## VOLUME III

Special Consultant Studies and Reports
Appendices A through J

# Dos Vientos Ranch

**SPECIFIC PLANS 8 & 9 / ANNEXATION 89**
**LAND USE AMENDMENT LU-85-143**

**DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT**

# PREFACE

A number of technical studies have been prepared by consultants whose services were retained by both the City of Thousand Oaks and the applicants of Specific Plans 8 and 9. These reports are incorporated by reference in Volume I of the Final Environmental Impact Report (EIR) and have been included as appendices in Volume III for purposes of review. In cases where significant revisions have occurred or supplemental data has been provided since release of the Draft EIR, these are noted on the following index page.

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# Project Description (A)

# Dos Vientos Ranch

## PROJECT DESCRIPTION

A PLANNED COMMUNITY FOR
THE CITY OF THOUSAND OAKS

PREPARED FOR:

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141 S. LAKE AVE.
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PREPARED BY:

HAALAND
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INC

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DOS VIENTOS RANCH

SPECIFIC PLAN NOS. 8 AND 9

## SECTION I. PROJECT DESCRIPTION

### A. PURPOSE AND FOUNDATION

Specific Plans 8 and 9 represent the Master Plan for the Dos Vientos Ranch. As authorized by the California Government Code and the City of Thousand Oaks, they are the comprehensive planning documents which will control development on the Ranch.

These Specific Plans can be best understood by a comparison with the City of Thousand Oaks General Plan. The purpose of the General Plan is to express, in general terms, conceptual land uses for the City. The General Plan is a living control and guide which may be amended or revised pursuant to changing circumstances. A Specific Plan implements the General Plan specifying more precise land uses and controls; it focuses on particular lands assuring density maximums, necessary uses and a functional infrastructure. It makes sure that large acreages are improved in a logical and orderly manner; one that works within and fits into the surrounding area.

The Dos Vientos Specific Plans combine all facets of land use planning and design in one compact instrument. The Dos Vientos Specific Plans will establish the type, location, intensity, and character of development with allowance for creative and imaginative design.

The Dos Vientos Ranch is planned as a fully integrated and sustaining village within this City. It is to be shaped by its natural topography, flora and fauna.

The Specific Plans are a mix of residential densities offering detached and attached housing types, public and private community greenbelts, a village commercial center, natural open-space buffer areas, wildlife corridors, both equestrian and pedestrian trails and paths, plus recreation facilities which include two park sites.

### B. PROPERTY LOCATION

The Dos Vientos Ranch is located north of Potrero Road, along the western edge of the existing Thousand Oaks City

limits, as shown on Exhibits A and B of this report. Since the Ranch is in two separate ownerships, two Specific Plans are necessary: Specific Plan No. 8 by Courtly Homes, Inc. and Specific Plan No. 9 by the Operating Engineer's Pension Trust. Included in the Specific Plans are the following assessor's parcels:

COURTLY HOMES, INC., SPECIFIC PLAN NO. 8

234-080-15
234-080-16
234-080-17
234-080-19
234-080-26
234-080-27
234-080-28

OPERATING ENGINEERS, SPECIFIC PLAN NO. 9

234-060-06 (Portion of parcel only)
234-070-03 (Portion of parcel only)
234-080-09 (Portion of parcel only)
234-080-18
234-080-20
234-080-22
234-080-23
234-080-24
234-080-25 (Portion of parcel only)

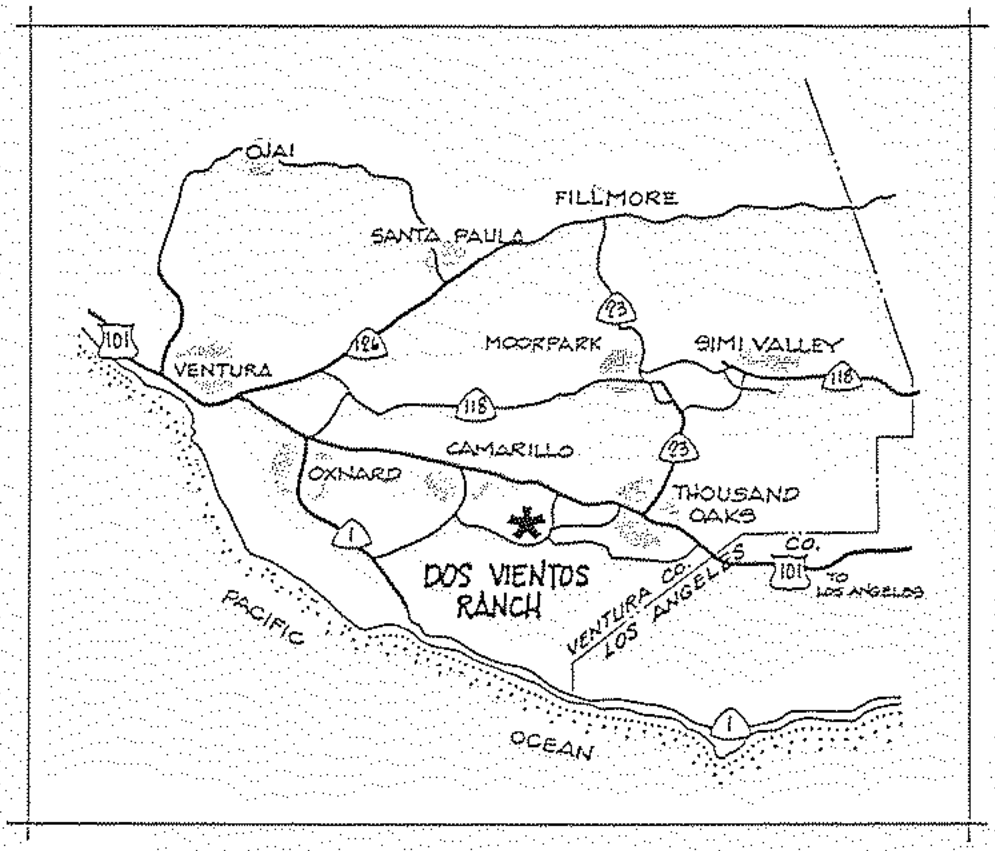
The total gross area of the above noted parcels is 3,481 acres. Approximately 2,331 acres are within the Sphere of Influence of the City of Thousand Oaks, which comprises the area of the Dos Vientos Specific Plans. The remaining acreage, not part of these Plans, is under the Sphere of Influence of the City of Camarillo (to the north) and the County of Ventura (to the west).

## C. SPECIFIC PLAN LAND USE CONCEPTS

### OBJECTIVE

The Dos Vientos Specific Plans are intended to implement the physical, economic, and social development of the Dos Vientos Ranch. The land plan is responsive to the open and rural nature of the Dos Vientos Newbury Park area. City ordinances and policies, marketing and economic goals are integrated.

# REGIONAL MAP



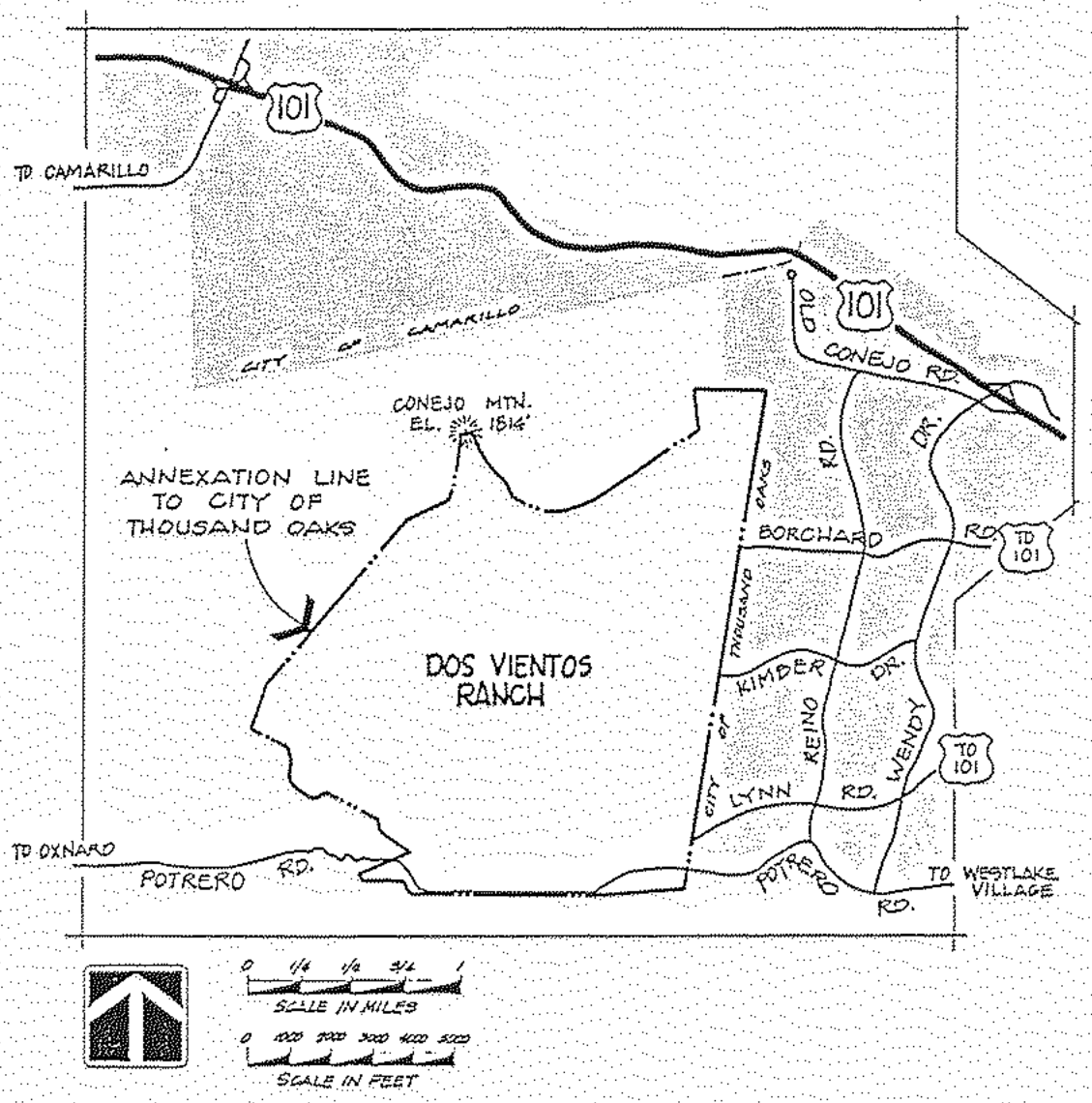
0 1 2 3 4 5
SCALE IN MILES

*Dos Vientos Ranch*

HAALAND AND ASSOCIATES INC

EXHIBIT A

# VICINITY MAP




*Dos Vientos Ranch*

HAALAND
AND
ASSOCIATES
INC

EXHIBIT B

D. RELATIONSHIP WITH CITY OF THOUSAND OAKS GENERAL PLAN

Currently, the Land Use Element of City's General Plan allows for approximately 2,903 dwelling units within the Dos Vientos Ranch. Of this, 1,386 units are allocated to the Specific Plan No. 8 area, and 1,517 to the Specific Plan No. 9 area. These Plans propose 3,719 dwellings, of which 1,901 units are located within Specific Plan No. 8 and 1,818 units are within Specific Plan No. 9.

Medium and high density areas for the most part have been centrally located in the lower valley area away from existing neighborhoods and steeper topographic regions. Residential densities are reduced when adjacent to terrain features to be preserved. Density dispersement and distribution has been emphasized.

The proposed dwelling unit count is higher than the General Plan for reasons which are:

1. State Assembly Bill No. 1151 (AB 1151) adopted in 1979. Briefly, this legislation states that cities must grant a density bonus or other benefits for housing where at least 25% of the units are made affordable to low or moderate income households.

At the present time planning units No. 1 (221 D.U.), No. 4 (346 D.U.), No. 11 (531 D.U., single-family detached units) and No. 16 (257 D.U., ownership mobile home lots) are targeted as Measure "A" - exempt affordable developments. The unit count of these four projects (1355 D.U.) is well in excess of the minimum requirement necessary to satisfy the 25% standard. Based on 3719 D.U., the 25% affordable requirement is 930 D.U.

2. The Danielson Ranch parcel, located east of Dos Vientos along the south side of Potrero Road at the Wendy Drive terminus, has been purchased by the National Park Service and will thus be devoted to future park and recreational use. While the approximate 800 Danielson dwelling units may have been eliminated as potential, all necessary infrastructure service (streets, water, sewer, etc.) exist to adequately support the number of dwelling units contemplated by the General Plan for that part of the Newbury Park area. The Dos Vientos Ranch development can physically accommodate such homes.

## E. LAND USE FEATURES AND GOALS

The Dos Vientos Ranch land use has been centralized around a planned village public and commercial core area, which serves as the primary focal point of the project. It is to be the primary activity center, including commercial services, school facilities and a 45 acre public park site. Generally, land uses become less intense as one travels away from the core area.

A major feature of this core concept is the bike/pedestrian trail system and the greenbelt network that links the core area with both the peripheral portions of the project and the existing Newbury Park community as well.

Also, community design elements such as entry features, signage, architectural themes, fencing, walls and landscaping are to be cohesive and consistent throughout Dos Vientos in order to enhance greater Newbury Park community identity.

Development is environmentally responsive to prominent knolls, ridgelines and hillsides. Structures are removed from more sensitive areas to those more conducive to development.

## F. CONSERVATION

The Dos Vientos Specific Plans propose to preserve significant natural land features where possible, and provide for a full system of open-space buffer zones. Natural view sheds are retained throughout the development, and wildlife corridors of significant size are established in the open space. In order to accomplish this, two of the project's primary streets, Borchard Road and Dos Vientos Parkway, utilize tunnels so that large cut slopes can be avoided. Project grading is significantly minimized.

It is proposed to annex 2,331 acres of the Ranch property to the City of Thousand Oaks. The gross area of the Ranch encompasses same 4,570 acres, of which approximately half will remain as open space outside of the City. It is relevant to note that the natural open space, both within the Specific Plan area and that outside of it, will amount to approximately 3,283 acres, or 72% of the entire Ranch property.

## G. TRANSPORTATION

The culmination of the Dos Vientos Specific Plans will complete the Circulation Element of the General Plan for the western portion of the City of Thousand Oaks. The westerly extensions of Borchard Road at the north, and Lynn Road to the south, coupled with the construction of Dos Vientos Parkway, form the backbone street system. Access to these streets is limited throughout the Ranch, thereby allowing for extensive landscaped greenbelts.

Within the greenbelts is a complete pedestrian and bicycle path system that will reduce automobile travel by offering alternate modes of travel. The proximity of the village core area to higher density residential uses provides more feasible pedestrian access for shopping, employment, and recreation. The village core area will also reduce external trip demands. The equestrian and hiking trail system loops throughout the project and joins with existing trail networks including the Conejo Recreation & Park District system to the east and the Point Mugu/Sycamore Canyon system to the south. The combination of these components reduces vehicular miles travelled, emissions, and central area concentration. Air quality and the sense and actuality of greater open space are benefitted.

An additional feature of the bike/pedestrian trail system is the inherent safety that the "off-street" trail provides. Surface crossings of major streets have been minimized through the use of bridges and trail undercrossings where feasible.

The westerly extension of Lynn Road is particularly significant because it will link up with West Potrero Road, thus diverting through-traffic from the residential section of Potrero Road west of Reino Road. This portion of Potrero Road will then be cul-de-saced at the existing City boundary. The Dos Vientos Ranch will contribute large amounts to the construction of off-site roads within Newbury Park. Said fee contributions exceed seven million dollars to complete major portions of the Newbury Park circulation element south of the 101 freeway throughout the duration of the project.

## H. WATER

The proposed water storage system for the Dos Vientos Ranch also provides a needed water facility for the existing Newbury

Park community, specifically, the six million gallon Potrero reservoir scheduled for construction in 1985-86 by the California American Water Company. The Master Facilities Plan for Cal-Am originally had this reservoir site located in an open space area east of the Dos Vientos project boundary. It is proposed to relocate this site to within the Dos Vientos project and donate the land to Cal-Am, thus negating the need for the water company to go through costly land acquisition procedures.

Within the project itself, a series of tank sites throughout the Ranch have been carefully located in order to minimize the impacts to the future ridgeline viewsheds.

I. HYDROLOGY/FLOOD CONTROL

Four project retention basins are a Newbury Park community benefit, a long time unmet need of those residents within the 100 year flood inundation area. They will be constructed within the Dos Vientos Ranch Specific Plan area to reduce downstream runoff by retaining storm water flow.

J. PUBLIC FACILITIES

Six park sites are to be provided, a 45-acre centrally located community park in the village core, along with five neighborhood parks distributed evenly throughout the project as well. Also to be provided are two elementary school sites with additional land area to accommodate a future intermediate school, and the extensive pedestrian and bicycle greenbelt system. As earlier mentioned, significant areas of open space will be provided within the project with an improved hiking and equestrian trail system accessible from a variety of locations through the development.

Not only are the trail and park facilities accessible to the project itself, of course, but it is the full intent of the Dos Vientos Specific Plans to open up the Ranch to the general Newbury Park community. The greenbelts, trails, and parks are to be fully utilized by the public, and provide a recreational opportunity for Newbury Park unlike any that has existed there before.

## K. HOUSING

The Dos Vientos Specific Plans will offer a variety of housing types to meet the needs of varied household and income groups. The housing program includes a project planning unit devoted exclusively to single-family detached modular housing for lower and moderate incomes and an own-your-own mobile home lot area. Other housing types include single family detached, single family patio homes, townhomes, and ranch style equestrian estates up to 5 acres in size. More than 25% of the project's residential inventory are proposed to qualify as affordable housing. A project planning unit site is being made available to the City of Thousand Oaks for an affordable senior housing project.

## L. RECREATION

Recreational amenities include the pedestrian and bicycle greenbelt system, private recreation and leisure facilities within the higher density residential area, hiking and equestrian trails, six public park sites, and the open space. As previously mentioned, the village core land use concept incorporates active and passive recreational features available to the Ranch itself and also the Newbury Park community as well.

## SECTION II. CONSTRUCTION AND PHASING

The development of the Dos Vientos Ranch will provide the City of Thousand Oaks with a variety of housing types and sites including single family detached, patio homes, prebuilt design, townhouses, condominiums, ownership mobile home lots, ranch estates and, at the City's discretion, senior housing. Phasing allows for such housing variety in accordance with market demands and shifts and the cost of advance design and construction of master street and utility improvements. Street and utility systems within the two Specific Plans are interfunctional, necessitating concurrent and combined phasing.

### A. PHASING PLAN

#### 1. PRE-PHASE I (1986-87)

The first improvements are the 6 million gallon Potrero Reservoir adjacent to Planning Unit 10, completion of the Lynn Road linkage and termination of Potrero Road as a cul-de-sac at the existing City boundary, and shifting the National Park entry to Lynn Road. The Potrero Reservoir completes Cal-American's water storage facilities balance for Newbury Park and Thousand Oaks. These are immediate and necessary Newbury Park public facility benefits. As such, they will be constructed during project review prior to annexation under City/County purview. Economics are achieved by grading and preparing the Potrero Reservoir in conjunction with Lynn Road work.

