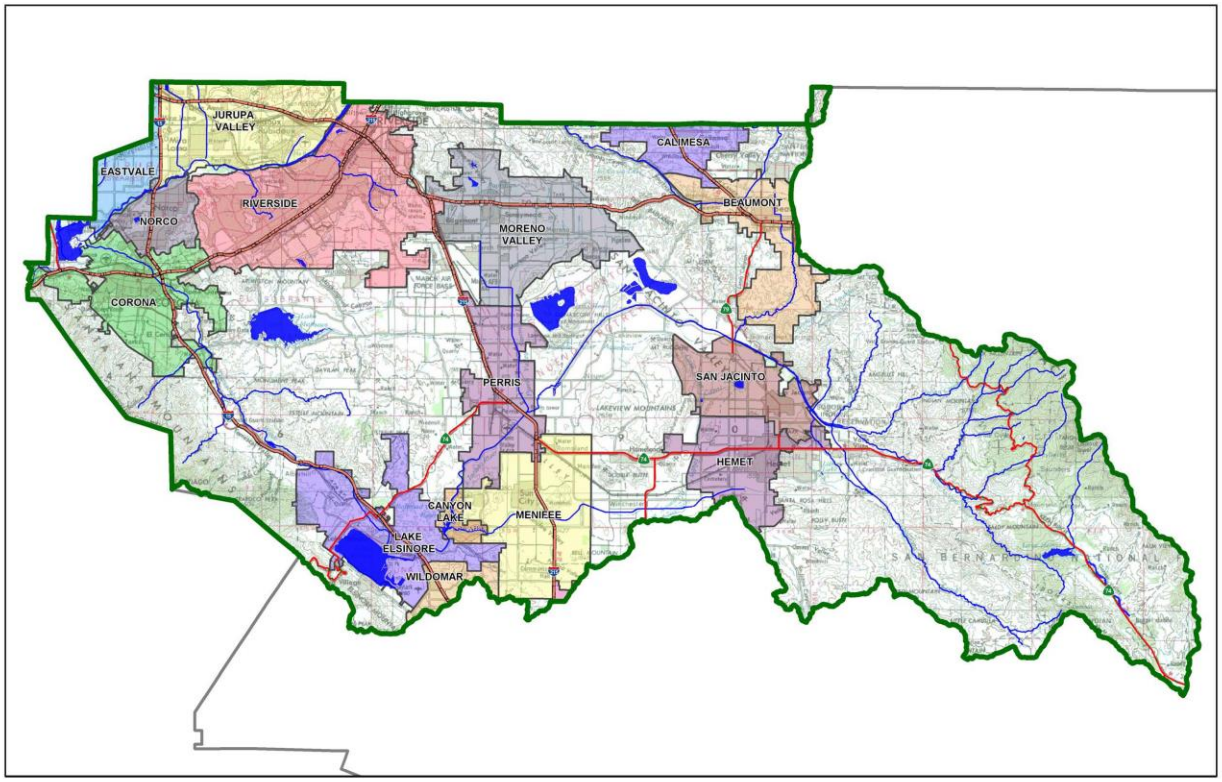
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Duke Harvill and Rider

Design Review/Case No: PPT190039



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☒ **Preliminary**
☐ **Final**

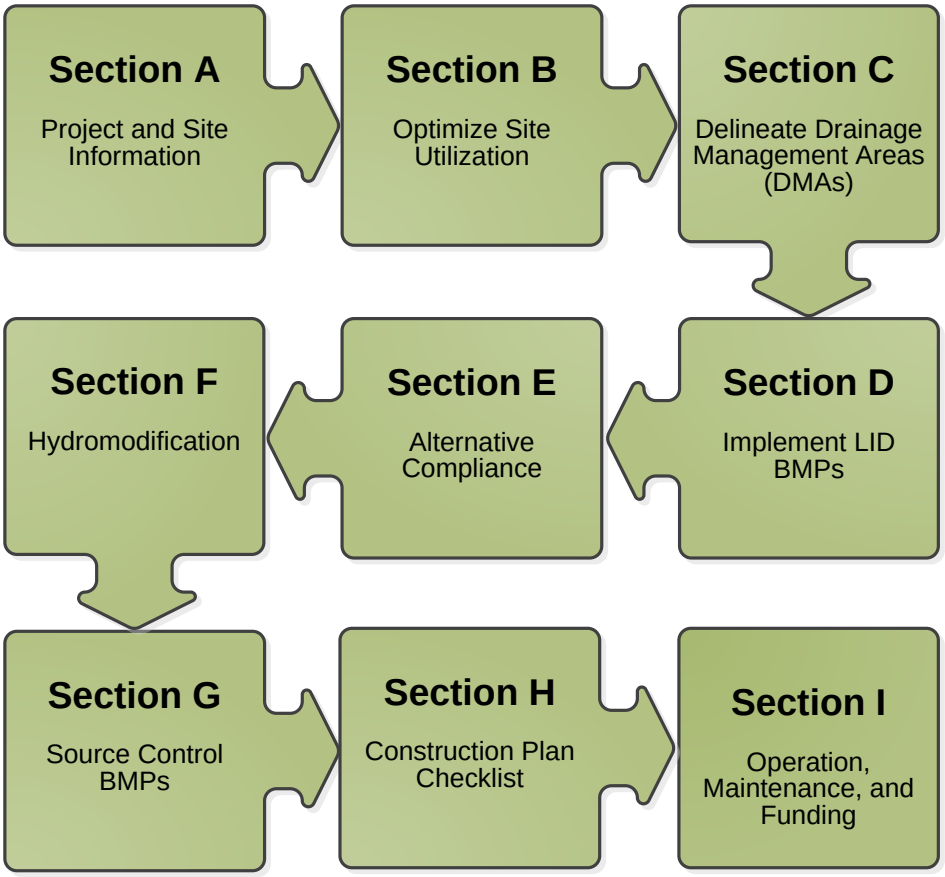
Original Date Prepared: October 2019

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Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**

A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your "how-to" manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for **Duke Realty Corporation** by **Albert A. Webb Associates** for the **Duke Harvill and Rider project**.

This WQMP is intended to comply with the requirements of Riverside County for County Ordinance No. 754 which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under the County of Riverside Water Quality Ordinance (Municipal Code Chapter 13.12 – Stormwater Drainage System Protection Regulations).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	Date
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	Date
DJ Arellano, P.E. Preparer's Printed Name	Senior Engineer Preparer's Title/Position

Preparer's Licensure:



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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	Commercial/Industrial
Planning Area:	Mead Valley
Community Name:	"A" Street #100
Development Name:	Duke Harvill & Rider
PROJECT LOCATION	
Latitude & Longitude (DMS): 33°49'53.90"N, 117°14'53.56"W	
Project Watershed and Sub-Watershed: Santa Ana Watershed, San Jacinto Sub-Watershed	
APN(s): 317-170-024, 317-170-045	
Map Book and Page No.: Thomas Brothers – Page 777 – Grid D3, E3	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	Commercial/Industrial
Proposed or Potential SIC Code(s): **1541** (General Contractors-Industrial Buildings & 1541, 4225 Warehouses) **4225** (General Warehousing & Storage)	
Area of Impervious Project Footprint (SF)	643,380 SF
Total Area of proposed Impervious Surfaces within the Project Limits (SF)/or Replacement	541,630 SF
Does the project consist of offsite road improvements?	☒ Y ☐ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the project limits (SF)	170,500 SF
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	N/A
Are there any natural hydrologic features on the project site?	☐ Y ☒ N
Is a Geotechnical Report attached?	☒ Y ☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	N/A
What is the Water Quality Design Storm Depth for the project?	0.60 inches

Project Description

The project is proposing a warehouse/industrial building (approximately 328,000 square feet) on approximately 15 acres. The majority of the land is vacant with an existing agricultural mill facility occupying approximately 4 acres. Existing elevations vary across the site. The existing ground slopes in an easterly direction with two ridgelines running parallel to the site's slope direction. The drop across the site is about 7-8 feet on average from 1509 to 1502 (NAVD88). The existing site drains east towards the existing Lateral H-12 culvert under Interstate 215; however, per the MDP, the site is tabled to drain roughly 40% of the site to H-11.1.

Onsite flows generated by the proposed project will be conveyed through the site utilizing curb and gutter, inlets, and minimal subsurface storm drain. The site is separated into two watersheds; the project proposes to discharge onsite runoff to H-11.1 and H-12 in roughly the same proportions as the MDP.

The western portion of the site (roughly 4.5 acres) is tributary to Lat H-11.1. It will drain to and be treated by a proposed bioretention basin (BMP-B) in the southwest corner; the basin will discharge to Lat H-11.1A before out falling to Lat H-11.1. The existing area is currently developed with existing grain silos, hardscape, and buildings; they will be demolished before construction of the proposed warehouse facility. The existing imperviousness of the Lat-H11.1 tributary area is currently 65% and surrounded by open space.

BMP-B was designed using the standard Riverside County Santa Ana Region basin calculations, however, it was designed for 1.0' of ponding instead of 0.5'.

The easterly portion (roughly 9.5 acres) is tributary to Lat H-12. It will drain to a series of underground polymer-coated CMP storage chambers in the truck court and parking areas. One set of chambers will completely contain the water quality volume and pump it into a proposed bioretention area (BMP-A) that is sized using the long-term media filtration rate and required drawdown time. Once the water quality chambers fill, runoff from the eastern portion will be detained in separate increased runoff chambers to be routed to existing flowrates before discharging into proposed Lat H-12.

BMP-A was designed using the INF-4 (bioinfiltration) calculations from the Orange County, Santa Ana Region WQMP guidance document. However, since not all the water quality runoff is stored in the bio-retention basin, the effective ponding depth was calculated assuming a drawdown of 48 hours rather than calculating the drawdown based on a ponding depth. The effective ponding depth is equal to the drawdown time multiplied by the media filtration rate; we used the recommended media filtration rate of 2.5 in/hr found in the INF-4 BMP fact sheets. The area was found by dividing the design capture volume, found from Riverside County design sheets, by the effective ponding depth. The pump is sized by taking the design capture volume and dividing it by the drawdown time which results in 50 gpm after unit conversions. See Appendix 6 for calculations.

The project is in an HCOC exemption area. However, the project site does not discharge to a county drainage facility that is improved downstream. All high flows generated by the project will be routed down to existing condition flowrates. The area tributary to H-11.1 did not produce an increase in peak flow nor volume for the 2-yr to 100-yr, 24-hr storm events; this area will release runoff unrestricted (a private flapgate will be provided onsite to prevent a backwater condition into the basin). However, the area tributary to H-12 produced higher runoff for the same storm events. The runoff will be routed down to the existing condition by detaining runoff in the high flow mitigation chambers and restricted through an orifice vault structure.

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
Perris Valley Storm Drain Channel	NONE	NONE	NOT A WATER BODY CLASSIFIED AS RARE
San Jacinto River (Reach3) (HU#802.11)	NONE	AGR, GWR, WILD, MUN, REC1, REC2, WARM	NOT A WATER BODY CLASSIFIED AS RARE
San Jacinto River (Reach2) (HU#802.11)	NONE	AGR, GWR, WILD, MUN, REC1, REC2,WARM	NOT A WATER BODY CLASSIFIED AS RARE
Canyon Lake (HU#802.11, 802.12)	NUTRIENTS, PATHOGENS	AGR, GWR, WILD, MUN, REC1, REC2, WARM	NOT A WATER BODY CLASSIFIED AS RARE
San Jacinto River (Reach1) (HU#802.11, 802.32, 802.31)	NONE	AGR, GWR, WILD, MUN, REC1, REC2, WARM	NOT A WATER BODY CLASSIFIED AS RARE
Lake Elsinore (HU#802.31)	DDT, NUTRIENTS, LOW DO, PCBs, TOXICITY	MUN, REC1, REC2, WARM, WILD	NOT A WATER BODY CLASSIFIED AS RARE

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage (**DEPENDENT ON TENANT)**	☒ Y	☐ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* Grading Permit	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, **constraints** might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. **Opportunities** might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?
The proposed site grading does not preserve the existing drainage pattern. Instead of conveying all runoff to the east, it will be distributed proportionally per the Perris Valley MDP. Roughly 40% of the site will be redirected to the south.

Did you identify and protect existing vegetation? If so, how? If not, why?
The project site is currently vacant with an abandoned mill facility and no vegetation. Dense vegetation or areas of well-established trees do not exist.

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?
The attached geotechnical report recommends a design infiltration rate of 0.7 in/hr. This is well below the BMP design handbook's required 1.6 in/hr. Bio-retention will be used because of these findings.

Did you identify and minimize impervious area? If so, how? If not, why?
The project intends to provide the standard amount of pervious and impervious cover.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?
Runoff will be dispersed to the onsite bio-retention basin and perforated underground chambers.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1]	Area (Sq. Ft.)	DMA Type
DMA-A			
L-A	LANDSCAPE	10,150	D
R-A	ROOF	169,740	D
H-A	HARDSCAPE	214,060	D
SR-A	LANDSCAPE	19,180	B
BMP-A	LANDSCAPE	1,740	D
SELF-TREATING	LANDSCAPE	31,180	A
DMA-B			
L-B	LANDSCAPE	35,380	D
R-B	ROOF	157,830	D
BMP-B	LANDSCAPE	4,120	D

[1]*Reference Table 2-1 in the WQMP Guidance Document to populate this column*

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
SELF-TREATING	31,180	LANDSCAPE	DRIP

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]
SR-A	LANDSCAPE	19,180	0.60			

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet)	Post-project surface type	Runoff factor	Product		Area (square feet)	Ratio
	[A]		[B]	[C] = [A] x [B]	DMA name /ID	[D]	[C]/[D]

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA-A	BMP-A
DMA-B	BMP-B

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site. If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?	X	
If Yes, list affected DMAs: DMA-A		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here:		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

☒ Reclaimed water will be used for the non-potable water demands for the project.

☐Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If neither of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: Insert Area (Acres)

Type of Landscaping (Conservation Design or Active Turf): List Landscaping Type

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: Insert Area (Acres)

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: EIATIA Factor

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: Insert Area (Acres)

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
Insert Area (Acres)	Insert Area (Acres)

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: Number of daily Toilet Users

Project Type: Enter 'Residential', 'Commercial', 'Industrial' or 'Schools'

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: Insert Area (Acres)

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-1 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: TUTIA Factor

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: Required number of toilet users

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	**Projected number of toilet users (Step 1)**
Insert Area (Acres)	Insert Area (Acres)

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

Insert narrative description here.

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: Projected Average Daily Use (gpd)

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: Insert Area (Acres)

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-3 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-3: Enter Value

Step 4: Multiply the unit value obtained from Step 4 by the total of impervious areas from Step 3 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: Minimum use required (gpd)

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**
Minimum use required (gpd)	Projected Average Daily Use (gpd)

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment, unless a site-specific analysis has been completed that demonstrates technical infeasibility as noted in D.3 below.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☒ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
DMA-A	☐	☐	☒	☐	☐
DMA-B	☐	☐	☒	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

N/A

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First**,** calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3.1 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Enter BMP Name / Identifier Here*		
	[A]		[B]	[C]	[A] x [C]			
L-A	*10,150*	*LANDSCAPE*	*0.1*	*0.11*	*1,121.1*	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
R-A	*169,740*	*ROOF*	*1*	*0.89*	*151,408.1*			
H-A	*214,060*	*HARDSCAPE*	*1*	*0.89*	*190,941.5*			
SR-A	*19,180*	*LANDSCAPE*						
BMP-A	*1,740*	*LANDSCAPE*	*0.1*	*0.1*	*192.2*			
SELF-TREATING	*31,180*	*LANDSCAPE*						
	446,050				343,662.9	0.60	17,183.1	***17,200***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Table D.4.2 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Enter BMP Name / Identifier Here*		
	[A]		[B]	[C]	[A] x [C]			
L-B	*35,380*	*LANDSCAPE*	*0.1*	*0.11*	*3,908*	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
R-B	*157,830*	*ROOF*	*1*	*0.89*	*140,784.4*			
BMP-B	*4,120*	*LANDSCAPE*	*0.1*	*0.11*	*455.1*			
	197,330				145,147.5	0.60	7,257.4	***7,260***

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒ LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

E.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☒ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☒ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☐	☒	☐	☒	☐	☐	☒

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
N/A	
Total Credit Percentage[1]	

[1]*Cannot Exceed 50%*
[2]*Obtain corresponding data from Table 3-8 in the WQMP Guidance Document*

E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Area x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
N/A						*Design Storm Depth (in)*	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12
[H] is from the Total Credit Percentage as Calculated from Table E.2 above
[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
N/A		

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.

[2] Cross Reference Table E.1 above to populate this column.

[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	INSERT VALUE	INSERT VALUE	INSERT VALUE
Volume (Cubic Feet)	INSERT VALUE	INSERT VALUE	INSERT VALUE

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

INSERT TEXT HERE

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

Because of the lack of improved facilities downstream, the 2, 5, 10, and 100 year developed condition flowrates will be mitigated to existing condition flowrates. This will be done by restricting flows and detaining excess volume with underground storage. The area tributary to H-11.1 did not result in increased runoff from the existing condition. However, the area tributary to H-12 produced an increase in runoff; it will be routed down to existing.

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
A. Onsite storm drain inlets	*Mark all inlets with the works "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951-955-1200 to verify.*	*Maintain and periodically repaint or replace inlet markings.* *Provide stormwater pollution prevention information to new site owners, lessees, or operators.* *See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in Appendix 10 (CASQA Stormwater Quality Handbook at www.cabmphandbooks.com*

	Onsite drainage structures, including all storm drain clean outs, area drains, inlets, catch basins, inlet & outlet structures, forebays, & water treatment control basins shall be inspected and maintained on a regular basis to insure their operational adequacy.	*Include the following in lessee agreements: "Tenants shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains"* *Maintenance should include removal of trash, debris, & sediment and the repair of any deficiencies or damage that may impact water quality.*
B. Interior floor drains and elevator shaft sump	*The interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer*	*Inspect and maintain drains to prevent blockages and overflow.*
C. Landscape/Outdoor Pesticide Use	*The final landscape shall be designed to accomplish all of the following:* *Preserve existing native trees, shrubs and ground cover to the maximum extent possible.* *Design landscape to minimize irrigation and runoff, to promote surface infiltration where appropriate and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.* *Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.* *Consider using pest-resistant plants, especially adjacent to hardscape.* *To insure successful establishments, select plants appropriate to site, soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency and plant interactions.* *Pesticide usage should be at a necessary minimum and be consistent with the instructions contained on product labels and with the regulations administered by the State Department of Pesticide Regulation. Pesticides should be used at an absolute minimum or not at all in the retention/infiltration basin. If*	*Maintain landscaping using minimum or no pesticides.* *See applicable operational BMPs in "What you should know for…. Landscape and Gardening" at http://rcflood.org/stormwater and Appendix 10.* *Provide IPM information to new owners, lessees and operators.* *Landscape maintenance should include mowing, weeding, trimming, removal of trash & debris, repair of erosion, re-vegetation, and removal of cut & dead vegetation.* *Irrigation maintenance should include the repair of leaky or broken sprinkler heads, the maintaining of timing apparatus accuracy, and the maintaining of shut off valves in good working order.*

	used, it should not be applied in close proximity to the rainy season.	
D. Refuse Trash Storage areas	*Trash container storage areas shall be paved with an impervious surface, designed not to allow run-on from adjoining areas, designed to divert drainage from adjoining roofs and pavements from the surrounding area, and screened or walled to prevent offsite transport of trash.* *Trash dumpsters (containers) shall be leak proof and have attached covers or lids.* *Trash enclosures shall be roofed per City standards and the details on the PWQMP Exhibit in Appendix 1. Trash compactors shall be roofed and set on a concrete pad per City standards. The pad shall be a minimum of one foot larger all around than the trash compactor and sloped to drain to a sanitary sewer line. Connection of trash area drains to the MS4 is prohibited.* *See CASQA SD-32 BMP Fact Sheets in Appendix 10 for additional information.* *Signs shall be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.*	*Adequate number of receptacles shall be provided. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available onsite.See Fact Sheet SC-34, in Appendix 10, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbook at www.cabmphandbooks.com*
E. Loading Docks	*Loading docks will not be covered and are 4 feet above finished pavement surface.* *Spill kits are to be kept onsite at all times per SC-11*	*Move loaded and unloaded items indoors as soon as possible.* *Inspect for accumulated trash and debris. Implement good housekeeping procedures on a regular basis. Sweep areas clean instead of using wash water. Loading docks will be kept in a clean and orderly condition, through a regular program of sweeping and litter control, and immediate clean up of any spills or broken containers. Property owner will ensure that loading docks will be swept as needed. Cleanup procedures will not include the use of wash-down water. Property owner will be responsible for*

		implementation of loading dock housekeeping procedures *See the Fact Sheet SC-30, in Appendix 10, "Outdoor Loading and Unloading" in the CASQA Stormwater Quality Handbooks a www.cabmphandbooks.com*
F. Miscellaneous Drain or Wash Water or Other Sources *Boiler drain lines* *Condensate drain lines* *Rooftop equipment* *Drainage sumps* *Roofing, gutters and trim* *Other sources*	*Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system* *Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur.* *Condensate drain lines may not discharge to the storm drain system.* *Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.* *Any drainage sumps onsite shall feature a sediment sump to reduce the quantity of sediment in pumped water.* *Avoid roofing, gutters and trim made of copper of other unprotected metals that may leach into runoff.* *Include controls for other sources as specified by local reviewer.*	
G. Plazas, sidewalks, and parking lots	*Spill kits are to be kept onsite at all times per SC-11*	*Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.*

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)
*	*	*

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

*To be completed during final engineering

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: WQMP Covenant and Agreement

Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☐ Y ☒ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

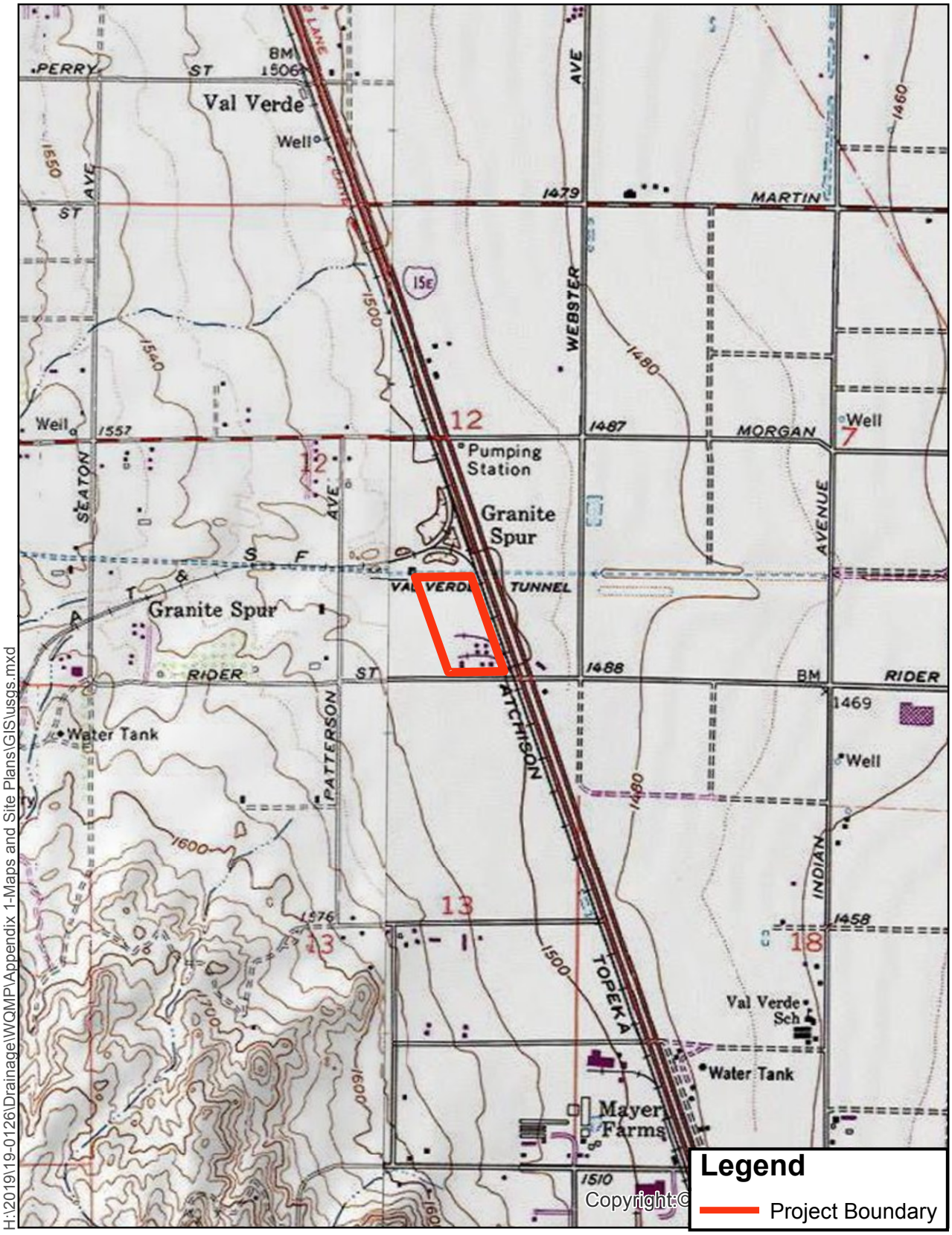
*More information to be provided during final engineering

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map



Figure 1. Vicinity Map



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Sources: ESRI / USGS 7.5min Quad
DRGs: PERRIS / STEELE PEAK

Figure 2. USGS Topography Map

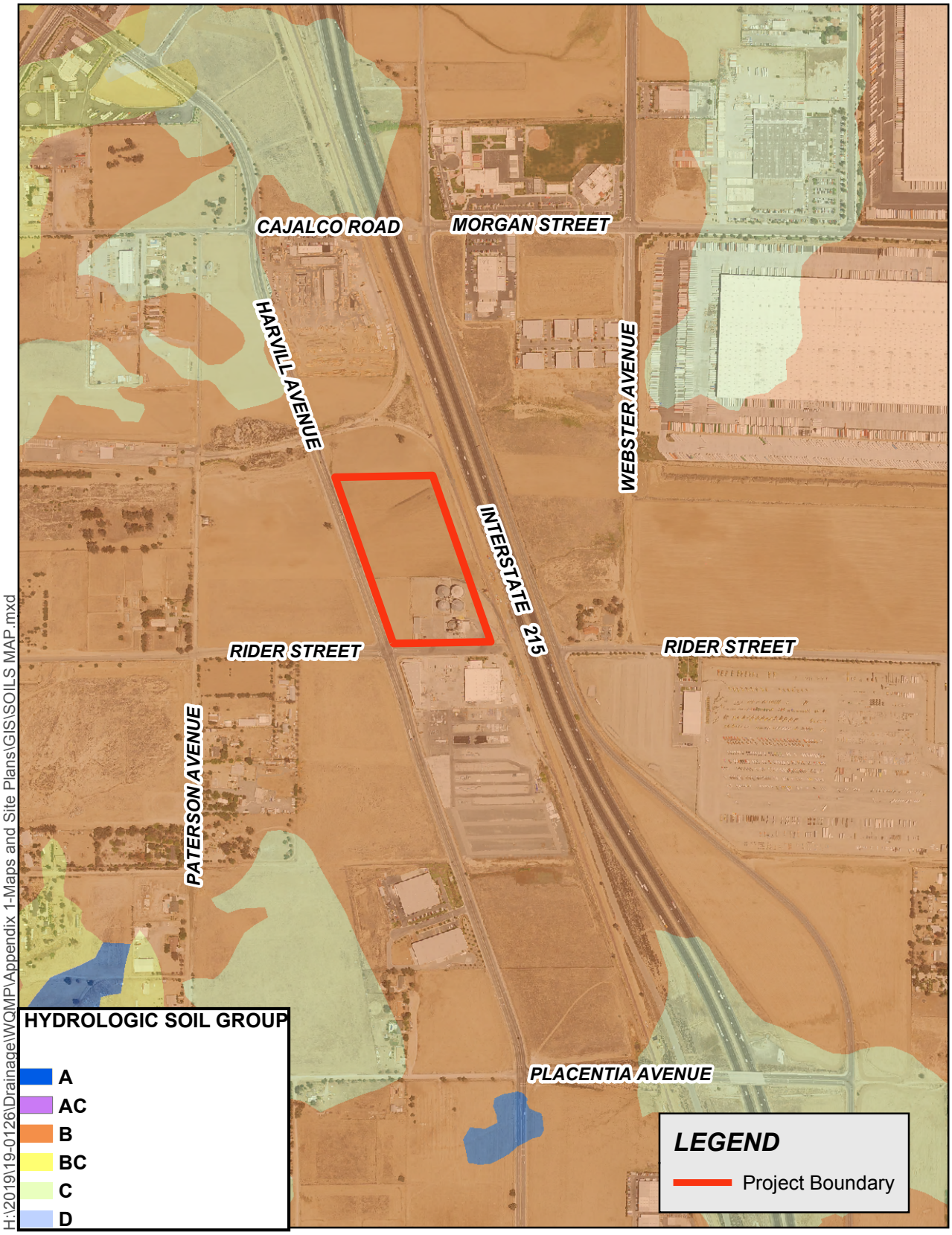
0 1,000 2,000 Feet



Sources: County of Riverside GIS, 2013; Eagle Aerial, April 2012.

Figure 3. Aerial Photograph

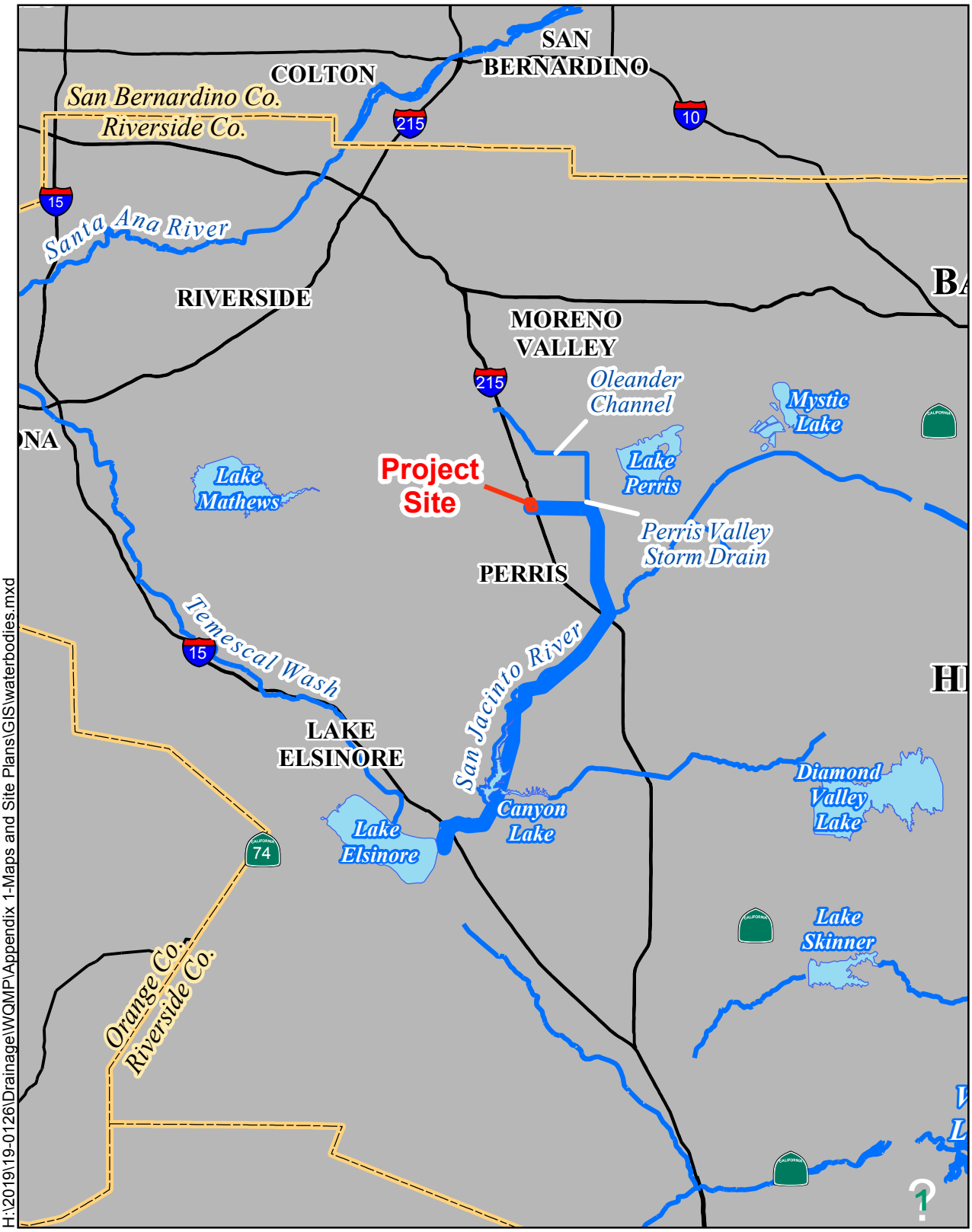
0 400 800 Feet



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Eagle Aerial, April 2010;
Riverside County GIS, 2012
RCFC&WCD Hydology Manual Plate C-1.30

Figure 5. Soils Map

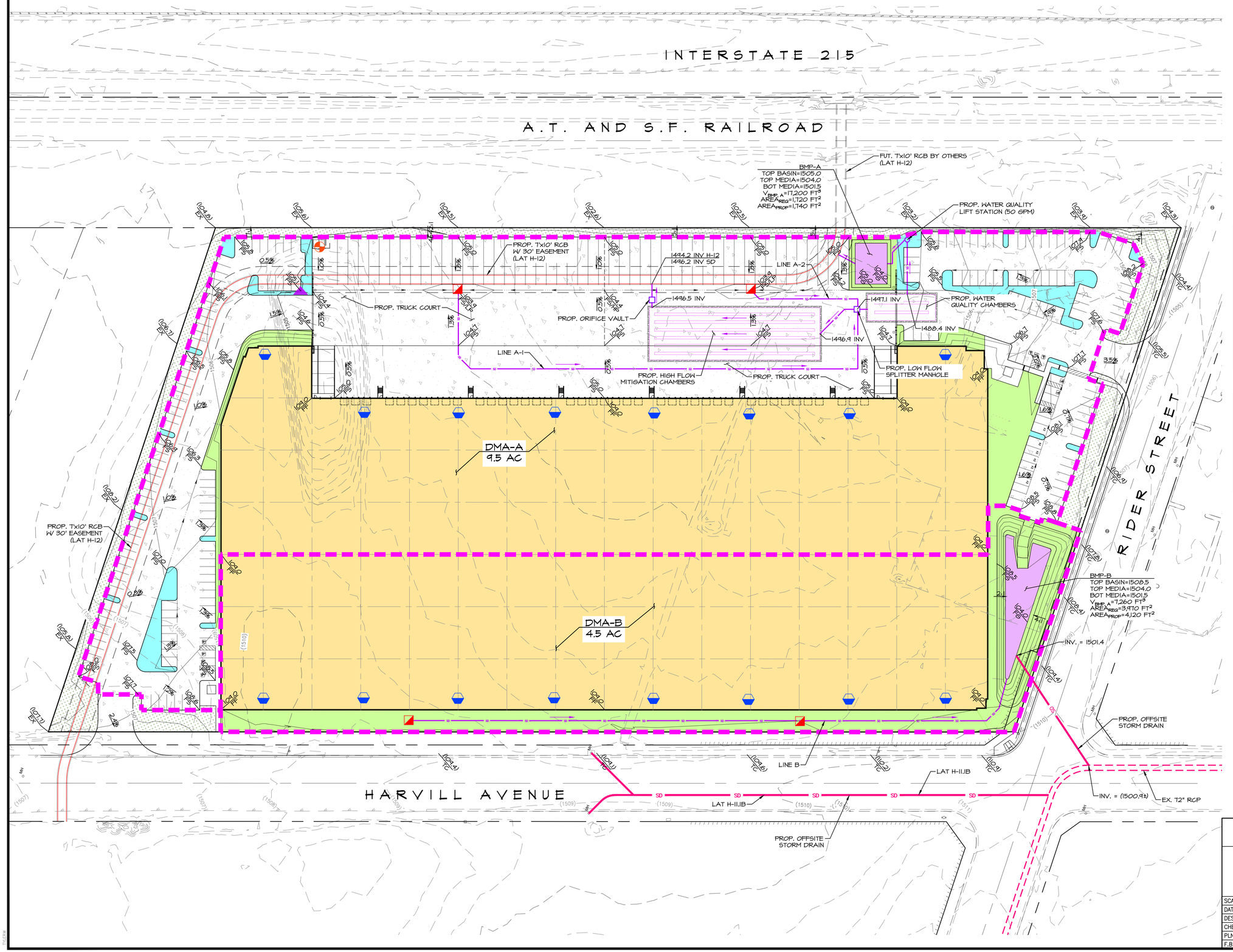


Sources: USGS 30 Meter DEM;
USGS Digital Line Graph

Figure 4. Receiving Waterbodies

0 2 4 6
Miles

Flowpath



LEGEND

- DRAINAGE MANAGEMENT BOUNDARY
- LANDSCAPING
- ROOF
- CONCRETE OR ASPHALT
- SELF RETAINING
- BMP
- FLOWLINE
- SD — STORM DRAIN PIPE
- STORM DRAIN FLOW DIRECTION
- STORM DRAIN INLET
- ROOF DRAIN DOWNSPOUT
- CURB OPENING/CUT
- TRASH ENCLOSURE

DMA-A			
LEGEND	DMA-ID	TYPE	AREA (SF)
	L-A	LANDSCAPE	10,150
	R-A	ROOF	169,740
	H-A	HARDSCAPE	214,060
	SR-A	LANDSCAPE	19,180
	BMP-A	LANDSCAPE	1,740
	SELF-TREATING	LANDSCAPE	31,180

DMA-B			
LEGEND	DMA-ID	TYPE	AREA (SF)
	L-B	LANDSCAPE	35,380
	R-B	ROOF	157,830
	BMP-B	LANDSCAPE	4,120

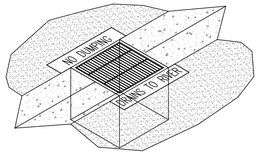
GENERAL NOTES:
1. ADD 1400 TO ALL ELEVATIONS SHOWN ON THIS PLAN.
2. ALL UNDERGROUND CMP DETENTION SYSTEMS WILL HAVE A POLYMER COATING PER MANUFACTURER'S SPECIFICATIONS.

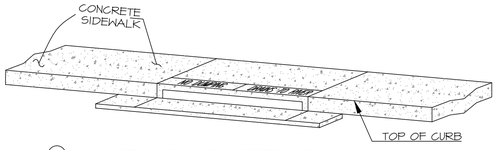
COUNTY OF RIVERSIDE

DUKE HARVILL & RIDER
POST CONSTRUCTION BMP EXHIBIT
PPTI90039

SCALE: 1"=50'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 19-0126
DATE: 11/08/2020			SHEET 1
DESIGNED:			OF 2 SHEETS
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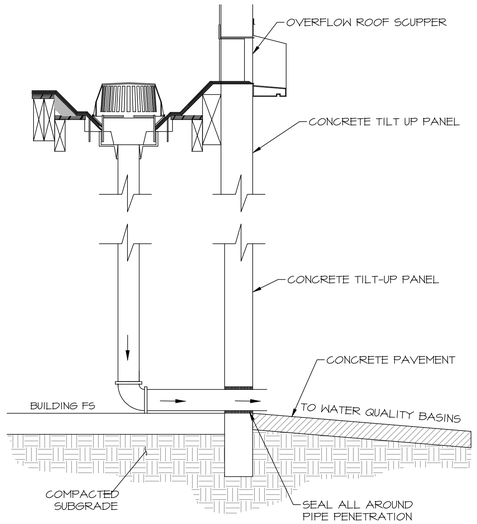




1. STENCILS TO HAVE 2" LETTERS AS FOLLOWS: "NO DUMPING - DRAINS TO RIVER"
2. PLACE BOTH STENCILS CENTERED WITHIN THE CATCHBASIN OPENINGS AND WITHIN THE TOP OF THE CURB.
3. SPRAY BOTH STENCILS WITH WHITE PAINT.
4. REMOVE STENCILS WHEN PAINT IS DRY.

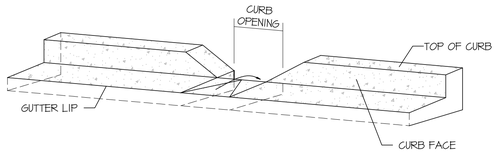
CATCH BASIN STENCILING DETAIL

N.T.S.



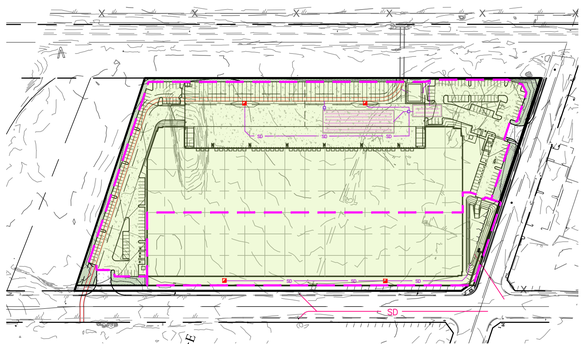
ROOF DRAIN DETAIL

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TYPICAL CURB OPENING DETAIL

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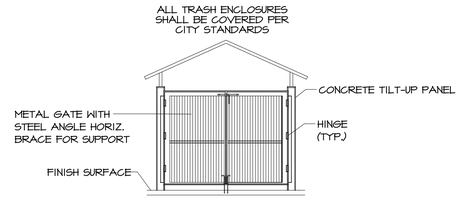


DMA SITE MAP

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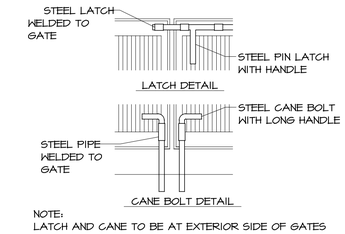
LEGEND

- DRAINAGE MANAGEMENT BOUNDARY
- DMA-A



TRASH ENCLOSURE GATE ELEVATION

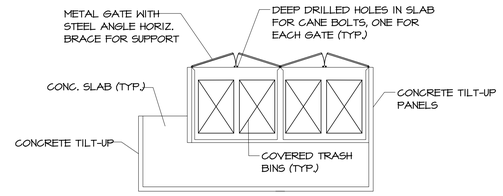
N.T.S.



NOTE:
LATCH AND CANE TO BE AT EXTERIOR SIDE OF GATES

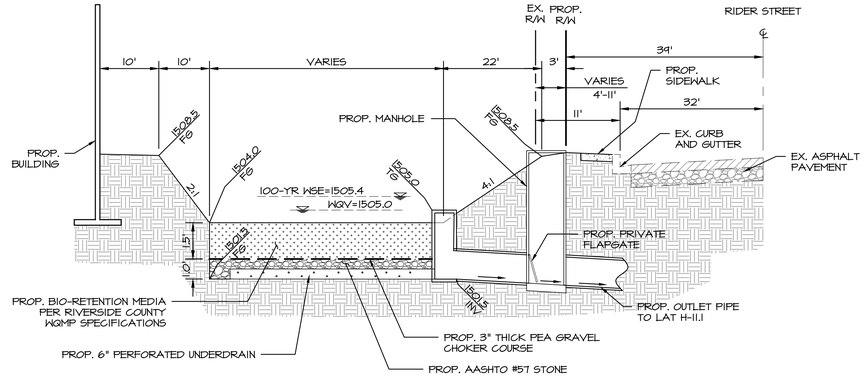
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N.T.S.



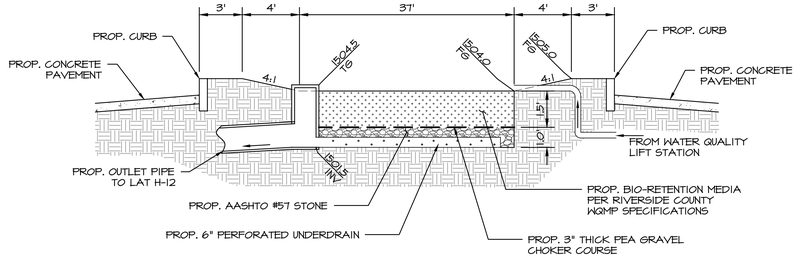
TRASH ENCLOSURE PLAN DETAIL

N.T.S.



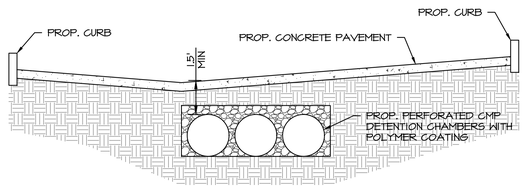
BMP-B TYPICAL SECTION

N.T.S.



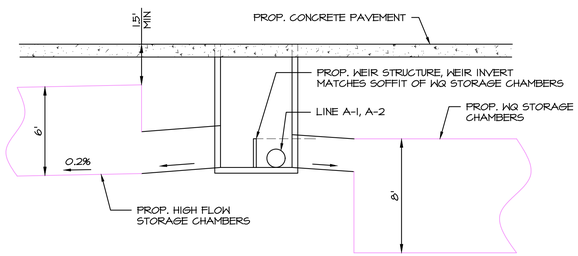
BMP-A TYPICAL SECTION

N.T.S.



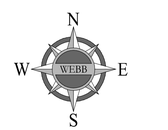
UNDERGROUND CHAMBERS TYPICAL SECTION

N.T.S.



LOW FLOW SPLITTER MANHOLE SECTION

N.T.S.



1" = 40'

20 0 40 80 120

COUNTY OF RIVERSIDE

DUKE HARVILL & RIDER
POST CONSTRUCTION BMP EXHIBIT
PPT190039

SCALE:	ALBERT A. WEBB ASSOCIATES	W.O. 19-0126
DATE: 11/08/2020	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 2
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TM RPW

Appendix 2: Construction Plans

Grading and Drainage Plans

N/A

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

GEOTECHNICAL INVESTIGATION
PROPOSED WAREHOUSE

NEC Harvill Avenue and Rider Street
Riverside County, California
for
Duke Realty



SOUTHERN
CALIFORNIA
GEOTECHNICAL
A California Corporation

October 1, 2018

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Duke Realty
200 Spectrum Center Drive, Suite 1600
Irvine, California 92618

Attention: Mr. Adam Schmid
Development Services Manager

Project No.: **18G185-1**

Subject: **Geotechnical Investigation**
Proposed Warehouse
NEC Harvill Avenue and Rider Street
Riverside County (Perris Area), California

Gentlemen:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, RCE 77915
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL W. NIELSEN
No. 77915
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STATE OF CALIFORNIA

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Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
ROBERT TRAZO
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GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (1) Addressee

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A Plate 1: Site Location Map
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C Laboratory Test Results
D Grading Guide Specifications
E Seismic Design Parameters

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Site Preparation

- Initial site preparation should include stripping of the existing native grass and weed growth, organic topsoil materials.
- Demolition of the existing silos, hoppers, elevators, machinery, a metal building, and other minor structures will be necessary in order to facilitate the construction of the proposed development. Demolition should include all foundations, floor slabs, utilities and any other subsurface improvements that will not remain in place with the new development.
- Native alluvium was encountered at the ground surface at most of the boring locations, except for boring No. B-4, which encountered artificial fill soils beneath the existing asphaltic concrete pavements. The near surface alluvium possesses variable densities and some of the near surface soils, possess a moderate to severe potential for hydrocollapse. Therefore, remedial grading is recommended to remove a portion of the near surface native alluvium and replace these soils as compacted structural fill soils. Additionally, the fill soils encountered at Boring No. B-4 possess loose relative densities and are considered to consist of undocumented fill. Therefore, the fill soils are not considered suitable for the support of the new structure. The recommended remedial grading should also remove any existing fill materials from the proposed building pad area.
- The proposed building area should be overexcavated to a depth of at least 5 feet below existing grade and to a depth of 5 feet below the proposed building pad subgrade elevation. Within the foundation influence zones, the overexcavation should extend to a depth of at least 3 feet below proposed foundation bearing grade. The overexcavation should extend horizontally at least 5 feet beyond the building perimeter. Additional overexcavation will be necessary in localized areas, such as in the vicinity Boring No. B-2, to remove potentially collapsible, low density, soils which extend to depths of 7 to 8± feet below existing site grades.
- We understand that two underground storage tanks were removed from the southern portion of the subject site. The materials used to backfill these excavations likely consist of undocumented fill soils or pea gravel. Therefore, additional overexcavation will be necessary in the area of these tanks if they are located within the proposed building pad area.
- After overexcavation has been completed, the resulting subgrade soils should be evaluated by the geotechnical engineer to identify any additional soils that should be removed. The resulting subgrade should then be scarified to a depth of 12 inches and moisture conditioned to 2 to 4 percent above optimum. The previously excavated soils may then be replaced as compacted structural fill. All structural fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density.
- The new pavement and flatwork subgrade soils are recommended to be scarified to a depth of 12± inches, thoroughly moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.

- 2,500 lbs/ft^2 maximum allowable soil bearing pressure.
- Reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slab

- Conventional Slab-on-grade, 6 inches thick.
- Modulus of Subgrade Reaction: 125 psi/in
- Reinforcement is not required for geotechnical conditions. The actual floor slab reinforcement should be determined by the structural engineer.

Pavements

ASPHALT PAVEMENTS (R = 40)				
Materials	**Thickness (inches)**			
	Automobile Parking and Drives (TI = 4.0 & 5.0)	Truck Traffic		
		(TI = 6.0)	(TI = 7.0)	(TI = 8.0)
Asphalt Concrete	3	3½	4	5
Aggregate Base	4	6	7	8
Compacted Subgrade	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R = 40)			
Materials	**Thickness (inches)**		
	Automobile and Light Truck Traffic (TI = 5.0 & 6.0)	Moderate Truck Traffic (TI =7.0)	Heavy Truck Traffic (TI =8.0)
PCC	5	5½	6½
Compacted Subgrade (95% minimum compaction)	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 18P358, dated August 22, 2018. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slabs, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located at the northeast corner of Harvill Avenue and Rider Street in an unincorporated portion of Riverside County near Perris, California. The site is bounded to the north by a vacant lot, to the west by Harvill Avenue, to the south by Rider Street, and to the east by a railroad easement. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The subject site consists of two (2) parcels, totaling 14.4± acres in size. The southeastern area of the site is presently developed with seven (7) silos, hopper and elevator structures, various machinery associated with the silos, and one industrial building, approximately 4,500 ft^2 in size. The building appears to be of metal construction and assumed to be supported on a conventional shallow foundation with a concrete slab-on-grade floor. Five of the silo structures possess diameters of 70± feet and the two remaining silos possess diameters of 20± feet. Two railroad spurs are located in the southeastern area of the site extending to the southeastern corner of the developed part of the site. A drainage course, approximately 6½± feet wide, extends from the northern portion of the developed area in the southeast portion of the site to Harvill Street. The ground surface cover in the southeastern area of the site consists of asphaltic concrete pavements. The remaining areas of the site are vacant and undeveloped. The ground surface cover in these areas consists of exposed soils with moderate native grass and weed growth. A soil stockpile is present in the northern portion of the site. The dimensions of the stockpile are about 10± feet in height and 280± feet long. The stockpile is about 80± feet wide.

As a part of our research for this geotechnical investigation, we used the California State Water Resources Control Board, GeoTracker, website (http://geotracker.waterboards.ca.gov/) to search for information regarding historic high groundwater levels near the subject site. In the course of our research of this database, we learned that two (2) underground storage tanks (UST) were present in the southern region of the site. In addition, GeoTracker identifies this portion of the site as a Leaking Underground Storage Tank (LUST) Cleanup Site, which is defined as a "site that has had an unauthorized release (i.e. leak or spill) of a hazardous substance, usually fuel hydrocarbons, and are being (or have been) cleaned up." GeoTracker noted a cleanup action case (T0606500587) for this portion of the site which was opened on June 25th, 1998 and closed August 4th, 2000. The cleanup action case summary indicates that two (2) 10,000-gallon diesel USTs were removed on June, 1998. Based on the report, we understand that the two tanks were located within the developed area in the southern portion of the overall site, south of the large silo structures.

Detailed topographic information was not available at the time of this report. However, based on topographic information obtained from Google Earth, the site topography ranges from 1503± feet mean sea level (msl) in the central-east area of the site to 1516± feet msl in the northern area of the site. The site topography slopes gently downward toward the southeast at a gradient of approximately 1± percent.

3.2 Proposed Development

A site plan for the proposed development was provided to our office by the client. This plan indicates that the site will be developed with a new warehouse. The building will be located in the west-central area of the site and will be 316,500± ft^2 in size. The building will be constructed with dock-high doors along the east side of the building. It is expected that the building will be surrounded by asphaltic concrete pavements for parking and drive lanes and Portland Cement Concrete (PCC) pavements in the truck court area. Several landscape planters and concrete flatwork are expected to be included throughout the site.

Detailed structural information has not been provided. It is assumed that the proposed building will be a single-story structure of tilt-up concrete construction, typically supported on conventional shallow foundations with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 4 to 7 kips per linear foot, respectively.

Based on the existing topography, it is expected that cuts and fills of less than 5± feet will be necessary to achieve the new site grades. No significant amounts of below grade construction, such as basements or crawl spaces, are expected to be included in the proposed development.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of six (6) borings (identified as Boring Nos. B-1 through B-6) advanced to depths of 20 to 50± feet below the existing site grades. All of the borings were logged during exploration by a member of our staff.

The borings were advanced with hollow-stem augers, by a truck-mounted drilling rig. Representative bulk and undisturbed soil samples were taken during drilling. Relatively undisturbed samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. In-situ samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plate 2 in Appendix A of this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Pavements

Asphaltic concrete pavements were encountered at the ground surface at Boring No. B-4. The pavement section at B-4 consists of 3± inches of asphaltic concrete underlain by 3± inches of aggregate base.

Artificial Fill

Artificial fill soils were encountered beneath the pavements at Boring No. B-4, extending to depths of 5± feet below the existing site grades. The artificial fill soils generally consist of loose to medium dense silty fine to medium sands with trace clay content. The fill soils possess a disturbed appearance and artificial debris, including asphaltic concrete fragments, resulting in their classification as artificial fill.

Alluvium

Native alluvium was encountered beneath the artificial fill soils at Boring No. B-4, and at the ground surface at all of the remaining borings. The near surface alluvial soils within the upper 20 to 30± feet generally consist of loose to medium dense silty sands and clayey sands. However, most of the borings also encountered hard fine sandy clay layers and/or dense to very dense clayey sand layers within the upper 10± feet. Some of the alluvial soils within the upper 5 to 6± feet are porous. Some of the soils encountered throughout the upper 20± feet are weakly cemented.

The native alluvial soils encountered between depths of 32± feet and the maximum depth explored of 50± feet generally consist of medium dense to dense silty fine to medium sands with trace to little clay content. Some of the recovered samples possessed trace fine gravel content.

Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the lack of any water within the borings, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the subsurface exploration.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level for the site. Recent water level data, obtained from GeoTracker, indicates that the nearest monitoring well is located 1.1± miles northeast of the subject site. Water level readings within this monitoring well indicates a high groundwater level of 79± feet (February 2015) below the ground surface.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Consolidation

Selected soil samples have been tested to determine their consolidation and collapse potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-8 in Appendix C of this report.

Maximum Dry Density and Optimum Moisture Content

Two representative bulk samples have been tested for their maximum dry densities and optimum moisture contents. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557, and are presented on Plates C-9 and C-10 in Appendix C of this report. These tests are generally used to with compare the dry densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a surcharge

equivalent to 144 pounds per square foot. The sample is then inundated with water, and allowed to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

Sample Identification	Expansion Index	Expansive Potential
B-2 @ 0 to 5 feet	1	Very Low
B-4 @ 0 to 5 feet	0	Very Low
B-6 @ 0 to 5 feet	18	Very Low

Soluble Sulfates

Representative samples of the near-surface soils were submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Sulfate Classification
B-2 @ 0 to 5 feet	0.001	Not Applicable (S0)
B-3 @ 0 to 5 feet	0.002	Not Applicable (S0)

Resistivity and pH Testing

Representative bulk samples of soil collected from the building area was submitted to a subcontracted analytical laboratory for determination of electrical resistivity and pH. The resistivity of the soils is a measure of their potential to attack buried metal improvements such as utility lines. The results of the resistivity and pH testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Resistivity (ohm-cm)	pH
B-2 @ 0-5 feet	4,800	7.2
B-3 @ 0-5 feet	3,840	7.1

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

Based on standards in place at the time of this report, the proposed development is expected to be designed in accordance with the requirements of the 2016 edition of the California Building Code (CBC). The CBC provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

The 2016 CBC Seismic Design Parameters have been generated using U.S. Seismic Design Maps, a web-based software application developed by the United States Geological Survey. This software application, available at the USGS web site, calculates seismic design parameters in accordance with the 2016 CBC, utilizing a database of deterministic site accelerations at 0.01 degree intervals. The table below is a compilation of the data provided by the USGS application. A copy of the output generated from this program is included in Appendix E of this report. A copy of the Design Response Spectrum, as generated by the USGS application is also included in Appendix E. Based on this output, the following parameters may be utilized for the subject site:

2016 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	1.500
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.600
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	1.500
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	0.900
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.000
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.600

Liquefaction

Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and plasticity characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Non-sensitive clayey (cohesive) soils which possess a plasticity index of at least 18 (Bray and Sancio, 2006) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The Riverside County GIS website indicates that the subject site is located within a zone of low to moderate liquefaction susceptibility. Based on this mapping, the scope of work for this investigation included a site-specific liquefaction evaluation. The subsurface exploration performed at the site identified conditions that are considered to be nonconductive to liquefaction, including near surface soils consisting of medium dense to dense alluvium extending to depths of 50± feet. In addition, readily available groundwater data from the state groundwater data library website indicates that the static groundwater table has historically been present at depths of 79± feet or greater for the nearest well to the subject site. Based on these factors, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

All of the borings, encountered native alluvium at the ground surface with the exception of Boring No. B-4, which encountered artificial fill soils within the upper 4½± feet. The fill soils encountered at this boring location consist of loose to medium dense silty sands. Based on the lack of documentation of the placement and compaction of these fill soils, as well as their low relative

density, the existing fill soils are considered to be undocumented fill, unsuitable for the support of the proposed structure. Additional undocumented fill soils are expected to be present in the developed area in the southeast portion of the site, as well as the areas of the two underground storage tanks, which were previously removed from the subject site. Based on our research of the GeoTracker website, as discussed in Section 3.1 or this report, we understand that these tanks were located in the southeastern portion of the subject site. The exact depths and locations of the tanks are unknown to SCG.

Based on the results of laboratory testing, the near-surface alluvium encountered with the upper 6 to 8± feet possess moderate to severe collapse potential when inundated with water. Some of the soils encountered at the upper 5 to 6± feet at the boring locations were visually observed to be slightly to moderately porous. Based on the porosity and collapse potential of the near surface soils, near surface alluvium, in its present state, is not considered to be suitable for the support of the new structure. Remedial grading is considered warranted within the proposed building area, in order to remove a portion of the near surface alluvium and replace these materials as compacted structural fill.

Settlement

The recommended remedial grading will remove a portion of the near-surface native alluvium, including collapsible/compressible soils, and replace these soils as compacted structural fill. The native soils that will remain in place below the recommended depth of overexcavation will not be subject to significant load increases from the foundations of the new structure. Provided that the recommended remedial grading is completed, the post-construction static settlements of the proposed structure is expected to be within tolerable limits.

Soluble Sulfates

The results of the soluble sulfate testing indicate that the selected samples of the on-site soils contain negligible concentrations of soluble sulfates, in accordance with American Concrete Institute (ACI) guidelines. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building area.

Expansion

Laboratory testing performed on representative samples of the near surface soils indicates that these materials possess a very low expansion potential (EIs ranging between 0 and 18). Therefore, no design considerations related to expansive soils are considered warranted for this site. It is recommended that additional expansion index testing be conducted at the completion of rough grading to verify the expansion potential of the as-graded building pads.

Corrosion Potential

The results of the electrical resistivity and pH testing indicate that a sample of the on-site soils possesses an electrical resistivities between 3,840 and 4,800 ohm-cm and a pH values of 7.1 and 7.2. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which

characteristics of the soils are used to quantify the corrosivity characteristics of the site. Resistivity and pH are two of the five factors that enter into the evaluation procedure. Relative soil moisture content as well as redox potential and sulfide testing are also included in the DIPRA procedure. Although redox potential and sulfide testing were not a part of the scope of this investigation, we have evaluated the corrosivity characteristics of the on-site soils using resistivity, pH and moisture content. Based on these factors, and utilizing the DIPRA procedure, the on-site soils are not considered to be corrosive to ductile iron pipe. However, the client may also wish to contact a corrosion engineer to provide a more thorough evaluation.

Shrinkage/Subsidence

Removal and recompaction of the near surface younger alluvium is estimated to result in an average shrinkage of 10 to 15 percent. Removal and recompaction of the near surface older alluvium is expected to result in an average shrinkage of up to 5 to 10 percent. Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.1± feet. This estimate may be used for grading in areas that are underlain by native alluvial soils.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be dependant on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Grading and Foundation Plan Review

It is recommended that we be provided with copies of the grading and foundation plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Demolition of the existing silos, elevator and hopper structures, machines, the metal building, and other minor structures will be necessary in the southeast portion of the site in order to facilitate the construction of the proposed development. Demolition should include all foundations, floor slabs, utilities and any other subsurface improvements that will not remain in place with the new development. Demolition debris should be disposed of off-site in accordance with any applicable regulations. Alternatively, concrete and asphalt debris may be crushed to a maximum 2-inch particle size, mixed with the on-site soils, and reused as compacted structural fill.

Initial site preparation should include stripping of any surficial vegetation and organic soils. Based on conditions encountered at the time of the subsurface exploration, stripping of native grass and weed growth is expected to be necessary throughout the majority of the site. These materials should be disposed of offsite. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered.

Treatment of Existing Soils: Building Pad

Remedial grading should be performed within the proposed building pad area in order to remove the existing potentially compressible/collapsible native alluvium and any undocumented fill soils. Undocumented fill soils were encountered at a boring located in the southeast portion of the site, extending to a depth of 5± feet below the existing site grades. In general, it is recommended that the overexcavation extend to a depth of at least 5 feet below existing grade, and to a depth of at least 5 feet below proposed grade, whichever is greater. Within the influence zones of the new foundations, the overexcavation should extend to a depth of at least 3 feet below proposed foundation bearing grade.

Additional remedial grading will be necessary in the area of Boring No. B-2 where lower density, collapsible soils extend to depths of 7 to 8± feet. Additional overexcavation may also be required in other localized areas if loose, porous materials are encountered at the base of the overexcavation. As discussed in Section 3.1 and 6.2, two underground storage tanks were removed from the southeastern portion of the site. The depths and locations of these tanks are presently unknown to SCG. If these tanks were located within the proposed building pad area, additional overexcavation will be required to remove the undocumented fill soils or pea gravel used to backfill the tank removal excavations.

The overexcavation areas should extend at least 5 feet beyond the building perimeters, and to an extent equal to the depth of fill below the new foundations. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the overexcavation areas should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrade, as well as to support the foundation loads of the new structure. This evaluation should include proofrolling and probing to identify any soft, loose or otherwise unstable soils that must be removed. **Some localized areas of deeper excavation will be required if additional fill materials or loose, porous, overly moist, or low-density native soils are encountered at the base of the overexcavation.**

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches and moisture conditioned or air dried to achieve a moisture content of 2 to 4 percent above optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

The building pad area may then be raised to grade with previously excavated soils or imported, very low expansive structural fill. All structural fill soils present within the proposed building area should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of proposed retaining and non-retaining site walls should be overexcavated to a depth of at least 3 feet below foundation bearing grade and replaced as compacted structural fill. Subgrades for erection pads for concrete tilt-up walls are considered to be a part of the foundation system and should also be overexcavated. Additional overexcavation may be required if porous or collapsible alluvium is encountered, as discussed above. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Parking Areas

Based on economic considerations, overexcavation of the alluvial soils in the new parking and drive areas is not considered warranted, with the exception of areas where lower strength, or unstable soils are identified by the geotechnical engineer during grading.

Subgrade preparation in the new parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations. The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. The subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength alluvial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking areas. The grading recommendations presented above do not completely mitigate the extent of existing undocumented fill soils and low strength alluvium in the parking areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 2 to 4 percent above the optimum moisture content, and compacted.
- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the CBC and the grading code of the county of Riverside.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not

be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. As an alternative, a clean sand (minimum Sand Equivalent of 30) may be placed within trenches and compacted in place (jetting or flooding is not recommended). Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the county of Riverside. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

6.4 Construction Considerations

Excavation Considerations

The near surface soils generally consist of silty sands, clayey sands, and sandy clays. These materials will likely be subject to minor caving within shallow excavations. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, the inclination of temporary slopes should not exceed 1.5h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Groundwater

The static groundwater table is considered to exist at a depth greater than 50± feet or more below existing grade. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pad will be underlain by newly placed structural fill soils extending to depths of at least 3 feet below

foundation bearing grade. Based on this subsurface profile, the proposed structures may be supported on shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom).
- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 18 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.
- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressures presented above may be increased by 1/3 when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on standard geotechnical practice. Additional rigidity may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill compacted at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 2 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential static settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be

less than 1.0 and 0.5 inches, respectively, under static conditions. Differential movements are expected to occur over a 30-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill soils. The maximum allowable passive pressure is 2,500 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floor of the proposed structure may be constructed as a conventional slab-on-grade, supported on newly placed structural fill (or densified existing soils), extending to a depth of at least 3 feet below finished pad grade. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 6 inches.

- Modulus of Subgrade Reaction: 125 psi/in.

- Minimum slab reinforcement: Reinforcement is not required for expansive soil conditions. However, slab reinforcement may be required for structural design considerations. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area of the proposed slab. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical

engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.

- Moisture condition the floor slab subgrade soils to 2 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Although not indicated on the site plan, some small (less than 6 feet in height) retaining walls may be required in truck court area and to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. The on-site soils generally consist of silty sands. Based on their classifications, the silty sand materials are expected to possess a friction angle of at least 30 degrees when compacted to 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		Soil Type
		On-Site Silty and Clayey Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		132 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	43 lbs/ft^3
	Active Condition (2h:1v backfill)	71 lbs/ft^3
	At-Rest Condition (level backfill)	66 lbs/ft^3

Regardless of the backfill type, the walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2016 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed compacted structural fill, extending to a depth of at least 3 feet below proposed foundation bearing grade. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site soils may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls be used. If the drainage composite material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The drainage composite should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 8-foot on-center spacing. The weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

Weep holes or a footing drain will not be required for building stem walls.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The on-site soils generally consist of clayey sands and silty sands with occasional sandy and

are expected to possess R-values between 40 and 60. Therefore the subsequent pavement design is based upon a conservative R-value of 40. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering-controlled conditions. It is recommended that additional R-value testing be performed after completion of rough grading to verify the pavement support characteristics of the pavement subgrades following site grading.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20 year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R = 40)				
Materials	**Thickness (inches)**			
	Automobile Parking and Drives (TI = 4.0 & 5.0)	Truck Traffic		
		(TI = 6.0)	(TI = 7.0)	(TI = 8.0)
Asphalt Concrete	3	3½	4	5
Aggregate Base	4	6	7	8
Compacted Subgrade	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and

Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS (R = 40)			
Materials	**Thickness (inches)**		
	Automobile and Light Truck Traffic (TI = 5.0 & 6.0)	Moderate Truck Traffic (TI =7.0)	Heavy Truck Traffic (TI =8.0)
PCC	5	5½	6½
Compacted Subgrade (95% minimum compaction)	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

7.0 GENERAL COMMENTS

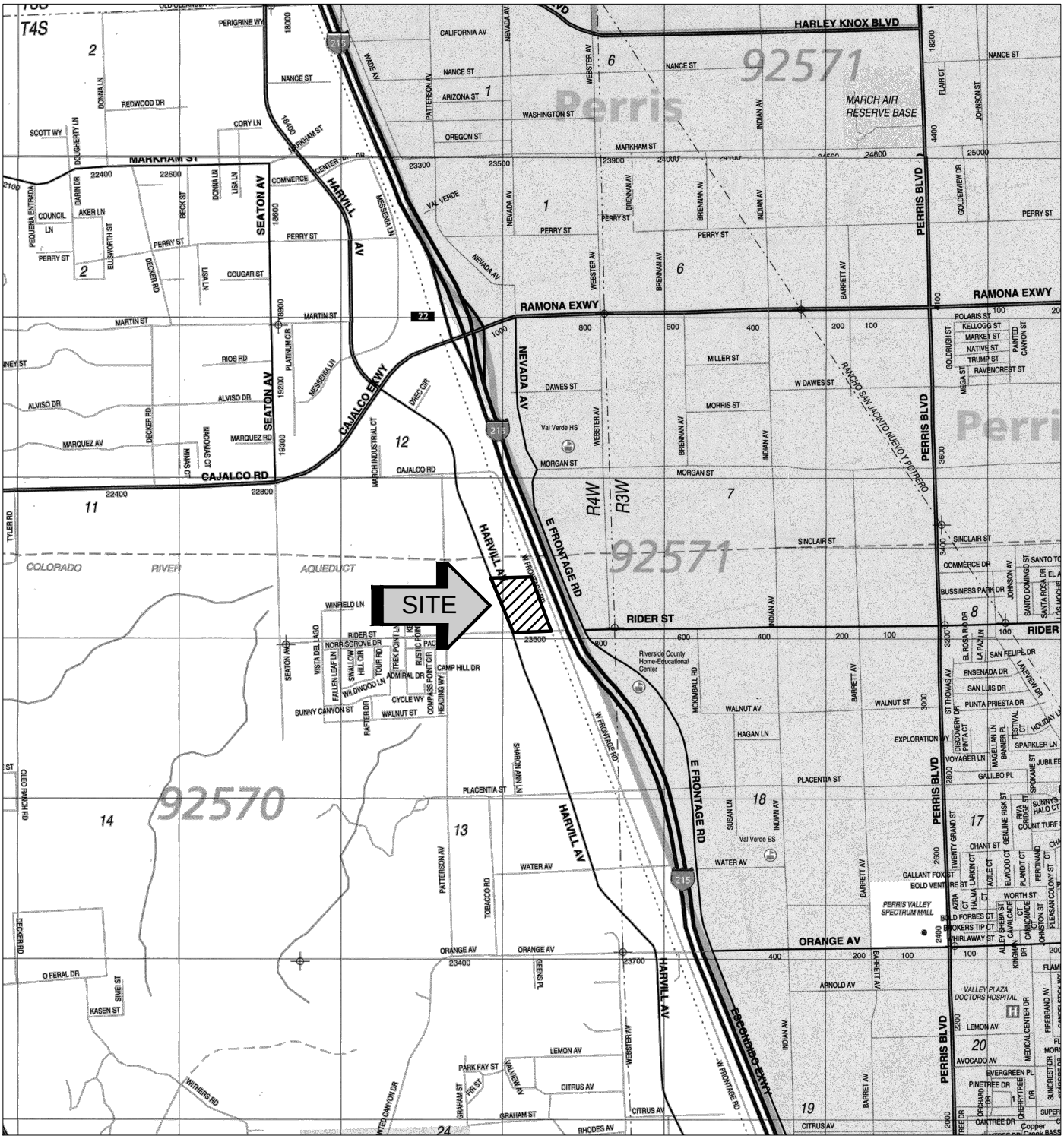
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: RIVERSIDE COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP

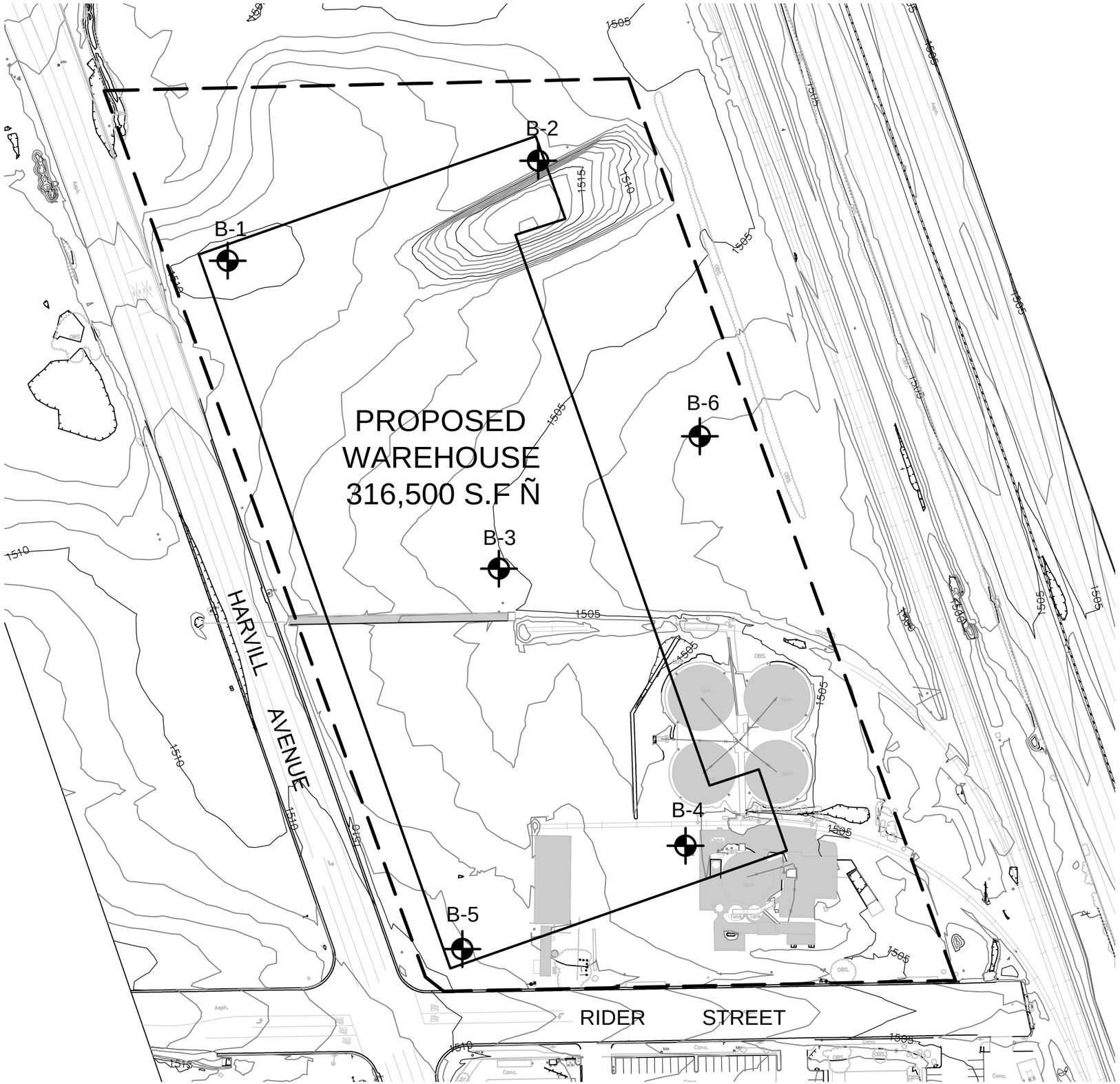
PROPOSED WAREHOUSE

RIVERSIDE COUNTY, CALIFORNIA

SCALE: 1" = 2400'	
DRAWN: CT CHKD: RGT	
SCG PROJECT 18G185-1	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

EXISTING STRUCTURES TO BE DEMOLISHED

NOTE: TOPOGRAPHIC INFORMATION PROVIDED BY ALBERT A. WEBB ASSOCIATES.
CONCEPTUAL SITE PLAN PROVIDED BY DUKE REALTY.

