.

Please see our separate Water Quality report that provides mitigation for all onsite stormwater quality impacts, as well as hydromodification management.

## 6 Watershed Information

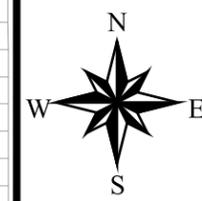
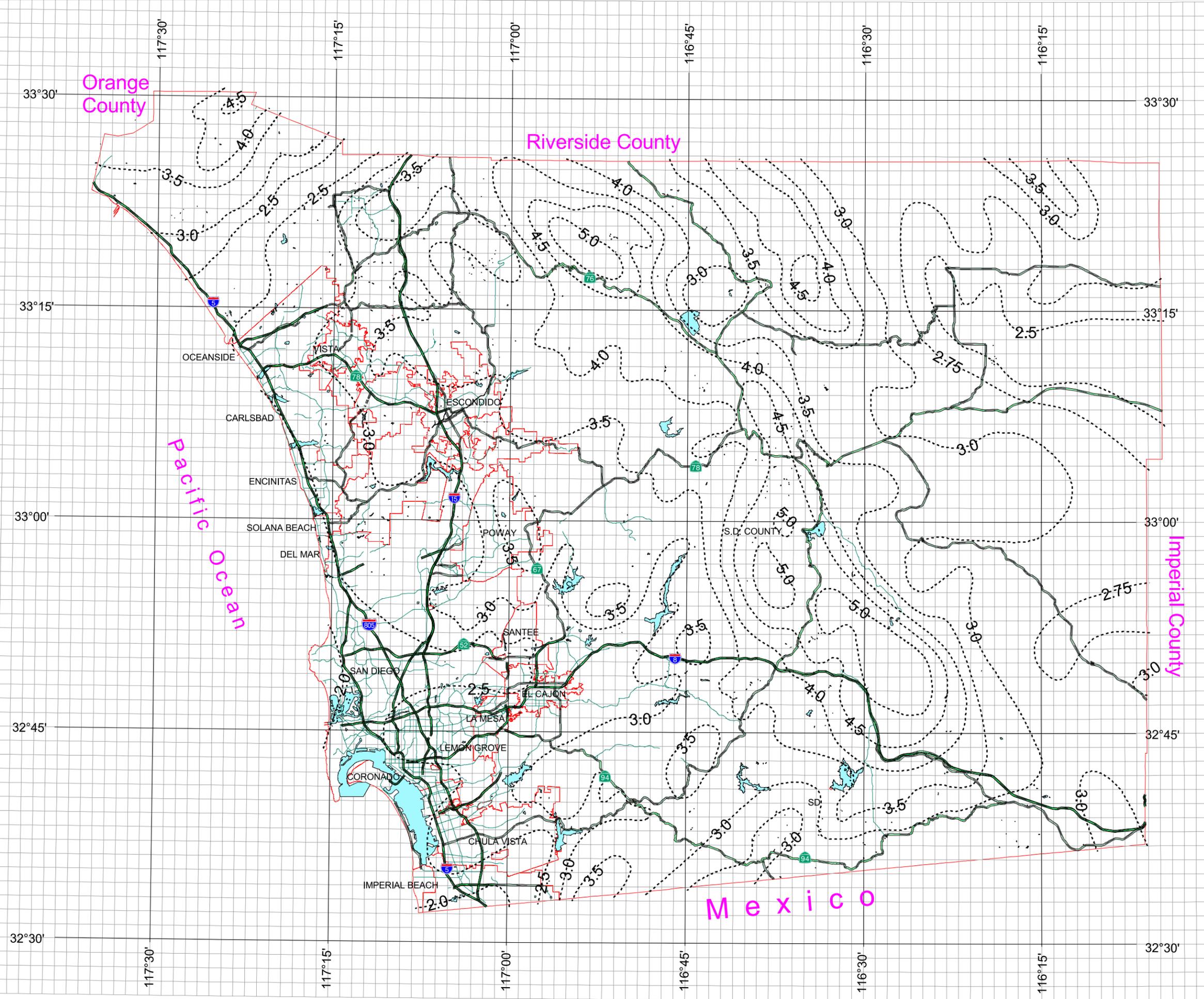
- Isopluvial Map

# County of San Diego Hydrology Manual



## Rainfall Isophuvials

### 100 Year Rainfall Event - 6 Hours



THIS MAP IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Copyright SanGIS. All Rights Reserved.

This product may contain information from the SANDAG Regional Information System which cannot be reproduced without the written permission of SANDAG.

This product may contain information which has been reproduced with permission granted by Thomas Brothers Maps.

## 7 Appendices

**Appendix 1 - Hydrology Calculations and Exhibits**

**Table 3-1  
RUNOFF COEFFICIENTS FOR URBAN AREAS**

Land Use		Runoff Coefficient "C"					
		% IMPER.	Soil Type				
NRCS Elements	County Elements			A	B	C	D
Undisturbed Natural Terrain (Natural)	Permanent Open Space	0*	0.20	0.25	0.30	0.35	
Low Density Residential (LDR)	Residential, 1.0 DU/A or less	10	0.27	0.32	0.36	0.41	Existing
Low Density Residential (LDR)	Residential, 2.0 DU/A or less	20	0.34	0.38	0.42	0.46	
Low Density Residential (LDR)	Residential, 2.9 DU/A or less	25	0.38	0.41	0.45	0.49	
Medium Density Residential (MDR)	Residential, 4.3 DU/A or less	30	0.41	0.45	0.48	0.52	Developed
Medium Density Residential (MDR)	Residential, 7.3 DU/A or less	40	0.48	0.51	0.54	0.57	
Medium Density Residential (MDR)	Residential, 10.9 DU/A or less	45	0.52	0.54	0.57	0.60	
Medium Density Residential (MDR)	Residential, 14.5 DU/A or less	50	0.55	0.58	0.60	0.63	
High Density Residential (HDR)	Residential, 24.0 DU/A or less	65	0.66	0.67	0.69	0.71	
High Density Residential (HDR)	Residential, 43.0 DU/A or less	80	0.76	0.77	0.78	0.79	
Commercial/Industrial (N. Com)	Neighborhood Commercial	80	0.76	0.77	0.78	0.79	
Commercial/Industrial (G. Com)	General Commercial	85	0.80	0.80	0.81	0.82	
Commercial/Industrial (O.P. Com)	Office Professional/Commercial	90	0.83	0.84	0.84	0.85	
Commercial/Industrial (Limited I.)	Limited Industrial	90	0.83	0.84	0.84	0.85	
Commercial/Industrial (General I.)	General Industrial	95	0.87	0.87	0.87	0.87	

\*The values associated with 0% impervious may be used for direct calculation of the runoff coefficient as described in Section 3.1.2 (representing the pervious runoff coefficient, Cp, for the soil type), or for areas that will remain undisturbed in perpetuity. Justification must be given that the area will remain natural forever (e.g., the area is located in Cleveland National Forest).

DU/A = dwelling units per acre

NRCS = National Resources Conservation Service

# EXISTING CONDITION

\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
2003, 1985, 1981 HYDROLOGY MANUAL
(c) Copyright 1982-2013 Advanced Engineering Software (aes)
Ver. 20.0 Release Date: 06/01/2013 License ID 1239

Analysis prepared by:

Hunsaker & Associates - San Diego, inc.
9707 Waples street
San Diego, CA 92121

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*
\* ROBERTS RANCH (MEADOWWOOD II) WO#2387-17 \*
\* 100 YEAR DEVELOPED CONDITION HYDROLOGICAL ANALYSIS \*
\* JUNE 1, 2015 \*

FILE NAME: H:\AES2010\1257\EX\EX-Q100.DAT
TIME/DATE OF STUDY: 11:52 06/01/2015

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00
6-HOUR DURATION PRECIPITATION (INCHES) = 2.700
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*
HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING
WIDTH CROSSFALL IN- / OUT-/PARK- HEIGHT WIDTH LIP HIKE FACTOR
(FT) (FT) SIDE / SIDE/ WAY (FT) (FT) (FT) (n)

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
1. Relative Flow-Depth = 0.50 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 5.0 (FT\*FT/S)
\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

Begin Area 100

\*\*\*\*\*
FLOW PROCESS FROM NODE 100.00 TO NODE 102.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .4100
SOIL CLASSIFICATION IS "D"
S.C.S. CURVE NUMBER (AMC II) = 82
INITIAL SUBAREA FLOW-LENGTH(FEET) = 154.00
UPSTREAM ELEVATION(FEET) = 321.00
DOWNSTREAM ELEVATION(FEET) = 310.00
ELEVATION DIFFERENCE(FEET) = 11.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.450
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
THE MAXIMUM OVERLAND FLOW LENGTH = 100.00
(Reference: Table 3-1B of Hydrology Manual)
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.037
SUBAREA RUNOFF(CFS) = 0.47
TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.47

\*\*\*\*\*
FLOW PROCESS FROM NODE 102.00 TO NODE 104.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 321.00 DOWNSTREAM(FEET) = 310.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 556.00 CHANNEL SLOPE = 0.0198
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.47
FLOW VELOCITY(FEET/SEC) = 2.11 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 4.39 Tc(MIN.) = 10.84
LONGEST FLOWPATH FROM NODE 100.00 TO NODE 104.00 = 710.00 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 102.00 TO NODE 104.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.318
RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .4100
SOIL CLASSIFICATION IS "D"
S.C.S. CURVE NUMBER (AMC II) = 82
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4100
SUBAREA AREA(ACRES) = 1.00 SUBAREA RUNOFF(CFS) = 1.77
TOTAL AREA(ACRES) = 1.2 TOTAL RUNOFF(CFS) = 2.11
TC(MIN.) = 10.84

End Area 100
Begin Area 200

\*\*\*\*\*
FLOW PROCESS FROM NODE 200.00 TO NODE 202.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT = .4100
SOIL CLASSIFICATION IS "D"
S.C.S. CURVE NUMBER (AMC II) = 82
INITIAL SUBAREA FLOW-LENGTH(FEET) = 96.00
UPSTREAM ELEVATION(FEET) = 321.00
DOWNSTREAM ELEVATION(FEET) = 312.00
ELEVATION DIFFERENCE(FEET) = 9.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.772
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.485
SUBAREA RUNOFF(CFS) = 0.48
TOTAL AREA(ACRES) = 0.18 TOTAL RUNOFF(CFS) = 0.48

\*\*\*\*\*
FLOW PROCESS FROM NODE 202.00 TO NODE 204.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 312.00 DOWNSTREAM(FEET) = 289.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 385.00 CHANNEL SLOPE = 0.0597
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.48
FLOW VELOCITY(FEET/SEC) = 3.67 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.75 Tc(MIN.) = 7.52
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 204.00 = 481.00 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 202.00 TO NODE 204.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
Page 2

EX-Q100. OUT

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR)	=	5.466
RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT	=	.4100
SOIL CLASSIFICATION IS "D"		
S. C. S. CURVE NUMBER (AMC II)	=	82
AREA-AVERAGE RUNOFF COEFFICIENT	=	0.4100
SUBAREA AREA(ACRES)	=	2.07
SUBAREA RUNOFF(CFS)	=	4.64
TOTAL AREA(ACRES)	=	2.2
TOTAL RUNOFF(CFS)	=	5.04
TC(MIN.)	=	7.52

-----

-----

End Area 200
Begin Area 300

-----

\*\*\*\*\*

FLOW PROCESS FROM NODE	300.00	TO NODE	302.00	IS CODE =	21
------------------------	--------	---------	--------	-----------	----

-----

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT	=	.4100
SOIL CLASSIFICATION IS "D"		
S. C. S. CURVE NUMBER (AMC II)	=	82
INITIAL SUBAREA FLOW-LENGTH(FEET)	=	108.00
UPSTREAM ELEVATION(FEET)	=	316.00
DOWNSTREAM ELEVATION(FEET)	=	308.00
ELEVATION DIFFERENCE(FEET)	=	8.00
SUBAREA OVERLAND TIME OF FLOW(MIN.)	=	6.372

WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN  
THE MAXIMUM OVERLAND FLOW LENGTH = 100.00  
(Reference: Table 3-1B of Hydrology Manual)  
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR)	=	6.084
SUBAREA RUNOFF(CFS)	=	0.25
TOTAL AREA(ACRES)	=	0.10
TOTAL RUNOFF(CFS)	=	0.25

-----

\*\*\*\*\*

FLOW PROCESS FROM NODE	302.00	TO NODE	104.00	IS CODE =	52
------------------------	--------	---------	--------	-----------	----

-----

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET)	=	308.00	DOWNSTREAM(FEET)	=	289.00
CHANNEL LENGTH THRU SUBAREA(FEET)	=	422.00	CHANNEL SLOPE	=	0.0450
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION					
CHANNEL FLOW THRU SUBAREA(CFS)	=	0.25			
FLOW VELOCITY(FEET/SEC)	=	3.18	(PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
TRAVEL TIME(MIN.)	=	2.21	Tc(MIN.)	=	8.58
LONGEST FLOWPATH FROM NODE	300.00	TO NODE	104.00	=	530.00 FEET.