#### 2. PHASE I (1988-1995)

After Specific Plan approval, construction will begin on Dos Vientos Parkway from its intersection at Lynn Road near the existing City Boundary northwards to Planning Unit 5. The street and utility improvements will serve the following planning units:

| | | |
|---|---|---|
| Planning Unit 3 - | (Portion) Single Family Detached (i.e., Patio Homes/Zero Lot Line) | approx. 342 D.U. |

| | | | |
|---|---|---|---|
| Planning Unit 4 | - Condominiums (targeted as a Measure "A" affordable project) | approx. | 346 D.U. |
| Planning Unit 8 | - Townhomes | approx. | 98 D.U. |
| Planning Unit 9 | - Church/Day Care Facility | | |
| Planning Unit 10 | - Townhomes | approx. | 259 D.U. |
| Planning Unit 11 | - Single Family Detached (prebuilt housing design, targeted as a Measure "A" affordable project) | approx. | 531 D.U. |
| Planning Unit 19 | - Custom Estate Lots | approx. | 14 |
| Planning Unit 13 | - Elementary School Site | | |
| Planning Unit 21 | - Greenbelt | | |
| Planning Unit 6A | - Neighborhood Park (2) | | |
| | PHASE I proposed totals | approx. | 1,590 D.U. |

The backbone utility improvements for Phase I include: (1) tying into existing offsite sewer, gas, electric, and telephone services, (2) the 6 M.G. Potrero Reservoir and two smaller reservoirs within Open Space Planning Unit 22, just west of the Dos Vientos Parkway Tunnel, (3) the trunk storm drain system for the entire development and (4) preparing the elementary school and neighborhood park sites.

3. PHASE II (1990-1999)

Phase II involves two sub-phases which, if satisfactory market and economic conditions exist, could build-out together. Phase II A consists of:

a. PHASE II A

| | | | |
|---|---|---|---|
| Planning Unit 2 | - Townhomes | approx. | 365 D.U. |

| | | |
|---|---|---|
| Planning Unit 7 - (portion) Townhomes | approx. | 183 D.U. |
| Planning Unit 5 - Commercial site (phased build-out as market demand dictate) | | |
| Planning Unit 21 - Greenbelt | | |
| Planning Unit 6A - Neighborhood Park | | |
| Planning Unit 23 - Retention Basin | | |
| Planning Unit 6, 13 - Community Park/Public School (rough-grading) | | |
| PHASE II A proposed totals | approx. | 548 D.U. |

This phase would extend Dos Vientos Parkway from Planning Unit 5 westerly towards Planning Unit 23, the retention basin. Trunk storm drain, water, and sewer lines would be installed. As noted above, five non-residential Planning Units - the commercial site (Planning Unit 5), and the community park site (Planning Unit 6) - would be rough graded and prepared for later improvement. The greenbelt (Planning Unit 21) and the retention basin (Planning Unit 23), and the neighborhood park by P.U. 7 would be wholly constructed.

b. PHASE II B

| | | |
|---|---|---|
| Planning Unit 18 - Single Family Estate Lots (2-5 acre lots) | approx. | 74 D.U. |
| Planning Unit 16 - Mobile Home Park | approx. | 257 D.U. |
| Planning Unit 6B - Park | | |
| Planning Unit 12 - Single Family Detached (not including 12A) | approx. | 203 D.U. |
| Planning Unit 6A - Park | | |
| Planning Unit 15 - Single Family Estate Lots (1-5 acre lots) | approx. | 86 D.U. |
| PHASE II B proposed totals | approx. | 620 D.U. |

Phase II B presents large estates rolling up the gentle slopes of the southerly mantle across from the National Park. This is in keeping with the very low densities designated for these foothills by the Council. This land use keeps in tact the scenic corridor along Potrero and Lynn Roads envisioned by the National Park Service as well.

In this phase, the major loop circulation elements of the project, Lynn Road and Dos Vientos Parkway, will be completed; and West Potrero Road will be shifted to its new proposed alignment at the west end of the project by P.U. 18.
The location and size of the school site in Planning Units 12 and 13 is subject to change. Planning Unit 13 is a separate planning area containing 28.5 gross acres, of which approximately 23.8 acres are developable under current City standards (i.e., under 25% slope). Those 23.8 acres are presently identified as a combined elementary (K-6) and intermediate (7-8) school site with joint use of certain common facilities. It is possible that the future requirements of the Conejo Valley Unified School District may dictate that the two campuses be segregated. If this occurs, then a portion of Planning Unit 13 and, thus, a portion of adjacent Planning Unit 12, would displace residential use to accommodate the new policy. Also contained within this area is a neighborhood park which would be coordinated into the design of the area. The overall dwelling unit count within these planning unit boundaries would, however, remain unchanged.

4. PHASE III (1996-2005)

Phase III, the final development phase, will include the construction of the Borchard Road extension and the installation of the remaining utility services, as well as the following planning units:

| | | |
|---|---|---|
| Planning Unit 17 - | Single Family Detached | approx. 104 D.U. |
| Planning Unit 14 - | Single Family Detached (including 14A & 14B) | approx. 357 D.U. |
| Planning Unit 1 - | Condominiums (targeted as a subsidized affordable housing project) | approx. 221 D.U. |
| Planning Unit 12A - | Single Family Detached | approx. 100 D.U. |

| | | |
|---|---|---|
| Planning Unit 3 - | Single Family Detached (Patio Homes/Zero Lot Line) | approx. 201 D.U. |
| Planning Unit 7 - | Townhomes | approx. 199 D.U. |
| Planning Unit 20 - | Equestrian Center Land Parcel (to be offered to the CRPD) | |
| | PHASE III proposed totals | approx. 1,182 D.U. |

1182 D.U. represents a gross total for Phase III including P.U.1. Net D.U. count without P.U.1 is 961.

198 dwellings in Planning Unit 3 are the remaining residences not built-out during Phase I.

5. PHASING, IN GENERAL:

This phasing program has been designed for an orderly, cost efficient and least intrusive build-out, minimizing the already minimal effects of construction on existing residents. Being dynamic, phasing is subject to market preferences, and absorption. No matter how carefully thought out, some modifications will likely be necessary.

B. MEASURE A:

Detailed phasing plans for individual planning units have not been completed. Necessary tract and RPD permits for each planning unit will be reviewed by the City as they come on line. Internal planning unit phasing is significantly effected by the Measure A ordinance and policies.

Residential projects outside of Specific Plans do not benefit from comprehensive master planning as provided by the Dos Vientos Specific Plans. Since the Measure A rating criteria relates to a project's impact on public facilities, services, and its contribution to public and private amenities, it is thus appropriate to apply a constant rating standard to all of the residential projects within the Dos Vientos Ranch during Measure A tenure. The same rating standards should be consistently applied to each Specific Plan project. If Measure A is extended or a similar growth system enacted, it is proposed that the same

standardized point rating concept be used. A draft application of existing Measure A standards indicates that the following criteria are common to the projects within Dos Vientos Ranch and would rate as follows:

PART A: AVAILABILITY OF PUBLIC FACILITIES AND SERVICES

| CATEGORY | POINTS EARNED | TOTAL |
|---|---|---|
| 1. Water service Efficiency and Impact (10 pts. max.) | | |
| a. Water Supply Impact | 9 | 10 |
| b. Community Improvements | 1.5 | |
| 2. Wastewater Service Impact (10 pts. max.) | | |
| a. Wastewater Service Impact | 9 | 10 |
| b. Community Improvements | 2 | |
| 3. Storm Water Drainage Facilities (10 pts. max.) | | |
| a. Storm Water Drainage | 8 | 10 |
| b. Community Improvements | 2 | |
| 4. Fire Protection (need to calculate) | (to be determined) | |
| 5. School Impact (10 pts. max.) | 10 | 10 |
| 6. Surface Street Traffic Impact (10 pts. max.) | | |
| a. Traffic Impact (need to calculate) | (to be determined) | |
| b. Circulation Element | 2 | |
| 7. Ventura Freeway Traffic Impact (10 pts. max.) | 10 | 10 |
| | Sub-total (to be determined) | |

PART B: QUALITY OF DESIGN AND CONTRIBUTION OF PUBLIC WELFARE AND AMENITY

| CATEGORY | POINTS EARNED | TOTAL |
|---|---|---|
| 2. Open space and slope landscaping | | |
| a. Open space/slope landscaping | 8 | |
| b. Design Excellence | 2 | 10 |
| 4. Provisions of useable open space | | |
| b. Significant contribution | 2 | 2 |
| 5. Bicycle and Foot Paths, Equestrian Trials and facilities and Greenbelts | 10 | 10 |
| 6. Provision of Public Facilities | 10 | 10 |
| 7. Site and Architectural Design Quality-Topographic Modification | | |
| a. Topographic Modification | 8 | |
| b. Design Excellence | 2 | 10 |

| | | |
|---|---|---|
| 8. Impact on Oak Trees and Archaeological Site | | |
| b. Archaeological Site | 5 | 5 |
| 9. Provision of Water Conservation Features | | |
| b. Special Features | .5 | .5 |
| | Sub-total | 47.5 |
| | Total (to be determined) | |

Criteria not listed include such items as architectural design and quality, energy conservation, oak tree preservation, (subject to individual tract applications), and, if applicable, project seniority.

Each residential project should be reviewed and rated on its own merits and in each instance, receive the score attributable the public benefit improvements for the Ranch as a whole. The projects would then compete in a regular Measure A cycle with other projects throughout the City.

C. CONSTRUCTION BUILD-OUT

Upon the completion of the Lynn Road link from the existing City limits to Potrero Road and the start of grading on the Potrero Reservoir in 1987, it is estimated that the first infrastructure improvements on Specific Plan lands could begin by 1988. Since the City would be reviewing the initial Phase I plans concurrently, it is conceiveable that the residential construction could begin in Fall, 1988.

By design, Phase I contains the most dwelling units (1590) and the greatest amount of residential variety for market flexibility. There must be a sufficient number of and return on for-sale residences to support the capital outlays to construct the necessary backbone infrastructure systems.

Phase II A and II B will support the completion of Dos Vientos Parkway and the preparation of the school, park and commercial sites. The initial utility improvements are slated to begin in 1991 and with, good consumer response to Phase I, residential construction could commence in 1992-1993. Assuming a rate of ±200 dwelling units per year, Phase I could be completed by 1993. Phase II A & II B could be completed by 2000.

Within Phase III is the improvement of Borchard Road. Assuming Phase III residential start-up in 1997, the units could be completed by 2005, which would culminate the Dos Vientos Ranch master plan.

Revised Hydrology & Drainage Study (B)

# HYDROLOGY REPORT

# FOR

# DOS VIENTOS RANCH

# (SPECIFIC PLAN NOS. 8 & 9)

Prepared By:

Hawks & Associates
2590 E. Main St., Suite 201
Ventura, California 93003

April, 1986

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# INTRODUCTION

The Dos Vientos Ranch is planned as a fully integrated and sustaining village within the City of Thousand Oaks. Specific Plans 8 and 9 represent the Master Plan for the Dos Vientos Ranch. The project will encompass a drainage area of approximately 1,915 acres of which 373 acres drain directly to Portrero Road and the South Branch Arroyo Conejo. The remaining 1,542 acres drain to Conejo Mountain Creek. Conejo Mountain Creek junctions with the South Branch Arroyo Conejo approximately 1/2 mile downstream of the easterly project boundary. This site is known as the Cohan property and future site for the proposed Tract 3666. The study watersheds addressed in this report and the Cohan property site are shown on Figure 1.

The South Branch Arroyo Conejo has quite severe capacity restrictions and areas downstream of the project site are subject to flooding from a 100-year storm. The Ventura county Flood Control District has previously conducted flood plain studies within the South Branch watershed to identify the flood hazards and has also conducted numerous conceptual studies involving methods to mitigate these flood hazards by providing retention basins at critical locations in the South Branch watershed.

Hydrology studies were conducted primarily in 1976 by the VCFCD for the Dos Vientos Ranch project site to identify sites where retention basins could be located to retard and limit flows to pre-development conditions, in order to mitigate the potential increase in flow from development. These studies were incorporated with other downstream studies in the South Branch watershed to insure that retarded storm peak flows would be compatible with other downstream retarding sites.

A number of factors have changed since the 1976 studies were completed primarily involving changes in the land use development

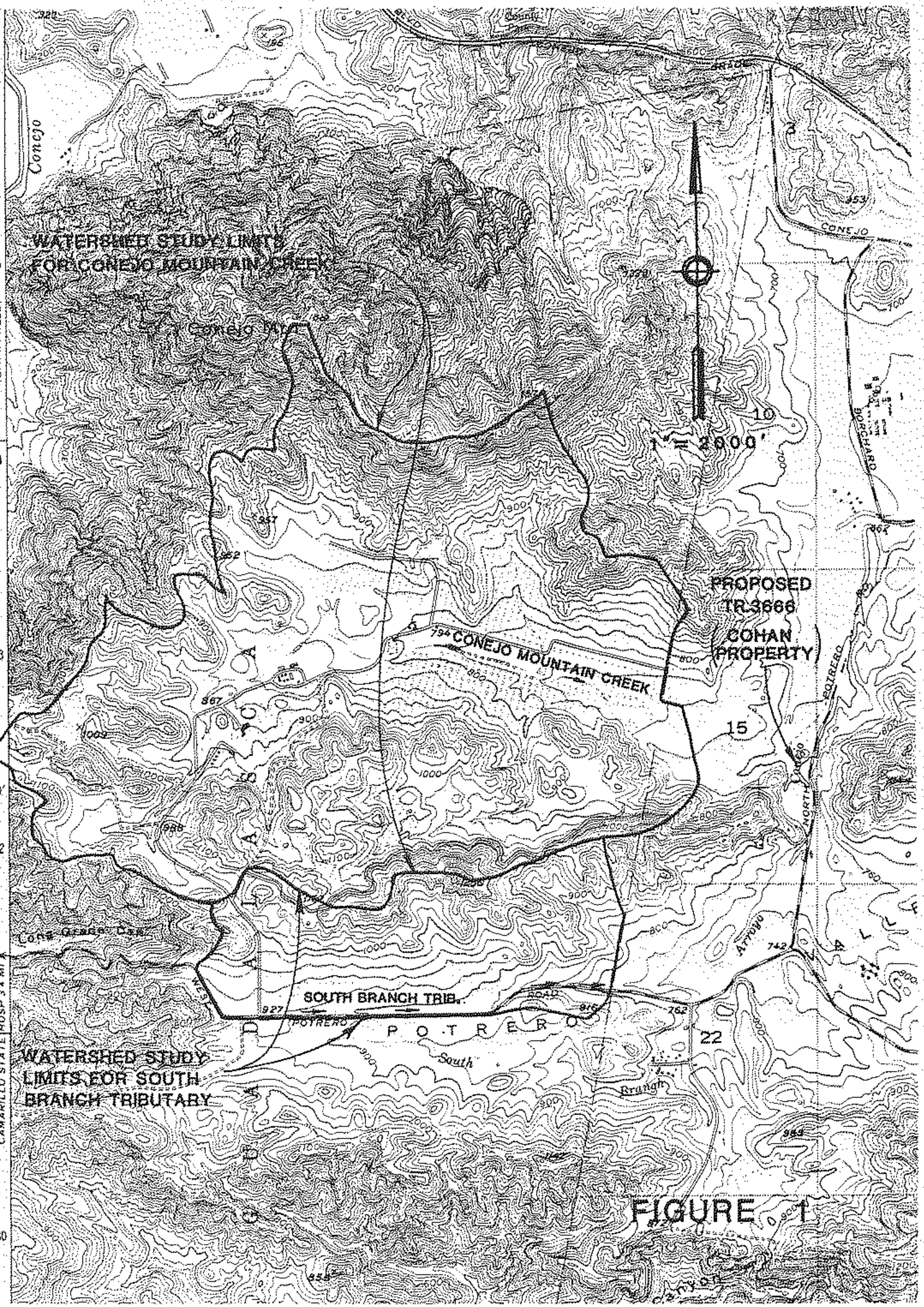

WATERSHED STUDY LIMITS FOR CONEJO MOUNTAIN CREEK
Conejo Mtn
1" = 2000'
PROPOSED TR-3666 COHAN (PROPERTY)
CONEJO MOUNTAIN CREEK
SOUTH BRANCH TRIB.
POTRERO
South
Branch
WATERSHED STUDY LIMITS FOR SOUTH BRANCH TRIBUTARY
Conejo
CONEJO
BORCHARD
NORTH
ROAD
BRIDGE
Long Grade Cyn.
CAMARILLO STATE HOSP 3.4 MI
2152 II NE (CAMARILLO)
3786
3785
3784
3783
3782
3780
10'
10
15
22

FIGURE 1

plan and methods of storm flow conveyance through the proposed development. The applicant has requested that a new hydrology study be completed in accordance with the latest development plan (Specific Plans 8 and 9) including a hydrology study of existing conditions to reevaluate retention basin sites and concepts.

This report has been prepared to summarize the results of this latest study. The report includes technical information and hydrology computer printouts which are also intended to provide information for the design phase of the project. Each of the study watersheds are discussed in more detail in subsequent sections of this report.

## METHODOLOGY

The method used for hydrologic analysis was the modified rational method developed by the VCFCD and described in their Hydrology Manual dated May, 1975, including subsequent revisions. Peak flow rates were computed for the 10, 50, and 100-year storm events. Rainfall intensity input utilized the K and L rainfall zones with most of the L zone intensities occurring in the tributary watershed to the South Branch Arroyo Conejo.

Using procedures described in the Hydrology Manual, time of concentration (Tc) was computed for representative subareas, approximately 50% of the subareas in the study watershed. Using the computed data, Tc's were assigned to the remaining subareas. The appropriate soil curve was assigned to each subarea, and the percent imperviousness was computed based on development limits and land use, open space areas, and road systems as delineated on a 1"=400' scale topographic map provided by Haaland & Associates.