BORING LOCATION PLAN

PROPOSED WAREHOUSE

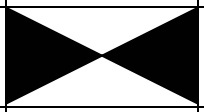
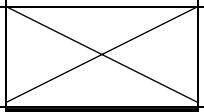
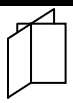
RIVERSIDE COUNTY, CALIFORNIA

SCALE: 1" = 120'	
DRAWN: JLL CHKD: DWN	
SCG PROJECT 18G185-1	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

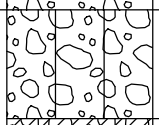
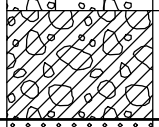
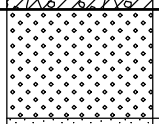
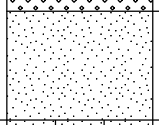
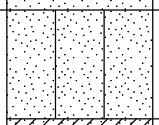
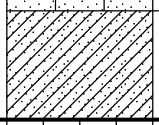
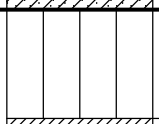
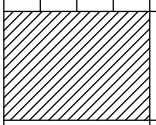
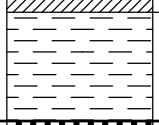
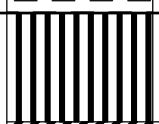
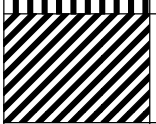
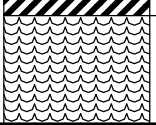
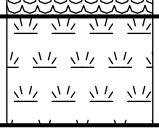
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 18G185 | DRILLING DATE: 9/5/18 | WATER DEPTH: Dry
PROJECT: Proposed Warehouse | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38.5 feet
LOCATION: Riverside County, California | LOGGED BY: Chris Tafoya | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		23			ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, trace fine Gravel, medium dense-damp		4					
		12					4					
5		24			Gray Brown Silty fine to coarse Sand, trace fine Gravel, trace Clay, medium dense-damp		6					
		41	3.0		Brown fine Sandy Clay, little medium Sand, hard-damp		12					
10												
		11			Brown Silty fine Sand, trace Clay, trace fine Gravel, medium dense-damp to moist		9					
15												
		15					8					
20												
		15					12					
25												
		18					7					
30												
		31			Gray Brown Silty fine to medium Sand, trace to little Clay, dense-moist		12					

TBL 18G185.GPJ SOCALGEO.GDT 10/2/18

TEST BORING LOG **PLATE B-1a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 18G185 | DRILLING DATE: 9/5/18 | WATER DEPTH: Dry
PROJECT: Proposed Warehouse | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38.5 feet
LOCATION: Riverside County, California | LOGGED BY: Chris Tafoya | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Gray Brown Silty fine to medium Sand, trace to little Clay, dense-moist							
		36			Brown Silty fine to medium Sand, trace fine Gravel, trace Clay, medium dense to dense-damp		6					
40												
		23					7					
45												
		29					7					
50					Boring Terminated at 50'							

TBL 18G185.GPJ SOCALGEO.GDT 10/2/18

TEST BORING LOG **PLATE B-1b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 18G185 | DRILLING DATE: 9/5/18 | WATER DEPTH: Dry
PROJECT: Proposed Warehouse | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 27 feet
LOCATION: Riverside County, California | LOGGED BY: Chris Tafoya | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine to medium Sand, trace Clay, slightly porous, medium dense-damp							
		30				103	4					EI = 1 @ 0 to 5'
		22				101	4					
5					Brown Silty fine to coarse Sand, trace Clay, porous, loose-damp							
		13				107	4					
		9				98	5					
					Gray Brown fine to coarse Sand, trace Silt, trace calcareous veining, medium dense-moist							
		20				106	9					
10												
					Dark Gray Brown Silty fine Sand, trace to little medium Sand, medium dense-moist to very moist							
		19				100	11					
15												
		28				107	15					
20												
		24				113	9					
25					Boring Terminated at 25'							

TBL 18G185.GPJ SOCALGEO.GDT 10/2/18

TEST BORING LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 18G185 | DRILLING DATE: 9/5/18 | WATER DEPTH: Dry
PROJECT: Proposed Warehouse | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Riverside County, California | LOGGED BY: Chris Tafoya | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		54	4.5+		ALLUVIUM: Red Brown to Brown fine to medium Sandy Clay, little Silt, slightly porous, trace calcareous veining, weakly cemented, hard-damp	114	5					
		71/9"			Brown Clayey fine to medium Sand, little coarse Sand, weakly cemented, very dense-damp	118	8					
5		33			Brown to Dark Brown Silty fine to coarse Sand, medium dense-damp	107	7					
		54			Brown Silty fine Sand, trace medium Sand, trace Clay, medium dense to dense-damp to moist	115	8					
10		35				113	10					
		21					7					
15												
		37			Brown Silty fine to coarse Sand, dense-damp		7					
20					Boring Terminated at 20'							

TBL 18G185.GPJ SOCALGEO.GDT 10/2/18

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 18G185 | DRILLING DATE: 9/5/18 | WATER DEPTH: Dry
PROJECT: Proposed Warehouse | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Riverside County, California | LOGGED BY: Chris Tafoya | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					3± inches Asphaltic concrete, 3± inches Aggregate base							
		10			FILL: Dark Brown Silty fine to medium Sand, trace Clay, some Asphaltic concrete fragments, loose to medium dense-damp to moist		7					EI = 0 @ 0 to 5'
		10					10					
5		54	4.5+		ALLUVIUM: Brown Clayey fine to medium Sand to fine to medium Sandy Clay, trace Silt, trace calcareous veining, dense to very dense to hard-damp to moist		9					
		39	2.5				11					
10					Brown Silty fine to medium Sand, trace to little Clay, medium dense to very dense-damp to moist							
		21					9					
15												
		50			@ 18½ to 20 feet, trace coarse Sand, weakly cemented		10					
20												
		29					7					
25					Boring Terminated at 25'							

TBL 18G185.GPJ SOCALGEO.GDT 10/2/18

TEST BORING LOG **PLATE B-4**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 18G185 | DRILLING DATE: 9/5/18 | WATER DEPTH: Dry
PROJECT: Proposed Warehouse | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Riverside County, California | LOGGED BY: Chris Tafoya | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		31			ALLUVIUM: Brown Clayey fine to medium Sand, trace Silt, porous, medium dense-damp	99	4					
		28			Brown Silty fine to medium Sand, trace to little coarse Sand, weakly cemented, medium dense to dense-damp	108	5					
5		63				111	6					
		49				122	6					
		43				110	7					
10												
		44					7					
15												
		21					8					
20					Boring Terminated at 20'							

TBL 18G185.GPJ SOCALGEO.GDT 10/2/18

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 18G185 | DRILLING DATE: 9/5/18 | WATER DEPTH: Dry
PROJECT: Proposed Warehouse | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15.5 feet
LOCATION: Riverside County, California | LOGGED BY: Chris Tafoya | READING TAKEN: At Completion

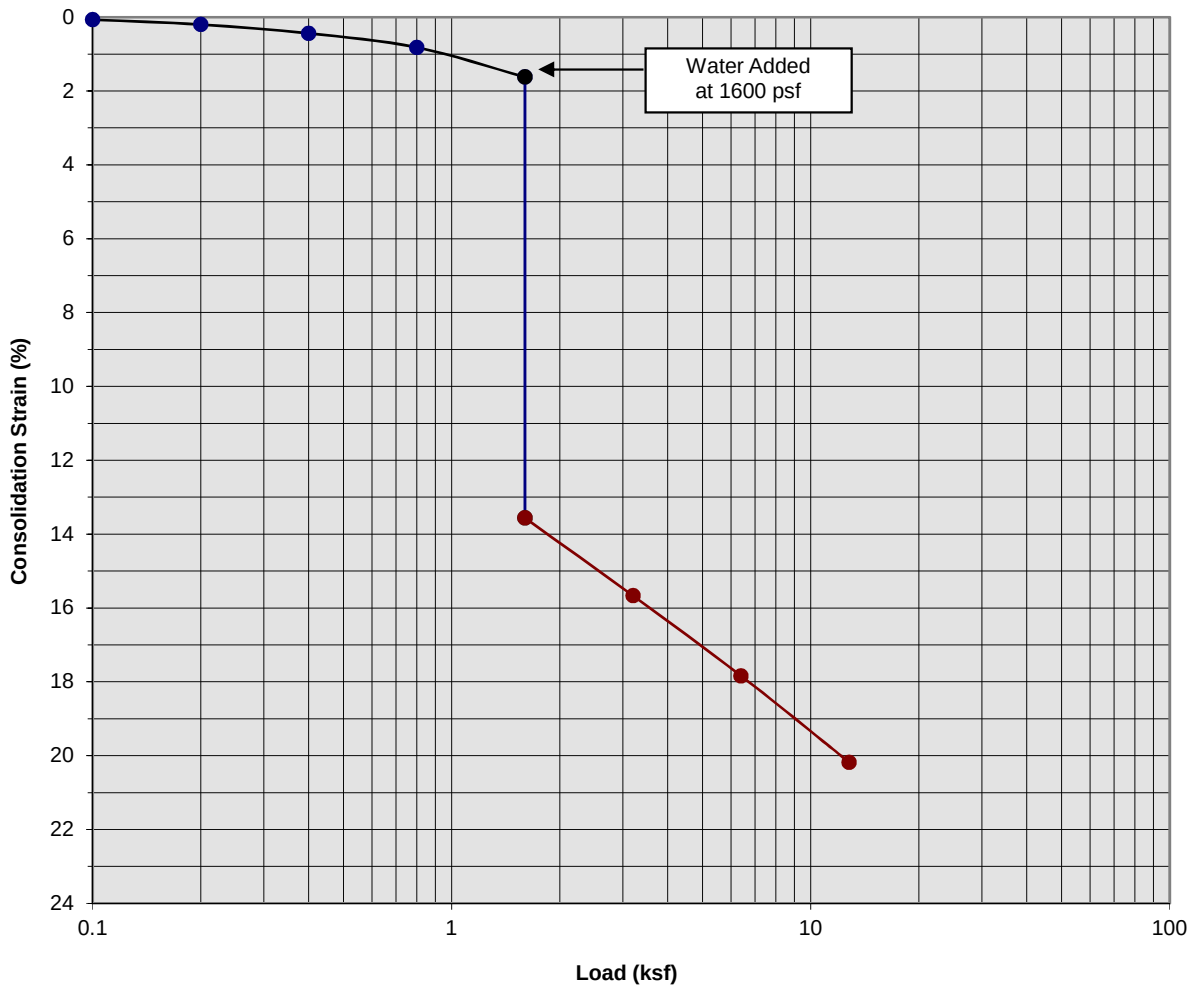
FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		50	4.5+		ALLUVIUM: Red Brown to Brown fine to medium Sandy Clay, weakly cemented, hard-damp	106	6					EI = 8 @ 0 to 5'
		69/10"	4.5+			118	7					
5		29			Brown fine Sandy Silt, trace Clay, little calcareous veining, medium dense-damp	107	7					
		41			Brown Silty fine to medium Sand, trace to little Clay, coarse Sand, medium dense-damp	107	5					
10		24				108	2					
		16			Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp		5					
15												
		18					8					
20					Boring Terminated at 20'							

TBL 18G185.GPJ SOCALGEO.GDT 10/2/18

TEST BORING LOG **PLATE B-6**

APPENDIX C

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine to medium Sand, trace Clay

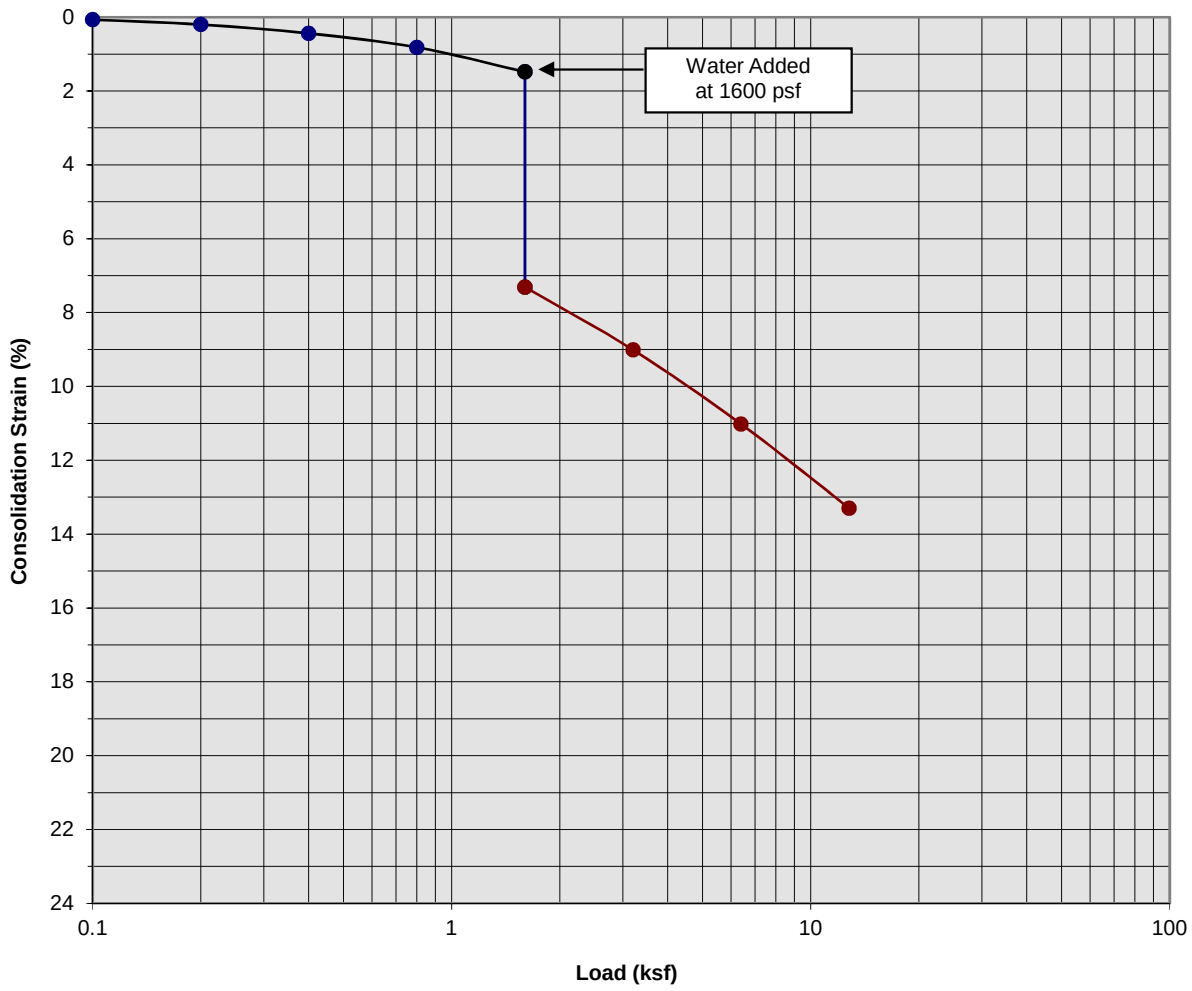
Boring Number:	B-2	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	3 to 4	Initial Dry Density (pcf)	101.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	11.94

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace Clay

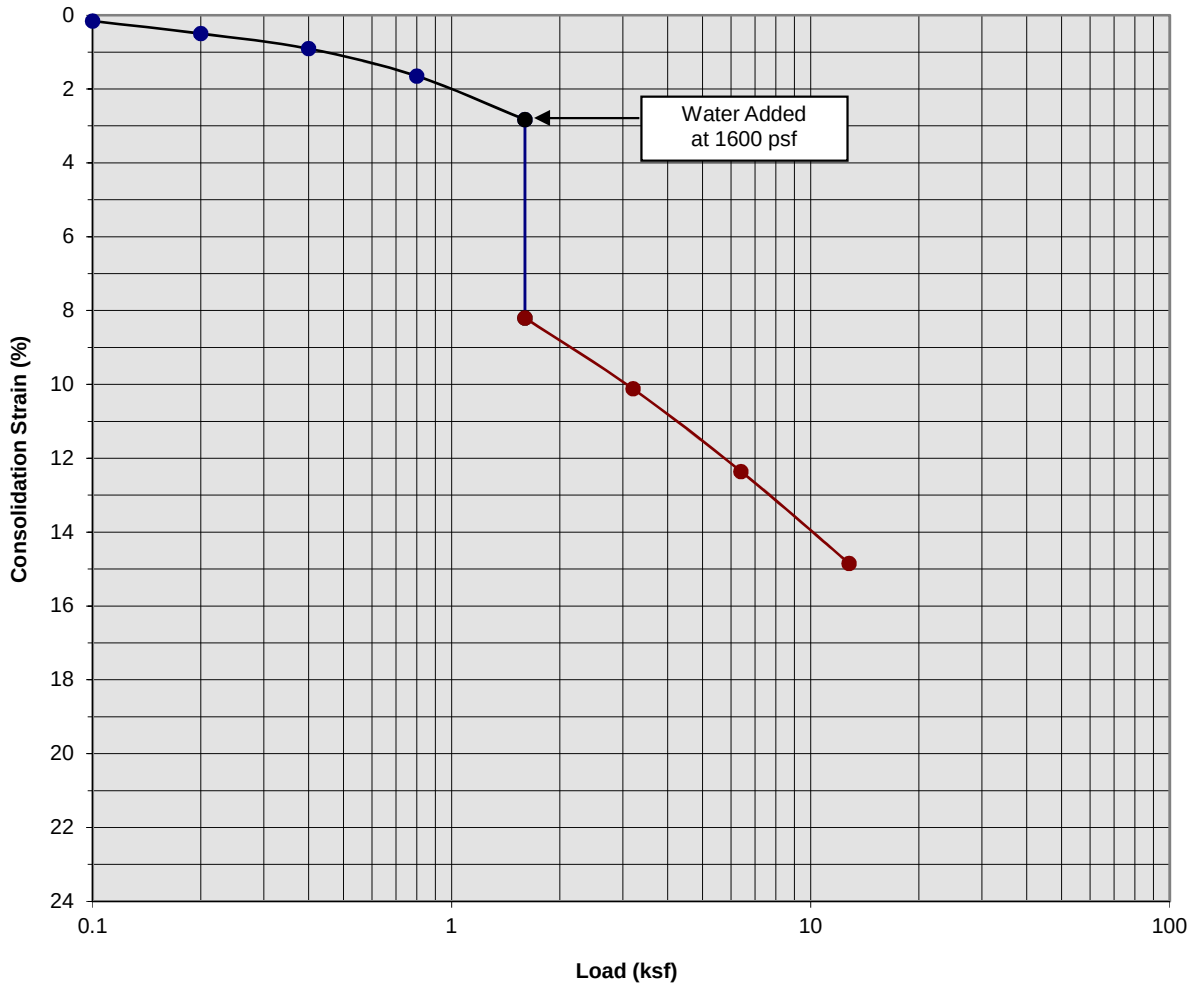
Boring Number:	B-2	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	5 to 6	Initial Dry Density (pcf)	106.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	122.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.83

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace Clay

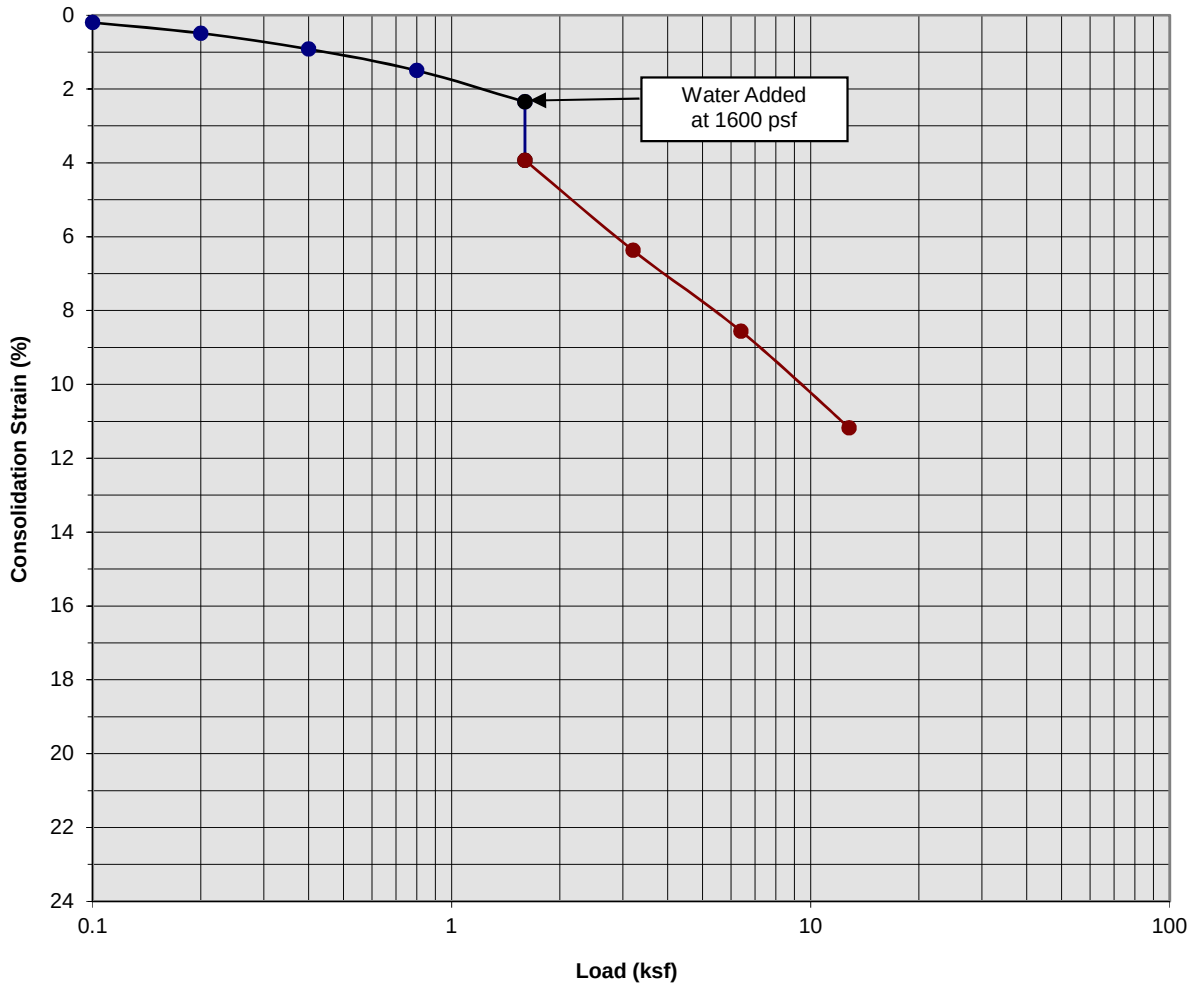
Boring Number:	B-2	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	98.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	116.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.37

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Gray Brown fine to coarse Sand, trace Silt

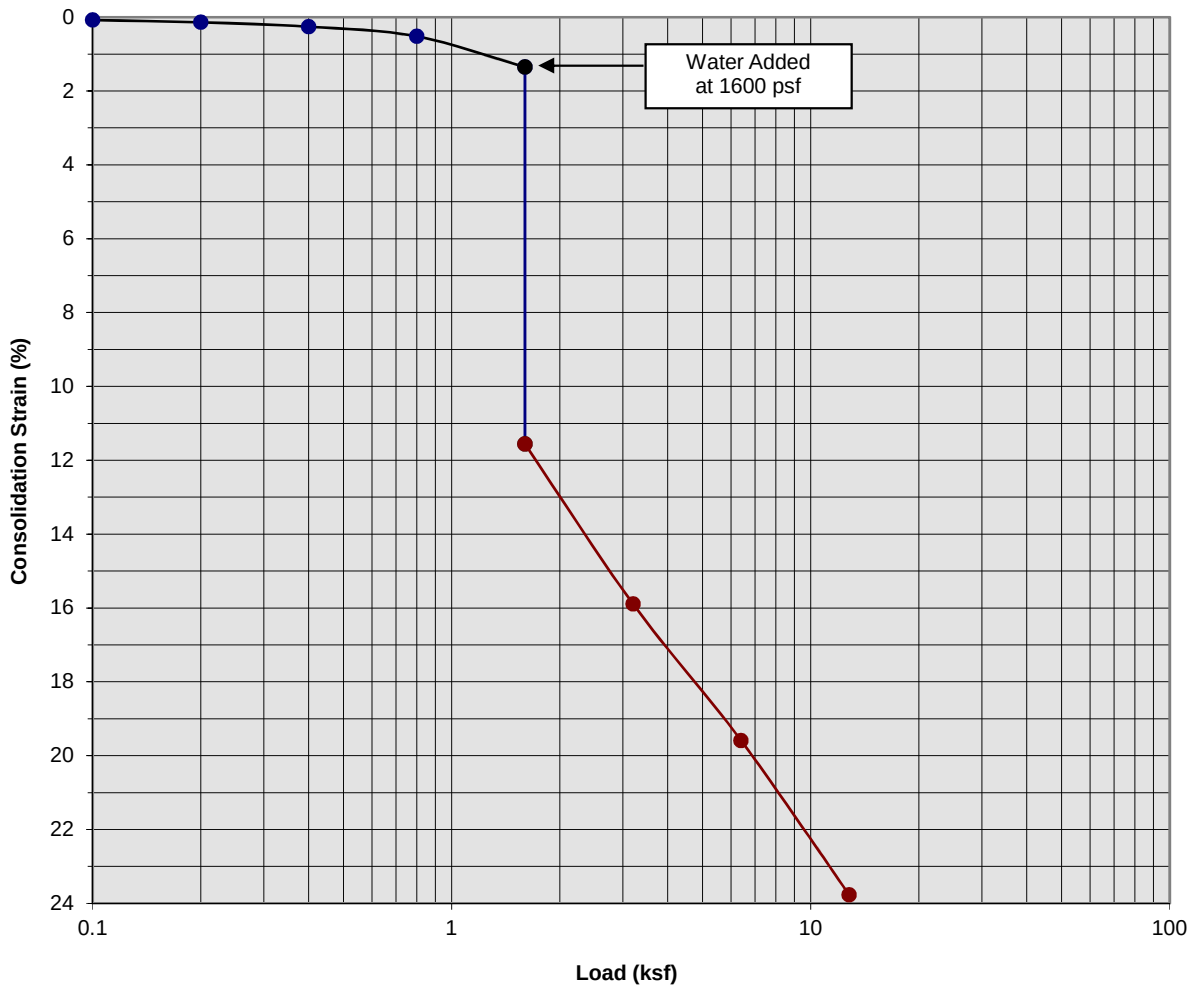
Boring Number:	B-2	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	9 to 10	Initial Dry Density (pcf)	107.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.58

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Clayey fine to medium Sand, trace Silt

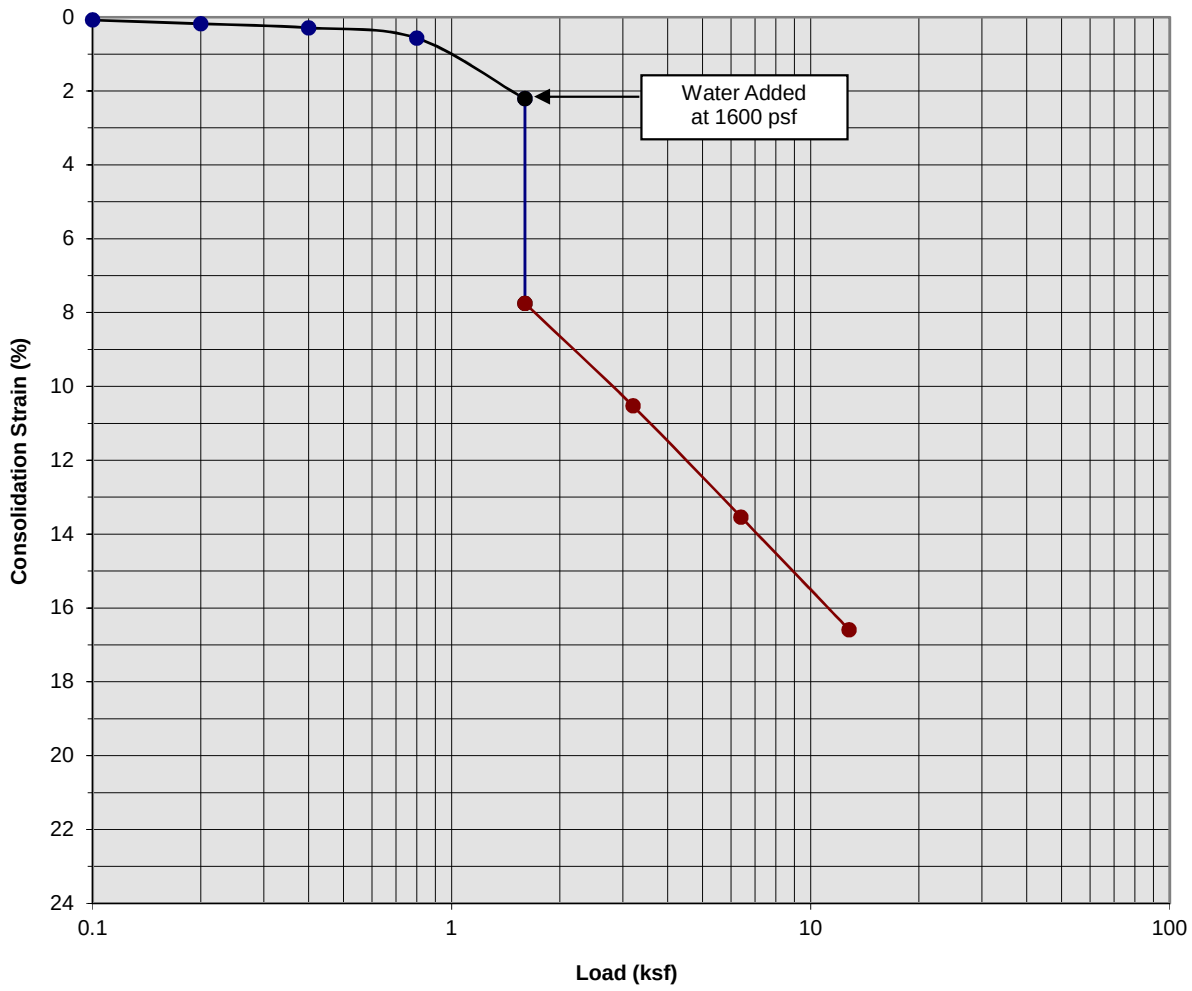
Boring Number:	B-5	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	1 to 2	Initial Dry Density (pcf)	98.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	10.21

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace to little coarse Sand

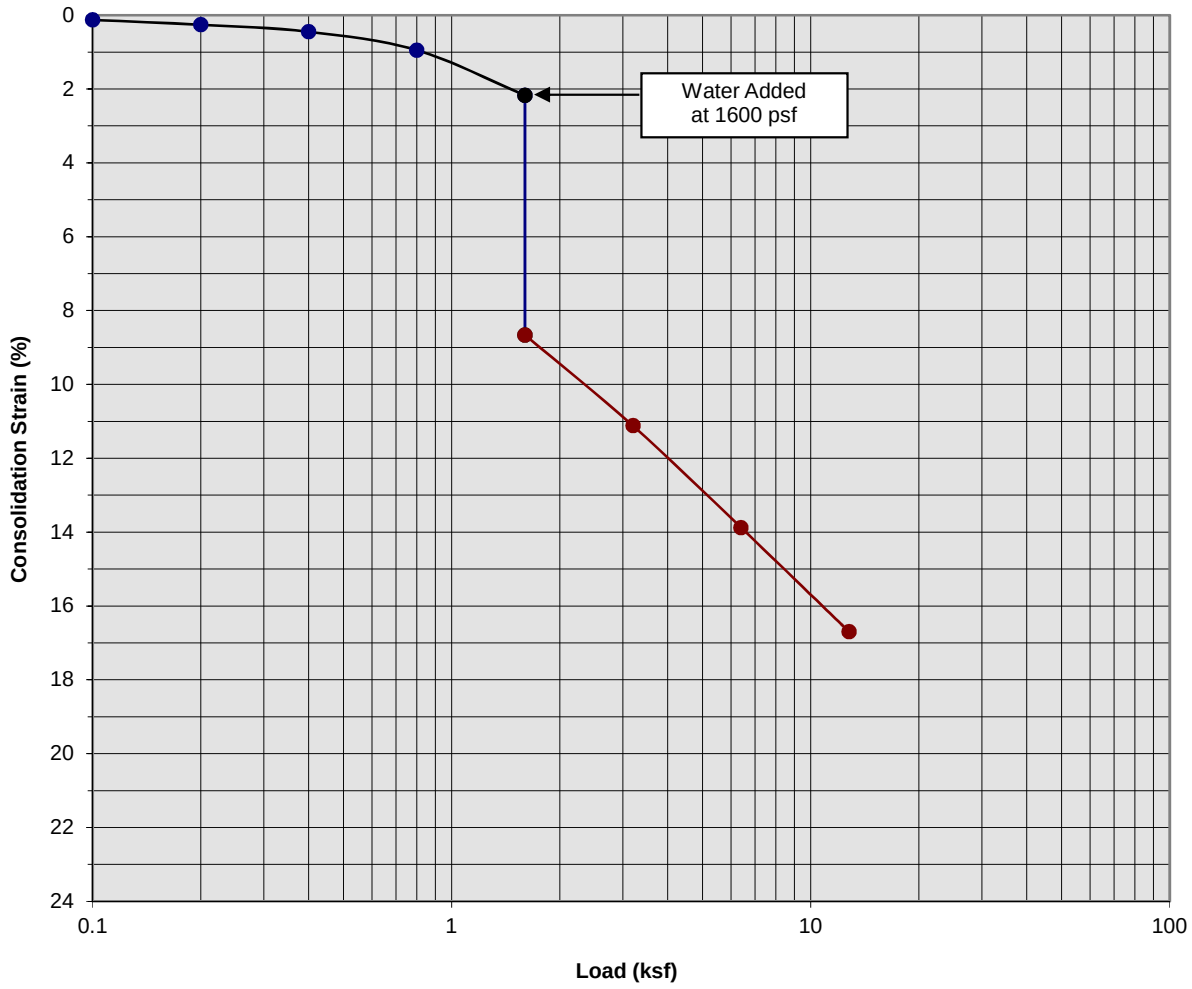
Boring Number:	B-5	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	3 to 4	Initial Dry Density (pcf)	106.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.54

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace to little coarse Sand

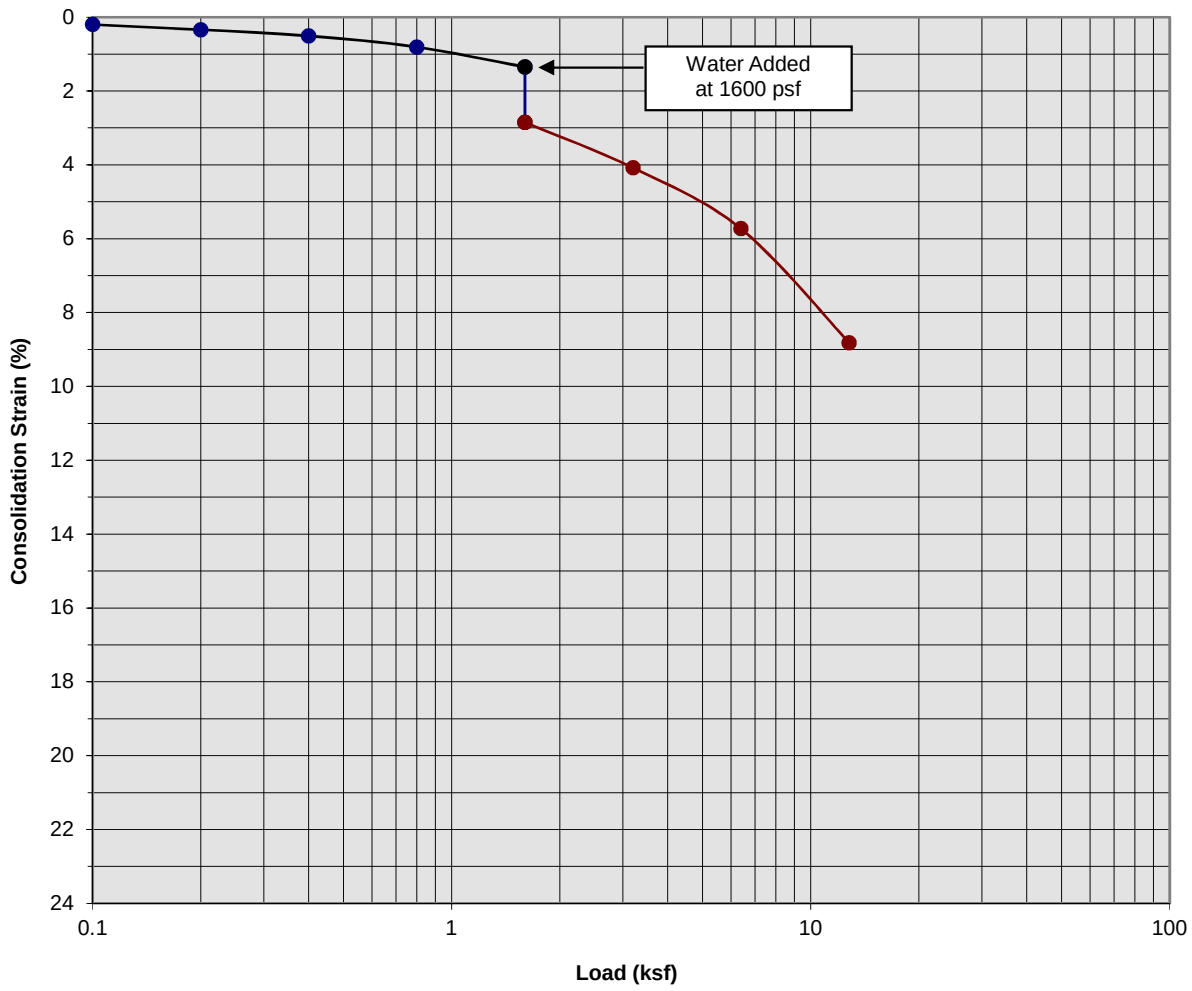
Boring Number:	B-5	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	5 to 6	Initial Dry Density (pcf)	110.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.49

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C- 7

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace to little coarse Sand

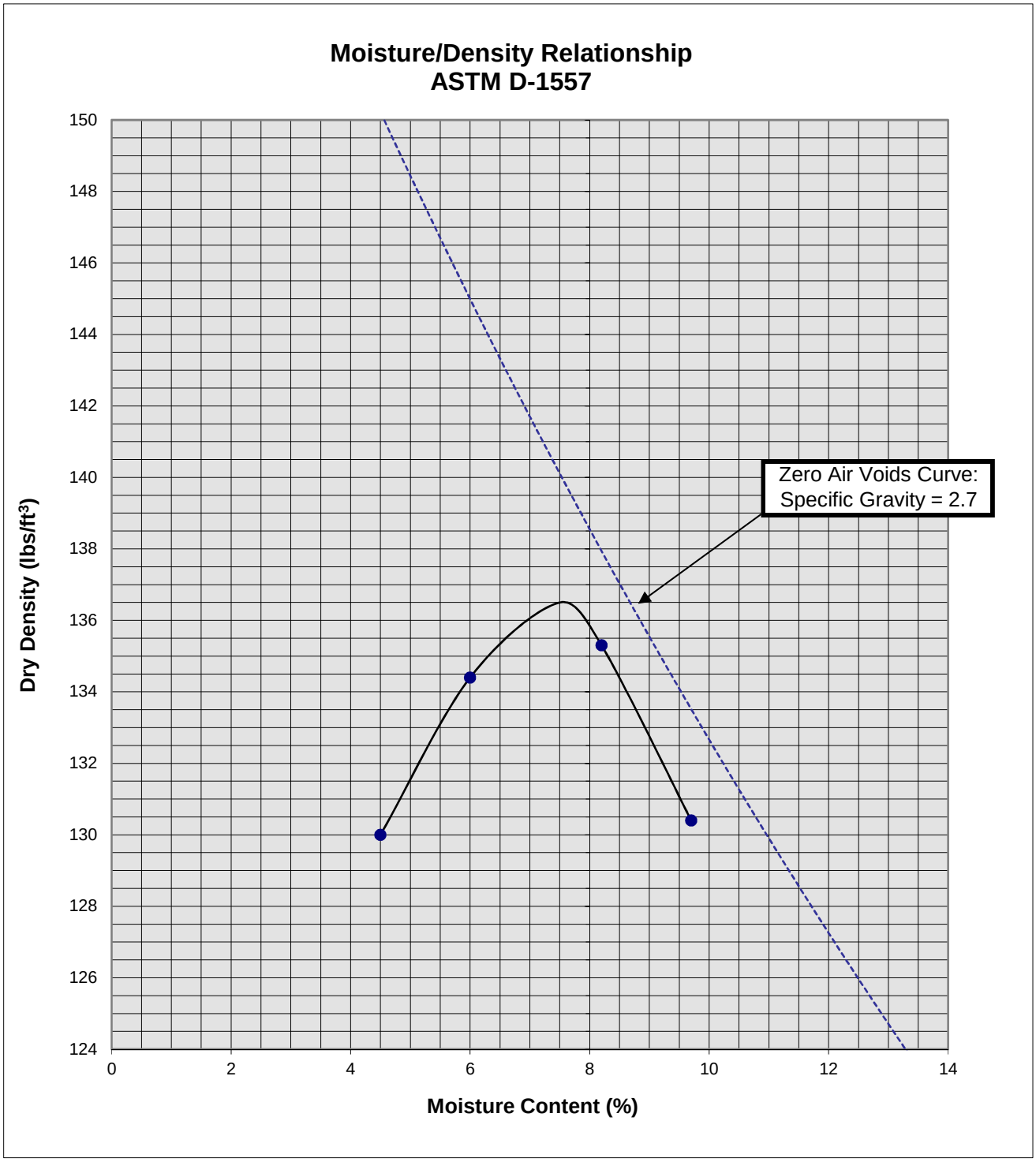
Boring Number:	B-5	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	121.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	131.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.50

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C- 8

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



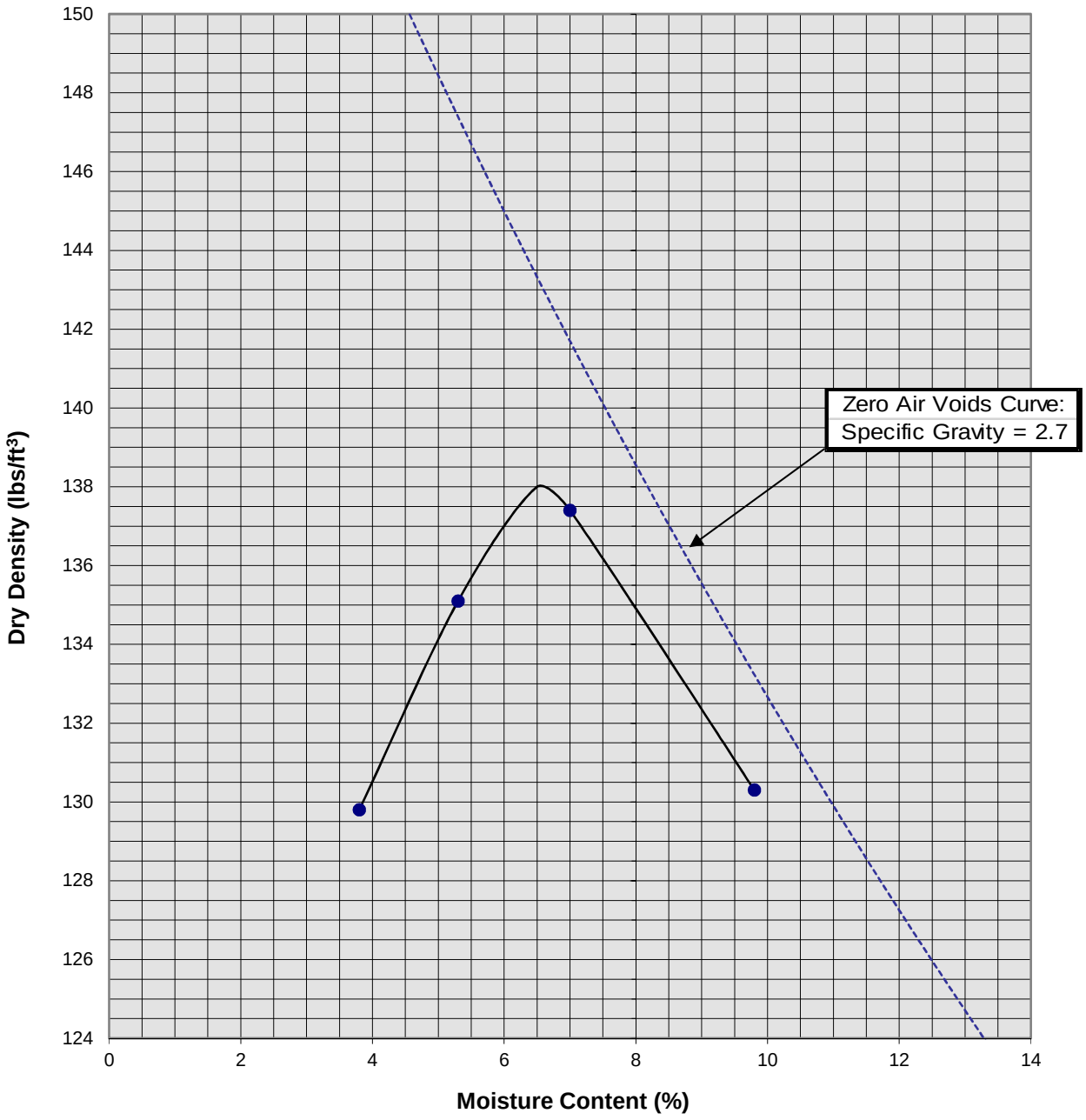
Soil ID Number	B-2 @ 0 to 5'
Optimum Moisture (%)	7.5
Maximum Dry Density (pcf)	136.5
Soil Classification	Red Brown Silty fine to medium Sand, trace clay

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C-9

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-4 @ 0 to 5'
Optimum Moisture (%)	6.5
Maximum Dry Density (pcf)	138
Soil Classification	Brown Silty fine to medium Sand, trace Clay

Proposed Warehouse
Riverside County, California
Project No. 18G185

PLATE C-10

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

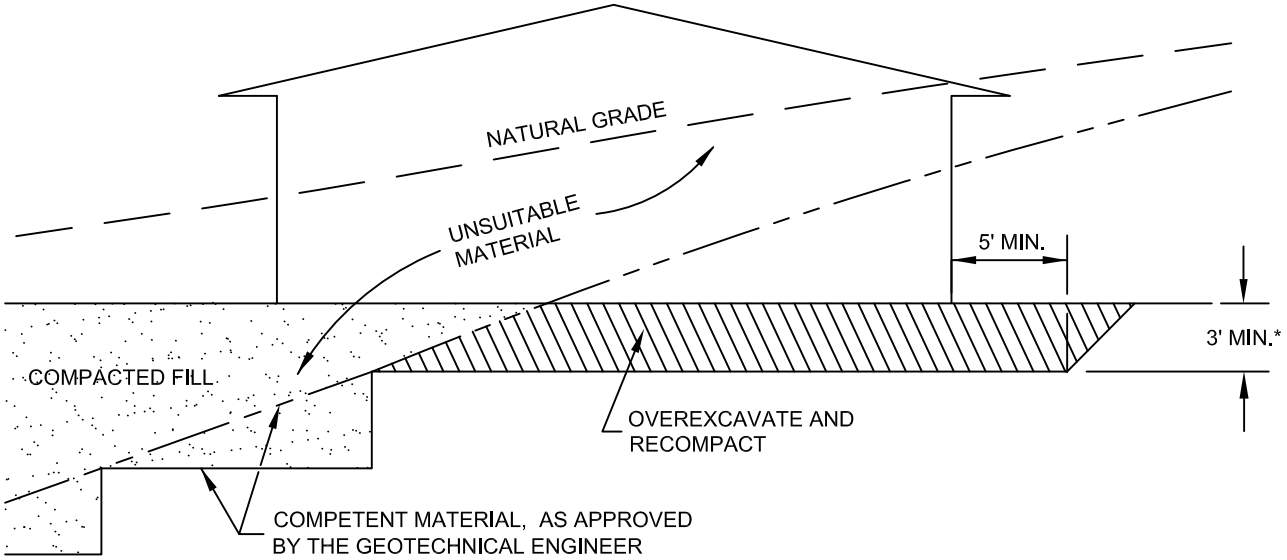
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

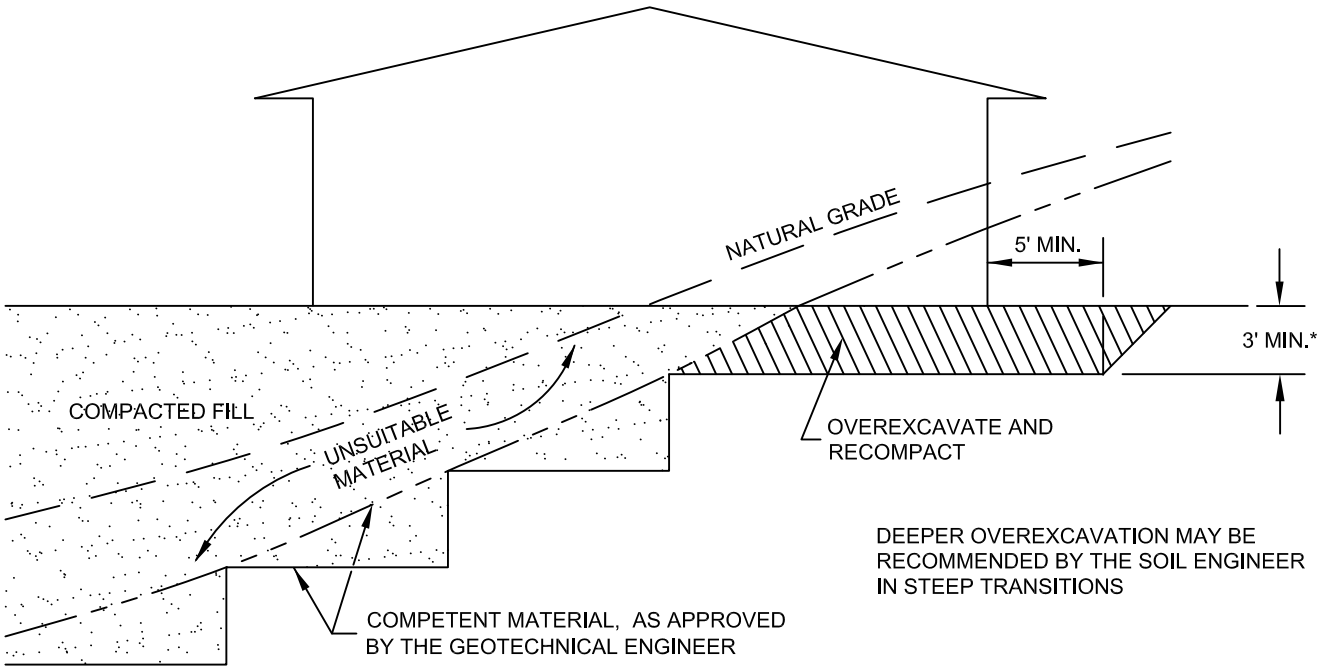
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

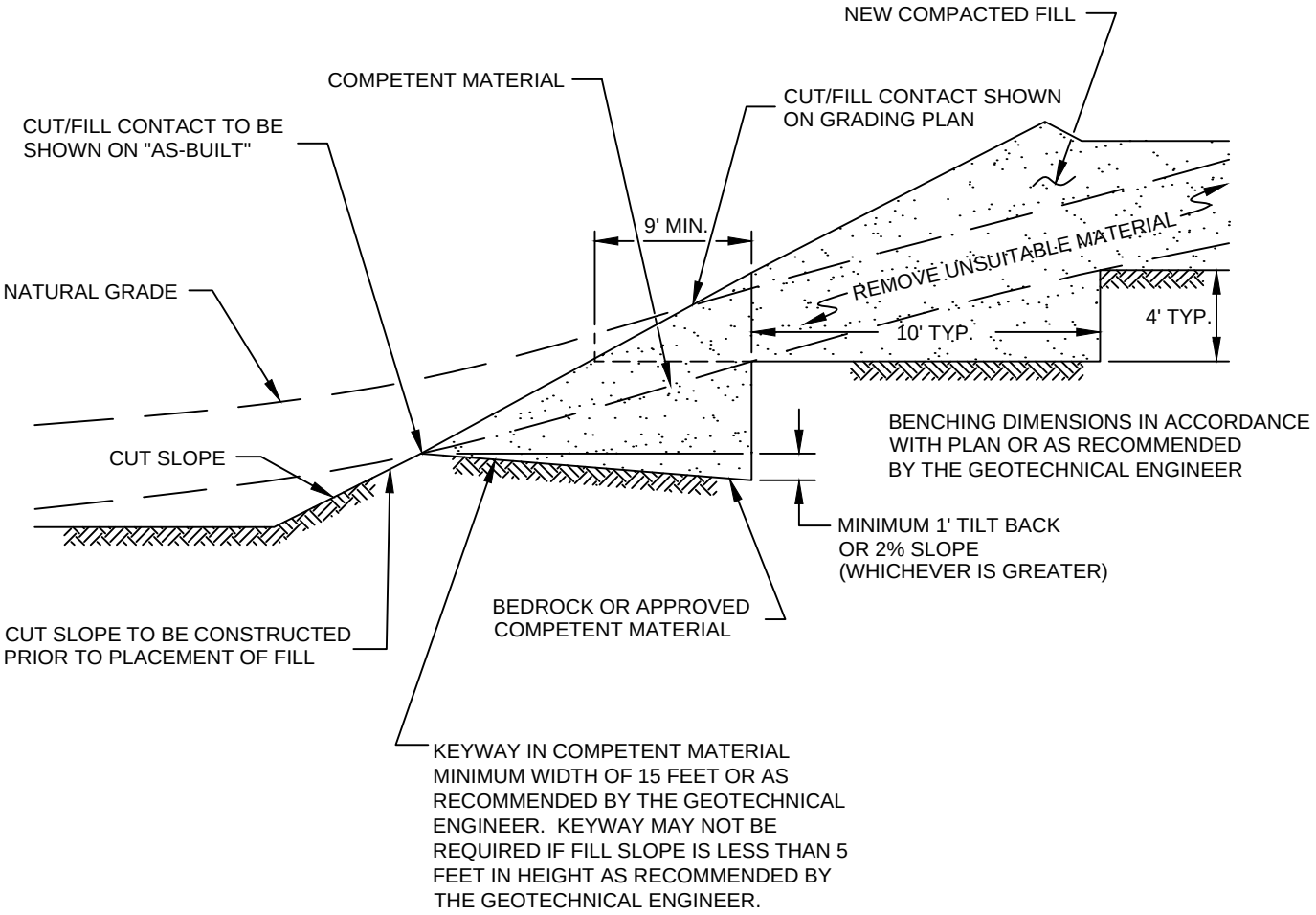
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

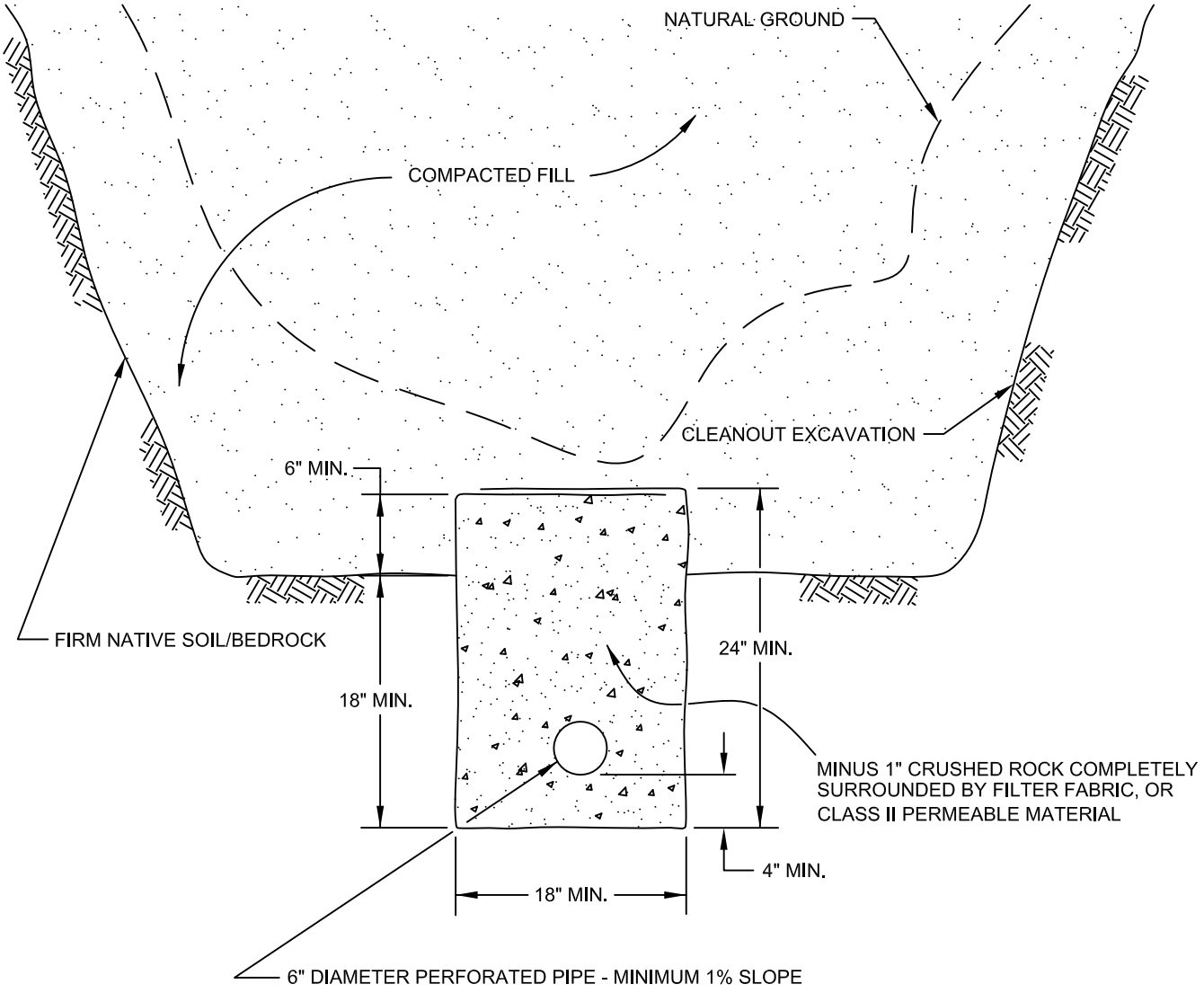
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

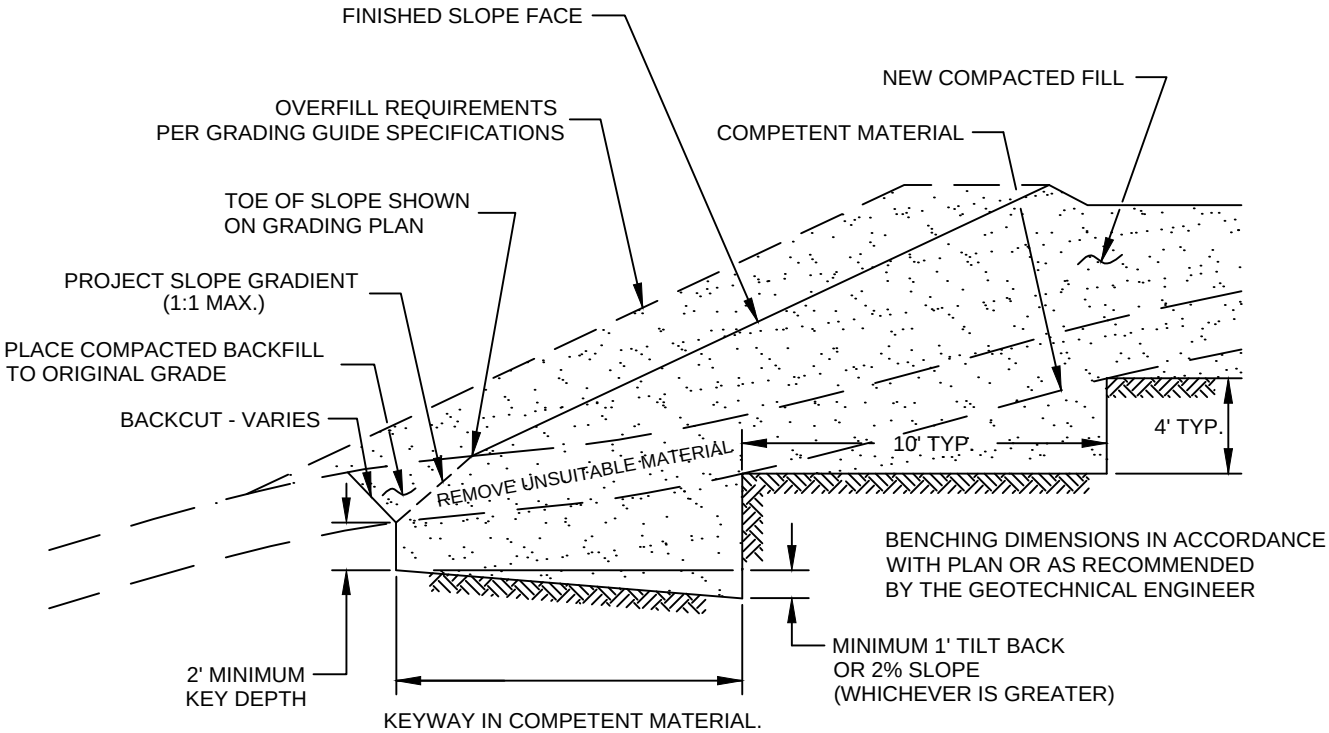
SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE
DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED WHEN NATURAL SLOPES ARE EQUAL TO OR STEEPER THAN 5:1 OR WHEN RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

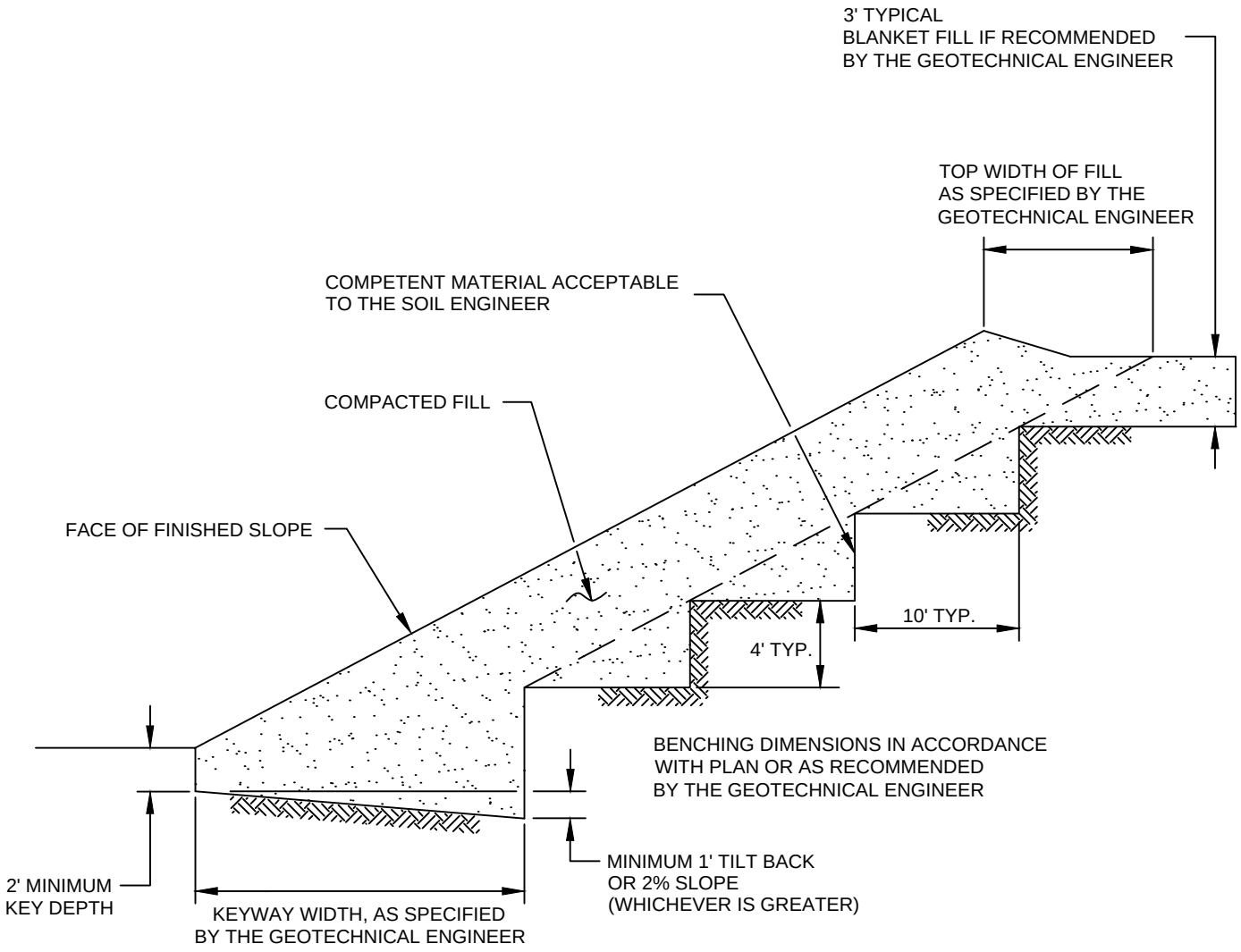
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

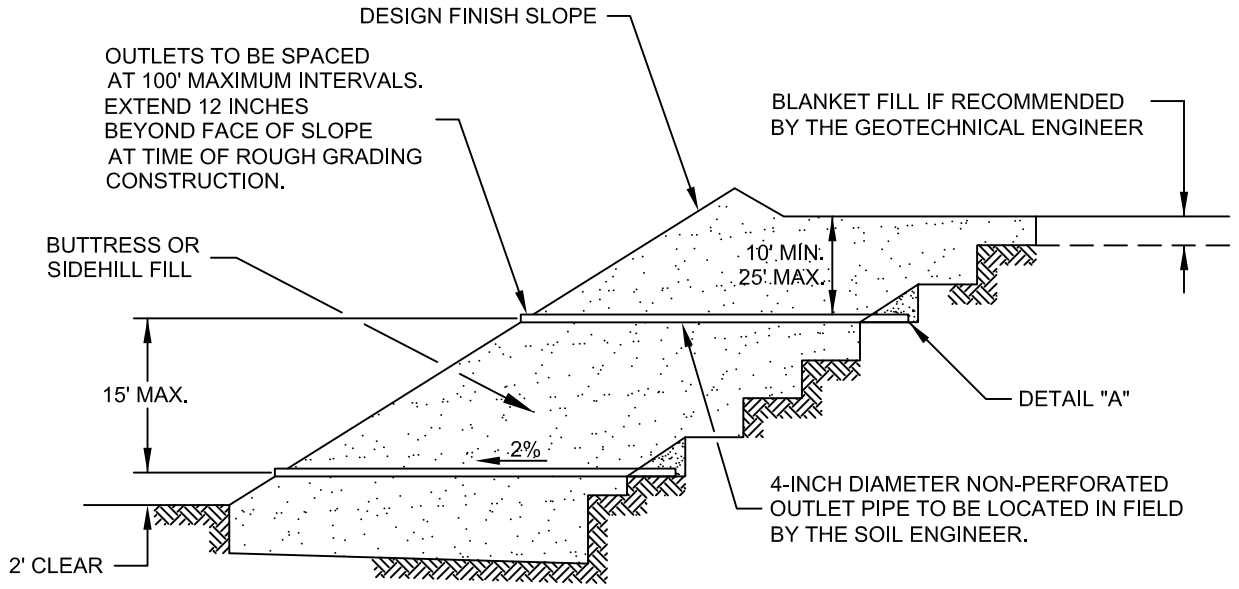
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



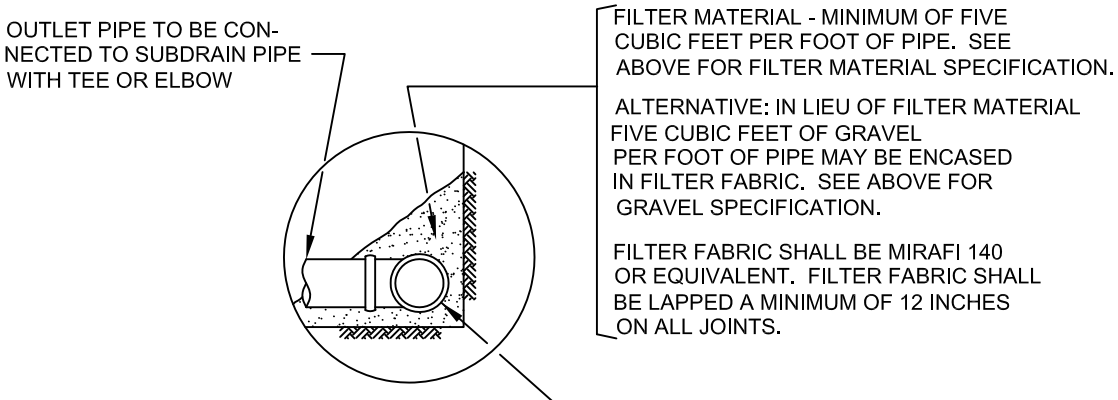
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

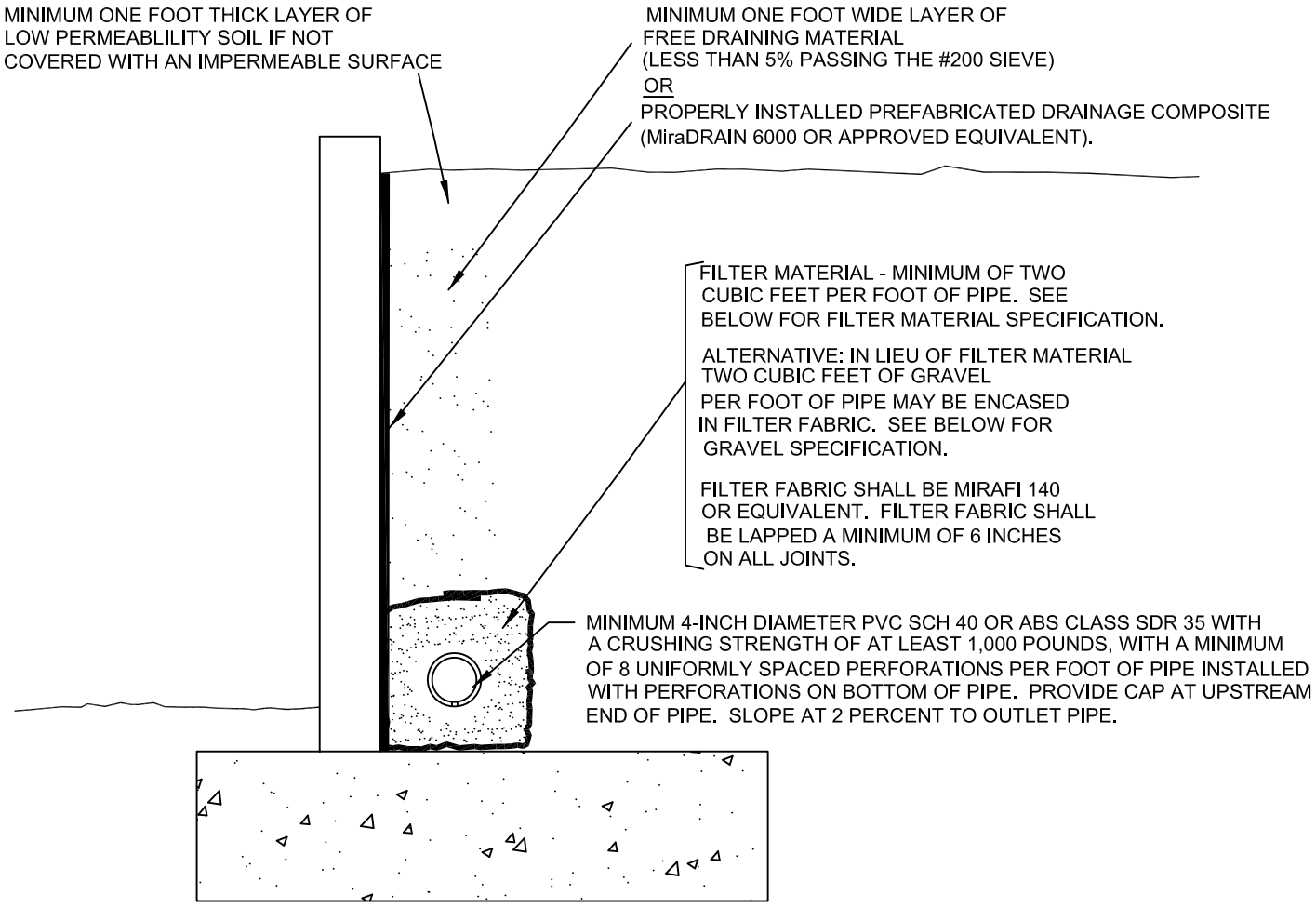
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

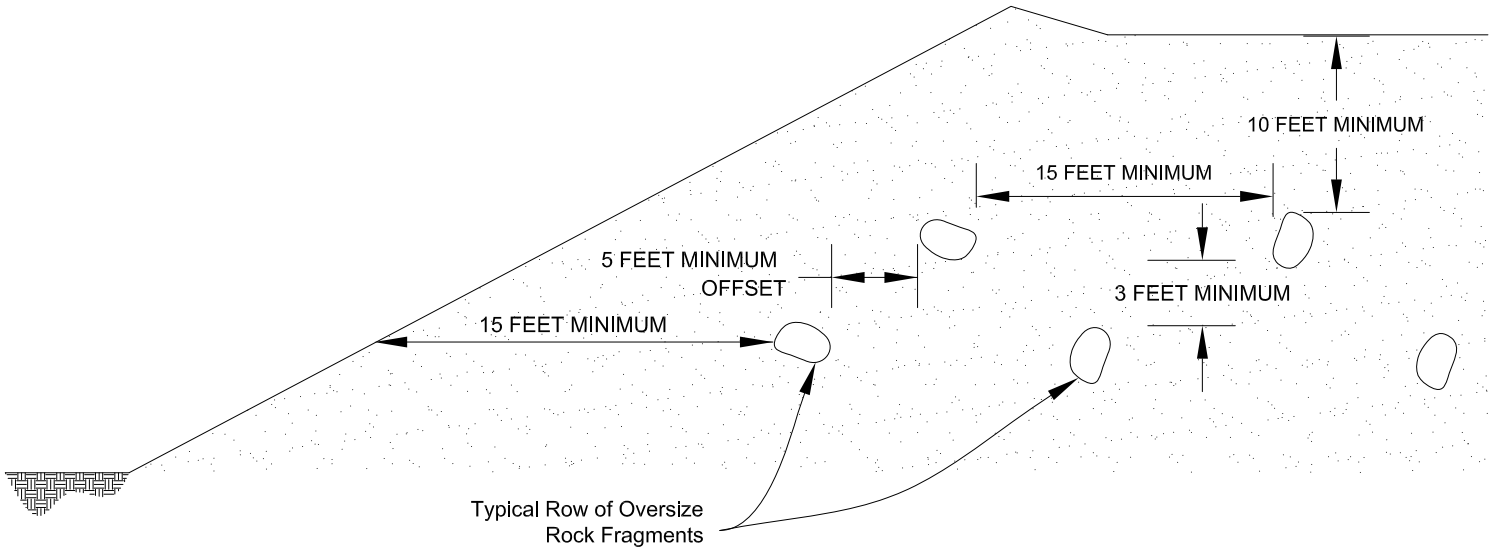
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DRAWN: JAS
CHKD: GKM

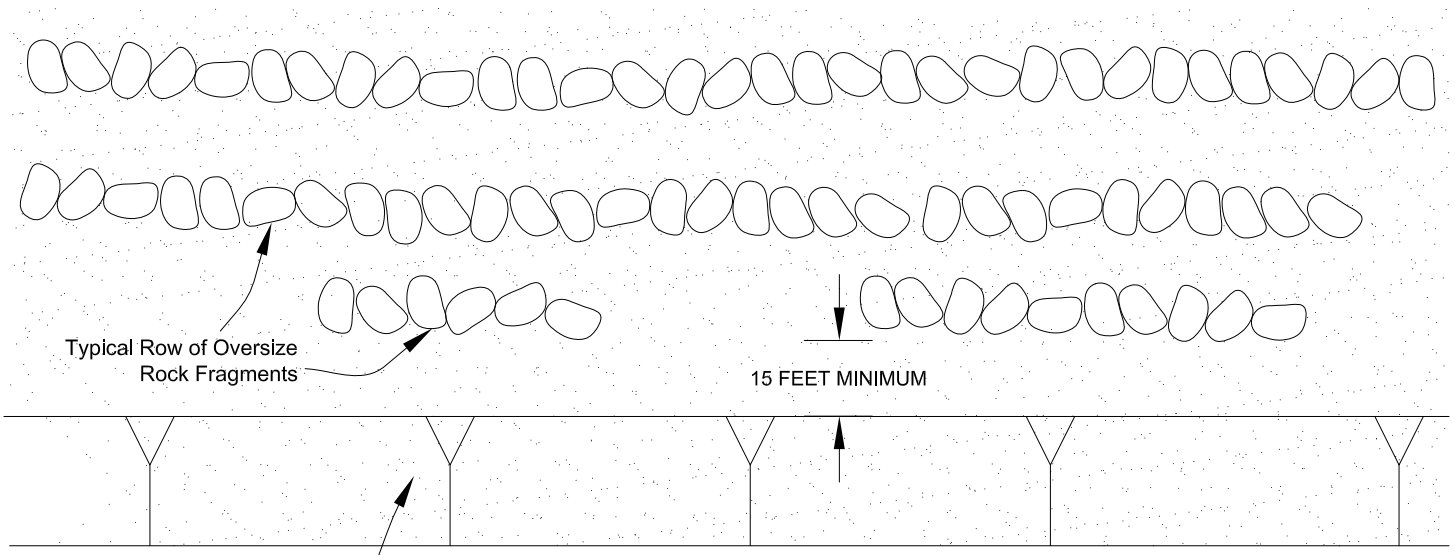
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

PLATE D-8

SoCalGeo

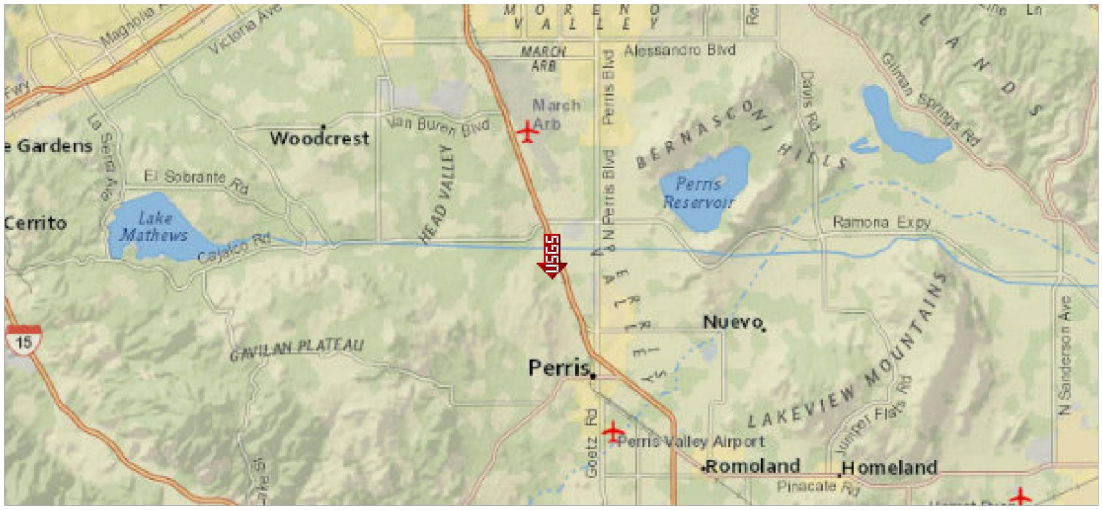
SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

USGS Design Maps Summary Report

User–Specified Input

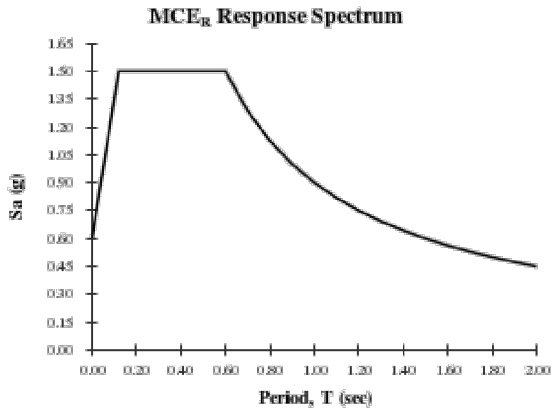
Building Code Reference Document	ASCE 7-10 Standard (which utilizes USGS hazard data available in 2008)
Site Coordinates	33.83134°N, 117.24802°W
Site Soil Classification	Site Class D – "Stiff Soil"
Risk Category	I/II/III

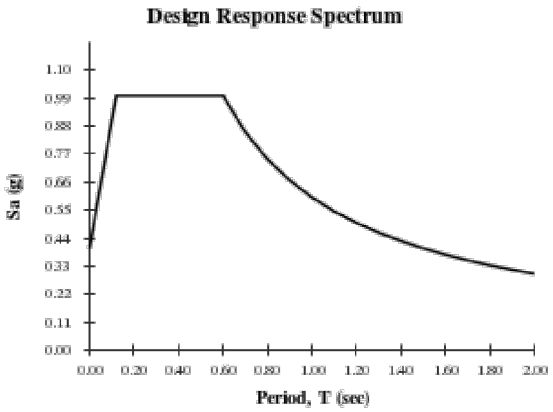


USGS–Provided Output

S_S =	1.500 g	S_{MS} =	1.500 g	S_{DS} =	1.000 g
S_1 =	0.600 g	S_{M1} =	0.900 g	S_{D1} =	0.600 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





SOURCE: U.S. GEOLOGICAL SURVEY (USGS)
<http://geohazards.usgs.gov/designmaps/us/application.php>

SEISMIC DESIGN PARAMETERS
PROPOSED WAREHOUSE
RIVERSIDE COUNTY, CALIFORNIA

DRAWN: CT
CHKD: RGT
SCG PROJECT 18G185-1
PLATE E-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL

October 1, 2018

Duke Realty
200 Spectrum Center Drive, Suite 1600
Irvine, California 92618

Attention: Mr. Adam Schmid
Development Services Manager

Project No.: **18G185-2**

Subject: **Results of Infiltration Testing**
Proposed Warehouse
NEC Harvill Avenue and Rider Street
Riverside County, California

Reference: Geotechnical Investigation, Proposed Warehouse, NEC Harvill Avenue and Rider Street, Riverside County, California, prepared for Duke Realty, prepared by Southern California Geotechnical, Inc. (SCG), SCG Project No. 18G185-1, dated October 1, 2018.

Gentlemen:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Proposal No. 18P358, dated August 22, 2018. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Site and Project Description

The subject site is located at the northeast corner of Harvill Avenue and Rider Street in an unincorporated portion of Riverside County near Perris, California. The site is bounded to the north by a vacant lot, to the west by Harvill Avenue, to the south by Rider Street, and to the east by a railroad easement. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 of this report.

The subject site consists of two (2) parcels, totaling 14.4± acres in size. The southeastern area of the site was developed with an industrial building, approximately 4,500 ft^2 in size. The building is of metal construction and assumed to be supported on a conventional shallow foundation with a concrete slab-on-grade floor. Five (5) silo structures, 70± feet in diameter, are located in the southern area of the site. Two railroad spurs are located in the southeastern area

of the site extending to the southeastern corner of the silos. There is a parallel curb and gutter, 6½± feet apart, that extends from the northwestern industrial area to Harvill Street The ground surface cover surface in the southeastern area of the site consists of asphaltic concrete pavements. The remaining areas of the site are vacant and undeveloped. The ground surface cover in these areas consist of exposed soil with moderate native grass and weed growth. There is a 10± foot-high soil berm at the northern section of the site that extends 275± feet.

Detailed topographic information was not available at the time of this report. However, based on topographic information obtained from Google Earth, the site topography ranges from 1503± feet mean sea level (msl) in the central-east area of the site to 1516± feet msl in the northern area of the site. The site topography slopes gently downward toward the southeast at a gradient of approximately 1± percent.

Proposed Development

A site plan for the proposed development, prepared by Duke Realty, was provided to our office by the client. This plan indicates that the site will be developed with a new warehouse. The building will be located in the west-central area of the site and will be 316,500± ft^2 in size. The building will be constructed with dock-high doors along the east side of the building. It is expected that the building will be surrounded by asphaltic concrete pavements for parking and drive lanes and Portland Cement Concrete (PCC) pavements in the loading docks. Several landscape planters and concrete flatwork are expected to be included throughout the site.

Although not indicated on the site plan, we understand that the proposed development may include on-site infiltration to dispose of storm water. Based on the current site layout and conversations with the client, the proposed infiltration system will consist of either a below-grade chamber system or infiltration/detention basin located in the southern area of the site. The bottom of the infiltration system will extend to a depth of 7± feet below the existing site grades.

Concurrent Study

Southern California Geotechnical, Inc. (SCG) recently conducted a geotechnical investigation at the subject site, which is referenced above. As a part of this study, six (6) borings were advanced to depths of 20 to 50± feet below existing site grades.

Asphaltic concrete pavements were encountered at the ground surface at Boring No. B-4. The pavement section at B-4 consists of 3± inches of asphaltic concrete underlain by 3± inches of aggregate base. Artificial fill soils were encountered beneath the pavements at Boring No. B-4, extending to depths of 5± feet below the existing site grades. The artificial fill soils generally consist of loose to medium dense silty fine to medium sands with trace clay content. The fill soils possess a disturbed appearance and artificial debris, including asphaltic concrete fragments, resulting in their classification as artificial fill. Native alluvium was encountered beneath the artificial fill soils at Boring No. B-4, and at the ground surface at all of the remaining borings. The near surface alluvial soils within the upper 20 to 30± feet generally consist of loose to medium dense silty sands and clayey sands. However, most of the borings also encountered hard fine sandy clay layers and/or dense to very dense clayey sand layers within the upper 10± feet. Some of the alluvial soils within the upper 5 to 6± feet are porous. Some of the soils encountered throughout the upper 20± feet are weakly cemented.

The native alluvial soils encountered between depths of 32± feet and the maximum depth explored of 50± feet generally consist of medium dense to dense silty fine to medium sands with trace to little clay content. Some of the recovered samples possessed trace fine gravel content.

Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the lack of any water within the borings and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the subsurface exploration. As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level for the site. Recent water level data, obtained from GeoTracker, indicates that the nearest monitoring well is located 1.1± miles northeast of the subject site. Water level readings within this monitoring well indicates a high groundwater level of 79± feet (February 2015) below the ground surface.

Subsurface Exploration

Scope of Exploration

The subsurface exploration for the infiltration testing consisted of two (2) backhoe-excavated trenches, extending to depths of 7± feet below existing site grades. The trenches were logged during excavation by a member of our staff. The approximate locations of the infiltration trenches (identified as I-1 and I-2) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Geotechnical Conditions

Asphaltic concrete pavements were encountered at the ground surface at Infiltration Trench No. I-1, measuring 3 to 4± inches in thickness. Artificial fill soils were encountered beneath the pavements at I-1, extending to a depth of 1½± feet below the existing site grades. The fill soils consist of dense silty fine sands with little medium to coarse sands. The fill soils possess a disturbed appearance resulting in their classification as artificial fill.

Native alluvium was encountered at the ground surface at Infiltration Trench No. I-2 and beneath the fill soils at I-1, extending to at least the maximum depth explored of 7± feet below existing site grades. The alluvial soils generally consist of loose to dense silty fine sands to fine sandy silts and silty fine to medium sands with varying coarse sand and clay content. Very dense, cemented silty sands were encountered at Infiltration Trench No. I-2, extending from 4½± feet to at least 7± feet below existing grade. The Trench Logs, which illustrate the conditions encountered at the infiltration test locations, are included with this report.

Infiltration Testing

The infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer. Two stainless steel infiltration rings were used for the infiltration testing. The outer infiltration ring is 2 feet in diameter and 20 inches in height. The inner infiltration ring is 1 foot in diameter and 20 inches in height. At the test locations, the outer ring was driven 3± inches into the soil at the

base of each trench. The inner ring was centered inside the outer ring and subsequently driven 3± inches into the soil at the base of the trench. The rings were driven into the soil using a ten-pound sledge hammer. The soil surrounding the wall of the infiltration rings was only slightly disturbed during the driving process.

Infiltration Testing Procedure

Infiltration testing was performed at both of the test locations. The infiltration testing consisted of filling the inner ring and the annular space (the space between the inner and outer rings) with water, approximately 3 to 4 inches above the soil. To prevent the flow of water from one ring to the other, the water level in both the inner ring and the annular space between the rings was maintained using constant-head float valves. The volume of water that was added to maintain a constant head in the inner ring and the annular space during each time interval was determined and recorded. A cap was placed over the rings to minimize the evaporation of water during the tests.

The schedule for readings was determined based on the observed soil type at the base of each backhoe-excavated trench. Based on the existing soils at each infiltration test location, the volumetric measurements were made at increments of 20 and 30 minutes. The water volume measurements are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on these spreadsheets.

The infiltration rates for the infiltration tests are calculated in centimeters per hour and then converted to inches per hour. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Soil Description	Infiltration Rate (inches/hour)
I-1	7	Silty fine to medium Sand, little Clay	0.7
I-2	7	Silty fine to medium Sand	0.1

Laboratory Testing

Moisture Content

The moisture contents for selected soil samples taken from the trenches were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Trench Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the base of each infiltration test trench has been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of these tests are presented on Plates C-1 and C-2 of this report.

Design Recommendations

Two (2) infiltration tests were performed at the subject site. As noted above, the calculated infiltration rates at the infiltration test locations are **0.1** and **0.7** inches per hour. The cemented and very dense silty sands encountered at the bottom of Infiltration Trench No. I-2 resulted in very low and nearly non-existent infiltration rates at the I-2 location.

Based on the very low infiltration rates at the depth tested within I-2, the very dense, cemented soils in the southwestern region of the subject site are not considered suitable for infiltration. However, if the proposed infiltration system is located in the southeastern region of the subject site, we recommend a design infiltration rate of 0.7 inches per hour be used for the proposed infiltration system.

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the system. It should be confirmed that the soils at the base of the proposed infiltration system correspond with those presented in this report to ensure that the performance of the system will be consistent with the rate reported herein.

The design of the proposed storm water infiltration system should be performed by the project civil engineer, in accordance with the City and/or County of Riverside guidelines. However, it is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the system. The presence of such materials would decrease the effective infiltration rate. **It is recommended that the project civil engineer apply an appropriate factor of safety. The infiltration rate recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates.** It should be noted that the recommended infiltration rates are based on infiltration testing at two (2) discrete locations and the overall infiltration rate of the storm water infiltration system could vary considerably.

Infiltration versus Permeability

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. The infiltration rates presented herein were determined in accordance with the ASTM Test Method D-3385-03 standard and are considered valid for the time and place of the actual test. Changes in soil moisture content will affect these infiltration rates. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration areas could potentially be damaged due to saturation of subgrade soils. **The proposed infiltration system for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration system at least 25 feet from the building, it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in

accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

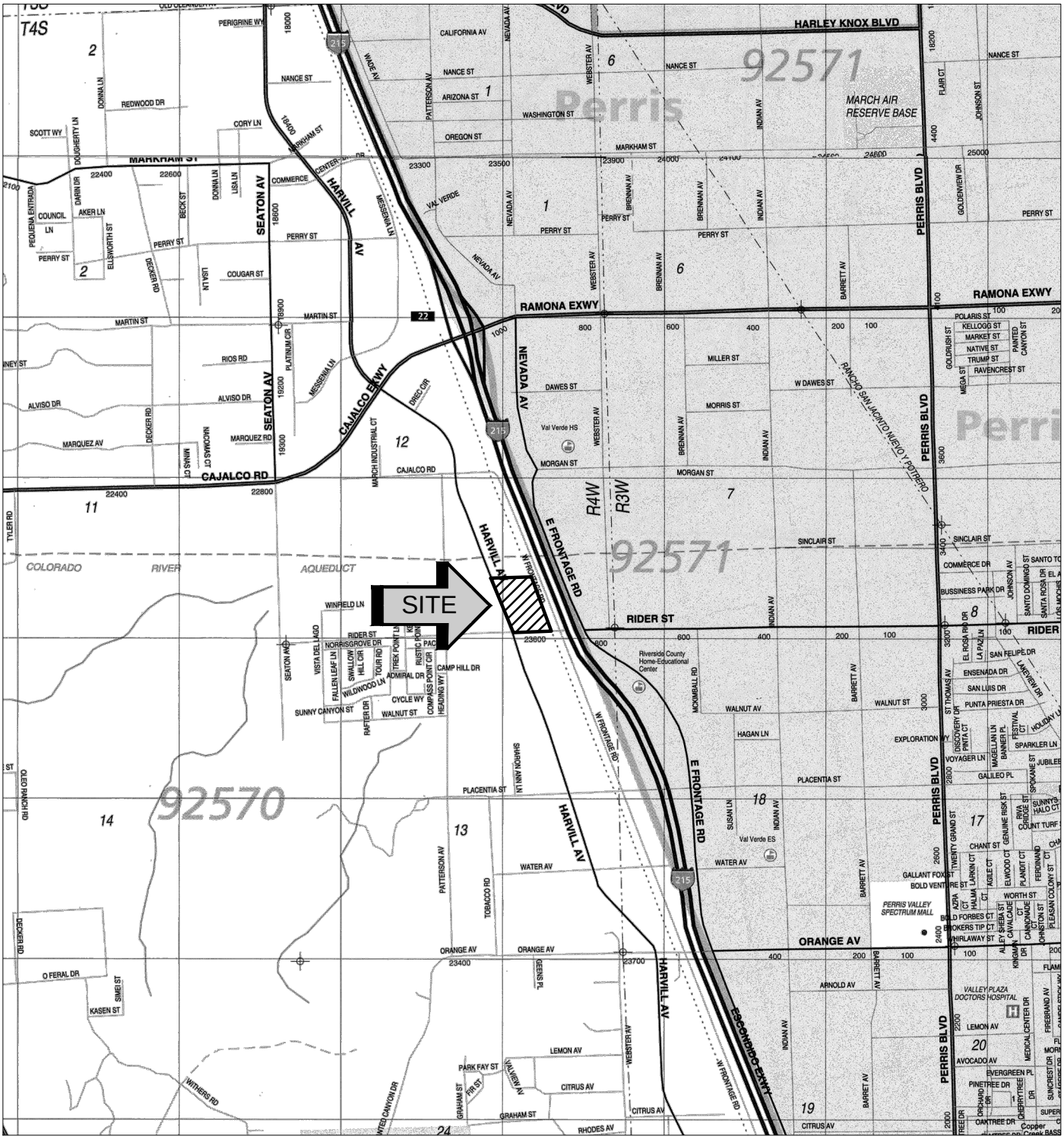
Scott McCann
Staff Scientist

Robert G. Trazo, GE 2655
Project Engineer



Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Trench Logs (2 pages)
Infiltration Test Results Spreadsheets (2 pages)
Grain Size Distribution Graphs (2 pages)



SOURCE: RIVERSIDE COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP

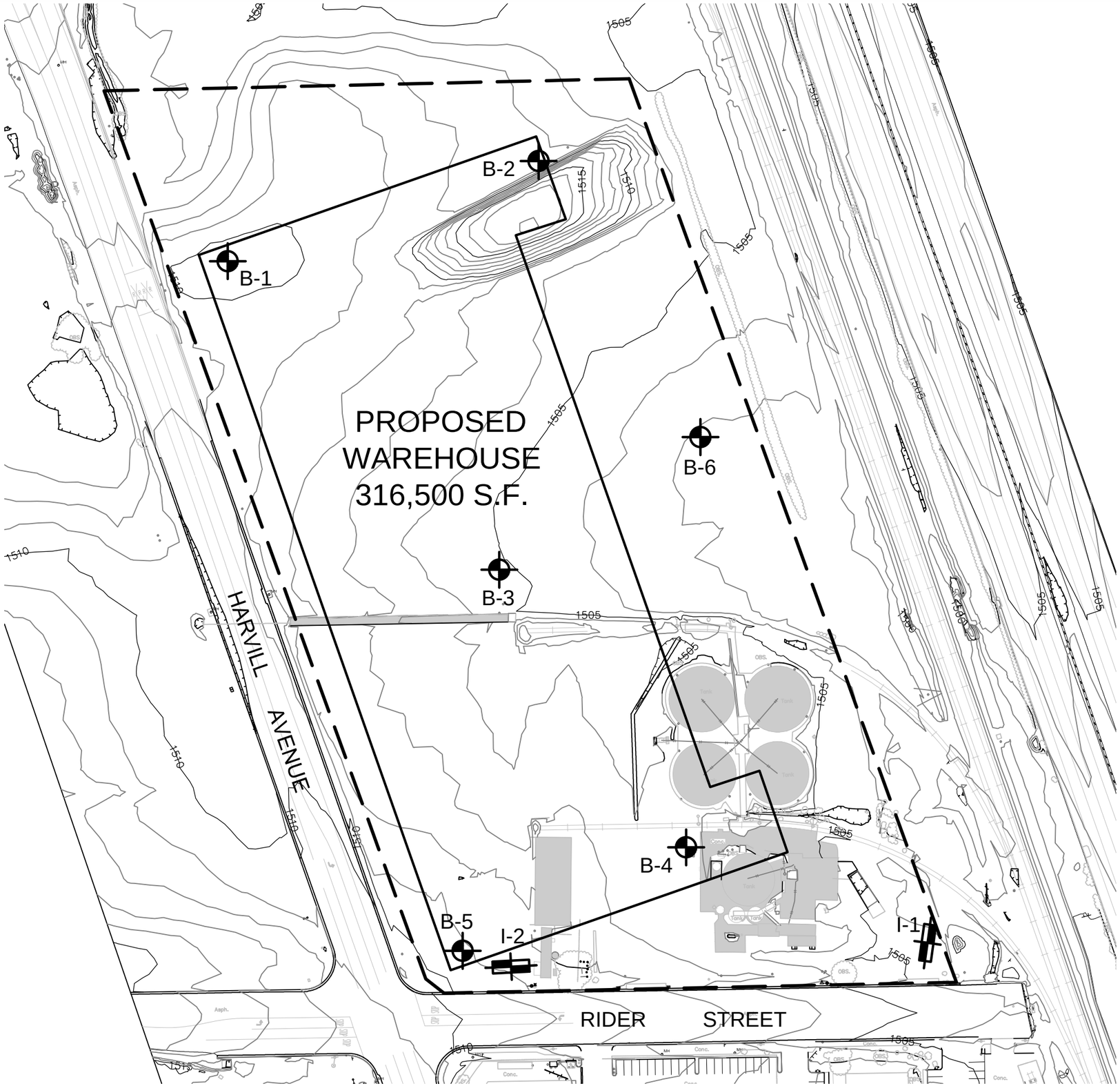
PROPOSED WAREHOUSE

RIVERSIDE COUNTY, CALIFORNIA

SCALE: 1" = 2400'	
DRAWN: CT CHKD: RGT	
SCG PROJECT 18G185-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION FROM CONCURRENT STUDY (SCG PROJECT NO. 18G185-1)
- EXISTING STRUCTURES TO BE DEMOLISHED

NOTE: TOPOGRAPHIC INFORMATION PROVIDED BY ALBERT A. WEBB ASSOCIATES.
CONCEPTUAL SITE PLAN PROVIDED BY DUKE REALTY.