-----

\*\*\*\*\*

FLOW PROCESS FROM NODE	302.00	TO NODE	104.00	IS CODE =	81
------------------------	--------	---------	--------	-----------	----

-----

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR)	=	5.021
RESIDENTIAL (1. DU/AC OR LESS) RUNOFF COEFFICIENT	=	.4100
SOIL CLASSIFICATION IS "D"		
S. C. S. CURVE NUMBER (AMC II)	=	82
AREA-AVERAGE RUNOFF COEFFICIENT	=	0.4100
SUBAREA AREA(ACRES)	=	1.00
SUBAREA RUNOFF(CFS)	=	2.06
TOTAL AREA(ACRES)	=	1.1
TOTAL RUNOFF(CFS)	=	2.26
TC(MIN.)	=	8.58

-----

END OF STUDY SUMMARY:

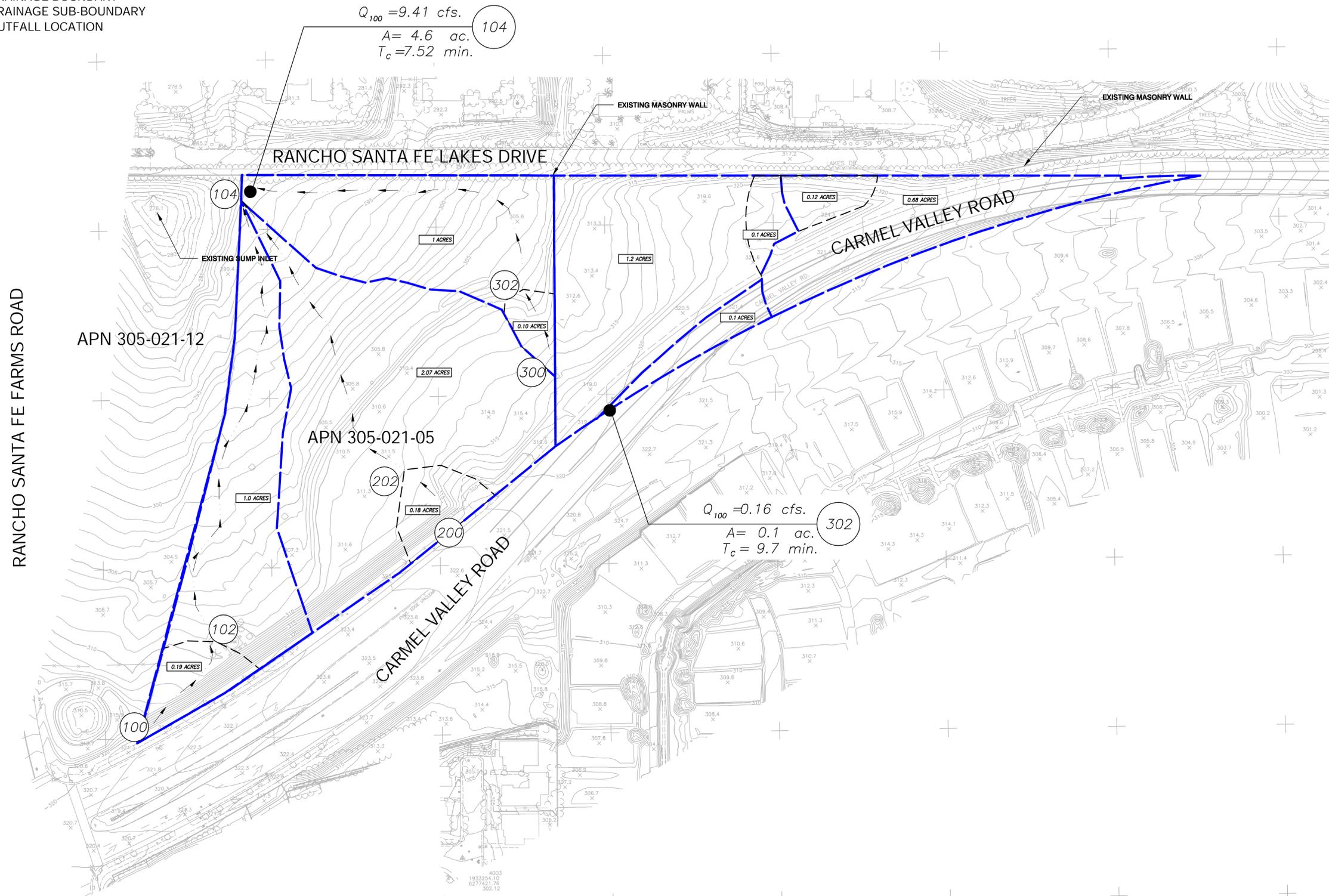
TOTAL AREA(ACRES)	=	1.1	TC(MIN.)	=	8.58
PEAK FLOW RATE(CFS)	=	2.26			

-----

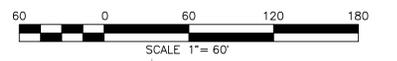
END OF RATIONAL METHOD ANALYSIS

# LEGEND

- PROJECT BOUNDARY
- DRAINAGE BOUNDARY
- DRAINAGE SUB-BOUNDARY
- OUTFALL LOCATION



4002  
1934045.18  
6277620.11  
300.95



**PREPARED BY:**  
 **HUNSAKER & ASSOCIATES**  
 SAN DIEGO, INC.  
PLANNING 9707 Waples Street  
 ENGINEERING San Diego, Ca 92121  
 SURVEYING PH(658)558-4500 - FX(658)558-1414

**EXISTING CONDITION  
 DRAINAGE MAP  
 MEADOWOOD II**  
 SAN DIEGO, CALIFORNIA

**SHEET**  
**1**  
 OF  
**2**

## **PROPOSED CONDITION**

\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
2003, 1985, 1981 HYDROLOGY MANUAL
(c) Copyright 1982-2013 Advanced Engineering Software (aes)
Ver. 20.0 Release Date: 06/01/2013 License ID 1239

Analysis prepared by:

Hunsaker & Associates - San Diego, inc.
9707 Waples street
San Diego, CA 92121

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*
\* ROBERTS RANCH (MEADOWOOD II) WO#2387-17 \*
\* 100 YEAR DEVELOPED CONDITION HYDROLOGICAL ANALYSIS \*
\* AUGUST 27, 2015 \*
\*\*\*\*\*

FILE NAME: H:\AES2010\1257\PR\PR-Q100.DAT
TIME/DATE OF STUDY: 15:04 08/27/2015

-----
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
-----

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00
6-HOUR DURATION PRECIPITATION (INCHES) = 2.700
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*
Table with 10 columns: NO., WIDTH (FT), CROWN TO STREET-CROSSFALL (FT), IN-/OUT-/PARK-SIDE / SIDE/ WAY, CURB HEIGHT (FT), GUTTER WIDTH (FT), LIP HIKE (FT), GEOMETRIES (FT), MANNING FACTOR (n)

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
1. Relative Flow-Depth = 0.50 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 5.0 (FT\*FT/S)
\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN OR EQUAL TO THE UPSTREAM TRI BUTARY PIPE.\*

\*\*\*\*\*
FLOW PROCESS FROM NODE 110.00 TO NODE 112.00 IS CODE = 21
-----

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200
SOIL CLASSIFICATION IS "D"
S.C.S. CURVE NUMBER (AMC II) = 86
INITIAL SUBAREA FLOW-LENGTH(FEET) = 126.49
UPSTREAM ELEVATION(FEET) = 312.50
DOWNSTREAM ELEVATION(FEET) = 311.50

ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.863
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
THE MAXIMUM OVERLAND FLOW LENGTH = 61.62
(Reference: Table 3-1B of Hydrology Manual)
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.917
SUBAREA RUNOFF(CFS) = 0.36
TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.36

\*\*\*\*\*
FLOW PROCESS FROM NODE 112.00 TO NODE 114.00 IS CODE = 62
-----

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 2 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 311.50 DOWNSTREAM ELEVATION(FEET) = 294.20
STREET LENGTH(FEET) = 271.94 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 12.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 6.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0130

\*\*TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.30
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.21
HALFSTREET FLOOD WIDTH(FEET) = 4.42
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.14
PRODUCT OF DEPTH&VELOCITY(FT\*FT/SEC.) = 0.89
STREET FLOW TRAVEL TIME(MIN.) = 1.10 Tc(MIN.) = 9.96
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.561
RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200
SOIL CLASSIFICATION IS "D"
S.C.S. CURVE NUMBER (AMC II) = 86
AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
SUBAREA AREA(ACRES) = 0.79 SUBAREA RUNOFF(CFS) = 1.87
TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 2.21

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.25 HALFSTREET FLOOD WIDTH(FEET) = 6.05
FLOW VELOCITY(FEET/SEC.) = 4.56 DEPTH\*VELOCITY(FT\*FT/SEC.) = 1.13
LONGEST FLOWPATH FROM NODE 110.00 TO NODE 114.00 = 398.43 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 114.00 TO NODE 114.00 IS CODE = 1
-----

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.96
RAINFALL INTENSITY(INCH/HR) = 4.56
TOTAL STREAM AREA(ACRES) = 0.93
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.21

PR-Q100. OUT

\*\*\*\*\*  
FLOW PROCESS FROM NODE 116.00 TO NODE 118.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200  
SOIL CLASSIFICATION IS "D"  
S. C. S. CURVE NUMBER (AMC II) = 86  
INITIAL SUBAREA FLOW-LENGTH(FEET) = 142.37  
UPSTREAM ELEVATION(FEET) = 311.70  
DOWNSTREAM ELEVATION(FEET) = 309.00  
ELEVATION DIFFERENCE(FEET) = 2.70  
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.495  
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN  
THE MAXIMUM OVERLAND FLOW LENGTH = 78.96  
(Reference: Table 3-1B of Hydrology Manual)  
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!  
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.479  
SUBAREA RUNOFF(CFS) = 0.46  
TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 0.46

\*\*\*\*\*  
FLOW PROCESS FROM NODE 118.00 TO NODE 114.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>(STREET TABLE SECTION # 2 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 309.00 DOWNSTREAM ELEVATION(FEET) = 294.20  
STREET LENGTH(FEET) = 256.08 CURB HEIGHT(INCHES) = 6.0  
STREET HALFWIDTH(FEET) = 12.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 6.00  
INSIDE STREET CROSSFALL(DECIMAL) = 0.020  
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1  
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020  
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150  
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0130

\*\*TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.30  
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:  
STREET FLOW DEPTH(FEET) = 0.25  
HALFSTREET FLOOD WIDTH(FEET) = 6.42  
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.34  
PRODUCT OF DEPTH&VELOCITY(FT\*FT/SEC.) = 1.10  
STREET FLOW TRAVEL TIME(MIN.) = 0.98 Tc(MIN.) = 8.48  
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.060  
RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200  
SOIL CLASSIFICATION IS "D"  
S. C. S. CURVE NUMBER (AMC II) = 86  
AREA-AVERAGE RUNOFF COEFFICIENT = 0.520  
SUBAREA AREA(ACRES) = 1.40 SUBAREA RUNOFF(CFS) = 3.68  
TOTAL AREA(ACRES) = 1.6 PEAK FLOW RATE(CFS) = 4.10

END OF SUBAREA STREET FLOW HYDRAULICS:  
DEPTH(FEET) = 0.29 HALFSTREET FLOOD WIDTH(FEET) = 8.39  
FLOW VELOCITY(FEET/SEC.) = 4.99 DEPTH\*VELOCITY(FT\*FT/SEC.) = 1.47  
LONGEST FLOWPATH FROM NODE 116.00 TO NODE 114.00 = 398.45 FEET.