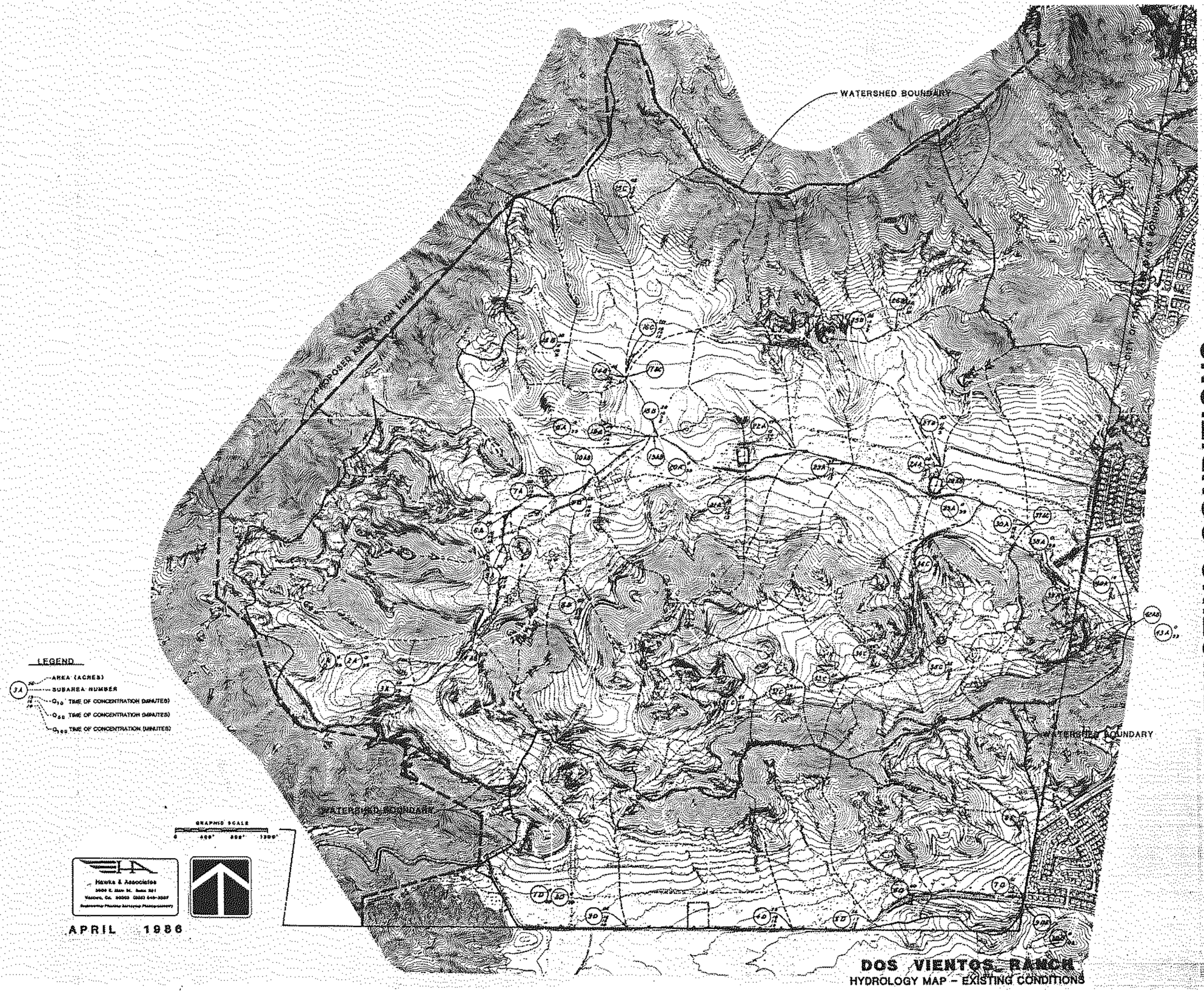
Channel routing and conveyance type were determined from the preliminary drainage plan along with the reach length and channel slope. Subarea delineations, numbering system, Tc and drainage area are shown in Figure 2 and Figure 3 for present and future conditions respectively. Proposed development limits, planning unit numbers and type of development, proposed retention basin locations, and the proposed backbone storm drain system are also shown in Figure 3. Larger scale maps (1"=400') are available at the consultant's office.

The proposed equestrian center (Planning Unit No. 20) is located outside of the study watershed. This facility including that portion of Borchard Road is expected to have an insignificant impact on drainage and therefore has not been addressed further in this report.

Copies of the computer printouts are contained in the appropriate appendices. The printouts show pertinent input data and peak flow rates at each subara and below confluences. The numbering system conforms with that shown in Figure 2 and 3.

The following impervious percentages were determined from land use symbols and descriptions contained in the development master plan and were discussed with the VCFCD Hydrology Section before inclusion in the hydrologic analysis:

| PLANNING UNIT NO. | DESCRIPTION | DENSITY RANGE (Du/Ac.) | % IMPERVIOUS |
|---|---|---|---|
| 1 | Senior Housing Project | 12-18 | 40 |
| 2 | Single Family Townhomes | 10-15 | 35 |
| 3 | Single family Detached | 3.5-5 | 20 |
| 4 | Single Family Townhomes | 12-18 | 40 |
| 5 | Village Commercial Center | | 50 |
| 6 | Public Park & Retention Basin | | 0 |
| 6A | Public Park | | 3 |
| 6B | Public Park | | 3 |
| 7 | Single Family Townhomes | 7-7.5 | 30 |
| 8 | Single Family Townhomes | 6-7.5 | 27 |
| 9 | Church | | 50 |
| 10 | Single Family Townhomes | 6.5-7.5 | 27 |
| 11 | Single Family Detached | 5-7.5 | 23 |
| 12 | Single Family Detached | 3.5-5 | 20 |
| 12A | Single Family Detached | 3.5-5 | 20 |
| 13 | Public School | | 50 |
| 14 | Single Family Detached | 3.5-5 | 20 |
| 14A | Single Family Detached | 3.5-5 | 20 |
| 14B | Single Family Detached | 3.5-5 | 20 |
| 15 | Single Family Detached | 0.5-1 | 8 |
| 16 | Ownership Mobile Homes | 5-7 | 23 |
| 17 | Single Family Detached | 2-4 | 17 |
| 18 | Single Family Detached | .3-.5 | 5 |
| 19 | Single Family Detached | 1-2 | 12 |
| 20 | Equestrian Center | | 0 |
| 21 | Pedestrian Greenbelts | | 0 |
| 22 | Public Open Space | | 0 |
| 23 | Retention Basin | | 0 |
| | Major Roads | | 99 |




# HYDROLOGY – EXISTING CONDITIONS

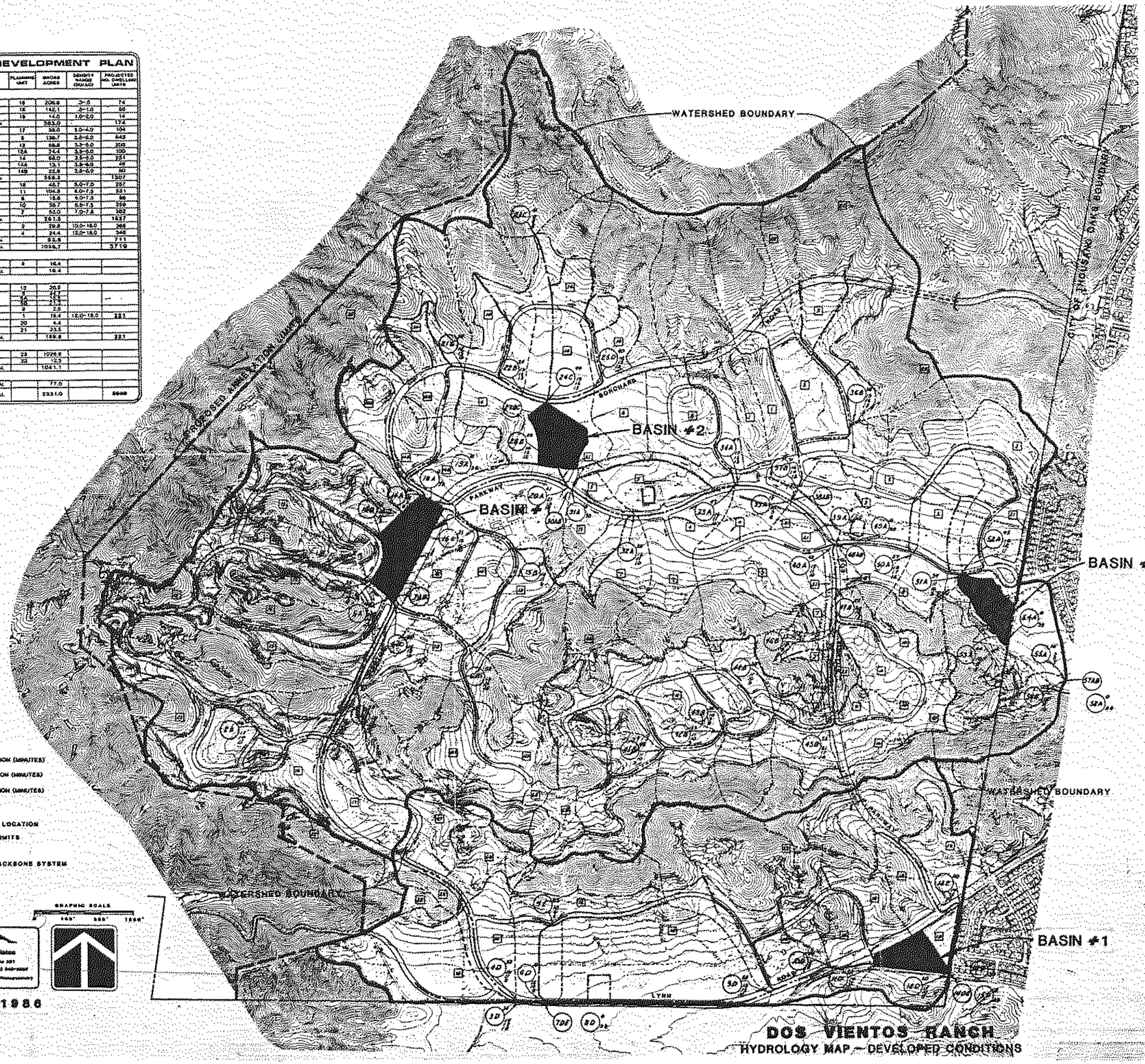
**DOS VIENTOS RANCH**

HYDROLOGY MAP – EXISTING CONDITIONS

# HYDROLOGY – DEVELOPED CONDITIONS

## LAND USE DEVELOPMENT PLAN

| PLAN DESIGNATION | PLANNING UNIT | GROSS ACRES | DENSITY RANGE DU/ACC | PROJECTED NO. DWELLING UNITS |
|---|---|---|---|---|
| **RESIDENTIAL** | | | | |
| VERY LOW DENSITY 0.1-0.5 DU/AC | SINGLE FAMILY DETACHED | 19 | 208.8 | .3-.5 | 74 |
| | SINGLE FAMILY DETACHED | 16 | 142.1 | .5-1.0 | 56 |
| | SINGLE FAMILY DETACHED | 18 | 14.0 | 1.0-2.0 | 14 |
| | SUBTOTAL | | 363.0 | | 174 |
| LOW 0.1-2.0 DU/AC | SINGLE FAMILY DETACHED | 17 | 36.0 | 2.0-4.0 | 104 |
| | SINGLE FAMILY DETACHED | 3 | 136.7 | 3.0-6.0 | 643 |
| | SINGLE FAMILY DETACHED | 12 | 68.8 | 3.0-6.0 | 202 |
| | SINGLE FAMILY DETACHED | 12A | 24.4 | 3.0-6.0 | 100 |
| | SINGLE FAMILY DETACHED | 14 | 68.0 | 3.0-6.0 | 231 |
| | SINGLE FAMILY DETACHED | 14A | 13.1 | 3.0-6.0 | 48 |
| | SINGLE FAMILY DETACHED | 14B | 22.9 | 3.0-6.0 | 80 |
| | SUBTOTAL | | 369.1 | | 1307 |
| MEDIUM 6.1-12.0 DU/AC | CONDOMINIUM MOBILE HOMES | 18 | 48.7 | 6.0-7.0 | 287 |
| | SINGLE FAMILY DETACHED | 11 | 104.5 | 6.0-7.3 | 531 |
| | SINGLE FAMILY TOWNHOUSES | 8 | 18.6 | 6.0-7.3 | 98 |
| | SINGLE FAMILY TOWNHOUSES | 10 | 38.7 | 6.0-7.3 | 259 |
| | SINGLE FAMILY TOWNHOUSES | 7 | 53.0 | 7.0-7.3 | 382 |
| | SUBTOTAL | | 261.5 | | 1527 |
| HIGH 12.1-18.0 DU/AC | SINGLE FAMILY TOWNHOUSES | 2 | 39.8 | 10.0-18.0 | 366 |
| | SINGLE FAMILY TOWNHOUSES | 4 | 24.4 | 12.0-18.0 | 346 |
| | SUBTOTAL | | 55.8 | | 711 |
| | RESIDENTIAL TOTAL | | 1026.7 | | 3719 |
| **COMMERCIAL** | | | | | |
| VILLAGE CONVENIENCE CENTER | 5 | 16.4 | | |
| | COMMERCIAL SUBTOTAL | | 16.4 | | |
| **PUBLIC FACILITIES** | | | | | |
| PUBLIC SCHOOL | 13 | 20.0 | | |
| PUBLIC PARKS | 4 | 7.7 | | |
| | 15 | 7.5 | | |
| | 16 | 21.5 | | |
| CEMETERY | 9 | 2.0 | | |
| SENIOR HOUSING PROJECT | 1 | 19.4 | 12.0-18.0 | 221 |
| EQUESTRIAN CENTER | 20 | 8.4 | | |
| EQUESTRIAN GREENS 18 | 21 | 23.5 | | |
| PUBLIC S-P S-P SUBTOTAL | | 129.9 | | 221 |
| **OPEN SPACE** | | | | |
| PUBLIC OPEN SPACE | 23 | 1026.6 | | |
| RETENTION BASINS | 22 | 15.3 | | |
| OPEN SPACE SUBTOTAL | | 1041.1 | | |
| **MAJOR ROADS** | | | | |
| MAJOR ROADS SUBTOTAL | | 77.0 | | |
| PROJECT TOTAL | | 2331.0 | | 3940 |




**DOS VIENTOS RANCH**
HYDROLOGY MAP – DEVELOPED CONDITIONS

## PROJECT IMPACTS

The total project area runoff to the Conejo Mountain Creek and the tributary to the South Branch Arroyo Conejo for existing and developed conditions is summarized in Table 1 for a 10, 50, and 100-year event. Developed conditions runoff as shown in this table is without the benefit of utilizing retention basins. The figures indicate an increase over existing conditions ranging from 87 to 97 percent for Conejo Mountain Creek depending on storm frequency, and an increase over existing conditions ranging from 25 to 26 percent for the tributary to South Branch Arroyo Conejo.

Runoff values for developed conditions are considerably higher on both watersheds than indicated in earlier VCFCD studies. A review of data indicates that at least 50 percent of the increase is due to different routing assumptions through the watershed. The earlier VCFCD studies assumed trapezoidal channel routing through much of the watershed. Flood routing in this type of facility provides the benefit of additional storage and increases runoff travel time which can be beneficial depending on the peaking time of other subareas entering the facility.

The latest development plan is to provide underground conduits for storm flow conveyance. The corresponding decrease in facility storage and reduction in travel time will now create almost an identical alignment of peaking times for the major drainage areas, particularly Conejo Mountain Creek. The underground storm drain conveyance facilities are preferred in order to maintain the greenbelt and park site concepts without impacting these areas with channel growth from low flow nuisance water and danger from potential high flow stages. In addition, the use of underground drainage outlet facilities from retention basins is preferred in lieu of outletting to an open channel facility where potential basin embankment failure becomes a concern.

TABLE 1

SUMMARY OF RUNOFF
IN CUBIC FEET PER SECOND (CFS)

| FACILITY | EXISTING CONDITIONS | | | DEVELOPED CONDITIONS[1)] | | |
|---|---|---|---|---|---|---|
| | 10-YR. | 50-YR. | 100-YR. | 10-YR. | 50-YR. | 100-YR. |
| Conejo Mountain Creek @ Downstream Study Limits | 1188 | 1844 | 2196 | 2337 | 3457 | 4153 |
| Tributary to South Branch Arroyo Conejo @ Downstream Study Limits | 535 | 809 | 958 | 666 | 1010 | 1210 |

1) Developed conditions without retention basins.

## MITIGATION MEASURES

The resulting runoff increases represent a significant impact to downstream inhabited areas, and the method of storm flow conveyance required that this study review the two retention basin sites as previously proposed. In addition, the VCFCD study developed conceptual retention basin sites for retarding a 50-year event. This study reviewed all retention sites for the 10, 50 and 100-year events. The following sections discuss the methods proposed for mitigating the increase in runoff in each of the study watersheds.

### Conejo Mountain Creek

Two basins were previously proposed for this watershed. Basin #1 was to be located at Planning Unit No. 23. Basin #2 was to be located at Planning Unit No. 6 of which a portion would serve as a public park site. Both basin sites were found to be still feasible although the physical features may be slightly different than originally conceived.

Basin No. 1 would encompass approximately 11 acres of surface area. The depth of the basin at the outlet facility would be approximately 22 feet with a maximum ponding depth of 19.50 feet for the 100-year storm. A small outlet conduit would release a maximum flow of 25 cfs for a peak 100-year inflow of 1404 cfs. The basin would retard flow from 463 acres of the watershed and temporarily store 110 acre-feet from the 100-year storm.

Basin No. 2 would encompass approximately 9 acres of surface area. The depth of the basin at the outlet facility would be approximately 14 feet with a maximum ponding depth of 10 feet for the 100-year storm. A small outlet conduit would release a maximum flow of 17 cfs for a peak 100-year inflow of 650 cfs. The basin would retard flow from 227 acres of the watershed and temporarily store 44 acre-feet from the 100-year storm.

The results of utilizing both of these sites is shown below in Table 2.

TABLE 2

SUMMARY OF RUNOFF (CFS)
CONEJO MOUNTAIN CREEK

| EXISTING CONDITIONS | | | DEVELOPED CONDITIONS WITH 2 RETENTION BASINS | | |
|---|---|---|---|---|---|
| 10-Yr. | 50-Yr. | 100-Yr. | 10-Yr. | 50-Yr. | 100-Yr. |
| 1188 | 1844 | 2196 | 1427 | 2087 | 2467 |

Peak flow for developed conditions still exceeds the existing conditions peak flow anywhere from 12 to 20 percent, depending on the storm event, necessitating consideration for a third basin.

Basin No. 3 would be located in Planning Unit No. 6A and could encompass as much as 7 acres of surface area depending on final grading concepts. This facility is being referred to as a throttling basin to restrict the development conditions outflow at the easterly terminus of the project to existing conditions outflow or lower. As presently envisioned, the facility would have a trapezoidal section with 4:1 side slopes for conveyance of storms of less than 10 year frequency, and an embankment with a 5' high by 10' wide reinforced concrete box outlet to trap and temporarily pond the larger storm events due to the restricted outlet. Maximum peak release rates would range from 830 cfs for a 10-year storm to 1,034 cfs for a 100-year storm, and the basin would temporarily store 34 acre-feet from a 100-year storm. The total project area runoff at the downstream study limits is summarized in Table 3 assuming the use of three retention basins in the Conejo Mountain Creek watershed.

TABLE 3

SUMMARY OF RUNOFF (CFS)
CONEJO MOUNTAIN CREEK

| EXISTING CONDITIONS | | | DEVELOPED CONDITIONS WITH 3 RETENTION BASINS | | |
|---|---|---|---|---|---|
| 10-Yr. | 50-Yr. | 100-Yr. | 10-Yr. | 50-Yr. | 100-Yr. |
| 1188 | 1844 | 2196 | 840 | 999 | 1057 |

The results indicate that all increases in flow have been mitigated and actually reduced considerably below existing conditions runoff, with the major reduction occurring for the larger storm event.

Computer printouts for existing conditions are contained in Appendix A in this report. Computer printouts for developed conditions with three retention basis are contained in Appendix B along with retention basin routing calculations.