INFILTRATION TEST LOCATION PLAN

PROPOSED WAREHOUSE

RIVERSIDE COUNTY, CALIFORNIA

SCALE: 1" = 120'	SOUTHERN CALIFORNIA GEOTECHNICAL
DRAWN: JLL CHKD: RGT	
SCG PROJECT 18G185-2	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-1

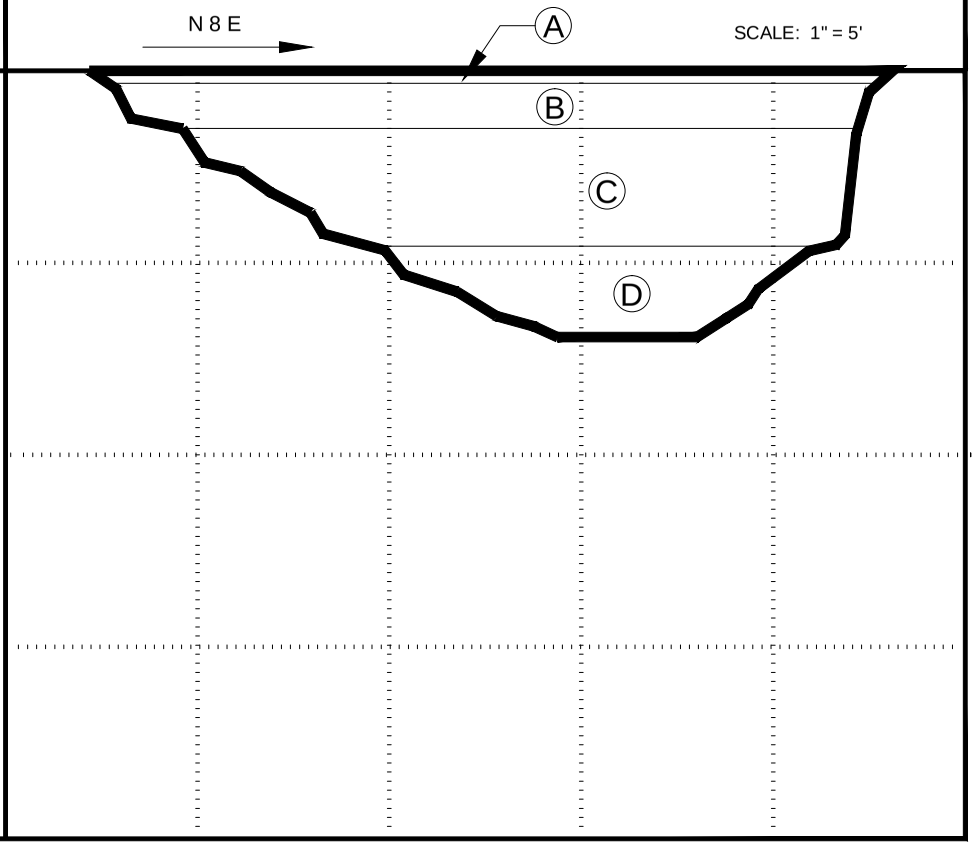
JOB NO.: 18G185-2
PROJECT: Proposed Warehouse
LOCATION: Riverside County, CA
DATE: 9-6-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Scott McCann
ORIENTATION: N 8 E
TOP OF TRENCH ELEVATION: 1504.5 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		5	A: ASPHALTIC CONCRETE (AC): 3 to 4 inches thick B: FILL: Brown Silty fine Sand, little medium to coarse Sand, dense - damp
	b		8	C: ALLUVIUM: Brown fine Sandy Silt, trace medium Sand, medium dense - damp to moist
5	b		9	D: ALLUVIUM: Brown Silty fine to medium Sand, little Clay, dense - damp to moist
				Trench Terminated @ 7 feet Bottom of Trench Elevation: 1497.5 feet msl
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-2

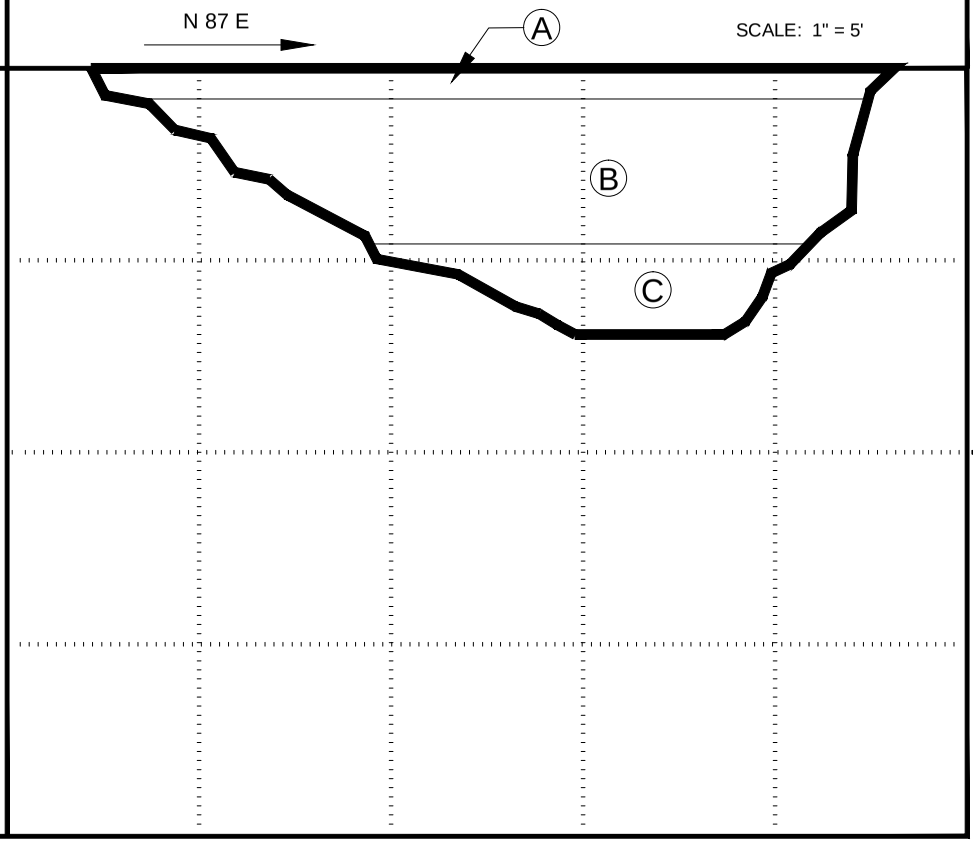
JOB NO.: 18G185-2
PROJECT: Proposed Warehouse
LOCATION: Riverside County, CA
DATE: 9-6-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Scott McCann
ORIENTATION: N 87 E
TOP OF TRENCH ELEVATION: 1509 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		4	A: ALLUVIUM: Light Brown fine to medium Sandy Silt, little coarse Sand, abundant fine root fibers, loose - dry B: ALLUVIUM: Brown Silty fine Sand to fine Sandy Silt, little medium to coarse Sand, trace calcareous veining, slightly cemented, dense - damp
5				C: ALLUVIUM: Brown Silty fine to medium Sand, cemented, very dense - damp
	b		6	Trench Terminated @ 7 feet Bottom of Trench Elevation: 1502 feet msl
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-2

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Riverside County, CA
Project Number	18G185-2
Engineer	Scott McCann

Infiltration Test No: I-1

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	11:15 AM	20	1200	600	550	2150	2.47	2.95	0.97	1.16
	Final	11:35 AM	**20**	1800		2700					
2	Initial	11:35 AM	20	1900	550	2700	1800	2.26	2.47	0.89	0.97
	Final	11:55 AM	**40**	2450		4500					
3	Initial	11:55 AM	20	450	500	500	1650	2.06	2.26	0.81	0.89
	Final	12:15 PM	**60**	950		2150					
4	Initial	12:15 PM	20	950	450	3200	1600	1.85	2.19	0.73	0.86
	Final	12:35 PM	**80**	1400		4800					
5	Initial	12:35 PM	20	200	425	1250	1500	1.75	2.06	0.69	0.81
	Final	12:55 PM	**100**	625		2750					
6	Initial	12:55 PM	20	650	400	2800	1450	1.64	1.99	0.65	0.78
	Final	1:15 PM	**120**	1050		4250					
7	Initial	1:15 PM	20	1050	400	2050	1450	1.64	1.99	0.65	0.78
	Final	1:35 PM	**140**	1450		3500					
8	Initial	1:35 PM	20	250	400	900	1400	1.64	1.92	0.65	0.76
	Final	1:55 PM	**160**	650		2300					

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Riverside County, CA
Project Number	18G185-2
Engineer	Scott McCann

Infiltration Test No: I-2

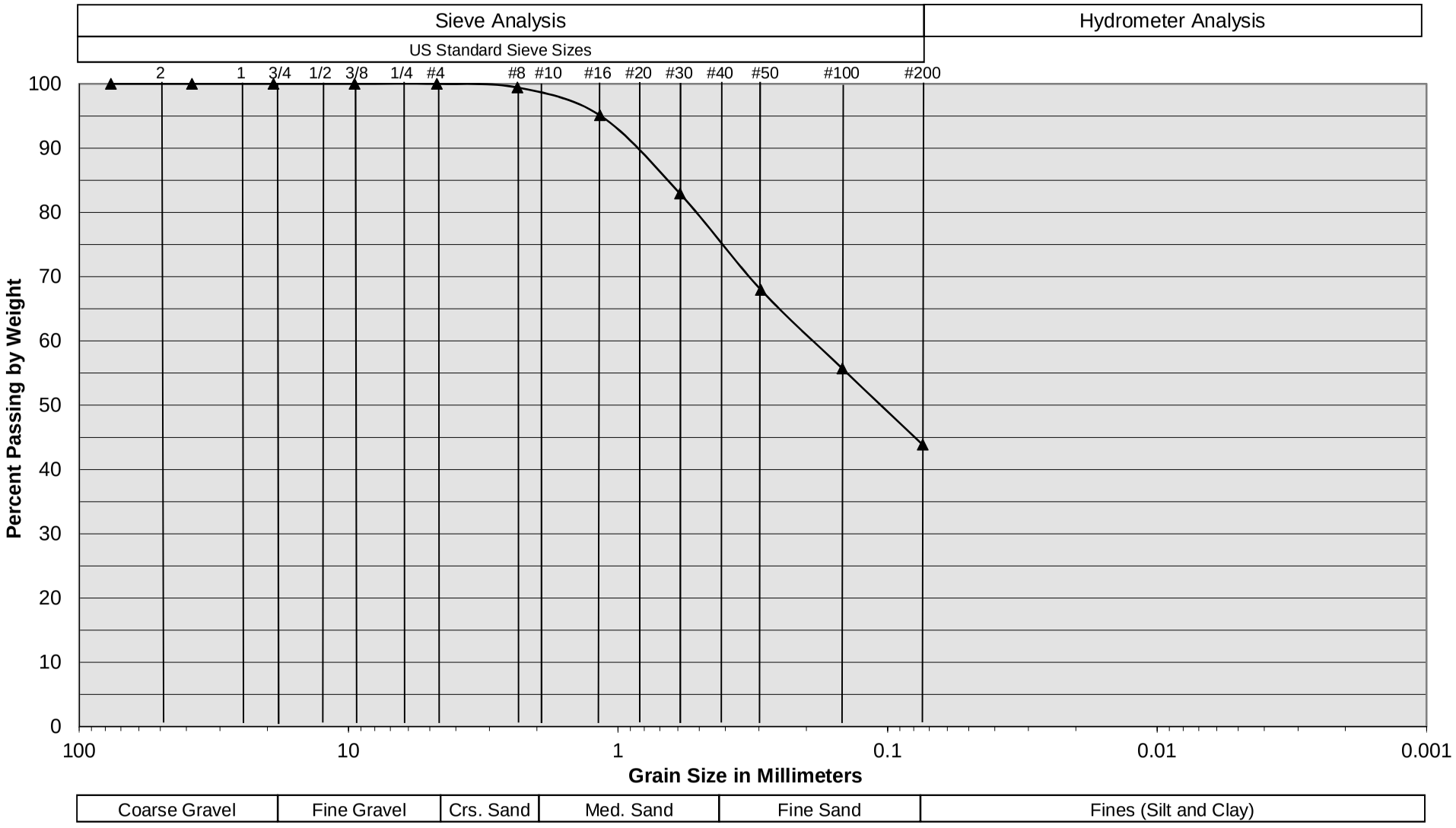
Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	8:00 AM	30	250	400	600	1250	1.10	1.14	0.43	0.45
	Final	8:30 AM	**30**	650		1850					
2	Initial	8:30 AM	30	650	150	1850	600	0.41	0.55	0.16	0.22
	Final	9:00 AM	**60**	800		2450					
3	Initial	9:00 AM	30	50	75	300	350	0.21	0.32	0.08	0.13
	Final	9:30 AM	**90**	125		650					
4	Initial	9:30 AM	30	125	50	650	300	0.14	0.27	0.05	0.11
	Final	10:00 AM	**120**	175		950					
5	Initial	10:00 AM	30	200	50	1000	300	0.14	0.27	0.05	0.11
	Final	10:30 AM	**150**	250		1300					
6	Initial	10:30 AM	30	250	50	1300	300	0.14	0.27	0.05	0.11
	Final	11:00 AM	**180**	300		1600					

Grain Size Distribution

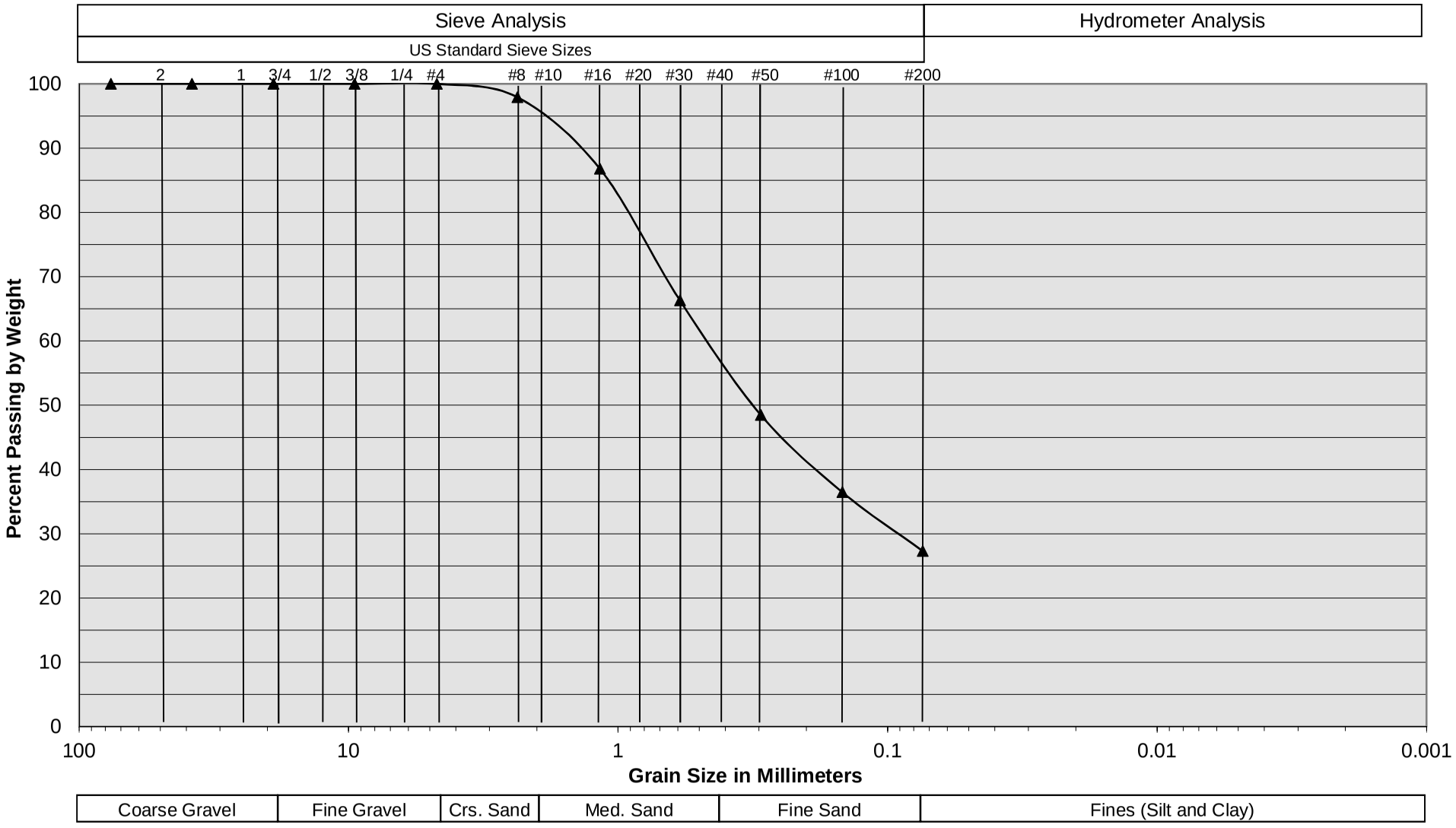


Sample Description	I-1 @ 7 feet
Soil Classification	Brown Silty fine to medium Sand, little Clay

Proposed Warehouse
Riverside County, CA
Project No. 18G185-2
PLATE C-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-2 @ 7 feet
Soil Classification	Brown Silty fine to medium Sand

Proposed Warehouse
Riverside County, CA
Project No. 18G185-2
PLATE C-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

PHASE I ENVIRONMENTAL SITE ASSESSMENT

23840 Rider Street
Perris, California

Prepared For:

Duke Realty
200 Spectrum Center Drive, Suite 1600
Irvine, California 92618

Prepared By:

3478 Buskirk Avenue, Suite 100
Pleasant Hill, CA 94523

February 11, 2019

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Appendix I Building Permits Report

EXECUTIVE SUMMARY

Apex Companies, LLC (Apex) performed a Phase I Environmental Site Assessment (ESA) of the property located to the northeast of the Harvill Avenue and Rider Street intersection in Perris, California (Subject Property) on behalf of Duke Realty (Duke). The Subject Property is comprised of two parcels identified as City of Perris Assessor's Parcel Numbers (APNs) 317-170-024 and 317-170-045. Parcel 024 consists of approximately 1.81 acres of undeveloped land. Parcel 045 consists of approximately 13.27 acres containing a former grain milling operation on the south portion of the Subject Property, adjacent east of Parcel 024, and undeveloped land on the north portion of the parcel. The former grain milling operation consists of one main building that operated as the mixing plant, office, warehouse and drug (i.e. antibiotics added to animal feed) storage area, with a loading dock on the east side of the warehouse and connects to the scale house, one trailer office, one large grain silo, and several "additive" above ground storage tanks (ASTs) that held vegetable/canola oil, Alimet® (a livestock feed additive), fish byproducts, animal fat, and "bakery" (flour, dough, etc.) additives. North of the main building, connected through auger belts, are four large grain silos with air venting systems to remove dust from the silos, thereby reducing the potential for combustion. Two railroad spurs that were used to unload shipped materials (i.e. corn) into the silos are located north and south of the four large silos. A corn-only truck loading platform is located on the west side of the four large silos. West of the main building is a storage/vehicle shed (storage shed) and mobile home, both currently occupied by a caretaker.

Based on historical information reviewed, the Subject Property was primarily undeveloped land with intermittent agriculture from at least 1938 to 1967. A grain milling operation has been in operation since 1968. The Subject Property previously contained two 10,000-gallon diesel underground storage tanks (USTs) that were removed June 25, 1998. Petroleum impacted soil apparently related to the operation of the USTs was documented to approximately 95-feet below ground surface (bgs); however, since groundwater was noted at approximately 120-feet bgs, and only low levels of gasoline constituents were detected to approximately 95-feet bgs and diesel was detected to approximately 40-feet bgs, and since the area was capped with asphalt and/or concrete, the Riverside County of Environmental Health (RCDEH) issued a case closure without requiring remediation. Staining was noticed beneath the corn-only feeder and on the cement in the storage shed that was previously used to repair vehicles, tractors, and other equipment, and a previous Phase I conducted by CW Soils (CWS) in 2013 noted staining on the loading dock. CWS also observed a septic system at the Subject Property that was not observed by Apex. Lastly, soil excavated from the construction of Harvill Avenue in 1994 was reportedly placed on the north portion of Parcel 045, subsequently creating a mound that was observed on the Subject Property.

The surrounding area is a mix of undeveloped land and light industrial/commercial properties. The industrial property south of the Subject Property, south of Rider Street, currently JM Eagle Perris Plant (23711 Rider Street), a plastic pipe manufacturing facility, first appeared in 1989, and expanded the operation from 1990 to 1997, at which time it resembled its current layout. The California Truss Company (a lumber facility located at 23665 Cajalco Road) north of the Site appeared in 1985, and

then expanded from 2006 to 2016, at which time it resembled its current layout. The commercial/industrial property east of the Subject Property and Interstate 215 (currently one residential property at 820 West Rider Street, and Ritchie Bros Auctioneers at 765 W Rider Street) first appeared in 1978 and expanded to its current configuration between 1994 to 2006.

This assessment has revealed no evidence of RECs in connection with the Subject Property except for the following:

- Two 10,000-gallon diesel USTs were removed from the Subject Property June 25, 1998. Soil impacted with residual diesel and petroleum was documented; however, the RCDEH issued a case closure based on low concentrations at greater than 45' bgs and no potential impact to groundwater (groundwater greater than 120' bgs). Based on the documented diesel and petroleum impacted soil Apex considers the historic usage of USTs at the Subject Property a REC.
- A septic system consisting of two 750-gallon septic tanks and seepage pit systems was described in the previous Phase I ESA. The septic system components were not observed during Apex's reconnaissance of the Subject Property. Although the septic system was reportedly used for restroom and hand-washing related wastes only and was not considered a REC by the authors of the report, Apex considers the presence of a septic system at industrial sites to be a REC since there is potential for improper disposal of hazardous materials via the system.
- Apex considers the presence of staining observed on the cement in the storage shed that was previously used to repair vehicles, tractors, and other general equipment a REC.
- Apex considers the soil stockpile observed on the north portion of the Subject Property to be REC based on its undocumented origin.

Based on these findings, should the property be converted from its current operations, Apex recommends conducting a Phase II Environmental Site Assessment consisting of collecting both shallow and deep soil samples for analysis of diesel and gasoline constituents to determine impacts from historical use in the area of the former USTs, and shallow soil samples from the vehicle repair area of the storage shed. Apex also recommends performing an in-depth search for the previously reported septic tank(s) and its associated leach field. If the septic system components can be found, Apex would recommend collection of soil samples from beneath each feature to assess the potential for improperly disposed hazardous materials.

The objective of this ESA was to identify recognized environmental conditions (RECs) in connection with the Subject Property. Apex performed this ESA in accordance with the proposal dated August 22, 2018 and the American Society and Testing Materials (ASTM) E1527-13 and the U.S. Environmental Protection Agency's Standards and Practices for All Appropriate Inquiries, 40 CFR 312. The findings, opinions and conclusions of this ESA are for the confidential and exclusive use of Duke, its affiliates, employees, agents, successors, and assigns. Reliance on this report for any use by parties other than specifically stated is prohibited without the express written consent of Apex

and Duke, and such use is at the sole risk of the User. Any exceptions to, or deletions from, this practice are described in Section 1.0 of this report.

TERMINOLOGY

This section contains definitions for technical terms used in the report. Italicized terms are defined in the American Society and Testing Materials (ASTM) Standard Practice E 1527-13 and provided below for easy reference.

Recognized Environmental Condition (REC): "The 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; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions."

Historical Recognized Environmental Condition (HREC): "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 a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a HREC, the environmental professional (EP) must determine whether the past release is a REC at the time the Phase I Environmental Site Assessment (ESA) is conducted (for example, if there has been a change in regulatory criteria). If the EP considers the past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a REC."

Controlled Recognized Environmental Condition (CREC): "A REC 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 the 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 EP to be a CREC shall be listed in the findings section of the Phase I ESA report, and as a REC in the conclusions section of the Phase I ESA report."

De minimis condition: "A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis conditions* are not *RECs* nor *controlled recognized environmental conditions*."

Business Environmental Risk: "A risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations."

Data Gap: "A lack of or inability to obtain information required by this practice despite good faith efforts by the EP to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including, but not limited to site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.)."

LIST OF ACRONYMS

AAI	All Appropriate Inquiries
APEX	Apex Companies, LLC
APN	Assessor's Parcel Number
AST	Aboveground Storage Tank
AUL	Activity and Use Limitations
ASTM	American Society and Testing Materials
CFR	Code Federal of Regulations
CREC	Controlled Recognized Environmental Condition
CUPA	Certified Unified Program Agency
Duke	Duke Realty
ECHO	Enforcement & Compliance History Information
EDR	Environmental Data Resources, Inc.
EMI	Emission Inventory Data
EP	Environmental Professional
EPA	Environmental Protection Agency
ESA	Phase I Environmental Site Assessment
ESL	Environmental Screening Level
ft bgs	Feet Below Ground Surface
FEMA	Emergency Management Agency
FINDS	Facility Index System
FIRM	Flood Insurance Rate Map
FWS	Fish and Wildlife Services
HAZMAT	Hazardous Material

HAZNET	Hazardous Waste Information System
HIST LUST	Historical Leaking Underground Storage Tank
HREC	Historical Recognized Environmental Condition
HWP	EnviroStor Permitted Facilities Listing
LUST	Leaking Underground Storage Tank
mg/kg	milligram per kilogram
NPDES	National Pollutant Discharge Elimination System
PCB	Polychlorinated biphenyls
RCRA	Resource Conservation and Recovery Act
NON-GEN/NLR	Non-Generator / No Longer Regulated
REC	Recognized Environmental Condition
SLIC	Spills, Leaks, Investigation, and Cleanup
SQG	Small Quantity Generator
SWEEPS	Statewide Environmental Evaluation and Planning System
USDA-NRCS	United States Department of Agriculture; Natural Resources Conservation Service
USGS	United States Geological Society
UST	Underground Storage Tank

1.0 INTRODUCTION

1.1 Purpose

Apex Companies, LLC has prepared this Phase I Environmental Site Assessment (ESA) at the request of the Duke Realty (Duke) to identify recognized environmental conditions (RECs) that may pose potential environmental risks associated with the Subject Property, located to the northeast of the Harvill Avenue and Rider Street intersection in Perris, California.

1.2 Scope of Services

This ESA was conducted in good commercial and customary practice by utilizing the American Society and Testing Materials (ASTM) E1527-13 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" and the U.S. Environmental Protection Agency's (EPA) Standards and Practices for All Appropriate Inquiries (AAI), 40 CFR, Part 312. The scope of services performed were in accordance with the proposal dated August 22, 2018 and included evaluation of the following:

- Environmental databases to determine the likelihood of current and historical releases of hazardous substances and petroleum through storage, treatment, and/or disposal on or near the Subject Property where migration could occur;
- Subject Property's history through prior reports on the GeoTracker database, interviews, historical aerial photographs, topographic maps, fire insurance maps, city directories, building permits, and the preliminary title report provided by the User;
- The Subject Property's current conditions by conducting an on-site survey of the Subject Property and visual evaluation of surrounding properties, and conducting interviews with representatives of regulatory agency(s), current property owner/operator, and/or consultants for owner/operator, and;
- Physical characteristics of the Subject Property including hydrologic and soil data through available environmental files from local agencies including California Regional Water Quality Control Board, California Department of Toxic Substances Control, the City of Ontario, San Bernardino County Division of Environmental Health Services, and other appropriate agencies.

Any *RECs, historical RECs* (HREC) or *controlled RECs* (CREC), as defined by ASTM E1527-13, that were identified during the assessment are discussed in the findings and conclusions sections of this report.

1.3 Significant Assumptions

Apex has performed the historical and environmental record searches in accordance with current ASTM and industry practice. The data, findings, and conclusions presented in this ESA are based upon a detailed search, review, and analysis of the documents and interviews as well as

observations made during the site reconnaissance. Conclusions reached regarding the conditions of the Subject Property do not represent a warranty that all areas within the Subject Property are of a similar quality as may be inferred from observable conditions and available history of the Subject Property. As stated in the ASTM Standard, no ESA can wholly eliminate uncertainty regarding the potential for environmental liability in connection with the Subject Property. Apex's evaluation and analysis are intended to reduce, not eliminate, the potential for conditions that result in liability for the User of this ESA.

1.4 Limitations and Exceptions

This report was prepared as a result of a contractual agreement that defined the approach and scope of services to be employed during the course of the investigation. The opinions and conclusions expressed in this study have been based strictly on the results of these contracted services. The scope of this ESA is intended to aid in the evaluation of RECs. The services provided by Apex should not be construed as a warranty or guarantee that no RECs exist at the Subject Property or that all RECs have been uncovered. No conclusions are stated or implied concerning the suitability of the Subject Property for its eventual use. This document is not intended for purposes other than those expressly set forth herein or for use by parties other than for whom it has been prepared.

As outlined in the ASTM Standard for ESAs and Apex's scope of work, this project was non-intrusive in nature and did not include any sampling or testing of soils, groundwater, surface water, or other materials. Additionally, unless specifically described in this report, Apex's scope of work explicitly excluded issues that are outside the scope of ASTM E1527-13 which would constitute a business environmental risk as defined by ASTM. The ASTM Standard Practice E1527-13 recognizes, but not limited to, the following inherent limitations for this ESA:

- Uncertainty is Not Eliminated - No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs, and this practice recognizes reasonable limits of time and cost.
- Not Exhaustive - All Appropriate Inquiry does not mean an exhaustive assessment of a property. There is a point at which the cost of information obtained or the time required to gather it outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions.
- Level of Inquiry Is Variable - Not every property will warrant the same level of assessment. Consistent with good commercial or customary practice, the appropriate level of environmental site assessment will be guided by the type of property, the expertise and risk tolerance of the user, and the information developed in the course of the inquiry.

In general, the EPA does not regulate indoor air quality except to the extent that indoor air impacts are caused by releases of hazardous substances into subsurface soil or groundwater (vapor intrusion). ASTM E1527-13 defines "migrate" and "migration" as referring to the movement of hazardous substances or petroleum products in any form, including solid and liquid at the surface or

subsurface, and vapor in the subsurface. Vapor migration in the subsurface is described in Guide E2600 – Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions; however, nothing in ASTM E1527-13 requires application of the Guide E2600 to achieve compliance with all appropriate inquiries.

An ESA completed less than 180 days prior to the date of acquisition of the property or (for transactions not involving an acquisition) the date of the intended transaction, is presumed to be valid. An ESA meeting or exceeding this practice and for which the information was collected or updated within one year prior to the date of the intended transaction, may be used provided that the following components of the ESA were conducted or updated within 180 days of the date of purchase or the date of the intended transaction:

- interviews with owners, operators, and occupants;
- searches for recorded environmental cleanup liens;
- reviews of federal, tribal, state, and local government records;
- visual inspections of the property and of adjoining properties, and;
- the declaration by the environmental professional responsible for the assessment or update.

1.5 Special Terms and Conditions

This project was performed in accordance with the scope of work, terms and conditions and limitations stated in the proposal dated August 22, 2018, and as stated in this report. There are no other special terms or conditions concerning this project.

1.6 User Reliance

This report documents the ESA of the Subject Property performed by Apex in accordance with the proposal and in accordance with ASTM E1527-13 and the U.S. EPA Standards and Practices for All Appropriate Inquiries, 40 CFR 312. The findings, opinions and conclusions of this Phase I ESA are for the confidential and exclusive use of Duke, its affiliates, employees, agents, successors, and assigns. Reliance on this report for any use by parties other than specifically stated is prohibited without the express written consent of Apex and Duke, and such use is at the sole risk of the user.

1.7 Data Gaps

Available historical information enabled Apex to identify the first developed use of the property and surrounding area, of which is a combination of undeveloped land and light industrial/commercial properties. Furthermore, consistent documentation exists for the Subject Property, such that significant data gaps were not encountered.

2.0 SITE DESCRIPTION

2.1 Site Location and Ownership

The Subject Property is located on the north side of Rider Street, bounded by Harvill Avenue to the west, railroad tracks and Interstate 215-Escondido Freeway to the east, California Truss Company (a lumber business) to the north, and JM Eagle (a plastic pipe manufacturer) to the south of Rider Street, in the City of Perris, California (**Figure 1)**. The Subject Property is approximately 15.08 acres and is identified as City of Perris Assessor's Parcel Numbers (APNs) 317-170-024 and 317-170-045, listed as 23840 and 23842 Rider Street, in Perris, California, 92570. According to the Environmental Lien Search Reports, both APN 317-170-024 and 317-170-045 are owned by Perris Valley Properties, LLC.

2.2 Current Uses and Improvements of Subject Property

The Subject Property has been developed as a grain milling operation on the southeast portion of the Subject Property since 1968 and remained undeveloped on the west and north portions of the Subject Property. The grain milling operations are currently not in use; however, the former grain milling operation facilities remain consisting of one main building that operates as the mixing plant, office, warehouse, and drug (i.e. antibiotics added to animal feed) storage area, a loading dock on the east side of the warehouse, and a scale house to the south, one trailer office, one large grain silo, and several "additive" above ground storage tanks that held vegetable/canola oil, Alimet®, fish biproducts, animal fat, and "bakery" (flour, dough, etc.) additives. North of the main building, connected through auger belts which transport the grain and corn, are four large grain silos with air venting systems to remove air from the silos, thereby reducing the potential for combustion. Railroad spurs are located north and south of the four large silos to unload shipped materials (i.e. corn) into the silos. A corn-only truck loading platform was located on the west side of the four large silos. West of the main building is a storage/vehicle shed and mobile home, both currently occupied by the property care taker.

The Subject Property previously contained two 10,000-gallon diesel USTs that were removed June 25, 1998. Impacted soil was noted to approximately 95-feet bgs (toluene); however, since groundwater is approximately 120-feet bgs., and since the area was capped with asphalt and/or concrete, the RCDEH issued a case closure without remediation.

Additionally, staining was noticed during the Phase I inspection beneath the corn-only feeder and on the cement in the storage shed that was previously used to repair vehicles, tractors, and other general equipment, and a previous Phase I conducted by CWS in December 2013 noted staining on the loading dock. Harvill Avenue appeared in 1994, which resulted in excavated material placed on the north portion of Parcel 045, subsequently creating a mound that remains on the Subject Property.

Photographs taken during the Site Reconnaissance are located in **Appendix A** which show current uses and improvements of the Subject Property.

2.3 Current Land Uses of Adjoining and Surrounding Properties

The Subject Property is surrounded by light industrial, commercial, residential, and undeveloped properties, as shown on the Site and Adjacent Properties Plan, provided as **Figure 2**, and listed in **Table 2-1** below.

The industrial property south of the Subject Property and south of Rider Street, currently JM Eagle Perris Plant (plastic pipe manufacturer), first appeared in 1989, and expanded the operation from 1990 to 1997, at which time it resembled its current layout. The California Truss Company (lumber yard) north of the Subject Property appeared in 1985, and then expanded from 2006 to 2016, at which time it resembled its current layout. The commercial/industrial property east of the Interstate 215-Escondido Freeway, first appeared in 1978 (currently a residential house), and expanded 1994 to 2006 (currently a Ritchie Bros Auctioneers), at which time it resembled its current configuration. The general area expanded its overall industrial/commercial properties in 2006; however, agriculture/rural properties are still present in the area in between the industrial/commercial properties.

TABLE 2-1: Adjacent and Surrounding Properties

Direction	Description
North	California Truss Company (commercial lumber yard).
East	Adjacent east are railroad tracks, which run parallel to Interstate 215-Escondido Freeway.
South	JM Eagle Perris Plant (plastic pipe manufacturer).
West	Harvill Avenue, followed by undeveloped and agriculture land.

3.0 USER PROVIDED INFORMATION

This section summarizes the information provided by the User, Duke Realty (Duke), for this Phase I Environmental Site Assessment (ESA). A User Questionnaire was prepared and sent to Duke to help retrieve the needed information and assist in gathering appropriate information that may help identify potential RECs on the property. At the time this report was prepared, the User Questionnaire had not been returned to Apex. A copy of the uncompleted questionnaire is provided in **Appendix B**. Information provided is summarized in **Table 3-1** and elsewhere in this report.

TABLE 3-1: User Provided Information

Data Type	Information Provided
Environmental Liens, AUL, Title Records	The Subject Property does not have an environmental lien or AUL.
Specialized User Knowledge	Mr. Robert Close of Duke Realty indicated he had no specialized knowledge related to the Subject Property.
Commonly Known or Reasonably Ascertainable Information	No information provided.
Valuation Reduction for Environmental Issues	The User is responsible to perform the additional inquiries regarding purchase price to the fair market value of the Site.
Reason for Performing Phase I ESA	This Phase I ESA was performed at the request of Duke in anticipation of an acquisition involving the Subject Property, for the User to qualify for defenses to CERCLA liability, and as part of Duke's Due Diligence for the acquisition loan requirements.
Other User Provided Information	The User provided Apex with a Phase I ESA completed in 2013.

4.0 RECORDS REVIEW

This section summarizes all records obtained by Environmental Data Resources, Inc.(EDR) and reviewed by Apex to help identify RECs in connection with the Subject Property. The first section discusses the physical setting sources that will provide an understanding of the physical characteristics of the Subject Property and surrounding area. This important information will help determine likelihood of potential of contaminants migrating onto the Subject Property from surrounding properties with environmental contaminants. The next section reviews current and historical environmental records associated with the Subject Property and surrounding properties. Relevant listings will be discussed and reviewed for potential RECs. The section for historical use record review will follow to develop a history of the previous uses of the Subject Property and surrounding area to help identify RECs from past uses followed by a findings section where identified RECs and information is summarized. The full EDR report can be found in **Appendix C**.

4.1 Physical Setting Sources

Although the ASTM E1527-13 Standards only require a current U.S. Geological Survey (USGS) 7.5 Minute Topographic Map for analysis, that is not enough information to fully characterize the physical setting of the Subject Property. Apex utilized several sources to understand the physical properties of the Subject Property and surrounding area, as shown in **Table 4-1**. This information will determine the likelihood of hazardous substances and/or petroleum contaminants migrating from surrounding areas through the soil and groundwater onto the Subject Property. More importantly, it will also identify significant environmental record listings in the following sections that are upgradient of groundwater flow where the contaminants could migrate onto the Subject Property.

TABLE 4-1: Physical Setting Sources

Data Type	Data Source
Topography	2012 U.S. Geological Survey Perris, California 7.5-minute topographic map. 2012 U.S. Geological Survey Steele Peak, California 7.5-minute topographic map. 2002 (updated 2006) U.S. Geological Survey 7.5-minute digital elevation model.
Floodplain	Federal Emergency Management Agency, Flood Insurance Rate Map
Wetlands	Fish and Wildlife Service (FWS) National Wetlands Inventory (http://www.fws.gov/wetlands/data/mapper.HTML)
Soils	United States Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) (http://websoilsurvey.nrcs.usda.gov/app/)
Geology	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).

4.1.1 Topography

The United States Geological Survey (USGS), Perris, California Quadrangle 7.5-minute series and Steele Peak, California Quadrangle 7.5-minute series topographic maps were reviewed for this ESA. The maps were published by the USGS in 2012. Based on a review of the topographic maps, the Property is approximately 1,510 feet above mean sea level. The contour lines also indicate that the Subject Property area is sloping to the east-northeast. The Colorado River Aqueduct is located in the Val Verde Tunnel bordering the north portion of the Subject Property, approximately 120-feet beneath the ground. The nearest aboveground water bodies are the San Jacinto River located approximately 5.2 miles south-southeast of the Subject Property, Lake Perris, a man-made lake built in the 1970s, located approximately 3.8 miles northeast of the Subject Property, and Lake Mathews located approximately 9 miles west of the Subject Property.

4.1.2 Geology and Soils

According to the USGS geologic Map of the Perris 7.5' Quadrangle in Riverside County (Morton, 2003), Perris is located between the Elsinore and San Jacinto fault zones, within the northern portion of the Peninsular Ranges Province within the central portion of the Perris block. The Perris quadrangle is underlain by Cretaceous plutonic and intrusive rocks.

Based on a review of the US Department of Agriculture's (USDA) Soil Conservation Service (SCS) maps, the Subject Property is primarily underlain by the Ramona and Greenfield sandy loam series. The Ramona and Greenfield soil series consist of deep and moderately deep, moderately well drained soils that formed in moderately coarse textured alluvium.

4.1.3 Hydrology and Hydrogeology

The Subject Property, located within the San Jacinto groundwater sub-basin, does not have surface water bodies on the property or in the immediate vicinity. However, the nearest bodies of water are the San Jacinto River located approximately 5.2 miles south-southeast of the Subject Property, Lake Perris, a man-made lake built in the 1970s, located approximately 3.8 miles northeast of the Subject Property, and Lake Mathews located approximately 9 miles west of the Subject Property. The radius map within the EDR Report (**Appendix C**) contains layers from the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) and the FWS National Wetlands Inventory Map. This figure shows that the Subject Property is not located on a national or state wetland or within a 100-year or 500-year flood zone.

A soil boring installed at the Subject Property in 1999 did not encounter groundwater to a depth of 100-feet bgs. Groundwater flow beneath the Subject Property was determined using several off-site sources listed on the California Water Resources Control Board's GeoTracker Database. The closest site with groundwater data is the Shell Service Station closed cleanup project located at 4039 N Perris Blvd, Perris located approximately 1.59 miles northeast of the Subject Property. According to a Confirmation Boring Assessment Report and Closure Request for that site dated April 22, 2009,

the depth to groundwater was approximately 80.52 to 81.06 feet with a flow direction reported southwest at a gradient of approximately 0.003 feet per foot. Additionally, the Colorado River Aqueduct is located in the Val Verde Tunnel, approximately 120-feet bgs, bordering the north portion of the Subject Property.

4.2 Environmental Record Review

The purpose of the environmental record review is to identify any records that the Subject Property or adjacent/surrounding properties are currently or historically associated with. This information will help identify any RECs in connection with the Subject Property and whether the listed sites with environmental records have current or former releases of hazardous substances and/or petroleum products that may have the potential to migrate onto the Subject Property.

4.2.1 Standard and Additional Environmental Record Sources

Consistent with ASTM E1527-13, a search of federal, state, and tribal environmental record sources within the established minimum search distances was conducted for the Subject Property by Environmental Data Resources, Inc. (EDR) and provided to Apex for review. The records search is used to identify adjoining or surrounding properties within the minimum search distance that may have a REC, HREC, CREC, or a de minimis condition that may exist at the Subject Property in connection with the searched listing. Apex reviewed the listings provided in the EDR report and summarized significant listings below. A full list of databases searched for this review can be found in the EDR report in **Appendix C**.

Environmental record sources required by the ASTM standard are listed below in **Table 4-2** along with the additional database sources that were searched and that produced a record result. Pertinent findings from the Record Review are discussed at the end of this section while significant findings as they pertain to RECs are discussed in **Section 4.4** and referenced in **Section 8.0**, Conclusions and Recommendations.

TABLE 4-2: Summary of Environmental Database Information

Environmental Record	Search Distance (Miles)	Off-site Listings within Search Distance	Subject Property Listed?
Standard Environmental Records Sources Required by ASTM E1527-13			
Federal National Priorities Sites List	1.0	0	No
Federal Delisted NPL Sites	1.0	0	No
Federal CERCLIS Sites	0.5	0	No
Federal CERCLIS NFRAP Sites	0.5	0	No

TABLE 4-2: Summary of Environmental Database Information			
Environmental Record	**Search Distance (Miles)**	**Off-site Listings within Search Distance**	**Subject Property Listed?**
Federal RCRA CORRACTS Facilities	1.0	**1**	No
Federal RCRA Non-CORRACTS TSD Facilities List	0.5	0	No
Federal RCRA Generators List (RCRA-LQG, -SQG, -CESQG)	0.25	**2**	No
Federal Institutional Control / Engineering Control Registries (IC/EC)	0.5	0	No
Federal Emergency Response Notification System (ERNS) List	0.5	0	No
CA NPL Sites (CA RESPONSE)	1.0	0	No
CA CERCLIS Sites (CA ENVIROSTOR)	1.0	**3**	No
CA Landfill and Solid Waste Disposal Sites (SWF/LF)	0.5	0	No
CA Leaking Storage Tank (LUST) Sites: Regional Water Quality Control Board (RWQCB) List (LUST, HIST LUST, SLIC, INDIAN LUST)	0.5	**2**	No
CA Registered Storage Tank List (FEMA UST, CA UST, CA AST, INDIAN UST)	0.25	**2**	No
CA Voluntary Cleanup Sites (CA VCP, INDIAN VCP)	0.5	0	No
CA Brownfields Sites (CA BROWNFIELDS)	0.5	0	No
Additional State and Federal Record Sources			
Local Lists of Registered Storage Tanks (SWEEPS UST, HIST UST, FID)	0.25	0	No
Certified Unified Program Agency of Hazardous Materials and Waste Regulatory Program (CUPA listings)	0.25	0	No
California Water Resources Control Board – Waste Discharge System (WDS)	0.001	**1**	**Yes**
CA Hazardous Waste Manifest Database (CA HAZNET)	0.001	**2**	**Yes**
California Integrated Water Quality System (CIWQS)	0.001	**1**	**Yes**
Enforcement & Compliance History Information (ECHO)	0.001	**1**	**Yes**
Federal RCRA NonGen / NLR	0.25	0	No
Facility Index System (FINDS)	0.001	**1**	**Yes**
Hazardous Substance Cleanup Bond Act (CA BOND EXP. PLAN)	1.0	0	No
Permitted Hazardous Waste Facilities and Corrective Action (“cleanups”) (CA HWP)	1.0	**1**	No

TABLE 4-2: Summary of Environmental Database Information			
Environmental Record	**Search Distance (Miles)**	**Off-site Listings within Search Distance**	**Subject Property Listed?**
Reported RWQCB Proposition 65 Incidents (CA NOTIFY 65)	1.0	0	No
National Pollutant Discharge Elimination System (NPDES)	0.001	**1**	**Yes**
CA Hazardous Waste and Substances Sites List (CORTESE, HIST CORTESE)	0.5	**1**	No
CA Institutional Control / Engineering Control Registries: (CA DEED)	0.5	0	No

4.2.1 Subject Property Environmental Record Results

The Subject Property was listed on NPDES, WDS, HAZNET, CIWQS, ECHO, and FINDS (a total of six) databases in the EDR report. In addition, a former occupant of the Subject Property, McAnally Enterprises, is incorrectly identified at 23480 Rider Street on the LUST, SWEEPS UST, CA FID UST, and HIST CORTESE databases. The Subject Property was known to contain two 10,000-gallon USTs that were removed June 25, 1998 and resulted in residual diesel and petroleum impacted soil to a depth of 95-feet bgs. Apex considers the Subject Property's appearance on a total of 11 databases, and the documented residual impacted soil a REC.

4.2.2 Adjacent and Surrounding Properties' Environmental Record Results

There were seven adjacent and surrounding properties identified in the EDR report for off-site facilities within the applicable ASTM search radii. The six properties were PW Eagle Inc DBA PW Pipe (23711 Rider St.), Arrowhead Ritchie Bros Refurb Shop (765 W. Rider St.), California Truss Co (23665 Cajalco Rd.), Val Verde Continuation High School (Nevada Ave./Morgan St.), Ecology Recycling Services, LLC (23332 Cajalco Rd.), AOC, LLC (19991 Seaton Ave.), and Val Verde Elementary School Addition (2656 Indian Ave.). Of these listings (i.e., large and small quantity hazardous waste generators, registered and historical above ground storage tanks [ASTs], permitted hazardous waste facilities, previous agricultural impacts), only two are adjacent to the Subject Property. These listings by themselves, are not necessarily indicative of a contamination concern and, therefore, are not discussed herein and were not further evaluated for purposes of this assessment. A number of facilities appear on databases indicating potential contamination concerns (e.g., ENVIROSTOR, Leaking Underground Storage Tank [LUST]; Spills, Leaks, Investigation, and Cleanup [SLIC]); however, groundwater is relatively deep (greater than 100-feet bgs), and therefore are not reasons of concern to the Subject Property. Of the sites representing a potential environmental concern, Apex did not identify any sites located adjacent to or upgradient that would indicate an environmental risk to the Subject Property.

4.2.3 Environmental Liens Search

Environmental liens and AULs can commonly be found within recorded land title records (e.g., County Recorder/Registry of Deeds). The types of title reports that may disclose environmental liens and AULs include Preliminary Title Reports, Title Commitments, Condition of Title, and Title Abstracts. Chain-of-title reports will not normally disclose environmental liens or AULs. Environmental liens and AULs that are imposed by judicial authorities may be recorded or filed in judicial records only. An environmental lien report was provided to Apex for review. No environmental liens or AULs are associated with the Subject Property. The Environmental Lien and AUL Search Report is included in **Appendix D**.

4.3 Historical Use Records

Apex reviewed reasonably ascertainable records documenting the history of the use and/or ownership of the Subject Property and adjoining/surrounding properties. **Table 4-3** below summaries this historical use information.

TABLE 4-3: Historical Use Summary

Period	Historical Uses		Source
	Subject Property	Surrounding Properties	
1938 – 1953	Vacant undeveloped agricultural land	Vacant undeveloped agricultural and residential uses. Railroad track present.	Aerial Photographs
1961	Vacant undeveloped agricultural land	Vacant undeveloped agricultural and residential uses. Railroad track present. Interstate 215-Escondido Freeway appears.	Aerial Photographs
1978	Star Milling/Grain Milling Operation	Vacant undeveloped agricultural and residential uses. Railroad and Interstate 215-Escondido Freeway to the east of the Subject Property. Commercial property appears to the east of the Interstate 215-Escondido Freeway, east of the Subject Property.	Aerial Photographs Topographic Maps
1985	Star Milling/Grain Milling Operation	Same as above. California Truss Company (lumber	Topographic Maps Aerial Photographs

TABLE 4-3: Historical Use Summary			
Period	**Historical Uses**		**Source**
	Subject Property	**Surrounding Properties**	
		yard) present north of the Subject Property.	
1989	Star Milling/Grain Milling Operation	Same as above. JM Eagle, Inc (plastic pipe manufacturer) present south of Subject Property.	Topographic Maps Aerial Photographs
1994	Star Milling/Grain Milling Operation	Same as above, commercial property appears to the east of the Interstate 215-Escondido Freeway, east of the Subject Property.	Topographic Maps Aerial Photographs City Directories Building Permit
2006 - Present	Star Milling/Grain Milling Operation	Light industrial, commercial, residential (rural, agricultural), and vacant undeveloped land.	Topographic Maps Aerial Photographs City Directories Building Permit

4.3.1 Aerial Photographs

Digital aerial photographs dated 1938, 1949, 1953, 1961, 1967, 1978, 1985, 1989, 1990, 1994, 1997, 2006, 2009, 2012, and 2016 provided by EDR were reviewed by Apex. Copies of aerial photographs can be found in **Appendix E**.

4.3.2 Topographic Maps

EDR provided historic topographic maps with coverage of the Subject Property dated 1901, 1942, 1943, 1947, 1953, 1967, 1973, 1978, 1979, and 2012. Because they show many man-made features not evident in photographs, historical topographic maps are useful in documenting the history of developments and land use features on many properties, particularly those in rural, unincorporated areas. Copies of these maps are included in **Appendix F**.

4.3.3 City Directories

EDR provided historic city directories for the years 1977, 1982, 1992, 1995, 2000, 2005, 2010, and 2014. Historical city directories, listed by street address, are frequently useful in documenting the historical occupancy of properties in urban or otherwise incorporated areas that have a significant history of developed commercial use. A copy of the City Directories Results is included as **Appendix G**. Surrounding Rider Street property listings were also reviewed for historical dry cleaning, automotive, or trucking businesses. The only business of concern is the JM Eagle Manufacturing

business located at 23711 Rider Street (south of the Subject Property), as it is a plastic pipe manufacturing business. A summary of the city directory listings is included in **Table 4-4** below.

TABLE 4-4: City Directory Listings Summary

Street Address	Listing Name	Years
23840 Rider St. (Subject Property)	Mc Anally Egg Enterprises	1977
23840 Rider St. (Subject Property)	Mc Anally Egg Enterprises Inc	1982
23615 Rider St. (Southwest of Subject Property)	Hill, Douglas M	1992, 1995
23711 Rider St. (South of Subject Property)	Pacific Western Extruded Plas	1992, 1995
23711 Rider St. (South of Subject Property)	PW Eagle Inc	2000, 2005
23615 Rider St. (Southwest of Subject Property)	Williams, John P	2005
23711 Rider St. (South of Subject Property)	J-M Manufacturing Company Inc Pacific Western Extruded PW Eagle Inc	2010
23840 Rider St. (Subject Property)	McAnally Egg Enterprises Inc	2010
23842 Rider St. (Subject Property)	Occupant Unknown	2010, 2014
23840 Rider St. (Subject Property)	McAnally Enterprises Inc	2014
23711 Rider St. (South of Subject Property)	J-M Manufacturing Company Inc PW Eagle Inc	2014
23615 Rider St. (Southwest of Subject Property)	Eschrich, Charles H	2014

4.3.4 Fire Insurance Maps

EDR did not find any fire insurance maps associated with the Subject Property. The certified Sanborn results as included in **Appendix H**.

4.3.5 Recorded Land Title Records

Information for the two parcels of the Subject Property on the EDR Environmental Lien and AUL Search report identified Perris Valley Properties, LLC as the owners of both Subject Property parcels. Prior to the current owner, Granite Patterson LP was the owner of parcel 317-170-024, and MoArk, LLC was the owner of parcel 317-170-045. A copy can be found in **Appendix D.**

4.3.6 Building Permit Records

Building permit records can be used to identify structures and/or features of previous or current properties on the Subject Property and adjacent/surrounding properties. This information can be used to determine potential environmental concerns through the presence of USTs, sump pumps, septic tanks and connection dates to sewer, electrical, water, and natural gas. The complete collection of Building Permit data available to EDR was searched and seven building permits at the Subject Property, and 25 building permits for the property south of Rider Street and the Subject Property (JM Eagle) were identified. Both properties frequently requested high NPDES inspections. A copy of the building permits report can be found in **Appendix I,** and a summary of the listings are included in **Table 4-5** below.

TABLE 4-5: Building Permit Summary

Date	Address	Permit Description/Proposed Use	Contractor Name
5/2/2017	23711 Rider St	High NPDES I/C Inspection	JM Eagle
10/17/2016	23711 Rider St	High NPDES I/C Inspection	JM Eagle
4/14/2016	23711 Rider St	High NPDES I/C Inspection	JM Eagle
8/19/2014	23711 Rider St	High NPDES I/C Inspection	JM Eagle
8/16/2013	23711 Rider St	High NPDES I/C Inspection	JM Eagle
9/24/2012	23711 Rider St	High NPDES I/C Inspection	JM Manufacturing Co Inc
6/6/2011	23711 Rider St	High NPDES I/C Inspection	JM Manufacturing Co Inc
5/5/2010	23711 Rider St	High NPDES I/C Inspection	JM Manufacturing Co Inc
3/26/2009	23711 Rider St	Initial NPDES I/C Inspection	JM Manufacturing Co, Inc
3/17/2009	23711 Rider St	Initial NPDES I/C Inspection	Not provided
7/11/2007	23711 Rider St	Tenant Improvement	Allied Modular Building Systems
7/11/2000	23711 Rider St	Grading: Commercial/Industrial	Pacific Western Extruded Plastic
11/2/1998	23711 Rider St	Electrical Work Only	T R Young Electric
3/20/1996	23711 Rider St	Historical Permit (Overtime – 4 Inspection Hours)	Young Thomas

TABLE 4-5: Building Permit Summary			
Date	**Address**	**Permit Description/Proposed Use**	**Contractor Name**
12/13/1994	23711 Rider St	Addition of 6 Silos	Beaubelle Robert
7/9/1992	23711 Rider St	Add Gas Line to Existing Commercial Building	Company Redlands Plumbing
6/25/1992	23711 Rider St	New Commercial (Storage Rack System/Warehouse)	Blair Ballard Architect
1/30/1992	23711 Rider St	Historical Permit (Temp Power)	Johnson Dwight Harold
11/21/1991	23711 Rider St	Grading Inspection (Comm'l Lot)	Gilbreath Robert
11/21/1991	23711 Rider St	New Commercial (Warehouse)	Gilbreath Robert
7/11/1991	23711 Rider St	Commercial Addition to Silo	Gilbreath Robert
4/25/1988	23711 Rider St	Historical Permit (Temp Use of Perm Power)	Robertson Don Family Trust
12/28/1987	23711 Rider St	Historical Permit (Temp Const Trailer)	Graham Walter J
12/3/1987	23711 Rider St	Historical Permit (Temp Power Pole)	Graham Walter J
11/12/1987	23711 Rider St	Historical Permit (Mfg Bldg-PVC Pipe)	Graham Walter J
9/20/2016	23840 Rider St (Subject Property)	High NPDES I/C Inspection	Star Milling Co
4/14/2015	23840 Rider St (Subject Property)	High NPDES I/C Inspection	Star Milling Co
8/20/2014	23840 Rider St (Subject Property)	High NPDES I/C Inspection	Star Milling Co
11/19/2013	23840 Rider St (Subject Property)	High NPDES I/C Inspection	Mc Anally Enterprises LLC
11/12/2013	23840 Rider St (Subject Property)	Request for Records	Copp David
10/27/2009	23840 Rider St (Subject Property)	Initial NPDES I/C Inspection	McAnally Enterprises LLC
8/24/2004	23840 Rider St (Subject Property	Other Construction (Replace Dust Collector)	Schuster Scott

4.4 Record Review Findings

Apex reviewed the available environmental and historical records for the Subject Property according to ASTM E1527-13 Standards.

Based on historical information reviewed, the Subject Property was shown as vacant undeveloped agricultural land from 1938 to 1961. In the late 1960s the Subject Property developed as a grain milling operation and remained as a grain milling operation to the present day. The Subject Property has appeared on 11 listed databases in the EDR report and is a closed former diesel UST case with documented soil impacts under oversight of the RCDEH. Apex considers the previously noted diesel and gasoline constituent impacted soil and appearance on the UST related databases a REC.

5.0 SITE RECONNAISSANCE

The Subject Property was inspected on September 4, 2018 by Apex representative, Stephanie Lapeyre-Montrose, a qualified environmental professional. Weather conditions at the time of the inspection were clear, with temperatures of approximately 89-degrees Fahrenheit. During the site reconnaissance, the Apex representative was accompanied by Star Milling Company Director of Sales, Paul Cramer, and Star Milling Company's real estate agent, Alan Deszcz (Re/Max agent). Site reconnaissance consisted of a walk-through of the Subject Property. The exterior areas of the Subject Property were entirely accessible; however, the interior grain storage silos would have required a confined space permit, the mixing warehouse and office building contained biological hazards (black widow spiders) due to minimal maintenance of the non-operated facility, and the mobile home and portion of the storage shed are inhabited by a tenant (care taker) and their personal belongings. Detailed information on the Site Reconnaissance can be found in **Appendix A** which contains photographs taken during the site walk and the field form used with detailed information on what was seen on the Subject Property. This section summarizes significant findings observed during the site inspection of the Subject Property.

5.1 Hazardous Substances and Petroleum Products

Apex did not find any evidence of petroleum products currently on the Subject Property. Two propane tanks were observed on the property, one adjacent to the aboveground storage tank of Alimet®, and one next to the mobile home. The propane tank located next to the Alimet® was empty; however, there is possible residual propane remaining in the tank. Mr. Cramer stated that propane tank will be removed. Additionally, a form of rodent bait was observed along the grain milling operation perimeter.

5.2 Waste Generation, Storage, and Disposal

The Subject Property is not currently in use. While Apex did not observe evidence of waste generation, storage, or disposal on the Subject Property, there is residual grain additives (i.e. Alimet®) in the small storage tanks, animal fat in a 55-gallon drum, and two propane tanks that Paul Cramer (Star Milling Director of Sales) stated will be "properly removed." Apex did not find storage of regulated waste or biomedical waste.

5.3 Underground Storage Tanks & Aboveground Storage Tanks

Apex did not find any evidence of existing USTs on the Subject Property; however, two 10,000-gallon diesel USTs were reportedly removed on June 25, 1998. Low levels of TPHg, toluene, ethylbenzene, xylenes and MtBE were detected to depths of 95-feet bgs (toluene), and diesel (TPHd) was detected at 20,000 ppm at 45-feet bgs. The RCDEH issued a case closure based on low levels of gasoline constituents, depth of contamination not a potential threat to groundwater (groundwater greater than 120-feet bgs), and the recommendation by the consultant to cap soil with asphalt and/or concrete.

Several ASTs were observed on the Subject Property, all used for storage of additives, such as vegetable/canola oil, Alimet®, fish biproducts, animal fat, and "bakery" that were mixed into the grain. Only residual Alimet® remains in one AST.

5.4 Polychlorinated Biphenyls (PCBs) and Oil-Containing Equipment

Polychlorinated biphenyls (PCBs) are known to be a component in fluids used in electrical and hydraulic equipment, lubricating oils, paints and coatings manufactured prior to 1979. In the event of a leak or release of fluid or oil-containing equipment, the owner is responsible for remediation. Fluorescent lights were observed in the storage shed, and it is unknown what lubricating oils were used on the property between 1968 and 1979; however, based on the operation, it is unlikely a significant leak or release occurred from lubricant oils. No evidence of PCB releases or leaks were observed during the Site visit.

An electrical transformer observed on the Subject Property during the previous Phase I ESA conducted in 2013 appears to have been removed. According to the 2013 ESA, "One pad-mounted electrical transformer was observed at the subject property. This transformer appeared to be in good condition, showing no signs of damage or past leakage, and appeared to be owned by the local utility. Based upon the date of construction of the subject property development and the apparent age of the transformer (pre-1977), it is possible the transformer contains poly-chlorinated biphenyls (PCBs). However, regardless of its PCB content, the maintenance, repair, or replacement of the transformer is the responsibility of the local utility, and therefore, no further investigation regarding the on-site transformer is recommended."

5.5 Other Observations

Staining was observed beneath the corn only feeder that loaded trucks to the west of the four large silos. Staining was also observed on concrete in the storage shed where vehicles and machinery were stored and maintained. Staining was also observed on the scales; however, bird feathers and feces were also observed within the staining. Additionally, a previous Phase I by CWS noted staining on the loading dock, east of the mixing plant; however, no staining in this area was observed during the Apex visit.

No evidence of chipped paint was observed inside the mixing plant building. Although no evidence of chipped or flaking paint was observed, based on the age of construction of the on-site buildings (beginning in 1968), it is likely that some lead-containing paint is present on the structures. Apex recommends informing contractors that lead may be present in painted surfaces and following OSHA Lead in Construction standards would be required during renovation or demolition activities.

Apex did not find evidence of unusual odors, drums, wells, existing septic systems, stressed vegetation, pits, ponds, or lagoons on the Subject Property. Apex notes that the Subject Property was graded vacant land on the north and west portions of the Site.

5.6 Findings from the Site Reconnaissance

Apex identified staining observed in the corn-only feeder area, storage shed area, and residual diesel and gasoline constituent contamination from previous USTs that qualify as a REC for this Phase I Assessment.

6.0 INTERVIEWS

The Apex employee was accompanied by Mr. Paul Cramer, Star Milling Company's Director of Sales, and Mr. Alan Deszcz, the Re/Max real estate agent. Mr. Cramer walked the Apex employee through the grain milling operation. Railroad cars offloaded materials (i.e. corn) onto a belt system (augers) that transported the materials into the four large silos. Venting systems attached to each silo removed all air from the silos to minimize the potential of combustion, which can happen from grain dust. Through a belt system (augers), grain or grain/corn mix would be transported to the mixing plant, where additives would be mixed into the final product. Additives include Alimet®, antibiotics, vegetable/canola oil, animal fat, fish byproducts, and "bakery" (i.e. flour, dough, etc.). Once mixed, the final product would either be bagged or loaded into trucks waiting on the scale. For consumers purchasing corn-only feed, a separate truck feeder was located on the west side of the four large silos. The storage shed located on the west portion of the Subject Property was used for vehicle and machine storage and maintenance. Two 10,000-gallon diesel tanks and a dispenser were located on the south portion of the Subject Property and were removed June 25, 1998.

While the operation is currently not in use, two of the large silos had side paneling removed, with one having enough panels removed to no longer be considered a confined space to enter. Pictures were taken of the inside of the silos and are included with the photolog in **Appendix A**. Additionally, since the operation is not currently in use, a complete inspection of the warehouse/mixing plant was not completed, as biological hazards existed (black widow spiders were observed). A portion of the storage shed and mobile home were also not inspected, as it is currently occupied by a tenant monitoring the property (caretaker). Furthermore, the Subject Property is maintained along the perimeter with a form of rodent bait.

While inspecting the north portion of the Subject Property (the undeveloped field), Mr. Cramer communicated that the soil mound present was from excavated material placed there during the Harvill Avenue road construction. Also communicated by Mr. Cramer, the Colorado River Aqueduct runs east-west approximately 120' bgs beneath the north portion of the Subject Property.

7.0 CONDITIONS OUTSIDE THE SCOPE OF ASTM E1527-13

According to the ASTM E1527-13 Standards, Duke may conduct additional investigations to assess the in connection with the commercial real estate. Apex did not conduct any other additional assessments on the Subject Property that are outside the scope of ASTM E1527-13 Standards.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Apex performed this Phase I ESA in accordance with the U.S. Environmental Protection Agency's 40 CFR, Part 312 Standards and Practices for All Appropriate Inquiries (AAI) and ATSM E1527-13: "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" and the work order from Duke to Apex dated August 22, 2018. Any exceptions to, or deletions from, this practice are described in Section 1.0 of this report.

This assessment has revealed no evidence of RECs in connection with the Subject Property except for the following:

Based on historical information reviewed, the Subject Property was shown as agricultural land from at least 1938 to 1967. The Subject Property was developed as a grain milling operation in 1968 and 1973 and maintains the same milling operation layout today; however, the operation is currently not in use. Two 10,000-gallon diesel USTs were removed from the Subject Property June 25, 1998. Soil impacted with residual diesel and petroleum was documented; however, the RCDEH issued a case closure based on low concentrations at greater than 45' bgs and no potential impact to groundwater (groundwater greater than 120' bgs). Based on the documented diesel and petroleum impacted soil Apex considers the historic usage of USTs at the Subject Property a REC.

A septic system consisting of two 750-gallon septic tanks and seepage pit systems was described in the previous Phase I ESA. The septic system was reportedly used for restroom and hand-washing related wastes only and was not considered a REC by the authors of the report. The septic system components were not observed during Apex's reconnaissance of the Subject Property. However, Apex considers the presence of a septic system at industrial sites to be a REC since there is potential for improper disposal of hazardous materials via the system.

Based on these findings, should the property be converted from its current operations, Apex recommends conducting a Phase II Environmental Site Assessment consisting of collecting both shallow and deep soil samples for analysis of diesel and gasoline constituents to determine impacts from historical use in the areas of the loading dock, scale, corn-only feeder, former USTs, and storage shed. Apex would also recommend collecting soil samples from the soil stockpile observed on the north portion of the Subject Property to determine if this imported soil contains hazardous substances. Finally, Apex recommends performing an in-depth search for the previously reported septic tank(s) and its associated leach field. If the septic system components can be found, Apex would recommend collection of soil samples from beneath each feature to assess the potential for improperly disposed hazardous materials.

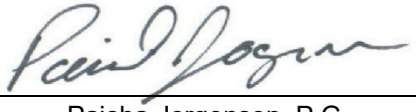
9.0 ENVIRONMENTAL PROFESSIONALS

9.1 Signatures of Responsible Environmental Professionals

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 Part 312, and 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 all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Dan Hisey
Project Scientist



Paisha Jorgensen. P.G.
Principal Geologist

9.2 Qualifications of Responsible Environmental Professionals

Mr. Hisey has a Bachelor of Science Degree in Environmental Science and has been performing environmental assessments of commercial/industrial real estate for over fifteen years. Mr. Hisey is an environmental professional as defined in § 312.10 of 40 CFR Part 312.

Mr. Jorgensen has a Bachelor of Science Degree in Geological Sciences and has over 18 years of professional experience in the environmental consulting field. Mr. Jorgensen is an environmental professional as defined in § 312.10 of 40 CFR Part 312.

10.0 REFERENCES

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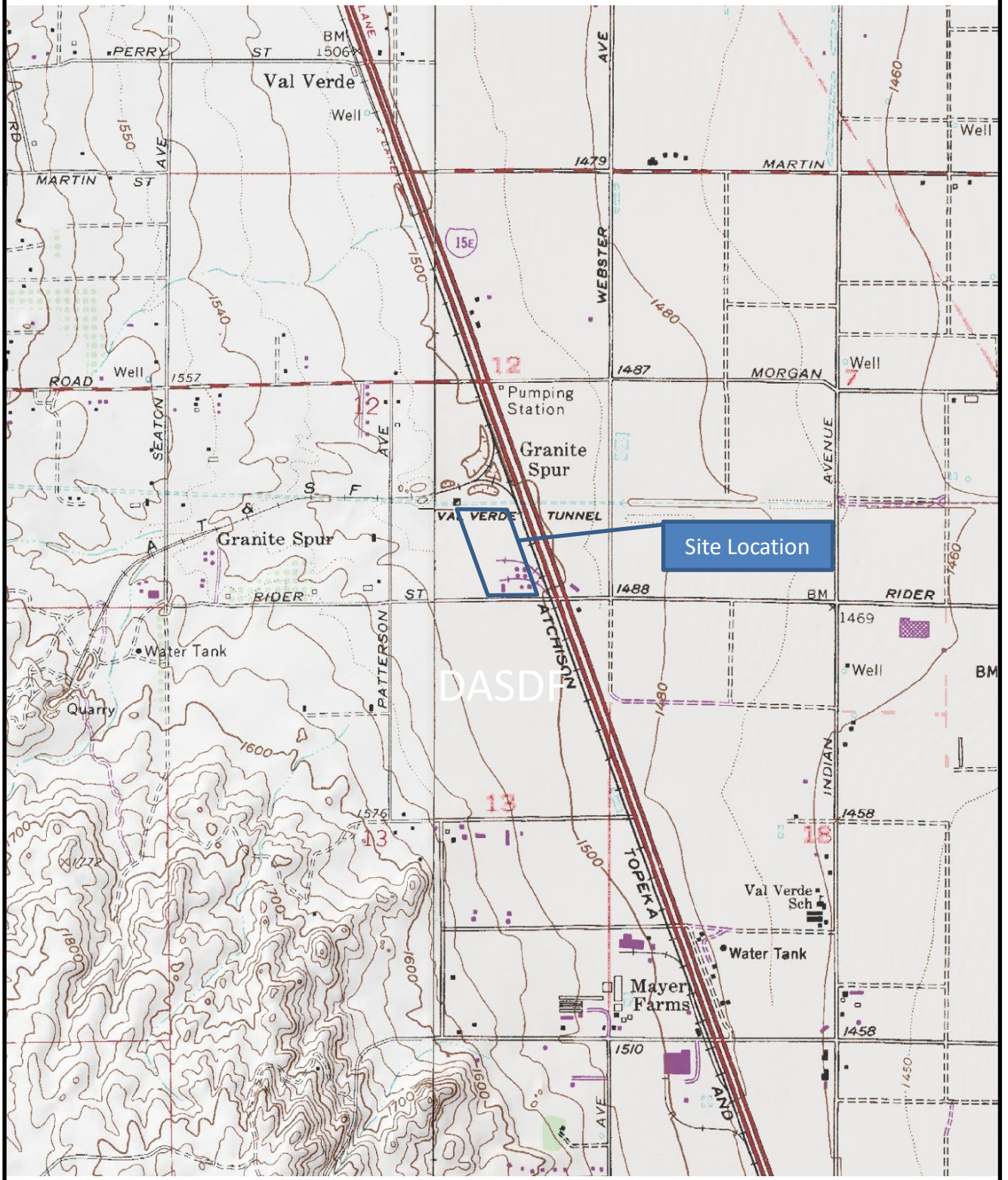
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FIGURES



DASDR

APEX

3478 BUSKIRK AVENUE, SUITE 100
PLEASANT HILL, CA 94523

Duke Realty
23840 and 23842 Rider St
Perris, California

SITE LOCATION MAP

FILE NAME	DATE	DR. BY	APP. BY	PROJECT #	FIGURE #
	1/9/19	DH	BR		1



APEX

3478 BUSKIRK AVENUE, SUITE 100
PLEASANT HILL, CA 94523

Duke Realty
Cypress Avenue and Slover Avenue
Fontana, California

SITE PLAN

FILE NAME	DATE	DR. BY	APP. BY	PROJECT #	FIGURE #
	1/9/2018	DH	BR	093-DUKE-015	**2**

APPENDIX A

SITE RECONNAISSANCE PHOTOGRAPHS AND FIELD FORM

Daily Field Log

APEX

Project & Site: Star Milling Co. / Ridge St. Perris, CA **Date & Time:** 9/4/13 / 0935

Time on Site: 0935 **HASP Present?** (Y) / N **HASP Reviewed?** (Y) / N

Appropriate JSA's Reviewed? (Y) / N **Initials:** S **Safety Level:** (D) / C

Report Prepared By: S. Lepyn Morton **Project Manager:** Pasha J.

Field Activities: Site Inspection - Phase I **Project No./Task:**

Weather: Sunny, warm **Site Conditions:** non-operational Milling Co. / open field

Field Personnel on Site: S. Lepyn Morton (Apex)

Client(s) on Site & Time: Paul Crowe (Owner) / Alex Deszcz (Realtor)

Regulator(s) on Site & Time:

Time:	Notes:
0830	Mob'd to site
0935	Onsite - H&S / Started taking pictures of adjoining properties
0945	Alex Deszcz (Realtor) onsite -- waiting on Paul Crowe (owner) w/ keys to property / Alex has as-builts, but need to send them back to him
0955	Paul onsite w/ keys. / Walked me through property & explained operations. Currently non-operational. Person in mobile home on site works for company but stays at plant down Street onsite as caretaker.
	• Land to North & west are open fields & have always been (per Paul). Property (field) to Southwest will be developed soon (per Paul), so utility work in the area (and on property - marking).
	• Scale house - contains clean outs where trucks parked to be loaded - area contained
	• Inside building - mixing area - pulls grain, corn, and additives (could be "baking" which includes flour, cookie mix, or limestone). Also added in "drugs" such as antibiotics or Ref. aliment (food supplements).
	• 4 main tanks of grain/corn have vent system, since powder is combustible, so pulls out all air - so no hazard. Stain noticed/observed under corn only feeder where trucks can just get corn w/out it being mixed (see photo)
	• smaller tanks next to scale house & mixing plant contain additives - limestone, aliment, oil (canola or veg. oil) drum observed next to oil tanks - owner to verify canola or veg. oil.

Office Telephone: (805) 373-9063

Daily Field Log

APEX

Project & Site: See previous page **Date & Time:** 9/4/15

Time on Site: _____ **HASP Present?** Y / N **HASP Reviewed?** Y / N

Appropriate JSA's Reviewed? Y / N **Initials:** _____ **Safety Level:** D / C

Report Prepared By: S. Lapeyre Martin **Project Manager:** _____

Field Activities: _____ **Project No./Task:** _____

Weather: _____ **Site Conditions:** _____

Field Personnel on Site: _____

Client(s) on Site & Time: _____

Regulator(s) on Site & Time: _____

Time: **Notes:**

Site Visit Notes continued:

- Railroad tracks pull onto property on North & south side of 4 large green/corn tanks to feed corn shipped in to the tanks. Feed is moved around through conveyor belts → auger system. Once in large tanks, vented (to air), then pulled into mixing plant (also through vacuum/auger system). No staining or evidence of concern near railroad tracks.
- 3 propane tanks on site. One near ailmt. Note: ailmt has some content left in tank below drain. Owner will have it properly removed. Also propane tank might have "smell" amount left, but owner will have that removed as well. 2 other propane tanks by mobile home. Poss. vent or water by mobile home / front gate.
- North & west fields - down to culvert on west field (north side), and fill material/mound on North property from excavated material during road construction.
- Noticed white PVC piping surrounding North & east perimeter of gate - owner to look into what it is
- Noticed lights in storage / vehicle sheds - possible PCBs (fluorescent) also staining next to tractor.
- Bio concern → excrement from birds and birds of prey, and spiders (incl. black widows) in all buildings / tanks.

Office Telephone: (805) 373-9063

Daily Field Log

APEX

Project & Site: See previous Date & Time: _____

Time on Site: _____ HASP Present? Y / N HASP Reviewed? Y / N

Appropriate JSA's Reviewed? Y / N Initials: _____ Safety Level: D / C

Report Prepared By: _____ Project Manager: _____

Field Activities: _____ Project No./Task: _____

Weather: _____ Site Conditions: _____

Field Personnel on Site: _____

Client(s) on Site & Time: _____

Regulator(s) on Site & Time: _____

Time:	Notes:
1130	Called to update PM (Parisha) and see if we should take box of as builts. Yes - take box & scan. Will need to send them back to Alex when finished. / took a couple more pictures of offsite properties.
1200	MOB'd offsite (stopped at Riverside County Dept. for Indio site - 30 min.)
1500	Arrived at Enterprise to return car
1515	End field day.

Office Telephone: (805) 373-9063

PHASE I ENVIRONMENTAL ASSESSMENT
Site Reconnaissance Form

APEX

23540 & 23542 Rider St.

Site Name:	**14.4-Acre Property**	**Site Address:**	**NEC of Rider St/Harvill Ave**
Date:	9/4/2018		**Perris, CA**
Business Name:	Star Milling Co.	**Business Address:**	**Same**
Personnel:	Apex: Stephanie Lepp, Matthew		

Objective of the Reconnaissance:
The objective of the site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with the property.

Section 1: General Site Settings

Property Uses

Current Site Uses of Property: Milling processing plant - no longer operational with 2 empty fields to the North & west

Past Site Uses of the Property: operational processing plant and empty field (agricultural) when it was an empty field it was owned by current land owner located at house across Harvill Ave.

General Description of Structures:

	Y	N	
Number of Buildings/Stories:	☒	☐	Description: Scale house / mixing building Storage shed for equipment/vehicles 5 larger grain tanks, 2 smaller addtive storage tanks
Approximate Age of Buildings:	☐	☐	Description: 2 small additive tanks
Ancillary Structures:	☒	☐	Description: (see tanks listed above)
Unoccupied Occupant Spaces?	☒	☐	Description: whole operation is no longer in use
Evidence of Former Structures:	☒	☐	Description: pump island
Above ground storage tanks:	☒	☐	Content: currently empty - was additives & grain Location: Capacity: varies Age:
Underground storage tanks:	☐	☒	Content: previously yes - See figure attached from previous phase I Location: Capacity: Age:
Vent pipes or fill pipes: for system	☐	☐	Description: associated w/ grain storage (powder is combustible - so vent system to pull out dust)
Odors:	☐	☐	Description: No odors on property except grain, birds, and decomposing animals (bird prey)

APEX

Roads:

Names of adjoining roads: Corner of Rider St & Harvill Ave.

Location of adjoining roads: South west corner of property

Roads or paths with no apparent outlet: Y ☐ N ☐ Description: Rider dead ends to RR tracks but access to Harvill Ave.

Parking facilities on the property: Y ☒ N ☐ Description: Parking on property near storage shed

Additional observations: 215 FWT on east side of property, just beyond railroad tracks (boarders property to east). 2 sets of railroad tracks on property.

Utilities:

Potable Water Supply Source:

Sewage Disposal System:

Approximate Age of Sewage Disposal System:

owner to get back to us (Paul Crane)

Electrical Source: SCE

Gas (piped natural vs propane): So Cal

Additional observations: Empty field to the south west is going to be under construction soon, so SCG & Verizon is working/marking area - including property

Geologic, Hyrogeologic, and Topographical Conditions:

Visual and/or physical observations: Mound on open field to the North was excavated dirt from road construction (when road - Harvill? put in). Volcanic rock on property from nearby mtns. Owner stated Colorado River is ~125' bgs running through property on North open field by tree. Drainage put in north portion of field to the west.

APEX

Section 2: Exterior Observations

	Y	N		
Pools of Liquid:	☐	☒	Description:	
Drums:	☒	☐	Content:	empty -- to be used for bird waste
			Leaking:	Y ☐ N ☐
5-gallon Buckets:	☐	☐	Content:	
			Leaking:	Y ☐ N ☐
Odors:	☒	☐	Description:	grain & birds
Unidentified Substance Containers:	☐	☒	Description:	
			Leaking:	Y ☐ N ☐
PCBs in Lighting or Hydraulic Equipment:	☐	☐	Description:	Looked like fluorescent lights used in vehicle storage sheds
Pits, Pools, or Lagoons:	☐	☒	Description:	
Stained Soil or Pavement:	☒	☐	Description:	one stain - under "straight" corn feeder w/ auger additive; another stain - by parked vehicles next to vehicle storage shed
Stressed Vegetation:	☐	☒	Description:	
Solid Waste Disposal:	☐	☒	Description:	
Waste Water Discharge Points (septic, sewer, ditches):	☐	☐	Description:	ditch to culvert
Wells (dry, irrigation, injection, and abandoned wells)	☐	☐	Description:	none observed
Septic Systems:	☐	☐	Description:	
Retention Basin:	☐	☒	Description:	
			Source:	
			Location:	
			Receive off-site drainage?	Y ☐ N ☐
Filled or re-graded areas:	☐	☒	Description:	

Additional observations: Asphalt degraded - hard to make out potential areas of concern. Pump island still in place. Scale house has clean out underneath where scales are located.

APEX

Section 3: Interior Observations – Note: hard to access - biological hazards (black widows, etc.)

Heating/Cooling System: electric

Stains or Corrosion: not observed on interior

Drains or Sumps: clean out under scale

	Y	N	
Maintenance, repair, or boiler rooms present:	☐	☐	Description: electrical room, restroom, drug area
Unoccupied Occupant Spaces:	☐	☐	Description: operation no longer in use
Odors:	☒	☐	Description: grain & birds
Pools of Liquid:	☐	☒	Description:
Drums: (6) ✓			Content: in green tank/silo empty – will be used for bird waste
			Leaking: Y N
5-gallon Buckets: ____			Content:
			Leaking: Y N
Unidentified Substance Containers: ____			Description:
			Leaking: Y (N)
PCBs in Lighting or Hydraulic Equipment:	☐	☐	Description: Storage vehicle shed lights looked fluorescent
Basement or slab foundation:	☐	☐	Description: asphalt – parking area, Concrete – good shape
			Cracks: Y N

Additional observations:

APEX

Section 4: Adjacent & Surrounding Properties

Adjoining Property Observations:

Current Uses of Adjoining Property:

North: (North - north west) → lumber yard
215 Fwy borders property to east, but cuts over North

East: Railroad track & 215 freeway

South: JM Eagle Perris Plant
23711 Rider St.
Perris, CA 92570

West: Open field - agriculture / house

Past Uses of Adjoining Property: Open fields / agriculture

Pits, Pools, or Lagoons: ☐ ☐ Description: None

Waste Water (e.g. drains, ditches, streams): ☐ ☐ Description: Water drain into culvert from NW edge of Star Milling paved area to Harvill Ave.

Additional observations:

Surrounding Area Observations:

General Use of Surrounding Area (e.g. residential, commercial, industrial):
Residential to west, commercial to North & South
East - railroad & Freeway
Military airport east across Freeway

Additional observations: Commercial areas to North & South are surrounded by fields, then additional commercial properties. Airport (Military) to the east across Freeway

PHASE I ENVIRONMENTAL ASSESSMENT
Site Reconnaissance Form

Section 5: Interview Records

Date: 9/4/18 Time: during visit Apex Staff: Stephanie Legg, MSA

Spoke with: Paul Comer (owner) Alan Deszcz (real estate agent) Title: _____

Phone Number: _____ Affiliation: _____

Subject: _____

Items Discussed:

	Y	N	
Pits, Ponds, or Lagoons present on the property?	☐	☒	Description: _____
Stained soil or pavement on the property?	☐	☐	Description: _____
Stressed Vegetation on the property?	☐	☒	Description: _____
Solid Waste present on the property?	☐	☐	Description: _____
Any evidence of wastewater, stormwater, or any other liquid discharge into a drain, ditch, stream, or on adjacent property?	☐	☐	Description: _____
Any wells on the property?	☐	☐	Description: _____
Any on-site septic systems on the property?	☐	☐	Description: _____

Additional Comments: Owner (Paul Comer) will get back to PM with any questions.

Photograph 1

Description: Overview of the Subject Property grain milling operation (looking northeast from Rider Street).



Photograph 2

Description: Overview of the mixing plant, connected to the scale on the right side. The storage tanks contained additives when the grain milling plant was in operation. The fuel dispenser island can be seen in front of the scale. Picture taken looking east from Harvill Avenue.



Photograph 3

Description: Scale, the location trucks would stop in order to be loaded with material and then weighed.

The image on the left is of the scale. The manhole is a clean out. Maintenance and scale workers were able to access beneath the scale to maintain and clean the scales.

The image on the right is of the feeders on the ceiling, used to load the material into the trucks.





Photograph 4

Description: Pictures 4 and 5 are of the inside of the mixing plant. This image is taken from the entrance of the plant, and is of the “mixer” (grain and additives are fed into the “mixer” to be mixed into the final product). The office and electrical room are located to the right (out of the picture).



Photograph 5

Description: The northeast portion of the inside of the mixing plant is a warehouse and previous “drug” (antibiotics added to the grain) storage area. Currently it is empty.



Photograph 6

Description: Electrical on the east side of the mixing plant. The electrical room inside of the mixing plant is located on the east side, and is cautioned as “High Voltage.”



Photograph 7

Description: Loading dock area on the east side of the mixing plant. A previous Phase I in 2013 noted staining in this area; however, no staining was observed on the September 4, 2018 visit.



Photograph 8

Description: Overview of train unloading area between the mixing plant and the large silos.





Photograph 9

Description: Corn-only feeder located on the west side of the large grain silos. Note the staining beneath the corn-only feeder.





Photograph 10

Description: Inside one of the large silos. Paneling had been removed, thereby allowing safe entrance without the need of a confined space permit. The drums will be used for the cleanout of the silo.



Photograph 11

Description: Additive area west side of mixing plant. Black aboveground storage tank on the left contains residual alimet. The empty propane tank is located on the north side of the alimet tank. Concrete pads (orange arrow) indicative of another aboveground storage tank that contained fish biproduct. On the right, one 55-gallon drum that was going to be used for the animal fat waste added to the grain.



Photograph 12

Description: Overview of the storage shed located on the western portion of the grain milling operation.



Photograph 13

Description: Inside the storage shed, staining observed next to the old tractor on the left (left front tire). Fluorescent lighting was observed in the storage shed (image on the right).





Photograph 14

Description: Mobile home occupied by the caretaker in the image on the left (picture taken looking east from Harvill Avenue). Image on the right shows the second propane tank located on the east side of the mobile home along the fence adjacent to Rider Street.





Photograph 15

Description: North portion of Subject Property (undeveloped land). Image on the left of the tree marks the location of the Colorado River Aqueduct (approximately 120-feet bgs). The image on the right is looking south toward the grain operation. The mound from the excavated material during the Harvill Avenue road construction can be seen between the “X” survey marker and the milling plant.





Photograph 16

Description: Overview of the west portion of the Subject Property (undeveloped land).



Photographs 17 and 18

Description: One culvert, located on the north portion of the west undeveloped land (APN 317-170-024). The image on the left is of the no longer used culvert adjacent to the mixing plant operation. The image on the right is of the open culvert adjacent to Harvill Avenue.





Photograph 19

Description: Railroad tracks adjacent east of the Subject Property.



Photograph 20

Description: Overview of JM Eagle plastic pipe manufacturing company, located south side of Rider Street.



Photograph 21

Description: Undeveloped land (soon to be developed per interview with Mr. Paul Cramer), located on the southwest corner of the Harvill Avenue and Rider Street intersection.



Photographs 22 and 23

Description: Undeveloped land, located on the northwest corner of the Harvill Avenue and Rider Street intersection.



Photograph 24 Description: California Truss Company (commercial lumber facility) located adjacent north of the Subject Property.	

APPENDIX B

USER QUESTIONNAIRE

INTRODUCTION

In order to qualify for one of the Landowner Liability Protections ("LLPs") offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the user must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. The respondent is welcome to provide supporting documentation as attachments.

QUESTIONS

1.	**Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).**	
1A Was the title reviewed for environmental cleanup liens against the property?	Yes	
	No	

1B. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? If yes, please provide details and copies of supporting documents.

Yes	
No	

2.	**Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).**	
2A. Was the title reviewed for Activity & Use Limitations for the property?	Yes	
	No	

2B. Are you aware of any Activity & Use Limitations such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? If yes, please provide details and copies of supporting documents.

Yes	
No	

3.	**Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).**

As the user of this ESA 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? If yes, please provide details and copies of supporting documents.

Yes	
No	

4.	**Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29).**

Does the purchase price being paid for this property reasonably reflect the fair market value of the property?

If you conclude that the value is lower than the fair market price, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? If you determined that contamination is believed to be the reason for the low purchase price, please provide details and copies of supporting documents.