\*\*\*\*\*

PR-Q100. OUT

\*\*\*\*\*  
FLOW PROCESS FROM NODE 114.00 TO NODE 114.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<  
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2  
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:  
TIME OF CONCENTRATION(MIN.) = 8.48  
RAINFALL INTENSITY(INCH/HR) = 5.06  
TOTAL STREAM AREA(ACRES) = 1.56  
PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.10

\*\* CONFLUENCE DATA \*\*

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	2.21	9.96	4.561	0.93
2	4.10	8.48	5.060	1.56

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO  
CONFLUENCE FORMULA USED FOR 2 STREAMS.

\*\* PEAK FLOW RATE TABLE \*\*

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	5.98	8.48	5.060
2	5.91	9.96	4.561

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:  
PEAK FLOW RATE(CFS) = 5.98 Tc(MIN.) = 8.48  
TOTAL AREA(ACRES) = 2.5  
LONGEST FLOWPATH FROM NODE 116.00 TO NODE 114.00 = 398.45 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 114.00 TO NODE 104.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING COMPUTER-ESTIMATED PIPE SIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 294.20 DOWNSTREAM(FEET) = 294.00  
FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013  
DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.3 INCHES  
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.15  
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 5.98  
PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 8.58  
LONGEST FLOWPATH FROM NODE 116.00 TO NODE 104.00 = 428.45 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 104.00 TO NODE 104.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2  
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:  
TIME OF CONCENTRATION(MIN.) = 8.58  
RAINFALL INTENSITY(INCH/HR) = 5.02  
TOTAL STREAM AREA(ACRES) = 2.49  
PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.98

\*\*\*\*\*

FLOW PROCESS FROM NODE 100.00 TO NODE 102.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200
SOIL CLASSIFICATION IS "D"
S. C. S. CURVE NUMBER (AMC II) = 86
INITIAL SUBAREA FLOW-LENGTH(FEET) = 118.00
UPSTREAM ELEVATION(FEET) = 316.00
DOWNSTREAM ELEVATION(FEET) = 315.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.819
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
THE MAXIMUM OVERLAND FLOW LENGTH = 63.90
(Reference: Table 3-1B of Hydrology Manual)
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.933
SUBAREA RUNOFF(CFS) = 0.33
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.33

\*\*\*\*\*
FLOW PROCESS FROM NODE 102.00 TO NODE 104.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 2 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 315.00 DOWNSTREAM ELEVATION(FEET) = 294.00
STREET LENGTH(FEET) = 216.42 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 12.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 6.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0130

\*\*TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.53
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.21
HALFSTREET FLOOD WIDTH(FEET) = 4.28
AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.08
PRODUCT OF DEPTH&VELOCITY(FT\*FT/SEC.) = 1.08
STREET FLOW TRAVEL TIME(MIN.) = 0.71 Tc(MIN.) = 9.53
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.693
RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200
SOIL CLASSIFICATION IS "D"
S. C. S. CURVE NUMBER (AMC II) = 86
AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
SUBAREA AREA(ACRES) = 0.98 SUBAREA RUNOFF(CFS) = 2.39
TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 2.71

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.25 HALFSTREET FLOOD WIDTH(FEET) = 6.05
FLOW VELOCITY(FEET/SEC.) = 5.60 DEPTH\*VELOCITY(FT\*FT/SEC.) = 1.38
LONGEST FLOWPATH FROM NODE 100.00 TO NODE 104.00 = 334.42 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 104.00 TO NODE 104.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.53
RAINFALL INTENSITY(INCH/HR) = 4.69
TOTAL STREAM AREA(ACRES) = 1.11
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.71

\*\* CONFLUENCE DATA \*\*

Table with 4 columns: STREAM NUMBER, RUNOFF (CFS), Tc (MIN.), INTENSITY (INCH/HOUR), AREA (ACRE). Rows for streams 1 and 2.

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

\*\* PEAK FLOW RATE TABLE \*\*

Table with 4 columns: STREAM NUMBER, RUNOFF (CFS), Tc (MIN.), INTENSITY (INCH/HOUR). Rows for streams 1 and 2.

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 8.42 Tc(MIN.) = 8.58
TOTAL AREA(ACRES) = 3.6
LONGEST FLOWPATH FROM NODE 116.00 TO NODE 104.00 = 428.45 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 104.00 TO NODE 106.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 294.00 DOWNSTREAM(FEET) = 286.40
FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 18.59
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.42
PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 8.62
LONGEST FLOWPATH FROM NODE 116.00 TO NODE 106.00 = 473.45 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 120.00 TO NODE 121.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200
SOIL CLASSIFICATION IS "D"
S. C. S. CURVE NUMBER (AMC II) = 86
INITIAL SUBAREA FLOW-LENGTH(FEET) = 105.00
UPSTREAM ELEVATION(FEET) = 311.70
DOWNSTREAM ELEVATION(FEET) = 310.00
ELEVATION DIFFERENCE(FEET) = 1.70
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.761
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
THE MAXIMUM OVERLAND FLOW LENGTH = 76.19

PR-Q100. OUT  
 (Reference: Table 3-1B of Hydrology Manual)  
 THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!  
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.357  
 SUBAREA RUNOFF(CFS) = 0.28  
 TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.28

\*\*\*\*\*  
 FLOW PROCESS FROM NODE 121.00 TO NODE 125.00 IS CODE = 52

-----  
 >>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<<  
 >>>>TRAVELTIME THRU SUBAREA<<<<<<

-----  
 ELEVATION DATA: UPSTREAM(FEET) = 310.00 DOWNSTREAM(FEET) = 305.00  
 CHANNEL LENGTH THRU SUBAREA(FEET) = 184.76 CHANNEL SLOPE = 0.0271  
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION  
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.28  
 FLOW VELOCITY(FEET/SEC) = 2.47 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
 TRAVEL TIME(MIN.) = 1.25 Tc(MIN.) = 9.01  
 LONGEST FLOWPATH FROM NODE 120.00 TO NODE 125.00 = 289.76 FEET.

\*\*\*\*\*  
 FLOW PROCESS FROM NODE 121.00 TO NODE 125.00 IS CODE = 81

-----  
 >>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<

-----  
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.866  
 RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200  
 SOIL CLASSIFICATION IS "D"  
 S.C.S. CURVE NUMBER (AMC II) = 86  
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.5200  
 SUBAREA AREA(ACRES) = 0.41 SUBAREA RUNOFF(CFS) = 1.04  
 TOTAL AREA(ACRES) = 0.5 TOTAL RUNOFF(CFS) = 1.29  
 Tc(MIN.) = 9.01

\*\*\*\*\*  
 FLOW PROCESS FROM NODE 125.00 TO NODE 125.00 IS CODE = 1

-----  
 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<

-----  
 TOTAL NUMBER OF STREAMS = 2  
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:  
 TIME OF CONCENTRATION(MIN.) = 9.01  
 RAINFALL INTENSITY(INCH/HR) = 4.87  
 TOTAL STREAM AREA(ACRES) = 0.51  
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.29

\*\*\*\*\*  
 FLOW PROCESS FROM NODE 122.00 TO NODE 123.00 IS CODE = 21

-----  
 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<

-----  
 RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200  
 SOIL CLASSIFICATION IS "D"  
 S.C.S. CURVE NUMBER (AMC II) = 86  
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 88.00  
 UPSTREAM ELEVATION(FEET) = 312.00  
 DOWNSTREAM ELEVATION(FEET) = 311.00  
 ELEVATION DIFFERENCE(FEET) = 1.00  
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.452  
 WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN  
 THE MAXIMUM OVERLAND FLOW LENGTH = 71.36

PR-Q100. OUT  
 (Reference: Table 3-1B of Hydrology Manual)  
 THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!  
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.071  
 SUBAREA RUNOFF(CFS) = 0.26  
 TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.26

\*\*\*\*\*  
 FLOW PROCESS FROM NODE 123.00 TO NODE 124.00 IS CODE = 52

-----  
 >>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<<  
 >>>>TRAVELTIME THRU SUBAREA<<<<<<

-----  
 ELEVATION DATA: UPSTREAM(FEET) = 311.00 DOWNSTREAM(FEET) = 306.00  
 CHANNEL LENGTH THRU SUBAREA(FEET) = 100.00 CHANNEL SLOPE = 0.0500  
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION  
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.26  
 FLOW VELOCITY(FEET/SEC) = 3.35 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
 TRAVEL TIME(MIN.) = 0.50 Tc(MIN.) = 8.95  
 LONGEST FLOWPATH FROM NODE 122.00 TO NODE 124.00 = 188.00 FEET.

\*\*\*\*\*  
 FLOW PROCESS FROM NODE 123.00 TO NODE 124.00 IS CODE = 81

-----  
 >>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<

-----  
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.887  
 RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200  
 SOIL CLASSIFICATION IS "D"  
 S.C.S. CURVE NUMBER (AMC II) = 86  
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.5200  
 SUBAREA AREA(ACRES) = 0.18 SUBAREA RUNOFF(CFS) = 0.46  
 TOTAL AREA(ACRES) = 0.3 TOTAL RUNOFF(CFS) = 0.71  
 Tc(MIN.) = 8.95

\*\*\*\*\*  
 FLOW PROCESS FROM NODE 124.00 TO NODE 125.00 IS CODE = 1

-----  
 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<  
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<<

-----  
 TOTAL NUMBER OF STREAMS = 2  
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:  
 TIME OF CONCENTRATION(MIN.) = 8.95  
 RAINFALL INTENSITY(INCH/HR) = 4.89  
 TOTAL STREAM AREA(ACRES) = 0.28  
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.71

-----  
 \*\* CONFLUENCE DATA \*\*

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	1.29	9.01	4.866	0.51
2	0.71	8.95	4.887	0.28

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO  
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

-----  
 \*\* PEAK FLOW RATE TABLE \*\*

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	1.99	8.95	4.887
2	2.00	9.01	4.866

PR-Q100. OUT

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 2.00 Tc(MIN.) = 9.01
TOTAL AREA(ACRES) = 0.8
LONGEST FLOWPATH FROM NODE 120.00 TO NODE 125.00 = 289.76 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 125.00 TO NODE 126.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 305.00 DOWNSTREAM(FEET) = 294.50
CHANNEL LENGTH THRU SUBAREA(FEET) = 310.39 CHANNEL SLOPE = 0.0338
CHANNEL FLOW THRU SUBAREA(CFS) = 2.00
FLOW VELOCITY(FEET/SEC) = 3.17 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.63 Tc(MIN.) = 10.64
LONGEST FLOWPATH FROM NODE 120.00 TO NODE 126.00 = 600.15 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 200.00 TO NODE 202.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200
SOIL CLASSIFICATION IS "D"
S. C. S. CURVE NUMBER (AMC II) = 86
INITIAL SUBAREA FLOW-LENGTH(FEET) = 250.00
UPSTREAM ELEVATION(FEET) = 320.00
DOWNSTREAM ELEVATION(FEET) = 295.00
ELEVATION DIFFERENCE(FEET) = 25.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.846
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
THE MAXIMUM OVERLAND FLOW LENGTH = 100.00
(Reference: Table 3-1B of Hydrology Manual)
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.114
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.18
TOTAL AREA(ACRES) = 0.05 TOTAL RUNOFF(CFS) = 0.18