Tributary to South Branch Arroyo Conejo

Retention basins were not previously considered for this watershed. The runoff increases for developed conditions as previously presented in Table 1 represent a significant impact downstream. As-built plans for Tract 2039-3, which is located adjacent to and easterly of the Dos Vientos project, indicate that the storm system was designed in 1970 and undoubtedly utilized earlier hydrology methods. The plans indicate that the storm drain system could convey approximately 440 cfs which is considerably less than the 10-year storm for existing conditions. Excess flow would have to be conveyed along Potrero Road. Therefore, a retention basin was considered for this watershed.

The proposed retention basin would be located at the southeast corner of the project and would encompass a surface area of approximately 6 acres. The depth of the basin at the outlet

facility would be approximately 15 feet with a maximum ponding depth of 11.50 feet for the 100-year storm and temporarily store 25.50 acre-feet for the 100-year storm. A 72" reinforced concrete pipe outlet condut was assumed which is identical in size to the existing downstream storm drain. The outlet would release a maximum flow of 384 cfs for a peak 100-year inflow of 1,210 cfs. The total project area runoff is summarized in Table 4.

TABLE 4

SUMMARY OF RUNOFF (CFS)
TRIBUTARY TO SOUTH BRANCH ARROYO CONEJO

| EXISTING CONDITIONS | | | DEVELOPED CONDITIONS WITH RETENTION BASIN | | |
|---|---|---|---|---|---|
| 10-Yr. | 50-Yr. | 100-Yr. | 10-Yr. | 50-Yr. | 100-Yr. |
| 535 | 809 | 958 | 281 | 354 | 384 |

Computer printouts for existing conditions are contained in Appendix A. Computer printouts for developed conditions including retention basin routing calculations are contained in Appendix B.

## CUMULATIVE IMPACTS

It was also necessary to assess the runoff effects of the project concepts at some point downstream of the project limits to insure that the peaking relationships of retarded flows were not causing any unusual situations. Hydrograph outputs at the downstream study limits were provided to the VCFCD for further analysis down to the Cohan property (proposed Tract 3666) where Conejo Mountain Creek junctions with the South Branch Arroyo. Restrictions have been placed on the Cohan property to require further retention if the property is to be developed.

VCFCD computer runs are summarized in Table 5 for the 100-year storm at appropriate locations. Subarea numbering is shown for the VCFCD printouts since a different numbering system was used for this study.

TABLE 5

SUMMARY OF RUNOFF (CFS)
100-YEAR STORM

| LOCATION | EXISTING CONDITIONS | DEVELOPED CONDITIONS |
|---|---|---|
| Conejo Mountain Creek, Downstream Study Limits (Subarea 102B) | 2196 | 1057 |
| Tributary to South Branch Arroyo Conejo Downstream Study Limits (Subarea 20C) | 958 | 384 |
| At Cohan Property (Subarea 106AB) | 7335 | 6291 |

Computer printouts are contained in Appendix C.

These study results indicate that the basins as proposed will mitigate any downstream increases and actually reduce the runoff to less than what would occur from existing conditions.

## SUMMARY AND DESIGN CONSIDERATIONS

The retention basins as proposed are conceptual and should be considered preliminary at this stage to be used as a guideline for final design considerations. Considerable flexibility is possible in the Conejo Mountain Creek watershed due to significant reduction in peak flow below existing conditions runoff and excess capacity in Basin No. 3.

Basin No. 1 and 2 were considered as depressed basins with underground outlets to eliminate the need for involvement of the State Division of Dam Safety. Three concerns are expressed regarding these basins: 1) A fairly elaborate intake structure with screens at the intake ports will be required to insure that the small outlet pipes do not clog; 2) A sediment production study should be conducted during the design stage to evaluate the potential loss of volume from sediment deposition in the basins; 3) The small release from these basins will require a detailed analysis for a four day storm event. The basins will probably require an automatic control valve that will be operated by floats and timers to increase the discharge during the receding portion of the storm in order to provide sufficient storage for the next storm event.

In addition, consideration for landscaping and recreational use of the two basins could reduce available storage volume. Basin No. 3 has considerable flexibility to increase the height and storage capacity to offset any storage volume loss in the upstream basins. The basin as proposed will only require 34 acre feet of storage for the 100-year event. Therefore, the height and storage requirements presently fall into the nonjurisdictional size and review by the State Division of Dam Safety would not be required.

The proposed basin on the tributary to the South Branch Arroyo Conejo would also be a depressed basin and would not require

review by the State Division of Dam Safety. This basin could also be reduced in size depending on more detailed review of the existing downstream storm drain system and design guidelines from the City of Thousand Oaks.

The information contained in this report has demonstrated that all impacts due to increased flow from development of the Dos Vietos Ranch can be mitigated. Project considerations have been discussed in considerable detail with the VCFCD Hydrology Section to insure that project concepts are compatible with the Master Plan for reduction of flood hazards in the South Branch Arroyo Conejo watershed and the Dos Vientos project may actually provide benefits in achieving those goals.

# APPENDIX A

## EXISTING CONDITIONS

## COMPUTER PRINTOUTS

CONEJO MOUNTAIN CREEK

10-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-EXISTING CONDITIONS-Q10 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1A | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | K10 | 0.00 |
| 861411 | 2A | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | K10 | 0.00 |
| 861411 | 3A | 56. | 85. | 56. | 85. | 1 | 1100. | 0.05455 | 0.00 | 0.00 | 0. | 10 | 19 | K10 | 0.00 |
| 861411 | 4A | 59. | 107. | 115. | 183. | 1 | 1250. | 0.04480 | 0.00 | 0.00 | 0. | 10 | 17 | L10 | 0.00 |
| 861411 | 5A | 95. | 125. | 210. | 293. | 1 | 450. | 0.03110 | 0.00 | 0.00 | 0. | 20 | 20 | K10 | 0.00 |
| 861411 | 6A | 36. | 54. | 246. | 339. | 1 | 625. | 0.01920 | 0.00 | 0.00 | 0. | 20 | 16 | K10 | 0.00 |
| 861411 | 7A | 50. | 72. | 296. | 395. | 1 | 650. | 0.01540 | 0.00 | 0.00 | 0. | 20 | 17 | K10 | 0.00 |
| 861411 | 8B | 62. | 94. | 62. | 94. | 1 | 1400. | 0.03714 | 0.00 | 0.00 | 0. | 20 | 19 | L10 | 0.00 |
| 861411 | 9B | 65. | 98. | 127. | 175. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 16 | K10 | 0.00 |

CONFLUENCE Q'S

861411 10A TA 1167 QA 391. QAB 533. QB 142. 861411 10B TB 1161 QB 175. QBA 501. QA 325.
861411 10AB TAB 1165 QAB 544. QA 381. QB 163.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 10AB | 127. | 175. | 423. | 544. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K10 | 0.00 |
| 861411 | 11A | 0. | 0. | 423. | 544. | 1 | 900. | 0.02440 | 0.00 | 0.00 | 0. | 20 | 99 | K10 | 0.00 |
| 861411 | 12A | 54. | 75. | 477. | 592. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 18 | K10 | 0.00 |
| 861411 | 13B | 38. | 80. | 38. | 80. | 1 | 900. | 0.01000 | 0.00 | 0.00 | 0. | 10 | 11 | K10 | 0.00 |
| 861411 | 14B | 45. | 75. | 83. | 132. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 16 | K10 | 0.00 |
| 861411 | 15C | 42. | 100. | 42. | 100. | 1 | 2350. | 0.05064 | 0.00 | 0.00 | 0. | 10 | 9 | K10 | 0.00 |
| 861411 | 16C | 70. | 95. | 112. | 162. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 19 | K10 | 0.00 |

CONFLUENCE Q'S

861411 17B TB 1163 QB 132. QBC 294. QC 162. 861411 17C TC 1163 QC 162. QCB 294. QB 132.
861411 17BC TBC 1163 QBC 294. QB 132. QC 162.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 17BC | 112. | 162. | 195. | 294. | 1 | 850. | 0.01765 | 0.00 | 0.00 | 0. | 20 | 0 | K10 | 0.00 |
| 861411 | 18B | 28. | 53. | 223. | 293. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 10 | K10 | 0.00 |

CONFLUENCE Q'S

861411 19A TA 1167 QA 592. QAB 884. QB 291. 861411 19B TB 1166 QB 293. QBA 881. QA 588.
861411 19AB TAB 1167 QAB 884. QA 592. QB 291.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 19AB | 223. | 293. | 700. | 884. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 0 | K10 | 0.00 |
| 861411 | 20A | 0. | 0. | 700. | 884. | 1 | 1325. | 0.01283 | 0.00 | 0.00 | 0. | 20 | 99 | K10 | 0.00 |
| 861411 | 21A | 81. | 117. | 781. | 877. | 1 | 750. | 0.01200 | 0.00 | 0.00 | 0. | 20 | 17 | K10 | 0.00 |
| 861411 | 22A | 47. | 68. | 828. | 876. | 1 | 750. | 0.01467 | 0.00 | 0.00 | 0. | 30 | 15 | K10 | 0.00 |
| 861411 | 23A | 95. | 127. | 923. | 878. | 1 | 1150. | 0.01130 | 0.00 | 0.00 | 0. | 30 | 17 | K10 | 0.00 |
| 861411 | 24A | 68. | 103. | 991. | 867. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 14 | K10 | 0.00 |
| 861411 | 25B | 36. | 80. | 36. | 80. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 10 | K10 | 0.00 |
| 861411 | 26B | 74. | 147. | 110. | 227. | 1 | 2000. | 0.03050 | 0.00 | 0.00 | 0. | 10 | 12 | K10 | 0.00 |
| 861411 | 27B | 50. | 95. | 160. | 256. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | K10 | 0.00 |

VR-1412

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-EXISTING CONDITIONS-Q10 STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

* CONFLUENCE Q'S *

* 861411 28A TA 1179 QA 867. QAB 924. QB 57. 861411 28B TB 1161 QB 256. QBA 815. QA 559. *

* 861411 28AB TAB 1178 QAB 927. QA 865. QB 62. *

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 28AB | 160. | 256. | 1151. | 927. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K10 | 0.00 |
| 861411 29A | 0. | 0. | 1151. | 927. | 1 | 1325. | 0.01810 | 0.00 | 0.00 | 0. | 20 | 99 | L10 | 0.00 |
| 861411 30A | 71. | 146. | 1222. | 936. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 12 | L10 | 0.00 |
| 861411 31C | 45. | 99. | 45. | 99. | 1 | 700. | 0.05140 | 0.00 | 0.00 | 0. | 20 | 11 | L10 | 0.00 |
| 861411 32C | 34. | 70. | 79. | 163. | 1 | 575. | 0.06960 | 0.00 | 0.00 | 0. | 20 | 12 | L10 | 0.00 |
| 861411 33C | 34. | 66. | 113. | 224. | 1 | 675. | 0.04440 | 0.00 | 0.00 | 0. | 20 | 13 | L10 | 0.00 |
| 861411 34C | 25. | 64. | 138. | 267. | 1 | 400. | 0.07500 | 0.00 | 0.00 | 0. | 10 | 10 | L10 | 0.00 |
| 861411 35C | 35. | 82. | 173. | 327. | 1 | 1500. | 0.04670 | 0.00 | 0.00 | 0. | 20 | 10 | L10 | 0.00 |
| 861411 36C | 40. | 103. | 213. | 347. | 1 | 1550. | 0.02450 | 0.00 | 0.00 | 0. | 10 | 10 | L10 | 0.00 |

* CONFLUENCE Q'S *

* 861411 37A TA 1181 QA 936. QAC 1097. QC 161. 861411 37C TC 1167 QC 320. QCA 1163. QA 842. *

* 861411 37AC TAC 1169 QAC 1170. QA 859. QC 311. *

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 37AC | 213. | 320. | 1435. | 1170. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | L10 | 0.00 |
| 861411 38A | 0. | 0. | 1435. | 1170. | 1 | 1150. | 0.00696 | 0.00 | 0.00 | 0. | 20 | 99 | L10 | 0.00 |
| 861411 39A | 90. | 126. | 1525. | 1176. | 1 | 800. | 0.04250 | 0.00 | 0.00 | 0. | 20 | 18 | K10 | 0.00 |
| 861411 40A | 16. | 41. | 1541. | 1178. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | L10 | 0.00 |
| 861411 41B | 38. | 74. | 38. | 74. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | L10 | 0.00 |

* CONFLUENCE Q'S *

* 861411 42A TA 1177 QA 1178. QAB 1188. QB 9. 861411 42B TB 1154 QB 74. QBA 599. QA 525. *

* 861411 42AB TAB 1177 QAB 1188. QA 1178. QB 9. *

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 42AB | 38. | 74. | 1579. | 1188. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L10 | 0.00 |
| 861411 43A | 0. | 0. | 1579. | 1188. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | L10 | 0.00 |

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MODIFIED RATIONAL METHOD HYDROLOGY
APPROX. AT FIRST BASIN (SUBAREA 10AB)
HYDROGRAPH AT 861411 10A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 1. | 300 | 1. | 400 | 1. |
| 500 | 1. | 600 | 1. | 700 | 1. | 800 | 1. | 900 | 4. |
| 1000 | 16. | 1050 | 33. | 1100 | 55. | 1110 | 67. | 1120 | 88. |
| 1130 | 113. | 1131 | 116. | 1132 | 119. | 1133 | 122. | 1134 | 126. |
| 1135 | 129. | 1136 | 133. | 1137 | 137. | 1138 | 141. | 1139 | 145. |
| 1140 | 149. | 1141 | 155. | 1142 | 160. | 1143 | 166. | 1144 | 172. |
| 1145 | 178. | 1146 | 185. | 1147 | 192. | 1148 | 201. | 1149 | 212. |
| 1150 | 224. | 1151 | 245. | 1152 | 273. | 1153 | 296. | 1154 | 315. |
| 1155 | 340. | 1156 | 369. | 1157 | 398. | 1158 | 427. | 1159 | 455. |
| 1160 | 480. | 1161 | 501. | 1162 | 518. | 1163 | 531. | 1164 | 540. |
| 1165 | 544. | 1166 | 544. | 1167 | 533. | 1168 | 510. | 1169 | 491. |
| 1170 | 477. | 1171 | 458. | 1172 | 436. | 1173 | 414. | 1174 | 391. |
| 1175 | 368. | 1176 | 342. | 1177 | 316. | 1178 | 289. | 1179 | 263. |
| 1180 | 239. | 1181 | 218. | 1182 | 199. | 1183 | 183. | 1184 | 170. |
| 1185 | 157. | 1186 | 146. | 1187 | 136. | 1188 | 127. | 1189 | 119. |
| 1190 | 112. | 1191 | 105. | 1192 | 98. | 1193 | 93. | 1194 | 87. |
| 1195 | 83. | 1196 | 78. | 1197 | 74. | 1198 | 70. | 1199 | 67. |
| 1200 | 63. | 1201 | 60. | 1202 | 58. | 1203 | 55. | 1204 | 53. |
| 1205 | 51. | 1206 | 49. | 1207 | 47. | 1208 | 46. | 1209 | 44. |
| 1210 | 43. | 1211 | 41. | 1212 | 40. | 1213 | 39. | 1214 | 38. |
| 1215 | 37. | 1216 | 36. | 1217 | 35. | 1218 | 34. | 1219 | 33. |
| 1220 | 32. | 1221 | 31. | 1222 | 31. | 1223 | 30. | 1224 | 29. |
| 1225 | 29. | 1226 | 28. | 1227 | 27. | 1228 | 27. | 1229 | 26. |
| 1230 | 25. | 1231 | 25. | 1232 | 24. | 1233 | 24. | 1234 | 23. |
| 1235 | 23. | 1236 | 22. | 1237 | 21. | 1238 | 21. | 1239 | 20. |
| 1240 | 20. | 1241 | 19. | 1242 | 19. | 1243 | 18. | 1244 | 18. |
| 1245 | 17. | 1246 | 17. | 1247 | 16. | 1248 | 16. | 1249 | 15. |
| 1250 | 15. | 1251 | 14. | 1252 | 14. | 1253 | 13. | 1254 | 13. |
| 1255 | 13. | 1256 | 12. | 1257 | 12. | 1258 | 12. | 1259 | 11. |
| 1260 | 11. | 1261 | 11. | 1262 | 11. | 1263 | 10. | 1264 | 10. |
| 1265 | 10. | 1266 | 9. | 1267 | 9. | 1268 | 9. | 1269 | 9. |
| 1270 | 9. | 1271 | 8. | 1272 | 8. | 1273 | 8. | 1274 | 8. |
| 1275 | 8. | 1276 | 7. | 1277 | 7. | 1278 | 7. | 1279 | 7. |
| 1280 | 7. | 1281 | 7. | 1282 | 7. | 1283 | 7. | 1284 | 6. |
| 1285 | 6. | 1286 | 6. | 1287 | 6. | 1288 | 6. | 1289 | 6. |
| 1290 | 6. | 1291 | 6. | 1292 | 6. | 1293 | 6. | 1294 | 6. |
| 1295 | 6. | 1296 | 5. | 1297 | 5. | 1298 | 5. | 1299 | 5. |
| 1300 | 5. | 1310 | 4. | 1320 | 3. | 1330 | 2. | 1340 | 2. |
| 1350 | 1. | 1360 | 1. | 1370 | 1. | 1380 | 1. | 1390 | 1. |
| 1400 | 1. | 1420 | 1. | 1440 | 1. | 1460 | 1. | 1500 | 1. |