Yes	
No	

5.	**Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).**	
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, as user, (a) Do you know the past uses of the property? If yes, please provide details.		
Yes		
No		
(b) Do you know of specific chemicals that are present or once were present at the property? If yes, please provide details.		
Yes		
No		
(c) Do you know of spills or other chemical releases that have taken place at the property? If yes, please provide details.		
Yes		
No		
(d) Do you know of any environmental cleanups that have taken place at the property? If yes, please provide details.		
Yes		
No		

6.	**The degree of obviousness of the presence of likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).**
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property? If yes, please provide details and copies of supporting documents.	
Yes	
No	

7.	**Why is a Phase I ESA required?**

8.	**Please identify the type of property, type of property transaction (for example, sale, purchase, exchange), and use of property following transaction (for example, same as current, demolition, rehabilitation).**

9.	**Please provide a complete and correct address for the property (a map or other documentation showing property location and boundaries is helpful). Is a site location map attached?**
Yes	
No	

10.	**What services are required?**	
Please Check All That Apply		**Comments**
ASTM 1527-05 (Former Standard)		
ASTM 1527-13 (All Appropriate Inquiry – Current)	**X**	
Asbestos Containing Materials		
Lead Based Paint		
Lead in Drinking Water		
High Voltage Power Lines		
Wet Utility Audit		
Lender-Specific Scope of Work		
Please list Lender (e.g., Fannie Mae)		
Other (Please Describe)		

11.	**Please list the full name and address for each party that will rely upon the Phase I ESA Report.**

12.	**Please identify one or more site contacts and how each can best be reached.**

13.	**Please list any special terms and conditions, which must be agreed upon by the environmental professional.**

14.	**Please provide any other knowledge or experience with the property that may be pertinent to the environmental professional (for example, copies of any available prior environmental site assessment reports, documents, correspondence, etc., concerning the property and its environmental condition).**

To the best of your knowledge:

1) Was the property used for industrial purposes in the past?	Yes	No	Unknown
2) Was the property used as gas station, for motor repair, printing, plating, dry cleaning, laboratory, junkyard, landfill, recycling, or waste treatment? If yes, have there been any unauthorized release(s) of chemicals associated with such past use?	Yes	No	Unknown
3) Are there or have there been any discarded automobiles, batteries, pesticides, paints, or other chemicals over 5 gallons on the property?	Yes	No	Unknown
4) Are there or were there any industrial 55 gallon drums or sacks of chemicals at facility in the past?	Yes	No	Unknown
5) Has fill dirt been brought in?	Yes	No	Unknown
6) Are there or have there been pits, ponds, or lagoons used for waste treatment?	Yes	No	Unknown
7) Are there or have there been any above or below ground storage tanks?	Yes	No	Unknown
8) Is there a well on the property? If yes, do you have test results?	Yes	No	Unknown
9) Does or has the property discharge waste water (not including sanitary or storm sewer) onto or adjacent to the property?	Yes	No	Unknown
10) Do you have knowledge that any hazardous substance or petroleum product, unidentified waste, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade on the property?	Yes	No	Unknown
11) Is there a transformer, capacitor, or hydraulic equipment for which there are any records indicating the presence of PCBs?	Yes	No	Unknown
12) Are there lead- or asbestos-containing materials on the property?	Yes	No	Unknown

This ASTM E1527-13 Questionnaire was completed for the following property:

Property Name	Address
City, State	

This ASTM E1527-13 Questionnaire was completed by:

Signature	Title
Company	Date

APPENDIX C

ENVIRONMENTAL DATA RESOURCES REPORT

Rider & Harvill Site
NEC of Rider St and Harvill Ave
Perris, CA 92570

Inquiry Number: 5407935.2s
August 28, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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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), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

NEC OF RIDER ST AND HARVILL AVE
PERRIS, CA 92570

COORDINATES

Latitude (North):	33.8319630 - 33° 49' 55.06''
Longitude (West):	117.2483200 - 117° 14' 53.95''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	477022.6
UTM Y (Meters):	3743358.5
Elevation:	1510 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5641330 PERRIS, CA
Version Date:	2012
West Map:	5641324 STEELE PEAK, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
NEC OF RIDER ST AND HARVILL AVE
PERRIS, CA 92570

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	STAR MILLING CO	23840 RIDER STREET	HAZNET, NPDES, WDS, CIWQS	Lower	1 ft.
A2	STAR MILLING CO	23840 RIDER STREET	FINDS, ECHO	Lower	1 ft.
A3	MCANNALLY ENTERPRISE	23840 RIDER ST	HAZNET	Lower	1 ft.
A4	P W EAGLE INC DBA P	23711 RIDER ST	RCRA-SQG	Lower	99, 0.019, SSE
5	ARROWHEAD RITCHIE BR	765 W RIDER ST	RCRA-SQG	Lower	1125, 0.213, ESE
B6	CALIFORNIA TRUSS CO.	23665 CAJALCO RD	AST	Lower	1300, 0.246, NNW
B7	CALIFORNIA TRUSS CO	23665 CAJALCO RD	AST	Lower	1300, 0.246, NNW
8	VAL VERDE CONTINUATI	NEVADA AVENUE/MORGAN	ENVIROSTOR, SCH	Lower	1565, 0.296, North
C9	MCANALLY ENTERPRISES	23480 RIDER ST	LUST, SWEEPS UST, CA FID UST, HIST CORTESE	Higher	1713, 0.324, WSW
C10	MCANALLY ENTERPRISES	23480 RIDER ST	LUST	Higher	1713, 0.324, WSW
11	ECOLOGY RECYCLING SE	23332 CAJALCO ROAD	SWRCY, NPDES, CIWQS	Higher	2331, 0.441, NW
12	AOC, LLC	19991 SEATON AVENUE	CORRACTS, RCRA-TSDF, RCRA-LQG, ENVIROSTOR, HIST...	Higher	3716, 0.704, West
13	VAL VERDE ELEMENTARY	2656 INDIAN AVENUE	ENVIROSTOR, SCH	Lower	5154, 0.976, SE

EXECUTIVE SUMMARY

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
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

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

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-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ..... Underground Storage Tank Listing
UST ..... Active UST Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP ..... Voluntary Cleanup Program Properties
INDIAN VCP ..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ..... Waste Management Unit Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands
ODI ..... Open Dump Inventory
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ..... Delisted National Clandestine Laboratory Register
HIST Cal-Sites ..... Historical Calsites Database
SCH ..... School Property Evaluation Program
CDL ..... Clandestine Drug Labs
Toxic Pits ..... Toxic Pits Cleanup Act Sites
US CDL ..... National Clandestine Laboratory Register
CERS HAZ WASTE ..... CERS HAZ WASTE

Local Lists of Registered Storage Tanks

SWEEPS UST ..... SWEEPS UST Listing

HIST UST	Hazardous Substance Storage Container Database
CA FID UST	Facility Inventory Database
CERS TANKS	California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS	Environmental Liens Listing
LIENS 2	CERCLA Lien Information
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites

FUELS PROGRAM - EPA Fuels Program Registered Listing
CA BOND EXP. PLAN - Bond Expenditure Plan
Cortese - "Cortese" Hazardous Waste & Substances Sites List
CUPA Listings - CUPA Resources List
DRYCLEANERS - Cleaner Facilities
EMI - Emissions Inventory Data
ENF - Enforcement Action Listing
Financial Assurance - Financial Assurance Information Listing
ICE - ICE
HWT - Registered Hazardous Waste Transporter Database
MINES - Mines Site Location Listing
MWMP - Medical Waste Management Program Listing
PEST LIC - Pesticide Regulation Licenses Listing
PROC - Certified Processors Database
Notify 65 - Proposition 65 Records
UIC - UIC Listing
WASTEWATER PITS - Oil Wastewater Pits Listing
WIP - Well Investigation Program Case List
NON-CASE INFO - NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS - OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS - PROD WATER PONDS (GEOTRACKER)
WELL STIM PROJ - Well Stimulation Project (GEOTRACKER)
CERS - CERS
SAMPLING POINT - SAMPLING POINT (GEOTRACKER)
MILITARY PRIV SITES - MILITARY PRIV SITES (GEOTRACKER)
UIC GEO - UIC GEO (GEOTRACKER)
PROJECT - PROJECT (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP - EDR Proprietary Manufactured Gas Plants
EDR Hist Auto - EDR Exclusive Historical Auto Stations
EDR Hist Cleaner - EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF - Recovered Government Archive Solid Waste Facilities List
RGA LUST - Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA CORRACTS facilities list

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC, LLC EPA ID:: CAD059270975	***19991 SEATON AVENUE***	***W 1/2 - 1 (0.704 mi.)***	***12***	***39***

Federal RCRA generators list

RCRA-SQG: 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.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/01/2018 has revealed that there are 2 RCRA-SQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
P W EAGLE INC DBA P EPA ID:: CAR000083436	23711 RIDER ST	SSE 0 - 1/8 (0.019 mi.)	A4	19
ARROWHEAD RITCHIE BR EPA ID:: CAR000129155	765 W RIDER ST	ESE 1/8 - 1/4 (0.213 mi.)	5	20

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 identifes 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 04/30/2018 has revealed that there are 3 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC, LLC	***19991 SEATON AVENUE***	***W 1/2 - 1 (0.704 mi.)***	***12***	***39***
Facility Id: 80001432				
Status: Active				

Lower Elevation	Address	Direction / Distance	Map ID	Page
VAL VERDE CONTINUATI	***NEVADA AVENUE/MORGAN***	***N 1/4 - 1/2 (0.296 mi.)***	***8***	***24***
Facility Id: 33010050				
Status: No Further Action				
VAL VERDE ELEMENTARY	***2656 INDIAN AVENUE***	***SE 1/2 - 1 (0.976 mi.)***	***13***	***68***
Facility Id: 33820012				
Status: No Action Required				

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES	***23480 RIDER ST***	***WSW 1/4 - 1/2 (0.324 mi.)***	***C9***	***28***
Database: LUST REG 8, Date of Government Version: 02/14/2005				
Global ID: T0606500587				
Facility Status: Case Closed				
MCANALLY ENTERPRISES	23480 RIDER ST	WSW 1/4 - 1/2 (0.324 mi.)	C10	30
Database: LUST, Date of Government Version: 06/11/2018				
Database: RIVERSIDE CO. LUST, Date of Government Version: 07/09/2018				
Status: Completed - Case Closed				
Facility Id: 9915151				
Global Id: T0606500587				
Facility Status: 9				

State and tribal registered storage tank lists

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, has revealed that there are 2 AST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CALIFORNIA TRUSS CO.	23665 CAJALCO RD	NNW 1/8 - 1/4 (0.246 mi.)	B6	23
Database: AST, Date of Government Version: 07/06/2016				
CALIFORNIA TRUSS CO	23665 CAJALCO RD	NNW 1/8 - 1/4 (0.246 mi.)	B7	24
Database: AST, Date of Government Version: 07/06/2016				

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: A listing of recycling facilities in California.

A review of the SWRCY list, as provided by EDR, and dated 06/11/2018 has revealed that there is 1 SWRCY site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ECOLOGY RECYCLING SE Cert Id: RC262180.001	***23332 CAJALCO ROAD***	***NW 1/4 - 1/2 (0.441 mi.)***	***11***	***32***

Other Ascertainable Records

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 02/21/2018 has revealed that there is 1 FINDS site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
STAR MILLING CO Registry ID:: 110070093292	***23840 RIDER STREET***	***0 - 1/8 (0.000 mi.)***	***A2***	***18***

ECHO: ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

A review of the ECHO list, as provided by EDR, and dated 02/25/2018 has revealed that there is 1 ECHO site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
STAR MILLING CO Registry ID: 110070093292	***23840 RIDER STREET***	***0 - 1/8 (0.000 mi.)***	***A2***	***18***

HAZNET: 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 from non-California manifests & continuation sheets are not included at the present time. 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, & disposal method. The source is the Department of Toxic Substance Control is the agency. This database begins with calendar year 1993.

A review of the HAZNET list, as provided by EDR, and dated 12/31/2016 has revealed that there are 2

HAZNET sites within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
STAR MILLING CO	***23840 RIDER STREET***	***0 - 1/8 (0.000 mi.)***	***A1***	***8***
GEPAID: CAL000392566				
GEPAID: CAL000385161				
MCANNALLY ENTERPRISE	23840 RIDER ST	0 - 1/8 (0.000 mi.)	A3	19
GEPAID: CAC001396112				

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. 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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES	***23480 RIDER ST***	***WSW 1/4 - 1/2 (0.324 mi.)***	***C9***	***28***
Reg Id: 083303464T				

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 05/21/2018 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC, LLC	***19991 SEATON AVENUE***	***W 1/2 - 1 (0.704 mi.)***	***12***	***39***
EPA Id: CAD059270975				
Cleanup Status: CLOSED				

NPDES: A listing of NPDES permits, including stormwater.

A review of the NPDES list, as provided by EDR, and dated 05/14/2018 has revealed that there is 1 NPDES site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
STAR MILLING CO	***23840 RIDER STREET***	***0 - 1/8 (0.000 mi.)***	***A1***	***8***
Facility Status: Active				

WDS: California Water Resources Control Board - Waste Discharge System.

A review of the WDS list, as provided by EDR, and dated 06/19/2007 has revealed that there is 1 WDS site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
STAR MILLING CO	***23840 RIDER STREET***	***0 - 1/8 (0.000 mi.)***	***A1***	***8***

EXECUTIVE SUMMARY

Facility Status: A
Facility Id: 8 33I009929

CIWQS: The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

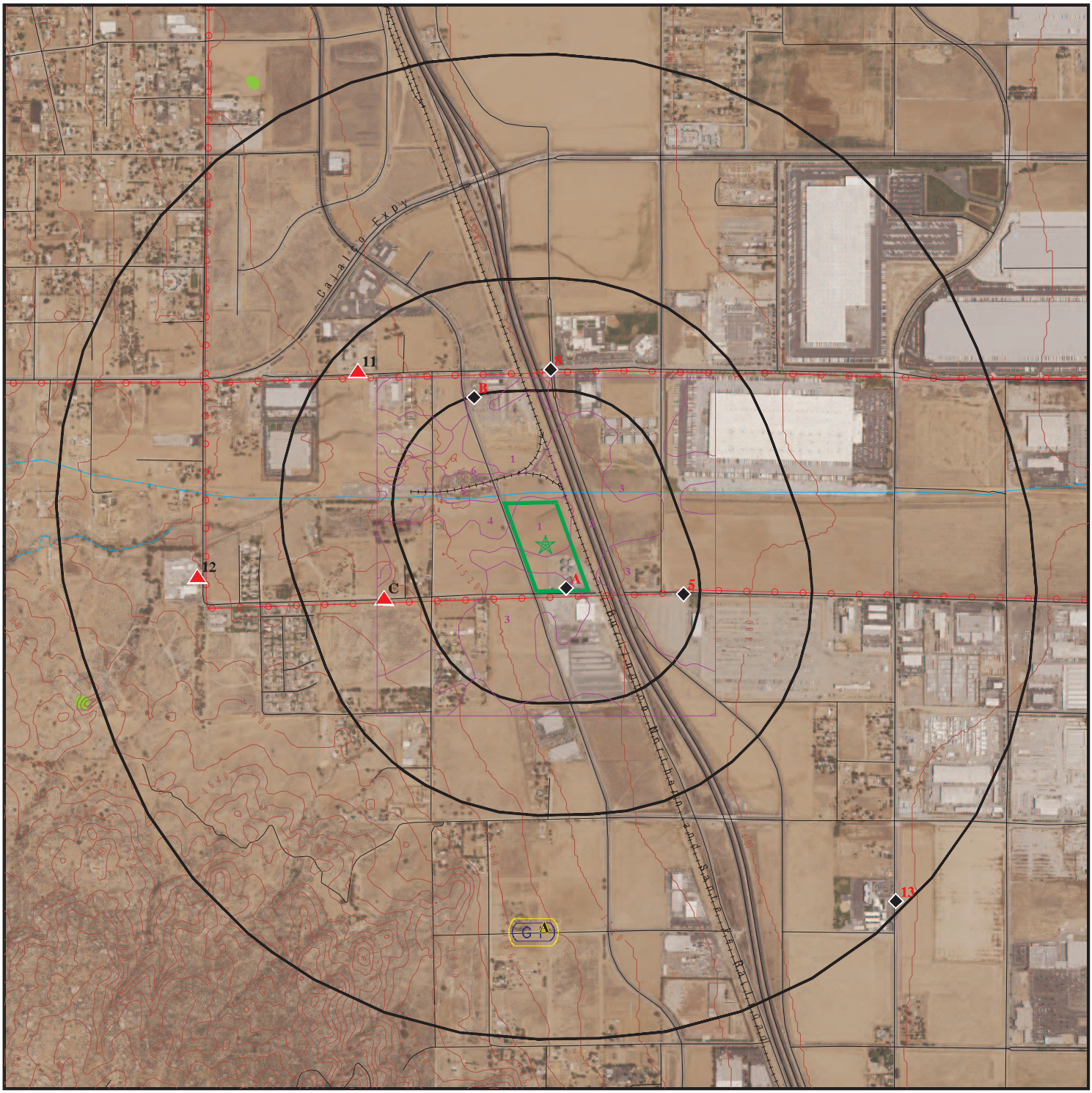
A review of the CIWQS list, as provided by EDR, and dated 06/04/2018 has revealed that there is 1 CIWQS site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
STAR MILLING CO	***23840 RIDER STREET***	***0 - 1/8 (0.000 mi.)***	***A1***	***8***

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 5407935.2S



0 1/4 1/2 1 Miles

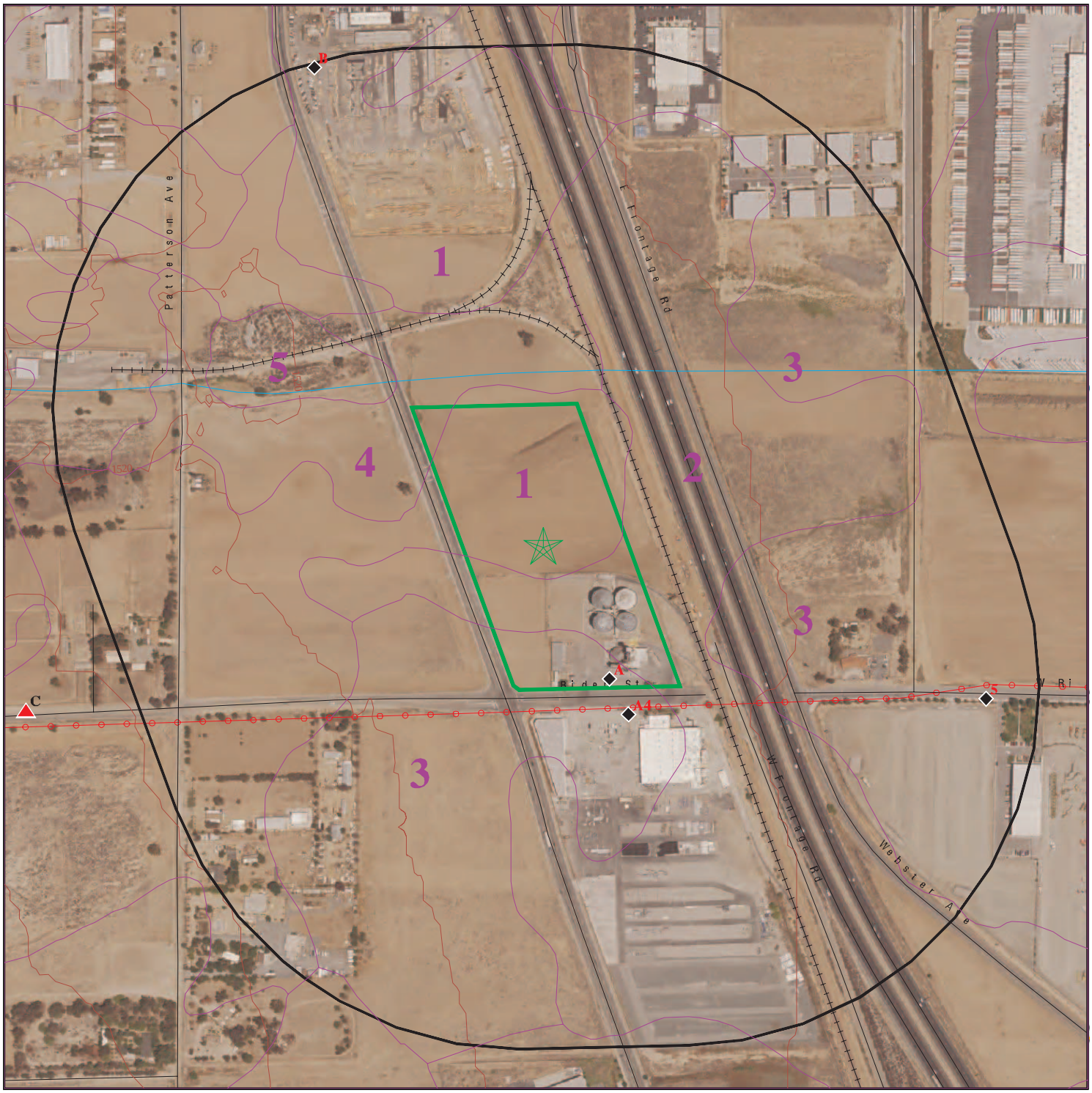
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area
- 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:	Rider & Harvill Site	CLIENT:	APEX Companies LLC
ADDRESS:	NEC of Rider St and Harvill Ave Perris CA 92570	CONTACT:	Dan Hisey
LAT/LONG:	33.831963 / 117.24832	INQUIRY #:	5407935.2s
		DATE:	August 28, 2018 4:10 pm

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DETAIL MAP - 5407935.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- 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:	Rider & Harvill Site	CLIENT:	APEX Companies LLC
ADDRESS:	NEC of Rider St and Harvill Ave Perris CA 92570	CONTACT:	Dan Hisey
LAT/LONG:	33.831963 / 117.24832	INQUIRY #:	5407935.2s
		DATE:	August 28, 2018 4:18 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
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
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	1	NR	1
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		1	1	NR	NR	NR	2
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	1	2	NR	3
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	2	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
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	2	NR	NR	NR	2
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	1	NR	NR	1
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0

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
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
FINDS	0.001		1	NR	NR	NR	NR	1
ECHO	0.001		1	NR	NR	NR	NR	1
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		2	NR	NR	NR	NR	2
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
HWP	1.000		0	0	0	1	NR	1
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		1	NR	NR	NR	NR	1
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		1	NR	NR	NR	NR	1
WIP	0.250		0	0	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		1	NR	NR	NR	NR	1
PROJECT	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	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
- Totals --		0	8	3	5	4	0	20

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **STAR MILLING CO** **HAZNET** **S103976830**
23840 RIDER STREET **NPDES** **N/A**
< 1/8 **PERRIS, CA 92570** **WDS**
1 ft. **CIWQS**

Site 1 of 4 in cluster A

Relative: Lower

Actual: 1509 ft.

HAZNET:

envid:	S103976830
Year:	2015
GEPAID:	CAL000392566
Contact:	MARK JACOBS
Telephone:	9516573143
Mailing Name:	Not reported
Mailing Address:	P.O. BOX 1987
Mailing City,St,Zip:	PERRIS, CA 925721987
Gen County:	Riverside
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.1
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Riverside

envid:	S103976830
Year:	2013
GEPAID:	CAL000385161
Contact:	MARK JACOBS
Telephone:	9516573987
Mailing Name:	Not reported
Mailing Address:	23840 RIDER ST
Mailing City,St,Zip:	PERRIS, CA 92570
Gen County:	Riverside
TSD EPA ID:	AZR000501510
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.2
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Not reported

NPDES:

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	8 33I009929
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported

STAR MILLING CO (Continued) **S103976830**

Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Terminated
Status Date:	02/11/2014
Operator Name:	McAnally Ent Inc
Operator Address:	PO Box 378
Operator City:	Nuevo
Operator State:	California
Operator Zip:	92567

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	210771
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 33I009929
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	02/06/2014
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/09/2008
Processed Date:	05/06/1993
Status:	Terminated
Status Date:	02/11/2014
Place Size:	4
Place Size Unit:	Acres
Contact:	Mark D Jacobs
Contact Title:	Not reported
Contact Phone:	951-657-3987
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	McAnally Ent Inc
Operator Address:	PO Box 378
Operator City:	Nuevo
Operator State:	California
Operator Zip:	92567
Operator Contact:	Don Brown
Operator Contact Title:	Not reported
Operator Contact Phone:	951-928-1935
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	dbrown@moarklic.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported

STAR MILLING CO (Continued) **S103976830**

Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	951-928-1935
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Riverside County
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	2048-Prepared Feed and Feed Ingredients for Animals and Fowls, Except Dogs and Cats
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	8 33I024660
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	01/29/2014
Operator Name:	Star Milling Co

STAR MILLING CO (Continued) **S103976830**

Operator Address:	23840 Rider Street
Operator City:	Perris
Operator State:	California
Operator Zip:	92570

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	444111
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33I024660
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/29/2014
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Star Milling Co
Discharge Address:	23840 Rider Street
Discharge City:	Perris
Discharge State:	California
Discharge Zip:	92570
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported

STAR MILLING CO (Continued) **S103976830**

Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	444111
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 33I024660
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	01/29/2014
Processed Date:	01/29/2014
Status:	Active
Status Date:	01/29/2014
Place Size:	4.3
Place Size Unit:	Acres
Contact:	Mark Jacobs
Contact Title:	Feed and Food Safety
Contact Phone:	951-657-3143
Contact Phone Ext:	310
Contact Email:	mjacobs@starmilling.com
Operator Name:	Star Milling Co
Operator Address:	23840 Rider Street
Operator City:	Perris

STAR MILLING CO (Continued) **S103976830**

Operator State:	California
Operator Zip:	92570
Operator Contact:	Bill Cramer
Operator Contact Title:	President
Operator Contact Phone:	951-657-3143
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	bill_cramer@starmilling.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	951-202-9016
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	None
Certifier:	William Cramer
Certifier Title:	President
Certification Date:	15-APR-15
Primary Sic:	2048-Prepared Feed and Feed Ingredients for Animals and Fowls, Except Dogs and Cats
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Active
NPDES Number:	CAS000001
Region:	8
Agency Number:	0
Regulatory Measure ID:	444111
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	8 33I024660
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/29/2014

STAR MILLING CO (Continued) **S103976830**

Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	23840 Rider Street
Discharge Name:	Star Milling Co
Discharge City:	Perris
Discharge State:	California
Discharge Zip:	92570
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	444111
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33I024660
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/29/2014
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Star Milling Co
Discharge Address:	23840 Rider Street
Discharge City:	Perris
Discharge State:	California
Discharge Zip:	92570
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported

STAR MILLING CO (Continued) **S103976830**

Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	444111
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 33I024660
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	01/29/2014
Processed Date:	01/29/2014
Status:	Active
Status Date:	01/29/2014

STAR MILLING CO (Continued) **S103976830**

Place Size:	4.3
Place Size Unit:	Acres
Contact:	Mark Jacobs
Contact Title:	Feed and Food Safety
Contact Phone:	951-657-3143
Contact Phone Ext:	310
Contact Email:	mjacobs@starmilling.com
Operator Name:	Star Milling Co
Operator Address:	23840 Rider Street
Operator City:	Perris
Operator State:	California
Operator Zip:	92570
Operator Contact:	Bill Cramer
Operator Contact Title:	President
Operator Contact Phone:	951-657-3143
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	bill_cramer@starmilling.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	951-202-9016
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	None
Certifier:	William Cramer
Certifier Title:	President
Certification Date:	15-APR-15
Primary Sic:	2048-Prepared Feed and Feed Ingredients for Animals and Fowls, Except Dogs and Cats
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

WDS:
Facility ID: Santa Ana River 33I009929

STAR MILLING CO (Continued) **S103976830**

Facility Type:	Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	8
Facility Telephone:	Not reported
Facility Contact:	Not reported
Agency Name:	MC ANALLY ENTERPRISES INC.
Agency Address:	PO BOX1129
Agency City,St,Zip:	YUCAIPA 923991129
Agency Contact:	NYLE A MCANALLY
Agency Telephone:	9097970144
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

CIWQS:

Agency:	McAnally Ent Inc
Agency Address:	PO Box 378, Nuevo, CA 92567
Place/Project Type:	Industrial - Prepared Feed and Feed Ingredients for Animals and Fowls, Except Dogs and Cats
SIC/NAICS:	2048
Region:	8
Program:	INDSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	8 33I009929
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	05/06/1993
Termination Date:	02/06/2014

STAR MILLING CO (Continued) **S103976830**

Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	33.83106
Longitude:	-117.24762
Agency:	Star Milling Co
Agency Address:	23840 Rider Street, Perris, CA 92570
Place/Project Type:	Industrial - Prepared Feed and Feed Ingredients for Animals and Fowls, Except Dogs and Cats
SIC/NAICS:	2048
Region:	8
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	8 33I024660
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	01/29/2014
Termination Date:	Not reported
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	33.83106
Longitude:	-117.24762

A2 **STAR MILLING CO** **FINDS 1023696217**
23840 RIDER STREET **ECHO N/A**
< 1/8 **PERRIS, CA 92570**
1 ft.

Site 2 of 4 in cluster A

Relative: Lower

Actual: 1509 ft.

FINDS:

Registry ID: 110070093292

Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

STAR MILLING CO (Continued) **1023696217**

ECHO:
Envid: 1023696217
Registry ID: 110070093292
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110070093292

A3 **MCANNALLY ENTERPRISES** **HAZNET** **S112887744**
23840 RIDER ST **N/A**
< 1/8 **PERRIS, CA 92370**
1 ft.

Site 3 of 4 in cluster A

Relative: **Lower**
Actual: **1509 ft.**

HAZNET:
envid: S112887744
Year: 1998
GEPAID: CAC001396112
Contact: MCANNALLY ENTERPRISES
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 12215 7TH ST
Mailing City,St,Zip: YUCAIPA, CA 923990000
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Tank bottom waste
Disposal Method: Recycler
Tons: 2.0850
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Riverside

A4 **P W EAGLE INC DBA P W PIPE** **RCRA-SQG** **1004676294**
SSE **23711 RIDER ST** **CAR000083436**
< 1/8 **PERRIS, CA 92570**
0.019 mi.
99 ft.

Site 4 of 4 in cluster A

Relative: **Lower**
Actual: **1507 ft.**

RCRA-SQG:
Date form received by agency: 04/30/2002
Facility name: P W EAGLE INC DBA P W PIPE
Facility address: 23711 RIDER ST
PERRIS, CA 92570-7114
EPA ID: CAR000083436
Contact: IVAN SHOEMAKER
Contact address: 23711 RIDER ST
PERRIS, CA 92570-7114
Contact country: US
Contact telephone: 909-657-7400
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

P W EAGLE INC DBA P W PIPE (Continued) **1004676294**

Owner/Operator Summary:
- Owner/operator name: P W EAGLE INC DBA P W PIPE
- Owner/operator address: 1550 VALLEY RIVER DR
  EUGENE, OR 97401
- Owner/operator country: Not reported
- Owner/operator telephone: 541-343-0200
- Owner/operator email: Not reported
- Owner/operator fax: Not reported
- Owner/operator extension: Not reported
- Legal status: Private
- Owner/Operator Type: Owner
- Owner/Op start date: Not reported
- Owner/Op end date: Not reported

Handler Activities Summary:
- U.S. importer of hazardous waste: No
- Mixed waste (haz. and radioactive): No
- Recycler of hazardous waste: No
- Transporter of hazardous waste: No
- Treater, storer or disposer of HW: No
- Underground injection activity: No
- On-site burner exemption: No
- Furnace exemption: No
- Used oil fuel burner: No
- Used oil processor: No
- User oil refiner: No
- Used oil fuel marketer to burner: No
- Used oil Specification marketer: No
- Used oil transfer facility: No
- Used oil transporter: No

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

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5 **ARROWHEAD RITCHIE BROS REFURB SHOP** **RCRA-SQG** **1014950472**
ESE **765 W RIDER ST** **CAR000129155**
1/8-1/4 **PERRIS, CA 92571**
0.213 mi.
1125 ft.

Relative: **Lower**

Actual: **1488 ft.**

RCRA-SQG:
- Date form received by agency: 07/25/2012
- Facility name: ARROWHEAD RITCHIE BROS REFURB SHOP
- Facility address: 765 W RIDER ST
  UNIT B
  PERRIS, CA 92571
- EPA ID: CAR000129155

ARROWHEAD RITCHIE BROS REFURB SHOP (Continued) **1014950472**

Mailing address:	900 BLUE MOUND ROAD EAST HASLET, TX 76052
Contact:	BYRON LIVINGSTON
Contact address:	900 BLUE MOUND ROAD EAST HASLET, TX 76052
Contact country:	US
Contact telephone:	817-800-2029
Contact email:	BLIVINGSTON@ASLTX.COM
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ARROWHEAD SVCS
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	07/09/2012
Owner/Op end date:	Not reported

Owner/operator name:	RITCHIE BROTHERS AUCTIONEERS
Owner/operator address:	PO BOX 6429 LINCOLN, NE 68506
Owner/operator country:	US
Owner/operator telephone:	402-421-3631
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/2000
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No

ARROWHEAD RITCHIE BROS REFURB SHOP (Continued) **1014950472**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Historical Generators:
Date form received by agency: 03/03/2003
Site name: ARROWHEAD SERVICES LTD
Classification: Small Quantity Generator

Date form received by agency: 03/03/2003
Site name: ARROWHEAD SERVICES LTD
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR

ARROWHEAD RITCHIE BROS REFURB SHOP (Continued) **1014950472**

F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 10/03/2002
Site name: G AND G INDUSTRIAL PAINTING
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

B6 **CALIFORNIA TRUSS CO. INC.** **AST A100418217**
NNW **23665 CAJALCO RD** **N/A**
1/8-1/4 **PERRIS, CA 92570**
0.246 mi.
1300 ft. **Site 1 of 2 in cluster B**

Relative: AST:
Lower
Actual:
1508 ft.

Certified Unified Program Agencies: Not reported
Owner: California Truss
Total Gallons: Not reported
CERSID: 10319638
Facility ID: Not reported
Business Name: California Truss Co.
Phone: 951 657-7491
Fax: 951 657-0486
Mailing Address: 23665 Caljaco Rd.
Mailing Address City: Perris
Mailing Address State: CA
Mailing Address Zip Code: 92570
Operator Name: California Truss Co.
Operator Phone: 951 657-7491
Owner Phone: 951 657-7491
Owner Mail Address: 23665 Cajalco Rd
Owner State: CA

CALIFORNIA TRUSS CO. INC. (Continued) **A100418217**

Owner Zip Code:	92570
Owner Country:	United States
Property Owner Name:	California Truss Co.
Property Owner Phone:	951 657-7491
Property Owner Mailing Address:	23665 Cajalco Rd
Property Owner City:	Perris
Property Owner Stat :	CA
Property Owner Zip Code:	92570
Property Owner Country:	United States
EPAID:	cal000139275

B7 **CALIFORNIA TRUSS CO** **AST** **S103644744**
NNW **23665 CAJALCO RD** **N/A**
1/8-1/4 **PERRIS, CA**
0.246 mi.
1300 ft. **Site 2 of 2 in cluster B**

Relative: AST:
Lower

Certified Unified Program Agencies:	Riverside
Owner:	CALIFORNIA TRUSS CO
Total Gallons:	1,320
CERSID:	Not reported
Facility ID:	Not reported
Business Name:	Not reported
Phone:	Not reported
Fax:	Not reported
Mailing Address:	Not reported
Mailing Address City:	Not reported
Mailing Address State:	Not reported
Mailing Address Zip Code:	Not reported
Operator Name:	Not reported
Operator Phone:	Not reported
Owner Phone:	Not reported
Owner Mail Address:	Not reported
Owner State:	Not reported
Owner Zip Code:	Not reported
Owner Country:	Not reported
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	Not reported

Actual:
1508 ft.

---

8 **VAL VERDE CONTINUATION HIGH SCHOOL** **ENVIROSTOR** **S105628757**
North **NEVADA AVENUE/MORGAN STREET** **SCH** **N/A**
1/4-1/2 **PERRIS, CA 92571**
0.296 mi.
1565 ft.

Relative: ENVIROSTOR:
Lower

Facility ID:	33010050
Status:	No Further Action
Status Date:	05/23/2002

Actual:
1499 ft.

VAL VERDE CONTINUATION HIGH SCHOOL (Continued) **S105628757**

Site Code: 404250
Site Type: School Investigation
Site Type Detailed: School
Acres: 18
NPL: NO
Regulatory Agencies: DTSC
Lead Agency: DTSC
Program Manager: Not reported
Supervisor: Javier Hinojosa
Division Branch: Southern California Schools & Brownfields Outreach
Assembly: 61
Senate: 31
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 33.8217
Longitude: -117.204
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: Arsenic Aldrin Chlordane DDD DDE DDT Dieldrin Endosulfan Endrin HCH (alpha HCH (beta HCH (gamma) Lindane HCH-technical Heptachlor Heptachlor epoxide Mirex Toxaphene
Confirmed COC: 30001-NO 30004-NO 30006-NO 30007-NO 30008-NO 30010-NO 30309-NO 30313-NO 30314-NO 30315-NO 30316-NO 30207-NO 30400-NO 30261-NO 30043-NO 30308-NO 30023-NO
Potential Description: SOIL
Alias Name: MORGAN STREET HIGH SCHOOL SITE
Alias Type: Alternate Name
Alias Name: VAL VERDE CONTINUATION HIGH SCHOOL
Alias Type: Alternate Name
Alias Name: VAL VERDE UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: VAL VERDE USD-CONTINUATION SCHOOL
Alias Type: Alternate Name
Alias Name: VAL VERDE USD-PRPSD VAL VERDE CONT. HS
Alias Type: Alternate Name
Alias Name: 404242
Alias Type: Project Code (Site Code)
Alias Name: 404250
Alias Type: Project Code (Site Code)
Alias Name: 33010050
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 07/13/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/23/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE

VAL VERDE CONTINUATION HIGH SCHOOL (Continued) **S105628757**

Completed Sub Area Name:	Not reported
Completed Document Type:	* Workplan
Completed Date:	12/05/2001
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	09/18/2001
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

SCH:

Facility ID:	33010050
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	18
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency:	DTSC
Lead Agency Description:	* DTSC
Project Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	404250
Assembly:	61
Senate:	31
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	05/23/2002
Restricted Use:	NO
Funding:	School District
Latitude:	33.8217
Longitude:	-117.204
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Arsenic, Aldrin, Chlordane, DDD, DDE, DDT, Dieldrin, Endosulfan, Endrin, HCH (alpha, HCH (beta, HCH (gamma) Lindane, HCH-technical, Heptachlor, Heptachlor epoxide, Mirex, Toxaphene
Confirmed COC:	30001-NO, 30004-NO, 30006-NO, 30007-NO, 30008-NO, 30010-NO, 30309-NO, 30313-NO, 30314-NO, 30315-NO, 30316-NO, 30207-NO, 30400-NO, 30261-NO, 30043-NO, 30308-NO, 30023-NO
Potential Description:	SOIL
Alias Name:	MORGAN STREET HIGH SCHOOL SITE
Alias Type:	Alternate Name
Alias Name:	VAL VERDE CONTINUATION HIGH SCHOOL

VAL VERDE CONTINUATION HIGH SCHOOL (Continued) **S105628757**

Alias Type:	Alternate Name
Alias Name:	VAL VERDE UNIFIED SCHOOL DISTRICT
Alias Type:	Alternate Name
Alias Name:	VAL VERDE USD-CONTINUATION SCHOOL
Alias Type:	Alternate Name
Alias Name:	VAL VERDE USD-PRPSD VAL VERDE CONT. HS
Alias Type:	Alternate Name
Alias Name:	404242
Alias Type:	Project Code (Site Code)
Alias Name:	404250
Alias Type:	Project Code (Site Code)
Alias Name:	33010050
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	07/13/2001
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	05/23/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Workplan
Completed Date:	12/05/2001
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	09/18/2001
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

C9 **MCANALLY ENTERPRISES INC** **LUST** **S101590216**
WSW **23480 RIDER ST** **SWEEPS UST** **N/A**
1/4-1/2 **PERRIS, CA 92370** **CA FID UST**
0.324 mi. **HIST CORTESE**
1713 ft. **Site 1 of 2 in cluster C**

Relative: **Higher**

Actual: **1544 ft.**

LUST REG 8:

Region:	8
County:	Riverside
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083303464T
Local Case Num:	99-15151
Case Type:	Soil only
Substance:	Diesel
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	HWY 215
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global ID:	T0606500587
How Stopped Date:	6/25/1998
Enter Date:	5/14/1999
Date Confirmation of Leak Began:	4/22/1999
Date Preliminary Assessment Began:	Not reported
Discover Date:	4/22/1999
Enforcement Date:	Not reported
Close Date:	8/4/2000
Date Prelim Assessment Workplan Submitted:	5/11/1999
Date Pollution Characterization Began:	1/19/2000
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	5/14/1999
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.8302077
Longitude:	-117.2522718
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	1
Max MTBE Soil:	.026
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	NOM
Staff Initials:	UNK
Lead Agency:	Local Agency
Local Agency:	33000L
Hydr Basin #:	SAN JACINTO (8-5)
Beneficial:	Not reported

MCANALLY ENTERPRISES INC (Continued) **S101590216**

Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Summary: Not reported

SWEEPS UST:
Status: Active
Comp Number: 59854
Number: 1
Board Of Equalization: 44-018415
Referral Date: 10-29-92
Action Date: 10-29-92
Created Date: 01-26-89
Owner Tank Id: 000495
SWRCB Tank Id: 33-000-059854-000001
Tank Status: A
Capacity: 10000
Active Date: 11-23-92
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 2

Status: Active
Comp Number: 59854
Number: 1
Board Of Equalization: 44-018415
Referral Date: 10-29-92
Action Date: 10-29-92
Created Date: 01-26-89
Owner Tank Id: 000495
SWRCB Tank Id: 33-000-059854-000002
Tank Status: A
Capacity: 10000
Active Date: 11-23-92
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 33006812
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 7146573987
Mail To: Not reported
Mailing Address: 12215 SEVENTH/POBOX 1129
Mailing Address 2: Not reported
Mailing City,St,Zip: PERRIS 92370
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported

MCANALLY ENTERPRISES INC (Continued) **S101590216**

Comments: Not reported
Status: Active

HIST CORTESE:
Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 083303464T

C10 **MCANALLY ENTERPRISES** **LUST** **S106410452**
WSW **23480 RIDER ST** **N/A**
1/4-1/2 **PERRIS, CA 92570**
0.324 mi.
1713 ft. **Site 2 of 2 in cluster C**

Relative:
Higher

Actual:
1544 ft.

LUST:
Lead Agency: RIVERSIDE COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606500587
Global Id: T0606500587
Latitude: 33.8306219725169
Longitude: -117.247480338449
Status: Completed - Case Closed
Status Date: 08/04/2000
Case Worker: RIV
RB Case Number: 083303464T
Local Agency: RIVERSIDE COUNTY LOP
File Location: Local Agency Warehouse
Local Case Number: 9915151
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T0606500587
Contact Type: Regional Board Caseworker
Contact Name: NANCY OLSON-MARTIN
Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 MAIN STREET, SUITE 500
City: RIVERSIDE
Email: nolson-martin@waterboards.ca.gov
Phone Number: Not reported

Global Id: T0606500587
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

LUST:
Global Id: T0606500587
Action Type: ENFORCEMENT
Date: 07/31/2000
Action: File review - #RCDEH upload site file 8/27/2015

MCANALLY ENTERPRISES (Continued) **S106410452**

Global Id: T0606500587
Action Type: Other
Date: 06/25/1998
Action: Leak Stopped

Global Id: T0606500587
Action Type: Other
Date: 04/22/1999
Action: Leak Discovery

Global Id: T0606500587
Action Type: Other
Date: 04/22/1999
Action: Leak Reported

Global Id: T0606500587
Action Type: ENFORCEMENT
Date: 08/01/2000
Action: Closure/No Further Action Letter - #Riv Co Closure

LUST:
Global Id: T0606500587
Status: Open - Case Begin Date
Status Date: 06/25/1998

Global Id: T0606500587
Status: Open - Site Assessment
Status Date: 04/22/1999

Global Id: T0606500587
Status: Open - Site Assessment
Status Date: 05/11/1999

Global Id: T0606500587
Status: Open - Site Assessment
Status Date: 01/19/2000

Global Id: T0606500587
Status: Completed - Case Closed
Status Date: 08/04/2000

RIVERSIDE CO. LUST:
Region: RIVERSIDE
Facility ID: 9915151
Employee: Boltinghous-LOP
Site Closed: Yes
Case Type: Soil only
Facility Status: closed/action completed
Casetype Decode: Soil only is impacted
Fstatus Decode: Closed/Action completed

11
NW
1/4-1/2
0.441 mi.
2331 ft.

ECOLOGY RECYCLING SERVICES, LLC
23332 CAJALCO ROAD
PERRIS, CA 92570

SWRCY **S110733091**
NPDES **N/A**
CIWQS

Relative:
Higher

Actual:
1529 ft.

SWRCY:

Reg Id:	262180
Cert Id:	RC262180.001
Mailing Address:	14150 Vine Pl
Mailing City:	Cerritos
Mailing State:	CA
Mailing Zip Code:	90703
Website:	Not reported
Email:	Not reported
Phone Number:	(951) 657-7725
Grand Father:	N
Rural:	Y
Operation Begin Date:	10/01/2017
Aluminium:	Y
Glass:	Y
Plastic:	Y
Bimetal:	Y
Agency:	N/A
Monday Hours Of Operation:	8:00 am - 4:30 pm
Tuesday Hours Of Operation:	8:00 am - 4:30 pm
Wednesday Hours Of Operation:	8:00 am - 4:30 pm
Thursday Hours Of Operation:	8:00 am - 4:30 pm
Friday Hours Of Operation:	8:00 am - 4:30 pm
Saturday Hours Of Operation:	8:00 am - 3:00 pm
Sunday Hours Of Operation:	CLOSED
Organization ID:	260754
Organization Name:	Ecology Recycling Services LLC

NPDES:

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	8 33MR000070
Regulatory Measure Type:	Region 8 - Scrap Metal Permit
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	08/10/2017
Operator Name:	Ecology Recycling Services LLC
Operator Address:	14150 Vine Place
Operator City:	Cerritos

ECOLOGY RECYCLING SERVICES, LLC (Continued) **S110733091**

Operator State:	California
Operator Zip:	90703

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	489674
Order Number:	Not reported
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33MR000070
Program Type:	Region 8 - Scrap Metal Permit
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	08/10/2017
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Ecology Recycling Services LLC
Discharge Address:	14150 Vine Place
Discharge City:	Cerritos
Discharge State:	California
Discharge Zip:	90703
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported

ECOLOGY RECYCLING SERVICES, LLC (Continued) **S110733091**

Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	489674
Order Number:	Not reported
Regulatory Measure Type:	Region 8 - Scrap Metal Permit
Place ID:	Not reported
WDID:	8 33MR000070
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	08/07/2017
Processed Date:	08/10/2017
Status:	Active
Status Date:	08/10/2017
Place Size:	5.5
Place Size Unit:	Acres
Contact:	Regina Coronado
Contact Title:	Compliance Manager
Contact Phone:	562-921-9974
Contact Phone Ext:	Not reported
Contact Email:	gcoronado@ecoparts.com
Operator Name:	Ecology Recycling Services LLC
Operator Address:	14150 Vine Place
Operator City:	Cerritos
Operator State:	California
Operator Zip:	90703

ECOLOGY RECYCLING SERVICES, LLC (Continued) **S110733091**

Operator Contact:	Regina Coronado
Operator Contact Title:	Compliance Manager
Operator Contact Phone:	562-921-9974
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	gcoronado@ecoparts.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	562-544-9860
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Santa Ana River
Certifier:	Aaron Siroonian
Certifier Title:	Manager
Certification Date:	07-AUG-17
Primary Sic:	5093-Scrap and Waste Materials
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Active
NPDES Number:	Not reported
Region:	8
Agency Number:	0
Regulatory Measure ID:	489674
Place ID:	Not reported
Order Number:	Not reported
WDID:	8 33MR000070
Regulatory Measure Type:	Enrollee
Program Type:	Region 8 - Scrap Metal Permit
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	08/10/2017
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	14150 Vine Place

ECOLOGY RECYCLING SERVICES, LLC (Continued) **S110733091**

Discharge Name:	Ecology Recycling Services LLC
Discharge City:	Cerritos
Discharge State:	California
Discharge Zip:	90703
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	489674
Order Number:	Not reported
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33MR000070
Program Type:	Region 8 - Scrap Metal Permit
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	08/10/2017
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Ecology Recycling Services LLC
Discharge Address:	14150 Vine Place
Discharge City:	Cerritos
Discharge State:	California
Discharge Zip:	90703
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported

ECOLOGY RECYCLING SERVICES, LLC (Continued) **S110733091**

Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	489674
Order Number:	Not reported
Regulatory Measure Type:	Region 8 - Scrap Metal Permit
Place ID:	Not reported
WDID:	8 33MR000070
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	08/07/2017
Processed Date:	08/10/2017
Status:	Active
Status Date:	08/10/2017
Place Size:	5.5
Place Size Unit:	Acres
Contact:	Regina Coronado

ECOLOGY RECYCLING SERVICES, LLC (Continued) **S110733091**

Contact Title:	Compliance Manager
Contact Phone:	562-921-9974
Contact Phone Ext:	Not reported
Contact Email:	gcoronado@ecoparts.com
Operator Name:	Ecology Recycling Services LLC
Operator Address:	14150 Vine Place
Operator City:	Cerritos
Operator State:	California
Operator Zip:	90703
Operator Contact:	Regina Coronado
Operator Contact Title:	Compliance Manager
Operator Contact Phone:	562-921-9974
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	gcoronado@ecoparts.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	562-544-9860
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Santa Ana River
Certifier:	Aaron Siroonian
Certifier Title:	Manager
Certification Date:	07-AUG-17
Primary Sic:	5093-Scrap and Waste Materials
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CIWQS:

Agency:	Ecology Recycling Services LLC
Agency Address:	14150 Vine Place, Cerritos, CA 90703
Place/Project Type:	Industrial - Scrap and Waste Materials
SIC/NAICS:	5093
Region:	8

ECOLOGY RECYCLING SERVICES, LLC (Continued) **S110733091**

Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Region 8 - Scrap Metal Permit
Order Number:	R8-2012-0012
WDID:	8 33MR000070
NPDES Number:	CAG618001
Adoption Date:	Not reported
Effective Date:	08/10/2017
Termination Date:	Not reported
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	33.83895
Longitude:	-117.25683

12
West
1/2-1
0.704 mi.
3716 ft.

Relative:
Higher

Actual:
1562 ft.

AOC, LLC
19991 SEATON AVENUE
PERRIS, CA 92570

CORRACTS **1000238960**
RCRA-TSDF **CAD059270975**
RCRA-LQG
ENVIROSTOR
HIST UST
RAATS
EMI
HWP
NPDES
CIWQS

CORRACTS:

EPA ID:	CAD059270975
EPA Region:	9
Area Name:	ENTIRE FACILITY
Actual Date:	19900101
Action:	CA029ST
NAICS Code(s):	325211 Plastics Material and Resin Manufacturing
Original schedule date:	Not reported
Schedule end date:	Not reported

EPA ID:	CAD059270975
EPA Region:	9
Area Name:	ENTIRE FACILITY
Actual Date:	19920716
Action:	CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
NAICS Code(s):	325211 Plastics Material and Resin Manufacturing
Original schedule date:	Not reported
Schedule end date:	Not reported

EPA ID:	CAD059270975
EPA Region:	9
Area Name:	ENTIRE FACILITY
Actual Date:	19920716

AOC, LLC (Continued) **1000238960**

Action: CA225NR - Stabilization Measures Evaluation, This facility is, not amenable to stabilization activity at the, present time for reasons other than (1) it appears to be technically, infeasible or inappropriate (NF) or (2) there is a lack of technical, information (IN). Reasons for this conclusion may be the status of, closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other, administrative considerations
NAICS Code(s): 325211
Plastics Material and Resin Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD059270975
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 19881024
Action: CA999 - Corrective Action Process Terminated
NAICS Code(s): 325211
Plastics Material and Resin Manufacturing
Original schedule date: 19881122
Schedule end date: Not reported

EPA ID: CAD059270975
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 19881024
Action: CA050 - RFA Completed
NAICS Code(s): 325211
Plastics Material and Resin Manufacturing
Original schedule date: 19881122
Schedule end date: Not reported

RCRA-TSDF:
Date form received by agency: 01/19/2016
Facility name: AOC, LLC
Facility address: 19991 SEATON AVENUE
PERRIS, CA 92570
EPA ID: CAD059270975
Mailing address: SEATON AVENUE
PERRIS, CA 92570
Contact: JUAN F MONTALVO
Contact address: SEATON AVENUE
PERRIS, CA 92570
Contact country: US
Contact telephone: 951-943-9708
Contact email: JMONTALVO@AOC-RESINS.COM
EPA Region: 09
Land type: Private
Classification: TSDF
Description: Handler is engaged in the treatment, storage or disposal of hazardous waste
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the

AOC, LLC (Continued) **1000238960**

cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	THE ALPHA CORPORATION
Owner/operator address:	HIGHWAY 57 EAST
	COLLIERVILLE, TN 38017
Owner/operator country:	US
Owner/operator telephone:	901-854-2850
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	05/01/1997
Owner/Op end date:	Not reported

Owner/operator name:	THE ALPHA CORPORATION
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	05/01/1997
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

. Waste code: 181
. Waste name: Other inorganic solid waste

AOC, LLC (Continued) **1000238960**

. Waste code: 352
. Waste name: Other organic solids

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: U147
. Waste name: 2,5-FURANDIONE

. Waste code: U190
. Waste name: 1,3-ISOBENZOFURANDIONE

Historical Generators:
Date form received by agency: 03/01/2014
Site name: AOC, LLC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: U147
. Waste name: 2,5-FURANDIONE

. Waste code: U190
. Waste name: 1,3-ISOBENZOFURANDIONE

Date form received by agency: 02/28/2012
Site name: AOC, LLC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D009
. Waste name: MERCURY

. Waste code: U147
. Waste name: 2,5-FURANDIONE

AOC, LLC (Continued) **1000238960**

. Waste code: U190
. Waste name: 1,3-ISOBENZOFURANDIONE

Date form received by agency: 02/08/2010
Site name: AOC, LLC
Classification: Large Quantity Generator

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 272
. Waste name: Polymeric resin waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 343
. Waste name: Unspecified organic liquid mixture

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 513
. Waste name: Empty containers less than 30 gallons

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D009
. Waste name: MERCURY

. Waste code: U107
. Waste name: 1,2-BENZENEDICARBOXYLIC ACID, DIOCTYL ESTER

. Waste code: U190
. Waste name: 1,3-ISOBENZOFURANDIONE

Date form received by agency: 02/27/2008
Site name: AOC, L.L.C.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE

AOC, LLC (Continued) **1000238960**

FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: U190
. Waste name: 1,3-ISOBENZOFURANDIONE

Date form received by agency: 02/27/2006
Site name: AOC, L.L.C.
Classification: Small Quantity Generator

Date form received by agency: 02/27/2006
Site name: AOC, L.L.C.
Classification: Large Quantity Generator

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 272
. Waste name: Polymeric resin waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 352
. Waste name: Other organic solids

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D009
. Waste name: MERCURY

. Waste code: U190
. Waste name: 1,3-ISOBENZOFURANDIONE

Date form received by agency: 03/01/2002
Site name: AOC, L.L.C.
Classification: Large Quantity Generator

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 272
. Waste name: Polymeric resin waste

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE

AOC, LLC (Continued) **1000238960**

FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: U190
. Waste name: 1,3-ISOBENZOFURANDIONE

Date form received by agency: 03/04/1999
Site name: ALPHA/OWENS-CORNING L.L.C
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Site name: ALPHA OWENS CORNING L L C
Classification: Large Quantity Generator

Date form received by agency: 10/17/1994
Site name: ALPHA OWENS CORNING L L C
Classification: Small Quantity Generator

Date form received by agency: 03/29/1994
Site name: ALPHA RESINS CORP
Classification: Large Quantity Generator

Date form received by agency: 02/26/1992
Site name: ALPHA RESINS
Classification: Large Quantity Generator

Date form received by agency: 04/12/1990
Site name: ALPHA RESINS
Classification: Large Quantity Generator

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Amount (Lbs): 32499

Waste code: U147
Waste name: 2,5-FURANDIONE
Amount (Lbs): 500

Waste code: U190
Waste name: 1,3-ISOBENZOFURANDIONE
Amount (Lbs): 500

Corrective Action Summary:

AOC, LLC (Continued) **1000238960**

Event date: 10/24/1988
Event: RFA COMPLETED

Event date: 10/24/1988
Event: CA PROCESS IS TERMINATED

Event date: 01/01/1990
Event: LEAD AGENCY DETERMINATION

Event date: 07/16/1992
Event: STABILIZATION MEASURES EVALUATION-FACILITY NOT AMENABLE TO STABILIZATION

Event date: 07/16/1992
Event: CA PRIORITIZATION-LOW CA PRIORITY

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: TSD IS-Preparedness and Prevention
Date violation determined: 01/06/2009
Date achieved compliance: 02/19/2009
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 01/06/2009
Date achieved compliance: 02/19/2009
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Container Use and Management
Date violation determined: 01/06/2009
Date achieved compliance: 02/19/2009
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported

AOC, LLC (Continued) **1000238960**

Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 01/06/2009
Date achieved compliance: 03/06/2009
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/06/2009
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 11/04/2004
Date achieved compliance: 12/03/2004
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/04/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 262.50-60
Area of violation: Generators - General
Date violation determined: 12/02/1992
Date achieved compliance: 01/07/1993
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 12/02/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 2400
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 262.30-34.C
Area of violation: Generators - General
Date violation determined: 12/02/1992
Date achieved compliance: 01/07/1993
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 12/02/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 2400
Final penalty amount: Not reported
Paid penalty amount: Not reported

AOC, LLC (Continued) **1000238960**

Regulation violated: F - 262.50-60
Area of violation: Generators - General
Date violation determined: 01/11/1989
Date achieved compliance: 05/12/1989
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/24/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 268 ALL
Area of violation: LDR - General
Date violation determined: 01/11/1989
Date achieved compliance: 03/24/1989
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 263
Area of violation: Transporters - General
Date violation determined: 01/11/1989
Date achieved compliance: 05/12/1989
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/24/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 268.7
Area of violation: LDR - General
Date violation determined: 01/11/1989
Date achieved compliance: 05/12/1989
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 268 ALL

AOC, LLC (Continued) **1000238960**

Area of violation:	LDR - General
Date violation determined:	06/07/1988
Date achieved compliance:	08/01/1988
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	F - 263
Area of violation:	Transporters - General
Date violation determined:	06/07/1988
Date achieved compliance:	08/01/1988
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	F - 262.50-60
Area of violation:	Generators - General
Date violation determined:	06/07/1988
Date achieved compliance:	08/01/1988
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	F - 268.7
Area of violation:	LDR - General
Date violation determined:	06/07/1988
Date achieved compliance:	08/01/1988
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Evaluation Action Summary:

Evaluation date:	08/13/2015

AOC, LLC (Continued) **1000238960**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/06/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 02/19/2009
Evaluation lead agency: EPA

Evaluation date: 01/06/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/06/2009
Evaluation lead agency: State

Evaluation date: 01/06/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD IS-Container Use and Management
Date achieved compliance: 02/19/2009
Evaluation lead agency: EPA

Evaluation date: 01/06/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD IS-Preparedness and Prevention
Date achieved compliance: 02/19/2009
Evaluation lead agency: EPA

Evaluation date: 11/04/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/03/2004
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 11/06/1992
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/19/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/07/1993
Evaluation lead agency: State

Evaluation date: 01/11/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 03/24/1989
Evaluation lead agency: State

Evaluation date: 01/11/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 05/12/1989

AOC, LLC (Continued) **1000238960**

Evaluation lead agency: State

Evaluation date: 01/11/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Transporters - General
Date achieved compliance: 05/12/1989
Evaluation lead agency: State

Evaluation date: 01/11/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/12/1989
Evaluation lead agency: State

Evaluation date: 01/09/1989
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/07/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Transporters - General
Date achieved compliance: 08/01/1988
Evaluation lead agency: State

Evaluation date: 06/07/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 08/01/1988
Evaluation lead agency: State

Evaluation date: 06/07/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 08/01/1988
Evaluation lead agency: State

ENVIROSTOR:
Facility ID: 80001432
Status: Active
Status Date: 08/12/2009
Site Code: 401231
Site Type: Corrective Action
Site Type Detailed: Corrective Action
Acres: 10
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: WM
Program Manager: Jess Villamayor
Supervisor: Philip Chandler
Division Branch: Cleanup Chatsworth
Assembly: 61
Senate: 31
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported

AOC, LLC (Continued) **1000238960**

Latitude:	33.83028
Longitude:	-117.2615
APN:	317090029
Past Use:	MANUFACTURING - CHEMICALS
Potential COC:	Diethylene glycol, monobutyl ether Diethylene glycol, monoethyl ether Ethylene glycol Ethylene glycol, monobutyl ether Phthalic anhydride Propylene glycol Propylene glycol, monoethyl ether Propylene glycol, monomethyl ether
Confirmed COC:	NONE SPECIFIED
Potential Description:	OTH, SED, SOIL, SURFW
Alias Name:	317090029
Alias Type:	APN
Alias Name:	CAD059270975
Alias Type:	EPA Identification Number
Alias Name:	110000479385
Alias Type:	EPA (FRS #)
Alias Name:	401231
Alias Type:	Project Code (Site Code)
Alias Name:	80001432
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Correspondence
Completed Date:	01/11/2005
Comments:	DTSC issued a letter to RP submitting a copy of the RCRA Facility Assessment report dated October 1988

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Annual Oversight Cost Estimate
Completed Date:	12/16/2014
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Correspondence
Completed Date:	09/19/2006
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	RCRA Facility Assessment Report
Completed Date:	10/01/1988
Comments:	RCRA FA was conducted by A. T. Kearney on behalf of the U.S.EPA

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Litigation Support
Completed Date:	09/15/2006
Comments:	DTSC issued a letter on September 15, 2006 responding a letter request, dated April 24, 2006, to provide additional information on: 1) summary report related to the DTSC March 10, 2005 on-site evaluation; 2) copies of figures indicating the location of the new areas of concerns (AOCs) identified, as referenced in Section 3 of the draft corrective action consent agreement (CACA); and 3) clarification of table 2.3 of the draft CACA

AOC, LLC (Continued) **1000238960**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: RCRA Facility Assessment Report
Completed Date: 10/24/1988
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * CA Process is Terminated
Completed Date: 10/24/1988
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 02/04/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 03/10/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 11/19/1980
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 03/30/1981
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Questionnaire
Completed Date: 07/16/1992
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/10/2015
Comments: Cost estimate completed

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 03/07/2007
Comments: DTSC concurred with AOC’s proposed schedule for submittal of the Letter Report on Current Condition at the AOC LLC Facility

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

AOC, LLC (Continued) **1000238960**

Completed Document Type: Correspondence
Completed Date: 04/30/1990
Comments: DHS issued a letter on April 30, 1990 on which acknowledged the Certification of Closure Report dated December 28, 1989, for the hazardous waste incinerator that operated at the Alpha Resins Corporation. The acknowledgment of Facility closure was not a certification that the Facility did not pose any environmental or public health threat, nor did release the owner/operator from responsibilities and liabilities associated with past hazardous waste management practices that occurred at the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Pre-HARP Form
Completed Date: 01/25/2005
Comments: Signed HARP is not available in the file room

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: Phase 1
Schedule Due Date: 06/30/2018
Schedule Revised Date: Not reported

HIST UST:
File Number: 0001F9FE
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001F9FE.pdf
Region: STATE
Facility ID: 00000019398
Facility Type: Other
Other Type: RESIN PLANT
Contact Name: JOHN HUGHES
Telephone: 7146575161
Owner Name: THE ALPHA CORPORATION
Owner Address: HIGHWAY 57 EAST
Owner City,St,Zip: COLLIERVILLE, TN 38017
Total Tanks: 0003

Tank Num: 001
Container Num: 01
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: 1/4
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 02
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: WASTE
Type of Fuel: Not reported
Container Construction Thickness: 1/4

AOC, LLC (Continued) **1000238960**

Leak Detection: Visual

Tank Num: 003
Container Num: 03
Year Installed: Not reported
Tank Capacity: 00008000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Container Construction Thickness: 1/4
Leak Detection: Stock Inventor

Click here for Geo Tracker PDF:

EMI:

Year: 2002
County Code: 33
Air Basin: SC
Facility ID: 117140
Air District Name: SC
SIC Code: 2821
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 15
Reactive Organic Gases Tons/Yr: 10
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 2
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

Year: 2003
County Code: 33
Air Basin: SC
Facility ID: 117140
Air District Name: SC
SIC Code: 2821
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 15
Reactive Organic Gases Tons/Yr: 10
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 2
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

Year: 2004
County Code: 33
Air Basin: SC
Facility ID: 117140
Air District Name: SC
SIC Code: 2821
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported

AOC, LLC (Continued) **1000238960**

Total Organic Hydrocarbon Gases Tons/Yr:	14.9067966
Reactive Organic Gases Tons/Yr:	9.82
Carbon Monoxide Emissions Tons/Yr:	1.2297
NOX - Oxides of Nitrogen Tons/Yr:	2.2815
SOX - Oxides of Sulphur Tons/Yr:	0.029756
Particulate Matter Tons/Yr:	0.26499
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.23

Year:	2005
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.889675
Reactive Organic Gases Tons/Yr:	.549064262
Carbon Monoxide Emissions Tons/Yr:	1.2121
NOX - Oxides of Nitrogen Tons/Yr:	2.184545
SOX - Oxides of Sulphur Tons/Yr:	.02143
Particulate Matter Tons/Yr:	.261165
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.23025594

Year:	2006
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	9.432175151723743611
Reactive Organic Gases Tons/Yr:	5.853
Carbon Monoxide Emissions Tons/Yr:	1.365
NOX - Oxides of Nitrogen Tons/Yr:	2.26
SOX - Oxides of Sulphur Tons/Yr:	.023
Particulate Matter Tons/Yr:	.294
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.2641

Year:	2007
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	9.430036548942120371
Reactive Organic Gases Tons/Yr:	5.853
Carbon Monoxide Emissions Tons/Yr:	1.365
NOX - Oxides of Nitrogen Tons/Yr:	2.26
SOX - Oxides of Sulphur Tons/Yr:	.023
Particulate Matter Tons/Yr:	.294

AOC, LLC (Continued) **1000238960**

Part. Matter 10 Micrometers and Smllr Tons/Yr:.2641

Year:	2008
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	15.07811376000858083
Reactive Organic Gases Tons/Yr:	9.963154663978917988
Carbon Monoxide Emissions Tons/Yr:	.9653995
NOX - Oxides of Nitrogen Tons/Yr:	4.40242296085028655
SOX - Oxides of Sulphur Tons/Yr:	.014278975
Particulate Matter Tons/Yr:	.194995375
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.19497979

Year:	2009
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8.0821268014842804
Reactive Organic Gases Tons/Yr:	5.1635499999999999
Carbon Monoxide Emissions Tons/Yr:	0.68061000000000005
NOX - Oxides of Nitrogen Tons/Yr:	3.1142699999999999
SOX - Oxides of Sulphur Tons/Yr:	0.0122285
Particulate Matter Tons/Yr:	0.13782249999999999
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.13762286500000001

Year:	2010
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	5.7045807250007101
Reactive Organic Gases Tons/Yr:	3.6664599999999998
Carbon Monoxide Emissions Tons/Yr:	0.72604000000000002
NOX - Oxides of Nitrogen Tons/Yr:	1.3524
SOX - Oxides of Sulphur Tons/Yr:	0.01336795
Particulate Matter Tons/Yr:	0.15657974999999999
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.14263007150000001

Year:	2011
County Code:	33
Air Basin:	SC
Facility ID:	117140

AOC, LLC (Continued) **1000238960**

Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	5.8255886653
Reactive Organic Gases Tons/Yr:	3.70706
Carbon Monoxide Emissions Tons/Yr:	0.86354
NOX - Oxides of Nitrogen Tons/Yr:	1.65961
SOX - Oxides of Sulphur Tons/Yr:	0.01689
Particulate Matter Tons/Yr:	0.18962
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.17000252

Year:	2012
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	5.7202886107
Reactive Organic Gases Tons/Yr:	3.73289
Carbon Monoxide Emissions Tons/Yr:	0.77024
NOX - Oxides of Nitrogen Tons/Yr:	1.4247
SOX - Oxides of Sulphur Tons/Yr:	0.01286
Particulate Matter Tons/Yr:	0.16742
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.14213816

Year:	2013
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	5.7592429067
Reactive Organic Gases Tons/Yr:	3.81681
Carbon Monoxide Emissions Tons/Yr:	1.98159
NOX - Oxides of Nitrogen Tons/Yr:	1.48536
SOX - Oxides of Sulphur Tons/Yr:	0.01438
Particulate Matter Tons/Yr:	0.17037
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.1417864

Year:	2014
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	6.4971263252

AOC, LLC (Continued) **1000238960**

Reactive Organic Gases Tons/Yr:	4.63982
Carbon Monoxide Emissions Tons/Yr:	0.70304
NOX - Oxides of Nitrogen Tons/Yr:	0.70898
SOX - Oxides of Sulphur Tons/Yr:	0.01108
Particulate Matter Tons/Yr:	0.14849
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.12351596

Year:	2015
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	12.673498909
Reactive Organic Gases Tons/Yr:	11.77189445
Carbon Monoxide Emissions Tons/Yr:	0.900319
NOX - Oxides of Nitrogen Tons/Yr:	0.9924485
SOX - Oxides of Sulphur Tons/Yr:	0.01402181
Particulate Matter Tons/Yr:	0.18722315
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.161949201

Year:	2016
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.7742614136
Reactive Organic Gases Tons/Yr:	1.00127321
Carbon Monoxide Emissions Tons/Yr:	0.8260817
NOX - Oxides of Nitrogen Tons/Yr:	0.77
SOX - Oxides of Sulphur Tons/Yr:	0.0127233242
Particulate Matter Tons/Yr:	0.15259185
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.1294313376

HWP:

EPA Id:	CAD059270975
Cleanup Status:	CLOSED
Latitude:	33.83028
Longitude:	-117.2615
Facility Type:	Historical - Non-Operating
Facility Size:	Not reported
Team:	Not reported
Supervisor:	Not reported
Site Code:	401231, TBD
Assembly District:	61
Senate District:	31
Public Information Officer:	Not reported
Public Information Officer:	Not reported

Activities:

AOC, LLC (Continued) **1000238960**

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - 2ND NOTICE OF DEFICIENCY ISSUED
Actual Date: 10/23/1984

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - APPLICATION PART A RECEIVED
Actual Date: 11/19/1980

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - 1ST NOTICE OF DEFICIENCY ISSUED
Actual Date: 02/14/1984

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - CALL-IN LETTER ISSUED
Actual Date: 09/30/1982

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST ACKNOWLEDGED
Actual Date: 06/21/1989

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - RESPONSE TO 1ST NOD RECEIVED
Actual Date: 03/28/1984

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - APPLICATION PART B RECEIVED
Actual Date: 05/02/1983

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST RECEIVED
Actual Date: 01/01/1989

Closure:
EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - ISSUE CLOSURE VERIFICATION
Actual Date: 04/30/1990

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating

AOC, LLC (Continued) **1000238960**

Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - PUBLIC COMMENT (END)
Actual Date: 03/08/1989

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - RECEIVE CLOSURE CERTIFICATION
Actual Date: 12/28/1989

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - CLOSURE PLAN APPROVED
Actual Date: 06/21/1989

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - PUBLIC COMMENT (BEGIN)
Actual Date: 02/06/1989

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - CLOSURE PLAN RECEIVED
Actual Date: 02/19/1985

Alias:
EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Alias Type: FRS
Alias: 110000479385

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Alias Type: Project Code (Site Code)
Alias: 401231

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Alias Type: Project Code (Site Code)
Alias: TBD

NPDES:
Facility Status: Active
NPDES Number: CAS000001
Region: 8
Agency Number: 0
Regulatory Measure ID: 210684
Place ID: Not reported
Order Number: 97-03-DWQ
WDID: 8 33I001426
Regulatory Measure Type: Enrollee
Program Type: Industrial

AOC, LLC (Continued) **1000238960**

Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/27/1992
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	19991 Seaton Avenue
Discharge Name:	AOC LLC
Discharge City:	Perris
Discharge State:	California
Discharge Zip:	92570
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	210684
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 33I001426
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/09/2008
Processed Date:	03/27/1992
Status:	Active
Status Date:	03/27/1992
Place Size:	10
Place Size Unit:	Acres
Contact:	Juan Montalvo
Contact Title:	Environmental Health Safety Leader
Contact Phone:	951-943-9708
Contact Phone Ext:	Not reported
Contact Email:	jmontalvo@aoc-resins.com
Operator Name:	AOC LLC
Operator Address:	19991 Seaton Avenue
Operator City:	Perris
Operator State:	California
Operator Zip:	92570
Operator Contact:	JUAN MONTALVO
Operator Contact Title:	EHS Leader
Operator Contact Phone:	951-943-9708
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	jmontalvo@aoc-resins.com

AOC, LLC (Continued) **1000238960**

Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Perris
Certifier:	JUAN MONTALVO
Certifier Title:	EHS LEADER
Certification Date:	05-MAR-15
Primary Sic:	2821-Plastics Material and Synthetic Resins, and Nonvulcanizable Elastomers
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	210684
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33I001426
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/27/1992
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	AOC LLC
Discharge Address:	19991 Seaton Avenue
Discharge City:	Perris
Discharge State:	California
Discharge Zip:	92570
Received Date:	Not reported

AOC, LLC (Continued) **1000238960**

Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

AOC, LLC (Continued) **1000238960**

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	8 33I001426
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	03/27/1992
Operator Name:	AOC LLC
Operator Address:	19991 Seaton Avenue
Operator City:	Perris
Operator State:	California
Operator Zip:	92570

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	210684
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 33I001426
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/09/2008
Processed Date:	03/27/1992
Status:	Active
Status Date:	03/27/1992
Place Size:	10
Place Size Unit:	Acres
Contact:	Juan Montalvo
Contact Title:	Environmental Health Safety Leader
Contact Phone:	951-943-9708
Contact Phone Ext:	Not reported
Contact Email:	jmontalvo@aoc-resins.com

AOC, LLC (Continued) **1000238960**

Operator Name:	AOC LLC
Operator Address:	19991 Seaton Avenue
Operator City:	Perris
Operator State:	California
Operator Zip:	92570
Operator Contact:	JUAN MONTALVO
Operator Contact Title:	EHS Leader
Operator Contact Phone:	951-943-9708
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	jmontalvo@aoc-resins.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Perris
Certifier:	JUAN MONTALVO
Certifier Title:	EHS LEADER
Certification Date:	05-MAR-15
Primary Sic:	2821-Plastics Material and Synthetic Resins, and Nonvulcanizable Elastomers
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	210684
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33I001426
Program Type:	Industrial

AOC, LLC (Continued) **1000238960**

Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/27/1992
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	AOC LLC
Discharge Address:	19991 Seaton Avenue
Discharge City:	Perris
Discharge State:	California
Discharge Zip:	92570
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported

AOC, LLC (Continued) **1000238960**

Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CIWQS:

Agency:	AOC LLC
Agency Address:	19991 Seaton Avenue, Perris, CA 92570
Place/Project Type:	Industrial - Plastics Material and Synthetic Resins, and Nonvulcanizable Elastomers
SIC/NAICS:	2821
Region:	8
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	8 33I001426
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	03/27/1992
Termination Date:	Not reported
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	33.83092
Longitude:	-117.26161

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13 **VAL VERDE ELEMENTARY SCHOOL ADDITION** **ENVIROSTOR** **S118756753**
SE **2656 INDIAN AVENUE** **SCH** **N/A**
1/2-1 **PERRIS, CA 92571**
0.976 mi.
5154 ft.

Relative:
Lower

Actual:
1462 ft.

ENVIROSTOR:

Facility ID:	33820012
Status:	No Action Required
Status Date:	10/13/2000
Site Code:	404158
Site Type:	School Investigation
Site Type Detailed:	School
Acres:	1
NPL:	NO
Regulatory Agencies:	DTSC
Lead Agency:	DTSC
Program Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Southern California Schools & Brownfields Outreach
Assembly:	61

VAL VERDE ELEMENTARY SCHOOL ADDITION (Continued) **S118756753**

Senate: 31
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 33.81987
Longitude: -117.2351
APN: NONE SPECIFIED
Past Use: * EDUCATIONAL SERVICES
Potential COC: NONE SPECIFIED No Contaminants found
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: VAL VERDE ELEMENTARY SCHOOL ADDITION
Alias Type: Alternate Name
Alias Name: VAL VERDE UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: VAL VERDE USD-VAL VERDE ELEM SCH
Alias Type: Alternate Name
Alias Name: 404158
Alias Type: Project Code (Site Code)
Alias Name: 33820012
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 01/18/2002
Comments: CRU Memo

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 10/13/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 11/22/2000
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

SCH:

Facility ID: 33820012
Site Type: School Investigation
Site Type Detail: School

VAL VERDE ELEMENTARY SCHOOL ADDITION (Continued) **S118756753**

Site Mgmt. Req.:	NONE SPECIFIED
Acres:	1
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency:	DTSC
Lead Agency Description:	* DTSC
Project Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	404158
Assembly:	61
Senate:	31
Special Program Status:	Not reported
Status:	No Action Required
Status Date:	10/13/2000
Restricted Use:	NO
Funding:	School District
Latitude:	33.81987
Longitude:	-117.2351
APN:	NONE SPECIFIED
Past Use:	* EDUCATIONAL SERVICES
Potential COC:	NONE SPECIFIED, No Contaminants found
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA
Alias Name:	VAL VERDE ELEMENTARY SCHOOL ADDITION
Alias Type:	Alternate Name
Alias Name:	VAL VERDE UNIFIED SCHOOL DISTRICT
Alias Type:	Alternate Name
Alias Name:	VAL VERDE USD-VAL VERDE ELEM SCH
Alias Type:	Alternate Name
Alias Name:	404158
Alias Type:	Project Code (Site Code)
Alias Name:	33820012
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	01/18/2002
Comments:	CRU Memo
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	10/13/2000
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	11/22/2000
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported

VAL VERDE ELEMENTARY SCHOOL ADDITION (Continued) **S118756753**

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: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

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: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
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: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
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
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

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: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

Federal CERCLIS list

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: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/06/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
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: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
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: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
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: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
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: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 07/16/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2018
Next Scheduled EDR Contact: 09/10/2018
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: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2018
Next Scheduled EDR Contact: 09/10/2018
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: 03/19/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

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: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes 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: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2018
Next Scheduled EDR Contact: 11/12/2018
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 inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/08/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 14

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/10/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
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
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
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
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

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
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
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
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 Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

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
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
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
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

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
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
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
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

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: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
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: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
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: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
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
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
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
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
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
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

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

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 26
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Semi-Annually

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Quarterly

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: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
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: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

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: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/25/2018
Date Data Arrived at EDR: 06/27/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 40

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
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: 03/19/2018
Date Data Arrived at EDR: 03/21/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
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: 07/24/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 54

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 05/29/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 48

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 11/26/2018
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: 07/30/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

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: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 08/03/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Quarterly

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 44

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 07/25/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/28/2018
Date Data Arrived at EDR: 05/25/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 46

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
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
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 04/19/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 10

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/25/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/05/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 43

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Semi-Annually

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: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 41

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
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: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 51

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
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
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/03/2018
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
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

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
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/03/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/10/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198
Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2
Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 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: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/20/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/19/2018
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: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 07/09/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
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: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
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: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

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: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/23/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 06/07/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/04/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/03/2018
Date Data Arrived at EDR: 04/05/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 85
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/05/2018
Next Scheduled EDR Contact: 10/15/2018
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

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/12/2018
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: 03/31/2018
Date Data Arrived at EDR: 04/16/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 74

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/09/2018
Next Scheduled EDR Contact: 10/01/2018
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: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/20/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
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 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

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: 05/03/2018
Date Data Arrived at EDR: 05/31/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 87

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 09/24/2018
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: 02/21/2018
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 28

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 02/25/2018
Date Data Arrived at EDR: 03/17/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 06/01/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 30

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/22/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/25/2018
Date Data Arrived at EDR: 06/27/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 40

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 04/03/2018
Date Data Arrived at EDR: 05/07/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 39

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA SAN FRANCISCO CO

Cupa facilities

Date of Government Version: 04/20/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 10

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: DRYCLEAN SOUTH COAST

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/16/2018
Date Data Arrived at EDR: 03/20/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 45

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 08/22/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 06/25/2018
Date Data Arrived at EDR: 06/28/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 39

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/17/2018
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: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 07/06/2018
Number of Days to Update: 73

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/20/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 60

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 38

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 11/26/2018
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. This database begins with calendar year 1993.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 97

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Annually

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/21/2018
Date Data Arrived at EDR: 05/23/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 55
Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/21/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/21/2018
Date Data Arrived at EDR: 05/23/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 55
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/21/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/09/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 44
Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 54
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

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: 05/23/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 42
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/16/2018
Date Made Active in Reports: 07/05/2018
Number of Days to Update: 50
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/10/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/19/2018
Number of Days to Update: 43
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 54
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 06/18/2018
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 10/01/2018
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: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 04/13/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 67
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/25/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

CIWQS: California Integrated Water Quality System
The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)
Other Oil & Gas Projects sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)
Non-Case Information sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data
The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/25/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

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
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 65

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/05/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 27

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 07/05/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 08/02/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 14

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/25/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 50

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/21/2018
Date Data Arrived at EDR: 05/25/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 56

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 07/30/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 44

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/24/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/12/2018
Date Data Arrived at EDR: 07/12/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 39

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 07/30/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 9

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/11/2018
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/22/2018
Number of Days to Update: 40

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/20/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 50

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/02/2018
Date Data Arrived at EDR: 05/07/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 72

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 07/20/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 06/12/2018
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 28
Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 08/08/2018
Date Data Arrived at EDR: 08/09/2018
Date Made Active in Reports: 08/22/2018
Number of Days to Update: 13
Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/16/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49
Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: 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: 06/13/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 04/16/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 60
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/05/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/16/2018
Date Data Arrived at EDR: 07/18/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 37

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/18/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 05/14/2018
Number of Days to Update: 13

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 04/17/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 63

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/20/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Semi-Annually

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 13

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/23/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/22/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/31/2018
Number of Days to Update: 68

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 03/30/2018
Date Data Arrived at EDR: 04/06/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 28

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/30/2018
Date Data Arrived at EDR: 06/01/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 42

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 05/22/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 50

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/13/2018
Date Data Arrived at EDR: 06/19/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 31

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 07/02/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 05/31/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 41

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 45

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/24/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 05/11/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 42

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/07/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 05/11/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 45

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/03/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 63

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/06/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

PLACER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/05/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 43

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 50

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 07/09/2018
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 42

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/18/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/18/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/07/2018
Date Data Arrived at EDR: 07/03/2018
Date Made Active in Reports: 08/13/2018
Number of Days to Update: 41

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/03/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 07/03/2018
Date Made Active in Reports: 08/13/2018
Number of Days to Update: 41

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/03/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 05/16/2018
Date Data Arrived at EDR: 05/22/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 52

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 04/09/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 69

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 07/24/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 41

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/17/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 31

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

SAN DIEGO CO. SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite 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: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 06/07/2018
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 28
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/16/2018
Date Data Arrived at EDR: 05/22/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 56
Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 06/12/2018
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 52

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/12/2018
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 08/13/2018
Number of Days to Update: 59

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 05/16/2018
Date Data Arrived at EDR: 05/23/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 55

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Annually

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/16/2018
Date Data Arrived at EDR: 05/22/2018
Date Made Active in Reports: 07/19/2018
Number of Days to Update: 58

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/08/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 40

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 07/12/2018
Number of Days to Update: 30

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 06/19/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 21

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/03/2018
Date Data Arrived at EDR: 07/10/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 45

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 08/14/2018
Date Data Arrived at EDR: 08/16/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 8

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 07/16/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/08/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 33

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 01/26/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 47

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/22/2018
Date Made Active in Reports: 04/17/2018
Number of Days to Update: 26

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 58

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/23/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Annually

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Quarterly

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 07/02/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 29

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/23/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 04/26/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 28

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/20/2018
Date Data Arrived at EDR: 07/03/2018
Date Made Active in Reports: 07/12/2018
Number of Days to Update: 9

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 05/10/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 31

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 11/12/2018
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: 01/03/2018
Date Data Arrived at EDR: 02/14/2018
Date Made Active in Reports: 03/22/2018
Number of Days to Update: 36

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/22/2018
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: 04/30/2018
Date Data Arrived at EDR: 05/03/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 35

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/12/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/21/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

RIDER & HARVILL SITE
NEC OF RIDER ST AND HARVILL AVE
PERRIS, CA 92570

TARGET PROPERTY COORDINATES

Latitude (North):	33.831963 - 33° 49' 55.07''
Longitude (West):	117.24832 - 117° 14' 53.95''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	477022.6
UTM Y (Meters):	3743358.5
Elevation:	1510 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5641330 PERRIS, CA
Version Date:	2012
West Map:	5641324 STEELE PEAK, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

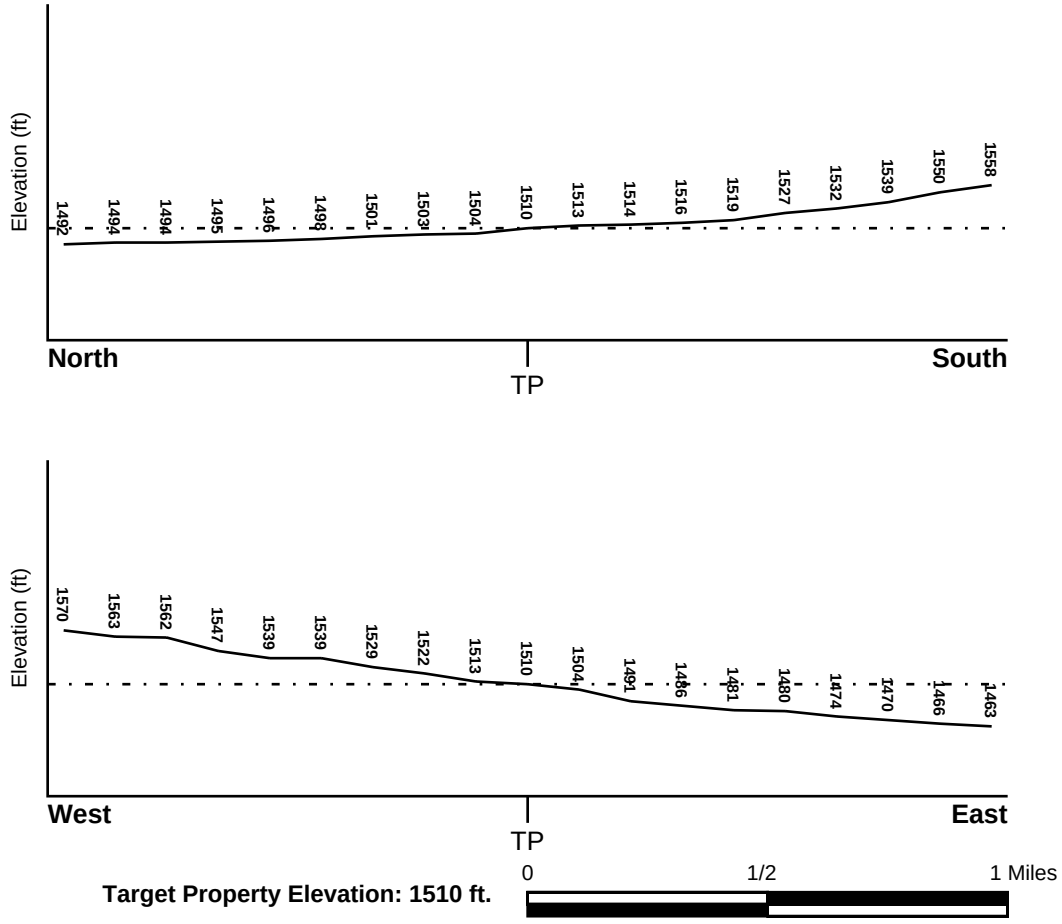
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ENE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 1510 ft.

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

Flood Plain Panel at Target Property	FEMA Source Type
06065C1430H	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06065C1410G	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	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.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
A1	1/2 - 1 Mile South	Not Reported
1G	1/2 - 1 Mile South	Not Reported

For additional site information, refer to Physical Setting Source Map Findings.