\*\*\*\*\*
FLOW PROCESS FROM NODE 202.00 TO NODE 204.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 300.00 DOWNSTREAM(FEET) = 292.50
CHANNEL LENGTH THRU SUBAREA(FEET) = 300.00 CHANNEL SLOPE = 0.0250
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.18
FLOW VELOCITY(FEET/SEC) = 2.37 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.11 Tc(MIN.) = 6.95
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 204.00 = 550.00 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 202.00 TO NODE 204.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.750

PR-Q100. OUT

RESIDENTIAL (4.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .5200
SOIL CLASSIFICATION IS "D"
S. C. S. CURVE NUMBER (AMC II) = 86
AREA-AVERAGE RUNOFF COEFFICIENT = 0.5200
SUBAREA AREA(ACRES) = 0.10 SUBAREA RUNOFF(CFS) = 0.30
TOTAL AREA(ACRES) = 0.2 TOTAL RUNOFF(CFS) = 0.45
TC(MIN.) = 6.95

=====
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 0.2 TC(MIN.) = 6.95
PEAK FLOW RATE(CFS) = 0.45
=====

=====
END OF RATIONAL METHOD ANALYSIS S
=====

♀

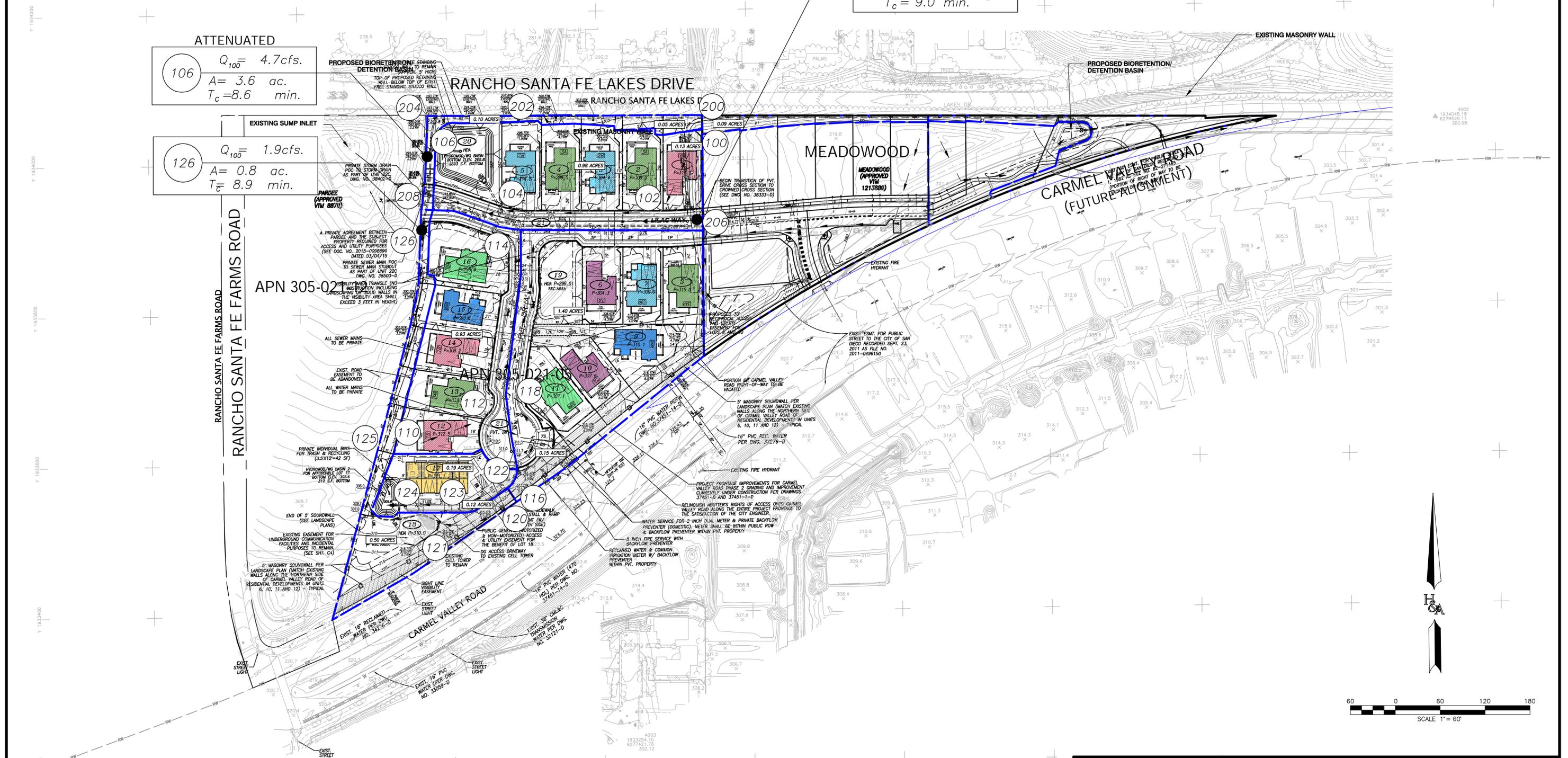
# LEGEND

- PROJECT BOUNDARY
- DRAINAGE BOUNDARY
- DRAINAGE SUB-BOUNDARY
- FLOWPATH
- OUTFALL LOCATION

ATTENUATED  
 106  $Q_{100} = 4.7\text{cfs.}$   
 $A = 3.6\text{ ac.}$   
 $T_c = 8.6\text{ min.}$

126  $Q_{100} = 1.9\text{cfs.}$   
 $A = 0.8\text{ ac.}$   
 $T_c = 8.9\text{ min.}$

ATTENUATED  
 $Q_{100} = 2.3\text{ cfs.}$   
 $A = 1.6\text{ ac.}$   
 $T_c = 9.0\text{ min.}$



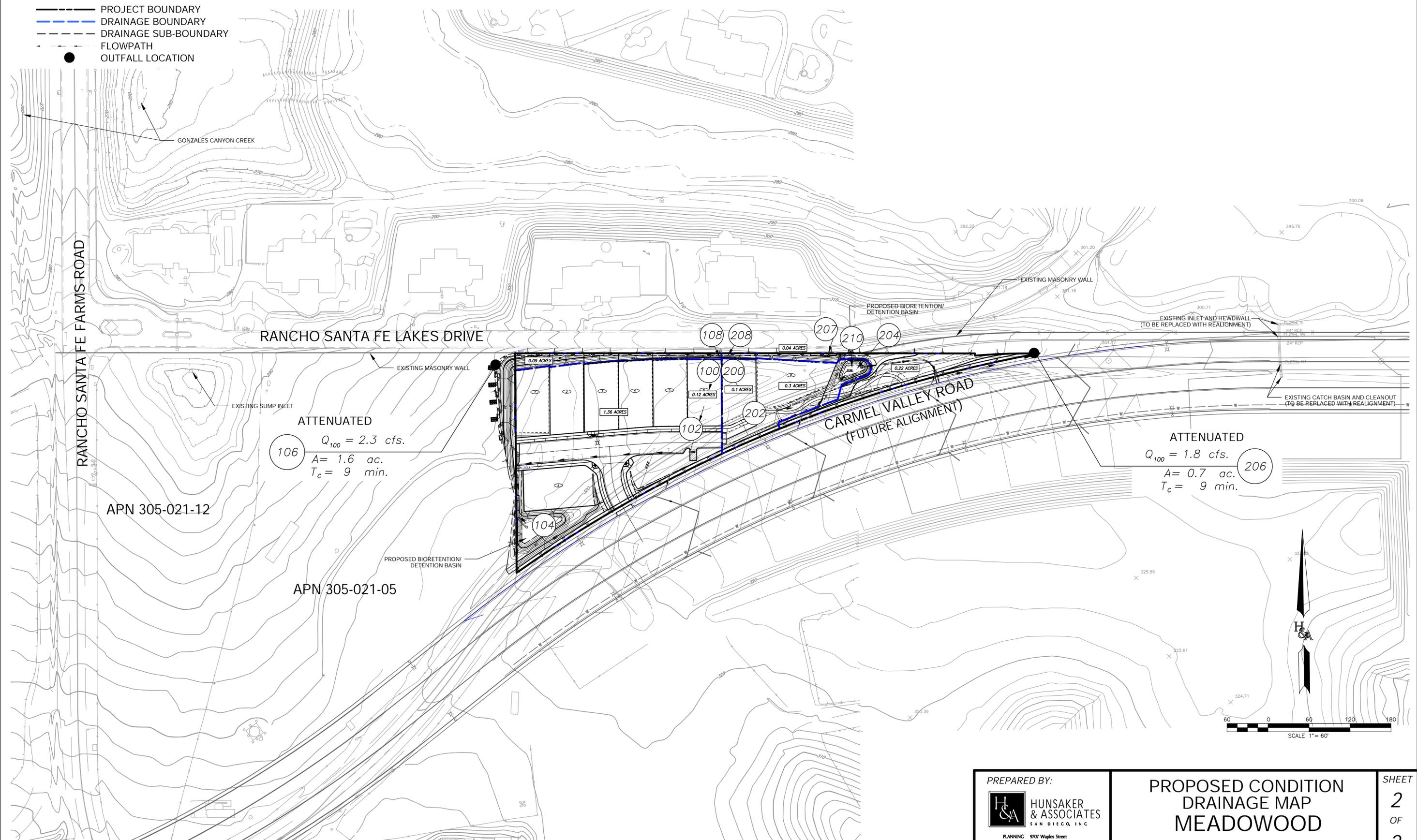
PREPARED BY:  
 HUNSAKER & ASSOCIATES  
 SAN DIEGO, INC.  
 PLANNING: 9707 Waples Street  
 ENGINEERING: San Diego, Ca 92121  
 SURVEYING: PH(619)558-4500 FX(619)558-1414

PROPOSED CONDITION  
 DRAINAGE MAP  
**MEADOWOOD II**  
 SAN DIEGO, CALIFORNIA

SHEET  
**2**  
 OF  
**2**  
 W.C. 23897-17

# LEGEND

-  PROJECT BOUNDARY
-  DRAINAGE BOUNDARY
-  DRAINAGE SUB-BOUNDARY
-  FLOWPATH
-  OUTFALL LOCATION



ATTENUATED  
 $Q_{100} = 2.3 \text{ cfs.}$   
 $A = 1.6 \text{ ac.}$   
 $T_c = 9 \text{ min.}$

ATTENUATED  
 $Q_{100} = 1.8 \text{ cfs.}$   
 $A = 0.7 \text{ ac.}$   
 $T_c = 9 \text{ min.}$

PREPARED BY:



**HUNSAKER & ASSOCIATES**  
 SAN DIEGO, INC.

PLANNING 9707 Waples Street  
 ENGINEERING San Diego, Ca 92121  
 SURVEYING PH(619)558-4500 FX(619)558-1414

**PROPOSED CONDITION  
 DRAINAGE MAP  
 MEADOWOOD**

SAN DIEGO, CALIFORNIA

SHEET  
 2  
 OF  
 2

TABLE 2

RUNOFF COEFFICIENTS (RATIONAL METHOD)

DEVELOPED AREAS (URBAN)

<u>Land Use</u>	<u>Coefficient, C</u> <u>Soil Type (1)</u>
Residential:	<u>D</u>
Single Family	.55
Multi-Units	.70
Mobile Homes	.65
Rural (lots greater than 1/2 acre)	.45
Commercial (2)	
80% Impervious	.85
Industrial (2)	
90% Impervious	.95

NOTES:

- (1) Type D soil to be used for all areas.
- (2) Where actual conditions deviate significantly from the tabulated imperviousness values of 80% or 90%, the values given for coefficient C, may be revised by multiplying 80% or 90% by the ratio of actual imperviousness to the tabulated imperviousness. However, in no case shall the final coefficient be less than 0.50. For example: Consider commercial property on D soil.