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MODIFIED RATIONAL METHOD HYDROLOGY
APPROX. AT SECOND BASIN LOCATION (SUBAREA 18B)
HYDROGRAPH AT 861411 18B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 1. | 300 | 1. | 400 | 1. |
| 500 | 1. | 600 | 1. | 700 | 1. | 800 | 1. | 900 | 1. |
| 1000 | 7. | 1050 | 16. | 1100 | 24. | 1110 | 30. | 1120 | 41. |
| 1130 | 54. | 1131 | 55. | 1132 | 57. | 1133 | 58. | 1134 | 60. |
| 1135 | 62. | 1136 | 64. | 1137 | 66. | 1138 | 69. | 1139 | 71. |
| 1140 | 74. | 1141 | 77. | 1142 | 80. | 1143 | 83. | 1144 | 86. |
| 1145 | 90. | 1146 | 94. | 1147 | 98. | 1148 | 104. | 1149 | 112. |
| 1150 | 121. | 1151 | 134. | 1152 | 155. | 1153 | 172. | 1154 | 189. |
| 1155 | 211. | 1156 | 231. | 1157 | 245. | 1158 | 255. | 1159 | 263. |
| 1160 | 271. | 1161 | 275. | 1162 | 275. | 1163 | 278. | 1164 | 285. |
| 1165 | 290. | 1166 | 293. | 1167 | 291. | 1168 | 286. | 1169 | 276. |
| 1170 | 260. | 1171 | 241. | 1172 | 220. | 1173 | 198. | 1174 | 176. |
| 1175 | 155. | 1176 | 137. | 1177 | 123. | 1178 | 112. | 1179 | 102. |
| 1180 | 93. | 1181 | 86. | 1182 | 79. | 1183 | 73. | 1184 | 68. |
| 1185 | 64. | 1186 | 60. | 1187 | 56. | 1188 | 53. | 1189 | 50. |
| 1190 | 47. | 1191 | 44. | 1192 | 41. | 1193 | 39. | 1194 | 37. |
| 1195 | 35. | 1196 | 33. | 1197 | 32. | 1198 | 30. | 1199 | 29. |
| 1200 | 28. | 1201 | 26. | 1202 | 25. | 1203 | 24. | 1204 | 23. |
| 1205 | 22. | 1206 | 22. | 1207 | 21. | 1208 | 20. | 1209 | 20. |
| 1210 | 19. | 1211 | 18. | 1212 | 18. | 1213 | 17. | 1214 | 17. |
| 1215 | 17. | 1216 | 16. | 1217 | 16. | 1218 | 16. | 1219 | 15. |
| 1220 | 15. | 1221 | 14. | 1222 | 14. | 1223 | 14. | 1224 | 13. |
| 1225 | 13. | 1226 | 12. | 1227 | 12. | 1228 | 12. | 1229 | 11. |
| 1230 | 11. | 1231 | 11. | 1232 | 10. | 1233 | 10. | 1234 | 10. |
| 1235 | 9. | 1236 | 9. | 1237 | 9. | 1238 | 8. | 1239 | 8. |
| 1240 | 8. | 1241 | 8. | 1242 | 8. | 1243 | 7. | 1244 | 7. |
| 1245 | 7. | 1246 | 7. | 1247 | 7. | 1248 | 6. | 1249 | 6. |
| 1250 | 6. | 1251 | 6. | 1252 | 6. | 1253 | 5. | 1254 | 5. |
| 1255 | 5. | 1256 | 5. | 1257 | 5. | 1258 | 5. | 1259 | 4. |
| 1260 | 4. | 1261 | 4. | 1262 | 4. | 1263 | 4. | 1264 | 4. |
| 1265 | 3. | 1266 | 3. | 1267 | 3. | 1268 | 3. | 1269 | 3. |
| 1270 | 3. | 1271 | 3. | 1272 | 3. | 1273 | 3. | 1274 | 2. |
| 1275 | 2. | 1276 | 2. | 1277 | 2. | 1278 | 2. | 1279 | 2. |
| 1280 | 2. | 1281 | 2. | 1282 | 2. | 1283 | 2. | 1284 | 2. |
| 1285 | 2. | 1286 | 2. | 1287 | 2. | 1288 | 2. | 1289 | 2. |
| 1290 | 2. | 1291 | 1. | 1292 | 1. | 1293 | 1. | 1294 | 1. |
| 1295 | 1. | 1296 | 1. | 1297 | 1. | 1298 | 1. | 1299 | 1. |
| 1300 | 1. | 1310 | 1. | 1320 | 1. | 1330 | 1. | 1340 | 1. |
| 1350 | 1. | 1360 | 1. | 1370 | 1. | 1380 | 1. | 1390 | 1. |
| 1400 | 1. | 1420 | 1. | 1440 | 1. | 1460 | 1. | 1500 | 1. |

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MODIFIED RATIONAL METHOD HYDROLOGY
AT EASTERLY TRACT BOUNDARY
HYDROGRAPH AT 861411 43A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 2. | 200 | 2. | 300 | 2. | 400 | 2. |
| 500 | 2. | 600 | 2. | 700 | 2. | 800 | 3. | 900 | 6. |
| 1000 | 33. | 1050 | 73. | 1100 | 138. | 1110 | 161. | 1120 | 198. |
| 1130 | 243. | 1131 | 249. | 1132 | 254. | 1133 | 260. | 1134 | 267. |
| 1135 | 273. | 1136 | 280. | 1137 | 287. | 1138 | 295. | 1139 | 303. |
| 1140 | 310. | 1141 | 319. | 1142 | 328. | 1143 | 337. | 1144 | 347. |
| 1145 | 357. | 1146 | 369. | 1147 | 382. | 1148 | 398. | 1149 | 417. |
| 1150 | 445. | 1151 | 478. | 1152 | 529. | 1153 | 565. | 1154 | 599. |
| 1155 | 627. | 1156 | 651. | 1157 | 678. | 1158 | 708. | 1159 | 737. |
| 1160 | 769. | 1161 | 798. | 1162 | 838. | 1163 | 879. | 1164 | 921. |
| 1165 | 957. | 1166 | 1008. | 1167 | 1057. | 1168 | 1099. | 1169 | 1131. |
| 1170 | 1152. | 1171 | 1160. | 1172 | 1163. | 1173 | 1170. | 1174 | 1178. |
| 1175 | 1183. | 1176 | 1186. | 1177 | 1188. | 1178 | 1187. | 1179 | 1183. |
| 1180 | 1178. | 1181 | 1172. | 1182 | 1164. | 1183 | 1156. | 1184 | 1147. |
| 1185 | 1138. | 1186 | 1127. | 1187 | 1116. | 1188 | 1103. | 1189 | 1088. |
| 1190 | 1072. | 1191 | 1054. | 1192 | 1033. | 1193 | 1011. | 1194 | 987. |
| 1195 | 962. | 1196 | 935. | 1197 | 908. | 1198 | 880. | 1199 | 852. |
| 1200 | 823. | 1201 | 795. | 1202 | 767. | 1203 | 740. | 1204 | 714. |
| 1205 | 688. | 1206 | 663. | 1207 | 638. | 1208 | 615. | 1209 | 592. |
| 1210 | 570. | 1211 | 549. | 1212 | 528. | 1213 | 508. | 1214 | 489. |
| 1215 | 471. | 1216 | 453. | 1217 | 436. | 1218 | 420. | 1219 | 405. |
| 1220 | 390. | 1221 | 376. | 1222 | 362. | 1223 | 350. | 1224 | 338. |
| 1225 | 326. | 1226 | 315. | 1227 | 304. | 1228 | 294. | 1229 | 284. |
| 1230 | 275. | 1231 | 266. | 1232 | 258. | 1233 | 250. | 1234 | 242. |
| 1235 | 235. | 1236 | 228. | 1237 | 222. | 1238 | 215. | 1239 | 209. |
| 1240 | 203. | 1241 | 197. | 1242 | 191. | 1243 | 186. | 1244 | 180. |
| 1245 | 175. | 1246 | 171. | 1247 | 166. | 1248 | 161. | 1249 | 157. |
| 1250 | 152. | 1251 | 148. | 1252 | 145. | 1253 | 141. | 1254 | 137. |
| 1255 | 134. | 1256 | 130. | 1257 | 127. | 1258 | 125. | 1259 | 122. |
| 1260 | 119. | 1261 | 116. | 1262 | 113. | 1263 | 111. | 1264 | 108. |
| 1265 | 106. | 1266 | 103. | 1267 | 101. | 1268 | 99. | 1269 | 96. |
| 1270 | 94. | 1271 | 92. | 1272 | 90. | 1273 | 88. | 1274 | 86. |
| 1275 | 84. | 1276 | 82. | 1277 | 81. | 1278 | 79. | 1279 | 77. |
| 1280 | 76. | 1281 | 74. | 1282 | 72. | 1283 | 71. | 1284 | 70. |
| 1285 | 68. | 1286 | 67. | 1287 | 66. | 1288 | 65. | 1289 | 64. |
| 1290 | 63. | 1291 | 61. | 1292 | 60. | 1293 | 59. | 1294 | 58. |
| 1295 | 57. | 1296 | 55. | 1297 | 54. | 1298 | 53. | 1299 | 52. |
| 1300 | 51. | 1310 | 43. | 1320 | 36. | 1330 | 31. | 1340 | 27. |
| 1350 | 23. | 1360 | 19. | 1370 | 17. | 1380 | 15. | 1390 | 13. |
| 1400 | 11. | 1420 | 9. | 1440 | 7. | 1460 | 6. | 1500 | 4. |

VR-1412

CONEJO MOUNTAIN CREEK

50-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-EXISTING CONDITIONS-Q50 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1A | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | K50 | 0.00 |
| 861411 | 2A | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | K50 | 0.00 |
| 861411 | 3A | 56. | 126. | 56. | 126. | 1 | 1100. | 0.05455 | 0.00 | 0.00 | 0. | 10 | 16 | K50 | 0.00 |
| 861411 | 4A | 59. | 160. | 115. | 273. | 1 | 1250. | 0.04480 | 0.00 | 0.00 | 0. | 10 | 15 | L50 | 0.00 |
| 861411 | 5A | 95. | 187. | 210. | 433. | 1 | 450. | 0.03110 | 0.00 | 0.00 | 0. | 20 | 17 | K50 | 0.00 |
| 861411 | 6A | 36. | 80. | 246. | 496. | 1 | 625. | 0.01920 | 0.00 | 0.00 | 0. | 20 | 14 | K50 | 0.00 |
| 861411 | 7A | 50. | 106. | 296. | 576. | 1 | 650. | 0.01540 | 0.00 | 0.00 | 0. | 20 | 15 | K50 | 0.00 |
| 861411 | 8B | 62. | 144. | 62. | 144. | 1 | 1400. | 0.03714 | 0.00 | 0.00 | 0. | 20 | 17 | L50 | 0.00 |
| 861411 | 9B | 65. | 144. | 127. | 257. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 14 | K50 | 0.00 |

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CONFLUENCE Q'S

861411 10A TA 1165 QA 570. QAB 783. QB 213. 861411 10B TB 1160 QB 257. QBA 749. QA 492.
861411 10AB TAB 1164 QAB 800. QA 565. QB 235.

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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 10AB | 127. | 257. | 423. | 800. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K50 | 0.00 |
| 861411 | 11A | 0. | 0. | 423. | 800. | 1 | 900. | 0.02440 | 0.00 | 0.00 | 0. | 20 | 99 | K50 | 0.00 |
| 861411 | 12A | 54. | 110. | 477. | 870. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 16 | K50 | 0.00 |
| 861411 | 13B | 38. | 109. | 38. | 109. | 1 | 900. | 0.01000 | 0.00 | 0.00 | 0. | 10 | 10 | K50 | 0.00 |
| 861411 | 14B | 45. | 109. | 83. | 181. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 14 | K50 | 0.00 |
| 861411 | 15C | 42. | 135. | 42. | 135. | 1 | 2350. | 0.05064 | 0.00 | 0.00 | 0. | 10 | 8 | K50 | 0.00 |
| 861411 | 16C | 70. | 138. | 112. | 226. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 17 | K50 | 0.00 |

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CONFLUENCE Q'S

861411 17B TB 1161 QB 181. QBC 407. QC 226. 861411 17C TC 1161 QC 226. QCB 407. QB 181.
861411 17BC TBC 1161 QBC 407. QB 181. QC 226.

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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 17BC | 112. | 226. | 195. | 407. | 1 | 850. | 0.01765 | 0.00 | 0.00 | 0. | 20 | 0 | K50 | 0.00 |
| 861411 | 18B | 28. | 74. | 223. | 408. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 9 | K50 | 0.00 |

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CONFLUENCE Q'S

861411 19A TA 1165 QA 870. QAB 1277. QB 406. 861411 19B TB 1164 QB 408. QBA 1269. QA 862.
861411 19AB TAB 1165 QAB 1277. QA 870. QB 406.

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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 19AB | 223. | 408. | 700. | 1277. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 0 | K50 | 0.00 |
| 861411 | 20A | 0. | 0. | 700. | 1277. | 1 | 1325. | 0.01283 | 0.00 | 0.00 | 0. | 20 | 99 | K50 | 0.00 |
| 861411 | 21A | 81. | 172. | 781. | 1281. | 1 | 750. | 0.01200 | 0.00 | 0.00 | 0. | 20 | 15 | K50 | 0.00 |
| 861411 | 22A | 47. | 97. | 828. | 1285. | 1 | 750. | 0.01467 | 0.00 | 0.00 | 0. | 30 | 14 | K50 | 0.00 |
| 861411 | 23A | 95. | 188. | 923. | 1300. | 1 | 1150. | 0.01130 | 0.00 | 0.00 | 0. | 30 | 15 | K50 | 0.00 |
| 861411 | 24A | 68. | 152. | 991. | 1296. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 12 | K50 | 0.00 |
| 861411 | 25B | 36. | 109. | 36. | 109. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 9 | K50 | 0.00 |
| 861411 | 26B | 74. | 201. | 110. | 310. | 1 | 2000. | 0.03050 | 0.00 | 0.00 | 0. | 10 | 11 | K50 | 0.00 |
| 861411 | 27B | 50. | 132. | 160. | 357. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | K50 | 0.00 |

VR-1412

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-EXISTING CONDITIONS-050 STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

CONFLUENCE Q'S

861411 28A TA 1175 QA 1296. QAB 1392. QB 95. 861411 28B TB 1160 QB 357. QBA 1246. QA 890.
861411 28AB TAB 1174 QAB 1394. QA 1290. QB 104.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 28AB | 160. | 357. | 1151. | 1394. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K50 | 0.00 |
| 861411 29A | 0. | 0. | 1151. | 1394. | 1 | 1325. | 0.01810 | 0.00 | 0.00 | 0. | 20 | 99 | L50 | 0.00 |
| 861411 30A | 71. | 215. | 1222. | 1422. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | L50 | 0.00 |
| 861411 31C | 45. | 156. | 45. | 156. | 1 | 700. | 0.05140 | 0.00 | 0.00 | 0. | 20 | 9 | L50 | 0.00 |
| 861411 32C | 34. | 103. | 79. | 250. | 1 | 575. | 0.06960 | 0.00 | 0.00 | 0. | 20 | 11 | L50 | 0.00 |
| 861411 33C | 34. | 103. | 113. | 346. | 1 | 675. | 0.04440 | 0.00 | 0.00 | 0. | 20 | 11 | L50 | 0.00 |
| 861411 34C | 25. | 99. | 138. | 407. | 1 | 400. | 0.07500 | 0.00 | 0.00 | 0. | 10 | 8 | L50 | 0.00 |
| 861411 35C | 35. | 122. | 173. | 499. | 1 | 1500. | 0.04670 | 0.00 | 0.00 | 0. | 20 | 9 | L50 | 0.00 |
| 861411 36C | 40. | 148. | 213. | 546. | 1 | 1550. | 0.02450 | 0.00 | 0.00 | 0. | 10 | 9 | L50 | 0.00 |

CONFLUENCE Q'S

861411 37A TA 1177 QA 1422. QAC 1689. QC 267. 861411 37C TC 1165 QC 504. QCA 1798. QA 1294.
861411 37AC TAC 1166 QAC 1801. QA 1302. QC 498.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 37AC | 213. | 504. | 1435. | 1801. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | L50 | 0.00 |
| 861411 38A | 0. | 0. | 1435. | 1801. | 1 | 1150. | 0.00696 | 0.00 | 0.00 | 0. | 20 | 99 | L50 | 0.00 |
| 861411 39A | 90. | 184. | 1525. | 1818. | 1 | 800. | 0.04250 | 0.00 | 0.00 | 0. | 20 | 16 | K50 | 0.00 |
| 861411 40A | 16. | 60. | 1541. | 1825. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 8 | L50 | 0.00 |
| 861411 41B | 38. | 115. | 38. | 115. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | L50 | 0.00 |

CONFLUENCE Q'S

861411 42A TA 1174 QA 1825. QAB 1844. QB 19. 861411 42B TB 1154 QB 115. QBA 1065. QA 950.
861411 42AB TAB 1174 QAB 1844. QA 1825. QB 19.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 42AB | 38. | 115. | 1579. | 1844. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L50 | 0.00 |
| 861411 43A | 0. | 0. | 1579. | 1844. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | L50 | 0.00 |

VR-1412

MODIFIED RATIONAL METHOD HYDROLOGY
APPROX. AT FIRST BASIN (SUBAREA 10AB)
HYDROGRAPH AT 861411 10A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 1. | 300 | 1. | 400 | 1. |
| 500 | 1. | 600 | 3. | 700 | 12. | 800 | 25. | 900 | 42. |
| 1000 | 80. | 1050 | 96. | 1100 | 128. | 1110 | 139. | 1120 | 159. |
| 1130 | 185. | 1131 | 188. | 1132 | 191. | 1133 | 194. | 1134 | 197. |
| 1135 | 200. | 1136 | 205. | 1137 | 210. | 1138 | 215. | 1139 | 221. |
| 1140 | 227. | 1141 | 235. | 1142 | 244. | 1143 | 254. | 1144 | 264. |
| 1145 | 276. | 1146 | 289. | 1147 | 302. | 1148 | 317. | 1149 | 334. |
| 1150 | 354. | 1151 | 387. | 1152 | 428. | 1153 | 469. | 1154 | 503. |
| 1155 | 543. | 1156 | 588. | 1157 | 635. | 1158 | 679. | 1159 | 717. |
| 1160 | 749. | 1161 | 773. | 1162 | 790. | 1163 | 800. | 1164 | 800. |
| 1165 | 783. | 1166 | 756. | 1167 | 724. | 1168 | 698. | 1169 | 666. |
| 1170 | 631. | 1171 | 596. | 1172 | 559. | 1173 | 518. | 1174 | 475. |
| 1175 | 433. | 1176 | 394. | 1177 | 359. | 1178 | 328. | 1179 | 302. |
| 1180 | 280. | 1181 | 261. | 1182 | 244. | 1183 | 229. | 1184 | 216. |
| 1185 | 204. | 1186 | 194. | 1187 | 185. | 1188 | 176. | 1189 | 169. |
| 1190 | 163. | 1191 | 157. | 1192 | 151. | 1193 | 146. | 1194 | 142. |
| 1195 | 137. | 1196 | 134. | 1197 | 130. | 1198 | 127. | 1199 | 124. |
| 1200 | 121. | 1201 | 118. | 1202 | 116. | 1203 | 113. | 1204 | 111. |
| 1205 | 109. | 1206 | 107. | 1207 | 105. | 1208 | 103. | 1209 | 102. |
| 1210 | 100. | 1211 | 98. | 1212 | 96. | 1213 | 94. | 1214 | 93. |
| 1215 | 91. | 1216 | 89. | 1217 | 87. | 1218 | 86. | 1219 | 84. |
| 1220 | 82. | 1221 | 80. | 1222 | 79. | 1223 | 77. | 1224 | 75. |
| 1225 | 73. | 1226 | 72. | 1227 | 70. | 1228 | 69. | 1229 | 67. |
| 1230 | 66. | 1231 | 64. | 1232 | 62. | 1233 | 61. | 1234 | 59. |
| 1235 | 58. | 1236 | 56. | 1237 | 55. | 1238 | 54. | 1239 | 53. |
| 1240 | 51. | 1241 | 50. | 1242 | 49. | 1243 | 48. | 1244 | 47. |
| 1245 | 46. | 1246 | 45. | 1247 | 44. | 1248 | 43. | 1249 | 43. |
| 1250 | 42. | 1251 | 41. | 1252 | 41. | 1253 | 40. | 1254 | 39. |
| 1255 | 39. | 1256 | 39. | 1257 | 38. | 1258 | 38. | 1259 | 37. |
| 1260 | 37. | 1261 | 37. | 1262 | 36. | 1263 | 36. | 1264 | 35. |
| 1265 | 35. | 1266 | 35. | 1267 | 34. | 1268 | 34. | 1269 | 34. |
| 1270 | 33. | 1271 | 33. | 1272 | 33. | 1273 | 32. | 1274 | 32. |
| 1275 | 31. | 1276 | 31. | 1277 | 30. | 1278 | 30. | 1279 | 29. |
| 1280 | 29. | 1281 | 28. | 1282 | 28. | 1283 | 27. | 1284 | 27. |
| 1285 | 26. | 1286 | 26. | 1287 | 25. | 1288 | 25. | 1289 | 24. |
| 1290 | 24. | 1291 | 23. | 1292 | 23. | 1293 | 22. | 1294 | 22. |
| 1295 | 21. | 1296 | 21. | 1297 | 20. | 1298 | 20. | 1299 | 20. |
| 1300 | 19. | 1310 | 17. | 1320 | 15. | 1330 | 12. | 1340 | 10. |
| 1350 | 8. | 1360 | 6. | 1370 | 5. | 1380 | 4. | 1390 | 3. |
| 1400 | 3. | 1420 | 2. | 1440 | 1. | 1460 | 1. | 1500 | 1. |