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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

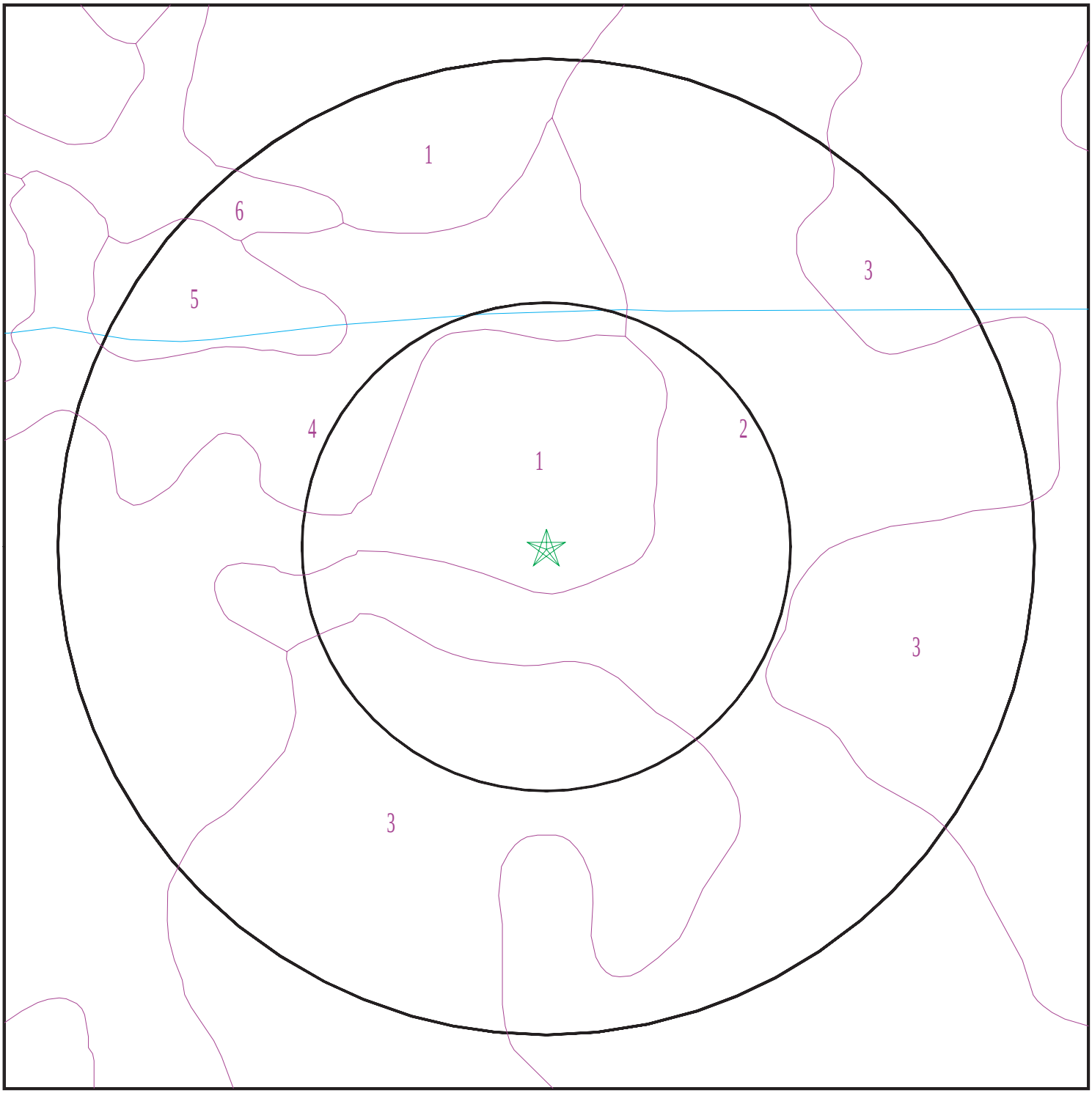
Era:	Mesozoic
System:	Cretaceous
Series:	Cretaceous granitic rocks
Code:	Kg *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

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 - 5407935.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Rider & Harvill Site	CLIENT:	APEX Companies LLC
ADDRESS:	NEC of Rider St and Harvill Ave Perris CA 92570	CONTACT:	Dan Hisey
LAT/LONG:	33.831963 / 117.24832	INQUIRY #:	5407935.2s
		DATE:	August 28, 2018 4:19 pm

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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: RAMONA

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	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: 6.6
2	14 inches	22 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
3	22 inches	68 inches	sandy clay 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: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
4	68 inches	74 inches	gravelly 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: 6.6

Soil Map ID: 2

Soil Component Name: GREENFIELD

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	25 inches	42 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
3	42 inches	59 inches	loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
4	59 inches	72 inches	stratified loamy 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, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

Soil Map ID: 3

Soil Component Name: RAMONA

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not 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							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	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: 6.6
2	14 inches	22 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
3	22 inches	68 inches	sandy clay 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: 6.6
4	68 inches	74 inches	gravelly 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: 6.6

Soil Map ID: 4

Soil Component Name: GREENFIELD

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
2	25 inches	42 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
3	42 inches	59 inches	loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
4	59 inches	72 inches	stratified loamy 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, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

Soil Map ID: 5

Soil Component Name: Gravel pits

Soil Surface Texture: very gravelly sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	very gravelly sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel.	Max: 141 Min: 42	Max: Min:
2	5 inches	59 inches	very gravelly sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel.	Max: 141 Min: 42	Max: Min:

Soil Map ID: 6

Soil Component Name: MONSERATE

Soil Surface Texture: sandy 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: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6
2	9 inches	27 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6
3	27 inches	44 inches	indurated	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6
4	44 inches	57 inches	cemented	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6
5	57 inches	70 inches	loamy coarse sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

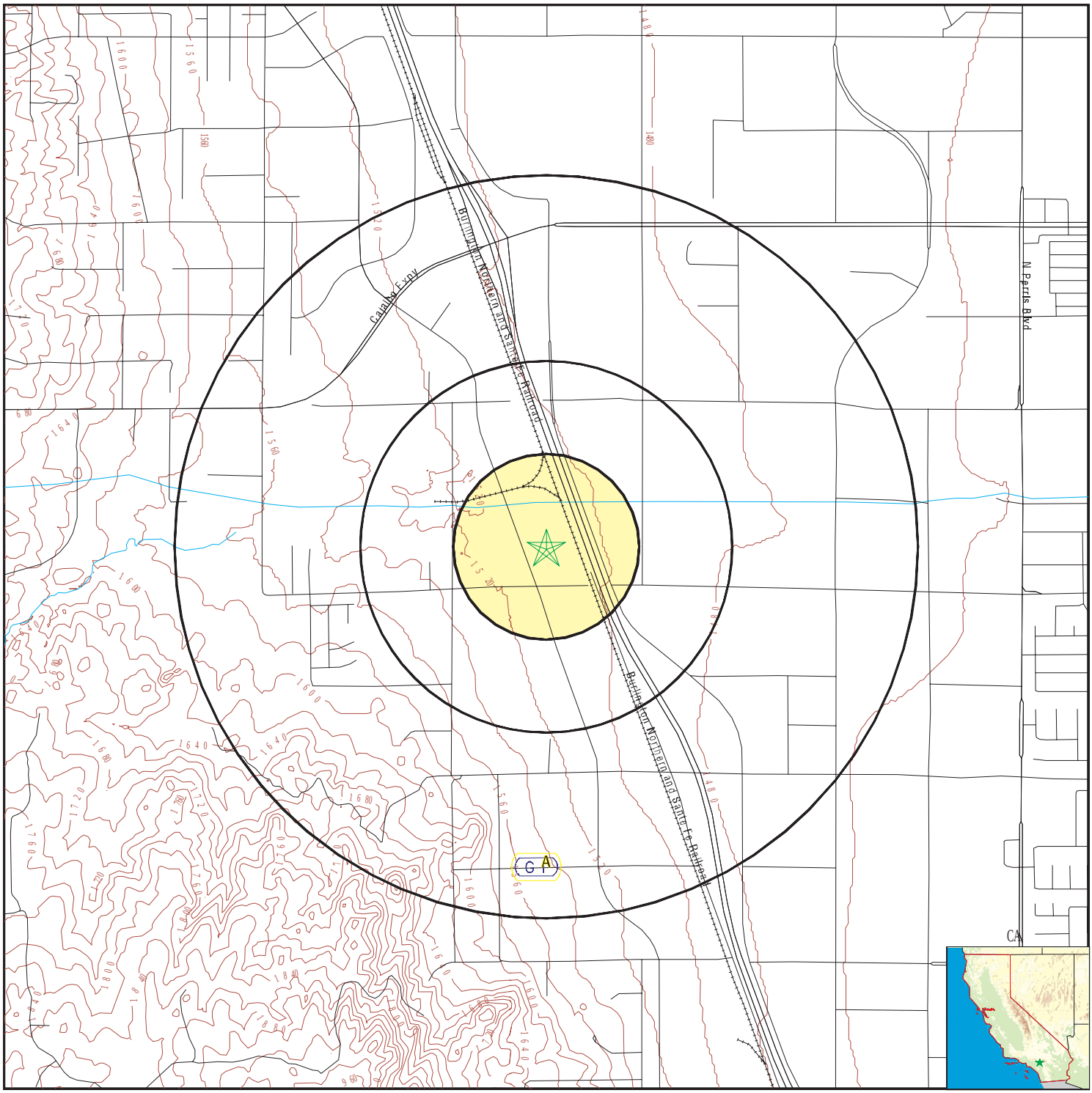
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 5407935.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Rider & Harvill Site	CLIENT:	APEX Companies LLC
ADDRESS:	NEC of Rider St and Harvill Ave Perris CA 92570	CONTACT:	Dan Hisey
LAT/LONG:	33.831963 / 117.24832	INQUIRY #:	5407935.2s
		DATE:	August 28, 2018 4:19 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
A1 **South** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083302019T Not Reported Not Reported Not Reported 100’ 05/15/1992	**AQUIFLOW**	**66414**
A2 **South** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083302019T Not Reported Not Reported Not Reported <100 05/15/1992	**AQUIFLOW**	**37864**
1G **South** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083302019T Not Reported Not Reported Not Reported 100’ 05/15/1992	**AQUIFLOW**	**66414**
2G **South** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083302019T Not Reported Not Reported Not Reported <100 05/15/1992	**AQUIFLOW**	**37864**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92570	2	0

Federal EPA Radon Zone for RIVERSIDE County: 2

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 RIVERSIDE COUNTY, CA

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.117 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.450 pCi/L	100%	0%	0%
Basement	1.700 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

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

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APPENDIX D

ENVIRONMENTAL LIEN AND ACTIVITY AND USE LIMITATION REPORT

Rider & Harvill Site
NEC of Rider St and Harvill Ave
Perris, CA 92570

Inquiry Number: 5407935.7S
September 5, 2018

EDR Environmental Lien and AUL Search

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

RIDER & HARVILL SITE
NEC OF RIDER ST AND HARVILL AVE
PERRIS, CA 92570

RESEARCH SOURCE

Source 1: Recorder
Riverside County, California

Source 2: Assessor
Riverside County, California

PROPERTY INFORMATION

Deed 1:

Type of Deed: Grant Deed

Title is vested in: Perris Valley Properties, LLC, a California limited liability company

Title received from: Granite Patterson LP, a Delaware limited partnership

Deed Recorded: 01/23/2017

Instrument: 2017-0027603

Legal Description: All that certain piece or parcel of land being Parcel 1 of Parcel Map No. 24737, as per map filed in Book 177, Pages 85 and 86, of Parcel Maps, situate and lying in the County of Riverside, State of California.

Legal Current Owner: Perris Valley Properties, LLC, a California limited liability company

Property Identifiers: 317-170-024

Deed 2:

Type of Deed: Grant Deed

Title is vested in: Perris Valley Properties, LLC, a California limited liability company

Title received from: MoArk, LLC, a Missouri limited liability company

Deed Dated: 12/18/2013

Deed Recorded: 12/26/2013

Instrument: 2013-0594912

Legal Description: All that certain piece or parcel of land containing 13.27 acres, more or less, being a portion of the Southeast Quarter of Section 12, Township 4 South, Range 4 West, situate and lying in the County of Riverside, State of California.

Legal Current Owner: Perris Valley Properties, LLC, a California limited liability company

Property Identifiers: 317-170-045

EDR Environmental Lien and AUL Search

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

If found:

1st Party:

2nd Party:

Dated:

Recorded:

Book:

Page:

Docket:

Volume:

Instrument:

Comments:

Miscellaneous:

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found ☐ Not Found ☒

If found:

1st Party:

2nd Party:

Dated:

Recorded:

Book:

Page:

Docket:

Volume:

Instrument:

Comments:

Miscellaneous:

DEED EXHIBIT

DOC # 2017-0027603
01/23/2017 01:06 PM Fees: $34.00
Page 1 of 4
Recorded in Official Records
County of Riverside
Peter Aldana
Assessor-County Clerk-Recorder

This document was electronically submitted to the County of Riverside for recording
Receipted by: MARIA #309

Recording Requested By
First American Title Company

Order No. RRI-5336201
Escrow No.
WHEN RECORDED MAIL TO AND MAIL
TAX **STATEMENTS TO:**

c/o Perris Valley Properties, LLC
P.O. Box 1987
Perris, CA 92572

SPACE ABOVE THIS LINE FOR RECORDER'S USE

DOCUMENTARY TRANSFER TAX
$ 390.50
.....Computed on the consideration or value of property conveyed; OR
.....Computed on the consideration or value less liens or encumbrances
remaining at time of sale.

Signature of Declarant or Agent determining tax - Firm Name

APN: 317-170-024-3
TRA: 098-068

GRANT DEED

FOR A VALUABLE CONSIDERATION, Granite Patterson LP, a Delaware limited partnership, ("**Grantor**"), does hereby grant to Perris Valley Properties, LLC, a California limited liability company, that certain real property in the City of Riverside, County of Riverside, State of California described on **Exhibit "A"** attached hereto and incorporated herein by this reference (the "**Property**").

SUBJECT TO:

1. General and special real property taxes and assessments and supplemental assessments, if any, for the current fiscal year.

2. All covenants, conditions, restrictions, easements, reservations, rights, rights-of-way, dedications, offers of dedication and other matters of record and/or which are discoverable by an inspection or survey of the Property.

[Signature on following page]

MAIL TAX STATEMENTS TO RETURN ADDRESS ABOVE.

GRANITE PATTERSON LP,
a Delaware limited partnership

By: Granite CA Holding Company, LLC,
a Delaware limited liability company,
its General Partner

By: BlackRock Property Fund Operating Partnership, L.P., f/k/a BlackRock Granite Property Fund, L.P., a Delaware limited partnership, its Sole Member

By: BlackRock US Core Property Fund, LLC, f/k/a BlackRock Granite Property Fund, LLC, a Delaware limited liability company, its General Partner

By: BlackRock US Core Property Fund, Inc. f/k/a BlackRock Granite Property Fund, Inc., a Maryland corporation, its Sole Member

By: Kathy Malitz * Kathy Malitz
Name: * Kathy Malitz
Title: President - CEO

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF ~~CALIFORNIA~~ NEW YORK)
) ss.
COUNTY OF New York)

On January 18, 2017 before me, Mellonie M Sanborn, Notary Public, personally appeared Kathy Malitz, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: Mellonie M Sanborn (Seal)

MELLONIE M. SANBORN NOTARY PUBLIC Exp. April 11, 2019 NEW YORK COUNTY No. 01SA6238861 STATE OF NEW YORK

EXHIBIT A

Legal Description

That certain real property in the unincorporated area of the County of Riverside, State of California, described as follows:

PARCEL 1:
PARCEL 1 OF PARCEL MAP NO. 24737, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP FILED IN BOOK 177 PAGES 85 AND 86, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN: 317-170-024-3

DOC # 2013-0594912
12/26/2013 01:51 PM Fees: $34.00
Page 1 of 4 Doc T Tax Paid
Recorded in Official Records
County of Riverside
Larry W. Ward
Assessor, County Clerk & Recorder

Recording requested by and Return document to:

First American Title Insurance Company
1900 Midwest Plaza, 801 Nicollet Mall,
Minneapolis, MN 55402
Minneapolis, Minnesota
NCS 627948

This document was electronically submitted to the County of Riverside for recording
Receipted by: YSEGURA

TRA 098 046

APN: 317-170-020-9 (Parcel 1) and 317-170-023-2 (Parcel 2)

GRANT DEED

The undersigned grantor(s) declare(s)
Documentary transfer tax is: $1430.00
[x] computed on full value of property conveyed, or
[ ] computed on full value less value of liens or encumbrances remaining at time of sale,
[ ] Unincorporated Area
[X] City of Perris, California

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, **MoArk, LLC**, a Missouri limited liability company,

hereby GRANT(S) to **Perris Valley Properties, LLC**, a California limited liability company,

the real property in the City of Perris, County of Riverside, State of California described on Exhibit A attached hereto and incorporated herein (the "Real Property"), subject to those matters listed on Exhibit B attached hereto.

Dated: 12-18, 2013

MOARK, LLC
a Missouri limited liability company

By _____
Printed Name Richard T. Sundal
Title President / CEO

STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
On DEC 18, 2013 before me, DA Bellinger, a Notary Public ~~in and for said County and State~~, personally appeared Richard T. Sundal who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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

WITNESS my hand and official seal.

Signature _____

(Seal)

D. A. BELLINGER
COMM. #1933211
NOTARY PUBLIC - CALIFORNIA
RIVERSIDE COUNTY
My Comm. Expires May 17, 2015

MAIL TAX STATEMENTS TO:
Perris Valley Properties, LLC
PO Box 1987
Perris, CA 92572

Exhibit A to Grant Deed
Legal Description of the Real Property

The real property is located in the City of Perris County of Riverside, State of California described as follows:

PARCEL 1:
THAT PORTION OF THE SOUTHEAST ¼ OF SECTION 12, TOWNSHIP 4 SOUTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WEST LINE OF THE SOUTHEAST ¼ OF SAID SECTION, DISTANT 7 CHAINS NORTH FROM THE SOUTHWEST CORNER OF SAID QUARTER SECTION; THENCE EAST ON THE NORTH LINE OF THE TRACT OF LAND CONVEYED BY CHARLES B. BULLOCK AND WIFE TO JOHN B. CONRAD AND GEORGE C. KENNARD, BY DEED RECORDED IN BOOK 4 PAGE 104 OF DEEDS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA, 1,807.96 FEET MORE OR LESS TO THE CENTERLINE OF THE CALIFORNIA SOUTHERN RAILWAY RIGHT OF WAY; THENCE NORTHWESTERLY ON THE CENTERLINE OF SAID RIGHT OF WAY TO THE NORTH LINE OF SAID SOUTHEAST ¼ OF SAID SECTION 12; THENCE WEST ON THE NORTH LINE OF SAID SOUTHEAST ¼ OF SAID SECTION 12 TO THE NORTHWEST CORNER OF SAID SOUTHEAST ¼; THENCE SOUTH ON THE WEST LINE OF SAID SOUTHEAST ¼ TO THE POINT OF BEGINNING;

EXCEPT THAT PORTION LYING NORTHERLY OF THE SOUTHERLY LINE OF THE PARCEL DESCRIBED BY DEED TO METROPOLITAN WATER DISTRICT EXECUTED BY ANNA PIRCH, A WIDOW, UNDER DATE OF JUNE 1, 1933 AND RECORDED JUNE 15, 1933 IN BOOK 125 PAGE 487

OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA;

ALSO EXCEPT THAT PORTION OF RAILROAD RIGHT OF WAY;

ALSO EXCEPTING THEREFROM THAT PORTION THEREOF AS CONVEYED TO THE COUNTY OF RIVERSIDE BY DEED RECORDED AUGUST 4, 1992 AS INSTRUMENT NO. 287672 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA;

ALSO EXCEPTING THEREFROM THAT PORTION THEREOF AS CONVEYED TO THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, A PUBLIC CORP., BY DEED RECORDED MAY 2, 1994 AS INSTRUMENT NO. 181561 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

ALSO EXCEPTING THEREFROM THAT PORTION DESCRIBED IN A DEED RECORDED JUNE 27, 2001 AS INSTRUMENT NO. 2001-293960 OF OFFICIAL RECORDS, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA.

PARCEL 2:
THAT PORTION OF THE SOUTHEAST QUARTER OF SECTION 12, TOWNSHIP 4 SOUTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF THE LAND DESCRIBED BY DEED TO SUNNY CAL RANCH CORPORATION, RECORDED AUGUST 20, 1965 AS INSTRUMENT NO. 96612 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA, AND THE

SOUTHWESTERLY CORNER OF THE ATCHESON, TOPEKA AND SANTA FE RAILROAD RIGHT OF WAY; THENCE WESTERLY, ON THE NORTHERLY LINE OF SAID LAND, DESCRIBED TO THE SUNNY CAL RANCH CORPORATION, 361.94 FEET; THENCE SOUTH 00° 06' 00" WEST, 462.00 FEET TO THE SOUTHERLY LINE OF SAID SECTION 12;

THENCE EASTERLY, ON THE SOUTHERLY LINE OF SAID SECTION 12, TO THE SOUTHEASTERLY PROLONGATION OF THE NORTHEASTERLY LINE OF SAID LAND DESCRIBED TO THE SUNNY CAL RANCH CORPORATION;

THENCE NORTHWESTERLY, ON THE NORTHEASTERLY LINE OF SAID LAND DESCRIBED TO THE SUNNY CAL RANCH CORPORATION, TO THE POINT OF BEGINNING;

EXCEPTING THEREFROM THAT PORTION THEREOF AS CONVEYED TO THE COUNTY OF RIVERSIDE BY DEED RECORDED AUGUST 4, 1992 AS INSTRUMENT NO. 287672 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA;

ALSO EXCEPTING THEREFROM THAT PORTION THEREOF LYING WITHIN RIDER STREET.

APN:
317-170-020-9 (Parcel 1)
317-170-023-2 (Parcel 2)

Exhibit B to Grant Deed
Permitted Exceptions

1. General and special taxes and special assessments which are not yet due and payable.
2. The lien of special tax assessed pursuant to Chapter 2.5 commencing with Section 53311 of the California Government Code for Community Facilities District No. 87-1, as disclosed by Notice of Special Tax Lien recorded November 19, 1990 as Instrument No. 1990-422516 of Official Records.
3. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.
4. Water rights, claims or title to water, whether or not shown by the public records.
5. Rights of the public in and to that portion of the land lying within Harvill Avenue.
6. An easement for construct, operate, maintain, replace and remove such communication systems as the grantees may from time to time require, consisting of underground cables, wave guides, wires, conduits, manholes, drains, splicing boxes, repeaters, repeater housings and incidental purposes, recorded August 24, 1973 as Instrument No. 111833 of Official Records.
   In Favor of: American Telephone and Telegraph Company, a corporation
   Affects: A portion of said land
7. The terms and provisions contained in the document entitled "Memorandum of Agreement" recorded June 29, 1998 as Instrument No. 98-265761 of Official Records.
   The terms and provisions contained in the document entitled "Memorandum of Amendment to Communications Site Lease Agreement (Ground)" recorded January 25, 2005 as Instrument No. 2005-0067526 of Official Records.
8. An easement for road purposes and incidental purposes, recorded June 06, 1933 as Book 127, Page 24 of Official Records.
   In Favor of: County of Riverside
   Affects: A portion of said land
9. An easement for either or both pole lines, conduits or underground facilities and incidental purposes, recorded July 30, 1968 as Instrument No. 73664 of Official Records.
   In Favor of: Southern California Edison Company
   Affects: A portion of said land
10. Any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the Local Customs, Laws, and Decisions of Courts; and also subject to the right of the proprietor of a vein or lode to extract and remove his ore therefrom should the same be found to penetrate or intersect the promises thereby granted, as provided by laws; and the reservation from the lands thereby granted of a right of way thereof for Ditches or Canals Constructed by the Authority of the United States, as set out in patent from the United States of America to Charles B. Bullock, recorded September 22, 1891 in Book 6, Page 474 of Patents, records of San Diego County, California.
11. The effect of a map purporting to show the land and other property, filed in Book 44, Page 76 of Record of Surveys.
12. The fact that the land lies within the boundaries of the Redevelopment Project No. 5-
13. 1987 Redevelopment Project Area, as disclosed by the document recorded December 24, 1987 as Instrument No. 362718 of Official Records.
14. The matters as shown or disclosed by the ALTA/ACSM land title survey of the Real Property dated September 26, 2013, prepared by W. Wayne Whatley for Commercial Due Diligence Services as CDS Project Number 13-08-10496.

APPENDIX E

AERIAL PHOTOGRAPHS

Rider & Harvill Site

NEC of Rider St and Harvill Ave

Perris, CA 92570

Inquiry Number: 5407935.11

August 29, 2018

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

08/29/18

Site Name:

Rider & Harvill Site
NEC of Rider St and Harvill Av
Perris, CA 92570
EDR Inquiry # 5407935.11

Client Name:

APEX Companies LLC
15850 Crabbs Branch Way
Rockville, MD 20855
Contact: Dan Hisey

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1997	1"=500'	Flight Date: October 16, 1997	USGS
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1990	1"=500'	Flight Date: September 06, 1990	USDA
1989	1"=500'	Flight Date: August 15, 1989	USDA
1985	1"=500'	Flight Date: February 24, 1985	USDA
1978	1"=500'	Flight Date: September 20, 1978	USDA
1967	1"=500'	Flight Date: May 15, 1967	USDA
1961	1"=500'	Flight Date: June 14, 1961	USDA
1953	1"=500'	Flight Date: August 28, 1953	USDA
1949	1"=500'	Flight Date: May 08, 1949	USDA
1938	1"=500'	Flight Date: June 14, 1938	USDA

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INQUIRY #: 5407935.11

YEAR: 2016

= 500'

N

EDR


INQUIRY #: 5407935.11
YEAR: 2012
= 500'
N
EDR



INQUIRY #: 5407935.11

YEAR: 2009

= 500'

N

EDR



INQUIRY #: 5407935.11

YEAR: 2006

= 500'

N

EDR



INQUIRY #: 5407935.11

YEAR: 1997

= 500'

N

EDR



INQUIRY #: 5407935.11

YEAR: 1994

= 500'

N

EDR


INQUIRY #: 5407935.11
YEAR: 1990
= 500'
N
EDR



INQUIRY #: 5407935.11

YEAR: 1989

= 500'

N

EDR



INQUIRY #: 5407935.11

YEAR: 1985

= 500'

N

EDR



INQUIRY #: 5407935.11

YEAR: 1978

= 500'

N

EDR



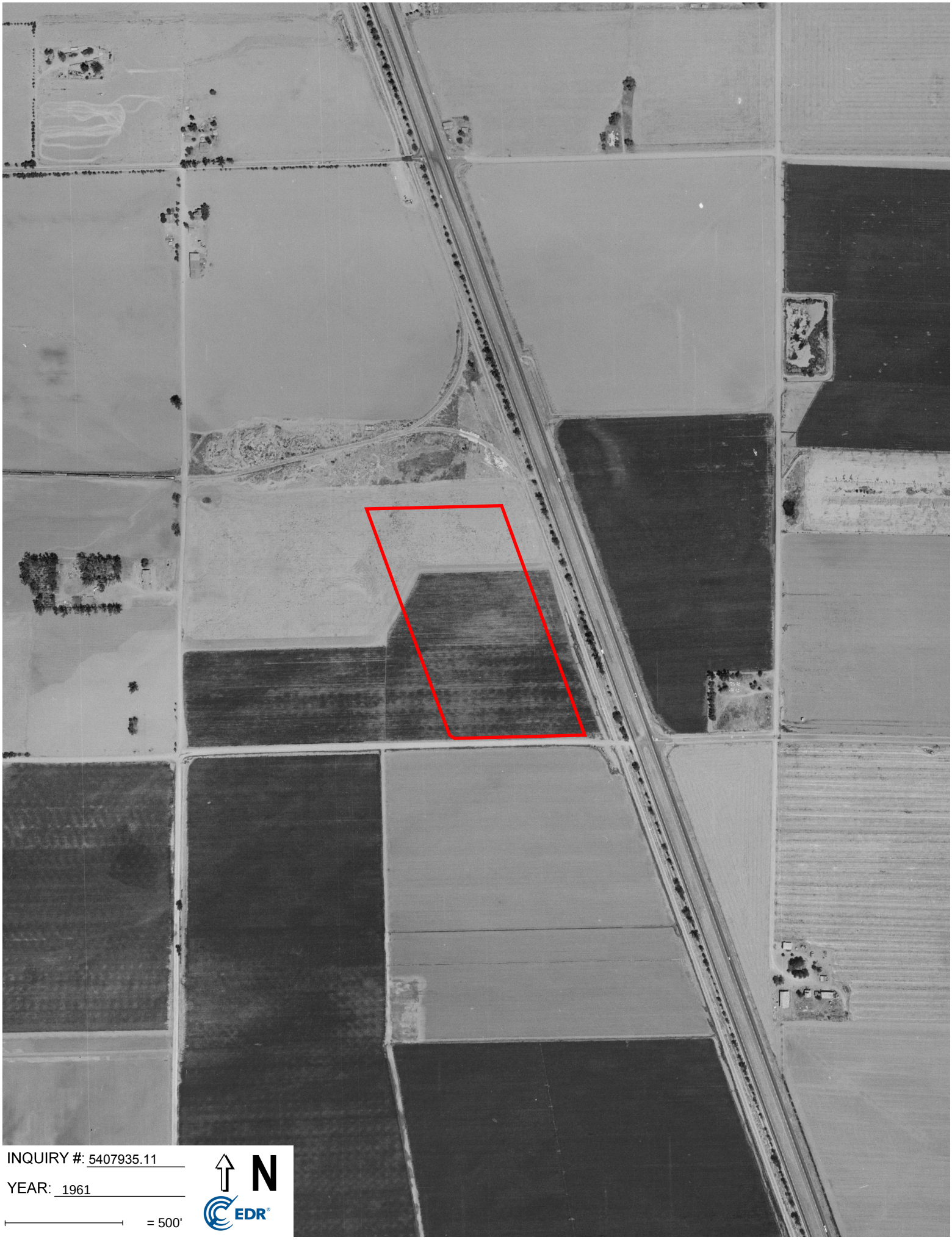
INQUIRY #: 5407935.11

YEAR: 1967

= 500'

N

EDR



INQUIRY #: 5407935.11

YEAR: 1961

= 500'

N

EDR



INQUIRY #: 5407935.11

YEAR: 1953

= 500'

N

EDR



INQUIRY #: 5407935.11

YEAR: 1949

= 500'

N

EDR



INQUIRY #: 5407935.11

YEAR: 1938

= 500'

N

EDR

APPENDIX F

TOPOGRAPHIC MAPS

Rider & Harvill Site

NEC of Rider St and Harvill Ave

Perris, CA 92570

Inquiry Number: 5407935.4

August 28, 2018

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

08/28/18

Site Name:

Rider & Harvill Site
NEC of Rider St and Harvill Av
Perris, CA 92570
EDR Inquiry # 5407935.4

Client Name:

APEX Companies LLC
15850 Crabbs Branch Way
Rockville, MD 20855
Contact: Dan Hisey

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by APEX Companies LLC were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA

Project: Duke-015

Coordinates:

Latitude:	33.831963 33° 49' 55" North
Longitude:	-117.24832 -117° 14' 54" West
UTM Zone:	Zone 11 North
UTM X Meters:	477023.10
UTM Y Meters:	3743552.34
Elevation:	1510.00' above sea level

Maps Provided:

2012	1942
1979	1901
1978	
1973	
1967	
1953	
1947	
1943	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Perris
2012
7.5-minute, 24000



Steele Peak
2012
7.5-minute, 24000

1979 Source Sheets



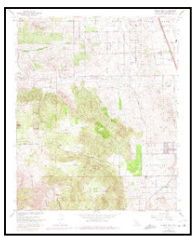
Perris
1979
7.5-minute, 24000
Aerial Photo Revised 1978

1978 Source Sheets



Steele Peak
1978
7.5-minute, 24000
Aerial Photo Revised 1978

1973 Source Sheets



Steele Peak
1973
7.5-minute, 24000
Aerial Photo Revised 1973



Perris
1973
7.5-minute, 24000
Aerial Photo Revised 1973

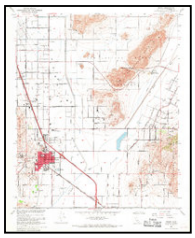
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1967 Source Sheets



Steele Peak
1967
7.5-minute, 24000
Aerial Photo Revised 1966



Perris
1967
7.5-minute, 24000
Aerial Photo Revised 1966

1953 Source Sheets



Perris
1953
7.5-minute, 24000
Aerial Photo Revised 1951



Steele Peak
1953
7.5-minute, 24000
Aerial Photo Revised 1951

1947 Source Sheets



RIVERSIDE
1947
15-minute, 50000

1943 Source Sheets



PERRIS
1943
15-minute, 62500

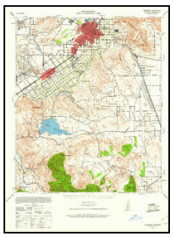
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1942 Source Sheets



Perris
1942
15-minute, 62500
Aerial Photo Revised 1939



Riverside
1942
15-minute, 62500
Aerial Photo Revised 1939

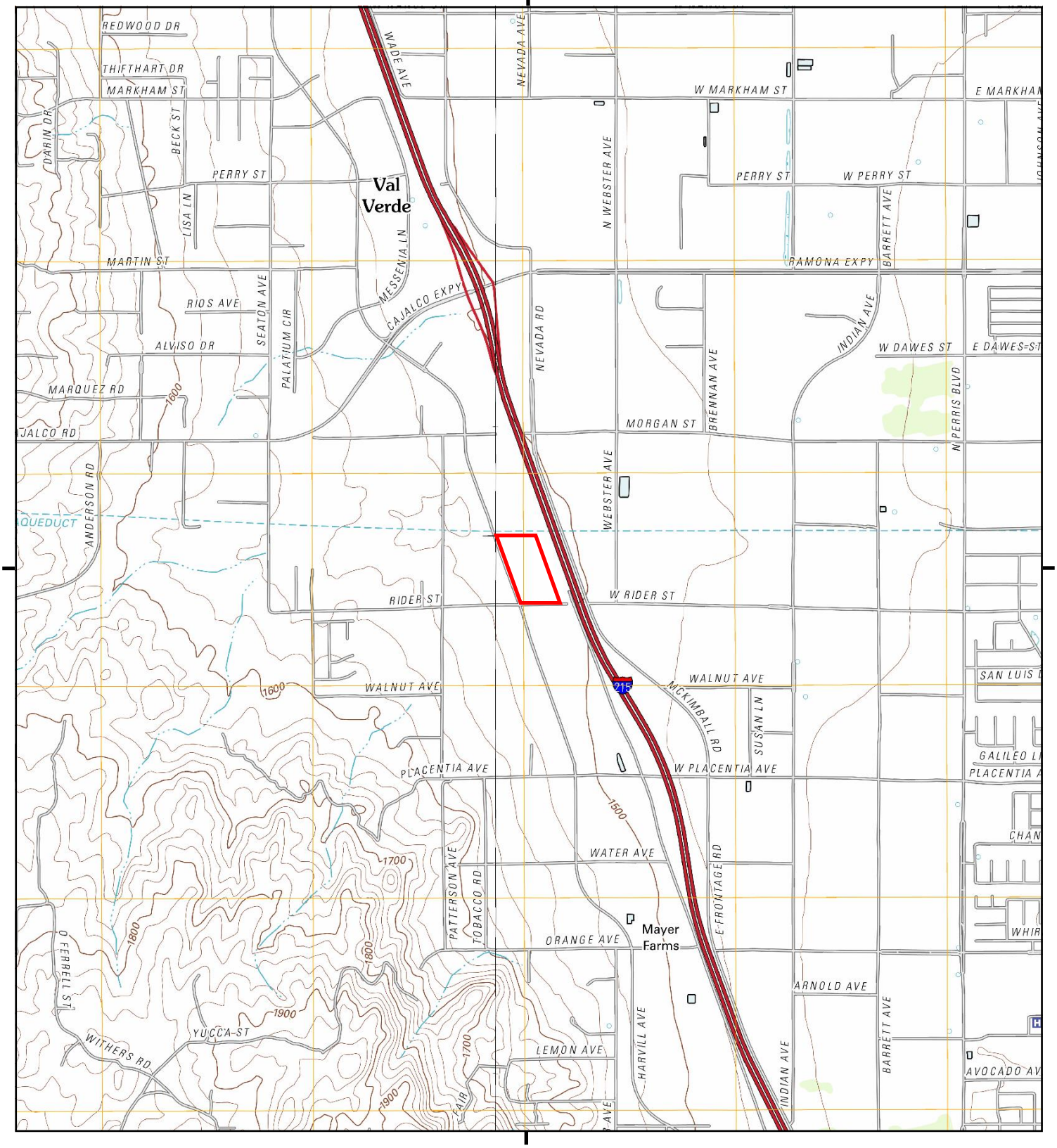
1901 Source Sheets



Riverside
1901
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

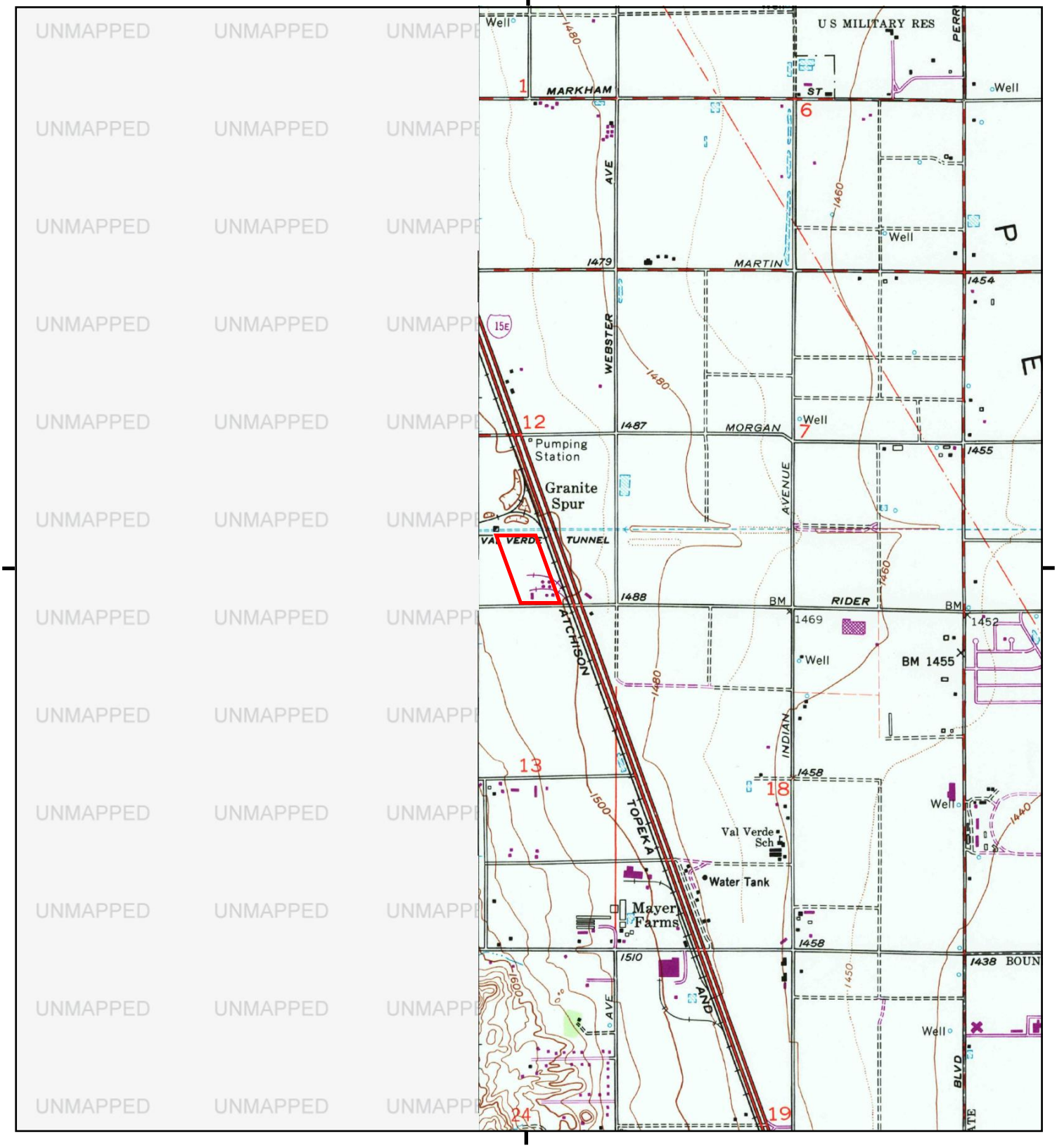
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Perris, 2012, 7.5-minute
W, Steele Peak, 2012, 7.5-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

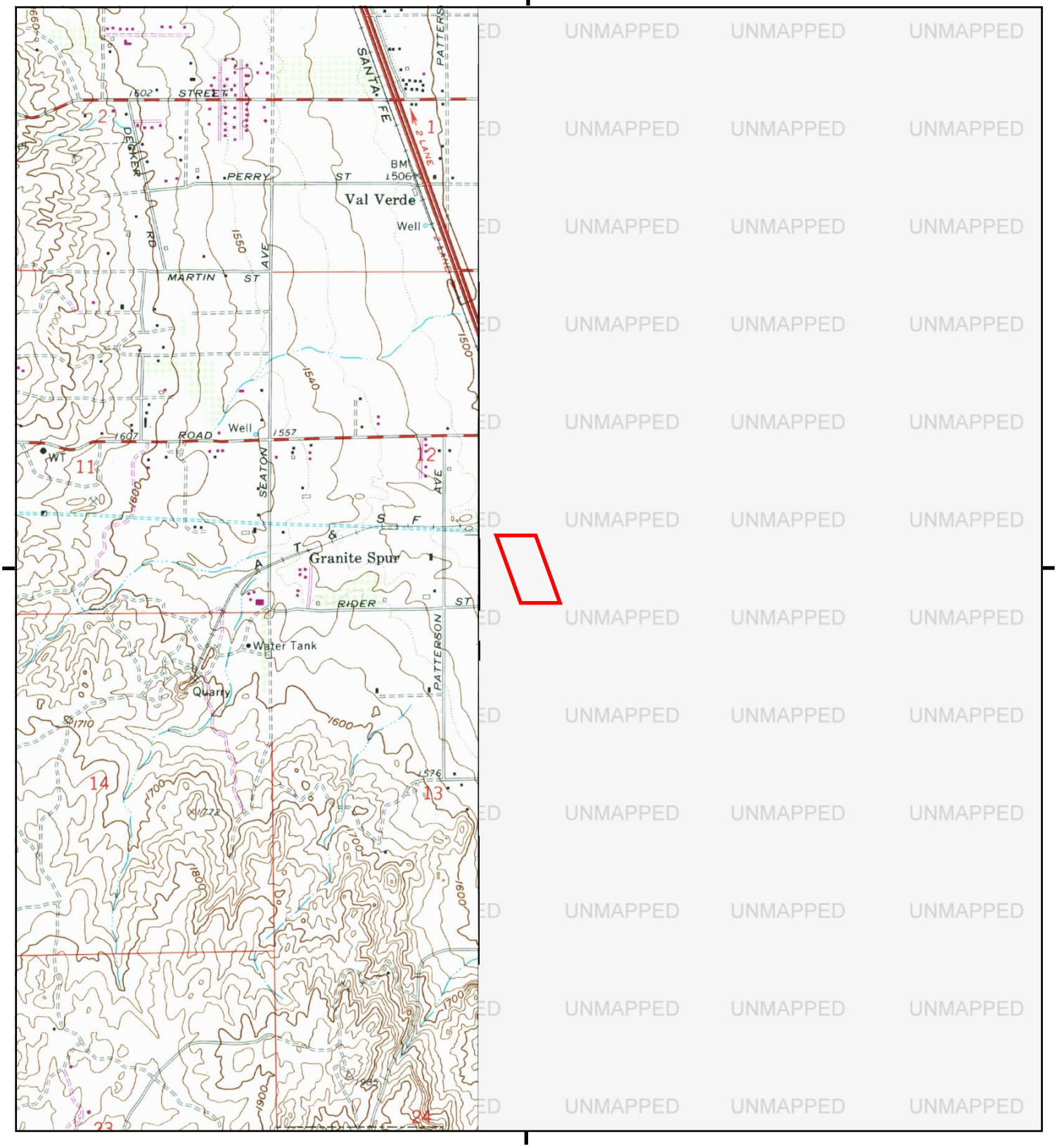
TP, Perris, 1979, 7.5-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N

Historical Topo Map

1978



This report includes information from the following map sheet(s).

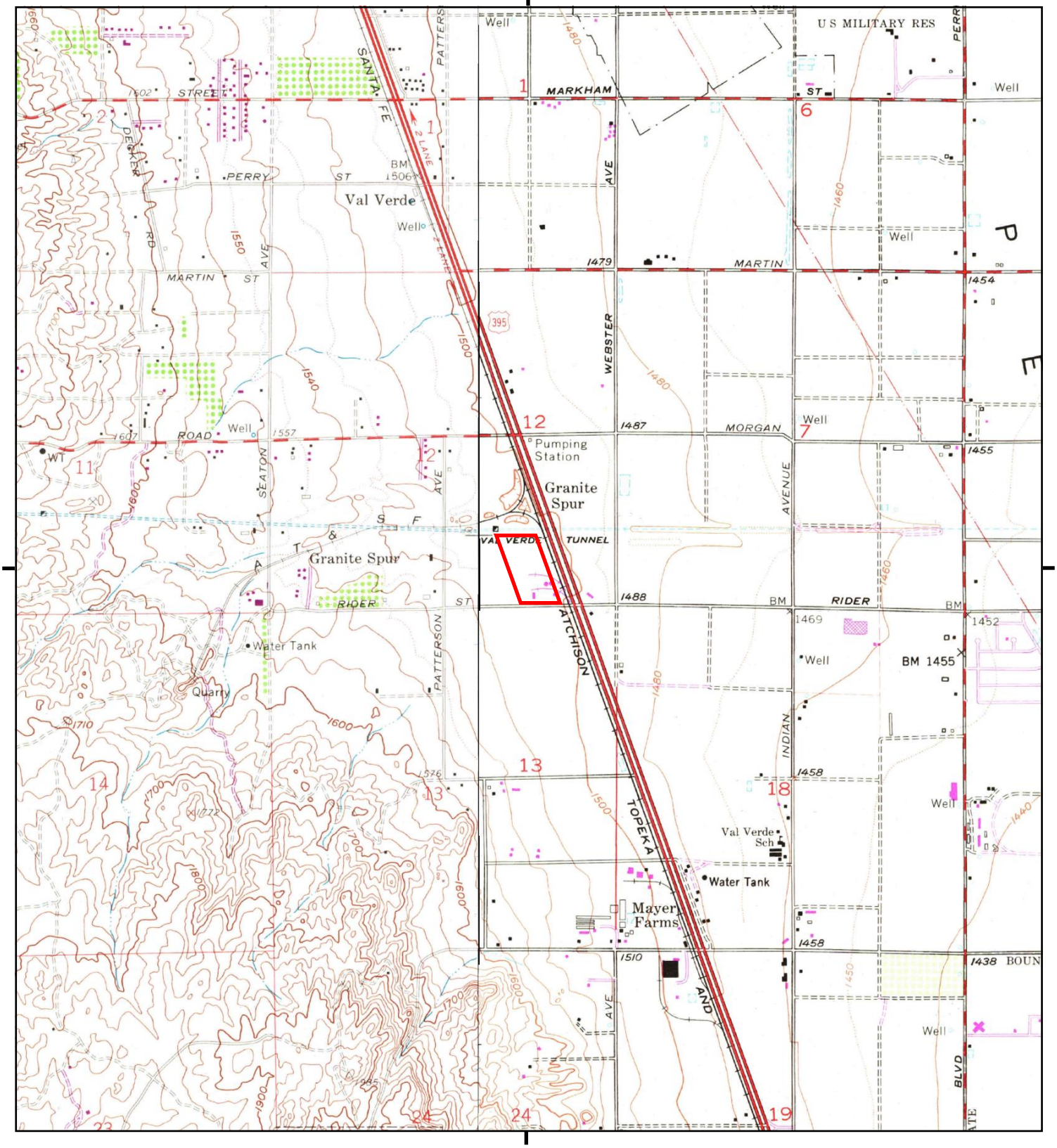
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

W, Steele Peak, 1978, 7.5-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

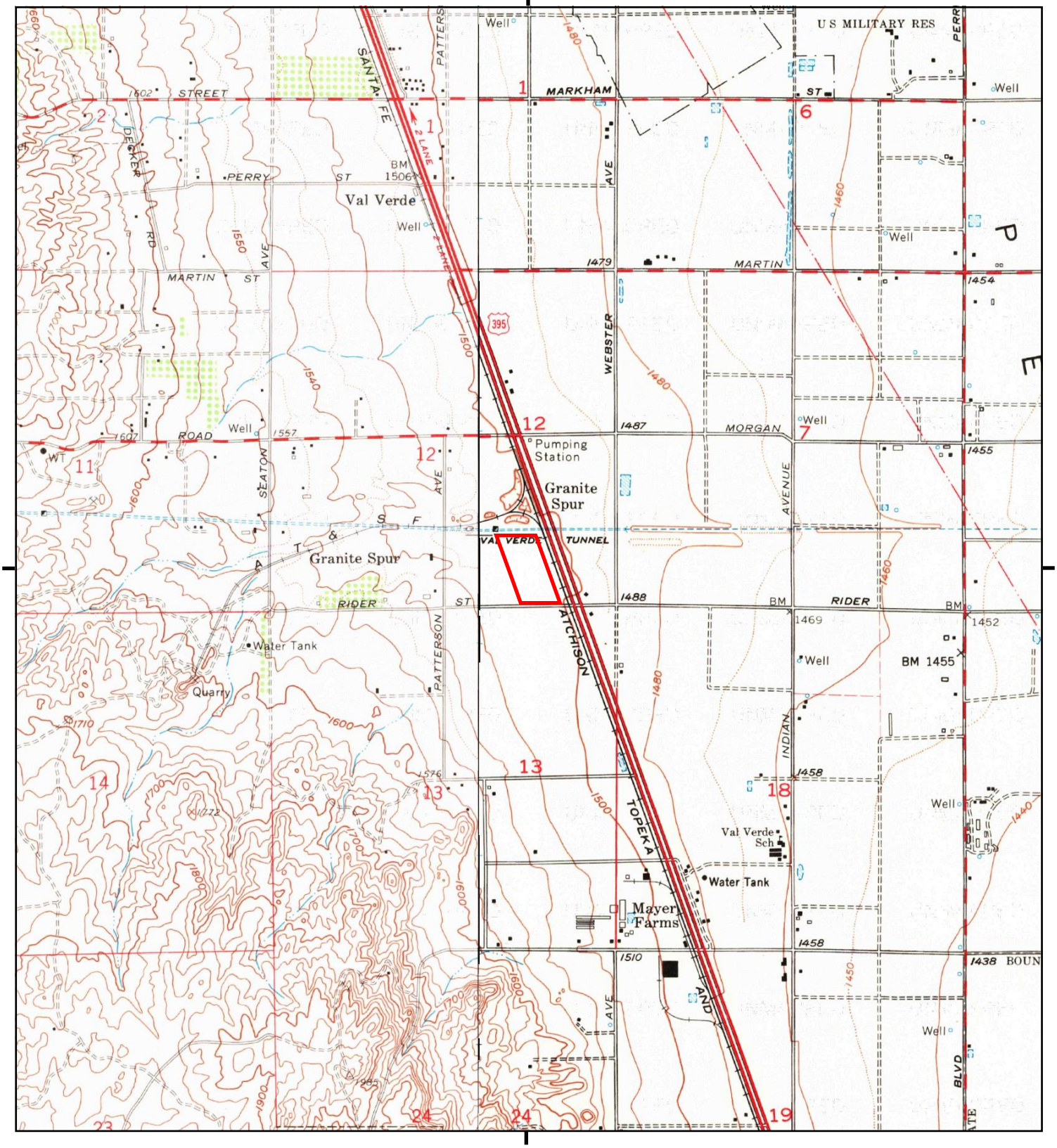
TP, Perris, 1973, 7.5-minute
W, Steele Peak, 1973, 7.5-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N

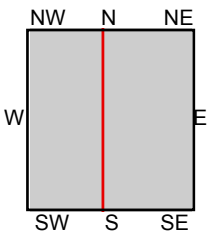
Historical Topo Map

1967



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



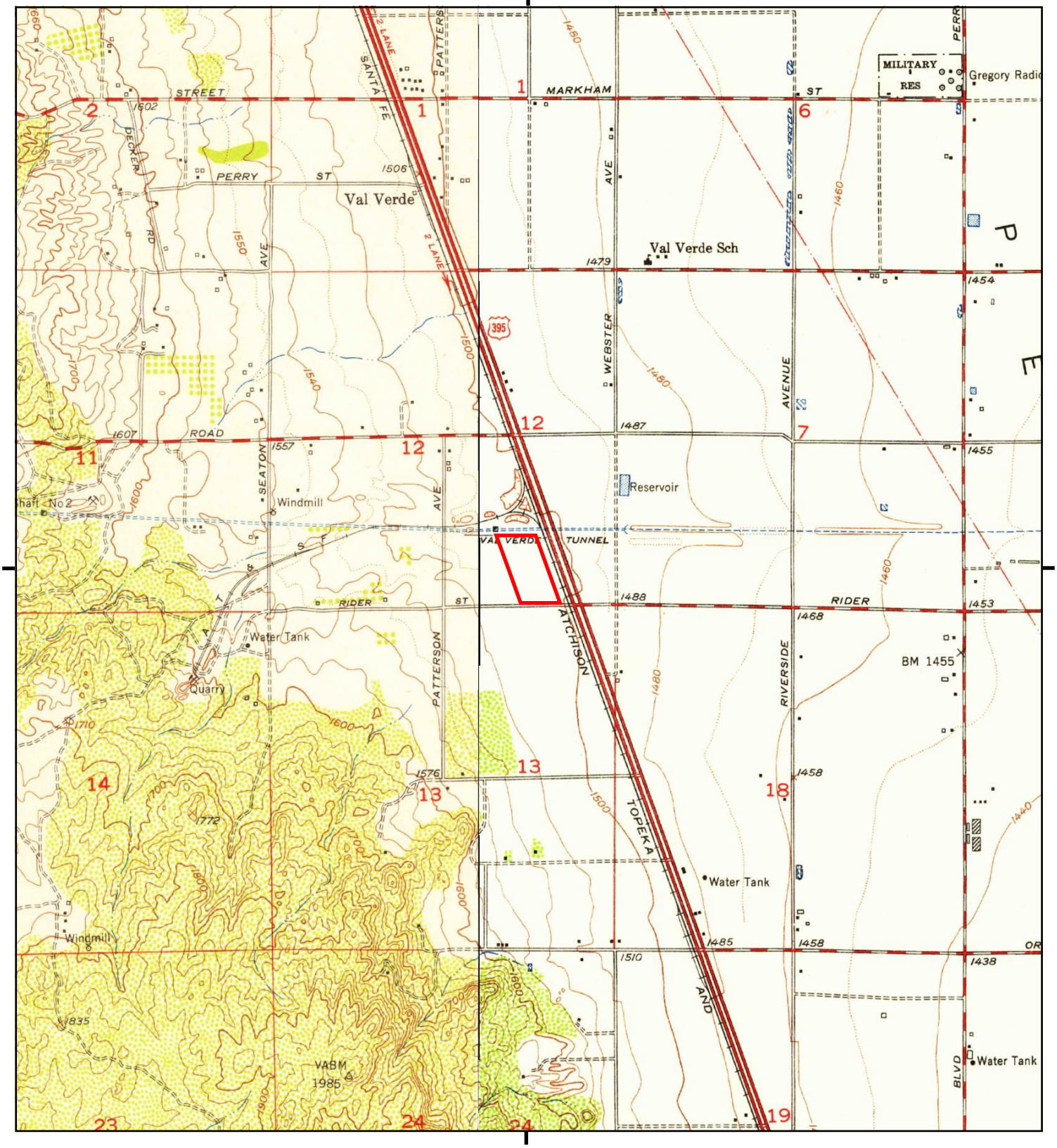
TP, Perris, 1967, 7.5-minute
W, Steele Peak, 1967, 7.5-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N

Historical Topo Map

1953



This report includes information from the following map sheet(s).

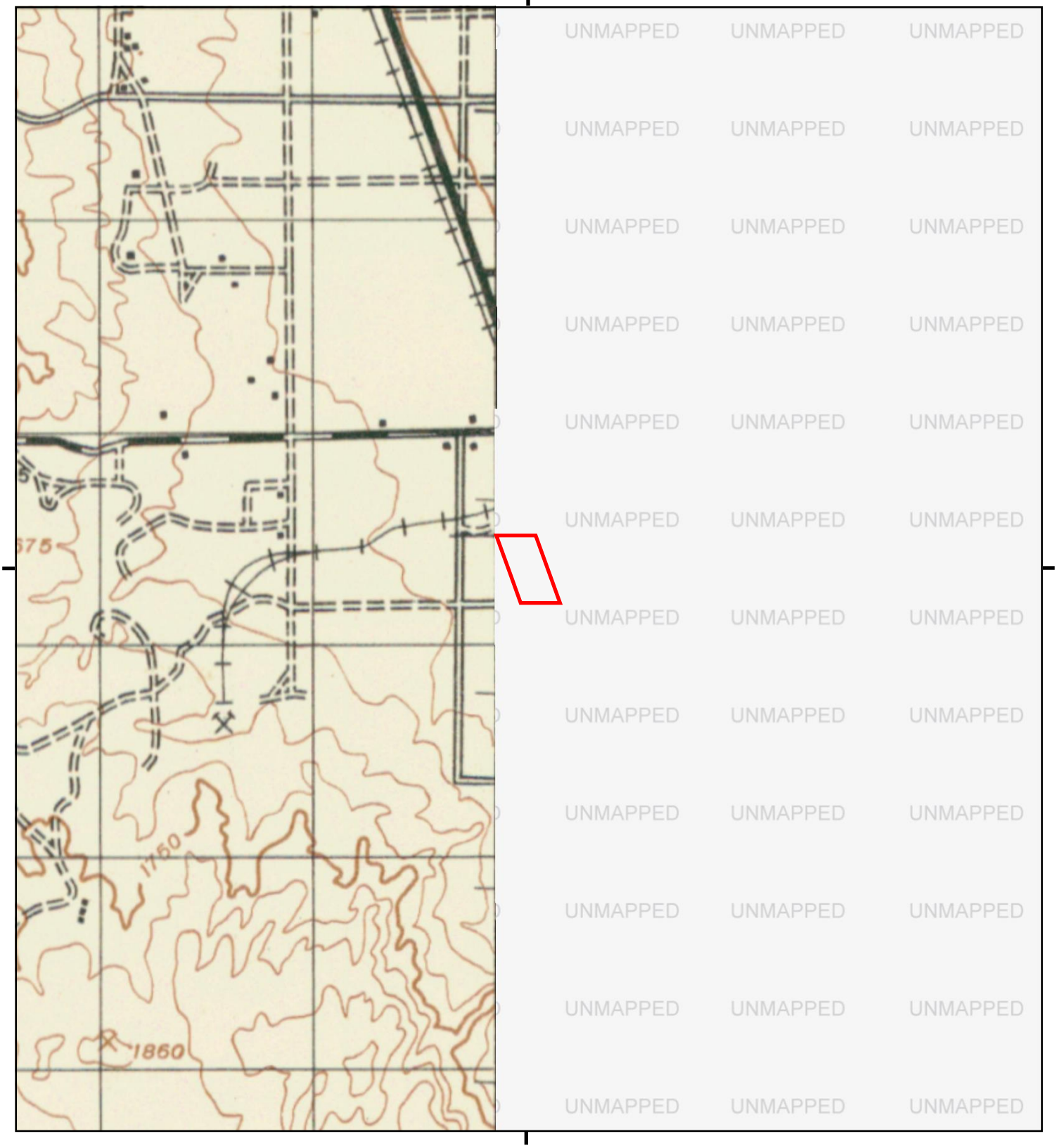
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Perris, 1953, 7.5-minute
W, Steele Peak, 1953, 7.5-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

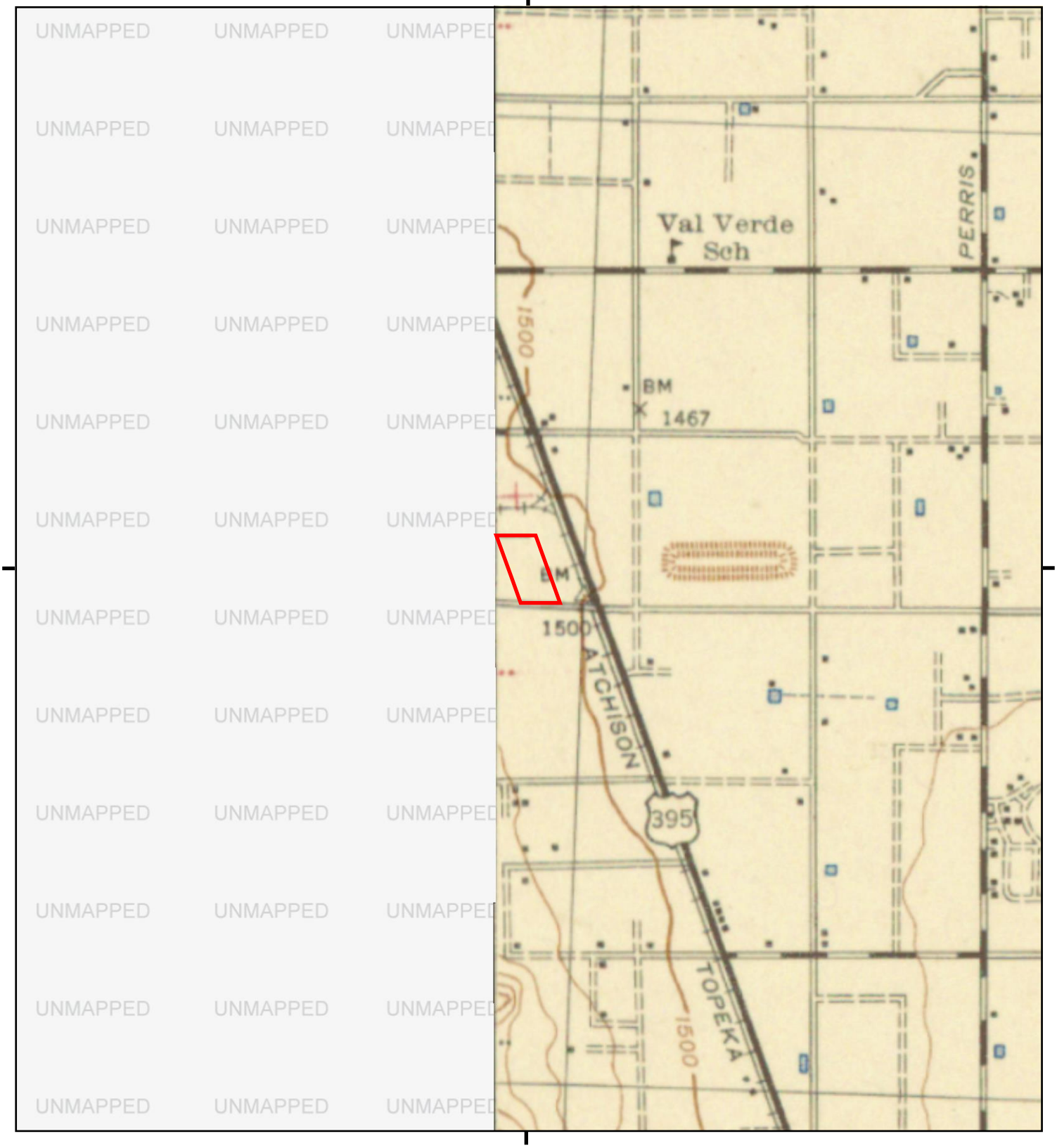
W, RIVERSIDE, 1947, 15-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N

Historical Topo Map

1943



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

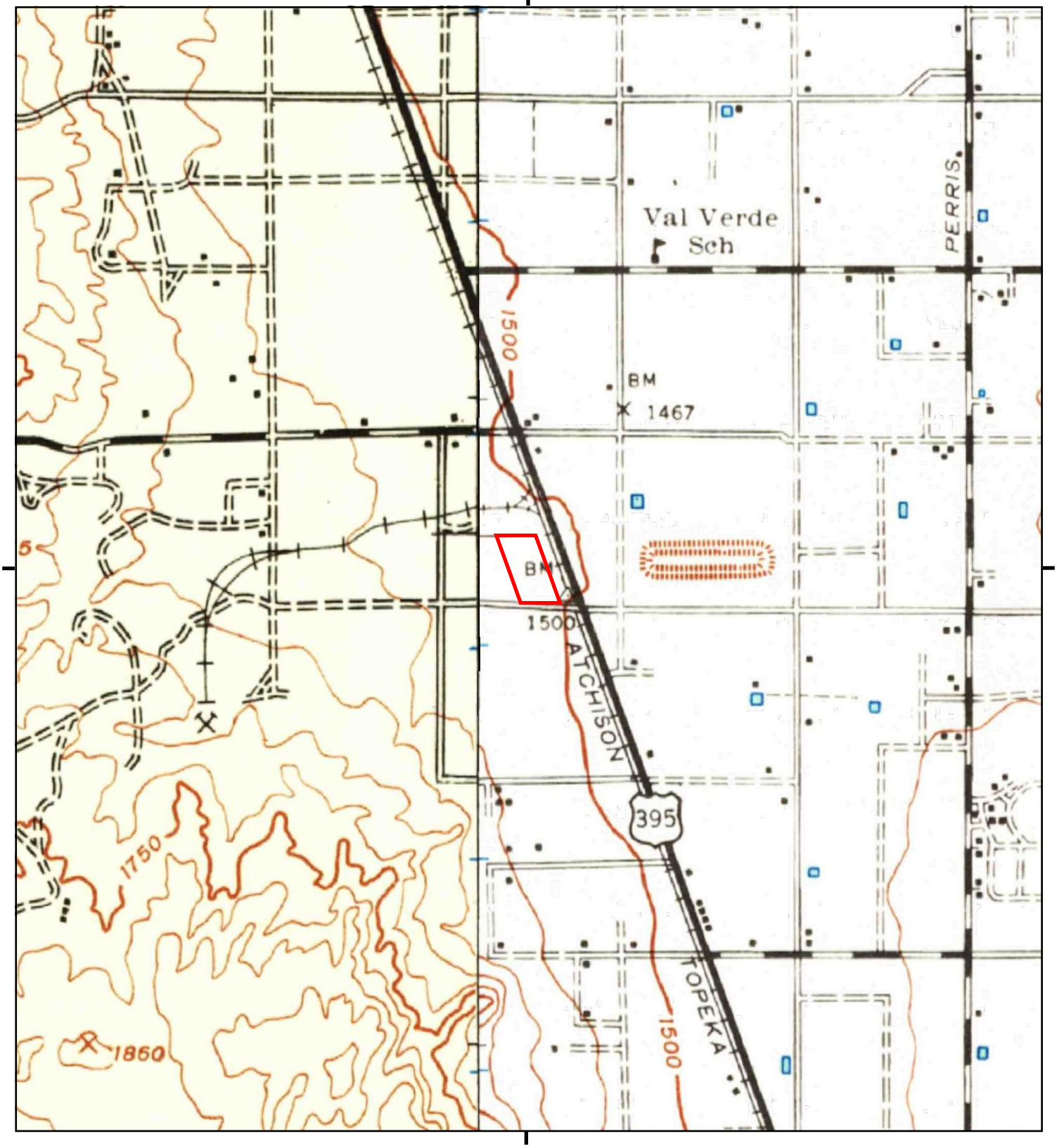
TP, PERRIS, 1943, 15-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N

Historical Topo Map

1942



This report includes information from the following map sheet(s).

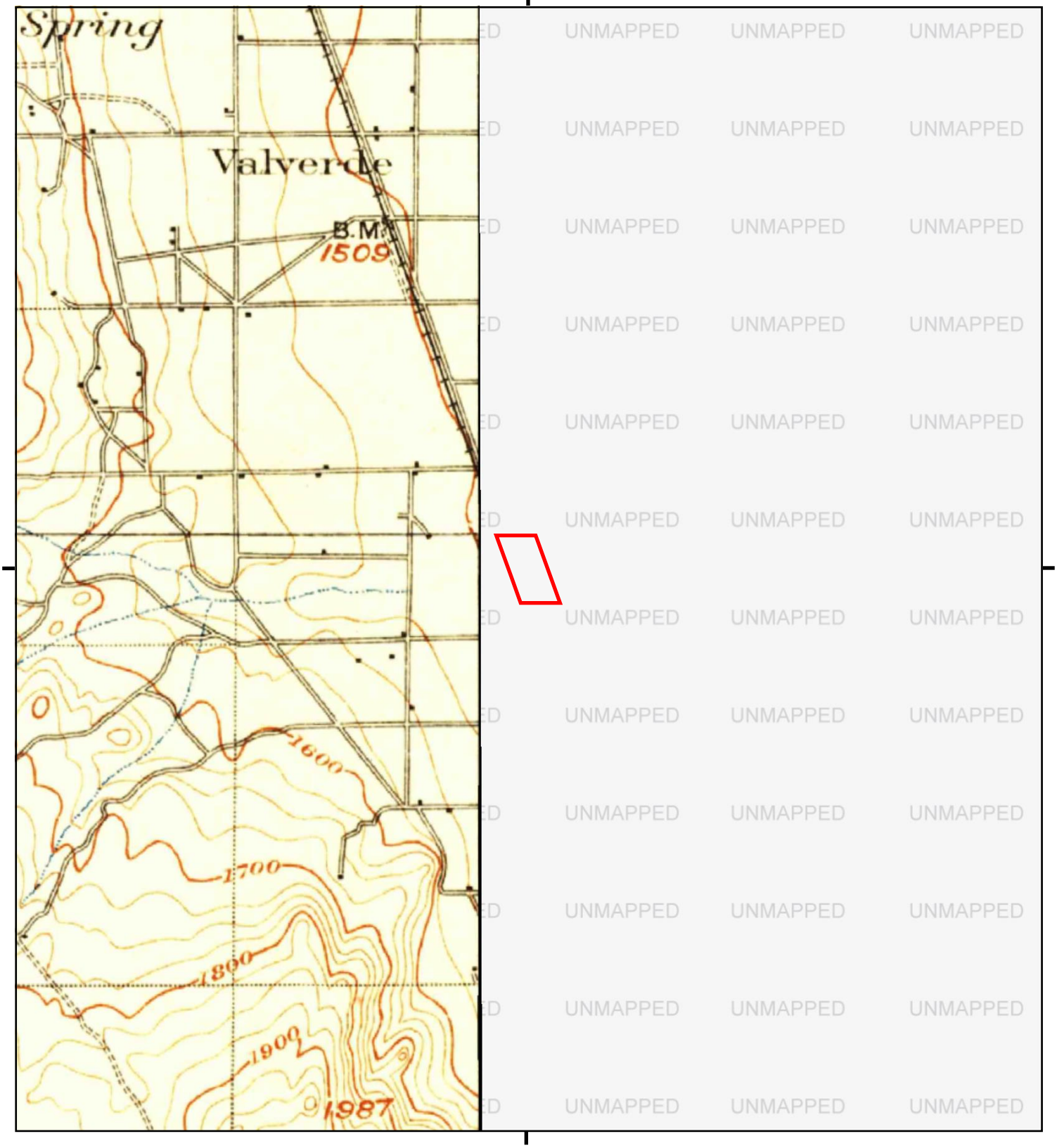
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Perris, 1942, 15-minute
W, Riverside, 1942, 15-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

W, Riverside, 1901, 15-minute

SITE NAME: Rider & Harvill Site
ADDRESS: NEC of Rider St and Harvill Ave
Perris, CA 92570
CLIENT: APEX Companies LLC

N

APPENDIX G

CITY DIRECTORIES REPORT

Rider & Harvill Site
NEC of Rider St and Harvill Ave
Perris, CA 92570

Inquiry Number: 5407935.5
August 31, 2018

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report 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 Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive
1982	☑	☐	EDR Digital Archive
1977	☑	☐	EDR Digital Archive

FINDINGS

TARGET PROPERTY STREET

NEC of Rider St and Harvill Ave
Perris, CA 92570

Year	*CD Image*	*Source*
RIDER ST		
2014	pg A1	EDR Digital Archive
2010	pg A2	EDR Digital Archive
2005	pg A3	EDR Digital Archive
2000	pg A4	EDR Digital Archive
1995	pg A5	EDR Digital Archive
1992	pg A6	EDR Digital Archive
1982	pg A7	EDR Digital Archive
1977	pg A8	EDR Digital Archive

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2014

23615 ESCHRICH, CHARLES H
23711 J-M MANUFACTURING COMPANY INC
PW EAGLE INC
23840 MCANALLY ENTERPRISES INC
23842 OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2010

23711 J-M MANUFACTURING COMPANY INC
PACIFIC WESTERN EXTRUDED
PW EAGLE INC
23840 MCANALLY ENTERPRISES INC
23842 OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2005

23615 WILLIAMS, JOHN P
23711 PW EAGLE INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2000

23711 PW EAGLE INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 1995

23615 HILL, DOUGLAS M
23711 PACIFIC WESTERN EXTRUDED PLAS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 1992

23615 HILL, DOUGLAS M
23711 PACIFIC WESTERN EXTRUDED PLAS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 1982

23840 MC ANALLY ENTERPRISES INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 1977

23840 MC ANALLY EGG ENTERPRISES

APPENDIX H

FIRE INSURANCE MAPS

Rider & Harvill Site

NEC of Rider St and Harvill Ave

Perris, CA 92570

Inquiry Number: 5407935.3

August 28, 2018

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

08/28/18

Site Name:

Rider & Harvill Site
NEC of Rider St and Harvill Ave
Perris, CA 92570
EDR Inquiry # 5407935.3

Client Name:

APEX Companies LLC
15850 Crabbs Branch Way
Rockville, MD 20855
Contact: Dan Hisey

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # A5BB-49FF-B475

PO # NA

Project Duke-015

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.

Sanborn® Library search results

Certification #: A5BB-49FF-B475

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™

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APPENDIX I

BUILDING PERMITS REPORT

Rider & Harvill Site
NEC of Rider St and Harvill Ave
Perris, CA 92570

Inquiry Number: 5407935.8
August 28, 2018

EDR Building Permit Report

Target Property and Adjoining Properties

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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EDR BUILDING PERMIT REPORT

About This Report

The EDR Building Permit Report provides a practical and efficient method to search building department records for indications of environmental conditions. Generated via a search of municipal building permit records gathered from more than 1,600 cities nationwide, this report will assist you in meeting 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.

Building permit data can be used to identify current and/or former operations and structures/features of environmental concern. The data can provide information on a target property and adjoining properties such as the presence of underground storage tanks, pump islands, sumps, drywells, etc., as well as information regarding water, sewer, natural gas, electrical connection dates, and current/former septic tanks.

ASTM and EPA Requirements

ASTM E 1527-13 lists building department records as a "standard historical source," as detailed in § 8.3.4.7: "Building Department Records - The term building department records means those records of the local government in which the property is located indicating permission of the local government to construct, alter, or demolish improvements on the property." ASTM also states that "Uses in the area surrounding the property shall be identified in the report, but this task is required only to the extent that this information is revealed in the course of researching the property itself."

EPA's Standards and Practices for All Appropriate Inquires (AAI) states: "§312.24: Reviews of historical sources of information. (a) Historical documents and records must be reviewed for the purposes of achieving the objectives and performance factors of §312.20(e) and (f). Historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."

Methodology

EDR has developed the EDR Building Permit Report through our partnership with BuildFax, the nation's largest repository of building department records. BuildFax collects, updates, and manages building department records from local municipal governments. The database now includes 30 million permits, on more than 10 million properties across 1,600 cities in the United States.

The EDR Building Permit Report comprises local municipal building permit records, gathered directly from local jurisdictions, including both target property and adjoining properties. Years of coverage vary by municipality. Data reported includes (where available): date of permit, permit type, permit number, status, valuation, contractor company, contractor name, and description.

Incoming permit data is checked at seven stages in a regimented quality control process, from initial data source interview, to data preparation, through final auditing. To ensure the building department is accurate, each of the seven quality control stages contains, on average, 15 additional quality checks, resulting in a process of approximately 105 quality control "touch points."

For more information about the EDR Building Permit Report, please contact your EDR Account Executive at (800) 352-0050.

EDR® Environmental Data Resources Inc

BUILDFAX® PROPERTY HISTORY

EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

A search of building department records was conducted by Environmental Data Resources, Inc (EDR) on behalf of APEX Companies LLC on Aug 28, 2018.

TARGET PROPERTY

NEC of Rider St and Harvill Ave
Perris, CA 92570

SEARCH METHODS

EDR searches available lists for both the Target Property and Surrounding Properties.

RESEARCH SUMMARY

Building permits identified: **YES**

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.

Riverside County

Year	*Source*	*TP*	*Adjoining*
2017	Riverside County, Building and Safety		X
2016	Riverside County, Building and Safety		X
2015	Riverside County, Building and Safety		X
2014	Riverside County, Building and Safety		X
2013	Riverside County, Building and Safety		X
2012	Riverside County, Building and Safety		X
2011	Riverside County, Building and Safety		X
2010	Riverside County, Building and Safety		X
2009	Riverside County, Building and Safety		X
2008	Riverside County, Building and Safety		
2007	Riverside County, Building and Safety		X
2006	Riverside County, Building and Safety		
2005	Riverside County, Building and Safety		
2004	Riverside County, Building and Safety		X
2003	Riverside County, Building and Safety		
2002	Riverside County, Building and Safety		
2001	Riverside County, Building and Safety		
2000	Riverside County, Building and Safety		X
1999	Riverside County, Building and Safety		
1998	Riverside County, Building and Safety		X
1997	Riverside County, Building and Safety		
1996	Riverside County, Building and Safety		X
1995	Riverside County, Building and Safety		
1994	Riverside County, Building and Safety		X
1993	Riverside County, Building and Safety		
1992	Riverside County, Building and Safety		X
1991	Riverside County, Building and Safety		X
1990	Riverside County, Building and Safety		

EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

Year	Source	TP	Adjoining
1989	Riverside County, Building and Safety		
1988	Riverside County, Building and Safety		X
1987	Riverside County, Building and Safety		X
1986	Riverside County, Building and Safety		
1985	Riverside County, Building and Safety		
1984	Riverside County, Building and Safety		
1983	Riverside County, Building and Safety		
1982	Riverside County, Building and Safety		
1981	Riverside County, Building and Safety		
1980	Riverside County, Building and Safety		
1979	Riverside County, Building and Safety		
1978	Riverside County, Building and Safety		
1977	Riverside County, Building and Safety		
1976	Riverside County, Building and Safety		
1975	Riverside County, Building and Safety		
1974	Riverside County, Building and Safety		
1973	Riverside County, Building and Safety		

BUILDING DEPARTMENT RECORDS SEARCHED

Name: Riverside County
Years: 1973-2017
Source: Riverside County, Building and Safety, PERRIS, CA
Phone: (951) 955-6742

Name: Perris
Years: 2014-2018
Source: City of Perris, Development Services, Perris, CA
Phone: (951) 443-1029

TARGET PROPERTY FINDINGS

TARGET PROPERTY DETAIL

NEC of Rider St and Harvill Ave
Perris, CA 92570

No Permits Found

ADJOINING PROPERTY FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

RIDER ST

23711 RIDER ST

Date:	**5/2/2017**
Permit Type:	**BIC**
Description:	**2307**
Permit Description:	
Work Class:	
Proposed Use:	HIGH NPDES I/C INSPECTION
Permit Number:	BIC170092
Status:	PAID
Valuation:	$0.00
Contractor Company:	
Contractor Name:	JM EAGLE

Date:	**10/17/2016**
Permit Type:	**BIC**
Description:	**2307**
Permit Description:	
Work Class:	
Proposed Use:	HIGH NPDES I/C INSPECTION
Permit Number:	BIC160637
Status:	PAID
Valuation:	$0.00
Contractor Company:	
Contractor Name:	J M EAGLE

ADJOINING PROPERTY FINDINGS

Date: **4/14/2016**
Permit Type: **BIC**
Description: **2307**

Permit Description:
Work Class:
Proposed Use: HIGH NPDES I/C INSPECTION
Permit Number: BIC160170
Status: PAID
Valuation: $0.00
Contractor Company:
Contractor Name: JM EAGLE

Date: **8/19/2014**
Permit Type: **BIC**
Description: **2307**

Permit Description:
Work Class:
Proposed Use: HIGH NPDES I/C INSPECTION
Permit Number: BIC140501
Status: COMPLETE
Valuation: $0.00
Contractor Company:
Contractor Name: JM EAGLE

Date: **8/16/2013**
Permit Type: **BIC**
Description: **2307**

Permit Description:
Work Class:
Proposed Use: HIGH NPDES I/C INSPECTION
Permit Number: BIC130360
Status: COMPLETE
Valuation: $0.00
Contractor Company:
Contractor Name: JM EAGLE

ADJOINING PROPERTY FINDINGS

Date: **9/24/2012**
Permit Type: **BIC**
Description: **2307**

Permit Description:
Work Class:
Proposed Use: HIGH NPDES I/C INSPECTION
Permit Number: BIC120557
Status: COMPLETE
Valuation: $0.00
Contractor Company:
Contractor Name: J M MANUFACTURING CO INC

Date: **6/6/2011**
Permit Type: **HIGH**
Description: **2307**

Permit Description: **HIGH NPDES I/C INSPECTION**
Work Class:
Proposed Use:
Permit Number: BIC110458
Status: PAID
Valuation: $0.00
Contractor Company:
Contractor Name: J M MANUFACTURING CO INC

Date: **5/5/2010**
Permit Type: **HIGH**
Description: **2307**

Permit Description: **HIGH NPDES I/C INSPECTION**
Work Class:
Proposed Use:
Permit Number: BIC100492
Status: COMPLETE
Valuation: $0.00
Contractor Company:
Contractor Name: JM MANUFACTURING CO INC

ADJOINING PROPERTY FINDINGS

Date: **3/26/2009**
Permit Type: **INIT**
Description: **2307**

Permit Description: **INITIAL NPDES I/C INSPECTION**
Work Class:
Proposed Use:
Permit Number: BIC090634
Status: COMPLETE
Valuation: $0.00
Contractor Company:
Contractor Name: J M MANUFACTURING CO, INC

Date: **3/17/2009**
Permit Type: **INIT**
Description: **2307**

Permit Description: **INITIAL NPDES I/C INSPECTION**
Work Class:
Proposed Use:
Permit Number: BIC090610
Status: VOID
Valuation: $0.00
Contractor Company:
Contractor Name:

Date: **7/11/2007**
Permit Type: **TI**
Description: **TI-PW EAGLE-2ND FLR MEZZ ADD/320 SF MODULAR OFFICE**

Permit Description: **TENANT IMPROVEMENT**
Work Class:
Proposed Use:
Permit Number: BTI060323
Status: EXPIRED
Valuation: $68,633.60
Contractor Company:
Contractor Name: ALLIED MODULAR BUILDING SYSTEMS

ADJOINING PROPERTY FINDINGS

Date:	**7/11/2000**
Permit Type:	**GCOM**
Description:	**GRADING PLAN FOR 12,800 SQ FT COMM BLDG.(PP09997)**
Permit Description:	**GRADING: COMMERCIAL/INDUSTRIAL**
Work Class:	
Proposed Use:	
Permit Number:	BGR000494
Status:	EXPIRED
Valuation:	$0.00
Contractor Company:	
Contractor Name:	PACIFIC WESTERN EXTRUDED PLASTIC

Date:	**11/2/1998**
Permit Type:	**ELEC**
Description:	**ELECTRICAL UPGRADE 400 AMP**
Permit Description:	**ELECTRICAL WORK ONLY**
Work Class:	
Proposed Use:	
Permit Number:	BEL981397
Status:	FINAL
Valuation:	$0.00
Contractor Company:	
Contractor Name:	T R YOUNG ELECTRIC

Date:	**3/20/1996**
Permit Type:	********
Description:	**OVERTIME - 4 INSPECTION HRS**
Permit Description:	**HISTORICAL PERMIT**
Work Class:	
Proposed Use:	
Permit Number:	406048
Status:	FINALED
Valuation:	$0.00
Contractor Company:	
Contractor Name:	YOUNG THOMAS

ADJOINING PROPERTY FINDINGS

Date: **12/13/1994**
Permit Type: **ARES**
Description: **ADDITION OF 6 SILOS**

Permit Description:
Work Class:
Proposed Use:
Permit Number: 387580
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: BEAUBELLE ROBERT

Date: **7/9/1992**
Permit Type: **MOVE**
Description: **ADD GAS LINE TO EXISTING COMM BLDG**

Permit Description:
Work Class:
Proposed Use:
Permit Number: 342595
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: COMPANY REDLANDS PLUMBING

Date: **6/25/1992**
Permit Type: **NCOM**
Description: **CONST STORAGE RACK SYSTEM/WAREHOUSE**

Permit Description: **NEW COMMERCIAL**
Work Class:
Proposed Use:
Permit Number: 341728
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: BLAIR BALLARD ARCHITECT

ADJOINING PROPERTY FINDINGS

Date: **1/30/1992**
Permit Type: ****
Description: **TEMP POWER**

Permit Description: **HISTORICAL PERMIT**
Work Class:
Proposed Use:
Permit Number: 333126
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: JOHNSON DWIGHT HAROLD

Date: **11/21/1991**
Permit Type: **GRAD**
Description: **GRADING - 1 COMM'L LOT**

Permit Description: **GRADING INSPECTION**
Work Class:
Proposed Use:
Permit Number: 330085
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: GILBREATH ROBERT

Date: **11/21/1991**
Permit Type: **NCOM**
Description: **WAREHOUSE**

Permit Description: **NEW COMMERCIAL**
Work Class:
Proposed Use:
Permit Number: 330083
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: GILBREATH ROBERT

ADJOINING PROPERTY FINDINGS

Date: **7/11/1991**
Permit Type: **ARES**
Description: **COMM. ADD. TO SILO**

Permit Description:
Work Class:
Proposed Use:
Permit Number: 321888
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: GILBREATH ROBERT

Date: **4/25/1988**
Permit Type: ****
Description: **TEMP USE OF PERM POWER**

Permit Description: **HISTORICAL PERMIT**
Work Class:
Proposed Use:
Permit Number: 190047
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: ROBERTSON DON FAMILY TRUST

Date: **12/28/1987**
Permit Type: ****
Description: **TEMP CONST TRAILER**

Permit Description: **HISTORICAL PERMIT**
Work Class:
Proposed Use:
Permit Number: 178254
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: GRAHAM WALTER J

ADJOINING PROPERTY FINDINGS

Date: **12/3/1987**
Permit Type: ****
Description: **TEMP POWER POLE**

Permit Description: **HISTORICAL PERMIT**
Work Class:
Proposed Use:
Permit Number: 176626
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: GRAHAM WALTER J

Date: **11/12/1987**
Permit Type: ****
Description: **MFG BLDG-PVC PIPE**

Permit Description: **HISTORICAL PERMIT**
Work Class:
Proposed Use:
Permit Number: 171501
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name: GRAHAM WALTER J

23840 RIDER ST

Date: **9/20/2016**
Permit Type: **BIC**
Description: **16590**

Permit Description:
Work Class:
Proposed Use: HIGH NPDES I/C INSPECTION
Permit Number: BIC160269
Status: PAID
Valuation: $0.00
Contractor Company:
Contractor Name: STAR MILLING CO

ADJOINING PROPERTY FINDINGS

Date: **4/14/2015**
Permit Type: **BIC**
Description: **16590**

Permit Description:
Work Class:
Proposed Use: HIGH NPDES I/C INSPECTION
Permit Number: BIC150171
Status: COMPLETE
Valuation: $0.00
Contractor Company:
Contractor Name: STAR MILLING CO

Date: **8/20/2014**
Permit Type: **BIC**
Description: **16590**

Permit Description:
Work Class:
Proposed Use: HIGH NPDES I/C INSPECTION
Permit Number: BIC140513
Status: COMPLETE
Valuation: $0.00
Contractor Company:
Contractor Name: STAR MILLING CO

Date: **11/19/2013**
Permit Type: **BIC**
Description: **16590**

Permit Description:
Work Class:
Proposed Use: HIGH NPDES I/C INSPECTION
Permit Number: BIC130507
Status: COMPLETE
Valuation: $0.00
Contractor Company:
Contractor Name: MC ANALLY ENTERPRISES LLC

ADJOINING PROPERTY FINDINGS

Date: **11/12/2013**
Permit Type: **BRI**
Description: **REQUEST FOR RECORDS**

Permit Description:
Work Class:
Proposed Use: BUILDING RECORDS INQUIRY
Permit Number: BRI131408
Status: PAID
Valuation: $0.00
Contractor Company:
Contractor Name: COPP DAVID

Date: **10/27/2009**
Permit Type: **INIT**
Description: **16590**

Permit Description: **INITIAL NPDES I/C INSPECTION**
Work Class:
Proposed Use:
Permit Number: BIC091828
Status: COMPLETE
Valuation: $0.00
Contractor Company:
Contractor Name: MCANALLY ENTERPRISES LLC

Date: **8/24/2004**
Permit Type: **OTHR**
Description: **REPLACE DUST COLLECTOR (EX FEEDMILL FOR EGG PRODCR**

Permit Description: **OTHER CONSTRUCTION**
Work Class:
Proposed Use:
Permit Number: BXX049624
Status: FINAL
Valuation: $120,000.00
Contractor Company:
Contractor Name: SCHUSTER SCOTT

GLOSSARY

General Building Department concepts

- **ICC:** The International Code Council. The governing body for the building/development codes used by all jurisdictions who've adopted the ICC guidelines. MOST of the US has done this. Canada, Mexico, and other countries use ICC codes books and guides as well. There are a few states who have added guidelines to the ICC codes to better fit their needs. For example, California has added seismic retrofit requirements for most commercial structures.
- **Building Department (Permitting Authority, Building Codes, Inspections Department, Building and Inspections):** This is the department in a jurisdiction where an owner or contractor goes to obtain permits and inspections for building, tearing down, remodeling, adding to, re-roofing, moving or otherwise making changes to any structure, Residential or Commercial.
- **Jurisdiction:** This is the geographic area representing the properties over which a Permitting Authority has responsibility.
- **GC:** General Contractor. Usually the primary contractor hired for any Residential or Commercial construction work.
- **Sub:** Subordinate contracting companies or subcontractors. Usually a "trades" contractor working for the GC. These contractors generally have an area of expertise in which they are licensed like Plumbing, Electrical, Heating and Air systems, Gas Systems, Pools etc. (called "trades").
- **Journeymen:** Sub contractors who have their own personal licenses in one or more trades and work for different contracting companies, wherever they are needed or there is work.
- **HVAC (Mechanical, Heating & Air companies):** HVAC = Heating, Ventilation, and Air Conditioning.
- **ELEC (Electrical, TempPole, TPole, TPower, Temporary Power, Panel, AMP Change, Power Release):** Electrical permits can be pulled for many reasons. The most common reason is to increase the AMPs of power in an electrical power panel. This requires a permit in almost every jurisdiction. Other commons reason for Electrical permits is to insert a temporary power pole at a new construction site. Construction requires electricity, and in a new development, power has yet to be run to the lot. The temporary power pole is usually the very first permit pulled for new development. The power is released to the home owner when construction is complete and this sometimes takes the form of a Power Release permit or inspection.
- **"Pull" a permit:** To obtain and pay for a building permit.
- **CBO:** Chief Building Official
- **Planning Department:** The department in the development process where the building /structural plans are reviewed for their completeness and compliance with building codes
- **Zoning Department:** The department in the development process where the site plans are reviewed for their compliance with the regulations associated with the zoning district in which they are situated.
- **Zoning District:** A pre-determined geographic boundary within a jurisdiction where certain types of structures are permitted / prohibited. Examples are Residential structure, Commercial/Retail structures, Industrial/Manufacturing structures etc. Each zoning district has regulations associated with it like the sizes of the lots, the density of the structures on the lots, the number of parking spaces required for certain types of structures on the lots etc.
- **PIN (TMS, GIS ID, Parcel#):** Property Identification Number and Tax Map System number.
- **State Card (Business license):** A license card issued to a contractor to conduct business.
- **Building Inspector (Inspector):** The inspector is a building department employee that inspects building construction for compliance to codes.
- **C.O.:** Certificate of Occupancy. This is the end of the construction process and designates that the owners now have permission to occupy a structure after its building is complete. Sometimes also referred to as a Certificate of Compliance.