Actual imperviousness	=	50%
Tabulated imperviousness	=	80%
Revised C	=	$\frac{50}{80} \times 0.85 = 0.53$

Existing 100 Series area contains some existing pavement, so 0.41 was chosen to be more conservative than typical undeveloped 0.35  
 Existing 200 Series area contains a significant amount of existing pavement (39% impervious), slightly more than typical SFR, so 0.57 was chosen to be conservative.

Proposed 100 Series area is 45% impervious, which is slightly higher than typical SFR, so 0.60 was chosen to be conservative.  
 Proposed 200 Series area is 31% impervious, and is slightly lower than typical SFR. To be conservative, 0.57 was kept from existing.

# Appendix 2 – Hydraulic Calculations

# Channel Report

## 24in STORM DRAIN THROUGH PHR UNIT 22C (WEST)

### Circular

Diameter (ft) = 2.00

Invert Elev (ft) = 279.94

Slope (%) = 1.00

N-Value = 0.013

### Calculations

Compute by: Q vs Depth

No. Increments = 10

### Highlighted

Depth (ft) = 1.80

Q (cfs) = 24.11

Area (sqft) = 2.98

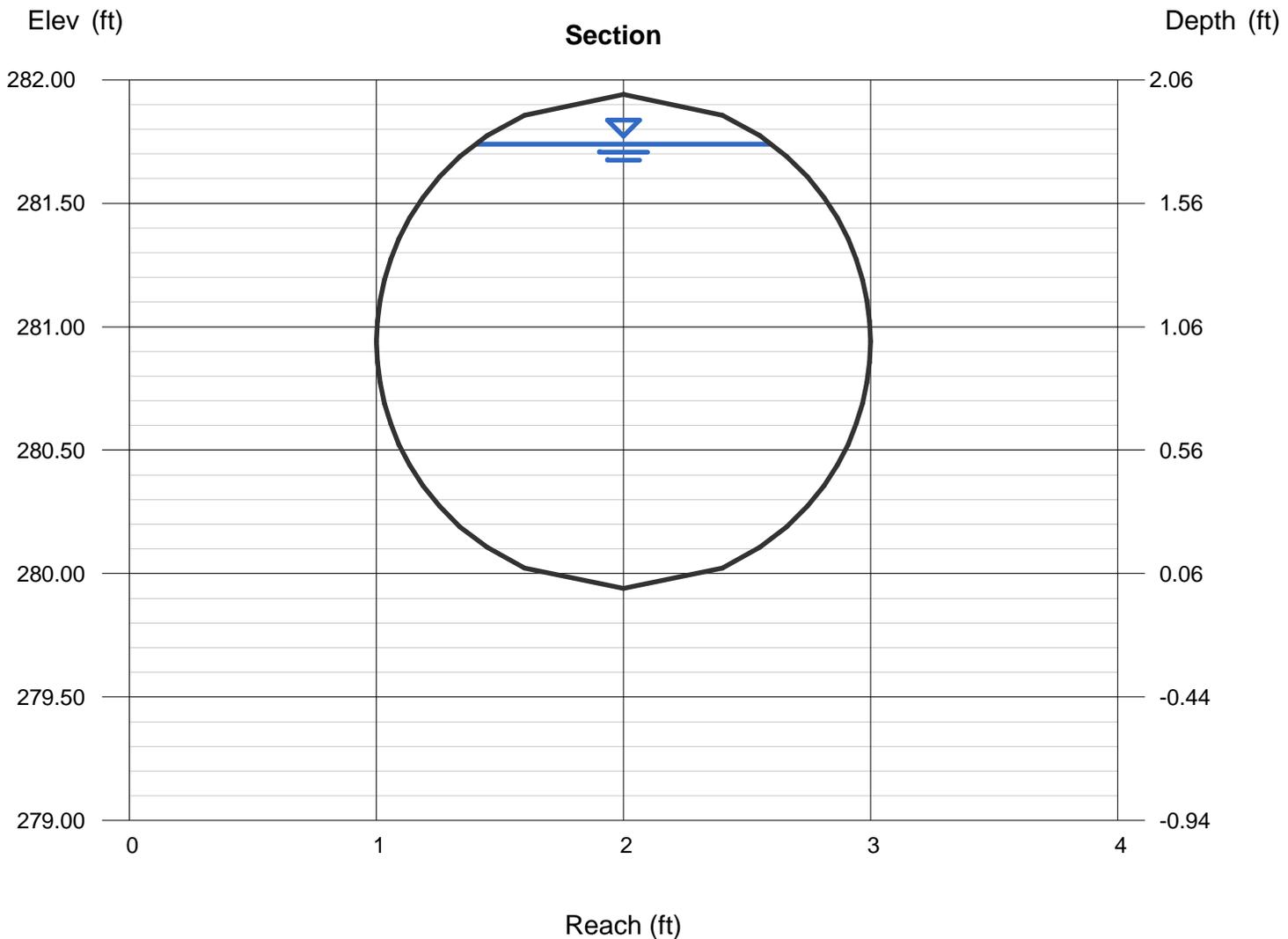
Velocity (ft/s) = 8.09

Wetted Perim (ft) = 5.00

Crit Depth, Yc (ft) = 1.74

Top Width (ft) = 1.20

EGL (ft) = 2.82



# Detention Basin Calculations

RATIONAL METHOD HYDROGRAPH PROGRAM  
COPYRIGHT 1992, 2001 RICK ENGINEERING COMPANY

RUN DATE 9/9/2015  
HYDROGRAPH FILE NAME Text1  
TIME OF CONCENTRATION 10 MIN.  
6 HOUR RAINFALL 4.69 INCHES  
BASIN AREA 3.6 ACRES  
RUNOFF COEFFICIENT 0.52  
PEAK DISCHARGE 8.42 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 10	DISCHARGE (CFS) = 0.5
TIME (MIN) = 20	DISCHARGE (CFS) = 0.5
TIME (MIN) = 30	DISCHARGE (CFS) = 0.6
TIME (MIN) = 40	DISCHARGE (CFS) = 0.6
TIME (MIN) = 50	DISCHARGE (CFS) = 0.6
TIME (MIN) = 60	DISCHARGE (CFS) = 0.6
TIME (MIN) = 70	DISCHARGE (CFS) = 0.6
TIME (MIN) = 80	DISCHARGE (CFS) = 0.7
TIME (MIN) = 90	DISCHARGE (CFS) = 0.7
TIME (MIN) = 100	DISCHARGE (CFS) = 0.7
TIME (MIN) = 110	DISCHARGE (CFS) = 0.7
TIME (MIN) = 120	DISCHARGE (CFS) = 0.8
TIME (MIN) = 130	DISCHARGE (CFS) = 0.8
TIME (MIN) = 140	DISCHARGE (CFS) = 0.9
TIME (MIN) = 150	DISCHARGE (CFS) = 0.9
TIME (MIN) = 160	DISCHARGE (CFS) = 1
TIME (MIN) = 170	DISCHARGE (CFS) = 1.1
TIME (MIN) = 180	DISCHARGE (CFS) = 1.2
TIME (MIN) = 190	DISCHARGE (CFS) = 1.3
TIME (MIN) = 200	DISCHARGE (CFS) = 1.4
TIME (MIN) = 210	DISCHARGE (CFS) = 1.8
TIME (MIN) = 220	DISCHARGE (CFS) = 2
TIME (MIN) = 230	DISCHARGE (CFS) = 2.9
TIME (MIN) = 240	DISCHARGE (CFS) = 10.5
TIME (MIN) = 250	DISCHARGE (CFS) = 8.42
TIME (MIN) = 260	DISCHARGE (CFS) = 2.3
TIME (MIN) = 270	DISCHARGE (CFS) = 1.6
TIME (MIN) = 280	DISCHARGE (CFS) = 1.2
TIME (MIN) = 290	DISCHARGE (CFS) = 1
TIME (MIN) = 300	DISCHARGE (CFS) = 0.9
TIME (MIN) = 310	DISCHARGE (CFS) = 0.8
TIME (MIN) = 320	DISCHARGE (CFS) = 0.7
TIME (MIN) = 330	DISCHARGE (CFS) = 0.7
TIME (MIN) = 340	DISCHARGE (CFS) = 0.6
TIME (MIN) = 350	DISCHARGE (CFS) = 0.6
TIME (MIN) = 360	DISCHARGE (CFS) = 0.5
TIME (MIN) = 370	DISCHARGE (CFS) = 0

# Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3



## Legend

<u>Hyd.</u>	<u>Origin</u>	<u>Description</u>
1	Manual	BASIN 1 Q100
2	Reservoir	BASIN 1 ATTENUATED

# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	8.420	10	250	27,972	-----	-----	-----	BASIN 1 Q100
2	Reservoir	4.764	10	260	26,993	1	102.14	6,486	BASIN 1 ATTENUATED
HH Basin 1.gpw					Return Period: 100 Year		Monday, 09 / 14 / 2015		

# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

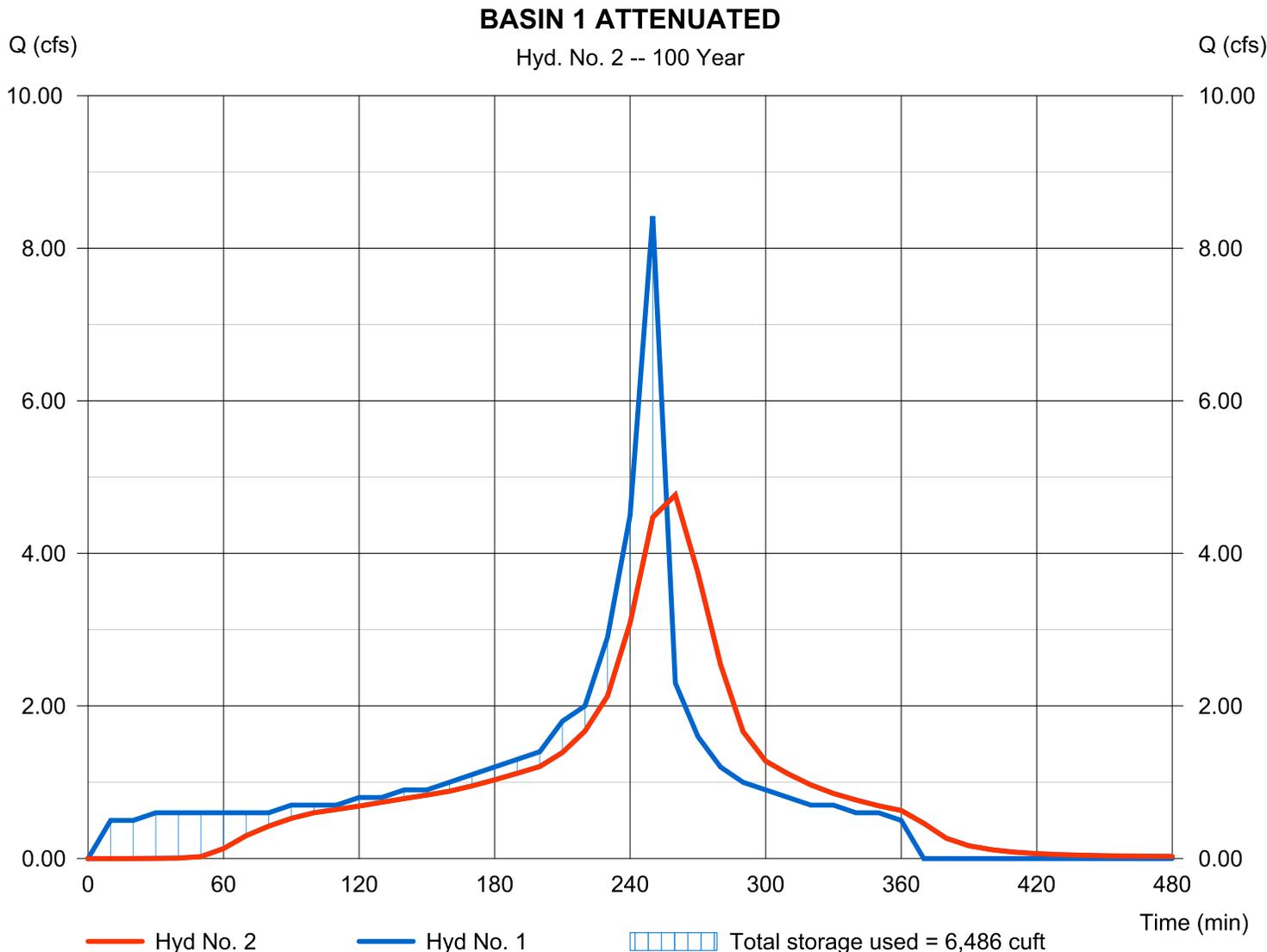
Monday, 09 / 14 / 2015

## Hyd. No. 2

### BASIN 1 ATTENUATED

Hydrograph type	= Reservoir	Peak discharge	= 4.764 cfs
Storm frequency	= 100 yrs	Time to peak	= 260 min
Time interval	= 10 min	Hyd. volume	= 26,993 cuft
Inflow hyd. No.	= 1 - BASIN 1 Q100	Max. Elevation	= 102.14 ft
Reservoir name	= BASIN 1	Max. Storage	= 6,486 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



# Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3



## **Legend**

<b><u>Hyd.</u></b>	<b><u>Origin</u></b>	<b><u>Description</u></b>
1	Manual	BASIN 2 Q100
2	Reservoir	BASIN 2 ATTENUATED

# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.710	10	250	2,970	-----	-----	-----	BASIN 2 Q100
2	Reservoir	0.686	10	250	2,881	1	101.18	486	BASIN 2 ATTENUATED
HH Basin2.gpw					Return Period: 100 Year			Friday, 09 / 14 / 2015	

# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

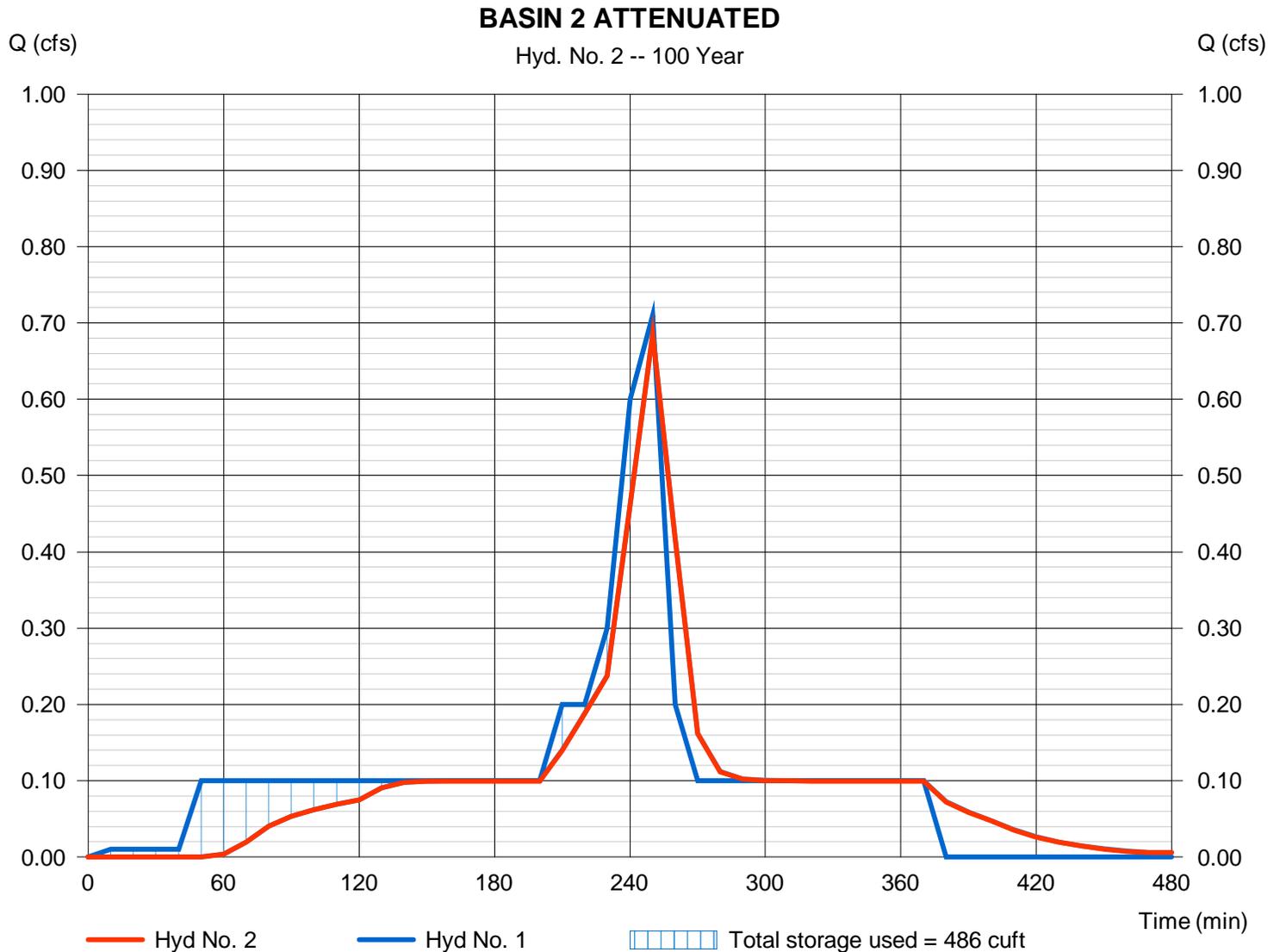
Friday, 09 /14 / 2015

## Hyd. No. 2

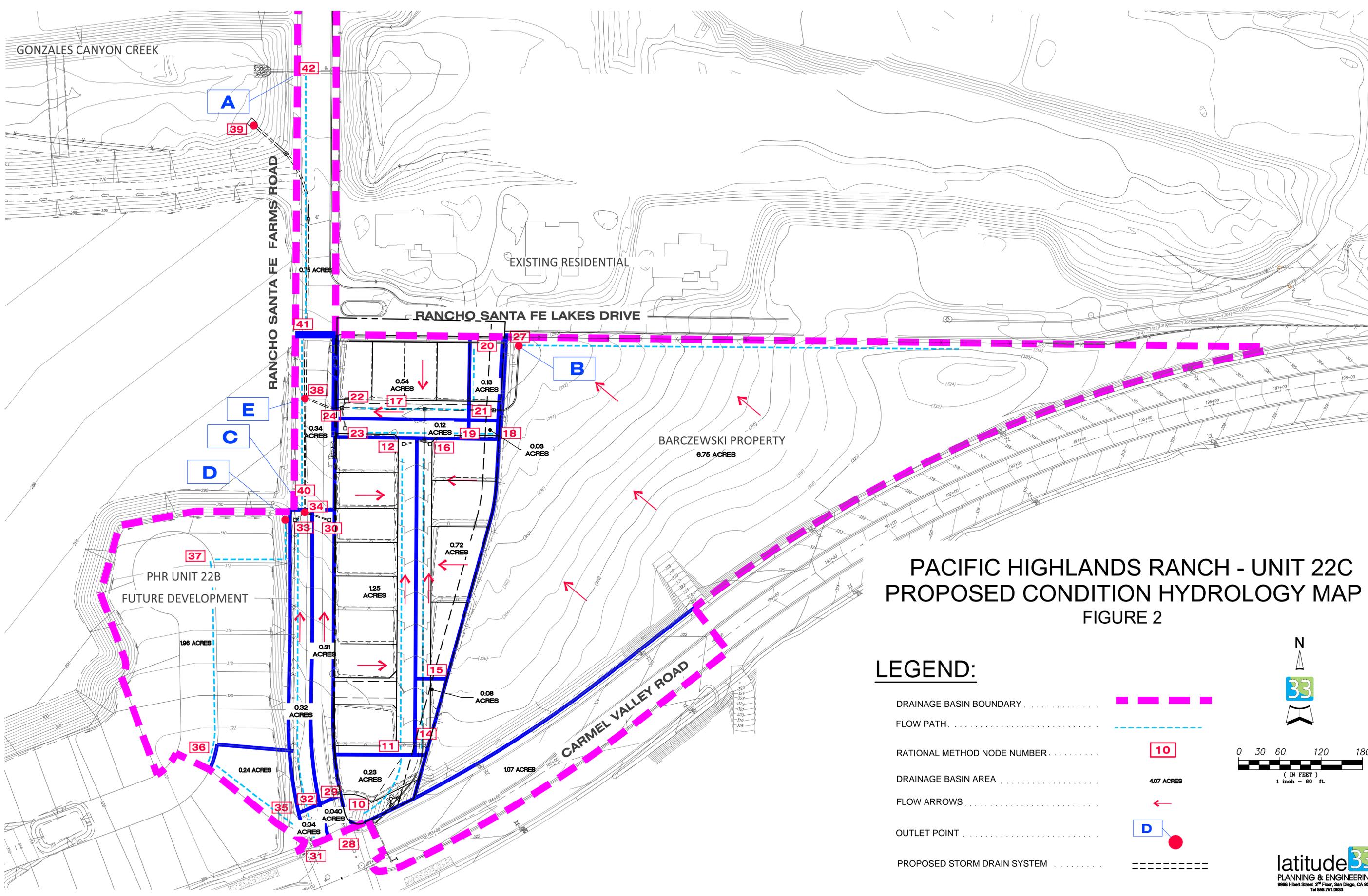
### BASIN 2 ATTENUATED

Hydrograph type	= Reservoir	Peak discharge	= 0.686 cfs
Storm frequency	= 100 yrs	Time to peak	= 250 min
Time interval	= 10 min	Hyd. volume	= 2,881 cuft
Inflow hyd. No.	= 1 - BASIN 2 Q100	Max. Elevation	= 101.18 ft
Reservoir name	= BASIN 2	Max. Storage	= 486 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