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MODIFIED RATIONAL METHOD HYDROLOGY
APPROX. AT SECOND BASIN LOCATION (SUBAREA 18B)
HYDROGRAPH AT 861411 18B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 1. | 300 | 1. | 400 | 1. |
| 500 | 1. | 600 | 1. | 700 | 2. | 800 | 5. | 900 | 14. |
| 1000 | 33. | 1050 | 39. | 1100 | 55. | 1110 | 62. | 1120 | 74. |
| 1130 | 90. | 1131 | 92. | 1132 | 93. | 1133 | 95. | 1134 | 97. |
| 1135 | 98. | 1136 | 101. | 1137 | 104. | 1138 | 107. | 1139 | 110. |
| 1140 | 114. | 1141 | 120. | 1142 | 125. | 1143 | 131. | 1144 | 138. |
| 1145 | 144. | 1146 | 151. | 1147 | 158. | 1148 | 167. | 1149 | 177. |
| 1150 | 189. | 1151 | 211. | 1152 | 237. | 1153 | 267. | 1154 | 296. |
| 1155 | 328. | 1156 | 355. | 1157 | 373. | 1158 | 386. | 1159 | 396. |
| 1160 | 399. | 1161 | 399. | 1162 | 399. | 1163 | 405. | 1164 | 408. |
| 1165 | 406. | 1166 | 399. | 1167 | 384. | 1168 | 361. | 1169 | 333. |
| 1170 | 302. | 1171 | 270. | 1172 | 239. | 1173 | 210. | 1174 | 186. |
| 1175 | 167. | 1176 | 152. | 1177 | 139. | 1178 | 128. | 1179 | 118. |
| 1180 | 110. | 1181 | 103. | 1182 | 97. | 1183 | 92. | 1184 | 88. |
| 1185 | 84. | 1186 | 81. | 1187 | 78. | 1188 | 75. | 1189 | 72. |
| 1190 | 70. | 1191 | 68. | 1192 | 66. | 1193 | 64. | 1194 | 63. |
| 1195 | 61. | 1196 | 59. | 1197 | 58. | 1198 | 56. | 1199 | 55. |
| 1200 | 54. | 1201 | 53. | 1202 | 52. | 1203 | 51. | 1204 | 50. |
| 1205 | 49. | 1206 | 48. | 1207 | 47. | 1208 | 46. | 1209 | 45. |
| 1210 | 44. | 1211 | 42. | 1212 | 42. | 1213 | 41. | 1214 | 40. |
| 1215 | 39. | 1216 | 39. | 1217 | 38. | 1218 | 37. | 1219 | 36. |
| 1220 | 35. | 1221 | 34. | 1222 | 34. | 1223 | 33. | 1224 | 32. |
| 1225 | 31. | 1226 | 30. | 1227 | 30. | 1228 | 29. | 1229 | 28. |
| 1230 | 27. | 1231 | 26. | 1232 | 26. | 1233 | 25. | 1234 | 24. |
| 1235 | 24. | 1236 | 23. | 1237 | 23. | 1238 | 22. | 1239 | 21. |
| 1240 | 20. | 1241 | 20. | 1242 | 19. | 1243 | 18. | 1244 | 18. |
| 1245 | 17. | 1246 | 17. | 1247 | 16. | 1248 | 16. | 1249 | 16. |
| 1250 | 15. | 1251 | 15. | 1252 | 14. | 1253 | 14. | 1254 | 14. |
| 1255 | 14. | 1256 | 13. | 1257 | 13. | 1258 | 13. | 1259 | 13. |
| 1260 | 12. | 1261 | 12. | 1262 | 12. | 1263 | 12. | 1264 | 11. |
| 1265 | 11. | 1266 | 11. | 1267 | 11. | 1268 | 10. | 1269 | 10. |
| 1270 | 10. | 1271 | 10. | 1272 | 10. | 1273 | 9. | 1274 | 9. |
| 1275 | 9. | 1276 | 9. | 1277 | 9. | 1278 | 8. | 1279 | 8. |
| 1280 | 8. | 1281 | 8. | 1282 | 8. | 1283 | 8. | 1284 | 7. |
| 1285 | 7. | 1286 | 7. | 1287 | 7. | 1288 | 7. | 1289 | 7. |
| 1290 | 7. | 1291 | 7. | 1292 | 7. | 1293 | 6. | 1294 | 6. |
| 1295 | 6. | 1296 | 6. | 1297 | 6. | 1298 | 6. | 1299 | 6. |
| 1300 | 6. | 1310 | 5. | 1320 | 4. | 1330 | 3. | 1340 | 3. |
| 1350 | 2. | 1360 | 2. | 1370 | 1. | 1380 | 1. | 1390 | 1. |
| 1400 | 1. | 1420 | 1. | 1440 | 1. | 1460 | 1. | 1500 | 1. |

MODIFIED RATIONAL METHOD HYDROLOGY
AT EASTERLY TRACT BOUNDARY
HYDROGRAPH AT 861411 43A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 2. | 200 | 2. | 300 | 2. | 400 | 2. |
| 500 | 2. | 600 | 4. | 700 | 23. | 800 | 69. | 900 | 130. |
| 1000 | 235. | 1050 | 305. | 1100 | 401. | 1110 | 426. | 1120 | 466. |
| 1130 | 526. | 1131 | 533. | 1132 | 540. | 1133 | 547. | 1134 | 555. |
| 1135 | 563. | 1136 | 572. | 1137 | 582. | 1138 | 593. | 1139 | 605. |
| 1140 | 617. | 1141 | 630. | 1142 | 643. | 1143 | 658. | 1144 | 673. |
| 1145 | 689. | 1146 | 707. | 1147 | 726. | 1148 | 748. | 1149 | 778. |
| 1150 | 812. | 1151 | 865. | 1152 | 946. | 1153 | 1010. | 1154 | 1065. |
| 1155 | 1112. | 1156 | 1157. | 1157 | 1204. | 1158 | 1256. | 1159 | 1309. |
| 1160 | 1357. | 1161 | 1418. | 1162 | 1479. | 1163 | 1533. | 1164 | 1608. |
| 1165 | 1685. | 1166 | 1754. | 1167 | 1804. | 1168 | 1830. | 1169 | 1837. |
| 1170 | 1836. | 1171 | 1837. | 1172 | 1841. | 1173 | 1844. | 1174 | 1844. |
| 1175 | 1842. | 1176 | 1836. | 1177 | 1826. | 1178 | 1813. | 1179 | 1798. |
| 1180 | 1781. | 1181 | 1762. | 1182 | 1742. | 1183 | 1721. | 1184 | 1696. |
| 1185 | 1669. | 1186 | 1638. | 1187 | 1605. | 1188 | 1569. | 1189 | 1530. |
| 1190 | 1490. | 1191 | 1447. | 1192 | 1403. | 1193 | 1358. | 1194 | 1313. |
| 1195 | 1268. | 1196 | 1224. | 1197 | 1180. | 1198 | 1137. | 1199 | 1096. |
| 1200 | 1056. | 1201 | 1017. | 1202 | 980. | 1203 | 944. | 1204 | 909. |
| 1205 | 876. | 1206 | 844. | 1207 | 814. | 1208 | 786. | 1209 | 759. |
| 1210 | 734. | 1211 | 709. | 1212 | 686. | 1213 | 664. | 1214 | 642. |
| 1215 | 622. | 1216 | 603. | 1217 | 584. | 1218 | 567. | 1219 | 550. |
| 1220 | 534. | 1221 | 519. | 1222 | 505. | 1223 | 491. | 1224 | 478. |
| 1225 | 465. | 1226 | 453. | 1227 | 442. | 1228 | 431. | 1229 | 421. |
| 1230 | 411. | 1231 | 402. | 1232 | 393. | 1233 | 385. | 1234 | 376. |
| 1235 | 369. | 1236 | 361. | 1237 | 354. | 1238 | 347. | 1239 | 340. |
| 1240 | 334. | 1241 | 328. | 1242 | 322. | 1243 | 316. | 1244 | 310. |
| 1245 | 305. | 1246 | 299. | 1247 | 294. | 1248 | 289. | 1249 | 284. |
| 1250 | 280. | 1251 | 275. | 1252 | 271. | 1253 | 266. | 1254 | 262. |
| 1255 | 258. | 1256 | 254. | 1257 | 250. | 1258 | 246. | 1259 | 243. |
| 1260 | 239. | 1261 | 235. | 1262 | 231. | 1263 | 227. | 1264 | 224. |
| 1265 | 220. | 1266 | 217. | 1267 | 213. | 1268 | 210. | 1269 | 206. |
| 1270 | 203. | 1271 | 200. | 1272 | 197. | 1273 | 194. | 1274 | 191. |
| 1275 | 188. | 1276 | 185. | 1277 | 182. | 1278 | 179. | 1279 | 176. |
| 1280 | 173. | 1281 | 170. | 1282 | 167. | 1283 | 164. | 1284 | 161. |
| 1285 | 159. | 1286 | 156. | 1287 | 154. | 1288 | 151. | 1289 | 148. |
| 1290 | 146. | 1291 | 144. | 1292 | 141. | 1293 | 139. | 1294 | 137. |
| 1295 | 134. | 1296 | 132. | 1297 | 130. | 1298 | 128. | 1299 | 126. |
| 1300 | 124. | 1310 | 104. | 1320 | 88. | 1330 | 75. | 1340 | 66. |
| 1350 | 58. | 1360 | 51. | 1370 | 44. | 1380 | 37. | 1390 | 32. |
| 1400 | 28. | 1420 | 22. | 1440 | 18. | 1460 | 14. | 1500 | 9. |

VR-1412

CONEJO MOUNTAIN CREEK

100-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-EXISTING CONDITIONS-Q100 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1A | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 861411 | 2A | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 861411 | 3A | 56. | 150. | 56. | 150. | 1 | 1100. | 0.05455 | 0.00 | 0.00 | 0. | 10 | 14 | B98 | 0.00 |
| 861411 | 4A | 59. | 194. | 115. | 330. | 1 | 1250. | 0.04480 | 0.00 | 0.00 | 0. | 10 | 13 | C99 | 0.00 |
| 861411 | 5A | 95. | 226. | 210. | 527. | 1 | 450. | 0.03110 | 0.00 | 0.00 | 0. | 20 | 15 | B98 | 0.00 |
| 861411 | 6A | 36. | 98. | 246. | 604. | 1 | 625. | 0.01920 | 0.00 | 0.00 | 0. | 20 | 12 | B98 | 0.00 |
| 861411 | 7A | 50. | 129. | 296. | 700. | 1 | 650. | 0.01540 | 0.00 | 0.00 | 0. | 20 | 13 | B98 | 0.00 |
| 861411 | 8B | 62. | 176. | 62. | 176. | 1 | 1400. | 0.03714 | 0.00 | 0.00 | 0. | 20 | 15 | C99 | 0.00 |
| 861411 | 9B | 65. | 176. | 127. | 317. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 12 | B98 | 0.00 |

CONFLUENCE Q'S

861411 10A TA 1163 QA 688. QAB 961. QB 273. 861411 10B TB 1159 QB 317. QBA 906. QA 589.
861411 10AB TAB 1163 QAB 961. QA 688. QB 273.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 10AB | 127. | 317. | 423. | 961. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 861411 | 11A | 0. | 0. | 423. | 961. | 1 | 900. | 0.02440 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 861411 | 12A | 54. | 134. | 477. | 1034. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 14 | B98 | 0.00 |
| 861411 | 13B | 38. | 131. | 38. | 131. | 1 | 900. | 0.01000 | 0.00 | 0.00 | 0. | 10 | 9 | B98 | 0.00 |
| 861411 | 14B | 45. | 132. | 83. | 220. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 12 | B98 | 0.00 |
| 861411 | 15C | 42. | 153. | 42. | 153. | 1 | 2350. | 0.05064 | 0.00 | 0.00 | 0. | 10 | 8 | B98 | 0.00 |
| 861411 | 16C | 70. | 166. | 112. | 270. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 15 | B98 | 0.00 |

CONFLUENCE Q'S

861411 17B TB 1160 QB 220. QBC 490. QC 270. 861411 17C TC 1160 QC 270. QCB 490. QB 220.
861411 17BC TBC 1160 QBC 490. QB 220. QC 270.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 17BC | 112. | 270. | 195. | 490. | 1 | 850. | 0.01765 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 861411 | 18B | 28. | 90. | 223. | 487. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 8 | B98 | 0.00 |

CONFLUENCE Q'S

861411 19A TA 1163 QA 1034. QAB 1520. QB 487. 861411 19B TB 1163 QB 487. QBA 1520. QA 1034.
861411 19AB TAB 1163 QAB 1520. QA 1034. QB 487.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 19AB | 223. | 487. | 700. | 1520. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 0 | B98 | 0.00 |
| 861411 | 20A | 0. | 0. | 700. | 1520. | 1 | 1325. | 0.01283 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 861411 | 21A | 81. | 209. | 781. | 1526. | 1 | 750. | 0.01200 | 0.00 | 0.00 | 0. | 20 | 13 | B98 | 0.00 |
| 861411 | 22A | 47. | 114. | 828. | 1535. | 1 | 750. | 0.01467 | 0.00 | 0.00 | 0. | 30 | 13 | B98 | 0.00 |
| 861411 | 23A | 95. | 220. | 923. | 1560. | 1 | 1150. | 0.01130 | 0.00 | 0.00 | 0. | 30 | 14 | B98 | 0.00 |
| 861411 | 24A | 68. | 183. | 991. | 1557. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 11 | B98 | 0.00 |
| 861411 | 25B | 36. | 131. | 36. | 131. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 8 | B98 | 0.00 |
| 861411 | 26B | 74. | 242. | 110. | 373. | 1 | 2000. | 0.03050 | 0.00 | 0.00 | 0. | 10 | 10 | B98 | 0.00 |
| 861411 | 27B | 50. | 161. | 160. | 417. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | B98 | 0.00 |

VR-1412

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK=EXISTING CONDITIONS=Q100 STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

CONFLUENCE Q'S

861411 28A TA 1173 QA 1557. QAB 1677. QB 119. 861411 28B TB 1160 QB 417. QBA 1512. QA 1095.
861411 28AB TAB 1172 QAB 1682. QA 1548. QB 133.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 28AB | 160. | 417. | 1151. | 1682. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 861411 29A | 0. | 0. | 1151. | 1682. | 1 | 1325. | 0.01810 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 861411 30A | 71. | 252. | 1222. | 1712. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.00 |
| 861411 31C | 45. | 198. | 45. | 198. | 1 | 700. | 0.05140 | 0.00 | 0.00 | 0. | 20 | 7 | C99 | 0.00 |
| 861411 32C | 34. | 121. | 79. | 311. | 1 | 575. | 0.06960 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.00 |
| 861411 33C | 34. | 121. | 113. | 422. | 1 | 675. | 0.04440 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.00 |
| 861411 34C | 25. | 116. | 138. | 477. | 1 | 400. | 0.07500 | 0.00 | 0.00 | 0. | 10 | 7 | C99 | 0.00 |
| 861411 35C | 35. | 141. | 173. | 581. | 1 | 1500. | 0.04670 | 0.00 | 0.00 | 0. | 20 | 8 | C99 | 0.00 |
| 861411 36C | 40. | 171. | 213. | 633. | 1 | 1550. | 0.02450 | 0.00 | 0.00 | 0. | 10 | 8 | C99 | 0.00 |

CONFLUENCE Q'S

861411 37A TA 1175 QA 1712. QAC 2018. QC 306. 861411 37C TC 1164 QC 593. QCA 2143. QA 1551.
861411 37AC TAC 1165 QAC 2149. QA 1564. QC 585.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 37AC | 213. | 593. | 1435. | 2149. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | C99 | 0.00 |
| 861411 38A | 0. | 0. | 1435. | 2149. | 1 | 1150. | 0.00696 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 861411 39A | 90. | 223. | 1525. | 2166. | 1 | 800. | 0.04250 | 0.00 | 0.00 | 0. | 20 | 14 | B98 | 0.00 |
| 861411 40A | 16. | 70. | 1541. | 2175. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 7 | C99 | 0.00 |
| 861411 41B | 38. | 135. | 38. | 135. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.00 |

CONFLUENCE Q'S

861411 42A TA 1172 QA 2175. QAB 2196. QB 22. 861411 42B TB 1154 QB 135. QBA 1313. QA 1178.
861411 42AB TAB 1172 QAB 2196. QA 2175. QB 22.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 42AB | 38. | 135. | 1579. | 2196. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 861411 43A | 0. | 0. | 1579. | 2196. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |

VIR-1412

MODIFIED RATIONAL METHOD HYDROLOGY
APPROX. AT FIRST BASIN (SUBAREA 10AB)
HYDROGRAPH AT 861411 10A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 10. | 200 | 13. | 300 | 17. | 400 | 18. |
| 500 | 21. | 600 | 23. | 700 | 28. | 800 | 34. | 900 | 52. |
| 1000 | 86. | 1050 | 118. | 1100 | 143. | 1110 | 165. | 1120 | 184. |
| 1130 | 224. | 1131 | 229. | 1132 | 233. | 1133 | 238. | 1134 | 244. |
| 1135 | 249. | 1136 | 253. | 1137 | 260. | 1138 | 267. | 1139 | 273. |
| 1140 | 281. | 1141 | 290. | 1142 | 298. | 1143 | 307. | 1144 | 317. |
| 1145 | 329. | 1146 | 341. | 1147 | 356. | 1148 | 373. | 1149 | 404. |
| 1150 | 438. | 1151 | 457. | 1152 | 524. | 1153 | 578. | 1154 | 629. |
| 1155 | 687. | 1156 | 748. | 1157 | 806. | 1158 | 860. | 1159 | 906. |
| 1160 | 943. | 1161 | 951. | 1162 | 951. | 1163 | 961. | 1164 | 916. |
| 1165 | 882. | 1166 | 854. | 1167 | 813. | 1168 | 764. | 1169 | 715. |
| 1170 | 662. | 1171 | 611. | 1172 | 557. | 1173 | 505. | 1174 | 459. |
| 1175 | 417. | 1176 | 380. | 1177 | 350. | 1178 | 323. | 1179 | 300. |
| 1180 | 279. | 1181 | 258. | 1182 | 244. | 1183 | 229. | 1184 | 215. |
| 1185 | 204. | 1186 | 193. | 1187 | 184. | 1188 | 176. | 1189 | 169. |
| 1190 | 163. | 1191 | 157. | 1192 | 152. | 1193 | 148. | 1194 | 144. |
| 1195 | 141. | 1196 | 138. | 1197 | 135. | 1198 | 133. | 1199 | 131. |
| 1200 | 129. | 1201 | 127. | 1202 | 126. | 1203 | 124. | 1204 | 123. |
| 1205 | 122. | 1206 | 120. | 1207 | 119. | 1208 | 118. | 1209 | 116. |
| 1210 | 114. | 1211 | 112. | 1212 | 110. | 1213 | 109. | 1214 | 107. |
| 1215 | 106. | 1216 | 104. | 1217 | 103. | 1218 | 101. | 1219 | 100. |
| 1220 | 99. | 1221 | 97. | 1222 | 96. | 1223 | 95. | 1224 | 94. |
| 1225 | 93. | 1226 | 92. | 1227 | 92. | 1228 | 91. | 1229 | 90. |
| 1230 | 90. | 1231 | 89. | 1232 | 89. | 1233 | 88. | 1234 | 88. |
| 1235 | 88. | 1236 | 87. | 1237 | 86. | 1238 | 86. | 1239 | 86. |
| 1240 | 85. | 1241 | 85. | 1242 | 84. | 1243 | 84. | 1244 | 84. |
| 1245 | 83. | 1246 | 83. | 1247 | 83. | 1248 | 82. | 1249 | 82. |
| 1250 | 81. | 1251 | 81. | 1252 | 81. | 1253 | 80. | 1254 | 80. |
| 1255 | 79. | 1256 | 79. | 1257 | 79. | 1258 | 78. | 1259 | 78. |
| 1260 | 78. | 1261 | 78. | 1262 | 77. | 1263 | 76. | 1264 | 76. |
| 1265 | 76. | 1266 | 75. | 1267 | 75. | 1268 | 74. | 1269 | 74. |
| 1270 | 73. | 1271 | 72. | 1272 | 71. | 1273 | 70. | 1274 | 70. |
| 1275 | 69. | 1276 | 68. | 1277 | 67. | 1278 | 66. | 1279 | 66. |
| 1280 | 65. | 1281 | 64. | 1282 | 63. | 1283 | 62. | 1284 | 62. |
| 1285 | 61. | 1286 | 60. | 1287 | 60. | 1288 | 59. | 1289 | 58. |
| 1290 | 58. | 1291 | 57. | 1292 | 57. | 1293 | 56. | 1294 | 56. |
| 1295 | 56. | 1296 | 56. | 1297 | 55. | 1298 | 55. | 1299 | 55. |
| 1300 | 55. | 1310 | 48. | 1320 | 41. | 1330 | 35. | 1340 | 31. |
| 1350 | 28. | 1360 | 24. | 1370 | 20. | 1380 | 16. | 1390 | 13. |
| 1400 | 11. | 1420 | 10. | 1440 | 10. | 1460 | 10. | 1500 | 10. |

MODIFIED RATIONAL METHOD HYDROLOGY
APPROX. AT SECOND BASIN LOCATION (SUBAREA 18B)
HYDROGRAPH AT 861411 18B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 1. | 300 | 3. | 400 | 5. |
| 500 | 6. | 600 | 8. | 700 | 11. | 800 | 13. | 900 | 20. |
| 1000 | 34. | 1050 | 51. | 1100 | 63. | 1110 | 76. | 1120 | 86. |
| 1130 | 110. | 1131 | 112. | 1132 | 115. | 1133 | 118. | 1134 | 121. |
| 1135 | 124. | 1136 | 127. | 1137 | 132. | 1138 | 136. | 1139 | 140. |
| 1140 | 144. | 1141 | 148. | 1142 | 152. | 1143 | 157. | 1144 | 163. |
| 1145 | 170. | 1146 | 177. | 1147 | 185. | 1148 | 195. | 1149 | 214. |
| 1150 | 234. | 1151 | 247. | 1152 | 294. | 1153 | 326. | 1154 | 356. |
| 1155 | 396. | 1156 | 428. | 1157 | 443. | 1158 | 454. | 1159 | 477. |
| 1160 | 473. | 1161 | 478. | 1162 | 486. | 1163 | 487. | 1164 | 480. |
| 1165 | 464. | 1166 | 438. | 1167 | 403. | 1168 | 369. | 1169 | 335. |
| 1170 | 295. | 1171 | 262. | 1172 | 233. | 1173 | 210. | 1174 | 191. |
| 1175 | 174. | 1176 | 160. | 1177 | 147. | 1178 | 137. | 1179 | 127. |
| 1180 | 119. | 1181 | 112. | 1182 | 105. | 1183 | 99. | 1184 | 94. |
| 1185 | 90. | 1186 | 86. | 1187 | 82. | 1188 | 78. | 1189 | 75. |
| 1190 | 72. | 1191 | 70. | 1192 | 68. | 1193 | 66. | 1194 | 64. |
| 1195 | 63. | 1196 | 61. | 1197 | 60. | 1198 | 59. | 1199 | 58. |
| 1200 | 57. | 1201 | 56. | 1202 | 55. | 1203 | 54. | 1204 | 53. |
| 1205 | 52. | 1206 | 51. | 1207 | 50. | 1208 | 49. | 1209 | 48. |
| 1210 | 47. | 1211 | 47. | 1212 | 46. | 1213 | 45. | 1214 | 45. |
| 1215 | 44. | 1216 | 43. | 1217 | 42. | 1218 | 42. | 1219 | 41. |
| 1220 | 40. | 1221 | 40. | 1222 | 39. | 1223 | 39. | 1224 | 38. |
| 1225 | 38. | 1226 | 37. | 1227 | 37. | 1228 | 37. | 1229 | 36. |
| 1230 | 36. | 1231 | 36. | 1232 | 36. | 1233 | 35. | 1234 | 35. |
| 1235 | 35. | 1236 | 35. | 1237 | 35. | 1238 | 34. | 1239 | 34. |
| 1240 | 34. | 1241 | 34. | 1242 | 34. | 1243 | 34. | 1244 | 34. |
| 1245 | 34. | 1246 | 33. | 1247 | 33. | 1248 | 33. | 1249 | 33. |
| 1250 | 33. | 1251 | 33. | 1252 | 33. | 1253 | 33. | 1254 | 33. |
| 1255 | 33. | 1256 | 33. | 1257 | 32. | 1258 | 32. | 1259 | 32. |
| 1260 | 32. | 1261 | 32. | 1262 | 32. | 1263 | 32. | 1264 | 32. |
| 1265 | 32. | 1266 | 32. | 1267 | 32. | 1268 | 31. | 1269 | 31. |
| 1270 | 31. | 1271 | 30. | 1272 | 30. | 1273 | 30. | 1274 | 29. |
| 1275 | 29. | 1276 | 29. | 1277 | 28. | 1278 | 28. | 1279 | 27. |
| 1280 | 27. | 1281 | 27. | 1282 | 26. | 1283 | 26. | 1284 | 26. |
| 1285 | 26. | 1286 | 25. | 1287 | 25. | 1288 | 25. | 1289 | 25. |
| 1290 | 24. | 1291 | 24. | 1292 | 24. | 1293 | 24. | 1294 | 24. |
| 1295 | 24. | 1296 | 23. | 1297 | 23. | 1298 | 23. | 1299 | 23. |
| 1300 | 23. | 1310 | 21. | 1320 | 17. | 1330 | 14. | 1340 | 12. |
| 1350 | 10. | 1360 | 8. | 1370 | 6. | 1380 | 5. | 1390 | 4. |
| 1400 | 3. | 1420 | 2. | 1440 | 1. | 1460 | 1. | 1500 | 1. |

VR-1412

MODIFIED RATIONAL METHOD HYDROLOGY
AT EASTERLY TRACT BOUNDARY
HYDROGRAPH AT 861411 43A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 28. | 200 | 36. | 300 | 48. | 400 | 58. |
| 500 | 68. | 600 | 78. | 700 | 96. | 800 | 117. | 900 | 163. |
| 1000 | 265. | 1050 | 360. | 1100 | 469. | 1110 | 507. | 1120 | 551. |
| 1130 | 628. | 1131 | 638. | 1132 | 647. | 1133 | 658. | 1134 | 669. |
| 1135 | 682. | 1136 | 694. | 1137 | 706. | 1138 | 717. | 1139 | 730. |
| 1140 | 743. | 1141 | 760. | 1142 | 779. | 1143 | 797. | 1144 | 816. |
| 1145 | 837. | 1146 | 861. | 1147 | 887. | 1148 | 914. | 1149 | 966. |
| 1150 | 1027. | 1151 | 1095. | 1152 | 1161. | 1153 | 1242. | 1154 | 1313. |
| 1155 | 1377. | 1156 | 1430. | 1157 | 1488. | 1158 | 1555. | 1159 | 1613. |
| 1160 | 1679. | 1161 | 1761. | 1162 | 1848. | 1163 | 1930. | 1164 | 2010. |
| 1165 | 2077. | 1166 | 2131. | 1167 | 2157. | 1168 | 2167. | 1169 | 2180. |
| 1170 | 2192. | 1171 | 2196. | 1172 | 2196. | 1173 | 2193. | 1174 | 2185. |
| 1175 | 2174. | 1176 | 2160. | 1177 | 2142. | 1178 | 2120. | 1179 | 2096. |
| 1180 | 2069. | 1181 | 2041. | 1182 | 2008. | 1183 | 1971. | 1184 | 1929. |
| 1185 | 1883. | 1186 | 1834. | 1187 | 1782. | 1188 | 1727. | 1189 | 1672. |
| 1190 | 1616. | 1191 | 1558. | 1192 | 1501. | 1193 | 1444. | 1194 | 1390. |
| 1195 | 1337. | 1196 | 1284. | 1197 | 1233. | 1198 | 1186. | 1199 | 1139. |
| 1200 | 1094. | 1201 | 1052. | 1202 | 1012. | 1203 | 974. | 1204 | 938. |
| 1205 | 903. | 1206 | 871. | 1207 | 841. | 1208 | 812. | 1209 | 785. |
| 1210 | 759. | 1211 | 735. | 1212 | 712. | 1213 | 691. | 1214 | 670. |
| 1215 | 651. | 1216 | 633. | 1217 | 616. | 1218 | 601. | 1219 | 585. |
| 1220 | 570. | 1221 | 557. | 1222 | 543. | 1223 | 530. | 1224 | 518. |
| 1225 | 507. | 1226 | 496. | 1227 | 486. | 1228 | 476. | 1229 | 467. |
| 1230 | 458. | 1231 | 450. | 1232 | 441. | 1233 | 434. | 1234 | 426. |
| 1235 | 419. | 1236 | 412. | 1237 | 406. | 1238 | 400. | 1239 | 394. |
| 1240 | 388. | 1241 | 383. | 1242 | 378. | 1243 | 374. | 1244 | 368. |
| 1245 | 364. | 1246 | 360. | 1247 | 356. | 1248 | 353. | 1249 | 350. |
| 1250 | 346. | 1251 | 344. | 1252 | 341. | 1253 | 338. | 1254 | 335. |
| 1255 | 332. | 1256 | 329. | 1257 | 327. | 1258 | 324. | 1259 | 321. |
| 1260 | 319. | 1261 | 316. | 1262 | 313. | 1263 | 311. | 1264 | 307. |
| 1265 | 304. | 1266 | 301. | 1267 | 299. | 1268 | 296. | 1269 | 293. |
| 1270 | 290. | 1271 | 288. | 1272 | 285. | 1273 | 283. | 1274 | 281. |
| 1275 | 279. | 1276 | 276. | 1277 | 274. | 1278 | 272. | 1279 | 271. |
| 1280 | 269. | 1281 | 266. | 1282 | 265. | 1283 | 264. | 1284 | 262. |
| 1285 | 260. | 1286 | 259. | 1287 | 259. | 1288 | 257. | 1289 | 255. |
| 1290 | 254. | 1291 | 253. | 1292 | 252. | 1293 | 250. | 1294 | 249. |
| 1295 | 248. | 1296 | 246. | 1297 | 244. | 1298 | 243. | 1299 | 242. |
| 1300 | 241. | 1310 | 219. | 1320 | 203. | 1330 | 186. | 1340 | 170. |
| 1350 | 147. | 1360 | 130. | 1370 | 114. | 1380 | 101. | 1390 | 89. |
| 1400 | 77. | 1420 | 59. | 1440 | 48. | 1460 | 40. | 1500 | 31. |

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MODIFIED RATIONAL METHOD HYDROLOGY
AT DOWNSTREAM STUDY LIMIT

HYDROGRAPH AT 861411 57A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 70. | 200 | 85. | 300 | 105. | 400 | 115. |
| 500 | 124. | 600 | 136. | 700 | 156. | 800 | 173. | 900 | 212. |
| 1000 | 285. | 1050 | 351. | 1100 | 413. | 1110 | 441. | 1120 | 486. |
| 1130 | 559. | 1131 | 567. | 1132 | 575. | 1133 | 584. | 1134 | 594. |
| 1135 | 605. | 1136 | 616. | 1137 | 629. | 1138 | 641. | 1139 | 655. |
| 1140 | 668. | 1141 | 685. | 1142 | 703. | 1143 | 722. | 1144 | 741. |
| 1145 | 762. | 1146 | 785. | 1147 | 809. | 1148 | 833. | 1149 | 880. |
| 1150 | 935. | 1151 | 998. | 1152 | 1072. | 1153 | 1159. | 1154 | 1244. |
| 1155 | 1345. | 1156 | 1447. | 1157 | 1561. | 1158 | 1689. | 1159 | 1825. |
| 1160 | 1964. | 1161 | 2089. | 1162 | 2180. | 1163 | 2237. | 1164 | 2263. |
| 1165 | 2242. | 1166 | 2182. | 1167 | 2090. | 1168 | 1977. | 1169 | 1848. |
| 1170 | 1711. | 1171 | 1575. | 1172 | 1447. | 1173 | 1320. | 1174 | 1195. |
| 1175 | 1082. | 1176 | 986. | 1177 | 907. | 1178 | 837. | 1179 | 775. |
| 1180 | 722. | 1181 | 676. | 1182 | 637. | 1183 | 605. | 1184 | 579. |
| 1185 | 557. | 1186 | 539. | 1187 | 521. | 1188 | 506. | 1189 | 492. |
| 1190 | 481. | 1191 | 469. | 1192 | 457. | 1193 | 445. | 1194 | 434. |
| 1195 | 424. | 1196 | 415. | 1197 | 407. | 1198 | 401. | 1199 | 395. |
| 1200 | 390. | 1201 | 387. | 1202 | 385. | 1203 | 383. | 1204 | 382. |
| 1205 | 380. | 1206 | 377. | 1207 | 375. | 1208 | 371. | 1209 | 368. |
| 1210 | 364. | 1211 | 359. | 1212 | 355. | 1213 | 351. | 1214 | 347. |
| 1215 | 342. | 1216 | 339. | 1217 | 335. | 1218 | 331. | 1219 | 328. |
| 1220 | 324. | 1221 | 322. | 1222 | 318. | 1223 | 315. | 1224 | 313. |
| 1225 | 311. | 1226 | 308. | 1227 | 306. | 1228 | 304. | 1229 | 303. |
| 1230 | 302. | 1231 | 300. | 1232 | 299. | 1233 | 298. | 1234 | 297. |
| 1235 | 296. | 1236 | 295. | 1237 | 295. | 1238 | 294. | 1239 | 293. |
| 1240 | 292. | 1241 | 291. | 1242 | 291. | 1243 | 290. | 1244 | 289. |
| 1245 | 288. | 1246 | 287. | 1247 | 285. | 1248 | 284. | 1249 | 283. |
| 1250 | 282. | 1251 | 281. | 1252 | 280. | 1253 | 278. | 1254 | 278. |
| 1255 | 277. | 1256 | 275. | 1257 | 275. | 1258 | 275. | 1259 | 274. |
| 1260 | 274. | 1261 | 273. | 1262 | 272. | 1263 | 272. | 1264 | 271. |
| 1265 | 270. | 1266 | 270. | 1267 | 269. | 1268 | 268. | 1269 | 267. |
| 1270 | 266. | 1271 | 266. | 1272 | 265. | 1273 | 263. | 1274 | 262. |
| 1275 | 261. | 1276 | 259. | 1277 | 257. | 1278 | 255. | 1279 | 253. |
| 1280 | 251. | 1281 | 248. | 1282 | 246. | 1283 | 244. | 1284 | 241. |
| 1285 | 239. | 1286 | 237. | 1287 | 236. | 1288 | 234. | 1289 | 233. |
| 1290 | 232. | 1291 | 231. | 1292 | 230. | 1293 | 230. | 1294 | 229. |
| 1295 | 229. | 1296 | 229. | 1297 | 228. | 1298 | 228. | 1299 | 229. |
| 1300 | 228. | 1310 | 217. | 1320 | 200. | 1330 | 183. | 1340 | 172. |
| 1350 | 158. | 1360 | 139. | 1370 | 120. | 1380 | 109. | 1390 | 107. |
| 1400 | 106. | 1420 | 100. | 1440 | 94. | 1460 | 87. | 1500 | 73. |

TRIBUTARY TO SOUTH BRANCH ARROYO CONEJO

10-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/TRIB. TO SOUTH BRANCH-EXISTING CONDITIONS-Q10

STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | L10 | 0.00 |
| 861411 | 2D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | L10 | 0.00 |
| 861411 | 3D | 82. | 143. | 82. | 143. | 2 | 2175. | 0.01240 | 0.00 | 0.00 | 0. | 10 | 18 | L10 | 0.00 |
| 861411 | 4D | 79. | 138. | 161. | 251. | 2 | 1100. | 0.00910 | 0.00 | 0.00 | 0. | 10 | 18 | L10 | 0.00 |
| 861411 | 5D | 56. | 91. | 217. | 318. | 2 | 875. | 0.03885 | 0.00 | 0.00 | 0. | 20 | 17 | L10 | 0.00 |
| 861411 | 6D | 40. | 78. | 257. | 372. | 2 | 1200. | 0.04167 | 0.00 | 0.00 | 0. | 10 | 15 | L10 | 0.00 |
| 861411 | 7D | 51. | 99. | 308. | 431. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | L10 | 0.00 |
| 861411 | 8E | 55. | 112. | 55. | 112. | 2 | 550. | 0.03450 | 0.00 | 0.00 | 0. | 10 | 14 | L10 | 0.00 |

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* CONFLUENCE Q'S *
* 861411 9D TD 1162 QD 431. QDE 533. QE 102. 861411 9E TE 1156 QE 112. QED 485. QD 374. *
* 861411 9DE TDE 1161 QDE 535. QD 429. QE 105. *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 9DE | 55. | 112. | 363. | 535. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L10 | 0.00 |
| 861411 | 10D | 0. | 0. | 363. | 535. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | L10 | 0.00 |