GLOSSARY

Permit Content Definitions

- Permit Number: The alphanumerical designation assigned to a permit for tracking within the building department system. Sometimes the permit number gives clues to its role, e.g. a "PL" prefix may designate a plumbing permit.
- Description: A field on the permit form that allows the building department to give a brief description of the work being done. More often than not, this is the most important field for EP's to find clues to the prior use(s) of the property.
- Permit Type: Generally a brief designation of the type of job being done. For example BLDG-RES, BLDG-COM, ELEC, MECH etc.

Sample Building Permit Data

Date: Nov 09, 2000
Permit Type: Bldg -
New Permit Number: 101000000405
Status: Valuation: $1,000,000.00
Contractor Company: OWNER-BUILDER
Contractor Name:

Description: New one store retail (SAV-ON) with drive-thru pharmacy. Certificate of Occupancy.

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

N/A

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

R 07 W | R 06 W | R 05 W | R 04 W | R 03 W | R 02 W | R 01 W | R 01 E | R 02 E | R 03 E | R 04 E | R 05 E

T 01 S
T 02 S
T 03 S
T 04 S
T 05 S
T 06 S
T 07 S
T 08 S

06	05	04	03	02	01
07	08	09	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

0.85 MiraLoma
0.61 RiversideNorth
0.54 RiversideSouth
0.88 PradoDam
0.51 Woodcrest
0.50 LakeMathews
0.68 PigeonPass
0.66 MorenoEast
0.68 PerrisReservoir
0.85 Beaumont
0.87 VistaGrandeGS
0.70 SanJacintoNWS
1.18 Idyllwild
0.58 SunCity
0.68 Winchester
0.90 HurkeyCreek
0.70 ElsinoreNWS
1.11 ElCarisoStation
0.77 WildomarLaCresta
0.52 SkinnerLake
0.65 Anza
0.77 SantaRosaPlateau
1.00 TemeculaNWS
0.64 AguangaValley

PROJECT SITE

Santa Ana River Watershed
Santa Margarita Watershed

JURUPA VALLEY | EASTVALE | NORCO | CORONA | RIVERSIDE | MORENO VALLEY | CALIMESA | BEAUMONT | PERRIS | SAN JACINTO | HEMET | CANYON LAKE | LAKE ELSINORE | MENIFEE | WILDOMAR | MURRIETA | TEMECULA

N

Rain Gage Locations

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Isohyetal Map for the 85th Percentile 24 hour Storm Event

July 2011

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Albert A Webb Associates	Date	11/6/2020
Designed by	TSW	Case No	PPT190039
Company Project Number/Name	Duke Harvill & Rider		

BMP Identification

BMP NAME / ID: DMA-A

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.60 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	Design Storm Depth (in)	Design Capture Volume, V_{BMP} (cubic feet)	Proposed Volume on Plans (cubic feet)
L-A	10,150	Ornamental Landscaping	0.1	0.11	1121.1			
R-A	169,740	Roofs	1	0.89	151408.1			
H-A	214,060	Concrete or Asphalt	1	0.89	190941.5			
SR-A	19,180	Ornamental Landscaping						
BMP-A	1,740	Ornamental Landscaping	0.1	0.11	192.2			
SELF-TREATING	31,180	Ornamental Landscaping						
	446050	Total			343662.9	0.60	17183.1	17200

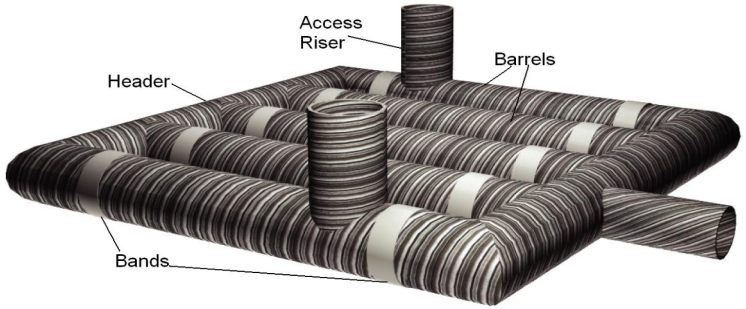
Notes:

DYODS™
Design Your Own Detention System

CONTECH CMP DETENTION SYSTEMS

CONTECH CONSTRUCTION PRODUCTS INC.

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com



Project Summary

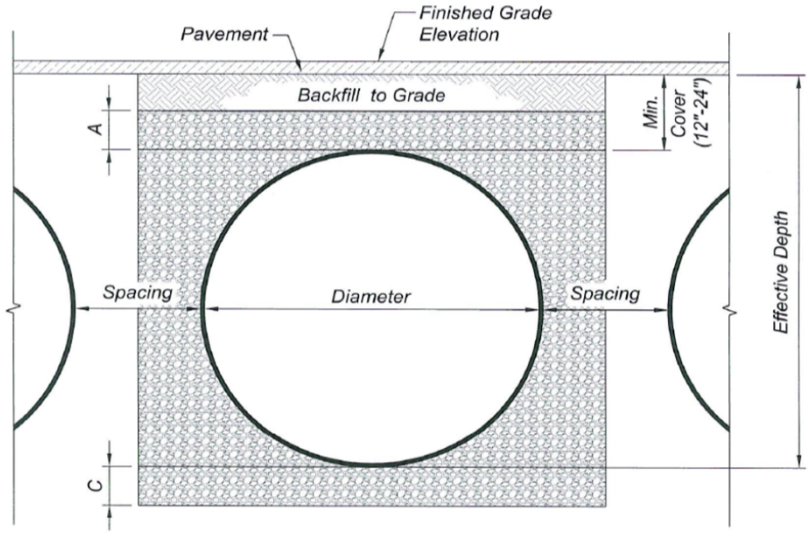
Date:	11/6/2020
Project Name:	Duke Harvill & Rider
City / County:	Riverside County
State:	CA
Designed By:	TSW
Company:	Albert A. Webb Associates
Telephone:	(951) 686-1070

Enter Information in Blue Cells

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	17,200
Limiting Width (ft):	40.00
Invert Depth Below Asphalt (ft):	11.00
Solid or Perforated Pipe:	Perforated
Shape Or Diameter (in):	96
Number Of Headers:	2
Spacing between Barrels (ft):	3.00
Stone Width Around Perimeter of System (ft):	2
Depth A: Porous Stone Above Pipe (in):	9
Depth C: Porous Stone Below Pipe (in):	6
Stone Porosity (0 to 40%):	40

50.27 ft^2 Pipe Area



System Sizing

Pipe Storage:	12,365	cf	
Porous Stone Storage:	5,369	cf	
Total Storage Provided:	17,735	cf	103.1% Of Required Storage
Number of Barrels:	3	barrels	
Length per Barrel:	62.0	ft	
Length Per Header:	30.0	ft	
Rectangular Footprint (W x L):	34. ft x 82. ft		

CONTECH Materials

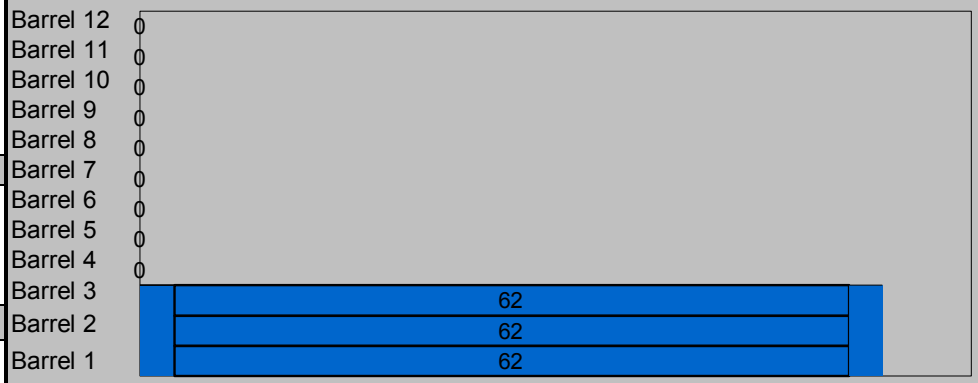
Total CMP Footage:	246	ft
Approximate Total Pieces:	13	pcs
Approximate Coupling Bands:	14	bands
Approximate Truckloads:	7	trucks

Construction Quantities**

Total Excavation:	1136	cy
Porous Stone Backfill For Storage:	497	cy stone
Backfill to Grade Excluding Stone:	181	cy fill

***Construction quantities are approximate and should be verified upon final design*

System Layout



Barrel Footage (w/o headers)

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INF-4: Bioinfiltration Fact Sheet

Bioinfiltration facilities are designed for partial infiltration of runoff and partial biotreatment. These facilities are similar to bioretention devices with underdrains but they include a raised underdrain above a gravel sump designed to facilitate infiltration. These facilities can be used in areas where there are no hazards associated with infiltration, but infiltration of the full DCV may not be feasible due to low infiltration rates or high depths of fill. These facilities may not result in retention of the full DCV but they can be used to achieve the maximum feasible infiltration and ET.

Also known as:

- *Rain gardens*
- *Infiltration planter*



Bioretention
Source: Geosyntec Consultants

Feasibility Screening Considerations

- Bioinfiltration shall pass infeasibility screening criteria for infiltration BMPs (**TGD Section 2.4.2.4**) to be considered for use.
- Infiltration rates are allowed to be less than 0.3 inches per hour.

Opportunity Criteria

- Land use may include commercial, residential, mixed use, institutional, and subdivisions. Bioretention may also be applied in parking lot islands, cul-de-sacs, traffic circles, road shoulders, and road medians.
- Drainage area is ≤ 5 acres, preferrably ≤ 1 acre.
- Area is available for infiltration.
- Site slope is less than 15 percent.

OC-Specific Design Criteria and Considerations

☐ Placement of BMPs should observe geotechnical recommendations with respect to geological hazards (e.g. landslides, liquefaction zones, erosion, etc.) and set-backs (e.g., foundations, utilities, roadways, etc.)

☐ Depth to mounded seasonally high groundwater shall not be less than 5 feet.

☐ If sheet flow is conveyed to the treatment area over stabilized grassed areas, the site must be graded in such a way that minimizes erosive conditions; sheet flow velocities should not exceed 1 foot per second.

☐ Ponding depth should not exceed 18 inches; fencing may be required if ponding depth exceeds 6 inches to mitigate the risk of drowning.

☐ Planting/storage media shall be based on the recommendations contained in MISC-1: Planting/Storage Media

☐ The minimum amended soil depth is 1.5 feet (3 feet is preferred).

☐ The depth of gravel below the underdrain elevation must be designed so that the effective depth that would infiltrate in 48 hours is stored in the gravel layer.

☐ Underdrain should be placed at the top of the gravel drainage layer to facilitate infiltration.

- ☐ Infiltration pathways may need to be restricted due to the close proximity of roads, foundations, or other infrastructure. A geomembrane liner, or other equivalent water proofing, may be placed along the vertical walls to reduce lateral flows. This liner should have a minimum thickness of 30 mils.
- ☐ Plant materials should be tolerant of summer drought, ponding fluctuations, and saturated soil conditions for 48 hours; native plant species and/or hardy cultivars that are not invasive and do not require chemical fertilizers or pesticides should be used to the maximum extent feasible
- ☐ The bioinfiltration area should be covered with 2-4 inches (average 3 inches) of mulch at startup and an additional placement of 1-2 inches of mulch should be added annually.
- ☐ An overflow device is required at the top of the ponding depth.
- ☐ Dispersed flow or energy dissipation (i.e. splash rocks) for piped inlets should be provided at basin inlet to prevent erosion.
- ☐ Planting/storage media shall be based on the recommendations contained in MISC-1: Planting/Storage Media
- ☐ Ponding area side slopes shall be 3H:1V.

Simple Sizing Method for Bioinfiltration

If the Simple Design Capture Volume Sizing Method described in **Appendix III.3.1** is used to size a bioinfiltration facility, the user selects the basin geometry and then determines the volume retained. The sizing steps are as follows:

Step 1: Select Bioinfiltration Geometry

Determine the desired ponding depth (not to exceed 1.5 ft), gravel depth, surface area, and media saturated hydraulic conductivity. A target media hydraulic conductivity of 5 inches per hour is recommended.

Step 2: Verify that the Ponding Depth will Draw Down within 48 Hours

The ponding area drawdown time can be calculated using the following equation:

$$DD_P = (d_P / K_{MEDIA}) \times 12$$

Calculated d_p from 48 hour drawdown

Where:

DD_P = time to drain ponded water, hours

$d_{EFFECTIVE}$ = total effective depth of water stored in bioretention area, ft (from Step 3)

K_{MEDIA} = media design infiltration rate, in/hr (equivalent to the media hydraulic conductivity with a factor of safety of 2; K_{MEDIA} of 2.5 in/hr should be used as a default unless other information is available to support an alternative value.)

If the drawdown time exceeds 48 hours, adjust ponding depth and/or media filter rate until 48 hour drawdown time is achieved.

Assumed K=2.5 in/hr

Step 3: Verify That Gravel Depth is Designed for 48 Hour Drawdown

In order to demonstrate that bioinfiltration systems have been designed to achieve the maximum feasible retention (See **Appendix XI**), the gravel depth below the underdrains must be designed with a thickness such that it draws down in 48 hours.

$$DD_G = ((d_G \times n_G) / K_{DESIGN}) \times 12$$

Where:

DD_G = time to drain gravel layer, hours

n_G = bioretention gravel layer porosity; 0.35 may be assumed where other information is not available

d_G = bioretention gravel layer depth, ft

K_{DESIGN} = bioretention design infiltration rate, in/hr (See **Appendix VII**)

If DD_G is less than 48 hours, adjust d_G until DD_G is at least 48 hours or greater.

Step 4: Determine the BMP Area Needed

The required infiltrating area (i.e. the surface area of the top of the media layer) can be calculated using the following equation:

$A = DCV / d_{EFFECTIVE}$

Divided design capture volume by d_p found above to obtain the required area

Where:

A = required infiltrating area, sq-ft (measured at the media surface)

DCV = design capture volume, cu-ft (see Step 1)

$d_{EFFECTIVE}$ = total effective depth of water stored in bioretention area, ft

$d_{EFFECTIVE} = (d_P + n_M d_M + n_G d_G)$

d_P = bioretention ponding depth, ft (should be less than or equal to 1.5 ft)

n_M = bioretention media porosity

d_M = bioretention media depth, ft

n_G = bioretention gravel layer porosity; 0.35 may be assumed where other information is not available

d_G = bioretention gravel layer depth, ft

This does not include the side slopes, access roads, etc. which would increase bioretention footprint. If the area required is greater than the selected basin area, adjust surface area or adjust ponding depth and recalculate required area until the required area is achieved.

Capture Efficiency Method for Bioinfiltration

Option 1: Accounting for Retention plus Biotreatment in Capture Efficiency Calculation

To size bioinfiltration facilities using the Capture Efficiency Method, the system should be divided into its retention and biotreatment components and analyzed as a treatment train per instructions in **Appendix III.5** Sizing Approaches for Treatment Trains and Hybrid Systems.

- Retention Storage: Water stored in gravel below underdrains.
- Biotreatment Storage: Water stored in surface ponding and media pore space. [23]

The retention component should be analyzed as the first component of the treatment train, and will yield a capture efficiency that is used as an input to the biotreatment sizing approach.

The retention component should be sized such that the depth of gravel drains in 48 hours at the design infiltration rate.

[23] In South Orange County, the water stored in surface ponding and media pore space may not be less than 0.75 of the remaining DCV that is not retained. This calculation must be checked if a capture efficiency-based method is used. See Section III.7 and Worksheet SOC-1.

Option 2: Sizing of Biotreatment Only; Presumptive Approach for Retention

Alternatively, bioinfiltration BMPs can be sized accounting for only the capture efficiency of the biotreatment component (See BIO-1: Bioretention with Underdrains for sizing methods). The retention component should be sized such that the depth of gravel drains in 48 hours or greater at the design infiltration rate. This provides presumption that water is infiltrated without quantifying the volume that is infiltrated. It is inherently a conservative sizing method.

Configuration for Use in a Treatment Train

- Bioinfiltration areas are inherently a treatment train BMP because they include both retention and biotreatment components.
- Bioinfiltration areas may be preceded in a treatment train by HSCs in the drainage area, which would reduce the required volume of the bioretention cell.
- Bioinfiltration areas can be incorporated in a treatment train to provide enhanced water quality treatment and reductions in runoff volume and rate.

Additional References for Design Guidance

- CASQA BMP Handbook for New and Redevelopment: **http://www.cabmphandbooks.com/Documents/Development/TC-32.pdf**
- SMC LID Manual (pp 68): **http://www.lowimpactdevelopment.org/guest75/pub/All_Projects/SoCal_LID_Manual/SoCalLID_Manual_FINAL_040910.pdf**
- Los Angeles County Stormwater BMP Design and Maintenance Manual, Chapter 5: **http://dpw.lacounty.gov/DES/design_manuals/StormwaterBMPDesignandMaintenance.pdf**
- San Diego County LID Handbook Appendix 4 (Factsheet 7): **http://www.sdcounty.ca.gov/dplu/docs/LID-Appendices.pdf**
- Los Angeles Unified School District (LAUSD) Stormwater Technical Manual, Chapter 4: **http://www.laschools.org/employee/design/fs-studies-and-reports/download/white_paper_report_material/Storm_Water_Technical_Manual_2009-opt-red.pdf?version_id=76975850**
- County of Los Angeles Low Impact Development Standards Manual, Chapter 5: **http://dpw.lacounty.gov/wmd/LA_County_LID_Manual.pdf**

Required Basin Area Calculation

BMP-A

$$\frac{V_{BMP}}{t_{drain}} = Area * i$$

$$Area = \frac{V_{BMP}}{t_{drain} * i}$$

$$ft^2 = \frac{ft^3}{hr * \frac{ft}{hr}}$$

$$1{,}720\ ft^2 = \frac{17{,}200\ ft^3}{48\ hr * \frac{2.5}{12}\frac{ft}{hr}}$$

DCV

d_p

$$Required\ Area = 1{,}720\ ft^2$$

$$\boldsymbol{Proposed\ Area = 1{,}740\ ft^2}$$

Pump Rate Calculation

BMP-A

$$\frac{V_{BMP}}{t_{drain}} = Area * i = Q_{pump}$$

$$\frac{V_{BMP}}{t_{drain}} = Q_{pump}$$

$$Q_{pump} = \frac{ft^3}{hr} * \frac{1\ hr}{3600\ sec} * \frac{449\ gpm}{1\ \frac{ft^3}{sec}}$$

$$Q_{pump} = \frac{17{,}200\ ft^3}{48\ hr} * \frac{449}{3600}\ \frac{gpm}{\frac{ft^3}{hr}} = 45\ gpm$$

$$\boldsymbol{Q_{pump} = 50\ gpm}$$

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Albert A Webb Associates	Date	11/6/2020
Designed by	TSW	Case No	PPT190039
Company Project Number/Name	Duke Harvill & Rider		

BMP Identification

BMP NAME / ID: DMA-B

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.60 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
L-B	*35,380*	*Ornamental Landscaping*	*0.1*	*0.11*	*3908*			
R-B	*157,830*	*Roofs*	*1*	*0.89*	*140784.4*			
BMP-B	*4,120*	*Ornamental Landscaping*	*0.1*	*0.11*	*455.1*			
	197330		***Total***		**145147.5**	**0.60**	***7257.4***	***7260***

Notes:

Bioretention Facility - Design Procedure	BMP ID: BMP-B	Legend:	Required Entries / Calculated Cells

Company Name: Albert A. Webb Associates | Date: 11/6/2020

Designed by: TSW | County/City Case No.: PPT190039

Design Volume

Enter the area tributary to this feature — A_T = 4.5 acres

Enter V_{BMP} determined from Section 2.1 of this Handbook — V_{BMP} = 7,260 ft^3

Type of Bioretention Facility Design

(●) Side slopes required (parallel to parking spaces or adjacent to walkways)

( ) No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer — d_S = 1.5 ft

Top Width of Bioretention Facility, excluding curb — w_T = 40.0 ft

Total Effective Depth, d_E

$d_E = (0.3) \times d_S + (0.4) \times 1 - (0.7/w_T) + 0.5$ — d_E = 1.33 ft

Minimum Surface Area, A_m

$$A_M\,(ft^2) = \frac{V_{BMP}\,(ft^3)}{d_E\,(ft)}$$

A_M = 5,449 ft^2

Proposed Surface Area — A= 4,120 ft^2

ERROR, the proposed surface area must be equal to or greater than the minimum surface area

Bioretention Facility Properties

Side Slopes in Bioretention Facility — z = 4 :1

Diameter of Underdrain — 6 inches

Longitudinal Slope of Site (3% maximum) — 0 %

6" Check Dam Spacing — 0 feet

Describe Vegetation:

Notes: Basin designed using 1' WQ ponding instead of 0.5'

de=(0.3*1.5)+(0.4*1.0)-(0.7/40)+1.0=1.83 Am=(7,260)/(1.83)=3,970 ft^2

Weir Inlet
Ponding Depth Calculation

ALBERT A WEBB ASSOCIATES
ENGINEERING CONSULTANTS

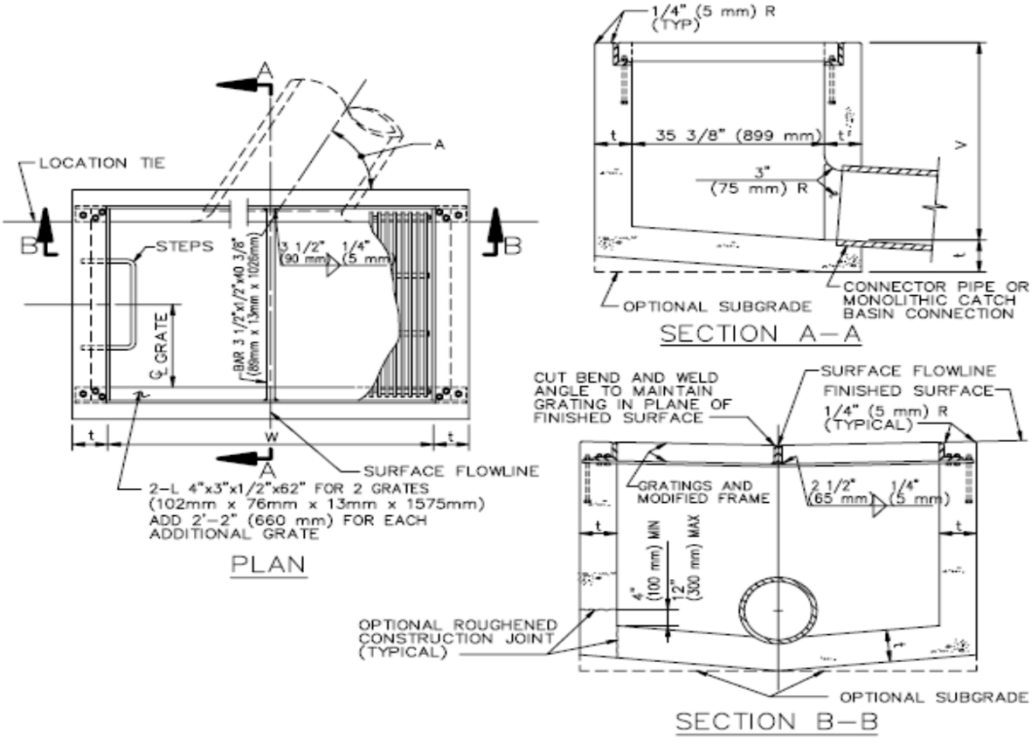
Designer:	TSW
Date:	11/11/2020
Project:	Duke Harvill & Rider
Location:	Outlet Structure

OUTLET STRUCTURE PONDING DEPTH SPPWC 305-3

DISCHARGE (cfs)		10.1	
NUMBER OF GRATES		2	
LENGTH (ft)		14.479	
WEIR COEFFICIENT	C	3	
WEIR LENGTH	L	14.479	ft^2
HEAD	h	0.38	ft
Flow	Q	10.10	cfs

$$Q = C L (h)^{3/2}$$

Top of Weir Elevation: 1507
Water Surface Elevation: 1507.38



Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 11/11/20 File: ONSITEPRE242.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

19-0126 DUKE HARVILL
ONSITE UNIT HYDROGRAPH ANALYSIS
EXISTING CONDITION H-11.1 TRIBUTARY, 2-YEAR 24-HOUR
FN: ONSITEPRE242.OUT- TSW

Drainage Area = 6.00(Ac.) = 0.009 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 6.00(Ac.) = 0.009 Sq. Mi.
Length along longest watercourse = 768.00(Ft.)
Length along longest watercourse measured to centroid = 255.00(Ft.)
Length along longest watercourse = 0.145 Mi.
Length along longest watercourse measured to centroid = 0.048 Mi.
Difference in elevation = 6.20(Ft.)
Slope along watercourse = 42.6250 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.036 Hr.
Lag time = 2.15 Min.
25% of lag time = 0.54 Min.
40% of lag time = 0.86 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
6.00	2.00	12.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
6.00	5.00	30.00

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
6.000	78.00	0.650

Total Area Entered = 6.00(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
78.0	60.6	0.464	0.650	0.192	1.000	0.192
					Sum (F) =	0.192

Area averaged mean soil loss (F) (In/Hr) = 0.111
Minimum soil loss rate ((In/Hr)) = 0.056
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.380

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	233.074	48.590	2.938
2	0.167	466.147	41.127	2.487
3	0.250	699.221	7.586	0.459
4	0.333	932.294	2.697	0.163
		Sum = 100.000	Sum=	6.047

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.016	(0.197)	0.006	0.010
2	0.17	0.07	0.016	(0.196)	0.006	0.010
3	0.25	0.07	0.016	(0.195)	0.006	0.010
4	0.33	0.10	0.024	(0.195)	0.009	0.015
5	0.42	0.10	0.024	(0.194)	0.009	0.015
6	0.50	0.10	0.024	(0.193)	0.009	0.015
7	0.58	0.10	0.024	(0.192)	0.009	0.015
8	0.67	0.10	0.024	(0.192)	0.009	0.015
9	0.75	0.10	0.024	(0.191)	0.009	0.015
10	0.83	0.13	0.032	(0.190)	0.012	0.020
11	0.92	0.13	0.032	(0.189)	0.012	0.020
12	1.00	0.13	0.032	(0.189)	0.012	0.020
13	1.08	0.10	0.024	(0.188)	0.009	0.015
14	1.17	0.10	0.024	(0.187)	0.009	0.015
15	1.25	0.10	0.024	(0.186)	0.009	0.015
16	1.33	0.10	0.024	(0.186)	0.009	0.015
17	1.42	0.10	0.024	(0.185)	0.009	0.015
18	1.50	0.10	0.024	(0.184)	0.009	0.015
19	1.58	0.10	0.024	(0.183)	0.009	0.015
20	1.67	0.10	0.024	(0.183)	0.009	0.015
21	1.75	0.10	0.024	(0.182)	0.009	0.015
22	1.83	0.13	0.032	(0.181)	0.012	0.020
23	1.92	0.13	0.032	(0.180)	0.012	0.020
24	2.00	0.13	0.032	(0.180)	0.012	0.020
25	2.08	0.13	0.032	(0.179)	0.012	0.020
26	2.17	0.13	0.032	(0.178)	0.012	0.020
27	2.25	0.13	0.032	(0.178)	0.012	0.020
28	2.33	0.13	0.032	(0.177)	0.012	0.020
29	2.42	0.13	0.032	(0.176)	0.012	0.020
30	2.50	0.13	0.032	(0.175)	0.012	0.020
31	2.58	0.17	0.040	(0.175)	0.015	0.025
32	2.67	0.17	0.040	(0.174)	0.015	0.025
33	2.75	0.17	0.040	(0.173)	0.015	0.025
34	2.83	0.17	0.040	(0.173)	0.015	0.025
35	2.92	0.17	0.040	(0.172)	0.015	0.025
36	3.00	0.17	0.040	(0.171)	0.015	0.025
37	3.08	0.17	0.040	(0.170)	0.015	0.025
38	3.17	0.17	0.040	(0.170)	0.015	0.025
39	3.25	0.17	0.040	(0.169)	0.015	0.025
40	3.33	0.17	0.040	(0.168)	0.015	0.025
41	3.42	0.17	0.040	(0.168)	0.015	0.025
42	3.50	0.17	0.040	(0.167)	0.015	0.025
43	3.58	0.17	0.040	(0.166)	0.015	0.025
44	3.67	0.17	0.040	(0.165)	0.015	0.025
45	3.75	0.17	0.040	(0.165)	0.015	0.025
46	3.83	0.20	0.048	(0.164)	0.018	0.030
47	3.92	0.20	0.048	(0.163)	0.018	0.030
48	4.00	0.20	0.048	(0.163)	0.018	0.030
49	4.08	0.20	0.048	(0.162)	0.018	0.030
50	4.17	0.20	0.048	(0.161)	0.018	0.030
51	4.25	0.20	0.048	(0.161)	0.018	0.030
52	4.33	0.23	0.056	(0.160)	0.021	0.035
53	4.42	0.23	0.056	(0.159)	0.021	0.035
54	4.50	0.23	0.056	(0.159)	0.021	0.035
55	4.58	0.23	0.056	(0.158)	0.021	0.035
56	4.67	0.23	0.056	(0.157)	0.021	0.035
57	4.75	0.23	0.056	(0.157)	0.021	0.035
58	4.83	0.27	0.064	(0.156)	0.024	0.040
59	4.92	0.27	0.064	(0.155)	0.024	0.040
60	5.00	0.27	0.064	(0.155)	0.024	0.040
61	5.08	0.20	0.048	(0.154)	0.018	0.030
62	5.17	0.20	0.048	(0.153)	0.018	0.030
63	5.25	0.20	0.048	(0.153)	0.018	0.030

64	5.33	0.23	0.056	(0.152)	0.021	0.035
65	5.42	0.23	0.056	(0.151)	0.021	0.035
66	5.50	0.23	0.056	(0.151)	0.021	0.035
67	5.58	0.27	0.064	(0.150)	0.024	0.040
68	5.67	0.27	0.064	(0.149)	0.024	0.040
69	5.75	0.27	0.064	(0.149)	0.024	0.040
70	5.83	0.27	0.064	(0.148)	0.024	0.040
71	5.92	0.27	0.064	(0.147)	0.024	0.040
72	6.00	0.27	0.064	(0.147)	0.024	0.040
73	6.08	0.30	0.072	(0.146)	0.027	0.045
74	6.17	0.30	0.072	(0.145)	0.027	0.045
75	6.25	0.30	0.072	(0.145)	0.027	0.045
76	6.33	0.30	0.072	(0.144)	0.027	0.045
77	6.42	0.30	0.072	(0.143)	0.027	0.045
78	6.50	0.30	0.072	(0.143)	0.027	0.045
79	6.58	0.33	0.080	(0.142)	0.030	0.050
80	6.67	0.33	0.080	(0.141)	0.030	0.050
81	6.75	0.33	0.080	(0.141)	0.030	0.050
82	6.83	0.33	0.080	(0.140)	0.030	0.050
83	6.92	0.33	0.080	(0.140)	0.030	0.050
84	7.00	0.33	0.080	(0.139)	0.030	0.050
85	7.08	0.33	0.080	(0.138)	0.030	0.050
86	7.17	0.33	0.080	(0.138)	0.030	0.050
87	7.25	0.33	0.080	(0.137)	0.030	0.050
88	7.33	0.37	0.088	(0.136)	0.033	0.055
89	7.42	0.37	0.088	(0.136)	0.033	0.055
90	7.50	0.37	0.088	(0.135)	0.033	0.055
91	7.58	0.40	0.096	(0.135)	0.036	0.060
92	7.67	0.40	0.096	(0.134)	0.036	0.060
93	7.75	0.40	0.096	(0.133)	0.036	0.060
94	7.83	0.43	0.104	(0.133)	0.040	0.064
95	7.92	0.43	0.104	(0.132)	0.040	0.064
96	8.00	0.43	0.104	(0.131)	0.040	0.064
97	8.08	0.50	0.120	(0.131)	0.046	0.074
98	8.17	0.50	0.120	(0.130)	0.046	0.074
99	8.25	0.50	0.120	(0.130)	0.046	0.074
100	8.33	0.50	0.120	(0.129)	0.046	0.074
101	8.42	0.50	0.120	(0.128)	0.046	0.074
102	8.50	0.50	0.120	(0.128)	0.046	0.074
103	8.58	0.53	0.128	(0.127)	0.049	0.079
104	8.67	0.53	0.128	(0.127)	0.049	0.079
105	8.75	0.53	0.128	(0.126)	0.049	0.079
106	8.83	0.57	0.136	(0.125)	0.052	0.084
107	8.92	0.57	0.136	(0.125)	0.052	0.084
108	9.00	0.57	0.136	(0.124)	0.052	0.084
109	9.08	0.63	0.152	(0.124)	0.058	0.094
110	9.17	0.63	0.152	(0.123)	0.058	0.094
111	9.25	0.63	0.152	(0.122)	0.058	0.094
112	9.33	0.67	0.160	(0.122)	0.061	0.099
113	9.42	0.67	0.160	(0.121)	0.061	0.099
114	9.50	0.67	0.160	(0.121)	0.061	0.099
115	9.58	0.70	0.168	(0.120)	0.064	0.104
116	9.67	0.70	0.168	(0.120)	0.064	0.104
117	9.75	0.70	0.168	(0.119)	0.064	0.104
118	9.83	0.73	0.176	(0.118)	0.067	0.109
119	9.92	0.73	0.176	(0.118)	0.067	0.109
120	10.00	0.73	0.176	(0.117)	0.067	0.109
121	10.08	0.50	0.120	(0.117)	0.046	0.074
122	10.17	0.50	0.120	(0.116)	0.046	0.074
123	10.25	0.50	0.120	(0.116)	0.046	0.074
124	10.33	0.50	0.120	(0.115)	0.046	0.074
125	10.42	0.50	0.120	(0.114)	0.046	0.074
126	10.50	0.50	0.120	(0.114)	0.046	0.074
127	10.58	0.67	0.160	(0.113)	0.061	0.099
128	10.67	0.67	0.160	(0.113)	0.061	0.099
129	10.75	0.67	0.160	(0.112)	0.061	0.099
130	10.83	0.67	0.160	(0.112)	0.061	0.099
131	10.92	0.67	0.160	(0.111)	0.061	0.099
132	11.00	0.67	0.160	(0.111)	0.061	0.099
133	11.08	0.63	0.152	(0.110)	0.058	0.094
134	11.17	0.63	0.152	(0.110)	0.058	0.094
135	11.25	0.63	0.152	(0.109)	0.058	0.094
136	11.33	0.63	0.152	(0.108)	0.058	0.094
137	11.42	0.63	0.152	(0.108)	0.058	0.094
138	11.50	0.63	0.152	(0.107)	0.058	0.094
139	11.58	0.57	0.136	(0.107)	0.052	0.084
140	11.67	0.57	0.136	(0.106)	0.052	0.084
141	11.75	0.57	0.136	(0.106)	0.052	0.084
142	11.83	0.60	0.144	(0.105)	0.055	0.089
143	11.92	0.60	0.144	(0.105)	0.055	0.089
144	12.00	0.60	0.144	(0.104)	0.055	0.089
145	12.08	0.83	0.200	(0.104)	0.076	0.124
146	12.17	0.83	0.200	(0.103)	0.076	0.124
147	12.25	0.83	0.200	(0.103)	0.076	0.124

148	12.33	0.87	0.208	(	0.102)	0.079		0.129
149	12.42	0.87	0.208	(	0.102)	0.079		0.129
150	12.50	0.87	0.208	(	0.101)	0.079		0.129
151	12.58	0.93	0.224	(	0.101)	0.085		0.139
152	12.67	0.93	0.224	(	0.100)	0.085		0.139
153	12.75	0.93	0.224	(	0.100)	0.085		0.139
154	12.83	0.97	0.232	(	0.099)	0.088		0.144
155	12.92	0.97	0.232	(	0.099)	0.088		0.144
156	13.00	0.97	0.232	(	0.098)	0.088		0.144
157	13.08	1.13	0.272		0.098	(	0.103)	0.174
158	13.17	1.13	0.272		0.097	(	0.103)	0.175
159	13.25	1.13	0.272		0.097	(	0.103)	0.175
160	13.33	1.13	0.272		0.096	(	0.103)	0.176
161	13.42	1.13	0.272		0.096	(	0.103)	0.176
162	13.50	1.13	0.272		0.095	(	0.103)	0.177
163	13.58	0.77	0.184	(	0.095)	0.070		0.114
164	13.67	0.77	0.184	(	0.094)	0.070		0.114
165	13.75	0.77	0.184	(	0.094)	0.070		0.114
166	13.83	0.77	0.184	(	0.093)	0.070		0.114
167	13.92	0.77	0.184	(	0.093)	0.070		0.114
168	14.00	0.77	0.184	(	0.092)	0.070		0.114
169	14.08	0.90	0.216	(	0.092)	0.082		0.134
170	14.17	0.90	0.216	(	0.091)	0.082		0.134
171	14.25	0.90	0.216	(	0.091)	0.082		0.134
172	14.33	0.87	0.208	(	0.090)	0.079		0.129
173	14.42	0.87	0.208	(	0.090)	0.079		0.129
174	14.50	0.87	0.208	(	0.089)	0.079		0.129
175	14.58	0.87	0.208	(	0.089)	0.079		0.129
176	14.67	0.87	0.208	(	0.089)	0.079		0.129
177	14.75	0.87	0.208	(	0.088)	0.079		0.129
178	14.83	0.83	0.200	(	0.088)	0.076		0.124
179	14.92	0.83	0.200	(	0.087)	0.076		0.124
180	15.00	0.83	0.200	(	0.087)	0.076		0.124
181	15.08	0.80	0.192	(	0.086)	0.073		0.119
182	15.17	0.80	0.192	(	0.086)	0.073		0.119
183	15.25	0.80	0.192	(	0.085)	0.073		0.119
184	15.33	0.77	0.184	(	0.085)	0.070		0.114
185	15.42	0.77	0.184	(	0.085)	0.070		0.114
186	15.50	0.77	0.184	(	0.084)	0.070		0.114
187	15.58	0.63	0.152	(	0.084)	0.058		0.094
188	15.67	0.63	0.152	(	0.083)	0.058		0.094
189	15.75	0.63	0.152	(	0.083)	0.058		0.094
190	15.83	0.63	0.152	(	0.082)	0.058		0.094
191	15.92	0.63	0.152	(	0.082)	0.058		0.094
192	16.00	0.63	0.152	(	0.082)	0.058		0.094
193	16.08	0.13	0.032	(	0.081)	0.012		0.020
194	16.17	0.13	0.032	(	0.081)	0.012		0.020
195	16.25	0.13	0.032	(	0.080)	0.012		0.020
196	16.33	0.13	0.032	(	0.080)	0.012		0.020
197	16.42	0.13	0.032	(	0.079)	0.012		0.020
198	16.50	0.13	0.032	(	0.079)	0.012		0.020
199	16.58	0.10	0.024	(	0.079)	0.009		0.015
200	16.67	0.10	0.024	(	0.078)	0.009		0.015
201	16.75	0.10	0.024	(	0.078)	0.009		0.015
202	16.83	0.10	0.024	(	0.077)	0.009		0.015
203	16.92	0.10	0.024	(	0.077)	0.009		0.015
204	17.00	0.10	0.024	(	0.077)	0.009		0.015
205	17.08	0.17	0.040	(	0.076)	0.015		0.025
206	17.17	0.17	0.040	(	0.076)	0.015		0.025
207	17.25	0.17	0.040	(	0.076)	0.015		0.025
208	17.33	0.17	0.040	(	0.075)	0.015		0.025
209	17.42	0.17	0.040	(	0.075)	0.015		0.025
210	17.50	0.17	0.040	(	0.074)	0.015		0.025
211	17.58	0.17	0.040	(	0.074)	0.015		0.025
212	17.67	0.17	0.040	(	0.074)	0.015		0.025
213	17.75	0.17	0.040	(	0.073)	0.015		0.025
214	17.83	0.13	0.032	(	0.073)	0.012		0.020
215	17.92	0.13	0.032	(	0.073)	0.012		0.020
216	18.00	0.13	0.032	(	0.072)	0.012		0.020
217	18.08	0.13	0.032	(	0.072)	0.012		0.020
218	18.17	0.13	0.032	(	0.072)	0.012		0.020
219	18.25	0.13	0.032	(	0.071)	0.012		0.020
220	18.33	0.13	0.032	(	0.071)	0.012		0.020
221	18.42	0.13	0.032	(	0.070)	0.012		0.020
222	18.50	0.13	0.032	(	0.070)	0.012		0.020
223	18.58	0.10	0.024	(	0.070)	0.009		0.015
224	18.67	0.10	0.024	(	0.069)	0.009		0.015
225	18.75	0.10	0.024	(	0.069)	0.009		0.015
226	18.83	0.07	0.016	(	0.069)	0.006		0.010
227	18.92	0.07	0.016	(	0.068)	0.006		0.010
228	19.00	0.07	0.016	(	0.068)	0.006		0.010
229	19.08	0.10	0.024	(	0.068)	0.009		0.015
230	19.17	0.10	0.024	(	0.068)	0.009		0.015
231	19.25	0.10	0.024	(	0.067)	0.009		0.015

232	19.33	0.13	0.032	(0.067)	0.012	0.020
233	19.42	0.13	0.032	(0.067)	0.012	0.020
234	19.50	0.13	0.032	(0.066)	0.012	0.020
235	19.58	0.10	0.024	(0.066)	0.009	0.015
236	19.67	0.10	0.024	(0.066)	0.009	0.015
237	19.75	0.10	0.024	(0.065)	0.009	0.015
238	19.83	0.07	0.016	(0.065)	0.006	0.010
239	19.92	0.07	0.016	(0.065)	0.006	0.010
240	20.00	0.07	0.016	(0.064)	0.006	0.010
241	20.08	0.10	0.024	(0.064)	0.009	0.015
242	20.17	0.10	0.024	(0.064)	0.009	0.015
243	20.25	0.10	0.024	(0.064)	0.009	0.015
244	20.33	0.10	0.024	(0.063)	0.009	0.015
245	20.42	0.10	0.024	(0.063)	0.009	0.015
246	20.50	0.10	0.024	(0.063)	0.009	0.015
247	20.58	0.10	0.024	(0.063)	0.009	0.015
248	20.67	0.10	0.024	(0.062)	0.009	0.015
249	20.75	0.10	0.024	(0.062)	0.009	0.015
250	20.83	0.07	0.016	(0.062)	0.006	0.010
251	20.92	0.07	0.016	(0.062)	0.006	0.010
252	21.00	0.07	0.016	(0.061)	0.006	0.010
253	21.08	0.10	0.024	(0.061)	0.009	0.015
254	21.17	0.10	0.024	(0.061)	0.009	0.015
255	21.25	0.10	0.024	(0.061)	0.009	0.015
256	21.33	0.07	0.016	(0.060)	0.006	0.010
257	21.42	0.07	0.016	(0.060)	0.006	0.010
258	21.50	0.07	0.016	(0.060)	0.006	0.010
259	21.58	0.10	0.024	(0.060)	0.009	0.015
260	21.67	0.10	0.024	(0.059)	0.009	0.015
261	21.75	0.10	0.024	(0.059)	0.009	0.015
262	21.83	0.07	0.016	(0.059)	0.006	0.010
263	21.92	0.07	0.016	(0.059)	0.006	0.010
264	22.00	0.07	0.016	(0.059)	0.006	0.010
265	22.08	0.10	0.024	(0.058)	0.009	0.015
266	22.17	0.10	0.024	(0.058)	0.009	0.015
267	22.25	0.10	0.024	(0.058)	0.009	0.015
268	22.33	0.07	0.016	(0.058)	0.006	0.010
269	22.42	0.07	0.016	(0.058)	0.006	0.010
270	22.50	0.07	0.016	(0.058)	0.006	0.010
271	22.58	0.07	0.016	(0.057)	0.006	0.010
272	22.67	0.07	0.016	(0.057)	0.006	0.010
273	22.75	0.07	0.016	(0.057)	0.006	0.010
274	22.83	0.07	0.016	(0.057)	0.006	0.010
275	22.92	0.07	0.016	(0.057)	0.006	0.010
276	23.00	0.07	0.016	(0.057)	0.006	0.010
277	23.08	0.07	0.016	(0.056)	0.006	0.010
278	23.17	0.07	0.016	(0.056)	0.006	0.010
279	23.25	0.07	0.016	(0.056)	0.006	0.010
280	23.33	0.07	0.016	(0.056)	0.006	0.010
281	23.42	0.07	0.016	(0.056)	0.006	0.010
282	23.50	0.07	0.016	(0.056)	0.006	0.010
283	23.58	0.07	0.016	(0.056)	0.006	0.010
284	23.67	0.07	0.016	(0.056)	0.006	0.010
285	23.75	0.07	0.016	(0.056)	0.006	0.010
286	23.83	0.07	0.016	(0.056)	0.006	0.010
287	23.92	0.07	0.016	(0.056)	0.006	0.010
288	24.00	0.07	0.016	(0.056)	0.006	0.010

(Loss Rate Not Used)

Sum = 100.0 Sum = 14.9

Flood volume = Effective rainfall 1.24(In)
times area 6.0(Ac.)/[(In)/(Ft.)] = 0.6(Ac.Ft)
Total soil loss = 0.76(In)
Total soil loss = 0.378(Ac.Ft)
Total rainfall = 2.00(In)
Flood volume = 27083.3 Cubic Feet
Total soil loss = 16476.2 Cubic Feet

Peak flow rate of this hydrograph = 1.068(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.03	Q	|	|	|	|
0+10	0.0006	0.05	Q	|	|	|	|
0+15	0.0010	0.06	Q	|	|	|	|
0+20	0.0015	0.07	Q	|	|	|	|
0+25	0.0021	0.09	Q	|	|	|	|
0+30	0.0027	0.09	Q	|	|	|	|

0+35	0.0033	0.09	Q	|	|	|	|
0+40	0.0039	0.09	Q	|	|	|	|
0+45	0.0046	0.09	Q	|	|	|	|
0+50	0.0053	0.10	Q	|	|	|	|
0+55	0.0061	0.12	Q	|	|	|	|
1+ 0	0.0069	0.12	Q	|	|	|	|
1+ 5	0.0076	0.11	Q	|	|	|	|
1+10	0.0083	0.09	Q	|	|	|	|
1+15	0.0089	0.09	Q	|	|	|	|
1+20	0.0095	0.09	Q	|	|	|	|
1+25	0.0101	0.09	Q	|	|	|	|
1+30	0.0108	0.09	Q	|	|	|	|
1+35	0.0114	0.09	Q	|	|	|	|
1+40	0.0120	0.09	Q	|	|	|	|
1+45	0.0126	0.09	Q	|	|	|	|
1+50	0.0133	0.10	Q	|	|	|	|
1+55	0.0141	0.12	Q	|	|	|	|
2+ 0	0.0150	0.12	Q	|	|	|	|
2+ 5	0.0158	0.12	QV	|	|	|	|
2+10	0.0166	0.12	QV	|	|	|	|
2+15	0.0174	0.12	QV	|	|	|	|
2+20	0.0183	0.12	QV	|	|	|	|
2+25	0.0191	0.12	QV	|	|	|	|
2+30	0.0199	0.12	QV	|	|	|	|
2+35	0.0209	0.13	QV	|	|	|	|
2+40	0.0219	0.15	QV	|	|	|	|
2+45	0.0229	0.15	QV	|	|	|	|
2+50	0.0239	0.15	QV	|	|	|	|
2+55	0.0250	0.15	QV	|	|	|	|
3+ 0	0.0260	0.15	QV	|	|	|	|
3+ 5	0.0270	0.15	QV	|	|	|	|
3+10	0.0281	0.15	QV	|	|	|	|
3+15	0.0291	0.15	QV	|	|	|	|
3+20	0.0301	0.15	QV	|	|	|	|
3+25	0.0312	0.15	Q V	|	|	|	|
3+30	0.0322	0.15	Q V	|	|	|	|
3+35	0.0332	0.15	Q V	|	|	|	|
3+40	0.0343	0.15	Q V	|	|	|	|
3+45	0.0353	0.15	Q V	|	|	|	|
3+50	0.0364	0.16	Q V	|	|	|	|
3+55	0.0376	0.18	Q V	|	|	|	|
4+ 0	0.0389	0.18	Q V	|	|	|	|
4+ 5	0.0401	0.18	Q V	|	|	|	|
4+10	0.0414	0.18	Q V	|	|	|	|
4+15	0.0426	0.18	Q V	|	|	|	|
4+20	0.0439	0.19	Q V	|	|	|	|
4+25	0.0454	0.21	Q V	|	|	|	|
4+30	0.0468	0.21	Q V	|	|	|	|
4+35	0.0483	0.21	Q V	|	|	|	|
4+40	0.0497	0.21	Q V	|	|	|	|
4+45	0.0511	0.21	Q V	|	|	|	|
4+50	0.0527	0.22	Q V	|	|	|	|
4+55	0.0543	0.24	Q V	|	|	|	|
5+ 0	0.0560	0.24	Q V	|	|	|	|
5+ 5	0.0574	0.21	Q V	|	|	|	|
5+10	0.0587	0.19	Q V	|	|	|	|
5+15	0.0600	0.18	Q V	|	|	|	|
5+20	0.0613	0.19	Q V	|	|	|	|
5+25	0.0627	0.21	Q V	|	|	|	|
5+30	0.0642	0.21	Q V	|	|	|	|
5+35	0.0657	0.22	Q V	|	|	|	|
5+40	0.0673	0.24	Q V	|	|	|	|
5+45	0.0690	0.24	Q V	|	|	|	|
5+50	0.0706	0.24	Q V	|	|	|	|
5+55	0.0723	0.24	Q V	|	|	|	|
6+ 0	0.0740	0.24	Q V	|	|	|	|
6+ 5	0.0757	0.25	|Q V	|	|	|	|
6+10	0.0775	0.27	|Q V	|	|	|	|
6+15	0.0794	0.27	|Q V	|	|	|	|
6+20	0.0813	0.27	|Q V	|	|	|	|
6+25	0.0831	0.27	|Q V	|	|	|	|
6+30	0.0850	0.27	|Q V	|	|	|	|
6+35	0.0869	0.28	|Q V	|	|	|	|
6+40	0.0890	0.30	|Q V	|	|	|	|
6+45	0.0910	0.30	|Q V	|	|	|	|
6+50	0.0931	0.30	|Q V	|	|	|	|
6+55	0.0952	0.30	|Q V	|	|	|	|
7+ 0	0.0972	0.30	|Q V	|	|	|	|
7+ 5	0.0993	0.30	|Q V	|	|	|	|
7+10	0.1014	0.30	|Q V	|	|	|	|
7+15	0.1034	0.30	|Q V	|	|	|	|
7+20	0.1056	0.31	|Q V	|	|	|	|
7+25	0.1079	0.33	|Q V	|	|	|	|
7+30	0.1101	0.33	|Q V	|	|	|	|

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 7+35       0.1125      0.34  |Q     V  |          |          |          |
 7+40       0.1150      0.36  |Q     V  |          |          |          |
 7+45       0.1174      0.36  |Q     V  |          |          |          |
 7+50       0.1200      0.37  |Q     V  |          |          |          |
 7+55       0.1227      0.39  |Q     V  |          |          |          |
 8+ 0       0.1254      0.39  |Q      V |          |          |          |
 8+ 5       0.1283      0.42  |Q      V |          |          |          |
 8+10       0.1313      0.44  |Q      V |          |          |          |
 8+15       0.1344      0.45  |Q      V |          |          |          |
 8+20       0.1375      0.45  |Q      V |          |          |          |
 8+25       0.1406      0.45  |Q       V|          |          |          |
 8+30       0.1437      0.45  |Q       V|          |          |          |
 8+35       0.1469      0.46  |Q       V|          |          |          |
 8+40       0.1502      0.48  |Q       V|          |          |          |
 8+45       0.1535      0.48  |Q       V|          |          |          |
 8+50       0.1569      0.49  |Q        V          |          |          |
 8+55       0.1604      0.51  | Q       V          |          |          |
 9+ 0       0.1639      0.51  | Q       V          |          |          |
 9+ 5       0.1676      0.54  | Q       V          |          |          |
 9+10       0.1715      0.56  | Q       |V         |          |          |
 9+15       0.1754      0.57  | Q       |V         |          |          |
 9+20       0.1794      0.58  | Q       |V         |          |          |
 9+25       0.1835      0.60  | Q       |V         |          |          |
 9+30       0.1877      0.60  | Q       | V        |          |          |
 9+35       0.1919      0.61  | Q       | V        |          |          |
 9+40       0.1962      0.63  | Q       | V        |          |          |
 9+45       0.2006      0.63  | Q       | V        |          |          |
 9+50       0.2050      0.64  | Q       |  V       |          |          |
 9+55       0.2095      0.66  | Q       |  V       |          |          |
10+ 0       0.2141      0.66  | Q       |  V       |          |          |
10+ 5       0.2179      0.56  | Q       |   V      |          |          |
10+10       0.2212      0.47  |Q        |   V      |          |          |
10+15       0.2243      0.46  |Q        |   V      |          |          |
10+20       0.2274      0.45  |Q        |   V      |          |          |
10+25       0.2305      0.45  |Q        |   V      |          |          |
10+30       0.2336      0.45  |Q        |    V     |          |          |
10+35       0.2372      0.52  | Q       |    V     |          |          |
10+40       0.2412      0.58  | Q       |    V     |          |          |
10+45       0.2453      0.60  | Q       |    V     |          |          |
10+50       0.2495      0.60  | Q       |     V    |          |          |
10+55       0.2536      0.60  | Q       |     V    |          |          |
11+ 0       0.2577      0.60  | Q       |     V    |          |          |
11+ 5       0.2618      0.59  | Q       |     V    |          |          |
11+10       0.2657      0.57  | Q       |      V   |          |          |
11+15       0.2696      0.57  | Q       |      V   |          |          |
11+20       0.2736      0.57  | Q       |      V   |          |          |
11+25       0.2775      0.57  | Q       |      V   |          |          |
11+30       0.2814      0.57  | Q       |       V  |          |          |
11+35       0.2852      0.54  | Q       |       V  |          |          |
11+40       0.2887      0.52  | Q       |       V  |          |          |
11+45       0.2922      0.51  | Q       |       V  |          |          |
11+50       0.2958      0.52  | Q       |       V|          |          |
11+55       0.2995      0.54  | Q       |       V|          |          |
12+ 0       0.3033      0.54  | Q       |       V|          |          |
12+ 5       0.3077      0.64  | Q       |       V|          |          |
12+10       0.3127      0.73  | Q       |        V          |          |
12+15       0.3178      0.74  | Q       |        V          |          |
12+20       0.3231      0.76  |  Q      |        V          |          |
12+25       0.3284      0.78  |  Q      |        |V         |          |
12+30       0.3338      0.78  |  Q      |        |V         |          |
12+35       0.3394      0.81  |  Q      |        |V         |          |
12+40       0.3451      0.83  |  Q      |        | V        |          |
12+45       0.3509      0.84  |  Q      |        | V        |          |
12+50       0.3568      0.85  |  Q      |        | V        |          |
12+55       0.3628      0.87  |  Q      |        |  V       |          |
13+ 0       0.3688      0.87  |  Q      |        |  V       |          |
13+ 5       0.3754      0.96  |  Q      |        |   V      |          |
13+10       0.3825      1.04  |   Q     |        |   V      |          |
13+15       0.3898      1.05  |   Q     |        |    V     |          |
13+20       0.3971      1.06  |   Q     |        |    V     |          |
13+25       0.4044      1.07  |   Q     |        |     V    |          |
13+30       0.4118      1.07  |   Q     |        |     V    |          |
13+35       0.4179      0.89  |  Q      |        |     V    |          |
13+40       0.4229      0.73  | Q       |        |      V   |          |
13+45       0.4277      0.70  | Q       |        |      V   |          |
13+50       0.4325      0.69  | Q       |        |      V   |          |
13+55       0.4372      0.69  | Q       |        |       V  |          |
14+ 0       0.4420      0.69  | Q       |        |       V  |          |
14+ 5       0.4471      0.75  | Q       |        |       V  |          |
14+10       0.4526      0.80  |  Q      |        |        V|          |
14+15       0.4582      0.81  |  Q      |        |        V|          |
14+20       0.4637      0.80  |  Q      |        |        V|          |
14+25       0.4691      0.78  |  Q      |        |         V          |
14+30       0.4744      0.78  |  Q      |        |         V          |
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14+35       0.4798      0.78  |   Q      |          |         V         |
14+40       0.4852      0.78  |   Q      |          |         |V        |
14+45       0.4906      0.78  |   Q      |          |         |V        |
14+50       0.4958      0.77  |   Q      |          |         |V        |
14+55       0.5010      0.75  |   Q      |          |         | V       |
15+ 0       0.5062      0.75  |   Q      |          |         | V       |
15+ 5       0.5113      0.74  |  Q       |          |         | V       |
15+10       0.5162      0.72  |  Q       |          |         |  V      |
15+15       0.5212      0.72  |  Q       |          |         |  V      |
15+20       0.5261      0.71  |  Q       |          |         |  V      |
15+25       0.5308      0.69  |  Q       |          |         |   V     |
15+30       0.5356      0.69  |  Q       |          |         |   V     |
15+35       0.5400      0.63  |  Q       |          |         |   V     |
15+40       0.5440      0.58  |  Q       |          |         |   V     |
15+45       0.5479      0.57  |  Q       |          |         |    V    |
15+50       0.5518      0.57  |  Q       |          |         |    V    |
15+55       0.5558      0.57  |  Q       |          |         |    V    |
16+ 0       0.5597      0.57  |  Q       |          |         |     V   |
16+ 5       0.5621      0.35  | Q        |          |         |     V   |
16+10       0.5633      0.17  Q          |          |         |     V   |
16+15       0.5642      0.13  Q          |          |         |     V   |
16+20       0.5650      0.12  Q          |          |         |     V   |
16+25       0.5658      0.12  Q          |          |         |     V   |
16+30       0.5667      0.12  Q          |          |         |     V   |
16+35       0.5674      0.11  Q          |          |         |     V   |
16+40       0.5680      0.09  Q          |          |         |     V   |
16+45       0.5686      0.09  Q          |          |         |     V   |
16+50       0.5693      0.09  Q          |          |         |     V   |
16+55       0.5699      0.09  Q          |          |         |     V   |
17+ 0       0.5705      0.09  Q          |          |         |     V   |
17+ 5       0.5713      0.12  Q          |          |         |     V   |
17+10       0.5723      0.14  Q          |          |         |     V   |
17+15       0.5733      0.15  Q          |          |         |     V   |
17+20       0.5744      0.15  Q          |          |         |     V   |
17+25       0.5754      0.15  Q          |          |         |      V  |
17+30       0.5764      0.15  Q          |          |         |      V  |
17+35       0.5775      0.15  Q          |          |         |      V  |
17+40       0.5785      0.15  Q          |          |         |      V  |
17+45       0.5795      0.15  Q          |          |         |      V  |
17+50       0.5805      0.14  Q          |          |         |      V  |
17+55       0.5813      0.12  Q          |          |         |      V  |
18+ 0       0.5822      0.12  Q          |          |         |      V  |
18+ 5       0.5830      0.12  Q          |          |         |      V  |
18+10       0.5838      0.12  Q          |          |         |      V  |
18+15       0.5846      0.12  Q          |          |         |      V  |
18+20       0.5855      0.12  Q          |          |         |      V  |
18+25       0.5863      0.12  Q          |          |         |      V  |
18+30       0.5871      0.12  Q          |          |         |      V  |
18+35       0.5878      0.11  Q          |          |         |      V  |
18+40       0.5885      0.09  Q          |          |         |      V  |
18+45       0.5891      0.09  Q          |          |         |      V  |
18+50       0.5896      0.08  Q          |          |         |      V  |
18+55       0.5901      0.06  Q          |          |         |      V  |
19+ 0       0.5905      0.06  Q          |          |         |      V  |
19+ 5       0.5910      0.07  Q          |          |         |       V |
19+10       0.5916      0.09  Q          |          |         |       V |
19+15       0.5922      0.09  Q          |          |         |       V |
19+20       0.5929      0.10  Q          |          |         |       V |
19+25       0.5937      0.12  Q          |          |         |       V |
19+30       0.5946      0.12  Q          |          |         |       V |
19+35       0.5953      0.11  Q          |          |         |       V |
19+40       0.5959      0.09  Q          |          |         |       V |
19+45       0.5965      0.09  Q          |          |         |       V |
19+50       0.5971      0.08  Q          |          |         |       V |
19+55       0.5975      0.06  Q          |          |         |       V |
20+ 0       0.5979      0.06  Q          |          |         |       V |
20+ 5       0.5984      0.07  Q          |          |         |       V |
20+10       0.5990      0.09  Q          |          |         |       V |
20+15       0.5996      0.09  Q          |          |         |       V |
20+20       0.6003      0.09  Q          |          |         |       V |
20+25       0.6009      0.09  Q          |          |         |       V |
20+30       0.6015      0.09  Q          |          |         |       V |
20+35       0.6021      0.09  Q          |          |         |       V |
20+40       0.6027      0.09  Q          |          |         |       V |
20+45       0.6034      0.09  Q          |          |         |       V |
20+50       0.6039      0.08  Q          |          |         |       V |
20+55       0.6043      0.06  Q          |          |         |       V |
21+ 0       0.6047      0.06  Q          |          |         |       V |
21+ 5       0.6053      0.07  Q          |          |         |       V |
21+10       0.6059      0.09  Q          |          |         |       V |
21+15       0.6065      0.09  Q          |          |         |        V|
21+20       0.6070      0.08  Q          |          |         |        V|
21+25       0.6074      0.06  Q          |          |         |        V|
21+30       0.6078      0.06  Q          |          |         |        V|
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21+35	0.6084	0.07	Q	|	|	|	V|
21+40	0.6090	0.09	Q	|	|	|	V|
21+45	0.6096	0.09	Q	|	|	|	V|
21+50	0.6101	0.08	Q	|	|	|	V|
21+55	0.6105	0.06	Q	|	|	|	V|
22+ 0	0.6109	0.06	Q	|	|	|	V|
22+ 5	0.6115	0.07	Q	|	|	|	V|
22+10	0.6121	0.09	Q	|	|	|	V|
22+15	0.6127	0.09	Q	|	|	|	V|
22+20	0.6132	0.08	Q	|	|	|	V|
22+25	0.6136	0.06	Q	|	|	|	V|
22+30	0.6140	0.06	Q	|	|	|	V|
22+35	0.6145	0.06	Q	|	|	|	V|
22+40	0.6149	0.06	Q	|	|	|	V|
22+45	0.6153	0.06	Q	|	|	|	V|
22+50	0.6157	0.06	Q	|	|	|	V|
22+55	0.6161	0.06	Q	|	|	|	V|
23+ 0	0.6165	0.06	Q	|	|	|	V|
23+ 5	0.6169	0.06	Q	|	|	|	V|
23+10	0.6173	0.06	Q	|	|	|	V|
23+15	0.6178	0.06	Q	|	|	|	V|
23+20	0.6182	0.06	Q	|	|	|	V|
23+25	0.6186	0.06	Q	|	|	|	V|
23+30	0.6190	0.06	Q	|	|	|	V|
23+35	0.6194	0.06	Q	|	|	|	V|
23+40	0.6198	0.06	Q	|	|	|	V|
23+45	0.6202	0.06	Q	|	|	|	V|
23+50	0.6207	0.06	Q	|	|	|	V|
23+55	0.6211	0.06	Q	|	|	|	V|
24+ 0	0.6215	0.06	Q	|	|	|	V|
24+ 5	0.6217	0.03	Q	|	|	|	V|
24+10	0.6217	0.01	Q	|	|	|	V|
24+15	0.6217	0.00	Q	|	|	|	V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 11/11/20 File: ONSITEPRE242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

19-0126 DUKE HARVILL
ONSITE UNIT HYDROGRAPH ANALYSIS
EXISTING CONDITION H-12 TRIBUTARY, 2-YEAR 24-HOUR
FN: ONSITEPRE242.OUT- TSW

Drainage Area = 8.40(Ac.) = 0.013 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.40(Ac.) = 0.013 Sq. Mi.
Length along longest watercourse = 765.00(Ft.)
Length along longest watercourse measured to centroid = 421.00(Ft.)
Length along longest watercourse = 0.145 Mi.
Length along longest watercourse measured to centroid = 0.080 Mi.
Difference in elevation = 7.60(Ft.)
Slope along watercourse = 52.4549 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.062 Hr.
Lag time = 3.74 Min.
25% of lag time = 0.93 Min.
40% of lag time = 1.49 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.40	2.00	16.80

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.40	5.00	42.00

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.400	78.00	0.000

Total Area Entered = 8.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
78.0	60.6	0.464	0.000	0.464	1.000	0.464
					Sum (F) =	0.464

Area averaged mean soil loss (F) (In/Hr) = 0.268
Minimum soil loss rate ((In/Hr)) = 0.134
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	133.792	29.047	2.459
2	0.167	267.583	48.085	4.071
3	0.250	401.375	12.228	1.035
4	0.333	535.166	5.433	0.460
5	0.417	668.958	2.964	0.251
6	0.500	802.750	2.243	0.190
			Sum = 100.000	Sum= 8.466

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.016	(0.474)	0.014	0.002
2	0.17	0.07	0.016	(0.473)	0.014	0.002
3	0.25	0.07	0.016	(0.471)	0.014	0.002
4	0.33	0.10	0.024	(0.469)	0.022	0.002
5	0.42	0.10	0.024	(0.467)	0.022	0.002
6	0.50	0.10	0.024	(0.465)	0.022	0.002
7	0.58	0.10	0.024	(0.463)	0.022	0.002
8	0.67	0.10	0.024	(0.462)	0.022	0.002
9	0.75	0.10	0.024	(0.460)	0.022	0.002
10	0.83	0.13	0.032	(0.458)	0.029	0.003
11	0.92	0.13	0.032	(0.456)	0.029	0.003
12	1.00	0.13	0.032	(0.454)	0.029	0.003
13	1.08	0.10	0.024	(0.453)	0.022	0.002
14	1.17	0.10	0.024	(0.451)	0.022	0.002
15	1.25	0.10	0.024	(0.449)	0.022	0.002
16	1.33	0.10	0.024	(0.447)	0.022	0.002
17	1.42	0.10	0.024	(0.445)	0.022	0.002
18	1.50	0.10	0.024	(0.444)	0.022	0.002
19	1.58	0.10	0.024	(0.442)	0.022	0.002
20	1.67	0.10	0.024	(0.440)	0.022	0.002
21	1.75	0.10	0.024	(0.438)	0.022	0.002
22	1.83	0.13	0.032	(0.437)	0.029	0.003
23	1.92	0.13	0.032	(0.435)	0.029	0.003
24	2.00	0.13	0.032	(0.433)	0.029	0.003
25	2.08	0.13	0.032	(0.431)	0.029	0.003
26	2.17	0.13	0.032	(0.430)	0.029	0.003
27	2.25	0.13	0.032	(0.428)	0.029	0.003
28	2.33	0.13	0.032	(0.426)	0.029	0.003
29	2.42	0.13	0.032	(0.424)	0.029	0.003
30	2.50	0.13	0.032	(0.423)	0.029	0.003
31	2.58	0.17	0.040	(0.421)	0.036	0.004
32	2.67	0.17	0.040	(0.419)	0.036	0.004
33	2.75	0.17	0.040	(0.417)	0.036	0.004
34	2.83	0.17	0.040	(0.416)	0.036	0.004
35	2.92	0.17	0.040	(0.414)	0.036	0.004
36	3.00	0.17	0.040	(0.412)	0.036	0.004
37	3.08	0.17	0.040	(0.411)	0.036	0.004
38	3.17	0.17	0.040	(0.409)	0.036	0.004
39	3.25	0.17	0.040	(0.407)	0.036	0.004
40	3.33	0.17	0.040	(0.405)	0.036	0.004
41	3.42	0.17	0.040	(0.404)	0.036	0.004
42	3.50	0.17	0.040	(0.402)	0.036	0.004
43	3.58	0.17	0.040	(0.400)	0.036	0.004
44	3.67	0.17	0.040	(0.399)	0.036	0.004
45	3.75	0.17	0.040	(0.397)	0.036	0.004
46	3.83	0.20	0.048	(0.395)	0.043	0.005
47	3.92	0.20	0.048	(0.394)	0.043	0.005
48	4.00	0.20	0.048	(0.392)	0.043	0.005
49	4.08	0.20	0.048	(0.390)	0.043	0.005
50	4.17	0.20	0.048	(0.389)	0.043	0.005
51	4.25	0.20	0.048	(0.387)	0.043	0.005
52	4.33	0.23	0.056	(0.385)	0.050	0.006
53	4.42	0.23	0.056	(0.384)	0.050	0.006
54	4.50	0.23	0.056	(0.382)	0.050	0.006
55	4.58	0.23	0.056	(0.381)	0.050	0.006
56	4.67	0.23	0.056	(0.379)	0.050	0.006
57	4.75	0.23	0.056	(0.377)	0.050	0.006
58	4.83	0.27	0.064	(0.376)	0.058	0.006
59	4.92	0.27	0.064	(0.374)	0.058	0.006
60	5.00	0.27	0.064	(0.372)	0.058	0.006
61	5.08	0.20	0.048	(0.371)	0.043	0.005

62	5.17	0.20	0.048	(0.369)	0.043	0.005
63	5.25	0.20	0.048	(0.368)	0.043	0.005
64	5.33	0.23	0.056	(0.366)	0.050	0.006
65	5.42	0.23	0.056	(0.364)	0.050	0.006
66	5.50	0.23	0.056	(0.363)	0.050	0.006
67	5.58	0.27	0.064	(0.361)	0.058	0.006
68	5.67	0.27	0.064	(0.360)	0.058	0.006
69	5.75	0.27	0.064	(0.358)	0.058	0.006
70	5.83	0.27	0.064	(0.356)	0.058	0.006
71	5.92	0.27	0.064	(0.355)	0.058	0.006
72	6.00	0.27	0.064	(0.353)	0.058	0.006
73	6.08	0.30	0.072	(0.352)	0.065	0.007
74	6.17	0.30	0.072	(0.350)	0.065	0.007
75	6.25	0.30	0.072	(0.349)	0.065	0.007
76	6.33	0.30	0.072	(0.347)	0.065	0.007
77	6.42	0.30	0.072	(0.345)	0.065	0.007
78	6.50	0.30	0.072	(0.344)	0.065	0.007
79	6.58	0.33	0.080	(0.342)	0.072	0.008
80	6.67	0.33	0.080	(0.341)	0.072	0.008
81	6.75	0.33	0.080	(0.339)	0.072	0.008
82	6.83	0.33	0.080	(0.338)	0.072	0.008
83	6.92	0.33	0.080	(0.336)	0.072	0.008
84	7.00	0.33	0.080	(0.335)	0.072	0.008
85	7.08	0.33	0.080	(0.333)	0.072	0.008
86	7.17	0.33	0.080	(0.332)	0.072	0.008
87	7.25	0.33	0.080	(0.330)	0.072	0.008
88	7.33	0.37	0.088	(0.329)	0.079	0.009
89	7.42	0.37	0.088	(0.327)	0.079	0.009
90	7.50	0.37	0.088	(0.326)	0.079	0.009
91	7.58	0.40	0.096	(0.324)	0.086	0.010
92	7.67	0.40	0.096	(0.323)	0.086	0.010
93	7.75	0.40	0.096	(0.321)	0.086	0.010
94	7.83	0.43	0.104	(0.320)	0.094	0.010
95	7.92	0.43	0.104	(0.318)	0.094	0.010
96	8.00	0.43	0.104	(0.317)	0.094	0.010
97	8.08	0.50	0.120	(0.315)	0.108	0.012
98	8.17	0.50	0.120	(0.314)	0.108	0.012
99	8.25	0.50	0.120	(0.312)	0.108	0.012
100	8.33	0.50	0.120	(0.311)	0.108	0.012
101	8.42	0.50	0.120	(0.309)	0.108	0.012
102	8.50	0.50	0.120	(0.308)	0.108	0.012
103	8.58	0.53	0.128	(0.306)	0.115	0.013
104	8.67	0.53	0.128	(0.305)	0.115	0.013
105	8.75	0.53	0.128	(0.304)	0.115	0.013
106	8.83	0.57	0.136	(0.302)	0.122	0.014
107	8.92	0.57	0.136	(0.301)	0.122	0.014
108	9.00	0.57	0.136	(0.299)	0.122	0.014
109	9.08	0.63	0.152	(0.298)	0.137	0.015
110	9.17	0.63	0.152	(0.296)	0.137	0.015
111	9.25	0.63	0.152	(0.295)	0.137	0.015
112	9.33	0.67	0.160	(0.294)	0.144	0.016
113	9.42	0.67	0.160	(0.292)	0.144	0.016
114	9.50	0.67	0.160	(0.291)	0.144	0.016
115	9.58	0.70	0.168	(0.289)	0.151	0.017
116	9.67	0.70	0.168	(0.288)	0.151	0.017
117	9.75	0.70	0.168	(0.287)	0.151	0.017
118	9.83	0.73	0.176	(0.285)	0.158	0.018
119	9.92	0.73	0.176	(0.284)	0.158	0.018
120	10.00	0.73	0.176	(0.283)	0.158	0.018
121	10.08	0.50	0.120	(0.281)	0.108	0.012
122	10.17	0.50	0.120	(0.280)	0.108	0.012
123	10.25	0.50	0.120	(0.278)	0.108	0.012
124	10.33	0.50	0.120	(0.277)	0.108	0.012
125	10.42	0.50	0.120	(0.276)	0.108	0.012
126	10.50	0.50	0.120	(0.274)	0.108	0.012
127	10.58	0.67	0.160	(0.273)	0.144	0.016
128	10.67	0.67	0.160	(0.272)	0.144	0.016
129	10.75	0.67	0.160	(0.270)	0.144	0.016
130	10.83	0.67	0.160	(0.269)	0.144	0.016
131	10.92	0.67	0.160	(0.268)	0.144	0.016
132	11.00	0.67	0.160	(0.266)	0.144	0.016
133	11.08	0.63	0.152	(0.265)	0.137	0.015
134	11.17	0.63	0.152	(0.264)	0.137	0.015
135	11.25	0.63	0.152	(0.263)	0.137	0.015
136	11.33	0.63	0.152	(0.261)	0.137	0.015
137	11.42	0.63	0.152	(0.260)	0.137	0.015
138	11.50	0.63	0.152	(0.259)	0.137	0.015
139	11.58	0.57	0.136	(0.257)	0.122	0.014
140	11.67	0.57	0.136	(0.256)	0.122	0.014
141	11.75	0.57	0.136	(0.255)	0.122	0.014
142	11.83	0.60	0.144	(0.254)	0.130	0.014
143	11.92	0.60	0.144	(0.252)	0.130	0.014
144	12.00	0.60	0.144	(0.251)	0.130	0.014
145	12.08	0.83	0.200	(0.250)	0.180	0.020

146	12.17	0.83	0.200	(	0.249)		0.180		0.020
147	12.25	0.83	0.200	(	0.247)		0.180		0.020
148	12.33	0.87	0.208	(	0.246)		0.187		0.021
149	12.42	0.87	0.208	(	0.245)		0.187		0.021
150	12.50	0.87	0.208	(	0.244)		0.187		0.021
151	12.58	0.93	0.224	(	0.242)		0.202		0.022
152	12.67	0.93	0.224	(	0.241)		0.202		0.022
153	12.75	0.93	0.224	(	0.240)		0.202		0.022
154	12.83	0.97	0.232	(	0.239)		0.209		0.023
155	12.92	0.97	0.232	(	0.238)		0.209		0.023
156	13.00	0.97	0.232	(	0.236)		0.209		0.023
157	13.08	1.13	0.272		0.235	(	0.245)		0.037
158	13.17	1.13	0.272		0.234	(	0.245)		0.038
159	13.25	1.13	0.272		0.233	(	0.245)		0.039
160	13.33	1.13	0.272		0.232	(	0.245)		0.040
161	13.42	1.13	0.272		0.230	(	0.245)		0.042
162	13.50	1.13	0.272		0.229	(	0.245)		0.043
163	13.58	0.77	0.184	(	0.228)		0.166		0.018
164	13.67	0.77	0.184	(	0.227)		0.166		0.018
165	13.75	0.77	0.184	(	0.226)		0.166		0.018
166	13.83	0.77	0.184	(	0.225)		0.166		0.018
167	13.92	0.77	0.184	(	0.223)		0.166		0.018
168	14.00	0.77	0.184	(	0.222)		0.166		0.018
169	14.08	0.90	0.216	(	0.221)		0.194		0.022
170	14.17	0.90	0.216	(	0.220)		0.194		0.022
171	14.25	0.90	0.216	(	0.219)		0.194		0.022
172	14.33	0.87	0.208	(	0.218)		0.187		0.021
173	14.42	0.87	0.208	(	0.217)		0.187		0.021
174	14.50	0.87	0.208	(	0.216)		0.187		0.021
175	14.58	0.87	0.208	(	0.214)		0.187		0.021
176	14.67	0.87	0.208	(	0.213)		0.187		0.021
177	14.75	0.87	0.208	(	0.212)		0.187		0.021
178	14.83	0.83	0.200	(	0.211)		0.180		0.020
179	14.92	0.83	0.200	(	0.210)		0.180		0.020
180	15.00	0.83	0.200	(	0.209)		0.180		0.020
181	15.08	0.80	0.192	(	0.208)		0.173		0.019
182	15.17	0.80	0.192	(	0.207)		0.173		0.019
183	15.25	0.80	0.192	(	0.206)		0.173		0.019
184	15.33	0.77	0.184	(	0.205)		0.166		0.018
185	15.42	0.77	0.184	(	0.204)		0.166		0.018
186	15.50	0.77	0.184	(	0.203)		0.166		0.018
187	15.58	0.63	0.152	(	0.202)		0.137		0.015
188	15.67	0.63	0.152	(	0.201)		0.137		0.015
189	15.75	0.63	0.152	(	0.200)		0.137		0.015
190	15.83	0.63	0.152	(	0.199)		0.137		0.015
191	15.92	0.63	0.152	(	0.198)		0.137		0.015
192	16.00	0.63	0.152	(	0.197)		0.137		0.015
193	16.08	0.13	0.032	(	0.196)		0.029		0.003
194	16.17	0.13	0.032	(	0.195)		0.029		0.003
195	16.25	0.13	0.032	(	0.194)		0.029		0.003
196	16.33	0.13	0.032	(	0.193)		0.029		0.003
197	16.42	0.13	0.032	(	0.192)		0.029		0.003
198	16.50	0.13	0.032	(	0.191)		0.029		0.003
199	16.58	0.10	0.024	(	0.190)		0.022		0.002
200	16.67	0.10	0.024	(	0.189)		0.022		0.002
201	16.75	0.10	0.024	(	0.188)		0.022		0.002
202	16.83	0.10	0.024	(	0.187)		0.022		0.002
203	16.92	0.10	0.024	(	0.186)		0.022		0.002
204	17.00	0.10	0.024	(	0.185)		0.022		0.002
205	17.08	0.17	0.040	(	0.184)		0.036		0.004
206	17.17	0.17	0.040	(	0.183)		0.036		0.004
207	17.25	0.17	0.040	(	0.182)		0.036		0.004
208	17.33	0.17	0.040	(	0.181)		0.036		0.004
209	17.42	0.17	0.040	(	0.180)		0.036		0.004
210	17.50	0.17	0.040	(	0.179)		0.036		0.004
211	17.58	0.17	0.040	(	0.178)		0.036		0.004
212	17.67	0.17	0.040	(	0.178)		0.036		0.004
213	17.75	0.17	0.040	(	0.177)		0.036		0.004
214	17.83	0.13	0.032	(	0.176)		0.029		0.003
215	17.92	0.13	0.032	(	0.175)		0.029		0.003
216	18.00	0.13	0.032	(	0.174)		0.029		0.003
217	18.08	0.13	0.032	(	0.173)		0.029		0.003
218	18.17	0.13	0.032	(	0.172)		0.029		0.003
219	18.25	0.13	0.032	(	0.172)		0.029		0.003
220	18.33	0.13	0.032	(	0.171)		0.029		0.003
221	18.42	0.13	0.032	(	0.170)		0.029		0.003
222	18.50	0.13	0.032	(	0.169)		0.029		0.003
223	18.58	0.10	0.024	(	0.168)		0.022		0.002
224	18.67	0.10	0.024	(	0.167)		0.022		0.002
225	18.75	0.10	0.024	(	0.167)		0.022		0.002
226	18.83	0.07	0.016	(	0.166)		0.014		0.002
227	18.92	0.07	0.016	(	0.165)		0.014		0.002
228	19.00	0.07	0.016	(	0.164)		0.014		0.002
229	19.08	0.10	0.024	(	0.163)		0.022		0.002

230	19.17	0.10	0.024	(	0.163)	0.022	0.002
231	19.25	0.10	0.024	(	0.162)	0.022	0.002
232	19.33	0.13	0.032	(	0.161)	0.029	0.003
233	19.42	0.13	0.032	(	0.160)	0.029	0.003
234	19.50	0.13	0.032	(	0.160)	0.029	0.003
235	19.58	0.10	0.024	(	0.159)	0.022	0.002
236	19.67	0.10	0.024	(	0.158)	0.022	0.002
237	19.75	0.10	0.024	(	0.157)	0.022	0.002
238	19.83	0.07	0.016	(	0.157)	0.014	0.002
239	19.92	0.07	0.016	(	0.156)	0.014	0.002
240	20.00	0.07	0.016	(	0.155)	0.014	0.002
241	20.08	0.10	0.024	(	0.155)	0.022	0.002
242	20.17	0.10	0.024	(	0.154)	0.022	0.002
243	20.25	0.10	0.024	(	0.153)	0.022	0.002
244	20.33	0.10	0.024	(	0.153)	0.022	0.002
245	20.42	0.10	0.024	(	0.152)	0.022	0.002
246	20.50	0.10	0.024	(	0.151)	0.022	0.002
247	20.58	0.10	0.024	(	0.151)	0.022	0.002
248	20.67	0.10	0.024	(	0.150)	0.022	0.002
249	20.75	0.10	0.024	(	0.150)	0.022	0.002
250	20.83	0.07	0.016	(	0.149)	0.014	0.002
251	20.92	0.07	0.016	(	0.148)	0.014	0.002
252	21.00	0.07	0.016	(	0.148)	0.014	0.002
253	21.08	0.10	0.024	(	0.147)	0.022	0.002
254	21.17	0.10	0.024	(	0.147)	0.022	0.002
255	21.25	0.10	0.024	(	0.146)	0.022	0.002
256	21.33	0.07	0.016	(	0.145)	0.014	0.002
257	21.42	0.07	0.016	(	0.145)	0.014	0.002
258	21.50	0.07	0.016	(	0.144)	0.014	0.002
259	21.58	0.10	0.024	(	0.144)	0.022	0.002
260	21.67	0.10	0.024	(	0.143)	0.022	0.002
261	21.75	0.10	0.024	(	0.143)	0.022	0.002
262	21.83	0.07	0.016	(	0.142)	0.014	0.002
263	21.92	0.07	0.016	(	0.142)	0.014	0.002
264	22.00	0.07	0.016	(	0.141)	0.014	0.002
265	22.08	0.10	0.024	(	0.141)	0.022	0.002
266	22.17	0.10	0.024	(	0.140)	0.022	0.002
267	22.25	0.10	0.024	(	0.140)	0.022	0.002
268	22.33	0.07	0.016	(	0.139)	0.014	0.002
269	22.42	0.07	0.016	(	0.139)	0.014	0.002
270	22.50	0.07	0.016	(	0.139)	0.014	0.002
271	22.58	0.07	0.016	(	0.138)	0.014	0.002
272	22.67	0.07	0.016	(	0.138)	0.014	0.002
273	22.75	0.07	0.016	(	0.137)	0.014	0.002
274	22.83	0.07	0.016	(	0.137)	0.014	0.002
275	22.92	0.07	0.016	(	0.137)	0.014	0.002
276	23.00	0.07	0.016	(	0.136)	0.014	0.002
277	23.08	0.07	0.016	(	0.136)	0.014	0.002
278	23.17	0.07	0.016	(	0.136)	0.014	0.002
279	23.25	0.07	0.016	(	0.136)	0.014	0.002
280	23.33	0.07	0.016	(	0.135)	0.014	0.002
281	23.42	0.07	0.016	(	0.135)	0.014	0.002
282	23.50	0.07	0.016	(	0.135)	0.014	0.002
283	23.58	0.07	0.016	(	0.135)	0.014	0.002
284	23.67	0.07	0.016	(	0.134)	0.014	0.002
285	23.75	0.07	0.016	(	0.134)	0.014	0.002
286	23.83	0.07	0.016	(	0.134)	0.014	0.002
287	23.92	0.07	0.016	(	0.134)	0.014	0.002
288	24.00	0.07	0.016	(	0.134)	0.014	0.002

(Loss Rate Not Used)

Sum = 100.0 Sum = 2.5

Flood volume = Effective rainfall 0.21(In)
times area 8.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 1.79(In)
Total soil loss = 1.256(Ac.Ft)
Total rainfall = 2.00(In)
Flood volume = 6291.1 Cubic Feet
Total soil loss = 54691.9 Cubic Feet

Peak flow rate of this hydrograph = 0.351(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