## **Appendix 3 – PHR UNIT 22C - Hydraulic Analysis**



PACIFIC HIGHLANDS RANCH - UNIT 22C  
 PROPOSED CONDITION HYDROLOGY MAP  
 FIGURE 2

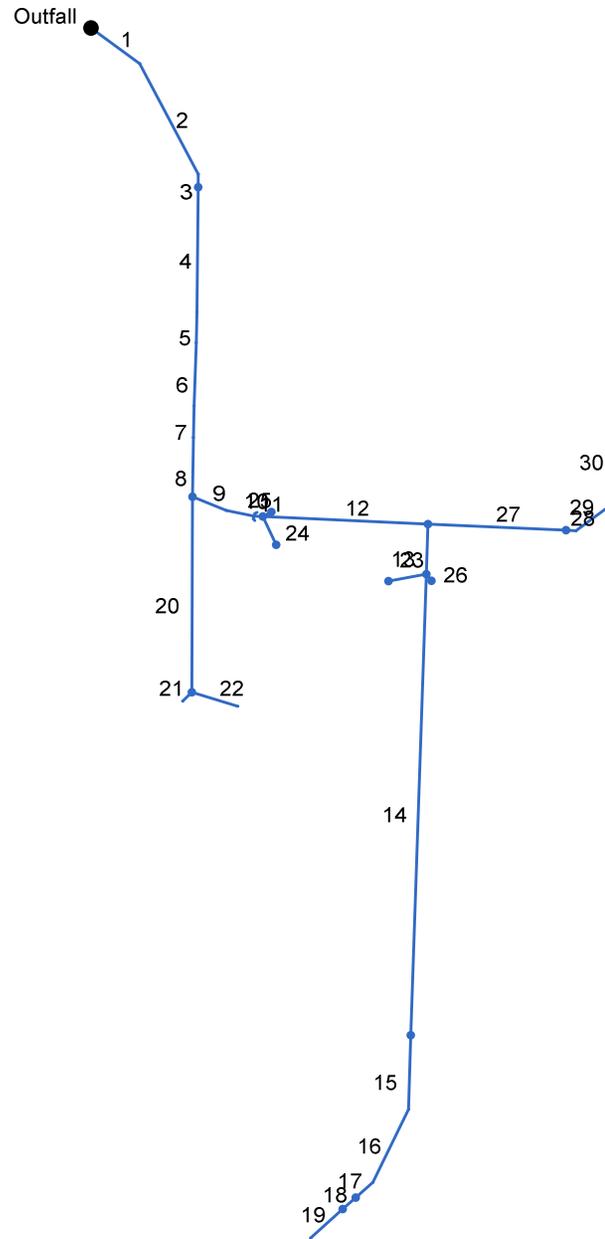
**LEGEND:**

- ..... DRAINAGE BASIN BOUNDARY
- ..... FLOW PATH
- ..... RATIONAL METHOD NODE NUMBER
- ..... DRAINAGE BASIN AREA
- ..... FLOW ARROWS
- ..... OUTLET POINT
- ..... PROPOSED STORM DRAIN SYSTEM

N  
  
 0 30 60 120 180  
 ( IN FEET )  
 1 inch = 60 ft.



# Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



Project File: UNIT 22C SD BACKBONE 2015-0619.stm

Number of lines: 30

Date: 8/3/2015

# Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert EI Dn (ft)	Line Slope (%)	Invert EI Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim EI (ft)	
1	End	44.724	41.180	None	0.00	0.00	0.00	0.0	258.00	8.21	261.67	36	Cir	0.012	0.47	265.19	Pipe - 57
2	1	99.922	24.604	None	0.00	0.00	0.00	0.0	261.67	8.47	270.13	36	Cir	0.012	0.47	273.65	Pipe - 40
3	2	10.561	24.604	Curb	0.00	0.00	0.00	0.0	270.13	8.21	271.00	36	Cir	0.012	0.50	279.87	Pipe - 64
4	3	102.669	0.000	None	0.00	0.00	0.00	0.0	271.33	1.50	272.87	36	Cir	0.012	0.15	276.39	Pipe - 39
5	4	25.448	0.737	None	0.00	0.00	0.00	0.0	272.87	1.50	273.25	36	Cir	0.012	0.15	276.77	Pipe - 70
6	5	52.002	0.737	None	0.00	0.00	0.00	0.0	273.25	1.50	274.03	36	Cir	0.012	0.15	277.55	Pipe - 67
7	6	26.014	-0.737	None	0.00	0.00	0.00	0.0	274.03	1.50	274.42	36	Cir	0.012	0.15	277.94	Pipe - 66
8	7	48.773	-0.737	Curb	0.00	0.00	0.00	0.0	274.42	1.50	275.15	36	Cir	0.012	1.38	291.64	Pipe - 65
9	8	26.211	-64.977	None	0.00	0.00	0.00	0.0	276.15	2.00	276.67	24	Cir	0.012	0.24	279.05	Pipe - 46
10	9	19.752	-11.393	Hdwl	0.00	0.00	0.00	0.0	276.67	2.01	277.07	24	Cir	0.012	0.50	279.82	Pipe - 37
11	10	5.931	-10.985	Curb	0.00	0.00	0.00	0.0	277.07	1.50	277.16	24	Cir	0.012	1.38	292.94	15
12	11	116.012	0.001	Curb	0.00	0.00	0.00	0.0	277.49	1.00	278.65	24	Cir	0.012	1.50	294.14	14
13	12	41.482	88.617	Curb	0.00	0.00	0.00	0.0	279.48	3.28	280.84	18	Cir	0.012	1.47	293.28	10
14	13	379.567	0.000	Curb	0.00	0.00	0.00	0.0	280.84	4.00	296.02	18	Cir	0.012	0.50	308.87	4
15	14	61.369	0.000	None	0.00	0.00	0.00	0.0	296.35	11.10	303.16	18	Cir	0.012	0.41	304.97	3
16	15	64.676	20.816	None	0.00	0.00	0.00	0.0	303.16	11.35	310.51	18	Cir	0.012	0.41	312.31	2
17	16	17.510	20.816	Curb	0.00	0.00	0.00	0.0	310.51	11.10	312.45	18	Cir	0.012	0.50	320.74	1 (1) (1)
18	17	13.000	0.000	Curb	0.00	0.00	0.00	0.0	312.78	2.00	313.04	18	Cir	0.012	0.50	320.88	1 (1)
19	18	33.000	0.000	None	2.69	0.00	0.00	0.0	313.37	2.00	314.03	18	Cir	0.012	1.00	0.00	1
20	8	161.000	-0.119	Curb	4.70	0.00	0.00	0.0	276.65	10.01	292.76	18	Cir	0.012	1.43	299.15	Pipe - 47
21	20	9.740	40.509	None	1.00	0.00	0.00	0.0	293.09	13.24	294.38	18	Cir	0.012	1.00	0.00	Pipe - 48
22	20	34.000	-70.525	None	0.90	0.00	0.00	0.0	294.66	-4.62	293.09	18	Cir	0.012	1.00	0.00	Pipe - 49
23	13	27.000	76.549	Curb	2.81	0.00	0.00	0.0	286.17	12.33	289.50	18	Cir	0.012	1.00	293.49	9

# Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
24	11	25.228	64.414	Curb	0.28	0.00	0.00	0.0	288.01	5.11	289.30	12	Cir	0.012	1.00	293.27	16
25	11	7.511	-34.117	Curb	1.30	0.00	0.00	0.0	288.01	17.17	289.30	12	Cir	0.012	1.00	293.27	17
26	13	6.509	-37.172	Curb	1.50	0.00	0.00	0.0	286.17	25.04	287.80	18	Cir	0.012	1.00	293.49	Pipe - 75
27	12	96.281	0.000	Curb	0.00	0.00	0.00	0.0	278.98	1.00	279.94	24	Cir	0.012	0.50	295.15	13
28	27	7.357	0.000	None	0.00	0.00	0.00	0.0	280.27	7.03	280.79	18	Cir	0.012	0.73	285.60	18
29	28	31.040	-43.612	None	0.00	0.00	0.00	0.0	280.79	4.31	282.13	18	Cir	0.012	0.73	285.89	19
30	29	71.552	-43.612	DrGrt	12.42	0.00	0.00	0.0	282.13	3.90	284.92	18	Cir	0.012	1.00	288.12	20
Project File: UNIT 22C SD BACKBONE 2015-0619.stm												Number of lines: 30				Date: 8/3/2015	

# Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	Pipe - 57	27.60	36	Cir	44.724	258.00	261.67	8.209	258.74	263.37	n/a	263.37	End	None
2	Pipe - 40	27.60	36	Cir	99.922	261.67	270.13	8.466	263.37	271.83	n/a	271.83	1	None
3	Pipe - 64	27.60	36	Cir	10.561	270.13	271.00	8.209	271.83	272.69	n/a	272.69	2	Curb-
4	Pipe - 39	27.60	36	Cir	102.669	271.33	272.87	1.500	272.69	274.57	n/a	274.57	3	None
5	Pipe - 70	27.60	36	Cir	25.448	272.87	273.25	1.500	274.57	274.95	n/a	274.95	4	None
6	Pipe - 67	27.60	36	Cir	52.002	273.25	274.03	1.500	274.95	275.73	n/a	275.73 j	5	None
7	Pipe - 66	27.60	36	Cir	26.014	274.03	274.42	1.500	275.73	276.12	n/a	276.12	6	None
8	Pipe - 65	27.60	36	Cir	48.773	274.42	275.15	1.500	276.12	276.85	n/a	276.85	7	Curb-
9	Pipe - 46	21.00	24	Cir	26.211	276.15	276.67	2.000	277.27	278.31	n/a	278.31	8	None
10	Pipe - 37	21.00	24	Cir	19.752	276.67	277.07	2.013	278.31	278.71	n/a	278.71 j	9	OpenHeadwall
11	15	21.00	24	Cir	5.931	277.07	277.16	1.500	278.71	278.80	n/a	278.80	10	Curb-
12	14	19.42	24	Cir	116.012	277.49	278.65	1.000	278.83	280.23	1.24	280.23	11	Curb-
13	10	7.00	18	Cir	41.482	279.48	280.84	3.278	280.23	281.86	n/a	281.86	12	Curb-
14	4	2.69	18	Cir	379.567	280.84	296.02	4.000	281.86	296.64	n/a	296.64 j	13	Curb-
15	3	2.69	18	Cir	61.369	296.35	303.16	11.104	296.64	303.79	n/a	303.79	14	None
16	2	2.69	18	Cir	64.676	303.16	310.51	11.351	303.79	311.13	n/a	311.13	15	None
17	1 (1) (1)	2.69	18	Cir	17.510	310.51	312.45	11.104	311.13	313.07	n/a	313.07	16	Curb-
18	1 (1)	2.69	18	Cir	13.000	312.78	313.04	2.000	313.20	313.66	n/a	313.66	17	Curb-
19	1	2.69	18	Cir	33.000	313.37	314.03	2.000	313.79	314.65	n/a	314.65	18	None
20	Pipe - 47	6.60	18	Cir	161.000	276.65	292.76	10.006	277.09	293.75	n/a	293.75	8	Curb-
21	Pipe - 48	1.00	18	Cir	9.740	293.09	294.38	13.244	293.75	294.75	n/a	294.75 j	20	None
22	Pipe - 49	0.90	18	Cir	34.000	294.66	293.09	-4.618	295.01*	295.21*	0.00	295.21	20	None
23	9	2.81	18	Cir	27.000	286.17	289.50	12.333	286.44	290.14	n/a	290.14	13	Curb-
24	16	0.28	12	Cir	25.228	288.01	289.30	5.113	288.13	289.52	n/a	289.52	11	Curb-

Project File: UNIT 22C SD BACKBONE 2015-0619.stm

Number of lines: 30

Run Date: 8/3/2015

NOTES: Known Qs only ; \*Surcharged (HGL above crown). ; j - Line contains hyd. jump.

# Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
25	17	1.30	12	Cir	7.511	288.01	289.30	17.173	288.20	289.78	0.19	289.78	11	Curb-
26	Pipe - 75	1.50	18	Cir	6.509	286.17	287.80	25.044	286.34	288.26	n/a	288.26	13	Curb-
27	13	12.42	24	Cir	96.281	278.98	279.94	1.000	280.23	281.21	0.27	281.21	12	Curb-
28	18	12.42	18	Cir	7.357	280.27	280.79	7.033	281.21	282.12	n/a	282.12	27	None
29	19	12.42	18	Cir	31.040	280.79	282.13	4.310	282.12	283.46	n/a	283.46	28	None
30	20	12.42	18	Cir	71.552	282.13	284.92	3.899	283.46	286.25	n/a	286.25	29	DropGrate

Project File: UNIT 22C SD BACKBONE 2015-0619.stm

Number of lines: 30

Run Date: 8/3/2015

NOTES: Known Qs only ; \*Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Line No.	Line ID	Flow Rate (cfs)	Vel Ave (ft/s)	Vel Dn (ft/s)	Vel Hd Dn (ft)	Vel Hd Up (ft)	HGL Dn (ft)	HGL Up (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Line Length (ft)	Line Size (in)
1	Pipe - 57	27.60	13.52	20.35	0.70	0.70	258.74	263.37	36	8.21	0.012	44.724	36
2	Pipe - 40	27.60	6.69	6.69	0.70	0.70	263.37	271.83	36	8.47	0.012	99.922	36
3	Pipe - 64	27.60	6.69	6.69	0.70	0.70	271.83	272.69	36	8.21	0.012	10.561	36
4	Pipe - 39	27.60	7.76	8.82	0.70	0.70	272.69	274.57	36	1.50	0.012	102.669	36
5	Pipe - 70	27.60	6.69	6.69	0.70	0.70	274.57	274.95	36	1.50	0.012	25.448	36
6	Pipe - 67	27.60	6.69	6.69	0.70	0.70	274.95	275.73 j	36	1.50	0.012	52.002	36
7	Pipe - 66	27.60	6.69	6.69	0.70	0.70	275.73	276.12	36	1.50	0.012	26.014	36
8	Pipe - 65	27.60	6.69	6.69	0.70	0.70	276.12	276.85	36	1.50	0.012	48.773	36
9	Pipe - 46	21.00	9.58	11.55	0.90	0.90	277.27	278.31	24	2.00	0.012	26.211	24
10	Pipe - 37	21.00	7.61	7.60	0.90	0.90	278.31	278.71 j	24	2.01	0.012	19.752	24
11	15	21.00	7.62	7.62	0.90	0.90	278.71	278.80	24	1.50	0.012	5.931	24
12	14	19.42	7.96	8.65	0.82	0.82	278.83	280.23	24	1.00	0.012	116.012	24
13	10	7.00	6.66	7.88	0.46	0.46	280.23	281.86	18	3.28	0.012	41.482	18
14	4	2.69	2.99	2.09	0.23	0.23	281.86	296.64 j	18	4.00	0.012	379.567	18
15	3	2.69	7.43	10.98	0.23	0.23	296.64	303.79	18	11.10	0.012	61.369	18
16	2	2.69	3.89	3.89	0.23	0.23	303.79	311.13	18	11.35	0.012	64.676	18
17	1 (1) (1)	2.69	3.89	3.89	0.23	0.23	311.13	313.07	18	11.10	0.012	17.510	18
18	1 (1)	2.69	5.32	6.75	0.23	0.23	313.07	313.66	18	2.00	0.012	13.000	18
19	1	2.69	5.32	6.75	0.23	0.23	313.66	314.65	18	2.00	0.012	33.000	18
20	Pipe - 47	6.60	10.41	15.51	0.44	0.44	277.09	293.75	18	10.01	0.012	161.000	18
21	Pipe - 48	1.00	2.12	1.33	0.13	0.13	293.75	294.75 j	18	13.24	0.012	9.740	18
22	Pipe - 49	0.90	1.67	2.84	0.13	0.00	295.01	295.21	18	-4.62	0.012	34.000	18
23	9	2.81	8.48	13.02	0.24	0.24	286.44	290.14	18	12.33	0.012	27.000	18

Project File: UNIT 22C SD BACKBONE 2015-0619.stm	Number of lines: 30	Date: 8/3/2015
--	---------------------	----------------

NOTES: \*\* Critical depth

Line No.	Line ID	Flow Rate (cfs)	Vel Ave (ft/s)	Vel Dn (ft/s)	Vel Hd Dn (ft)	Vel Hd Up (ft)	HGL Dn (ft)	HGL Up (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Line Length (ft)	Line Size (in)
24	16	0.28	3.64	5.06	0.08	0.08	288.13	289.52	12	5.11	0.012	25.228	12
25	17	1.30	7.86	12.24	0.19	0.19	288.20	289.78	12	17.17	0.012	7.511	12
26	Pipe - 75	1.50	8.56	13.84	0.17	0.17	286.34	288.26	18	25.04	0.012	6.509	18
27	13	12.42	5.96	5.99	0.55	0.55	280.23	281.21	24	1.00	0.012	96.281	24
28	18	12.42	9.09	10.67	0.87	0.87	281.21	282.12	18	7.03	0.012	7.357	18
29	19	12.42	7.50	7.51	0.87	0.87	282.12	283.46	18	4.31	0.012	31.040	18
30	20	12.42	7.50	7.51	0.87	0.87	283.46	286.25	18	3.90	0.012	71.552	18

Project File: UNIT 22C SD BACKBONE 2015-0619.stm	Number of lines: 30	Date: 8/3/2015
--	---------------------	----------------

NOTES: \*\* Critical depth

# Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	36	27.60	258.00	258.74	0.74	1.36	20.35	0.70	259.44	0.000	44.724	261.67	263.37	1.70**	4.12	6.69	0.70	264.06	0.000	0.000	n/a	0.47	n/a
2	36	27.60	261.67	263.37	1.70*	4.12	6.69	0.70	264.06	0.000	99.922	270.13	271.83	1.70**	4.12	6.69	0.70	272.52	0.000	0.000	n/a	0.47	n/a
3	36	27.60	270.13	271.83	1.70*	4.12	6.69	0.70	272.52	0.000	10.561	271.00	272.69	1.70**	4.12	6.69	0.70	273.39	0.000	0.000	n/a	0.50	n/a
4	36	27.60	271.33	272.69	1.36	3.13	8.82	0.70	273.39	0.000	102.669	272.87	274.57	1.70**	4.12	6.69	0.70	275.26	0.000	0.000	n/a	0.15	n/a
5	36	27.60	272.87	274.57	1.70*	4.12	6.69	0.70	275.26	0.000	25.448	273.25	274.95	1.70**	4.12	6.69	0.70	275.65	0.000	0.000	n/a	0.15	n/a
6	36	27.60	273.25	274.95	1.70	4.12	6.69	0.70	275.65	0.000	52.002	274.03	275.73 j	1.70**	4.12	6.69	0.70	276.42	0.000	0.000	n/a	0.15	n/a
7	36	27.60	274.03	275.73	1.70*	4.12	6.69	0.70	276.42	0.000	26.014	274.42	276.12	1.70**	4.12	6.69	0.70	276.81	0.000	0.000	n/a	0.15	n/a
8	36	27.60	274.42	276.12	1.70	4.12	6.69	0.70	276.81	0.000	48.773	275.15	276.85	1.70**	4.12	6.69	0.70	277.55	0.000	0.000	n/a	1.38	n/a
9	24	21.00	276.15	277.27	1.12*	1.82	11.55	0.90	278.18	0.000	26.211	276.67	278.31	1.64**	2.76	7.61	0.90	279.22	0.000	0.000	n/a	0.24	n/a
10	24	21.00	276.67	278.31	1.64	2.76	7.60	0.90	279.22	0.000	19.752	277.07	278.71 j	1.64**	2.76	7.61	0.90	279.61	0.000	0.000	n/a	0.50	n/a
11	24	21.00	277.07	278.71	1.64	2.75	7.62	0.90	279.61	0.000	5.931	277.16	278.80	1.64**	2.76	7.61	0.90	279.70	0.000	0.000	n/a	1.38	n/a
12	24	19.42	277.49	278.83	1.34*	2.25	8.65	0.82	279.66	0.000	116.012	278.65	280.23	1.58**	2.67	7.28	0.82	281.06	0.000	0.000	n/a	1.50	1.24
13	18	7.00	279.48	280.23	0.75	0.89	7.88	0.46	280.70	0.000	41.482	280.84	281.86	1.02**	1.28	5.45	0.46	282.33	0.000	0.000	n/a	1.47	n/a
14	18	2.69	280.84	281.86	1.02	0.69	2.09	0.23	282.10	0.000	379.567	296.02	296.64 j	0.62**	0.69	3.89	0.23	296.88	0.000	0.000	n/a	0.50	n/a
15	18	2.69	296.35	296.64	0.29	0.24	10.98	0.23	296.88	0.000	61.369	303.16	303.79	0.62**	0.69	3.89	0.23	304.02	0.000	0.000	n/a	0.41	n/a
16	18	2.69	303.16	303.79	0.62*	0.69	3.89	0.23	304.02	0.000	64.676	310.51	311.13	0.62**	0.69	3.89	0.23	311.36	0.000	0.000	n/a	0.41	n/a
17	18	2.69	310.51	311.13	0.62*	0.69	3.89	0.23	311.36	0.000	17.510	312.45	313.07	0.62**	0.69	3.89	0.23	313.31	0.000	0.000	n/a	0.50	n/a
18	18	2.69	312.78	313.20	0.42*	0.40	6.75	0.23	313.43	0.000	13.000	313.04	313.66	0.62**	0.69	3.89	0.23	313.90	0.000	0.000	n/a	0.50	n/a
19	18	2.69	313.37	313.79	0.42*	0.40	6.75	0.23	314.02	0.000	33.000	314.03	314.65	0.62**	0.69	3.89	0.23	314.89	0.000	0.000	n/a	1.00	n/a
20	18	6.60	276.65	277.09	0.44*	0.43	15.51	0.44	277.52	0.000	161.000	292.76	293.75	0.99**	1.24	5.31	0.44	294.19	0.000	0.000	n/a	1.43	n/a
21	18	1.00	293.09	293.75	0.66	0.34	1.33	0.13	293.89	0.000	9.740	294.38	294.75 j	0.37**	0.34	2.92	0.13	294.89	0.000	0.000	n/a	1.00	0.13
22	18	0.90	294.66	295.01	0.35*	0.32	2.84	0.13	295.14	0.424	34.000	293.09	295.21	1.50	1.77	0.51	0.00	295.21	0.006	0.215	0.073	1.00	0.00

Project File: UNIT 22C SD BACKBONE 2015-0619.stm

Number of lines: 30

Run Date: 8/3/2015

Notes: \* depth assumed.; \*\* Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

# Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
23	18	2.81	286.17	286.44	0.27*	0.22	13.02	0.24	286.68	0.000	27.000	289.50	290.14	0.64**	0.71	3.94	0.24	290.38	0.000	0.000	n/a	1.00	n/a
24	12	0.28	288.01	288.13	0.12*	0.06	5.06	0.08	288.21	0.000	25.228	289.30	289.52	0.22**	0.13	2.22	0.08	289.59	0.000	0.000	n/a	1.00	n/a
25	12	1.30	288.01	288.20	0.19*	0.11	12.24	0.19	288.39	0.000	7.511	289.30	289.78	0.48**	0.37	3.48	0.19	289.97	0.000	0.000	n/a	1.00	0.19
26	18	1.50	286.17	286.34	0.17*	0.11	13.84	0.17	286.50	0.000	6.509	287.80	288.26	0.46**	0.46	3.27	0.17	288.43	0.000	0.000	n/a	1.00	n/a
27	24	12.42	278.98	280.23	1.25	2.07	5.99	0.55	280.78	0.000	96.281	279.94	281.21	1.27**	2.10	5.92	0.55	281.75	0.000	0.000	n/a	0.50	0.27
28	18	12.42	280.27	281.21	0.94	1.16	10.67	0.87	282.08	0.000	7.357	280.79	282.12	1.33**	1.66	7.50	0.87	282.99	0.000	0.000	n/a	0.73	n/a
29	18	12.42	280.79	282.12	1.33	1.65	7.51	0.87	282.99	0.000	31.040	282.13	283.46	1.33**	1.66	7.50	0.87	284.33	0.000	0.000	n/a	0.73	n/a
30	18	12.42	282.13	283.46	1.33	1.65	7.51	0.87	284.33	0.000	71.552	284.92	286.25	1.33**	1.66	7.50	0.87	287.12	0.000	0.000	n/a	1.00	n/a

Project File: UNIT 22C SD BACKBONE 2015-0619.stm

Number of lines: 30

Run Date: 8/3/2015

Notes: \* depth assumed.; \*\* Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box