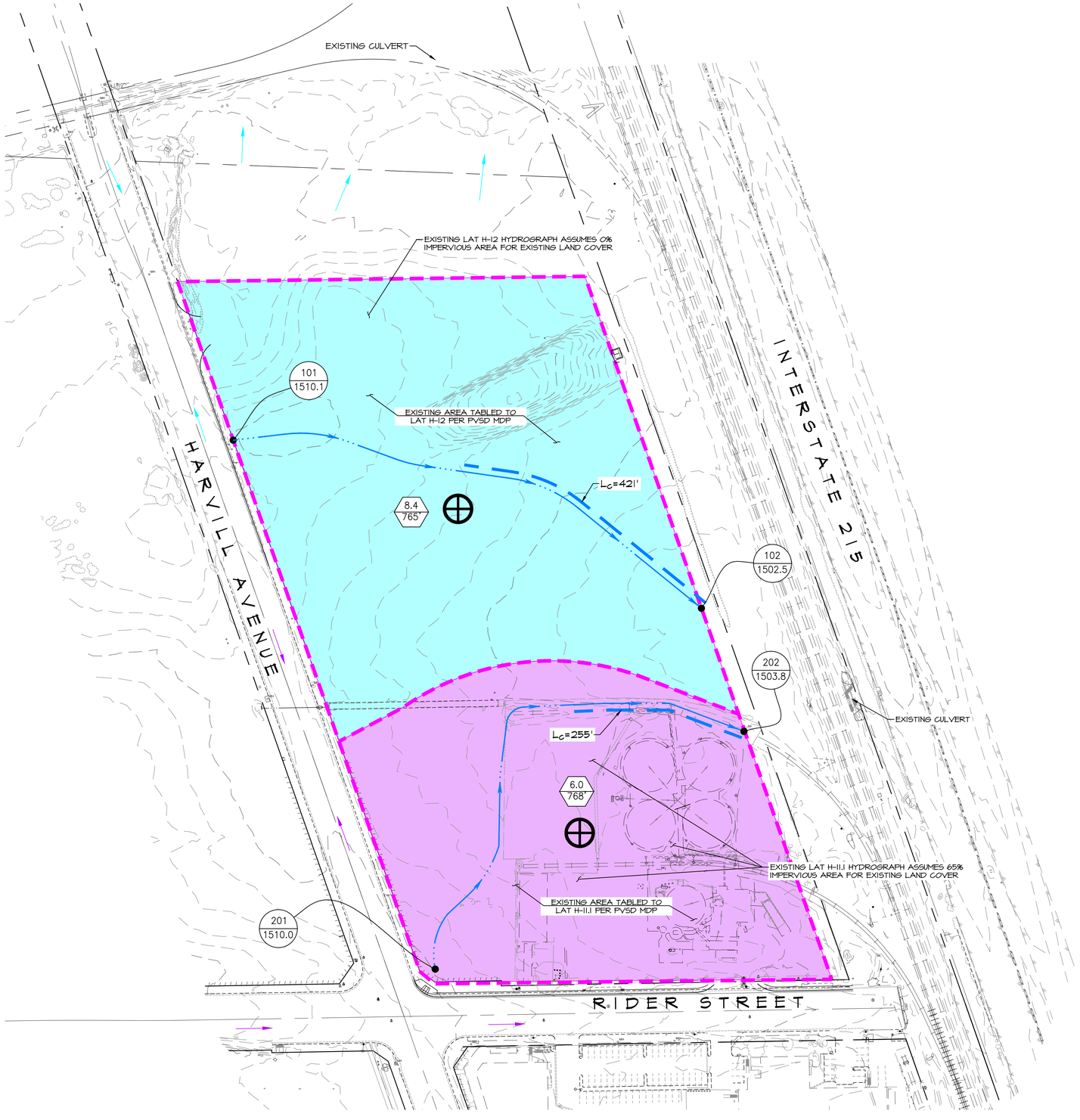
Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0001	0.01	Q	|	|	|	|
0+15	0.0002	0.01	Q	|	|	|	|
0+20	0.0003	0.01	Q	|	|	|	|

0+25	0.0004	0.02	Q	|	|	|	|
0+30	0.0005	0.02	Q	|	|	|	|
0+35	0.0007	0.02	Q	|	|	|	|
0+40	0.0008	0.02	Q	|	|	|	|
0+45	0.0010	0.02	Q	|	|	|	|
0+50	0.0011	0.02	Q	|	|	|	|
0+55	0.0013	0.03	Q	|	|	|	|
1+ 0	0.0015	0.03	Q	|	|	|	|
1+ 5	0.0016	0.02	Q	|	|	|	|
1+10	0.0018	0.02	Q	|	|	|	|
1+15	0.0019	0.02	Q	|	|	|	|
1+20	0.0021	0.02	Q	|	|	|	|
1+25	0.0022	0.02	Q	|	|	|	|
1+30	0.0024	0.02	Q	|	|	|	|
1+35	0.0025	0.02	Q	|	|	|	|
1+40	0.0026	0.02	Q	|	|	|	|
1+45	0.0028	0.02	Q	|	|	|	|
1+50	0.0029	0.02	Q	|	|	|	|
1+55	0.0031	0.03	Q	|	|	|	|
2+ 0	0.0033	0.03	Q	|	|	|	|
2+ 5	0.0035	0.03	Q	|	|	|	|
2+10	0.0037	0.03	QV	|	|	|	|
2+15	0.0039	0.03	QV	|	|	|	|
2+20	0.0040	0.03	QV	|	|	|	|
2+25	0.0042	0.03	QV	|	|	|	|
2+30	0.0044	0.03	QV	|	|	|	|
2+35	0.0046	0.03	QV	|	|	|	|
2+40	0.0048	0.03	QV	|	|	|	|
2+45	0.0051	0.03	QV	|	|	|	|
2+50	0.0053	0.03	QV	|	|	|	|
2+55	0.0055	0.03	QV	|	|	|	|
3+ 0	0.0058	0.03	QV	|	|	|	|
3+ 5	0.0060	0.03	QV	|	|	|	|
3+10	0.0062	0.03	QV	|	|	|	|
3+15	0.0065	0.03	QV	|	|	|	|
3+20	0.0067	0.03	QV	|	|	|	|
3+25	0.0069	0.03	QV	|	|	|	|
3+30	0.0072	0.03	QV	|	|	|	|
3+35	0.0074	0.03	Q V	|	|	|	|
3+40	0.0076	0.03	Q V	|	|	|	|
3+45	0.0079	0.03	Q V	|	|	|	|
3+50	0.0081	0.04	Q V	|	|	|	|
3+55	0.0084	0.04	Q V	|	|	|	|
4+ 0	0.0086	0.04	Q V	|	|	|	|
4+ 5	0.0089	0.04	Q V	|	|	|	|
4+10	0.0092	0.04	Q V	|	|	|	|
4+15	0.0095	0.04	Q V	|	|	|	|
4+20	0.0098	0.04	Q V	|	|	|	|
4+25	0.0101	0.05	Q V	|	|	|	|
4+30	0.0104	0.05	Q V	|	|	|	|
4+35	0.0107	0.05	Q V	|	|	|	|
4+40	0.0111	0.05	Q V	|	|	|	|
4+45	0.0114	0.05	Q V	|	|	|	|
4+50	0.0117	0.05	Q V	|	|	|	|
4+55	0.0121	0.05	Q V	|	|	|	|
5+ 0	0.0125	0.05	Q V	|	|	|	|
5+ 5	0.0128	0.05	Q V	|	|	|	|
5+10	0.0131	0.04	Q V	|	|	|	|
5+15	0.0134	0.04	Q V	|	|	|	|
5+20	0.0137	0.04	Q V	|	|	|	|
5+25	0.0140	0.05	Q V	|	|	|	|
5+30	0.0143	0.05	Q V	|	|	|	|
5+35	0.0147	0.05	Q V	|	|	|	|
5+40	0.0150	0.05	Q V	|	|	|	|
5+45	0.0154	0.05	Q V	|	|	|	|
5+50	0.0158	0.05	Q V	|	|	|	|
5+55	0.0161	0.05	Q V	|	|	|	|
6+ 0	0.0165	0.05	Q V	|	|	|	|
6+ 5	0.0169	0.06	Q V	|	|	|	|
6+10	0.0173	0.06	Q V	|	|	|	|
6+15	0.0177	0.06	Q V	|	|	|	|
6+20	0.0182	0.06	Q V	|	|	|	|
6+25	0.0186	0.06	Q V	|	|	|	|
6+30	0.0190	0.06	Q V	|	|	|	|
6+35	0.0194	0.06	Q V	|	|	|	|
6+40	0.0199	0.07	Q V	|	|	|	|
6+45	0.0203	0.07	Q V	|	|	|	|
6+50	0.0208	0.07	Q V	|	|	|	|
6+55	0.0213	0.07	Q V	|	|	|	|
7+ 0	0.0217	0.07	Q V	|	|	|	|
7+ 5	0.0222	0.07	Q V	|	|	|	|
7+10	0.0227	0.07	Q V	|	|	|	|
7+15	0.0231	0.07	Q V	|	|	|	|
7+20	0.0236	0.07	Q V	|	|	|	|

```
 7+25       0.0241      0.07  Q     V   |          |          |          |
 7+30       0.0246      0.07  Q     V   |          |          |          |
 7+35       0.0252      0.08  Q     V   |          |          |          |
 7+40       0.0257      0.08  Q      V  |          |          |          |
 7+45       0.0263      0.08  Q      V  |          |          |          |
 7+50       0.0268      0.08  Q      V  |          |          |          |
 7+55       0.0274      0.09  Q      V  |          |          |          |
 8+ 0       0.0280      0.09  Q      V  |          |          |          |
 8+ 5       0.0287      0.09  Q      V  |          |          |          |
 8+10       0.0293      0.10  Q       V |          |          |          |
 8+15       0.0300      0.10  Q       V |          |          |          |
 8+20       0.0307      0.10  Q       V |          |          |          |
 8+25       0.0314      0.10  Q       V |          |          |          |
 8+30       0.0321      0.10  Q       V |          |          |          |
 8+35       0.0328      0.10  Q        V|          |          |          |
 8+40       0.0336      0.11  Q        V|          |          |          |
 8+45       0.0343      0.11  Q        V|          |          |          |
 8+50       0.0351      0.11  Q        V|          |          |          |
 8+55       0.0358      0.11  Q        V|          |          |          |
 9+ 0       0.0366      0.11  Q         V          |          |          |
 9+ 5       0.0375      0.12  Q         V          |          |          |
 9+10       0.0383      0.13  Q         V          |          |          |
 9+15       0.0392      0.13  Q         V          |          |          |
 9+20       0.0401      0.13  Q         |V         |          |          |
 9+25       0.0410      0.13  Q         |V         |          |          |
 9+30       0.0419      0.13  Q         |V         |          |          |
 9+35       0.0429      0.14  Q         |V         |          |          |
 9+40       0.0439      0.14  Q         | V        |          |          |
 9+45       0.0448      0.14  Q         | V        |          |          |
 9+50       0.0458      0.14  Q         | V        |          |          |
 9+55       0.0468      0.15  Q         | V        |          |          |
10+ 0       0.0479      0.15  Q         |  V       |          |          |
10+ 5       0.0488      0.13  Q         |  V       |          |          |
10+10       0.0496      0.11  Q         |  V       |          |          |
10+15       0.0503      0.11  Q         |  V       |          |          |
10+20       0.0510      0.10  Q         |   V      |          |          |
10+25       0.0517      0.10  Q         |   V      |          |          |
10+30       0.0524      0.10  Q         |   V      |          |          |
10+35       0.0532      0.11  Q         |   V      |          |          |
10+40       0.0541      0.13  Q         |   V      |          |          |
10+45       0.0550      0.13  Q         |    V     |          |          |
10+50       0.0559      0.13  Q         |    V     |          |          |
10+55       0.0568      0.13  Q         |    V     |          |          |
11+ 0       0.0578      0.14  Q         |    V     |          |          |
11+ 5       0.0587      0.13  Q         |     V    |          |          |
11+10       0.0596      0.13  Q         |     V    |          |          |
11+15       0.0605      0.13  Q         |     V    |          |          |
11+20       0.0614      0.13  Q         |     V    |          |          |
11+25       0.0622      0.13  Q         |      V   |          |          |
11+30       0.0631      0.13  Q         |      V   |          |          |
11+35       0.0640      0.12  Q         |      V   |          |          |
11+40       0.0648      0.12  Q         |      V   |          |          |
11+45       0.0656      0.12  Q         |       V  |          |          |
11+50       0.0664      0.12  Q         |       V  |          |          |
11+55       0.0672      0.12  Q         |       V  |          |          |
12+ 0       0.0681      0.12  Q         |       V  |          |          |
12+ 5       0.0690      0.14  Q         |        V |          |          |
12+10       0.0701      0.16  Q         |        V |          |          |
12+15       0.0712      0.16  Q         |        V |          |          |
12+20       0.0724      0.17  Q         |         V          |          |
12+25       0.0736      0.17  Q         |         V          |          |
12+30       0.0748      0.18  Q         |         V          |          |
12+35       0.0760      0.18  Q         |         |V         |          |
12+40       0.0773      0.19  Q         |         |V         |          |
12+45       0.0786      0.19  Q         |         |V         |          |
12+50       0.0799      0.19  Q         |         | V        |          |
12+55       0.0813      0.19  Q         |         | V        |          |
13+ 0       0.0826      0.20  Q         |         | V        |          |
13+ 5       0.0842      0.23  Q         |         |  V       |          |
13+10       0.0862      0.29  |Q        |         |  V       |          |
13+15       0.0883      0.31  |Q        |         |   V      |          |
13+20       0.0906      0.33  |Q        |         |    V     |          |
13+25       0.0929      0.34  |Q        |         |    V     |          |
13+30       0.0953      0.35  |Q        |         |     V    |          |
13+35       0.0974      0.30  |Q        |         |     V    |          |
13+40       0.0988      0.20  Q         |         |      V   |          |
13+45       0.1000      0.18  Q         |         |      V   |          |
13+50       0.1011      0.17  Q         |         |       V  |          |
13+55       0.1022      0.16  Q         |         |       V  |          |
14+ 0       0.1033      0.16  Q         |         |       V  |          |
14+ 5       0.1045      0.16  Q         |         |       V  |          |
14+10       0.1057      0.18  Q         |         |        V |          |
14+15       0.1069      0.18  Q         |         |        V |          |
14+20       0.1081      0.18  Q         |         |        V |          |
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14+25       0.1094      0.18  Q          |           |          V          |
14+30       0.1106      0.18  Q          |           |          V          |
14+35       0.1118      0.18  Q          |           |          V          |
14+40       0.1130      0.18  Q          |           |          |V         |
14+45       0.1142      0.18  Q          |           |          |V         |
14+50       0.1154      0.17  Q          |           |          |V         |
14+55       0.1166      0.17  Q          |           |          | V        |
15+ 0       0.1178      0.17  Q          |           |          | V        |
15+ 5       0.1189      0.17  Q          |           |          | V        |
15+10       0.1201      0.16  Q          |           |          |  V       |
15+15       0.1212      0.16  Q          |           |          |  V       |
15+20       0.1223      0.16  Q          |           |          |  V       |
15+25       0.1234      0.16  Q          |           |          |   V      |
15+30       0.1245      0.16  Q          |           |          |   V      |
15+35       0.1255      0.15  Q          |           |          |   V      |
15+40       0.1264      0.14  Q          |           |          |    V     |
15+45       0.1273      0.13  Q          |           |          |    V     |
15+50       0.1282      0.13  Q          |           |          |    V     |
15+55       0.1291      0.13  Q          |           |          |    V     |
16+ 0       0.1300      0.13  Q          |           |          |     V    |
16+ 5       0.1307      0.10  Q          |           |          |     V    |
16+10       0.1310      0.05  Q          |           |          |     V    |
16+15       0.1313      0.04  Q          |           |          |     V    |
16+20       0.1315      0.03  Q          |           |          |     V    |
16+25       0.1317      0.03  Q          |           |          |     V    |
16+30       0.1319      0.03  Q          |           |          |     V    |
16+35       0.1321      0.03  Q          |           |          |     V    |
16+40       0.1322      0.02  Q          |           |          |     V    |
16+45       0.1324      0.02  Q          |           |          |     V    |
16+50       0.1325      0.02  Q          |           |          |     V    |
16+55       0.1326      0.02  Q          |           |          |     V    |
17+ 0       0.1328      0.02  Q          |           |          |     V    |
17+ 5       0.1330      0.02  Q          |           |          |     V    |
17+10       0.1332      0.03  Q          |           |          |     V    |
17+15       0.1334      0.03  Q          |           |          |     V    |
17+20       0.1336      0.03  Q          |           |          |      V   |
17+25       0.1338      0.03  Q          |           |          |      V   |
17+30       0.1341      0.03  Q          |           |          |      V   |
17+35       0.1343      0.03  Q          |           |          |      V   |
17+40       0.1345      0.03  Q          |           |          |      V   |
17+45       0.1348      0.03  Q          |           |          |      V   |
17+50       0.1350      0.03  Q          |           |          |      V   |
17+55       0.1352      0.03  Q          |           |          |      V   |
18+ 0       0.1354      0.03  Q          |           |          |      V   |
18+ 5       0.1356      0.03  Q          |           |          |      V   |
18+10       0.1358      0.03  Q          |           |          |      V   |
18+15       0.1360      0.03  Q          |           |          |      V   |
18+20       0.1361      0.03  Q          |           |          |      V   |
18+25       0.1363      0.03  Q          |           |          |      V   |
18+30       0.1365      0.03  Q          |           |          |      V   |
18+35       0.1367      0.03  Q          |           |          |      V   |
18+40       0.1368      0.02  Q          |           |          |      V   |
18+45       0.1370      0.02  Q          |           |          |      V   |
18+50       0.1371      0.02  Q          |           |          |      V   |
18+55       0.1372      0.02  Q          |           |          |       V  |
19+ 0       0.1373      0.01  Q          |           |          |       V  |
19+ 5       0.1374      0.02  Q          |           |          |       V  |
19+10       0.1376      0.02  Q          |           |          |       V  |
19+15       0.1377      0.02  Q          |           |          |       V  |
19+20       0.1378      0.02  Q          |           |          |       V  |
19+25       0.1380      0.03  Q          |           |          |       V  |
19+30       0.1382      0.03  Q          |           |          |       V  |
19+35       0.1384      0.02  Q          |           |          |       V  |
19+40       0.1385      0.02  Q          |           |          |       V  |
19+45       0.1387      0.02  Q          |           |          |       V  |
19+50       0.1388      0.02  Q          |           |          |       V  |
19+55       0.1389      0.02  Q          |           |          |       V  |
20+ 0       0.1390      0.01  Q          |           |          |       V  |
20+ 5       0.1391      0.02  Q          |           |          |       V  |
20+10       0.1392      0.02  Q          |           |          |       V  |
20+15       0.1394      0.02  Q          |           |          |       V  |
20+20       0.1395      0.02  Q          |           |          |       V  |
20+25       0.1396      0.02  Q          |           |          |       V  |
20+30       0.1398      0.02  Q          |           |          |       V  |
20+35       0.1399      0.02  Q          |           |          |       V  |
20+40       0.1401      0.02  Q          |           |          |       V  |
20+45       0.1402      0.02  Q          |           |          |       V  |
20+50       0.1403      0.02  Q          |           |          |       V  |
20+55       0.1404      0.02  Q          |           |          |       V  |
21+ 0       0.1405      0.01  Q          |           |          |       V  |
21+ 5       0.1406      0.02  Q          |           |          |       V  |
21+10       0.1408      0.02  Q          |           |          |       V  |
21+15       0.1409      0.02  Q          |           |          |        V |
21+20       0.1410      0.02  Q          |           |          |        V |
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21+25	0.1411	0.01	Q	|	|	|	V|
21+30	0.1412	0.01	Q	|	|	|	V|
21+35	0.1413	0.02	Q	|	|	|	V|
21+40	0.1415	0.02	Q	|	|	|	V|
21+45	0.1416	0.02	Q	|	|	|	V|
21+50	0.1417	0.02	Q	|	|	|	V|
21+55	0.1418	0.01	Q	|	|	|	V|
22+ 0	0.1419	0.01	Q	|	|	|	V|
22+ 5	0.1420	0.02	Q	|	|	|	V|
22+10	0.1422	0.02	Q	|	|	|	V|
22+15	0.1423	0.02	Q	|	|	|	V|
22+20	0.1424	0.02	Q	|	|	|	V|
22+25	0.1425	0.01	Q	|	|	|	V|
22+30	0.1426	0.01	Q	|	|	|	V|
22+35	0.1427	0.01	Q	|	|	|	V|
22+40	0.1428	0.01	Q	|	|	|	V|
22+45	0.1429	0.01	Q	|	|	|	V|
22+50	0.1430	0.01	Q	|	|	|	V|
22+55	0.1431	0.01	Q	|	|	|	V|
23+ 0	0.1432	0.01	Q	|	|	|	V|
23+ 5	0.1433	0.01	Q	|	|	|	V|
23+10	0.1434	0.01	Q	|	|	|	V|
23+15	0.1435	0.01	Q	|	|	|	V|
23+20	0.1436	0.01	Q	|	|	|	V|
23+25	0.1437	0.01	Q	|	|	|	V|
23+30	0.1438	0.01	Q	|	|	|	V|
23+35	0.1439	0.01	Q	|	|	|	V|
23+40	0.1439	0.01	Q	|	|	|	V|
23+45	0.1440	0.01	Q	|	|	|	V|
23+50	0.1441	0.01	Q	|	|	|	V|
23+55	0.1442	0.01	Q	|	|	|	V|
24+ 0	0.1443	0.01	Q	|	|	|	V|
24+ 5	0.1444	0.01	Q	|	|	|	V|
24+10	0.1444	0.00	Q	|	|	|	V|
24+15	0.1444	0.00	Q	|	|	|	V|
24+20	0.1444	0.00	Q	|	|	|	V|
24+25	0.1444	0.00	Q	|	|	|	V



LEGEND

- DRAINAGE BOUNDARY
- FLOW DIRECTION
- AREA TRIBUTARY TO H-I1.1
- AREA TRIBUTARY TO H-I2
- LCA=1000' — CENTROIDAL LENGTH
- 101 / 14xx — NODE DESIGNATION / NODE ELEVATION
- *14XX — *INVERT ELEVATION
- 5.0 / 1000' — WATERSHED AREA (ACRES) / LONGEST WATER PATH (FT)
- CENTROID

N
W WEBB E
S

1" = 80'

40 0 80 160 240

NOTE:

1. THE PROJECT SITE CURRENTLY DRAINS INTO THE EXISTING CULVERTS SHOWN, BUT PER THE PVSD MDP, A PORTION OF THIS PROJECT SITE IS TABULATED TO DRAIN INTO LATERAL H-I1.1.
2. THE PROPOSED SITE WILL MITIGATE FOR INCREASED RUNOFF BASED ON THE EXISTING CONDITION OF THE MDP TRIBUTARY AREAS. PROPOSED AREAS DRAINING TO LAT H-I2 WILL BE ROUTED TO THE HYDROGRAPH OF THE BLUE AREA; PROPOSED AREAS DRAINING TO LAT H-I1.1 WILL BE ROUTED TO THE HYDROGRAPH OF THE PURPLE AREA.

COUNTY OF RIVERSIDE

UNIT HYDROGRAPH HYDROLOGY
EXISTING UNIT HYDROGRAPH
DUKE HARVILL AND RIDER

SCALE: AS SHOWN	ALBERT A. WEBB ASSOCIATES	W.O. 19-0126	
DATE: 11/06/2020	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 1 OF 2 SHEETS	
DESIGNED: TSW			
CHECKED: DJA			
PLN CK REF:		DWG. NO.	
F.B.			

H:\2019\19-0126\DRAINAGE\HYDROLOGY\DWG FOLDER\19-0126-PHYD-UH.DWG 11/12/2020 1:25:53 AM

TM ESW

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 11/11/20 File: ONSITEPOST242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

19-0126 DUKE HARVILL
ONSITE UNIT HYDROGRAPH ANALYSIS
PROPOSED CONDITION H-11.1 TRIBUTARY, 2-YEAR 24-HOUR
FN: ONSITEPOST242.OUT- TSW

Drainage Area = 4.50(Ac.) = 0.007 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 4.50(Ac.) = 0.007 Sq. Mi.
Length along longest watercourse = 1242.00(Ft.)
Length along longest watercourse measured to centroid = 745.00(Ft.)
Length along longest watercourse = 0.235 Mi.
Length along longest watercourse measured to centroid = 0.141 Mi.
Difference in elevation = 6.00(Ft.)
Slope along watercourse = 25.5072 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.20 Min.
25% of lag time = 0.80 Min.
40% of lag time = 1.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
4.50	2.00	9.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
4.50	5.00	22.50

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
4.500	56.00	0.900

Total Area Entered = 4.50(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	36.0	0.706	0.900	0.134	1.000	0.134
					Sum (F) =	0.134

Area averaged mean soil loss (F) (In/Hr) = 0.097
Minimum soil loss rate ((In/Hr)) = 0.049
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	156.242	34.652	1.572
2	0.167	312.485	46.549	2.111
3	0.250	468.727	10.830	0.491
4	0.333	624.969	4.695	0.213
5	0.417	781.211	2.297	0.104
6	0.500	937.454	0.977	0.044
			Sum = 100.000	Sum= 4.535

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.016	(0.172)	0.003	0.013
2	0.17	0.07	0.016	(0.171)	0.003	0.013
3	0.25	0.07	0.016	(0.171)	0.003	0.013
4	0.33	0.10	0.024	(0.170)	0.004	0.020
5	0.42	0.10	0.024	(0.169)	0.004	0.020
6	0.50	0.10	0.024	(0.169)	0.004	0.020
7	0.58	0.10	0.024	(0.168)	0.004	0.020
8	0.67	0.10	0.024	(0.167)	0.004	0.020
9	0.75	0.10	0.024	(0.167)	0.004	0.020
10	0.83	0.13	0.032	(0.166)	0.006	0.026
11	0.92	0.13	0.032	(0.165)	0.006	0.026
12	1.00	0.13	0.032	(0.165)	0.006	0.026
13	1.08	0.10	0.024	(0.164)	0.004	0.020
14	1.17	0.10	0.024	(0.163)	0.004	0.020
15	1.25	0.10	0.024	(0.163)	0.004	0.020
16	1.33	0.10	0.024	(0.162)	0.004	0.020
17	1.42	0.10	0.024	(0.162)	0.004	0.020
18	1.50	0.10	0.024	(0.161)	0.004	0.020
19	1.58	0.10	0.024	(0.160)	0.004	0.020
20	1.67	0.10	0.024	(0.160)	0.004	0.020
21	1.75	0.10	0.024	(0.159)	0.004	0.020
22	1.83	0.13	0.032	(0.158)	0.006	0.026
23	1.92	0.13	0.032	(0.158)	0.006	0.026
24	2.00	0.13	0.032	(0.157)	0.006	0.026
25	2.08	0.13	0.032	(0.156)	0.006	0.026
26	2.17	0.13	0.032	(0.156)	0.006	0.026
27	2.25	0.13	0.032	(0.155)	0.006	0.026
28	2.33	0.13	0.032	(0.155)	0.006	0.026
29	2.42	0.13	0.032	(0.154)	0.006	0.026
30	2.50	0.13	0.032	(0.153)	0.006	0.026
31	2.58	0.17	0.040	(0.153)	0.007	0.033
32	2.67	0.17	0.040	(0.152)	0.007	0.033
33	2.75	0.17	0.040	(0.151)	0.007	0.033
34	2.83	0.17	0.040	(0.151)	0.007	0.033
35	2.92	0.17	0.040	(0.150)	0.007	0.033
36	3.00	0.17	0.040	(0.150)	0.007	0.033
37	3.08	0.17	0.040	(0.149)	0.007	0.033
38	3.17	0.17	0.040	(0.148)	0.007	0.033
39	3.25	0.17	0.040	(0.148)	0.007	0.033
40	3.33	0.17	0.040	(0.147)	0.007	0.033
41	3.42	0.17	0.040	(0.146)	0.007	0.033
42	3.50	0.17	0.040	(0.146)	0.007	0.033
43	3.58	0.17	0.040	(0.145)	0.007	0.033
44	3.67	0.17	0.040	(0.145)	0.007	0.033
45	3.75	0.17	0.040	(0.144)	0.007	0.033
46	3.83	0.20	0.048	(0.143)	0.009	0.039
47	3.92	0.20	0.048	(0.143)	0.009	0.039
48	4.00	0.20	0.048	(0.142)	0.009	0.039
49	4.08	0.20	0.048	(0.142)	0.009	0.039
50	4.17	0.20	0.048	(0.141)	0.009	0.039
51	4.25	0.20	0.048	(0.140)	0.009	0.039
52	4.33	0.23	0.056	(0.140)	0.010	0.046
53	4.42	0.23	0.056	(0.139)	0.010	0.046
54	4.50	0.23	0.056	(0.139)	0.010	0.046
55	4.58	0.23	0.056	(0.138)	0.010	0.046
56	4.67	0.23	0.056	(0.137)	0.010	0.046
57	4.75	0.23	0.056	(0.137)	0.010	0.046
58	4.83	0.27	0.064	(0.136)	0.012	0.052
59	4.92	0.27	0.064	(0.136)	0.012	0.052
60	5.00	0.27	0.064	(0.135)	0.012	0.052
61	5.08	0.20	0.048	(0.134)	0.009	0.039

62	5.17	0.20	0.048	(0.134)	0.009	0.039
63	5.25	0.20	0.048	(0.133)	0.009	0.039
64	5.33	0.23	0.056	(0.133)	0.010	0.046
65	5.42	0.23	0.056	(0.132)	0.010	0.046
66	5.50	0.23	0.056	(0.132)	0.010	0.046
67	5.58	0.27	0.064	(0.131)	0.012	0.052
68	5.67	0.27	0.064	(0.130)	0.012	0.052
69	5.75	0.27	0.064	(0.130)	0.012	0.052
70	5.83	0.27	0.064	(0.129)	0.012	0.052
71	5.92	0.27	0.064	(0.129)	0.012	0.052
72	6.00	0.27	0.064	(0.128)	0.012	0.052
73	6.08	0.30	0.072	(0.128)	0.013	0.059
74	6.17	0.30	0.072	(0.127)	0.013	0.059
75	6.25	0.30	0.072	(0.126)	0.013	0.059
76	6.33	0.30	0.072	(0.126)	0.013	0.059
77	6.42	0.30	0.072	(0.125)	0.013	0.059
78	6.50	0.30	0.072	(0.125)	0.013	0.059
79	6.58	0.33	0.080	(0.124)	0.014	0.066
80	6.67	0.33	0.080	(0.124)	0.014	0.066
81	6.75	0.33	0.080	(0.123)	0.014	0.066
82	6.83	0.33	0.080	(0.122)	0.014	0.066
83	6.92	0.33	0.080	(0.122)	0.014	0.066
84	7.00	0.33	0.080	(0.121)	0.014	0.066
85	7.08	0.33	0.080	(0.121)	0.014	0.066
86	7.17	0.33	0.080	(0.120)	0.014	0.066
87	7.25	0.33	0.080	(0.120)	0.014	0.066
88	7.33	0.37	0.088	(0.119)	0.016	0.072
89	7.42	0.37	0.088	(0.119)	0.016	0.072
90	7.50	0.37	0.088	(0.118)	0.016	0.072
91	7.58	0.40	0.096	(0.118)	0.017	0.079
92	7.67	0.40	0.096	(0.117)	0.017	0.079
93	7.75	0.40	0.096	(0.116)	0.017	0.079
94	7.83	0.43	0.104	(0.116)	0.019	0.085
95	7.92	0.43	0.104	(0.115)	0.019	0.085
96	8.00	0.43	0.104	(0.115)	0.019	0.085
97	8.08	0.50	0.120	(0.114)	0.022	0.098
98	8.17	0.50	0.120	(0.114)	0.022	0.098
99	8.25	0.50	0.120	(0.113)	0.022	0.098
100	8.33	0.50	0.120	(0.113)	0.022	0.098
101	8.42	0.50	0.120	(0.112)	0.022	0.098
102	8.50	0.50	0.120	(0.112)	0.022	0.098
103	8.58	0.53	0.128	(0.111)	0.023	0.105
104	8.67	0.53	0.128	(0.111)	0.023	0.105
105	8.75	0.53	0.128	(0.110)	0.023	0.105
106	8.83	0.57	0.136	(0.110)	0.024	0.112
107	8.92	0.57	0.136	(0.109)	0.024	0.112
108	9.00	0.57	0.136	(0.109)	0.024	0.112
109	9.08	0.63	0.152	(0.108)	0.027	0.125
110	9.17	0.63	0.152	(0.108)	0.027	0.125
111	9.25	0.63	0.152	(0.107)	0.027	0.125
112	9.33	0.67	0.160	(0.107)	0.029	0.131
113	9.42	0.67	0.160	(0.106)	0.029	0.131
114	9.50	0.67	0.160	(0.105)	0.029	0.131
115	9.58	0.70	0.168	(0.105)	0.030	0.138
116	9.67	0.70	0.168	(0.104)	0.030	0.138
117	9.75	0.70	0.168	(0.104)	0.030	0.138
118	9.83	0.73	0.176	(0.103)	0.032	0.144
119	9.92	0.73	0.176	(0.103)	0.032	0.144
120	10.00	0.73	0.176	(0.102)	0.032	0.144
121	10.08	0.50	0.120	(0.102)	0.022	0.098
122	10.17	0.50	0.120	(0.101)	0.022	0.098
123	10.25	0.50	0.120	(0.101)	0.022	0.098
124	10.33	0.50	0.120	(0.101)	0.022	0.098
125	10.42	0.50	0.120	(0.100)	0.022	0.098
126	10.50	0.50	0.120	(0.100)	0.022	0.098
127	10.58	0.67	0.160	(0.099)	0.029	0.131
128	10.67	0.67	0.160	(0.099)	0.029	0.131
129	10.75	0.67	0.160	(0.098)	0.029	0.131
130	10.83	0.67	0.160	(0.098)	0.029	0.131
131	10.92	0.67	0.160	(0.097)	0.029	0.131
132	11.00	0.67	0.160	(0.097)	0.029	0.131
133	11.08	0.63	0.152	(0.096)	0.027	0.125
134	11.17	0.63	0.152	(0.096)	0.027	0.125
135	11.25	0.63	0.152	(0.095)	0.027	0.125
136	11.33	0.63	0.152	(0.095)	0.027	0.125
137	11.42	0.63	0.152	(0.094)	0.027	0.125
138	11.50	0.63	0.152	(0.094)	0.027	0.125
139	11.58	0.57	0.136	(0.093)	0.024	0.112
140	11.67	0.57	0.136	(0.093)	0.024	0.112
141	11.75	0.57	0.136	(0.092)	0.024	0.112
142	11.83	0.60	0.144	(0.092)	0.026	0.118
143	11.92	0.60	0.144	(0.092)	0.026	0.118
144	12.00	0.60	0.144	(0.091)	0.026	0.118
145	12.08	0.83	0.200	(0.091)	0.036	0.164

146	12.17	0.83	0.200	(0.090)	0.036	0.164
147	12.25	0.83	0.200	(0.090)	0.036	0.164
148	12.33	0.87	0.208	(0.089)	0.037	0.171
149	12.42	0.87	0.208	(0.089)	0.037	0.171
150	12.50	0.87	0.208	(0.088)	0.037	0.171
151	12.58	0.93	0.224	(0.088)	0.040	0.184
152	12.67	0.93	0.224	(0.087)	0.040	0.184
153	12.75	0.93	0.224	(0.087)	0.040	0.184
154	12.83	0.97	0.232	(0.087)	0.042	0.190
155	12.92	0.97	0.232	(0.086)	0.042	0.190
156	13.00	0.97	0.232	(0.086)	0.042	0.190
157	13.08	1.13	0.272	(0.085)	0.049	0.223
158	13.17	1.13	0.272	(0.085)	0.049	0.223
159	13.25	1.13	0.272	(0.084)	0.049	0.223
160	13.33	1.13	0.272	(0.084)	0.049	0.223
161	13.42	1.13	0.272	(0.084)	0.049	0.223
162	13.50	1.13	0.272	(0.083)	0.049	0.223
163	13.58	0.77	0.184	(0.083)	0.033	0.151
164	13.67	0.77	0.184	(0.082)	0.033	0.151
165	13.75	0.77	0.184	(0.082)	0.033	0.151
166	13.83	0.77	0.184	(0.081)	0.033	0.151
167	13.92	0.77	0.184	(0.081)	0.033	0.151
168	14.00	0.77	0.184	(0.081)	0.033	0.151
169	14.08	0.90	0.216	(0.080)	0.039	0.177
170	14.17	0.90	0.216	(0.080)	0.039	0.177
171	14.25	0.90	0.216	(0.079)	0.039	0.177
172	14.33	0.87	0.208	(0.079)	0.037	0.171
173	14.42	0.87	0.208	(0.079)	0.037	0.171
174	14.50	0.87	0.208	(0.078)	0.037	0.171
175	14.58	0.87	0.208	(0.078)	0.037	0.171
176	14.67	0.87	0.208	(0.077)	0.037	0.171
177	14.75	0.87	0.208	(0.077)	0.037	0.171
178	14.83	0.83	0.200	(0.077)	0.036	0.164
179	14.92	0.83	0.200	(0.076)	0.036	0.164
180	15.00	0.83	0.200	(0.076)	0.036	0.164
181	15.08	0.80	0.192	(0.075)	0.035	0.157
182	15.17	0.80	0.192	(0.075)	0.035	0.157
183	15.25	0.80	0.192	(0.075)	0.035	0.157
184	15.33	0.77	0.184	(0.074)	0.033	0.151
185	15.42	0.77	0.184	(0.074)	0.033	0.151
186	15.50	0.77	0.184	(0.073)	0.033	0.151
187	15.58	0.63	0.152	(0.073)	0.027	0.125
188	15.67	0.63	0.152	(0.073)	0.027	0.125
189	15.75	0.63	0.152	(0.072)	0.027	0.125
190	15.83	0.63	0.152	(0.072)	0.027	0.125
191	15.92	0.63	0.152	(0.072)	0.027	0.125
192	16.00	0.63	0.152	(0.071)	0.027	0.125
193	16.08	0.13	0.032	(0.071)	0.006	0.026
194	16.17	0.13	0.032	(0.071)	0.006	0.026
195	16.25	0.13	0.032	(0.070)	0.006	0.026
196	16.33	0.13	0.032	(0.070)	0.006	0.026
197	16.42	0.13	0.032	(0.069)	0.006	0.026
198	16.50	0.13	0.032	(0.069)	0.006	0.026
199	16.58	0.10	0.024	(0.069)	0.004	0.020
200	16.67	0.10	0.024	(0.068)	0.004	0.020
201	16.75	0.10	0.024	(0.068)	0.004	0.020
202	16.83	0.10	0.024	(0.068)	0.004	0.020
203	16.92	0.10	0.024	(0.067)	0.004	0.020
204	17.00	0.10	0.024	(0.067)	0.004	0.020
205	17.08	0.17	0.040	(0.067)	0.007	0.033
206	17.17	0.17	0.040	(0.066)	0.007	0.033
207	17.25	0.17	0.040	(0.066)	0.007	0.033
208	17.33	0.17	0.040	(0.066)	0.007	0.033
209	17.42	0.17	0.040	(0.065)	0.007	0.033
210	17.50	0.17	0.040	(0.065)	0.007	0.033
211	17.58	0.17	0.040	(0.065)	0.007	0.033
212	17.67	0.17	0.040	(0.064)	0.007	0.033
213	17.75	0.17	0.040	(0.064)	0.007	0.033
214	17.83	0.13	0.032	(0.064)	0.006	0.026
215	17.92	0.13	0.032	(0.063)	0.006	0.026
216	18.00	0.13	0.032	(0.063)	0.006	0.026
217	18.08	0.13	0.032	(0.063)	0.006	0.026
218	18.17	0.13	0.032	(0.063)	0.006	0.026
219	18.25	0.13	0.032	(0.062)	0.006	0.026
220	18.33	0.13	0.032	(0.062)	0.006	0.026
221	18.42	0.13	0.032	(0.062)	0.006	0.026
222	18.50	0.13	0.032	(0.061)	0.006	0.026
223	18.58	0.10	0.024	(0.061)	0.004	0.020
224	18.67	0.10	0.024	(0.061)	0.004	0.020
225	18.75	0.10	0.024	(0.060)	0.004	0.020
226	18.83	0.07	0.016	(0.060)	0.003	0.013
227	18.92	0.07	0.016	(0.060)	0.003	0.013
228	19.00	0.07	0.016	(0.060)	0.003	0.013
229	19.08	0.10	0.024	(0.059)	0.004	0.020

230	19.17	0.10	0.024	(	0.059)	0.004	0.020
231	19.25	0.10	0.024	(	0.059)	0.004	0.020
232	19.33	0.13	0.032	(	0.058)	0.006	0.026
233	19.42	0.13	0.032	(	0.058)	0.006	0.026
234	19.50	0.13	0.032	(	0.058)	0.006	0.026
235	19.58	0.10	0.024	(	0.058)	0.004	0.020
236	19.67	0.10	0.024	(	0.057)	0.004	0.020
237	19.75	0.10	0.024	(	0.057)	0.004	0.020
238	19.83	0.07	0.016	(	0.057)	0.003	0.013
239	19.92	0.07	0.016	(	0.057)	0.003	0.013
240	20.00	0.07	0.016	(	0.056)	0.003	0.013
241	20.08	0.10	0.024	(	0.056)	0.004	0.020
242	20.17	0.10	0.024	(	0.056)	0.004	0.020
243	20.25	0.10	0.024	(	0.056)	0.004	0.020
244	20.33	0.10	0.024	(	0.055)	0.004	0.020
245	20.42	0.10	0.024	(	0.055)	0.004	0.020
246	20.50	0.10	0.024	(	0.055)	0.004	0.020
247	20.58	0.10	0.024	(	0.055)	0.004	0.020
248	20.67	0.10	0.024	(	0.054)	0.004	0.020
249	20.75	0.10	0.024	(	0.054)	0.004	0.020
250	20.83	0.07	0.016	(	0.054)	0.003	0.013
251	20.92	0.07	0.016	(	0.054)	0.003	0.013
252	21.00	0.07	0.016	(	0.054)	0.003	0.013
253	21.08	0.10	0.024	(	0.053)	0.004	0.020
254	21.17	0.10	0.024	(	0.053)	0.004	0.020
255	21.25	0.10	0.024	(	0.053)	0.004	0.020
256	21.33	0.07	0.016	(	0.053)	0.003	0.013
257	21.42	0.07	0.016	(	0.053)	0.003	0.013
258	21.50	0.07	0.016	(	0.052)	0.003	0.013
259	21.58	0.10	0.024	(	0.052)	0.004	0.020
260	21.67	0.10	0.024	(	0.052)	0.004	0.020
261	21.75	0.10	0.024	(	0.052)	0.004	0.020
262	21.83	0.07	0.016	(	0.052)	0.003	0.013
263	21.92	0.07	0.016	(	0.051)	0.003	0.013
264	22.00	0.07	0.016	(	0.051)	0.003	0.013
265	22.08	0.10	0.024	(	0.051)	0.004	0.020
266	22.17	0.10	0.024	(	0.051)	0.004	0.020
267	22.25	0.10	0.024	(	0.051)	0.004	0.020
268	22.33	0.07	0.016	(	0.051)	0.003	0.013
269	22.42	0.07	0.016	(	0.050)	0.003	0.013
270	22.50	0.07	0.016	(	0.050)	0.003	0.013
271	22.58	0.07	0.016	(	0.050)	0.003	0.013
272	22.67	0.07	0.016	(	0.050)	0.003	0.013
273	22.75	0.07	0.016	(	0.050)	0.003	0.013
274	22.83	0.07	0.016	(	0.050)	0.003	0.013
275	22.92	0.07	0.016	(	0.050)	0.003	0.013
276	23.00	0.07	0.016	(	0.049)	0.003	0.013
277	23.08	0.07	0.016	(	0.049)	0.003	0.013
278	23.17	0.07	0.016	(	0.049)	0.003	0.013
279	23.25	0.07	0.016	(	0.049)	0.003	0.013
280	23.33	0.07	0.016	(	0.049)	0.003	0.013
281	23.42	0.07	0.016	(	0.049)	0.003	0.013
282	23.50	0.07	0.016	(	0.049)	0.003	0.013
283	23.58	0.07	0.016	(	0.049)	0.003	0.013
284	23.67	0.07	0.016	(	0.049)	0.003	0.013
285	23.75	0.07	0.016	(	0.049)	0.003	0.013
286	23.83	0.07	0.016	(	0.049)	0.003	0.013
287	23.92	0.07	0.016	(	0.049)	0.003	0.013
288	24.00	0.07	0.016	(	0.049)	0.003	0.013

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.7

Flood volume = Effective rainfall 1.64(In)
times area 4.5(Ac.)/[(In)/(Ft.)] = 0.6(Ac.Ft)
Total soil loss = 0.36(In)
Total soil loss = 0.135(Ac.Ft)
Total rainfall = 2.00(In)
Flood volume = 26789.2 Cubic Feet
Total soil loss = 5880.5 Cubic Feet

Peak flow rate of this hydrograph = 1.012(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.02	Q	|	|	|	|
0+10	0.0005	0.05	Q	|	|	|	|
0+15	0.0009	0.05	Q	|	|	|	|
0+20	0.0013	0.07	Q	|	|	|	|

0+25	0.0019	0.08	Q	|	|	|	|
0+30	0.0025	0.09	Q	|	|	|	|
0+35	0.0031	0.09	Q	|	|	|	|
0+40	0.0037	0.09	Q	|	|	|	|
0+45	0.0043	0.09	Q	|	|	|	|
0+50	0.0050	0.10	Q	|	|	|	|
0+55	0.0058	0.11	Q	|	|	|	|
1+ 0	0.0066	0.12	Q	|	|	|	|
1+ 5	0.0073	0.11	Q	|	|	|	|
1+10	0.0080	0.09	Q	|	|	|	|
1+15	0.0086	0.09	Q	|	|	|	|
1+20	0.0092	0.09	Q	|	|	|	|
1+25	0.0099	0.09	Q	|	|	|	|
1+30	0.0105	0.09	Q	|	|	|	|
1+35	0.0111	0.09	Q	|	|	|	|
1+40	0.0117	0.09	Q	|	|	|	|
1+45	0.0123	0.09	Q	|	|	|	|
1+50	0.0130	0.10	Q	|	|	|	|
1+55	0.0138	0.11	Q	|	|	|	|
2+ 0	0.0146	0.12	Q	|	|	|	|
2+ 5	0.0154	0.12	QV	|	|	|	|
2+10	0.0162	0.12	QV	|	|	|	|
2+15	0.0170	0.12	QV	|	|	|	|
2+20	0.0179	0.12	QV	|	|	|	|
2+25	0.0187	0.12	QV	|	|	|	|
2+30	0.0195	0.12	QV	|	|	|	|
2+35	0.0204	0.13	QV	|	|	|	|
2+40	0.0214	0.14	QV	|	|	|	|
2+45	0.0224	0.15	QV	|	|	|	|
2+50	0.0234	0.15	QV	|	|	|	|
2+55	0.0244	0.15	QV	|	|	|	|
3+ 0	0.0255	0.15	QV	|	|	|	|
3+ 5	0.0265	0.15	QV	|	|	|	|
3+10	0.0275	0.15	QV	|	|	|	|
3+15	0.0285	0.15	QV	|	|	|	|
3+20	0.0296	0.15	QV	|	|	|	|
3+25	0.0306	0.15	QV	|	|	|	|
3+30	0.0316	0.15	Q V	|	|	|	|
3+35	0.0326	0.15	Q V	|	|	|	|
3+40	0.0337	0.15	Q V	|	|	|	|
3+45	0.0347	0.15	Q V	|	|	|	|
3+50	0.0358	0.16	Q V	|	|	|	|
3+55	0.0370	0.17	Q V	|	|	|	|
4+ 0	0.0382	0.18	Q V	|	|	|	|
4+ 5	0.0394	0.18	Q V	|	|	|	|
4+10	0.0406	0.18	Q V	|	|	|	|
4+15	0.0419	0.18	Q V	|	|	|	|
4+20	0.0432	0.19	Q V	|	|	|	|
4+25	0.0446	0.20	Q V	|	|	|	|
4+30	0.0460	0.21	Q V	|	|	|	|
4+35	0.0474	0.21	Q V	|	|	|	|
4+40	0.0488	0.21	Q V	|	|	|	|
4+45	0.0503	0.21	Q V	|	|	|	|
4+50	0.0518	0.22	Q V	|	|	|	|
4+55	0.0534	0.23	Q V	|	|	|	|
5+ 0	0.0550	0.24	Q V	|	|	|	|
5+ 5	0.0565	0.22	Q V	|	|	|	|
5+10	0.0578	0.19	Q V	|	|	|	|
5+15	0.0591	0.18	Q V	|	|	|	|
5+20	0.0604	0.19	Q V	|	|	|	|
5+25	0.0618	0.20	Q V	|	|	|	|
5+30	0.0632	0.21	Q V	|	|	|	|
5+35	0.0647	0.22	Q V	|	|	|	|
5+40	0.0663	0.23	Q V	|	|	|	|
5+45	0.0679	0.24	Q V	|	|	|	|
5+50	0.0696	0.24	Q V	|	|	|	|
5+55	0.0712	0.24	Q V	|	|	|	|
6+ 0	0.0728	0.24	Q V	|	|	|	|
6+ 5	0.0745	0.25	Q V	|	|	|	|
6+10	0.0764	0.26	|Q V	|	|	|	|
6+15	0.0782	0.27	|Q V	|	|	|	|
6+20	0.0800	0.27	|Q V	|	|	|	|
6+25	0.0819	0.27	|Q V	|	|	|	|
6+30	0.0837	0.27	|Q V	|	|	|	|
6+35	0.0856	0.28	|Q V	|	|	|	|
6+40	0.0876	0.29	|Q V	|	|	|	|
6+45	0.0897	0.30	|Q V	|	|	|	|
6+50	0.0917	0.30	|Q V	|	|	|	|
6+55	0.0938	0.30	|Q V	|	|	|	|
7+ 0	0.0958	0.30	|Q V	|	|	|	|
7+ 5	0.0979	0.30	|Q V	|	|	|	|
7+10	0.0999	0.30	|Q V	|	|	|	|
7+15	0.1020	0.30	|Q V	|	|	|	|
7+20	0.1041	0.31	|Q V	|	|	|	|

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 7+25       0.1063      0.32  |Q    V   |          |          |          |
 7+30       0.1085      0.33  |Q     V  |          |          |          |
 7+35       0.1109      0.34  |Q     V  |          |          |          |
 7+40       0.1133      0.35  |Q     V  |          |          |          |
 7+45       0.1157      0.35  |Q     V  |          |          |          |
 7+50       0.1182      0.37  |Q     V  |          |          |          |
 7+55       0.1209      0.38  |Q     V  |          |          |          |
 8+ 0       0.1235      0.38  |Q      V |          |          |          |
 8+ 5       0.1263      0.41  |Q      V |          |          |          |
 8+10       0.1293      0.44  |Q      V |          |          |          |
 8+15       0.1324      0.44  |Q      V |          |          |          |
 8+20       0.1354      0.44  |Q      V |          |          |          |
 8+25       0.1385      0.45  |Q       V|          |          |          |
 8+30       0.1416      0.45  |Q       V|          |          |          |
 8+35       0.1447      0.46  |Q       V|          |          |          |
 8+40       0.1479      0.47  |Q       V|          |          |          |
 8+45       0.1512      0.47  |Q       V|          |          |          |
 8+50       0.1546      0.49  |Q        V          |          |          |
 8+55       0.1580      0.50  | Q       V          |          |          |
 9+ 0       0.1615      0.50  | Q       V          |          |          |
 9+ 5       0.1651      0.53  | Q       V          |          |          |
 9+10       0.1689      0.55  | Q       V          |          |          |
 9+15       0.1728      0.56  | Q       |V         |          |          |
 9+20       0.1767      0.57  | Q       |V         |          |          |
 9+25       0.1808      0.59  | Q       |V         |          |          |
 9+30       0.1849      0.59  | Q        | V        |          |          |
 9+35       0.1890      0.60  | Q        | V        |          |          |
 9+40       0.1933      0.62  | Q        | V        |          |          |
 9+45       0.1976      0.62  | Q        | V        |          |          |
 9+50       0.2019      0.63  | Q        |  V       |          |          |
 9+55       0.2064      0.65  | Q        |  V       |          |          |
10+ 0       0.2109      0.65  | Q        |  V       |          |          |
10+ 5       0.2149      0.58  | Q        |  V       |          |          |
10+10       0.2183      0.49  |Q         |   V      |          |          |
10+15       0.2214      0.46  |Q         |   V      |          |          |
10+20       0.2246      0.45  |Q         |   V      |          |          |
10+25       0.2277      0.45  |Q         |   V      |          |          |
10+30       0.2307      0.45  |Q         |    V     |          |          |
10+35       0.2342      0.50  |Q         |    V     |          |          |
10+40       0.2381      0.57  | Q        |    V     |          |          |
10+45       0.2421      0.58  | Q        |    V     |          |          |
10+50       0.2462      0.59  | Q        |     V    |          |          |
10+55       0.2502      0.59  | Q        |     V    |          |          |
11+ 0       0.2543      0.60  | Q        |     V    |          |          |
11+ 5       0.2584      0.59  | Q        |     V    |          |          |
11+10       0.2623      0.57  | Q        |      V   |          |          |
11+15       0.2662      0.57  | Q        |      V   |          |          |
11+20       0.2701      0.57  | Q        |      V   |          |          |
11+25       0.2740      0.57  | Q        |      V   |          |          |
11+30       0.2779      0.57  | Q        |       V  |          |          |
11+35       0.2817      0.54  | Q        |       V  |          |          |
11+40       0.2852      0.52  | Q        |       V  |          |          |
11+45       0.2887      0.51  | Q        |       V  |          |          |
11+50       0.2923      0.52  | Q        |        V |          |          |
11+55       0.2960      0.53  | Q        |        V |          |          |
12+ 0       0.2996      0.53  | Q        |        V |          |          |
12+ 5       0.3038      0.61  | Q        |        V |          |          |
12+10       0.3087      0.70  | Q        |         V          |          |
12+15       0.3137      0.73  | Q        |         V          |          |
12+20       0.3188      0.75  | Q        |         V          |          |
12+25       0.3241      0.77  |  Q       |          |V        |          |
12+30       0.3294      0.77  |  Q       |          |V        |          |
12+35       0.3349      0.79  |  Q       |          |V        |          |
12+40       0.3406      0.82  |  Q       |          | V       |          |
12+45       0.3463      0.83  |  Q       |          | V       |          |
12+50       0.3521      0.84  |  Q       |          | V       |          |
12+55       0.3580      0.86  |  Q       |          |  V      |          |
13+ 0       0.3639      0.86  |  Q       |          |  V      |          |
13+ 5       0.3702      0.91  |  Q       |          |   V     |          |
13+10       0.3770      0.98  |  Q       |          |   V     |          |
13+15       0.3838      1.00  |   Q      |          |   V     |          |
13+20       0.3908      1.01  |   Q      |          |    V    |          |
13+25       0.3977      1.01  |   Q      |          |    V    |          |
13+30       0.4047      1.01  |   Q      |          |     V   |          |
13+35       0.4109      0.90  |  Q       |          |     V   |          |
13+40       0.4160      0.75  | Q        |          |      V  |          |
13+45       0.4209      0.71  | Q        |          |      V  |          |
13+50       0.4257      0.70  | Q        |          |      V  |          |
13+55       0.4305      0.69  | Q        |          |      V  |          |
14+ 0       0.4352      0.68  | Q        |          |       V |          |
14+ 5       0.4402      0.73  | Q        |          |       V |          |
14+10       0.4456      0.78  |  Q       |          |       V |          |
14+15       0.4510      0.79  |  Q       |          |        V|          |
14+20       0.4565      0.79  |  Q       |          |        V|          |
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14+25       0.4618      0.78  |   Q       |           |          V          |
14+30       0.4672      0.78  |   Q       |           |          V          |
14+35       0.4725      0.77  |   Q       |           |          V          |
14+40       0.4778      0.77  |   Q       |           |          |V         |
14+45       0.4832      0.77  |   Q       |           |          |V         |
14+50       0.4884      0.76  |   Q       |           |          |V         |
14+55       0.4936      0.75  |  Q        |           |          |  V       |
15+ 0       0.4987      0.75  |  Q        |           |          |  V       |
15+ 5       0.5038      0.73  |  Q        |           |          |  V       |
15+10       0.5088      0.72  |  Q        |           |          |   V      |
15+15       0.5137      0.72  |  Q        |           |          |   V      |
15+20       0.5185      0.71  |  Q        |           |          |   V      |
15+25       0.5233      0.69  |  Q        |           |          |    V     |
15+30       0.5280      0.69  |  Q        |           |          |    V     |
15+35       0.5325      0.64  |  Q        |           |          |    V     |
15+40       0.5365      0.59  |  Q        |           |          |    V     |
15+45       0.5405      0.58  |  Q        |           |          |     V    |
15+50       0.5444      0.57  |  Q        |           |          |     V    |
15+55       0.5483      0.57  |  Q        |           |          |     V    |
16+ 0       0.5522      0.57  |  Q        |           |          |     V    |
16+ 5       0.5550      0.41  |Q          |           |          |      V   |
16+10       0.5564      0.20  Q           |           |          |      V   |
16+15       0.5575      0.15  Q           |           |          |      V   |
16+20       0.5584      0.13  Q           |           |          |      V   |
16+25       0.5593      0.12  Q           |           |          |      V   |
16+30       0.5601      0.12  Q           |           |          |      V   |
16+35       0.5608      0.11  Q           |           |          |      V   |
16+40       0.5615      0.09  Q           |           |          |      V   |
16+45       0.5621      0.09  Q           |           |          |      V   |
16+50       0.5627      0.09  Q           |           |          |      V   |
16+55       0.5634      0.09  Q           |           |          |      V   |
17+ 0       0.5640      0.09  Q           |           |          |      V   |
17+ 5       0.5647      0.11  Q           |           |          |      V   |
17+10       0.5657      0.14  Q           |           |          |      V   |
17+15       0.5667      0.14  Q           |           |          |      V   |
17+20       0.5677      0.15  Q           |           |          |      V   |
17+25       0.5687      0.15  Q           |           |          |      V   |
17+30       0.5697      0.15  Q           |           |          |       V  |
17+35       0.5708      0.15  Q           |           |          |       V  |
17+40       0.5718      0.15  Q           |           |          |       V  |
17+45       0.5728      0.15  Q           |           |          |       V  |
17+50       0.5738      0.14  Q           |           |          |       V  |
17+55       0.5746      0.12  Q           |           |          |       V  |
18+ 0       0.5755      0.12  Q           |           |          |       V  |
18+ 5       0.5763      0.12  Q           |           |          |       V  |
18+10       0.5771      0.12  Q           |           |          |       V  |
18+15       0.5779      0.12  Q           |           |          |       V  |
18+20       0.5787      0.12  Q           |           |          |       V  |
18+25       0.5796      0.12  Q           |           |          |       V  |
18+30       0.5804      0.12  Q           |           |          |       V  |
18+35       0.5811      0.11  Q           |           |          |       V  |
18+40       0.5818      0.09  Q           |           |          |       V  |
18+45       0.5824      0.09  Q           |           |          |       V  |
18+50       0.5830      0.08  Q           |           |          |       V  |
18+55       0.5834      0.07  Q           |           |          |       V  |
19+ 0       0.5838      0.06  Q           |           |          |       V  |
19+ 5       0.5843      0.07  Q           |           |          |        V |
19+10       0.5849      0.08  Q           |           |          |        V |
19+15       0.5855      0.09  Q           |           |          |        V |
19+20       0.5862      0.10  Q           |           |          |        V |
19+25       0.5870      0.11  Q           |           |          |        V |
19+30       0.5878      0.12  Q           |           |          |        V |
19+35       0.5885      0.11  Q           |           |          |        V |
19+40       0.5892      0.09  Q           |           |          |        V |
19+45       0.5898      0.09  Q           |           |          |        V |
19+50       0.5903      0.08  Q           |           |          |        V |
19+55       0.5908      0.07  Q           |           |          |        V |
20+ 0       0.5912      0.06  Q           |           |          |        V |
20+ 5       0.5917      0.07  Q           |           |          |        V |
20+10       0.5923      0.08  Q           |           |          |        V |
20+15       0.5929      0.09  Q           |           |          |        V |
20+20       0.5935      0.09  Q           |           |          |        V |
20+25       0.5941      0.09  Q           |           |          |        V |
20+30       0.5947      0.09  Q           |           |          |        V |
20+35       0.5953      0.09  Q           |           |          |        V |
20+40       0.5960      0.09  Q           |           |          |        V |
20+45       0.5966      0.09  Q           |           |          |        V |
20+50       0.5971      0.08  Q           |           |          |        V |
20+55       0.5976      0.07  Q           |           |          |        V |
21+ 0       0.5980      0.06  Q           |           |          |        V |
21+ 5       0.5985      0.07  Q           |           |          |        V |
21+10       0.5991      0.08  Q           |           |          |        V |
21+15       0.5997      0.09  Q           |           |          |         V|
21+20       0.6002      0.08  Q           |           |          |         V|
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21+25	0.6006	0.06	Q	|	|	|	V|
21+30	0.6011	0.06	Q	|	|	|	V|
21+35	0.6015	0.07	Q	|	|	|	V|
21+40	0.6021	0.08	Q	|	|	|	V|
21+45	0.6027	0.09	Q	|	|	|	V|
21+50	0.6033	0.08	Q	|	|	|	V|
21+55	0.6037	0.06	Q	|	|	|	V|
22+ 0	0.6041	0.06	Q	|	|	|	V|
22+ 5	0.6046	0.07	Q	|	|	|	V|
22+10	0.6052	0.08	Q	|	|	|	V|
22+15	0.6058	0.09	Q	|	|	|	V|
22+20	0.6063	0.08	Q	|	|	|	V|
22+25	0.6068	0.06	Q	|	|	|	V|
22+30	0.6072	0.06	Q	|	|	|	V|
22+35	0.6076	0.06	Q	|	|	|	V|
22+40	0.6080	0.06	Q	|	|	|	V|
22+45	0.6084	0.06	Q	|	|	|	V|
22+50	0.6089	0.06	Q	|	|	|	V|
22+55	0.6093	0.06	Q	|	|	|	V|
23+ 0	0.6097	0.06	Q	|	|	|	V|
23+ 5	0.6101	0.06	Q	|	|	|	V|
23+10	0.6105	0.06	Q	|	|	|	V|
23+15	0.6109	0.06	Q	|	|	|	V|
23+20	0.6113	0.06	Q	|	|	|	V|
23+25	0.6117	0.06	Q	|	|	|	V|
23+30	0.6121	0.06	Q	|	|	|	V|
23+35	0.6125	0.06	Q	|	|	|	V|
23+40	0.6130	0.06	Q	|	|	|	V|
23+45	0.6134	0.06	Q	|	|	|	V|
23+50	0.6138	0.06	Q	|	|	|	V|
23+55	0.6142	0.06	Q	|	|	|	V|
24+ 0	0.6146	0.06	Q	|	|	|	V|
24+ 5	0.6149	0.04	Q	|	|	|	V|
24+10	0.6149	0.01	Q	|	|	|	V|
24+15	0.6150	0.00	Q	|	|	|	V|
24+20	0.6150	0.00	Q	|	|	|	V|
24+25	0.6150	0.00	Q	|	|	|	V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 11/11/20 File: ONSITEPOST242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

19-0126 DUKE HARVILL
ONSITE UNIT HYDROGRAPH ANALYSIS
PROPOSED CONDITION H-12 TRIBUTARY, 2-YEAR 24-HOUR
FN: ONSITEPOST242.OUT- TSW

Drainage Area = 9.50(Ac.) = 0.015 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.50(Ac.) = 0.015 Sq. Mi.
Length along longest watercourse = 1690.00(Ft.)
Length along longest watercourse measured to centroid = 714.00(Ft.)
Length along longest watercourse = 0.320 Mi.
Length along longest watercourse measured to centroid = 0.135 Mi.
Difference in elevation = 13.80(Ft.)
Slope along watercourse = 43.1148 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.20 Min.
25% of lag time = 0.80 Min.
40% of lag time = 1.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
9.50	2.00	19.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
9.50	5.00	47.50

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
9.500	56.00	0.900

Total Area Entered = 9.50(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	56.0	0.511	0.900	0.097	1.000	0.097
					Sum (F) =	0.097

Area averaged mean soil loss (F) (In/Hr) = 0.097
Minimum soil loss rate ((In/Hr)) = 0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	156.061	34.610	3.314
2	0.167	312.122	46.562	4.458
3	0.250	468.183	10.840	1.038
4	0.333	624.245	4.700	0.450
5	0.417	780.306	2.302	0.220
6	0.500	936.367	0.986	0.094
			Sum = 100.000	Sum= 9.574

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.016	(0.172)	0.003	0.013
2	0.17	0.07	0.016	(0.171)	0.003	0.013
3	0.25	0.07	0.016	(0.171)	0.003	0.013
4	0.33	0.10	0.024	(0.170)	0.004	0.020
5	0.42	0.10	0.024	(0.169)	0.004	0.020
6	0.50	0.10	0.024	(0.169)	0.004	0.020
7	0.58	0.10	0.024	(0.168)	0.004	0.020
8	0.67	0.10	0.024	(0.167)	0.004	0.020
9	0.75	0.10	0.024	(0.167)	0.004	0.020
10	0.83	0.13	0.032	(0.166)	0.006	0.026
11	0.92	0.13	0.032	(0.165)	0.006	0.026
12	1.00	0.13	0.032	(0.165)	0.006	0.026
13	1.08	0.10	0.024	(0.164)	0.004	0.020
14	1.17	0.10	0.024	(0.163)	0.004	0.020
15	1.25	0.10	0.024	(0.163)	0.004	0.020
16	1.33	0.10	0.024	(0.162)	0.004	0.020
17	1.42	0.10	0.024	(0.162)	0.004	0.020
18	1.50	0.10	0.024	(0.161)	0.004	0.020
19	1.58	0.10	0.024	(0.160)	0.004	0.020
20	1.67	0.10	0.024	(0.160)	0.004	0.020
21	1.75	0.10	0.024	(0.159)	0.004	0.020
22	1.83	0.13	0.032	(0.158)	0.006	0.026
23	1.92	0.13	0.032	(0.158)	0.006	0.026
24	2.00	0.13	0.032	(0.157)	0.006	0.026
25	2.08	0.13	0.032	(0.156)	0.006	0.026
26	2.17	0.13	0.032	(0.156)	0.006	0.026
27	2.25	0.13	0.032	(0.155)	0.006	0.026
28	2.33	0.13	0.032	(0.155)	0.006	0.026
29	2.42	0.13	0.032	(0.154)	0.006	0.026
30	2.50	0.13	0.032	(0.153)	0.006	0.026
31	2.58	0.17	0.040	(0.153)	0.007	0.033
32	2.67	0.17	0.040	(0.152)	0.007	0.033
33	2.75	0.17	0.040	(0.151)	0.007	0.033
34	2.83	0.17	0.040	(0.151)	0.007	0.033
35	2.92	0.17	0.040	(0.150)	0.007	0.033
36	3.00	0.17	0.040	(0.150)	0.007	0.033
37	3.08	0.17	0.040	(0.149)	0.007	0.033
38	3.17	0.17	0.040	(0.148)	0.007	0.033
39	3.25	0.17	0.040	(0.148)	0.007	0.033
40	3.33	0.17	0.040	(0.147)	0.007	0.033
41	3.42	0.17	0.040	(0.146)	0.007	0.033
42	3.50	0.17	0.040	(0.146)	0.007	0.033
43	3.58	0.17	0.040	(0.145)	0.007	0.033
44	3.67	0.17	0.040	(0.145)	0.007	0.033
45	3.75	0.17	0.040	(0.144)	0.007	0.033
46	3.83	0.20	0.048	(0.143)	0.009	0.039
47	3.92	0.20	0.048	(0.143)	0.009	0.039
48	4.00	0.20	0.048	(0.142)	0.009	0.039
49	4.08	0.20	0.048	(0.142)	0.009	0.039
50	4.17	0.20	0.048	(0.141)	0.009	0.039
51	4.25	0.20	0.048	(0.140)	0.009	0.039
52	4.33	0.23	0.056	(0.140)	0.010	0.046
53	4.42	0.23	0.056	(0.139)	0.010	0.046
54	4.50	0.23	0.056	(0.139)	0.010	0.046
55	4.58	0.23	0.056	(0.138)	0.010	0.046
56	4.67	0.23	0.056	(0.137)	0.010	0.046
57	4.75	0.23	0.056	(0.137)	0.010	0.046
58	4.83	0.27	0.064	(0.136)	0.012	0.052
59	4.92	0.27	0.064	(0.136)	0.012	0.052
60	5.00	0.27	0.064	(0.135)	0.012	0.052
61	5.08	0.20	0.048	(0.134)	0.009	0.039
62	5.17	0.20	0.048	(0.134)	0.009	0.039

63	5.25	0.20	0.048	(0.133)	0.009	0.039
64	5.33	0.23	0.056	(0.133)	0.010	0.046
65	5.42	0.23	0.056	(0.132)	0.010	0.046
66	5.50	0.23	0.056	(0.132)	0.010	0.046
67	5.58	0.27	0.064	(0.131)	0.012	0.052
68	5.67	0.27	0.064	(0.130)	0.012	0.052
69	5.75	0.27	0.064	(0.130)	0.012	0.052
70	5.83	0.27	0.064	(0.129)	0.012	0.052
71	5.92	0.27	0.064	(0.129)	0.012	0.052
72	6.00	0.27	0.064	(0.128)	0.012	0.052
73	6.08	0.30	0.072	(0.128)	0.013	0.059
74	6.17	0.30	0.072	(0.127)	0.013	0.059
75	6.25	0.30	0.072	(0.126)	0.013	0.059
76	6.33	0.30	0.072	(0.126)	0.013	0.059
77	6.42	0.30	0.072	(0.125)	0.013	0.059
78	6.50	0.30	0.072	(0.125)	0.013	0.059
79	6.58	0.33	0.080	(0.124)	0.014	0.066
80	6.67	0.33	0.080	(0.124)	0.014	0.066
81	6.75	0.33	0.080	(0.123)	0.014	0.066
82	6.83	0.33	0.080	(0.122)	0.014	0.066
83	6.92	0.33	0.080	(0.122)	0.014	0.066
84	7.00	0.33	0.080	(0.121)	0.014	0.066
85	7.08	0.33	0.080	(0.121)	0.014	0.066
86	7.17	0.33	0.080	(0.120)	0.014	0.066
87	7.25	0.33	0.080	(0.120)	0.014	0.066
88	7.33	0.37	0.088	(0.119)	0.016	0.072
89	7.42	0.37	0.088	(0.119)	0.016	0.072
90	7.50	0.37	0.088	(0.118)	0.016	0.072
91	7.58	0.40	0.096	(0.118)	0.017	0.079
92	7.67	0.40	0.096	(0.117)	0.017	0.079
93	7.75	0.40	0.096	(0.116)	0.017	0.079
94	7.83	0.43	0.104	(0.116)	0.019	0.085
95	7.92	0.43	0.104	(0.115)	0.019	0.085
96	8.00	0.43	0.104	(0.115)	0.019	0.085
97	8.08	0.50	0.120	(0.114)	0.022	0.098
98	8.17	0.50	0.120	(0.114)	0.022	0.098
99	8.25	0.50	0.120	(0.113)	0.022	0.098
100	8.33	0.50	0.120	(0.113)	0.022	0.098
101	8.42	0.50	0.120	(0.112)	0.022	0.098
102	8.50	0.50	0.120	(0.112)	0.022	0.098
103	8.58	0.53	0.128	(0.111)	0.023	0.105
104	8.67	0.53	0.128	(0.111)	0.023	0.105
105	8.75	0.53	0.128	(0.110)	0.023	0.105
106	8.83	0.57	0.136	(0.110)	0.024	0.112
107	8.92	0.57	0.136	(0.109)	0.024	0.112
108	9.00	0.57	0.136	(0.109)	0.024	0.112
109	9.08	0.63	0.152	(0.108)	0.027	0.125
110	9.17	0.63	0.152	(0.108)	0.027	0.125
111	9.25	0.63	0.152	(0.107)	0.027	0.125
112	9.33	0.67	0.160	(0.107)	0.029	0.131
113	9.42	0.67	0.160	(0.106)	0.029	0.131
114	9.50	0.67	0.160	(0.105)	0.029	0.131
115	9.58	0.70	0.168	(0.105)	0.030	0.138
116	9.67	0.70	0.168	(0.104)	0.030	0.138
117	9.75	0.70	0.168	(0.104)	0.030	0.138
118	9.83	0.73	0.176	(0.103)	0.032	0.144
119	9.92	0.73	0.176	(0.103)	0.032	0.144
120	10.00	0.73	0.176	(0.102)	0.032	0.144
121	10.08	0.50	0.120	(0.102)	0.022	0.098
122	10.17	0.50	0.120	(0.101)	0.022	0.098
123	10.25	0.50	0.120	(0.101)	0.022	0.098
124	10.33	0.50	0.120	(0.101)	0.022	0.098
125	10.42	0.50	0.120	(0.100)	0.022	0.098
126	10.50	0.50	0.120	(0.100)	0.022	0.098
127	10.58	0.67	0.160	(0.099)	0.029	0.131
128	10.67	0.67	0.160	(0.099)	0.029	0.131
129	10.75	0.67	0.160	(0.098)	0.029	0.131
130	10.83	0.67	0.160	(0.098)	0.029	0.131
131	10.92	0.67	0.160	(0.097)	0.029	0.131
132	11.00	0.67	0.160	(0.097)	0.029	0.131
133	11.08	0.63	0.152	(0.096)	0.027	0.125
134	11.17	0.63	0.152	(0.096)	0.027	0.125
135	11.25	0.63	0.152	(0.095)	0.027	0.125
136	11.33	0.63	0.152	(0.095)	0.027	0.125
137	11.42	0.63	0.152	(0.094)	0.027	0.125
138	11.50	0.63	0.152	(0.094)	0.027	0.125
139	11.58	0.57	0.136	(0.093)	0.024	0.112
140	11.67	0.57	0.136	(0.093)	0.024	0.112
141	11.75	0.57	0.136	(0.092)	0.024	0.112
142	11.83	0.60	0.144	(0.092)	0.026	0.118
143	11.92	0.60	0.144	(0.092)	0.026	0.118
144	12.00	0.60	0.144	(0.091)	0.026	0.118
145	12.08	0.83	0.200	(0.091)	0.036	0.164
146	12.17	0.83	0.200	(0.090)	0.036	0.164

147	12.25	0.83	0.200	(0.090)	0.036	0.164
148	12.33	0.87	0.208	(0.089)	0.037	0.171
149	12.42	0.87	0.208	(0.089)	0.037	0.171
150	12.50	0.87	0.208	(0.088)	0.037	0.171
151	12.58	0.93	0.224	(0.088)	0.040	0.184
152	12.67	0.93	0.224	(0.087)	0.040	0.184
153	12.75	0.93	0.224	(0.087)	0.040	0.184
154	12.83	0.97	0.232	(0.087)	0.042	0.190
155	12.92	0.97	0.232	(0.086)	0.042	0.190
156	13.00	0.97	0.232	(0.086)	0.042	0.190
157	13.08	1.13	0.272	(0.085)	0.049	0.223
158	13.17	1.13	0.272	(0.085)	0.049	0.223
159	13.25	1.13	0.272	(0.084)	0.049	0.223
160	13.33	1.13	0.272	(0.084)	0.049	0.223
161	13.42	1.13	0.272	(0.084)	0.049	0.223
162	13.50	1.13	0.272	(0.083)	0.049	0.223
163	13.58	0.77	0.184	(0.083)	0.033	0.151
164	13.67	0.77	0.184	(0.082)	0.033	0.151
165	13.75	0.77	0.184	(0.082)	0.033	0.151
166	13.83	0.77	0.184	(0.081)	0.033	0.151
167	13.92	0.77	0.184	(0.081)	0.033	0.151
168	14.00	0.77	0.184	(0.081)	0.033	0.151
169	14.08	0.90	0.216	(0.080)	0.039	0.177
170	14.17	0.90	0.216	(0.080)	0.039	0.177
171	14.25	0.90	0.216	(0.079)	0.039	0.177
172	14.33	0.87	0.208	(0.079)	0.037	0.171
173	14.42	0.87	0.208	(0.079)	0.037	0.171
174	14.50	0.87	0.208	(0.078)	0.037	0.171
175	14.58	0.87	0.208	(0.078)	0.037	0.171
176	14.67	0.87	0.208	(0.077)	0.037	0.171
177	14.75	0.87	0.208	(0.077)	0.037	0.171
178	14.83	0.83	0.200	(0.077)	0.036	0.164
179	14.92	0.83	0.200	(0.076)	0.036	0.164
180	15.00	0.83	0.200	(0.076)	0.036	0.164
181	15.08	0.80	0.192	(0.075)	0.035	0.157
182	15.17	0.80	0.192	(0.075)	0.035	0.157
183	15.25	0.80	0.192	(0.075)	0.035	0.157
184	15.33	0.77	0.184	(0.074)	0.033	0.151
185	15.42	0.77	0.184	(0.074)	0.033	0.151
186	15.50	0.77	0.184	(0.073)	0.033	0.151
187	15.58	0.63	0.152	(0.073)	0.027	0.125
188	15.67	0.63	0.152	(0.073)	0.027	0.125
189	15.75	0.63	0.152	(0.072)	0.027	0.125
190	15.83	0.63	0.152	(0.072)	0.027	0.125
191	15.92	0.63	0.152	(0.072)	0.027	0.125
192	16.00	0.63	0.152	(0.071)	0.027	0.125
193	16.08	0.13	0.032	(0.071)	0.006	0.026
194	16.17	0.13	0.032	(0.071)	0.006	0.026
195	16.25	0.13	0.032	(0.070)	0.006	0.026
196	16.33	0.13	0.032	(0.070)	0.006	0.026
197	16.42	0.13	0.032	(0.069)	0.006	0.026
198	16.50	0.13	0.032	(0.069)	0.006	0.026
199	16.58	0.10	0.024	(0.069)	0.004	0.020
200	16.67	0.10	0.024	(0.068)	0.004	0.020
201	16.75	0.10	0.024	(0.068)	0.004	0.020
202	16.83	0.10	0.024	(0.068)	0.004	0.020
203	16.92	0.10	0.024	(0.067)	0.004	0.020
204	17.00	0.10	0.024	(0.067)	0.004	0.020
205	17.08	0.17	0.040	(0.067)	0.007	0.033
206	17.17	0.17	0.040	(0.066)	0.007	0.033
207	17.25	0.17	0.040	(0.066)	0.007	0.033
208	17.33	0.17	0.040	(0.066)	0.007	0.033
209	17.42	0.17	0.040	(0.065)	0.007	0.033
210	17.50	0.17	0.040	(0.065)	0.007	0.033
211	17.58	0.17	0.040	(0.065)	0.007	0.033
212	17.67	0.17	0.040	(0.064)	0.007	0.033
213	17.75	0.17	0.040	(0.064)	0.007	0.033
214	17.83	0.13	0.032	(0.064)	0.006	0.026
215	17.92	0.13	0.032	(0.063)	0.006	0.026
216	18.00	0.13	0.032	(0.063)	0.006	0.026
217	18.08	0.13	0.032	(0.063)	0.006	0.026
218	18.17	0.13	0.032	(0.063)	0.006	0.026
219	18.25	0.13	0.032	(0.062)	0.006	0.026
220	18.33	0.13	0.032	(0.062)	0.006	0.026
221	18.42	0.13	0.032	(0.062)	0.006	0.026
222	18.50	0.13	0.032	(0.061)	0.006	0.026
223	18.58	0.10	0.024	(0.061)	0.004	0.020
224	18.67	0.10	0.024	(0.061)	0.004	0.020
225	18.75	0.10	0.024	(0.060)	0.004	0.020
226	18.83	0.07	0.016	(0.060)	0.003	0.013
227	18.92	0.07	0.016	(0.060)	0.003	0.013
228	19.00	0.07	0.016	(0.060)	0.003	0.013
229	19.08	0.10	0.024	(0.059)	0.004	0.020
230	19.17	0.10	0.024	(0.059)	0.004	0.020

231	19.25	0.10	0.024	(	0.059)	0.004	0.020
232	19.33	0.13	0.032	(	0.058)	0.006	0.026
233	19.42	0.13	0.032	(	0.058)	0.006	0.026
234	19.50	0.13	0.032	(	0.058)	0.006	0.026
235	19.58	0.10	0.024	(	0.058)	0.004	0.020
236	19.67	0.10	0.024	(	0.057)	0.004	0.020
237	19.75	0.10	0.024	(	0.057)	0.004	0.020
238	19.83	0.07	0.016	(	0.057)	0.003	0.013
239	19.92	0.07	0.016	(	0.057)	0.003	0.013
240	20.00	0.07	0.016	(	0.056)	0.003	0.013
241	20.08	0.10	0.024	(	0.056)	0.004	0.020
242	20.17	0.10	0.024	(	0.056)	0.004	0.020
243	20.25	0.10	0.024	(	0.056)	0.004	0.020
244	20.33	0.10	0.024	(	0.055)	0.004	0.020
245	20.42	0.10	0.024	(	0.055)	0.004	0.020
246	20.50	0.10	0.024	(	0.055)	0.004	0.020
247	20.58	0.10	0.024	(	0.055)	0.004	0.020
248	20.67	0.10	0.024	(	0.054)	0.004	0.020
249	20.75	0.10	0.024	(	0.054)	0.004	0.020
250	20.83	0.07	0.016	(	0.054)	0.003	0.013
251	20.92	0.07	0.016	(	0.054)	0.003	0.013
252	21.00	0.07	0.016	(	0.054)	0.003	0.013
253	21.08	0.10	0.024	(	0.053)	0.004	0.020
254	21.17	0.10	0.024	(	0.053)	0.004	0.020
255	21.25	0.10	0.024	(	0.053)	0.004	0.020
256	21.33	0.07	0.016	(	0.053)	0.003	0.013
257	21.42	0.07	0.016	(	0.053)	0.003	0.013
258	21.50	0.07	0.016	(	0.052)	0.003	0.013
259	21.58	0.10	0.024	(	0.052)	0.004	0.020
260	21.67	0.10	0.024	(	0.052)	0.004	0.020
261	21.75	0.10	0.024	(	0.052)	0.004	0.020
262	21.83	0.07	0.016	(	0.052)	0.003	0.013
263	21.92	0.07	0.016	(	0.051)	0.003	0.013
264	22.00	0.07	0.016	(	0.051)	0.003	0.013
265	22.08	0.10	0.024	(	0.051)	0.004	0.020
266	22.17	0.10	0.024	(	0.051)	0.004	0.020
267	22.25	0.10	0.024	(	0.051)	0.004	0.020
268	22.33	0.07	0.016	(	0.051)	0.003	0.013
269	22.42	0.07	0.016	(	0.050)	0.003	0.013
270	22.50	0.07	0.016	(	0.050)	0.003	0.013
271	22.58	0.07	0.016	(	0.050)	0.003	0.013
272	22.67	0.07	0.016	(	0.050)	0.003	0.013
273	22.75	0.07	0.016	(	0.050)	0.003	0.013
274	22.83	0.07	0.016	(	0.050)	0.003	0.013
275	22.92	0.07	0.016	(	0.050)	0.003	0.013
276	23.00	0.07	0.016	(	0.049)	0.003	0.013
277	23.08	0.07	0.016	(	0.049)	0.003	0.013
278	23.17	0.07	0.016	(	0.049)	0.003	0.013
279	23.25	0.07	0.016	(	0.049)	0.003	0.013
280	23.33	0.07	0.016	(	0.049)	0.003	0.013
281	23.42	0.07	0.016	(	0.049)	0.003	0.013
282	23.50	0.07	0.016	(	0.049)	0.003	0.013
283	23.58	0.07	0.016	(	0.049)	0.003	0.013
284	23.67	0.07	0.016	(	0.049)	0.003	0.013
285	23.75	0.07	0.016	(	0.049)	0.003	0.013
286	23.83	0.07	0.016	(	0.049)	0.003	0.013
287	23.92	0.07	0.016	(	0.049)	0.003	0.013
288	24.00	0.07	0.016	(	0.049)	0.003	0.013

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.7

Flood volume = Effective rainfall 1.64(In)
times area 9.5(Ac.)/[(In)/(Ft.)] = 1.3(Ac.Ft)
Total soil loss = 0.36(In)
Total soil loss = 0.285(Ac.Ft)
Total rainfall = 2.00(In)
Flood volume = 56554.4 Cubic Feet
Total soil loss = 12414.4 Cubic Feet

Peak flow rate of this hydrograph = 2.136(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

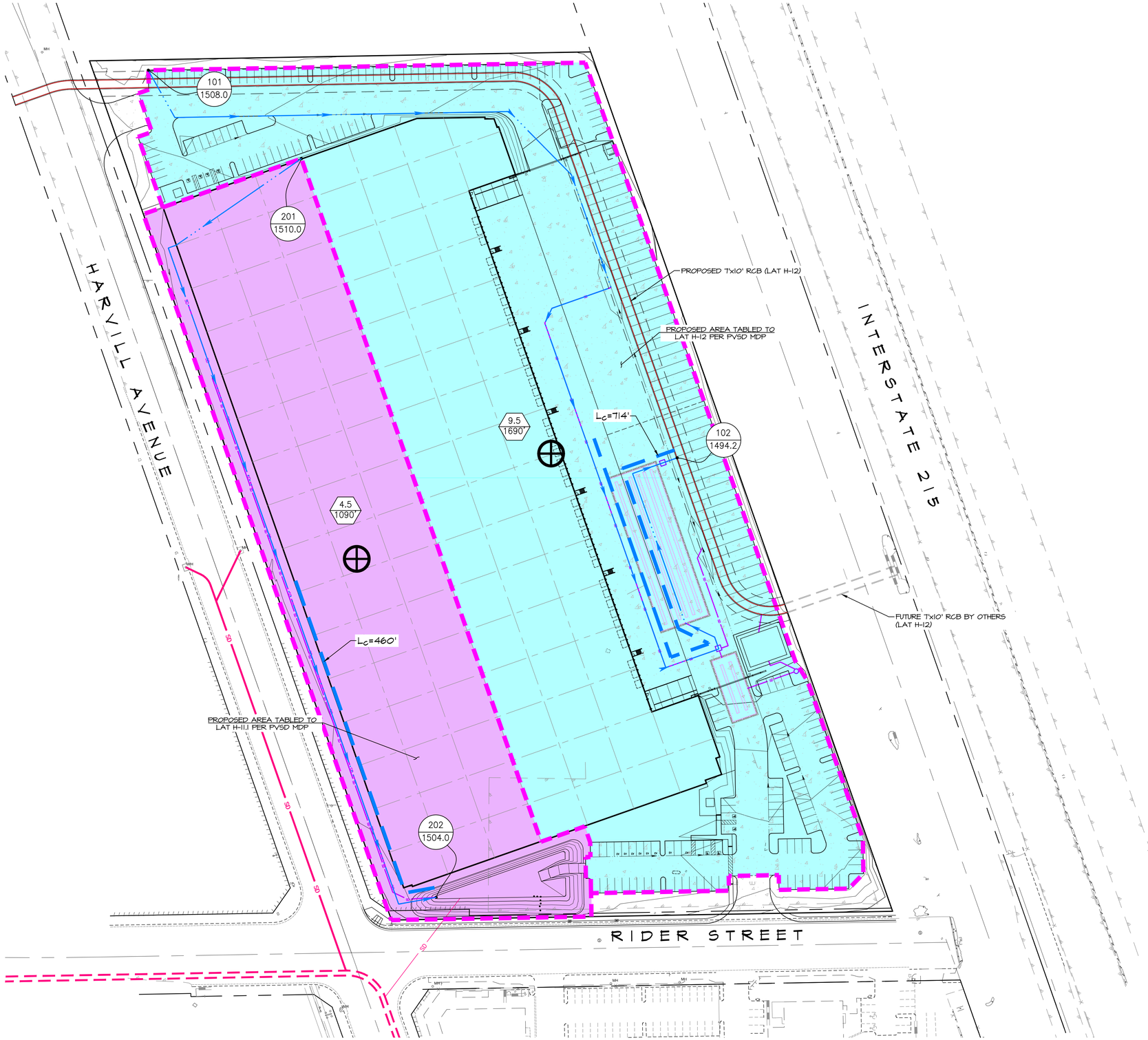
Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0003	0.04	Q	|	|	|	|
0+10	0.0010	0.10	Q	|	|	|	|
0+15	0.0018	0.12	Q	|	|	|	|
0+20	0.0028	0.14	Q	|	|	|	|
0+25	0.0040	0.18	Q	|	|	|	|

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0+30       0.0053      0.18  Q          |          |          |          |
0+35       0.0065      0.19  Q          |          |          |          |
0+40       0.0078      0.19  Q          |          |          |          |
0+45       0.0091      0.19  Q          |          |          |          |
0+50       0.0106      0.21  Q          |          |          |          |
0+55       0.0122      0.24  Q          |          |          |          |
1+ 0       0.0139      0.25  Q          |          |          |          |
1+ 5       0.0155      0.23  Q          |          |          |          |
1+10       0.0169      0.20  Q          |          |          |          |
1+15       0.0182      0.19  Q          |          |          |          |
1+20       0.0195      0.19  Q          |          |          |          |
1+25       0.0208      0.19  Q          |          |          |          |
1+30       0.0221      0.19  Q          |          |          |          |
1+35       0.0234      0.19  Q          |          |          |          |
1+40       0.0247      0.19  Q          |          |          |          |
1+45       0.0260      0.19  Q          |          |          |          |
1+50       0.0275      0.21  Q          |          |          |          |
1+55       0.0291      0.24  Q          |          |          |          |
2+ 0       0.0308      0.25  Q          |          |          |          |
2+ 5       0.0325      0.25  QV         |          |          |          |
2+10       0.0342      0.25  |Q         |          |          |          |
2+15       0.0360      0.25  |Q         |          |          |          |
2+20       0.0377      0.25  |Q         |          |          |          |
2+25       0.0394      0.25  |Q         |          |          |          |
2+30       0.0412      0.25  |Q         |          |          |          |
2+35       0.0431      0.27  |Q         |          |          |          |
2+40       0.0451      0.30  |Q         |          |          |          |
2+45       0.0473      0.31  |Q         |          |          |          |
2+50       0.0494      0.31  |Q         |          |          |          |
2+55       0.0516      0.31  |Q         |          |          |          |
3+ 0       0.0537      0.31  |Q         |          |          |          |
3+ 5       0.0559      0.31  |Q         |          |          |          |
3+10       0.0581      0.31  |Q         |          |          |          |
3+15       0.0602      0.31  |Q         |          |          |          |
3+20       0.0624      0.31  |Q         |          |          |          |
3+25       0.0646      0.31  |Q         |          |          |          |
3+30       0.0667      0.31  |QV        |          |          |          |
3+35       0.0689      0.31  |QV        |          |          |          |
3+40       0.0711      0.31  |QV        |          |          |          |
3+45       0.0732      0.31  |QV        |          |          |          |
3+50       0.0755      0.34  |QV        |          |          |          |
3+55       0.0780      0.37  |QV        |          |          |          |
4+ 0       0.0806      0.37  |QV        |          |          |          |
4+ 5       0.0832      0.37  |QV        |          |          |          |
4+10       0.0858      0.38  |QV        |          |          |          |
4+15       0.0884      0.38  |QV        |          |          |          |
4+20       0.0911      0.40  |QV        |          |          |          |
4+25       0.0941      0.43  |QV        |          |          |          |
4+30       0.0971      0.43  |QV        |          |          |          |
4+35       0.1001      0.44  |Q V       |          |          |          |
4+40       0.1031      0.44  |Q V       |          |          |          |
4+45       0.1061      0.44  |Q V       |          |          |          |
4+50       0.1093      0.46  |Q V       |          |          |          |
4+55       0.1127      0.49  |Q V       |          |          |          |
5+ 0       0.1161      0.50  |Q V       |          |          |          |
5+ 5       0.1193      0.46  |Q V       |          |          |          |
5+10       0.1220      0.40  |Q V       |          |          |          |
5+15       0.1247      0.39  |Q V       |          |          |          |
5+20       0.1275      0.40  |Q V       |          |          |          |
5+25       0.1304      0.43  |Q  V       |          |          |          |
5+30       0.1334      0.43  |Q  V       |          |          |          |
5+35       0.1366      0.46  |Q  V       |          |          |          |
5+40       0.1400      0.49  |Q  V       |          |          |          |
5+45       0.1434      0.50  |Q  V       |          |          |          |
5+50       0.1468      0.50  | Q V       |          |          |          |
5+55       0.1503      0.50  | Q V       |          |          |          |
6+ 0       0.1538      0.50  | Q V       |          |          |          |
6+ 5       0.1574      0.52  | Q V       |          |          |          |
6+10       0.1612      0.55  | Q V       |          |          |          |
6+15       0.1650      0.56  | Q  V      |          |          |          |
6+20       0.1689      0.56  | Q  V      |          |          |          |
6+25       0.1728      0.56  | Q  V      |          |          |          |
6+30       0.1767      0.57  | Q  V      |          |          |          |
6+35       0.1808      0.59  | Q  V      |          |          |          |
6+40       0.1850      0.62  | Q  V      |          |          |          |
6+45       0.1893      0.62  | Q  V      |          |          |          |
6+50       0.1936      0.63  | Q  V      |          |          |          |
6+55       0.1979      0.63  | Q   V     |          |          |          |
7+ 0       0.2023      0.63  | Q   V     |          |          |          |
7+ 5       0.2066      0.63  | Q   V     |          |          |          |
7+10       0.2109      0.63  | Q   V     |          |          |          |
7+15       0.2152      0.63  | Q   V     |          |          |          |
7+20       0.2197      0.65  | Q   V     |          |          |          |
7+25       0.2244      0.68  | Q   V     |          |          |          |
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 7+30       0.2291      0.69  | Q    V  |          |          |          |
 7+35       0.2340      0.71  | Q    V  |          |          |          |
 7+40       0.2391      0.74  | Q    V  |          |          |          |
 7+45       0.2443      0.75  | Q    V  |          |          |          |
 7+50       0.2496      0.77  |  Q   V  |          |          |          |
 7+55       0.2552      0.80  |  Q   V  |          |          |          |
 8+ 0       0.2607      0.81  |  Q    V |          |          |          |
 8+ 5       0.2667      0.86  |  Q    V |          |          |          |
 8+10       0.2730      0.92  |  Q    V |          |          |          |
 8+15       0.2794      0.93  |  Q    V |          |          |          |
 8+20       0.2859      0.94  |  Q    V |          |          |          |
 8+25       0.2923      0.94  |  Q     V|          |          |          |
 8+30       0.2988      0.94  |  Q     V|          |          |          |
 8+35       0.3055      0.96  |  Q     V|          |          |          |
 8+40       0.3123      0.99  |  Q     V|          |          |          |
 8+45       0.3192      1.00  |   Q    V|          |          |          |
 8+50       0.3263      1.03  |   Q     V          |          |          |
 8+55       0.3335      1.06  |   Q     V          |          |          |
 9+ 0       0.3409      1.06  |   Q     V          |          |          |
 9+ 5       0.3485      1.11  |   Q     V          |          |          |
 9+10       0.3566      1.17  |   Q     V          |          |          |
 9+15       0.3647      1.18  |   Q     |V         |          |          |
 9+20       0.3731      1.21  |   Q     |V         |          |          |
 9+25       0.3816      1.24  |   Q     |V         |          |          |
 9+30       0.3902      1.25  |    Q    | V        |          |          |
 9+35       0.3990      1.28  |    Q    | V        |          |          |
 9+40       0.4080      1.31  |    Q    | V        |          |          |
 9+45       0.4171      1.31  |    Q    | V        |          |          |
 9+50       0.4263      1.34  |    Q    |  V       |          |          |
 9+55       0.4358      1.37  |    Q    |  V       |          |          |
10+ 0       0.4452      1.38  |    Q    |  V       |          |          |
10+ 5       0.4537      1.23  |   Q     |  V       |          |          |
10+10       0.4608      1.02  |   Q     |   V      |          |          |
10+15       0.4675      0.98  |  Q      |   V      |          |          |
10+20       0.4741      0.96  |  Q      |   V      |          |          |
10+25       0.4806      0.95  |  Q      |   V      |          |          |
10+30       0.4871      0.94  |  Q      |    V     |          |          |
10+35       0.4943      1.05  |   Q     |    V     |          |          |
10+40       0.5026      1.20  |   Q     |    V     |          |          |
10+45       0.5111      1.23  |   Q     |    V     |          |          |
10+50       0.5196      1.25  |   Q     |     V    |          |          |
10+55       0.5283      1.25  |    Q    |     V    |          |          |
11+ 0       0.5369      1.26  |    Q    |     V    |          |          |
11+ 5       0.5454      1.24  |   Q     |     V    |          |          |
11+10       0.5537      1.21  |   Q     |      V   |          |          |
11+15       0.5620      1.20  |   Q     |      V   |          |          |
11+20       0.5702      1.20  |   Q     |      V   |          |          |
11+25       0.5785      1.19  |   Q     |      V   |          |          |
11+30       0.5867      1.19  |   Q     |       V  |          |          |
11+35       0.5946      1.15  |   Q     |       V  |          |          |
11+40       0.6021      1.09  |   Q     |       V  |          |          |
11+45       0.6096      1.08  |   Q     |       V  |          |          |
11+50       0.6171      1.09  |   Q     |        V |          |          |
11+55       0.6248      1.12  |   Q     |        V |          |          |
12+ 0       0.6326      1.13  |   Q     |        V |          |          |
12+ 5       0.6414      1.28  |    Q    |        V |          |          |
12+10       0.6516      1.49  |    Q    |         V          |          |
12+15       0.6622      1.54  |     Q   |         V          |          |
12+20       0.6731      1.58  |     Q   |         V          |          |
12+25       0.6842      1.62  |     Q   |          |V        |          |
12+30       0.6954      1.63  |     Q   |          |V        |          |
12+35       0.7070      1.68  |     Q   |          |V        |          |
12+40       0.7189      1.74  |     Q   |          | V       |          |
12+45       0.7310      1.75  |     Q   |          | V       |          |
12+50       0.7432      1.78  |      Q  |          | V       |          |
12+55       0.7557      1.81  |      Q  |          |  V      |          |
13+ 0       0.7682      1.82  |      Q  |          |  V      |          |
13+ 5       0.7815      1.93  |      Q  |          |   V     |          |
13+10       0.7958      2.08  |       Q |          |   V     |          |
13+15       0.8103      2.11  |       Q |          |   V     |          |
13+20       0.8250      2.13  |       Q |          |    V    |          |
13+25       0.8397      2.13  |       Q |          |    V    |          |
13+30       0.8544      2.14  |       Q |          |     V   |          |
13+35       0.8674      1.90  |      Q  |          |     V   |          |
13+40       0.8783      1.58  |     Q   |          |      V  |          |
13+45       0.8886      1.50  |     Q   |          |      V  |          |
13+50       0.8987      1.47  |    Q    |          |      V  |          |
13+55       0.9087      1.45  |    Q    |          |      V  |          |
14+ 0       0.9187      1.45  |    Q    |          |       V |          |
14+ 5       0.9292      1.53  |     Q   |          |       V |          |
14+10       0.9406      1.65  |     Q   |          |       V |          |
14+15       0.9521      1.68  |     Q   |          |        V|          |
14+20       0.9636      1.67  |     Q   |          |        V|          |
14+25       0.9749      1.64  |     Q   |          |         V          |
```

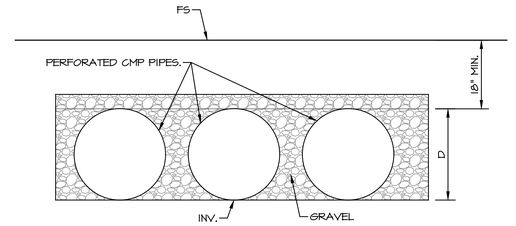
```
14+30       0.9862      1.64  |     Q    |          |         V         |
14+35       0.9975      1.64  |     Q    |          |         V         |
14+40       1.0087      1.63  |     Q    |          |         |V        |
14+45       1.0200      1.63  |     Q    |          |         |V        |
14+50       1.0311      1.61  |     Q    |          |         |V        |
14+55       1.0420      1.58  |     Q    |          |         | V       |
15+ 0       1.0529      1.58  |     Q    |          |         | V       |
15+ 5       1.0635      1.55  |     Q    |          |         | V       |
15+10       1.0740      1.52  |     Q    |          |         |  V      |
15+15       1.0844      1.51  |     Q    |          |         |  V      |
15+20       1.0947      1.49  |    Q     |          |         |  V      |
15+25       1.1047      1.46  |    Q     |          |         |   V     |
15+30       1.1147      1.45  |    Q     |          |         |   V     |
15+35       1.1241      1.36  |    Q     |          |         |   V     |
15+40       1.1326      1.24  |   Q      |          |         |   V     |
15+45       1.1410      1.21  |   Q      |          |         |    V    |
15+50       1.1493      1.20  |   Q      |          |         |    V    |
15+55       1.1575      1.20  |   Q      |          |         |    V    |
16+ 0       1.1657      1.19  |   Q      |          |         |    V    |
16+ 5       1.1717      0.87  |  Q       |          |         |     V   |
16+10       1.1747      0.43  |Q         |          |         |     V   |
16+15       1.1769      0.33  |Q         |          |         |     V   |
16+20       1.1789      0.28  |Q         |          |         |     V   |
16+25       1.1807      0.26  |Q         |          |         |     V   |
16+30       1.1824      0.25  |Q         |          |         |     V   |
16+35       1.1840      0.23  Q          |          |         |     V   |
16+40       1.1853      0.20  Q          |          |         |     V   |
16+45       1.1867      0.19  Q          |          |         |     V   |
16+50       1.1880      0.19  Q          |          |         |     V   |
16+55       1.1893      0.19  Q          |          |         |     V   |
17+ 0       1.1906      0.19  Q          |          |         |     V   |
17+ 5       1.1922      0.23  Q          |          |         |     V   |
17+10       1.1942      0.29  |Q         |          |         |     V   |
17+15       1.1963      0.30  |Q         |          |         |     V   |
17+20       1.1984      0.31  |Q         |          |         |     V   |
17+25       1.2006      0.31  |Q         |          |         |     V   |
17+30       1.2027      0.31  |Q         |          |         |      V  |
17+35       1.2049      0.31  |Q         |          |         |      V  |
17+40       1.2071      0.31  |Q         |          |         |      V  |
17+45       1.2092      0.31  |Q         |          |         |      V  |
17+50       1.2112      0.29  |Q         |          |         |      V  |
17+55       1.2131      0.26  |Q         |          |         |      V  |
18+ 0       1.2148      0.26  |Q         |          |         |      V  |
18+ 5       1.2166      0.25  |Q         |          |         |      V  |
18+10       1.2183      0.25  |Q         |          |         |      V  |
18+15       1.2200      0.25  |Q         |          |         |      V  |
18+20       1.2218      0.25  |Q         |          |         |      V  |
18+25       1.2235      0.25  |Q         |          |         |      V  |
18+30       1.2252      0.25  |Q         |          |         |      V  |
18+35       1.2268      0.23  Q          |          |         |      V  |
18+40       1.2282      0.20  Q          |          |         |      V  |
18+45       1.2295      0.19  Q          |          |         |      V  |
18+50       1.2307      0.17  Q          |          |         |      V  |
18+55       1.2316      0.14  Q          |          |         |      V  |
19+ 0       1.2325      0.13  Q          |          |         |      V  |
19+ 5       1.2336      0.15  Q          |          |         |       V |
19+10       1.2348      0.18  Q          |          |         |       V |
19+15       1.2361      0.18  Q          |          |         |       V |
19+20       1.2375      0.21  Q          |          |         |       V |
19+25       1.2391      0.24  Q          |          |         |       V |
19+30       1.2408      0.25  Q          |          |         |       V |
19+35       1.2424      0.23  Q          |          |         |       V |
19+40       1.2438      0.20  Q          |          |         |       V |
19+45       1.2451      0.19  Q          |          |         |       V |
19+50       1.2463      0.17  Q          |          |         |       V |
19+55       1.2472      0.14  Q          |          |         |       V |
20+ 0       1.2481      0.13  Q          |          |         |       V |
20+ 5       1.2491      0.15  Q          |          |         |       V |
20+10       1.2504      0.18  Q          |          |         |       V |
20+15       1.2516      0.18  Q          |          |         |       V |
20+20       1.2529      0.19  Q          |          |         |       V |
20+25       1.2542      0.19  Q          |          |         |       V |
20+30       1.2555      0.19  Q          |          |         |       V |
20+35       1.2568      0.19  Q          |          |         |       V |
20+40       1.2581      0.19  Q          |          |         |       V |
20+45       1.2594      0.19  Q          |          |         |       V |
20+50       1.2606      0.17  Q          |          |         |       V |
20+55       1.2615      0.14  Q          |          |         |       V |
21+ 0       1.2624      0.13  Q          |          |         |       V |
21+ 5       1.2634      0.15  Q          |          |         |       V |
21+10       1.2647      0.18  Q          |          |         |       V |
21+15       1.2659      0.18  Q          |          |         |        V|
21+20       1.2671      0.16  Q          |          |         |        V|
21+25       1.2680      0.14  Q          |          |         |        V|
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   21+30       1.2689      0.13  Q          |           |           |         V|
   21+35       1.2699      0.15  Q          |           |           |         V|
   21+40       1.2711      0.18  Q          |           |           |         V|
   21+45       1.2724      0.18  Q          |           |           |         V|
   21+50       1.2735      0.16  Q          |           |           |         V|
   21+55       1.2745      0.14  Q          |           |           |         V|
   22+ 0       1.2754      0.13  Q          |           |           |         V|
   22+ 5       1.2764      0.15  Q          |           |           |         V|
   22+10       1.2776      0.18  Q          |           |           |         V|
   22+15       1.2789      0.18  Q          |           |           |         V|
   22+20       1.2800      0.16  Q          |           |           |         V|
   22+25       1.2810      0.14  Q          |           |           |         V|
   22+30       1.2819      0.13  Q          |           |           |         V|
   22+35       1.2828      0.13  Q          |           |           |         V|
   22+40       1.2836      0.13  Q          |           |           |         V|
   22+45       1.2845      0.13  Q          |           |           |         V|
   22+50       1.2854      0.13  Q          |           |           |         V|
   22+55       1.2862      0.13  Q          |           |           |         V|
   23+ 0       1.2871      0.13  Q          |           |           |         V|
   23+ 5       1.2880      0.13  Q          |           |           |         V|
   23+10       1.2888      0.13  Q          |           |           |         V|
   23+15       1.2897      0.13  Q          |           |           |         V|
   23+20       1.2905      0.13  Q          |           |           |         V|
   23+25       1.2914      0.13  Q          |           |           |         V|
   23+30       1.2923      0.13  Q          |           |           |         V|
   23+35       1.2931      0.13  Q          |           |           |         V|
   23+40       1.2940      0.13  Q          |           |           |         V|
   23+45       1.2949      0.13  Q          |           |           |         V|
   23+50       1.2957      0.13  Q          |           |           |         V|
   23+55       1.2966      0.13  Q          |           |           |         V|
   24+ 0       1.2975      0.13  Q          |           |           |         V|
   24+ 5       1.2980      0.08  Q          |           |           |         V|
   24+10       1.2982      0.02  Q          |           |           |         V|
   24+15       1.2983      0.01  Q          |           |           |         V|
   24+20       1.2983      0.00  Q          |           |           |         V|
   24+25       1.2983      0.00  Q          |           |           |          V
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LEGEND

- DRAINAGE MANAGEMENT BOUNDARY
- FLOW DIRECTION
- AREA TRIBUTARY TO H-11.1
- AREA TRIBUTARY TO H-12
- LCA=1000' — CENTROIDAL LENGTH
- 101 / 14xx — NODE DESIGNATION / NODE ELEVATION
- *14XX — *INVERT ELEVATION
- 5.0 / 1000' — WATERSHED AREA (ACRES) / LONGEST WATER PATH (FT)
- CENTROID



UNDERGROUND CHAMBERS TYPICAL SECTION

N
W WEBB E
S

1" = 60'

30 0 60 120 180

COUNTY OF RIVERSIDE

UNIT HYDROGRAPH HYDROLOGY
PROPOSED UNIT HYDROGRAPH
DUKE HARVILL

SCALE: 1"=60'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 19-0126
DATE: 11/06/2020			SHEET 2
DESIGNED:			OF 2 SHEETS
CHECKED:			
PLN CK REF:			DWG. NO.
F.B.			

H:\2019\19-0126\DRAINAGE\HYDROLOGY\DWG FOLDER\19-0126-PHYD-UH.DWG 11/12/2020 1:28:41 AM

TXT.R.W

Duke Harvill & Rider

19-0126: Duke Realty - Harvill and Rider

Stage - Storage - Discharge Table

Basin Information: High Flow Mitigation Underground Chambers

Invert Elevation:	1496.5	**FT**
Length:	200	**FT**
Width:	64	**FT**
Footprint:	12,800	**SF**
Invert Slope:	0.2	**%**

2-Year 24 Hour Orifice		5-Year 24 Hour Orifice		10-Year 24 Hour Orifice		100-Year 24 Hour Orifice	
EX. Q 2-YR 24-HR	0.4	EX. Q 5-YR 24-HR	1.20	EX. Q 10-YR 24-HR	1.80	EX. Q 100-YR 24-HR	3.80
Opening (IN)	2	Opening (IN)	3.5	Width(IN)	3.0	Width(IN)	6.0
Opening (FT)	0.167	Opening (FT)	0.292	Height (IN)	3.0	Height (IN)	4.0
AREA (SF)	0.022	AREA (SF)	0.067	AREA (SF)	0.063	AREA (SF)	0.167
# of Orifices	2	# of Orifices	2	# of Orifices	1	# of Orifices	1
Total Area (SF)	0.044	Total Area (SF)	0.134	Total Area (SF)	0.063	Total Area (SF)	0.167
G (FT/s^2)	32.2	G (FT/s^2)	32.2	G (FT/s^2)	32.2	G (FT/s^2)	32.2
Cd	0.66	Cd	0.66	Cd	0.66	Cd	0.66
Invert H (FT)	1496.5	Invert H (FT)	1500.6	Invert H (FT)	1501.7	Invert H (FT)	1502.4

Point #	Elevation (FT)	Depth (FT)	CMP Chambers Storage (AC-FT)	Truck Court Storage (AC-FT)	Total Storage (AC-FT)	h (FT)	Q** (CFS)	h (FT)	Q** (CFS)	h (FT)	Q** (CFS)	h (FT)	Q** (CFS)	Qtotal (CFS)
1.00	1,496.50	0.00	0.000		0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.000
2.00	1,496.70	0.20	0.029		0.029	0.12	0.079	0.00	0.000	0.00	0.000	0.00	0.000	0.079
3.00	1,497.00	0.50	0.081		0.081	0.42	0.149	0.00	0.000	0.00	0.000	0.00	0.000	0.149
4.00	1,497.50	1.00	0.178		0.178	0.92	0.221	0.00	0.000	0.00	0.000	0.00	0.000	0.221
5.00	1,498.50	2.00	0.395		0.395	1.92	0.320	0.00	0.000	0.00	0.000	0.00	0.000	0.320
6.00	1,499.50	3.00	0.627		0.627	2.92	0.395	0.00	0.000	0.00	0.000	0.00	0.000	0.395
7.00	1,500.50	4.00	0.859		0.859	3.92	0.457	0.00	0.000	0.00	0.000	0.00	0.000	0.457
8.00	1,500.90	4.40	0.948		0.948	4.32	0.480	0.15	0.278	0.00	0.000	0.00	0.000	0.758
9.00	1,501.00	4.50	0.970		0.970	4.42	0.486	0.25	0.357	0.00	0.000	0.00	0.000	0.842
10.00	1,501.50	5.00	1.076		1.076	4.92	0.512	0.75	0.615	0.00	0.000	0.00	0.000	1.127
11.00	1,501.90	5.40	1.155		1.155	5.32	0.533	1.15	0.760	0.00	0.000	0.00	0.000	1.293
12.00	1,502.00	5.50	1.173		1.173	5.42	0.538	1.25	0.793	0.17	0.138	0.00	0.000	1.469
13.00	1,502.50	6.00	1.254		1.254	5.92	0.562	1.75	0.937	0.67	0.272	0.00	0.000	1.771
14.00	1,502.70	6.20	1.277		1.277	6.12	0.572	1.95	0.989	0.88	0.310	0.00	0.000	1.871
15.00	1,502.80	6.30	1.289		1.289	6.22	0.576	2.05	1.014	0.97	0.327	0.23	0.426	2.344
16.00	1,503.20	6.70	1.336		1.336	6.62	0.594	2.45	1.109	1.38	0.388	0.63	0.703	2.794
17.00	1,503.90	7.40	1.336	0.000	1.336	7.32	0.625	3.15	1.257	2.08	0.477	1.33	1.019	3.378
18.00	1,504.00	7.50	1.336	0.002	1.338	7.42	0.629	3.25	1.277	2.17	0.488	1.43	1.057	3.451
19.00	1,504.50	8.00	1.336	0.236	1.572	7.92	0.650	3.75	1.371	2.67	0.541	1.93	1.227	3.790
20.00	1,505.00	8.50	1.336	1.178	2.514	8.42	0.670	4.25	1.460	3.17	0.590	2.43	1.377	4.097

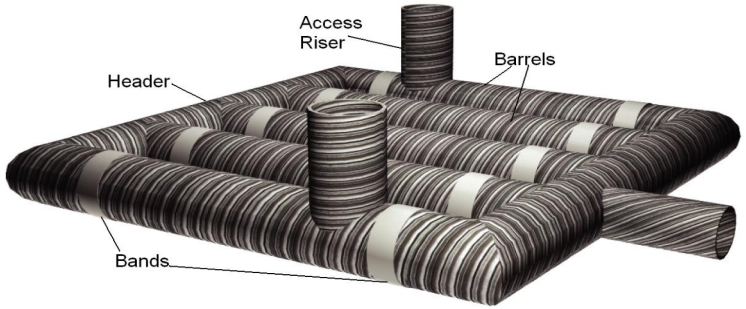
**Q determined using orifice equation, Q=CA(2gh)^0.5

DYODS™
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CONTECH CONSTRUCTION PRODUCTS INC.

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dyods@contech-cpi.com



Project Summary

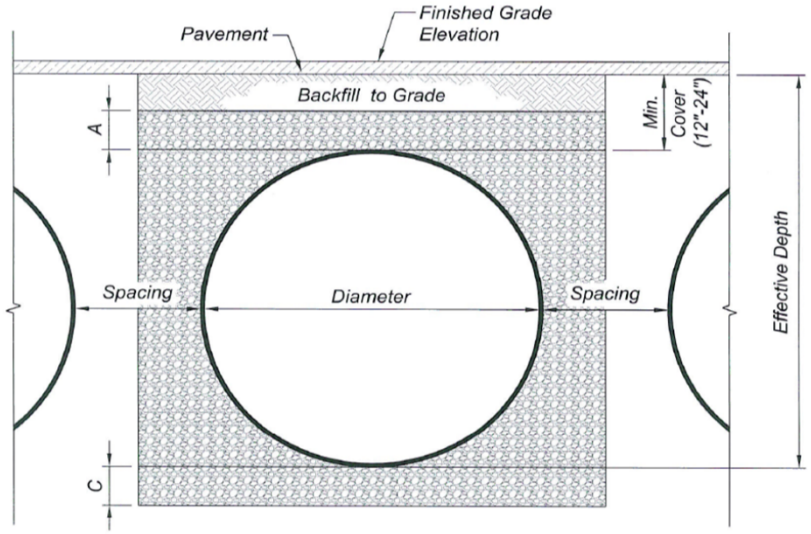
Date:	11/10/2020
Project Name:	Duke Harvill & Rider
City / County:	Riverside County
State:	CA
Designed By:	TSW
Company:	Albert A. Webb Associates
Telephone:	(951) 686-1070

Enter Information in Blue Cells

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	58,000
Limiting Width (ft):	70.00
Invert Depth Below Asphalt (ft):	5.60
Solid or Perforated Pipe:	Perforated
Shape Or Diameter (in):	72
Number Of Headers:	2
Spacing between Barrels (ft):	3.00
Stone Width Around Perimeter of System (ft):	2
Depth A: Porous Stone Above Pipe (in):	9
Depth C: Porous Stone Below Pipe (in):	0
Stone Porosity (0 to 40%):	40

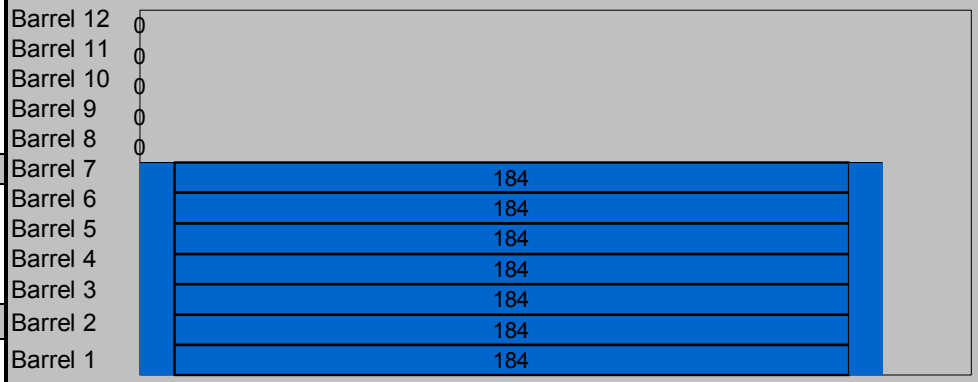
28.27 ft^2 Pipe Area



System Sizing

Pipe Storage:	39,810	cf	
Porous Stone Storage:	18,636	cf	
Total Storage Provided:	58,446	cf	100.8% Of Required Storage
Number of Barrels:	7	barrels	
Length per Barrel:	184.0	ft	
Length Per Header:	60.0	ft	
Rectangular Footprint (W x L):	64. ft x 200. ft		

System Layout



Barrel Footage (w/o headers)

CONTECH Materials

Total CMP Footage:	1,408	ft
Approximate Total Pieces:	62	pcs
Approximate Coupling Bands:	67	bands
Approximate Truckloads:	31	trucks

Construction Quantities**

Total Excavation:	2655	cy
Porous Stone Backfill For Storage:	1726	cy stone
Backfill to Grade Excluding Stone:	-545	cy fill

***Construction quantities are approximate and should be verified upon final design*

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FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 11/11/20

19-0126 - DUKE HARVILL
BASIN ROUTING CALCULATIONS, PROPOSED H-12 TRIBUTARY
2-YEAR, 24-HOUR STORM EVENT
FN: ROUTE242.OUT TSW

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: ONSITEPOST242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 2.136 (CFS)
Total volume = 1.298 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.200	0.029	0.079	0.029	0.029
0.500	0.081	0.149	0.080	0.082
1.000	0.178	0.221	0.177	0.179
2.000	0.395	0.320	0.394	0.396
3.000	0.627	0.395	0.626	0.628
4.000	0.859	0.457	0.857	0.861
4.400	0.948	0.758	0.945	0.951
4.500	0.970	0.842	0.967	0.973
5.000	1.076	1.127	1.072	1.080
5.400	1.155	1.293	1.151	1.159
5.500	1.173	1.469	1.168	1.178
6.000	1.254	1.771	1.248	1.260
6.200	1.277	1.871	1.271	1.283
6.300	1.289	2.344	1.281	1.297
6.700	1.336	2.794	1.326	1.346
7.400	1.336	3.378	1.324	1.348
7.500	1.133	3.451	1.121	1.145
8.000	1.572	3.790	1.559	1.585
8.500	2.514	4.097	2.500	2.528

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 0.5 1.07 1.60 2.14 (Ft.) Depth

0.083	0.04	0.00	0.000	O	|	|	|	0.00
0.167	0.10	0.00	0.001	OI	|	|	|	0.00
0.250	0.12	0.00	0.001	OI	|	|	|	0.01
0.333	0.14	0.01	0.002	O I	|	|	|	0.02
0.417	0.18	0.01	0.003	O I	|	|	|	0.02
0.500	0.18	0.01	0.004	O I	|	|	|	0.03
0.583	0.19	0.02	0.006	O I	|	|	|	0.04
0.667	0.19	0.02	0.007	O I	|	|	|	0.05
0.750	0.19	0.02	0.008	O I	|	|	|	0.05
0.833	0.21	0.02	0.009	O I	|	|	|	0.06
0.917	0.24	0.03	0.011	O I	|	|	|	0.07
1.000	0.25	0.03	0.012	O I	|	|	|	0.08
1.083	0.23	0.04	0.013	O I	|	|	|	0.09
1.167	0.20	0.04	0.015	O I	|	|	|	0.10
1.250	0.19	0.04	0.016	O I	|	|	|	0.11
1.333	0.19	0.05	0.017	O I	|	|	|	0.12
1.417	0.19	0.05	0.018	O I	|	|	|	0.12
1.500	0.19	0.05	0.019	O I	|	|	|	0.13
1.583	0.19	0.05	0.020	O I	|	|	|	0.13
1.667	0.19	0.06	0.020	O I	|	|	|	0.14
1.750	0.19	0.06	0.021	O I	|	|	|	0.15
1.833	0.21	0.06	0.022	O I	|	|	|	0.15
1.917	0.24	0.06	0.023	O I	|	|	|	0.16
2.000	0.25	0.07	0.025	|O I	|	|	|	0.17
2.083	0.25	0.07	0.026	|O I	|	|	|	0.18
2.167	0.25	0.07	0.027	|O I	|	|	|	0.19
2.250	0.25	0.08	0.028	|O I	|	|	|	0.20
2.333	0.25	0.08	0.030	|O I	|	|	|	0.20
2.417	0.25	0.08	0.031	|O I	|	|	|	0.21
2.500	0.25	0.08	0.032	|O I	|	|	|	0.22
2.583	0.27	0.08	0.033	|O I	|	|	|	0.22
2.667	0.30	0.09	0.035	|O I	|	|	|	0.23
2.750	0.31	0.09	0.036	|O I	|	|	|	0.24
2.833	0.31	0.09	0.038	|O I	|	|	|	0.25
2.917	0.31	0.09	0.039	|O I	|	|	|	0.26
3.000	0.31	0.09	0.041	|O I	|	|	|	0.27
3.083	0.31	0.10	0.042	|O I	|	|	|	0.28
3.167	0.31	0.10	0.044	|O I	|	|	|	0.28
3.250	0.31	0.10	0.045	|O I	|	|	|	0.29
3.333	0.31	0.10	0.047	|O I	|	|	|	0.30
3.417	0.31	0.10	0.048	|O I	|	|	|	0.31
3.500	0.31	0.11	0.049	|O I	|	|	|	0.32
3.583	0.31	0.11	0.051	|O I	|	|	|	0.33
3.667	0.31	0.11	0.052	|O I	|	|	|	0.33
3.750	0.31	0.11	0.054	|O I	|	|	|	0.34
3.833	0.34	0.11	0.055	|O I	|	|	|	0.35
3.917	0.37	0.12	0.057	|O I	|	|	|	0.36
4.000	0.37	0.12	0.058	|O I	|	|	|	0.37
4.083	0.37	0.12	0.060	|O I	|	|	|	0.38
4.167	0.38	0.12	0.062	|O I	|	|	|	0.39
4.250	0.38	0.13	0.064	|O I	|	|	|	0.40
4.333	0.40	0.13	0.065	|O I	|	|	|	0.41
4.417	0.43	0.13	0.067	|O I	|	|	|	0.42
4.500	0.43	0.13	0.069	|O I	|	|	|	0.43
4.583	0.44	0.14	0.072	| O I	|	|	|	0.45
4.667	0.44	0.14	0.074	| O I	|	|	|	0.46
4.750	0.44	0.14	0.076	| O I	|	|	|	0.47
4.833	0.46	0.14	0.078	| O I	|	|	|	0.48
4.917	0.49	0.15	0.080	| O I|	|	|	0.49
5.000	0.50	0.15	0.082	| O I|	|	|	0.51
5.083	0.46	0.15	0.085	| O I	|	|	|	0.52
5.167	0.40	0.15	0.087	| O I	|	|	|	0.53
5.250	0.39	0.15	0.088	| O I	|	|	|	0.54
5.333	0.40	0.16	0.090	| O I	|	|	|	0.55
5.417	0.43	0.16	0.092	| O I	|	|	|	0.56
5.500	0.43	0.16	0.094	| O I	|	|	|	0.56
5.583	0.46	0.16	0.096	| O I	|	|	|	0.58
5.667	0.49	0.16	0.098	| O I|	|	|	0.59
5.750	0.50	0.16	0.100	| O I|	|	|	0.60
5.833	0.50	0.16	0.102	| O I|	|	|	0.61
5.917	0.50	0.17	0.105	| O I|	|	|	0.62
6.000	0.50	0.17	0.107	| O I|	|	|	0.63
6.083	0.52	0.17	0.109	| O I|	|	|	0.65
6.167	0.55	0.17	0.112	| O I	|	|	|	0.66
6.250	0.56	0.17	0.115	| O I	|	|	|	0.67
6.333	0.56	0.18	0.117	| O I	|	|	|	0.69
6.417	0.56	0.18	0.120	| O I	|	|	|	0.70
6.500	0.57	0.18	0.123	| O I	|	|	|	0.71
6.583	0.59	0.18	0.125	| O I	|	|	|	0.73
6.667	0.62	0.18	0.128	| O |I	|	|	|	0.74
6.750	0.62	0.19	0.131	| O |I	|	|	|	0.76
6.833	0.63	0.19	0.134	| O |I	|	|	|	0.77
6.917	0.63	0.19	0.137	| O |I	|	|	|	0.79
7.000	0.63	0.19	0.140	| O |I	|	|	|	0.80

7.083	0.63	0.20	0.143	O	I				0.82
7.167	0.63	0.20	0.146	O	I				0.84
7.250	0.63	0.20	0.149	O	I				0.85
7.333	0.65	0.20	0.152	O	I				0.87
7.417	0.68	0.20	0.155	O	I				0.88
7.500	0.69	0.21	0.159	O	I				0.90
7.583	0.71	0.21	0.162	O	I				0.92
7.667	0.74	0.21	0.166	O	I				0.94
7.750	0.75	0.21	0.169	O	I				0.95
7.833	0.77	0.22	0.173	O	I				0.97
7.917	0.80	0.22	0.177	O	I				0.99
8.000	0.81	0.22	0.181	O	I				1.01
8.083	0.86	0.22	0.185	O	I				1.03
8.167	0.92	0.23	0.190	O	I				1.05
8.250	0.93	0.23	0.194	O	I				1.08
8.333	0.94	0.23	0.199	O	I				1.10
8.417	0.94	0.23	0.204	O	I				1.12
8.500	0.94	0.24	0.209	O	I				1.14
8.583	0.96	0.24	0.214	O	I				1.17
8.667	0.99	0.24	0.219	O	I				1.19
8.750	1.00	0.24	0.224	O	I				1.21
8.833	1.03	0.24	0.230	O	I				1.24
8.917	1.06	0.25	0.235	O	I				1.26
9.000	1.06	0.25	0.241	O	I				1.29
9.083	1.11	0.25	0.246	O	I				1.32
9.167	1.17	0.26	0.253	O	I				1.34
9.250	1.18	0.26	0.259	O	I				1.37
9.333	1.21	0.26	0.265	O	I				1.40
9.417	1.24	0.26	0.272	O	I				1.43
9.500	1.25	0.27	0.279	O	I				1.46
9.583	1.28	0.27	0.286	O	I				1.50
9.667	1.31	0.27	0.293	O	I				1.53
9.750	1.31	0.28	0.300	O	I				1.56
9.833	1.34	0.28	0.307	O	I				1.59
9.917	1.37	0.28	0.314	O	I				1.63
10.000	1.38	0.29	0.322	O	I				1.66
10.083	1.23	0.29	0.329	O	I				1.70
10.167	1.02	0.29	0.335	O	I				1.72
10.250	0.98	0.29	0.340	O	I				1.74
10.333	0.96	0.30	0.344	O	I				1.77
10.417	0.95	0.30	0.349	O	I				1.79
10.500	0.94	0.30	0.353	O	I				1.81
10.583	1.05	0.30	0.358	O	I				1.83
10.667	1.20	0.31	0.364	O	I				1.85
10.750	1.23	0.31	0.370	O	I				1.88
10.833	1.25	0.31	0.376	O	I				1.91
10.917	1.25	0.31	0.383	O	I				1.94
11.000	1.26	0.32	0.389	O	I				1.97
11.083	1.24	0.32	0.395	O	I				2.00
11.167	1.21	0.32	0.402	O	I				2.03
11.250	1.20	0.32	0.408	O	I				2.05
11.333	1.20	0.33	0.414	O	I				2.08
11.417	1.19	0.33	0.420	O	I				2.11
11.500	1.19	0.33	0.426	O	I				2.13
11.583	1.15	0.33	0.431	O	I				2.16
11.667	1.09	0.33	0.437	O	I				2.18
11.750	1.08	0.34	0.442	O	I				2.20
11.833	1.09	0.34	0.447	O	I				2.23
11.917	1.12	0.34	0.453	O	I				2.25
12.000	1.13	0.34	0.458	O	I				2.27
12.083	1.28	0.34	0.464	O	I				2.30
12.167	1.49	0.34	0.471	O	I				2.33
12.250	1.54	0.35	0.479	O	I				2.36
12.333	1.58	0.35	0.487	O	I				2.40
12.417	1.62	0.35	0.496	O	I				2.44
12.500	1.63	0.36	0.505	O	I				2.47
12.583	1.68	0.36	0.514	O	I				2.51
12.667	1.74	0.36	0.523	O	I				2.55
12.750	1.75	0.36	0.532	O	I				2.59
12.833	1.78	0.37	0.542	O	I				2.63
12.917	1.81	0.37	0.552	O	I				2.68
13.000	1.82	0.37	0.562	O	I				2.72
13.083	1.93	0.38	0.572	O	I				2.76
13.167	2.08	0.38	0.583	O	I				2.81
13.250	2.11	0.38	0.595	O	I				2.86
13.333	2.13	0.39	0.607	O	I				2.91
13.417	2.13	0.39	0.619	O	I				2.97
13.500	2.14	0.40	0.631	O	I				3.02
13.583	1.90	0.40	0.642	O	I				3.07
13.667	1.58	0.40	0.651	O	I				3.10
13.750	1.50	0.40	0.659	O	I				3.14
13.833	1.47	0.41	0.667	O	I				3.17
13.917	1.45	0.41	0.674	O	I				3.20
14.000	1.45	0.41	0.681	O	I				3.23

14.083	1.53	0.41	0.688	O		I		3.26
14.167	1.65	0.41	0.697	O		I		3.30
14.250	1.68	0.42	0.705	O		I		3.34
14.333	1.67	0.42	0.714	O		I		3.37
14.417	1.64	0.42	0.722	O		I		3.41
14.500	1.64	0.42	0.731	O		I		3.45
14.583	1.64	0.42	0.739	O		I		3.48
14.667	1.63	0.43	0.747	O		I		3.52
14.750	1.63	0.43	0.756	O		I		3.55
14.833	1.61	0.43	0.764	O		I		3.59
14.917	1.58	0.43	0.772	O		I		3.62
15.000	1.58	0.44	0.780	O		I		3.66
15.083	1.55	0.44	0.788	O		I		3.69
15.167	1.52	0.44	0.795	O		I		3.72
15.250	1.51	0.44	0.802	O		I		3.76
15.333	1.49	0.44	0.810	O		I		3.79
15.417	1.46	0.45	0.817	O		I		3.82
15.500	1.45	0.45	0.824	O		I		3.85
15.583	1.36	0.45	0.830	O		I		3.88
15.667	1.24	0.45	0.836	O	I			3.90
15.750	1.21	0.45	0.842	O	I			3.92
15.833	1.20	0.45	0.847	O	I			3.95
15.917	1.20	0.46	0.852	O	I			3.97
16.000	1.19	0.46	0.857	O	I			3.99
16.083	0.87	0.46	0.861	O	I			4.01
16.167	0.43	0.47	0.862	IO				4.01
16.250	0.33	0.47	0.862	I O				4.01
16.333	0.28	0.46	0.860	I O				4.01
16.417	0.26	0.46	0.859	I O				4.00
16.500	0.25	0.46	0.858	I O				3.99
16.583	0.23	0.46	0.856	I O				3.99
16.667	0.20	0.46	0.855	I O				3.98
16.750	0.19	0.46	0.853	I O				3.97
16.833	0.19	0.45	0.851	I O				3.97
16.917	0.19	0.45	0.849	I O				3.96
17.000	0.19	0.45	0.847	I O				3.95
17.083	0.23	0.45	0.846	I O				3.94
17.167	0.29	0.45	0.844	I O				3.94
17.250	0.30	0.45	0.843	I O				3.93
17.333	0.31	0.45	0.842	I O				3.93
17.417	0.31	0.45	0.841	I O				3.92
17.500	0.31	0.45	0.840	I O				3.92
17.583	0.31	0.45	0.839	I O				3.92
17.667	0.31	0.45	0.839	I O				3.91
17.750	0.31	0.45	0.838	I O				3.91
17.833	0.29	0.45	0.837	I O				3.90
17.917	0.26	0.45	0.835	I O				3.90
18.000	0.26	0.45	0.834	I O				3.89
18.083	0.25	0.45	0.833	I O				3.89
18.167	0.25	0.45	0.831	I O				3.88
18.250	0.25	0.45	0.830	I O				3.87
18.333	0.25	0.45	0.829	I O				3.87
18.417	0.25	0.45	0.827	I O				3.86
18.500	0.25	0.45	0.826	I O				3.86
18.583	0.23	0.45	0.824	I O				3.85
18.667	0.20	0.45	0.823	I O				3.84
18.750	0.19	0.45	0.821	I O				3.84
18.833	0.17	0.45	0.819	I O				3.83
18.917	0.14	0.45	0.817	I O				3.82
19.000	0.13	0.45	0.815	I O				3.81
19.083	0.15	0.44	0.813	I O				3.80
19.167	0.18	0.44	0.811	I O				3.79
19.250	0.18	0.44	0.809	I O				3.79
19.333	0.21	0.44	0.808	I O				3.78
19.417	0.24	0.44	0.806	I O				3.77
19.500	0.25	0.44	0.805	I O				3.77
19.583	0.23	0.44	0.803	I O				3.76
19.667	0.20	0.44	0.802	I O				3.75
19.750	0.19	0.44	0.800	I O				3.75
19.833	0.17	0.44	0.798	I O				3.74
19.917	0.14	0.44	0.796	I O				3.73
20.000	0.13	0.44	0.794	I O				3.72
20.083	0.15	0.44	0.792	I O				3.71
20.167	0.18	0.44	0.790	I O				3.70
20.250	0.18	0.44	0.788	I O				3.70
20.333	0.19	0.44	0.787	I O				3.69
20.417	0.19	0.44	0.785	I O				3.68
20.500	0.19	0.44	0.783	I O				3.67
20.583	0.19	0.44	0.782	I O				3.67
20.667	0.19	0.44	0.780	I O				3.66
20.750	0.19	0.44	0.778	I O				3.65
20.833	0.17	0.43	0.776	I O				3.64
20.917	0.14	0.43	0.774	I O				3.64
21.000	0.13	0.43	0.772	I O				3.63

21.083	0.15	0.43	0.770	I	O			3.62
21.167	0.18	0.43	0.768	I	O			3.61
21.250	0.18	0.43	0.767	I	O			3.60
21.333	0.16	0.43	0.765	I	O			3.59
21.417	0.14	0.43	0.763	I	O			3.59
21.500	0.13	0.43	0.761	I	O			3.58
21.583	0.15	0.43	0.759	I	O			3.57
21.667	0.18	0.43	0.757	I	O			3.56
21.750	0.18	0.43	0.755	I	O			3.55
21.833	0.16	0.43	0.754	I	O			3.55
21.917	0.14	0.43	0.752	I	O			3.54
22.000	0.13	0.43	0.750	I	O			3.53
22.083	0.15	0.43	0.748	I	O			3.52
22.167	0.18	0.43	0.746	I	O			3.51
22.250	0.18	0.43	0.744	I	O			3.51
22.333	0.16	0.43	0.743	I	O			3.50
22.417	0.14	0.43	0.741	I	O			3.49
22.500	0.13	0.42	0.739	I	O			3.48
22.583	0.13	0.42	0.737	I	O			3.47
22.667	0.13	0.42	0.735	I	O			3.46
22.750	0.13	0.42	0.732	I	O			3.45
22.833	0.13	0.42	0.730	I	O			3.45
22.917	0.13	0.42	0.728	I	O			3.44
23.000	0.13	0.42	0.726	I	O			3.43
23.083	0.13	0.42	0.724	I	O			3.42
23.167	0.13	0.42	0.722	I	O			3.41
23.250	0.13	0.42	0.720	I	O			3.40
23.333	0.13	0.42	0.718	I	O			3.39
23.417	0.13	0.42	0.716	I	O			3.38
23.500	0.13	0.42	0.714	I	O			3.38
23.583	0.13	0.42	0.712	I	O			3.37
23.667	0.13	0.42	0.710	I	O			3.36
23.750	0.13	0.42	0.708	I	O			3.35
23.833	0.13	0.42	0.706	I	O			3.34
23.917	0.13	0.42	0.704	I	O			3.33
24.000	0.13	0.42	0.702	I	O			3.32
24.083	0.08	0.41	0.700	I	O			3.31
24.167	0.02	0.41	0.698	I	O			3.30
24.250	0.01	0.41	0.695	I	O			3.29
24.333	0.00	0.41	0.692	I	O			3.28
24.417	0.00	0.41	0.689	I	O			3.27
24.500	0.00	0.41	0.686	I	O			3.26
24.583	0.00	0.41	0.684	I	O			3.24
24.667	0.00	0.41	0.681	I	O			3.23
24.750	0.00	0.41	0.678	I	O			3.22
24.833	0.00	0.41	0.675	I	O			3.21
24.917	0.00	0.41	0.672	I	O			3.20
25.000	0.00	0.41	0.669	I	O			3.18
25.083	0.00	0.41	0.667	I	O			3.17
25.167	0.00	0.40	0.664	I	O			3.16
25.250	0.00	0.40	0.661	I	O			3.15
25.333	0.00	0.40	0.658	I	O			3.14
25.417	0.00	0.40	0.656	I	O			3.12
25.500	0.00	0.40	0.653	I	O			3.11
25.583	0.00	0.40	0.650	I	O			3.10
25.667	0.00	0.40	0.647	I	O			3.09
25.750	0.00	0.40	0.645	I	O			3.08
25.833	0.00	0.40	0.642	I	O			3.06
25.917	0.00	0.40	0.639	I	O			3.05
26.000	0.00	0.40	0.636	I	O			3.04
26.083	0.00	0.40	0.634	I	O			3.03
26.167	0.00	0.40	0.631	I	O			3.02
26.250	0.00	0.40	0.628	I	O			3.00
26.333	0.00	0.39	0.625	I	O			2.99
26.417	0.00	0.39	0.623	I	O			2.98
26.500	0.00	0.39	0.620	I	O			2.97
26.583	0.00	0.39	0.617	I	O			2.96
26.667	0.00	0.39	0.615	I	O			2.95
26.750	0.00	0.39	0.612	I	O			2.93
26.833	0.00	0.39	0.609	I	O			2.92
26.917	0.00	0.39	0.606	I	O			2.91
27.000	0.00	0.39	0.604	I	O			2.90
27.083	0.00	0.39	0.601	I	O			2.89
27.167	0.00	0.39	0.598	I	O			2.88
27.250	0.00	0.38	0.596	I	O			2.87
27.333	0.00	0.38	0.593	I	O			2.85
27.417	0.00	0.38	0.591	I	O			2.84
27.500	0.00	0.38	0.588	I	O			2.83
27.583	0.00	0.38	0.585	I	O			2.82
27.667	0.00	0.38	0.583	I	O			2.81
27.750	0.00	0.38	0.580	I	O			2.80
27.833	0.00	0.38	0.577	I	O			2.79
27.917	0.00	0.38	0.575	I	O			2.78
28.000	0.00	0.38	0.572	I	O			2.76

28.083	0.00	0.38	0.570	I	o	|	|	|	2.75
28.167	0.00	0.38	0.567	I	o	|	|	|	2.74
28.250	0.00	0.37	0.564	I	o	|	|	|	2.73
28.333	0.00	0.37	0.562	I	o	|	|	|	2.72
28.417	0.00	0.37	0.559	I	o	|	|	|	2.71
28.500	0.00	0.37	0.557	I	o	|	|	|	2.70
28.583	0.00	0.37	0.554	I	o	|	|	|	2.69
28.667	0.00	0.37	0.552	I	o	|	|	|	2.68
28.750	0.00	0.37	0.549	I	o	|	|	|	2.66
28.833	0.00	0.37	0.547	I	o	|	|	|	2.65
28.917	0.00	0.37	0.544	I	o	|	|	|	2.64
29.000	0.00	0.37	0.541	I	o	|	|	|	2.63
29.083	0.00	0.37	0.539	I	o	|	|	|	2.62
29.167	0.00	0.37	0.536	I	o	|	|	|	2.61
29.250	0.00	0.36	0.534	I	o	|	|	|	2.60
29.333	0.00	0.36	0.531	I	o	|	|	|	2.59
29.417	0.00	0.36	0.529	I	o	|	|	|	2.58
29.500	0.00	0.36	0.526	I	o	|	|	|	2.57
29.583	0.00	0.36	0.524	I	o	|	|	|	2.56
29.667	0.00	0.36	0.521	I	o	|	|	|	2.54
29.750	0.00	0.36	0.519	I	o	|	|	|	2.53
29.833	0.00	0.36	0.516	I	o	|	|	|	2.52
29.917	0.00	0.36	0.514	I	o	|	|	|	2.51
30.000	0.00	0.36	0.511	I	o	|	|	|	2.50
30.083	0.00	0.36	0.509	I	o	|	|	|	2.49
30.167	0.00	0.36	0.507	I	o	|	|	|	2.48
30.250	0.00	0.36	0.504	I	o	|	|	|	2.47
30.333	0.00	0.35	0.502	I	o	|	|	|	2.46
30.417	0.00	0.35	0.499	I	o	|	|	|	2.45
30.500	0.00	0.35	0.497	I	o	|	|	|	2.44
30.583	0.00	0.35	0.494	I	o	|	|	|	2.43
30.667	0.00	0.35	0.492	I	o	|	|	|	2.42
30.750	0.00	0.35	0.490	I	o	|	|	|	2.41
30.833	0.00	0.35	0.487	I	o	|	|	|	2.40
30.917	0.00	0.35	0.485	I	o	|	|	|	2.39
31.000	0.00	0.35	0.482	I	o	|	|	|	2.38
31.083	0.00	0.35	0.480	I	o	|	|	|	2.37
31.167	0.00	0.35	0.478	I	o	|	|	|	2.36
31.250	0.00	0.35	0.475	I	o	|	|	|	2.35
31.333	0.00	0.35	0.473	I	o	|	|	|	2.34
31.417	0.00	0.34	0.470	I	o	|	|	|	2.33
31.500	0.00	0.34	0.468	I	o	|	|	|	2.31
31.583	0.00	0.34	0.466	I	o	|	|	|	2.30
31.667	0.00	0.34	0.463	I	o	|	|	|	2.29
31.750	0.00	0.34	0.461	I	o	|	|	|	2.28
31.833	0.00	0.34	0.459	I	o	|	|	|	2.27
31.917	0.00	0.34	0.456	I	o	|	|	|	2.26
32.000	0.00	0.34	0.454	I	o	|	|	|	2.25
32.083	0.00	0.34	0.452	I	o	|	|	|	2.24
32.167	0.00	0.34	0.449	I	o	|	|	|	2.23
32.250	0.00	0.34	0.447	I	o	|	|	|	2.22
32.333	0.00	0.34	0.445	I	o	|	|	|	2.21
32.417	0.00	0.34	0.442	I	o	|	|	|	2.20
32.500	0.00	0.33	0.440	I	o	|	|	|	2.19
32.583	0.00	0.33	0.438	I	o	|	|	|	2.18
32.667	0.00	0.33	0.435	I	o	|	|	|	2.17
32.750	0.00	0.33	0.433	I	o	|	|	|	2.16
32.833	0.00	0.33	0.431	I	o	|	|	|	2.15
32.917	0.00	0.33	0.429	I	o	|	|	|	2.14
33.000	0.00	0.33	0.426	I	o	|	|	|	2.13
33.083	0.00	0.33	0.424	I	o	|	|	|	2.13
33.167	0.00	0.33	0.422	I	o	|	|	|	2.12
33.250	0.00	0.33	0.419	I	o	|	|	|	2.11
33.333	0.00	0.33	0.417	I	o	|	|	|	2.10
33.417	0.00	0.33	0.415	I	o	|	|	|	2.09
33.500	0.00	0.33	0.413	I	o	|	|	|	2.08
33.583	0.00	0.33	0.410	I	o	|	|	|	2.07
33.667	0.00	0.32	0.408	I	o	|	|	|	2.06
33.750	0.00	0.32	0.406	I	o	|	|	|	2.05
33.833	0.00	0.32	0.404	I	o	|	|	|	2.04
33.917	0.00	0.32	0.402	I	o	|	|	|	2.03
34.000	0.00	0.32	0.399	I	o	|	|	|	2.02
34.083	0.00	0.32	0.397	I	o	|	|	|	2.01
34.167	0.00	0.32	0.395	I	o	|	|	|	2.00
34.250	0.00	0.32	0.393	I	o	|	|	|	1.99
34.333	0.00	0.32	0.391	I	o	|	|	|	1.98
34.417	0.00	0.32	0.388	I	o	|	|	|	1.97
34.500	0.00	0.32	0.386	I	o	|	|	|	1.96
34.583	0.00	0.31	0.384	I	o	|	|	|	1.95
34.667	0.00	0.31	0.382	I	o	|	|	|	1.94
34.750	0.00	0.31	0.380	I	o	|	|	|	1.93
34.833	0.00	0.31	0.378	I	o	|	|	|	1.92
34.917	0.00	0.31	0.375	I	o	|	|	|	1.91
35.000	0.00	0.31	0.373	I	o	|	|	|	1.90

35.083	0.00	0.31	0.371	I	o	|	|	|	|	1.89
35.167	0.00	0.31	0.369	I	o	|	|	|	|	1.88
35.250	0.00	0.31	0.367	I	o	|	|	|	|	1.87
35.333	0.00	0.31	0.365	I	o	|	|	|	|	1.86
35.417	0.00	0.31	0.363	I	o	|	|	|	|	1.85
35.500	0.00	0.30	0.361	I	o	|	|	|	|	1.84
35.583	0.00	0.30	0.358	I	o	|	|	|	|	1.83
35.667	0.00	0.30	0.356	I	o	|	|	|	|	1.82
35.750	0.00	0.30	0.354	I	o	|	|	|	|	1.81
35.833	0.00	0.30	0.352	I	o	|	|	|	|	1.80
35.917	0.00	0.30	0.350	I	o	|	|	|	|	1.79
36.000	0.00	0.30	0.348	I	o	|	|	|	|	1.78
36.083	0.00	0.30	0.346	I	o	|	|	|	|	1.77
36.167	0.00	0.30	0.344	I	o	|	|	|	|	1.76
36.250	0.00	0.30	0.342	I	o	|	|	|	|	1.76
36.333	0.00	0.29	0.340	I	o	|	|	|	|	1.75
36.417	0.00	0.29	0.338	I	o	|	|	|	|	1.74
36.500	0.00	0.29	0.336	I	o	|	|	|	|	1.73
36.583	0.00	0.29	0.334	I	o	|	|	|	|	1.72
36.667	0.00	0.29	0.332	I	o	|	|	|	|	1.71
36.750	0.00	0.29	0.330	I	o	|	|	|	|	1.70
36.833	0.00	0.29	0.328	I	o	|	|	|	|	1.69
36.917	0.00	0.29	0.326	I	o	|	|	|	|	1.68
37.000	0.00	0.29	0.324	I	o	|	|	|	|	1.67
37.083	0.00	0.29	0.322	I	o	|	|	|	|	1.66
37.167	0.00	0.29	0.320	I	o	|	|	|	|	1.65
37.250	0.00	0.28	0.318	I	o	|	|	|	|	1.65
37.333	0.00	0.28	0.316	I	o	|	|	|	|	1.64
37.417	0.00	0.28	0.314	I	o	|	|	|	|	1.63
37.500	0.00	0.28	0.312	I	o	|	|	|	|	1.62
37.583	0.00	0.28	0.310	I	o	|	|	|	|	1.61
37.667	0.00	0.28	0.308	I	o	|	|	|	|	1.60
37.750	0.00	0.28	0.306	I	o	|	|	|	|	1.59
37.833	0.00	0.28	0.304	I	o	|	|	|	|	1.58
37.917	0.00	0.28	0.302	I	o	|	|	|	|	1.57
38.000	0.00	0.28	0.301	I	o	|	|	|	|	1.56
38.083	0.00	0.28	0.299	I	o	|	|	|	|	1.56
38.167	0.00	0.28	0.297	I	o	|	|	|	|	1.55
38.250	0.00	0.27	0.295	I	o	|	|	|	|	1.54
38.333	0.00	0.27	0.293	I	o	|	|	|	|	1.53
38.417	0.00	0.27	0.291	I	o	|	|	|	|	1.52
38.500	0.00	0.27	0.289	I	o	|	|	|	|	1.51
38.583	0.00	0.27	0.287	I	o	|	|	|	|	1.50
38.667	0.00	0.27	0.285	I	o	|	|	|	|	1.50
38.750	0.00	0.27	0.284	I	o	|	|	|	|	1.49
38.833	0.00	0.27	0.282	I	o	|	|	|	|	1.48
38.917	0.00	0.27	0.280	I	o	|	|	|	|	1.47
39.000	0.00	0.27	0.278	I	o	|	|	|	|	1.46
39.083	0.00	0.27	0.276	I	o	|	|	|	|	1.45
39.167	0.00	0.26	0.274	I	o	|	|	|	|	1.44
39.250	0.00	0.26	0.273	I	o	|	|	|	|	1.44
39.333	0.00	0.26	0.271	I	o	|	|	|	|	1.43
39.417	0.00	0.26	0.269	I	o	|	|	|	|	1.42
39.500	0.00	0.26	0.267	I	o	|	|	|	|	1.41
39.583	0.00	0.26	0.265	I	o	|	|	|	|	1.40
39.667	0.00	0.26	0.264	I	o	|	|	|	|	1.39
39.750	0.00	0.26	0.262	I	o	|	|	|	|	1.39
39.833	0.00	0.26	0.260	I	o	|	|	|	|	1.38
39.917	0.00	0.26	0.258	I	o	|	|	|	|	1.37
40.000	0.00	0.26	0.256	I	o	|	|	|	|	1.36
40.083	0.00	0.26	0.255	I	o	|	|	|	|	1.35
40.167	0.00	0.26	0.253	I	o	|	|	|	|	1.35
40.250	0.00	0.25	0.251	I	o	|	|	|	|	1.34
40.333	0.00	0.25	0.249	I	o	|	|	|	|	1.33
40.417	0.00	0.25	0.248	I	o	|	|	|	|	1.32
40.500	0.00	0.25	0.246	I	o	|	|	|	|	1.31
40.583	0.00	0.25	0.244	I	o	|	|	|	|	1.31
40.667	0.00	0.25	0.242	I	o	|	|	|	|	1.30
40.750	0.00	0.25	0.241	I	o	|	|	|	|	1.29
40.833	0.00	0.25	0.239	I	o	|	|	|	|	1.28
40.917	0.00	0.25	0.237	I	o	|	|	|	|	1.27
41.000	0.00	0.25	0.236	I	o	|	|	|	|	1.27
41.083	0.00	0.25	0.234	I	o	|	|	|	|	1.26
41.167	0.00	0.25	0.232	I	o	|	|	|	|	1.25
41.250	0.00	0.24	0.231	I	o	|	|	|	|	1.24
41.333	0.00	0.24	0.229	I	o	|	|	|	|	1.23
41.417	0.00	0.24	0.227	I	o	|	|	|	|	1.23
41.500	0.00	0.24	0.226	I	o	|	|	|	|	1.22
41.583	0.00	0.24	0.224	I	o	|	|	|	|	1.21
41.667	0.00	0.24	0.222	I	o	|	|	|	|	1.20
41.750	0.00	0.24	0.221	I	o	|	|	|	|	1.20
41.833	0.00	0.24	0.219	I	o	|	|	|	|	1.19
41.917	0.00	0.24	0.217	I	o	|	|	|	|	1.18
42.000	0.00	0.24	0.216	I	o	|	|	|	|	1.17

42.083	0.00	0.24	0.214	I	o	|	|	|	1.17
42.167	0.00	0.24	0.212	I	o	|	|	|	1.16
42.250	0.00	0.24	0.211	I	o	|	|	|	1.15
42.333	0.00	0.24	0.209	I	o	|	|	|	1.14
42.417	0.00	0.23	0.207	I	o	|	|	|	1.14
42.500	0.00	0.23	0.206	I	o	|	|	|	1.13
42.583	0.00	0.23	0.204	I	o	|	|	|	1.12
42.667	0.00	0.23	0.203	I	o	|	|	|	1.11
42.750	0.00	0.23	0.201	I	o	|	|	|	1.11
42.833	0.00	0.23	0.199	I	o	|	|	|	1.10
42.917	0.00	0.23	0.198	I	o	|	|	|	1.09
43.000	0.00	0.23	0.196	I	o	|	|	|	1.08
43.083	0.00	0.23	0.195	I	o	|	|	|	1.08
43.167	0.00	0.23	0.193	I	o	|	|	|	1.07
43.250	0.00	0.23	0.192	I	o	|	|	|	1.06
43.333	0.00	0.23	0.190	I	o	|	|	|	1.06
43.417	0.00	0.23	0.188	I	o	|	|	|	1.05
43.500	0.00	0.23	0.187	I	o	|	|	|	1.04
43.583	0.00	0.22	0.185	I	o	|	|	|	1.03
43.667	0.00	0.22	0.184	I	o	|	|	|	1.03
43.750	0.00	0.22	0.182	I	o	|	|	|	1.02
43.833	0.00	0.22	0.181	I	o	|	|	|	1.01
43.917	0.00	0.22	0.179	I	o	|	|	|	1.01
44.000	0.00	0.22	0.178	I	o	|	|	|	1.00
44.083	0.00	0.22	0.176	I	o	|	|	|	0.99
44.167	0.00	0.22	0.175	I	o	|	|	|	0.98
44.250	0.00	0.22	0.173	I	o	|	|	|	0.97
44.333	0.00	0.22	0.172	I	o	|	|	|	0.97
44.417	0.00	0.22	0.170	I	o	|	|	|	0.96
44.500	0.00	0.21	0.169	I	o	|	|	|	0.95
44.583	0.00	0.21	0.167	I	o	|	|	|	0.94
44.667	0.00	0.21	0.166	I	o	|	|	|	0.94
44.750	0.00	0.21	0.164	I	o	|	|	|	0.93
44.833	0.00	0.21	0.163	I	o	|	|	|	0.92
44.917	0.00	0.21	0.161	I	o	|	|	|	0.91
45.000	0.00	0.21	0.160	I	o	|	|	|	0.91
45.083	0.00	0.21	0.159	I	o	|	|	|	0.90
45.167	0.00	0.21	0.157	I	o	|	|	|	0.89
45.250	0.00	0.20	0.156	I	o	|	|	|	0.89
45.333	0.00	0.20	0.154	I	o	|	|	|	0.88
45.417	0.00	0.20	0.153	I	o	|	|	|	0.87
45.500	0.00	0.20	0.152	I	o	|	|	|	0.86
45.583	0.00	0.20	0.150	I	o	|	|	|	0.86
45.667	0.00	0.20	0.149	I	o	|	|	|	0.85
45.750	0.00	0.20	0.147	I	o	|	|	|	0.84
45.833	0.00	0.20	0.146	I	o	|	|	|	0.84
45.917	0.00	0.20	0.145	I	o	|	|	|	0.83
46.000	0.00	0.20	0.143	I	o	|	|	|	0.82
46.083	0.00	0.19	0.142	I	o	|	|	|	0.81
46.167	0.00	0.19	0.141	I	o	|	|	|	0.81
46.250	0.00	0.19	0.139	I	o	|	|	|	0.80
46.333	0.00	0.19	0.138	I	o	|	|	|	0.79
46.417	0.00	0.19	0.137	I	o	|	|	|	0.79
46.500	0.00	0.19	0.135	I	o	|	|	|	0.78
46.583	0.00	0.19	0.134	I	o	|	|	|	0.77
46.667	0.00	0.19	0.133	I	o	|	|	|	0.77
46.750	0.00	0.19	0.132	I	o	|	|	|	0.76
46.833	0.00	0.19	0.130	I	o	|	|	|	0.75
46.917	0.00	0.18	0.129	I	o	|	|	|	0.75
47.000	0.00	0.18	0.128	I	o	|	|	|	0.74
47.083	0.00	0.18	0.126	I	o	|	|	|	0.73
47.167	0.00	0.18	0.125	I	o	|	|	|	0.73
47.250	0.00	0.18	0.124	I	o	|	|	|	0.72
47.333	0.00	0.18	0.123	I	o	|	|	|	0.71
47.417	0.00	0.18	0.121	I	o	|	|	|	0.71
47.500	0.00	0.18	0.120	I	o	|	|	|	0.70
47.583	0.00	0.18	0.119	I	o	|	|	|	0.70
47.667	0.00	0.18	0.118	I	o	|	|	|	0.69
47.750	0.00	0.18	0.117	I	o	|	|	|	0.68
47.833	0.00	0.17	0.115	I	o	|	|	|	0.68
47.917	0.00	0.17	0.114	I	o	|	|	|	0.67
48.000	0.00	0.17	0.113	I	o	|	|	|	0.66
48.083	0.00	0.17	0.112	I	o	|	|	|	0.66
48.167	0.00	0.17	0.111	I	o	|	|	|	0.65
48.250	0.00	0.17	0.109	I	o	|	|	|	0.65
48.333	0.00	0.17	0.108	I	o	|	|	|	0.64
48.417	0.00	0.17	0.107	I	o	|	|	|	0.63
48.500	0.00	0.17	0.106	I	o	|	|	|	0.63
48.583	0.00	0.17	0.105	I	o	|	|	|	0.62
48.667	0.00	0.17	0.104	I	o	|	|	|	0.62
48.750	0.00	0.16	0.102	I	o	|	|	|	0.61
48.833	0.00	0.16	0.101	I	o	|	|	|	0.60
48.917	0.00	0.16	0.100	I	o	|	|	|	0.60
49.000	0.00	0.16	0.099	I	o	|	|	|	0.59

49.083	0.00	0.16	0.098	I O				0.59
49.167	0.00	0.16	0.097	I O				0.58
49.250	0.00	0.16	0.096	I O				0.58
49.333	0.00	0.16	0.095	I O				0.57
49.417	0.00	0.16	0.094	I O				0.56
49.500	0.00	0.16	0.093	I O				0.56
49.583	0.00	0.16	0.091	I O				0.55
49.667	0.00	0.16	0.090	I O				0.55
49.750	0.00	0.16	0.089	I O				0.54
49.833	0.00	0.15	0.088	I O				0.54
49.917	0.00	0.15	0.087	I O				0.53
50.000	0.00	0.15	0.086	I O				0.53
50.083	0.00	0.15	0.085	I O				0.52
50.167	0.00	0.15	0.084	I O				0.52
50.250	0.00	0.15	0.083	I O				0.51
50.333	0.00	0.15	0.082	I O				0.50
50.417	0.00	0.15	0.081	I O				0.50
50.500	0.00	0.15	0.080	I O				0.49
50.583	0.00	0.15	0.079	I O				0.49
50.667	0.00	0.14	0.078	I O				0.48
50.750	0.00	0.14	0.077	I O				0.48
50.833	0.00	0.14	0.076	I O				0.47
50.917	0.00	0.14	0.075	I O				0.46
51.000	0.00	0.14	0.074	I O				0.46
51.083	0.00	0.14	0.073	I O				0.45
51.167	0.00	0.14	0.072	I O				0.45
51.250	0.00	0.14	0.071	I O				0.44
51.333	0.00	0.13	0.070	I O				0.44
51.417	0.00	0.13	0.069	IO				0.43
51.500	0.00	0.13	0.068	IO				0.43
51.583	0.00	0.13	0.067	IO				0.42
51.667	0.00	0.13	0.067	IO				0.42
51.750	0.00	0.13	0.066	IO				0.41
51.833	0.00	0.13	0.065	IO				0.41
51.917	0.00	0.13	0.064	IO				0.40
52.000	0.00	0.12	0.063	IO				0.40
52.083	0.00	0.12	0.062	IO				0.39
52.167	0.00	0.12	0.061	IO				0.39
52.250	0.00	0.12	0.060	IO				0.38
52.333	0.00	0.12	0.060	IO				0.38
52.417	0.00	0.12	0.059	IO				0.37
52.500	0.00	0.12	0.058	IO				0.37
52.583	0.00	0.12	0.057	IO				0.36
52.667	0.00	0.12	0.056	IO				0.36
52.750	0.00	0.11	0.056	IO				0.35
52.833	0.00	0.11	0.055	IO				0.35
52.917	0.00	0.11	0.054	IO				0.34
53.000	0.00	0.11	0.053	IO				0.34
53.083	0.00	0.11	0.053	IO				0.34
53.167	0.00	0.11	0.052	IO				0.33
53.250	0.00	0.11	0.051	IO				0.33
53.333	0.00	0.11	0.050	IO				0.32
53.417	0.00	0.11	0.050	IO				0.32
53.500	0.00	0.11	0.049	IO				0.31
53.583	0.00	0.10	0.048	IO				0.31
53.667	0.00	0.10	0.047	IO				0.31
53.750	0.00	0.10	0.047	IO				0.30
53.833	0.00	0.10	0.046	IO				0.30
53.917	0.00	0.10	0.045	IO				0.29
54.000	0.00	0.10	0.045	IO				0.29
54.083	0.00	0.10	0.044	IO				0.29
54.167	0.00	0.10	0.043	IO				0.28
54.250	0.00	0.10	0.043	IO				0.28
54.333	0.00	0.10	0.042	IO				0.27
54.417	0.00	0.10	0.041	IO				0.27
54.500	0.00	0.09	0.041	IO				0.27
54.583	0.00	0.09	0.040	IO				0.26
54.667	0.00	0.09	0.039	IO				0.26
54.750	0.00	0.09	0.039	IO				0.26
54.833	0.00	0.09	0.038	IO				0.25
54.917	0.00	0.09	0.037	IO				0.25
55.000	0.00	0.09	0.037	IO				0.24
55.083	0.00	0.09	0.036	IO				0.24
55.167	0.00	0.09	0.036	IO				0.24
55.250	0.00	0.09	0.035	IO				0.23
55.333	0.00	0.09	0.034	IO				0.23
55.417	0.00	0.09	0.034	IO				0.23
55.500	0.00	0.08	0.033	IO				0.22
55.583	0.00	0.08	0.033	IO				0.22
55.667	0.00	0.08	0.032	IO				0.22
55.750	0.00	0.08	0.031	IO				0.21
55.833	0.00	0.08	0.031	IO				0.21
55.917	0.00	0.08	0.030	IO				0.21
56.000	0.00	0.08	0.030	IO				0.20

56.083	0.00	0.08	0.029	IO				0.20
56.167	0.00	0.08	0.029	IO				0.20
56.250	0.00	0.08	0.028	IO				0.19
56.333	0.00	0.08	0.028	IO				0.19
56.417	0.00	0.07	0.027	IO				0.19
56.500	0.00	0.07	0.027	IO				0.18
56.583	0.00	0.07	0.026	IO				0.18
56.667	0.00	0.07	0.026	IO				0.18
56.750	0.00	0.07	0.025	IO				0.17
56.833	0.00	0.07	0.025	IO				0.17
56.917	0.00	0.07	0.024	O				0.17
57.000	0.00	0.06	0.024	O				0.16
57.083	0.00	0.06	0.023	O				0.16
57.167	0.00	0.06	0.023	O				0.16
57.250	0.00	0.06	0.022	O				0.15
57.333	0.00	0.06	0.022	O				0.15
57.417	0.00	0.06	0.022	O				0.15
57.500	0.00	0.06	0.021	O				0.15
57.583	0.00	0.06	0.021	O				0.14
57.667	0.00	0.06	0.020	O				0.14
57.750	0.00	0.05	0.020	O				0.14
57.833	0.00	0.05	0.020	O				0.14
57.917	0.00	0.05	0.019	O				0.13
58.000	0.00	0.05	0.019	O				0.13
58.083	0.00	0.05	0.019	O				0.13
58.167	0.00	0.05	0.018	O				0.13
58.250	0.00	0.05	0.018	O				0.12
58.333	0.00	0.05	0.018	O				0.12
58.417	0.00	0.05	0.017	O				0.12
58.500	0.00	0.05	0.017	O				0.12
58.583	0.00	0.05	0.017	O				0.11
58.667	0.00	0.04	0.016	O				0.11
58.750	0.00	0.04	0.016	O				0.11
58.833	0.00	0.04	0.016	O				0.11
58.917	0.00	0.04	0.015	O				0.11
59.000	0.00	0.04	0.015	O				0.10
59.083	0.00	0.04	0.015	O				0.10
59.167	0.00	0.04	0.015	O				0.10
59.250	0.00	0.04	0.014	O				0.10
59.333	0.00	0.04	0.014	O				0.10
59.417	0.00	0.04	0.014	O				0.10
59.500	0.00	0.04	0.014	O				0.09
59.583	0.00	0.04	0.013	O				0.09
59.667	0.00	0.04	0.013	O				0.09
59.750	0.00	0.03	0.013	O				0.09
59.833	0.00	0.03	0.013	O				0.09
59.917	0.00	0.03	0.012	O				0.08
60.000	0.00	0.03	0.012	O				0.08
60.083	0.00	0.03	0.012	O				0.08
60.167	0.00	0.03	0.012	O				0.08
60.250	0.00	0.03	0.011	O				0.08
60.333	0.00	0.03	0.011	O				0.08
60.417	0.00	0.03	0.011	O				0.08
60.500	0.00	0.03	0.011	O				0.07
60.583	0.00	0.03	0.011	O				0.07
60.667	0.00	0.03	0.010	O				0.07
60.750	0.00	0.03	0.010	O				0.07
60.833	0.00	0.03	0.010	O				0.07
60.917	0.00	0.03	0.010	O				0.07
61.000	0.00	0.03	0.010	O				0.07
61.083	0.00	0.03	0.009	O				0.07
61.167	0.00	0.03	0.009	O				0.06
61.250	0.00	0.02	0.009	O				0.06
61.333	0.00	0.02	0.009	O				0.06
61.417	0.00	0.02	0.009	O				0.06
61.500	0.00	0.02	0.009	O				0.06
61.583	0.00	0.02	0.008	O				0.06
61.667	0.00	0.02	0.008	O				0.06
61.750	0.00	0.02	0.008	O				0.06
61.833	0.00	0.02	0.008	O				0.06
61.917	0.00	0.02	0.008	O				0.05
62.000	0.00	0.02	0.008	O				0.05
62.083	0.00	0.02	0.008	O				0.05
62.167	0.00	0.02	0.007	O				0.05
62.250	0.00	0.02	0.007	O				0.05
62.333	0.00	0.02	0.007	O				0.05
62.417	0.00	0.02	0.007	O				0.05
62.500	0.00	0.02	0.007	O				0.05
62.583	0.00	0.02	0.007	O				0.05
62.667	0.00	0.02	0.007	O				0.05
62.750	0.00	0.02	0.007	O				0.04
62.833	0.00	0.02	0.006	O				0.04
62.917	0.00	0.02	0.006	O				0.04
63.000	0.00	0.02	0.006	O				0.04

63.083	0.00	0.02	0.006	o	|	|	|	0.04
63.167	0.00	0.02	0.006	o	|	|	|	0.04
63.250	0.00	0.02	0.006	o	|	|	|	0.04
63.333	0.00	0.02	0.006	o	|	|	|	0.04
63.417	0.00	0.02	0.006	o	|	|	|	0.04
63.500	0.00	0.01	0.005	o	|	|	|	0.04
63.583	0.00	0.01	0.005	o	|	|	|	0.04
63.667	0.00	0.01	0.005	o	|	|	|	0.04
63.750	0.00	0.01	0.005	o	|	|	|	0.04
63.833	0.00	0.01	0.005	o	|	|	|	0.04
63.917	0.00	0.01	0.005	o	|	|	|	0.03
64.000	0.00	0.01	0.005	o	|	|	|	0.03
64.083	0.00	0.01	0.005	o	|	|	|	0.03
64.167	0.00	0.01	0.005	o	|	|	|	0.03
64.250	0.00	0.01	0.005	o	|	|	|	0.03
64.333	0.00	0.01	0.005	o	|	|	|	0.03
64.417	0.00	0.01	0.004	o	|	|	|	0.03
64.500	0.00	0.01	0.004	o	|	|	|	0.03
64.583	0.00	0.01	0.004	o	|	|	|	0.03
64.667	0.00	0.01	0.004	o	|	|	|	0.03
64.750	0.00	0.01	0.004	o	|	|	|	0.03
64.833	0.00	0.01	0.004	o	|	|	|	0.03
64.917	0.00	0.01	0.004	o	|	|	|	0.03
65.000	0.00	0.01	0.004	o	|	|	|	0.03
65.083	0.00	0.01	0.004	o	|	|	|	0.03
65.167	0.00	0.01	0.004	o	|	|	|	0.03
65.250	0.00	0.01	0.004	o	|	|	|	0.03
65.333	0.00	0.01	0.004	o	|	|	|	0.03
65.417	0.00	0.01	0.004	o	|	|	|	0.02
65.500	0.00	0.01	0.004	o	|	|	|	0.02
65.583	0.00	0.01	0.003	o	|	|	|	0.02
65.667	0.00	0.01	0.003	o	|	|	|	0.02
65.750	0.00	0.01	0.003	o	|	|	|	0.02
65.833	0.00	0.01	0.003	o	|	|	|	0.02
65.917	0.00	0.01	0.003	o	|	|	|	0.02
66.000	0.00	0.01	0.003	o	|	|	|	0.02
66.083	0.00	0.01	0.003	o	|	|	|	0.02
66.167	0.00	0.01	0.003	o	|	|	|	0.02
66.250	0.00	0.01	0.003	o	|	|	|	0.02
66.333	0.00	0.01	0.003	o	|	|	|	0.02
66.417	0.00	0.01	0.003	o	|	|	|	0.02
66.500	0.00	0.01	0.003	o	|	|	|	0.02
66.583	0.00	0.01	0.003	o	|	|	|	0.02
66.667	0.00	0.01	0.003	o	|	|	|	0.02
66.750	0.00	0.01	0.003	o	|	|	|	0.02
66.833	0.00	0.01	0.003	o	|	|	|	0.02
66.917	0.00	0.01	0.003	o	|	|	|	0.02
67.000	0.00	0.01	0.002	o	|	|	|	0.02
67.083	0.00	0.01	0.002	o	|	|	|	0.02
67.167	0.00	0.01	0.002	o	|	|	|	0.02
67.250	0.00	0.01	0.002	o	|	|	|	0.02
67.333	0.00	0.01	0.002	o	|	|	|	0.02
67.417	0.00	0.01	0.002	o	|	|	|	0.02
67.500	0.00	0.01	0.002	o	|	|	|	0.02
67.583	0.00	0.01	0.002	o	|	|	|	0.02
67.667	0.00	0.01	0.002	o	|	|	|	0.01
67.750	0.00	0.01	0.002	o	|	|	|	0.01
67.833	0.00	0.01	0.002	o	|	|	|	0.01
67.917	0.00	0.01	0.002	o	|	|	|	0.01
68.000	0.00	0.01	0.002	o	|	|	|	0.01
68.083	0.00	0.01	0.002	o	|	|	|	0.01
68.167	0.00	0.01	0.002	o	|	|	|	0.01
68.250	0.00	0.01	0.002	o	|	|	|	0.01
68.333	0.00	0.01	0.002	o	|	|	|	0.01
68.417	0.00	0.00	0.002	o	|	|	|	0.01
68.500	0.00	0.00	0.002	o	|	|	|	0.01
68.583	0.00	0.00	0.002	o	|	|	|	0.01
68.667	0.00	0.00	0.002	o	|	|	|	0.01
68.750	0.00	0.00	0.002	o	|	|	|	0.01
68.833	0.00	0.00	0.002	o	|	|	|	0.01
68.917	0.00	0.00	0.002	o	|	|	|	0.01
69.000	0.00	0.00	0.002	o	|	|	|	0.01
69.083	0.00	0.00	0.002	o	|	|	|	0.01
69.167	0.00	0.00	0.002	o	|	|	|	0.01
69.250	0.00	0.00	0.002	o	|	|	|	0.01
69.333	0.00	0.00	0.001	o	|	|	|	0.01
69.417	0.00	0.00	0.001	o	|	|	|	0.01
69.500	0.00	0.00	0.001	o	|	|	|	0.01
69.583	0.00	0.00	0.001	o	|	|	|	0.01
69.667	0.00	0.00	0.001	o	|	|	|	0.01
69.750	0.00	0.00	0.001	o	|	|	|	0.01
69.833	0.00	0.00	0.001	o	|	|	|	0.01
69.917	0.00	0.00	0.001	o	|	|	|	0.01
70.000	0.00	0.00	0.001	o	|	|	|	0.01

70.083	0.00	0.00	0.001	o	|	|	|	|	0.01
70.167	0.00	0.00	0.001	o	|	|	|	|	0.01
70.250	0.00	0.00	0.001	o	|	|	|	|	0.01
70.333	0.00	0.00	0.001	o	|	|	|	|	0.01
70.417	0.00	0.00	0.001	o	|	|	|	|	0.01
70.500	0.00	0.00	0.001	o	|	|	|	|	0.01
70.583	0.00	0.00	0.001	o	|	|	|	|	0.01
70.667	0.00	0.00	0.001	o	|	|	|	|	0.01
70.750	0.00	0.00	0.001	o	|	|	|	|	0.01
70.833	0.00	0.00	0.001	o	|	|	|	|	0.01
70.917	0.00	0.00	0.001	o	|	|	|	|	0.01
71.000	0.00	0.00	0.001	o	|	|	|	|	0.01
71.083	0.00	0.00	0.001	o	|	|	|	|	0.01
71.167	0.00	0.00	0.001	o	|	|	|	|	0.01
71.250	0.00	0.00	0.001	o	|	|	|	|	0.01
71.333	0.00	0.00	0.001	o	|	|	|	|	0.01
71.417	0.00	0.00	0.001	o	|	|	|	|	0.01
71.500	0.00	0.00	0.001	o	|	|	|	|	0.01
71.583	0.00	0.00	0.001	o	|	|	|	|	0.01
71.667	0.00	0.00	0.001	o	|	|	|	|	0.01
71.750	0.00	0.00	0.001	o	|	|	|	|	0.01
71.833	0.00	0.00	0.001	o	|	|	|	|	0.01
71.917	0.00	0.00	0.001	o	|	|	|	|	0.01
72.000	0.00	0.00	0.001	o	|	|	|	|	0.01
72.083	0.00	0.00	0.001	o	|	|	|	|	0.01
72.167	0.00	0.00	0.001	o	|	|	|	|	0.01
72.250	0.00	0.00	0.001	o	|	|	|	|	0.01
72.333	0.00	0.00	0.001	o	|	|	|	|	0.01
72.417	0.00	0.00	0.001	o	|	|	|	|	0.01
72.500	0.00	0.00	0.001	o	|	|	|	|	0.00
72.583	0.00	0.00	0.001	o	|	|	|	|	0.00
72.667	0.00	0.00	0.001	o	|	|	|	|	0.00
72.750	0.00	0.00	0.001	o	|	|	|	|	0.00
72.833	0.00	0.00	0.001	o	|	|	|	|	0.00
72.917	0.00	0.00	0.001	o	|	|	|	|	0.00
73.000	0.00	0.00	0.001	o	|	|	|	|	0.00
73.083	0.00	0.00	0.001	o	|	|	|	|	0.00
73.167	0.00	0.00	0.001	o	|	|	|	|	0.00
73.250	0.00	0.00	0.001	o	|	|	|	|	0.00
73.333	0.00	0.00	0.001	o	|	|	|	|	0.00
73.417	0.00	0.00	0.001	o	|	|	|	|	0.00
73.500	0.00	0.00	0.001	o	|	|	|	|	0.00
73.583	0.00	0.00	0.001	o	|	|	|	|	0.00
73.667	0.00	0.00	0.001	o	|	|	|	|	0.00
73.750	0.00	0.00	0.001	o	|	|	|	|	0.00
73.833	0.00	0.00	0.001	o	|	|	|	|	0.00
73.917	0.00	0.00	0.001	o	|	|	|	|	0.00
74.000	0.00	0.00	0.001	o	|	|	|	|	0.00
74.083	0.00	0.00	0.001	o	|	|	|	|	0.00
74.167	0.00	0.00	0.000	o	|	|	|	|	0.00
74.250	0.00	0.00	0.000	o	|	|	|	|	0.00
74.333	0.00	0.00	0.000	o	|	|	|	|	0.00
74.417	0.00	0.00	0.000	o	|	|	|	|	0.00
74.500	0.00	0.00	0.000	o	|	|	|	|	0.00
74.583	0.00	0.00	0.000	o	|	|	|	|	0.00
74.667	0.00	0.00	0.000	o	|	|	|	|	0.00
74.750	0.00	0.00	0.000	o	|	|	|	|	0.00
74.833	0.00	0.00	0.000	o	|	|	|	|	0.00
74.917	0.00	0.00	0.000	o	|	|	|	|	0.00
75.000	0.00	0.00	0.000	o	|	|	|	|	0.00
75.083	0.00	0.00	0.000	o	|	|	|	|	0.00
75.167	0.00	0.00	0.000	o	|	|	|	|	0.00
75.250	0.00	0.00	0.000	o	|	|	|	|	0.00
75.333	0.00	0.00	0.000	o	|	|	|	|	0.00
75.417	0.00	0.00	0.000	o	|	|	|	|	0.00
75.500	0.00	0.00	0.000	o	|	|	|	|	0.00
75.583	0.00	0.00	0.000	o	|	|	|	|	0.00

**********HYDROGRAPH DATA**********

Number of intervals = 907
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.468 (CFS)
Total volume = 1.298 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

***To be provided during final engineering**

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

***To be provided during final engineering**

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

***To be provided during final engineering**