VR-1412

MODIFIED RATIONAL METHOD HYDROLOGY

AT SOUTHEASTERLY CORNER OF PROPERTY

HYDROGRAPH AT 861411 10D STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 1. | 300 | 1. | 400 | 1. |
| 500 | 1. | 600 | 1. | 700 | 1. | 800 | 4. | 900 | 19. |
| 1000 | 52. | 1050 | 75. | 1100 | 106. | 1110 | 120. | 1120 | 148. |
| 1130 | 175. | 1131 | 178. | 1132 | 181. | 1133 | 184. | 1134 | 187. |
| 1135 | 190. | 1136 | 193. | 1137 | 196. | 1138 | 199. | 1139 | 201. |
| 1140 | 204. | 1141 | 207. | 1142 | 210. | 1143 | 214. | 1144 | 216. |
| 1145 | 219. | 1146 | 224. | 1147 | 229. | 1148 | 237. | 1149 | 249. |
| 1150 | 270. | 1151 | 301. | 1152 | 353. | 1153 | 398. | 1154 | 438. |
| 1155 | 466. | 1156 | 485. | 1157 | 501. | 1158 | 514. | 1159 | 524. |
| 1160 | 532. | 1161 | 535. | 1162 | 533. | 1163 | 523. | 1164 | 508. |
| 1165 | 476. | 1166 | 455. | 1167 | 431. | 1168 | 404. | 1169 | 384. |
| 1170 | 369. | 1171 | 353. | 1172 | 336. | 1173 | 321. | 1174 | 306. |
| 1175 | 292. | 1176 | 277. | 1177 | 262. | 1178 | 249. | 1179 | 237. |
| 1180 | 226. | 1181 | 216. | 1182 | 206. | 1183 | 196. | 1184 | 187. |
| 1185 | 178. | 1186 | 169. | 1187 | 161. | 1188 | 154. | 1189 | 148. |
| 1190 | 142. | 1191 | 137. | 1192 | 131. | 1193 | 127. | 1194 | 122. |
| 1195 | 118. | 1196 | 114. | 1197 | 110. | 1198 | 107. | 1199 | 104. |
| 1200 | 101. | 1201 | 98. | 1202 | 95. | 1203 | 93. | 1204 | 91. |
| 1205 | 89. | 1206 | 87. | 1207 | 85. | 1208 | 83. | 1209 | 82. |
| 1210 | 81. | 1211 | 79. | 1212 | 77. | 1213 | 76. | 1214 | 74. |
| 1215 | 71. | 1216 | 69. | 1217 | 67. | 1218 | 65. | 1219 | 63. |
| 1220 | 60. | 1221 | 58. | 1222 | 56. | 1223 | 54. | 1224 | 52. |
| 1225 | 50. | 1226 | 49. | 1227 | 47. | 1228 | 45. | 1229 | 44. |
| 1230 | 43. | 1231 | 42. | 1232 | 41. | 1233 | 40. | 1234 | 39. |
| 1235 | 38. | 1236 | 38. | 1237 | 37. | 1238 | 36. | 1239 | 35. |
| 1240 | 34. | 1241 | 34. | 1242 | 33. | 1243 | 32. | 1244 | 32. |
| 1245 | 31. | 1246 | 30. | 1247 | 30. | 1248 | 29. | 1249 | 29. |
| 1250 | 28. | 1251 | 28. | 1252 | 27. | 1253 | 27. | 1254 | 26. |
| 1255 | 26. | 1256 | 26. | 1257 | 25. | 1258 | 25. | 1259 | 24. |
| 1260 | 24. | 1261 | 24. | 1262 | 24. | 1263 | 23. | 1264 | 23. |
| 1265 | 22. | 1266 | 21. | 1267 | 21. | 1268 | 20. | 1269 | 19. |
| 1270 | 18. | 1271 | 18. | 1272 | 17. | 1273 | 16. | 1274 | 16. |
| 1275 | 15. | 1276 | 15. | 1277 | 14. | 1278 | 14. | 1279 | 13. |
| 1280 | 13. | 1281 | 13. | 1282 | 12. | 1283 | 12. | 1284 | 12. |
| 1285 | 11. | 1286 | 11. | 1287 | 11. | 1288 | 10. | 1289 | 10. |
| 1290 | 10. | 1291 | 9. | 1292 | 9. | 1293 | 9. | 1294 | 8. |
| 1295 | 8. | 1296 | 8. | 1297 | 8. | 1298 | 7. | 1299 | 7. |
| 1300 | 7. | 1310 | 5. | 1320 | 3. | 1330 | 3. | 1340 | 2. |
| 1350 | 1. | 1360 | 1. | 1370 | 1. | 1380 | 1. | 1390 | 1. |
| 1400 | 1. | 1420 | 1. | 1440 | 1. | 1460 | 1. | 1500 | 1. |

VR-1412

TRIBUTARY TO SOUTH BRANCH ARROYO CONEJO

50-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/TRIB. TO SOUTH BRANCH-EXISTING CONDITIONS-Q50 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | L50 | 0.00 |
| 861411 | 2D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | L50 | 0.00 |
| 861411 | 3D | 82. | 215. | 82. | 215. | 2 | 2175. | 0.01240 | 0.00 | 0.00 | 0. | 10 | 16 | L50 | 0.00 |
| 861411 | 4D | 79. | 207. | 161. | 377. | 2 | 1100. | 0.00910 | 0.00 | 0.00 | 0. | 10 | 16 | L50 | 0.00 |
| 861411 | 5D | 56. | 140. | 217. | 482. | 2 | 875. | 0.03885 | 0.00 | 0.00 | 0. | 20 | 15 | L50 | 0.00 |
| 861411 | 6D | 40. | 113. | 257. | 565. | 2 | 1200. | 0.04167 | 0.00 | 0.00 | 0. | 10 | 14 | L50 | 0.00 |
| 861411 | 7D | 51. | 146. | 308. | 655. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 12 | L50 | 0.00 |
| 861411 | 8E | 55. | 170. | 55. | 170. | 2 | 550. | 0.03450 | 0.00 | 0.00 | 0. | 10 | 12 | L50 | 0.00 |

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*****************************************************************************************************************
*                                                CONFLUENCE Q'S                                                 *
*
* 861411    9D  TD 1162 QD     655. QDE     800. QE     146.  861411    9E  TE 1156 QE     169. QED     737. QD     567.  *
*                              861411    9DE TDE 1160 QDE     809. QD     649. QE     159.                                *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 9DE | 55. | 169. | 363. | 809. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L50 | 0.00 |
| 861411 | 10D | 0. | 0. | 363. | 809. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | L50 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY
AT SOUTHEASTERLY CORNER OF PROPERTY
HYDROGRAPH AT 861411 10D STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 1. | 300 | 1. | 400 | 1. |
| 500 | 1. | 600 | 17. | 700 | 47. | 800 | 80. | 900 | 109. |
| 1000 | 139. | 1050 | 168. | 1100 | 197. | 1110 | 202. | 1120 | 215. |
| 1130 | 239. | 1131 | 242. | 1132 | 246. | 1133 | 250. | 1134 | 254. |
| 1135 | 258. | 1136 | 263. | 1137 | 268. | 1138 | 274. | 1139 | 280. |
| 1140 | 287. | 1141 | 294. | 1142 | 302. | 1143 | 310. | 1144 | 318. |
| 1145 | 326. | 1146 | 336. | 1147 | 346. | 1148 | 357. | 1149 | 375. |
| 1150 | 400. | 1151 | 444. | 1152 | 519. | 1153 | 592. | 1154 | 657. |
| 1155 | 703. | 1156 | 737. | 1157 | 763. | 1158 | 783. | 1159 | 799. |
| 1160 | 809. | 1161 | 809. | 1162 | 800. | 1163 | 776. | 1164 | 726. |
| 1165 | 685. | 1166 | 649. | 1167 | 616. | 1168 | 584. | 1169 | 555. |
| 1170 | 528. | 1171 | 503. | 1172 | 479. | 1173 | 455. | 1174 | 431. |
| 1175 | 408. | 1176 | 388. | 1177 | 369. | 1178 | 352. | 1179 | 336. |
| 1180 | 320. | 1181 | 304. | 1182 | 289. | 1183 | 276. | 1184 | 263. |
| 1185 | 253. | 1186 | 243. | 1187 | 234. | 1188 | 227. | 1189 | 220. |
| 1190 | 215. | 1191 | 209. | 1192 | 204. | 1193 | 199. | 1194 | 195. |
| 1195 | 191. | 1196 | 187. | 1197 | 183. | 1198 | 180. | 1199 | 177. |
| 1200 | 173. | 1201 | 171. | 1202 | 168. | 1203 | 165. | 1204 | 163. |
| 1205 | 161. | 1206 | 160. | 1207 | 158. | 1208 | 157. | 1209 | 156. |
| 1210 | 154. | 1211 | 153. | 1212 | 151. | 1213 | 150. | 1214 | 148. |
| 1215 | 146. | 1216 | 144. | 1217 | 142. | 1218 | 140. | 1219 | 138. |
| 1220 | 135. | 1221 | 133. | 1222 | 131. | 1223 | 129. | 1224 | 128. |
| 1225 | 126. | 1226 | 125. | 1227 | 124. | 1228 | 123. | 1229 | 122. |
| 1230 | 121. | 1231 | 120. | 1232 | 118. | 1233 | 117. | 1234 | 116. |
| 1235 | 114. | 1236 | 113. | 1237 | 112. | 1238 | 110. | 1239 | 109. |
| 1240 | 108. | 1241 | 106. | 1242 | 105. | 1243 | 104. | 1244 | 103. |
| 1245 | 102. | 1246 | 101. | 1247 | 100. | 1248 | 99. | 1249 | 99. |
| 1250 | 98. | 1251 | 98. | 1252 | 97. | 1253 | 97. | 1254 | 96. |
| 1255 | 96. | 1256 | 95. | 1257 | 95. | 1258 | 94. | 1259 | 94. |
| 1260 | 94. | 1261 | 93. | 1262 | 92. | 1263 | 91. | 1264 | 89. |
| 1265 | 88. | 1266 | 86. | 1267 | 84. | 1268 | 82. | 1269 | 81. |
| 1270 | 79. | 1271 | 77. | 1272 | 74. | 1273 | 73. | 1274 | 71. |
| 1275 | 70. | 1276 | 69. | 1277 | 67. | 1278 | 66. | 1279 | 65. |
| 1280 | 64. | 1281 | 64. | 1282 | 63. | 1283 | 62. | 1284 | 61. |
| 1285 | 60. | 1286 | 60. | 1287 | 59. | 1288 | 58. | 1289 | 58. |
| 1290 | 57. | 1291 | 57. | 1292 | 56. | 1293 | 56. | 1294 | 55. |
| 1295 | 55. | 1296 | 54. | 1297 | 54. | 1298 | 53. | 1299 | 53. |
| 1300 | 52. | 1310 | 40. | 1320 | 29. | 1330 | 23. | 1340 | 19. |
| 1350 | 14. | 1360 | 10. | 1370 | 7. | 1380 | 5. | 1390 | 4. |
| 1400 | 3. | 1420 | 1. | 1440 | 1. | 1460 | 1. | 1500 | 1. |

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TRIBUTARY TO SOUTH BRANCH ARROYO CONEJO

100-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/TRIB. TO SOUTH BRANCH-EXISTING CONDITIONS-Q100 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | C99 | 0.00 |
| 861411 | 2D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | C99 | 0.00 |
| 861411 | 3D | 82. | 260. | 82. | 260. | 2 | 2175. | 0.01240 | 0.00 | 0.00 | 0. | 10 | 14 | C99 | 0.00 |
| 861411 | 4D | 79. | 251. | 161. | 454. | 2 | 1100. | 0.00910 | 0.00 | 0.00 | 0. | 10 | 14 | C99 | 0.00 |
| 861411 | 5D | 56. | 171. | 217. | 575. | 2 | 875. | 0.03885 | 0.00 | 0.00 | 0. | 20 | 13 | C99 | 0.00 |
| 861411 | 6D | 40. | 131. | 257. | 677. | 2 | 1200. | 0.04167 | 0.00 | 0.00 | 0. | 10 | 13 | C99 | 0.00 |
| 861411 | 7D | 51. | 181. | 308. | 767. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.00 |
| 861411 | 8E | 55. | 197. | 55. | 197. | 2 | 550. | 0.03450 | 0.00 | 0.00 | 0. | 10 | 11 | C99 | 0.00 |

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*                                    CONFLUENCE Q'S                                                                    *
* 861411    9D  TD 1158 QD    767. QDE    958. QE    191.  861411    9E  TE 1156 QE    196. QED    905. QD    709.   *
*                            861411    9DE TDE 1158 QDE    958. QD    767. QE    191.                                 *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 9DE | 55. | 196. | 363. | 958. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 861411 | 10D | 0. | 0. | 363. | 958. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY
AT SOUTHEASTERLY CORNER OF PROPERTY
HYDROGRAPH AT 861411 100 STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 37. | 200 | 48. | 300 | 54. | 400 | 58. |
| 500 | 63. | 600 | 66. | 700 | 80. | 800 | 88. | 900 | 113. |
| 1000 | 153. | 1050 | 182. | 1100 | 211. | 1110 | 228. | 1120 | 241. |
| 1130 | 275. | 1131 | 279. | 1132 | 283. | 1133 | 288. | 1134 | 293. |
| 1135 | 299. | 1136 | 305. | 1137 | 311. | 1138 | 317. | 1139 | 323. |
| 1140 | 329. | 1141 | 338. | 1142 | 349. | 1143 | 360. | 1144 | 372. |
| 1145 | 386. | 1146 | 399. | 1147 | 414. | 1148 | 429. | 1149 | 466. |
| 1150 | 519. | 1151 | 587. | 1152 | 665. | 1153 | 750. | 1154 | 815. |
| 1155 | 868. | 1156 | 905. | 1157 | 935. | 1158 | 958. | 1159 | 955. |
| 1160 | 942. | 1161 | 916. | 1162 | 880. | 1163 | 835. | 1164 | 796. |
| 1165 | 749. | 1166 | 704. | 1167 | 661. | 1168 | 621. | 1169 | 585. |
| 1170 | 553. | 1171 | 522. | 1172 | 493. | 1173 | 466. | 1174 | 440. |
| 1175 | 418. | 1176 | 397. | 1177 | 377. | 1178 | 357. | 1179 | 338. |
| 1180 | 320. | 1181 | 304. | 1182 | 289. | 1183 | 276. | 1184 | 265. |
| 1185 | 255. | 1186 | 246. | 1187 | 238. | 1188 | 232. | 1189 | 227. |
| 1190 | 225. | 1191 | 222. | 1192 | 220. | 1193 | 217. | 1194 | 215. |
| 1195 | 212. | 1196 | 209. | 1197 | 207. | 1198 | 205. | 1199 | 201. |
| 1200 | 197. | 1201 | 195. | 1202 | 192. | 1203 | 189. | 1204 | 186. |
| 1205 | 184. | 1206 | 182. | 1207 | 180. | 1208 | 178. | 1209 | 176. |
| 1210 | 175. | 1211 | 173. | 1212 | 172. | 1213 | 171. | 1214 | 169. |
| 1215 | 168. | 1216 | 167. | 1217 | 166. | 1218 | 165. | 1219 | 164. |
| 1220 | 163. | 1221 | 162. | 1222 | 161. | 1223 | 159. | 1224 | 159. |
| 1225 | 158. | 1226 | 157. | 1227 | 157. | 1228 | 156. | 1229 | 156. |
| 1230 | 155. | 1231 | 155. | 1232 | 154. | 1233 | 153. | 1234 | 152. |
| 1235 | 151. | 1236 | 150. | 1237 | 149. | 1238 | 148. | 1239 | 147. |
| 1240 | 146. | 1241 | 145. | 1242 | 144. | 1243 | 143. | 1244 | 142. |
| 1245 | 142. | 1246 | 141. | 1247 | 140. | 1248 | 140. | 1249 | 139. |
| 1250 | 139. | 1251 | 139. | 1252 | 138. | 1253 | 138. | 1254 | 137. |
| 1255 | 137. | 1256 | 137. | 1257 | 137. | 1258 | 136. | 1259 | 136. |
| 1260 | 136. | 1261 | 135. | 1262 | 134. | 1263 | 134. | 1264 | 132. |
| 1265 | 131. | 1266 | 130. | 1267 | 129. | 1268 | 127. | 1269 | 126. |
| 1270 | 125. | 1271 | 124. | 1272 | 122. | 1273 | 121. | 1274 | 120. |
| 1275 | 120. | 1276 | 119. | 1277 | 118. | 1278 | 117. | 1279 | 117. |
| 1280 | 116. | 1281 | 115. | 1282 | 115. | 1283 | 115. | 1284 | 114. |
| 1285 | 113. | 1286 | 113. | 1287 | 113. | 1288 | 112. | 1289 | 112. |
| 1290 | 112. | 1291 | 111. | 1292 | 111. | 1293 | 110. | 1294 | 110. |
| 1295 | 110. | 1296 | 110. | 1297 | 109. | 1298 | 110. | 1299 | 110. |
| 1300 | 109. | 1310 | 97. | 1320 | 86. | 1330 | 82. | 1340 | 78. |
| 1350 | 62. | 1360 | 50. | 1370 | 43. | 1380 | 39. | 1390 | 36. |
| 1400 | 36. | 1420 | 36. | 1440 | 36. | 1460 | 36. | 1500 | 36. |

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# APPENDIX B

## DEVELOPED CONDITIONS

## COMPUTER PRINTOUTS

CONEJO MOUNTAIN CREEK

10-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-DEV. WITH 3 BASINS-Q10 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1A | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | K10 | 0.00 |
| 861411 | 2A | 58. | 96. | 58. | 96. | 4 | 1200. | 0.04167 | 2.75 | 0.00 | 0. | 10 | 17 | K10 | 0.15 |
| 861411 | 3A | 59. | 95. | 117. | 189. | 4 | 1050. | 0.05700 | 3.25 | 0.00 | 0. | 20 | 18 | L10 | 0.13 |
| 861411 | 4A | 30. | 45. | 147. | 232. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 15 | K10 | 0.12 |
| 861411 | 5A | 77. | 103. | 224. | 334. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 20 | K10 | 0.06 |
| 861411 | 6B | 58. | 90. | 58. | 90. | 4 | 1050. | 0.02570 | 2.75 | 0.00 | 0. | 20 | 19 | L10 | 0.11 |

CONFLUENCE Q'S

861411 7A TA 1157 QA 334. QAB 424. QB 89. 861411 7B TB 1157 QB 89. QBA 424. QA 334.
861411 7AB TAB 1157 QAB 424. QA 334. QB 89.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 7AB | 58. | 89. | 282. | 424. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K10 | 0.00 |
| 861411 | 8A | 0. | 0. | 282. | 424. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | K10 | 0.00 |
| 861411 | 9A | 35. | 61. | 317. | 483. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | K10 | 0.08 |
| 861411 | 10B | 42. | 70. | 42. | 70. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 14 | K10 | 0.08 |

CONFLUENCE Q'S

861411 11A TA 1157 QA 483. QAB 551. QB 68. 861411 11B TB 1154 QB 70. QBA 527. QA 457.
861411 11AB TAB 1157 QAB 551. QA 483. QB 68.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 11AB | 42. | 70. | 359. | 551. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K10 | 0.00 |
| 861411 | 12A | 0. | 0. | 359. | 551. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | K10 | 0.00 |
| 861411 | 13A | 11. | 21. | 370. | 571. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | K10 | 0.00 |
| 861411 | 14A | 34. | 66. | 404. | 635. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | K10 | 0.14 |
| 861411 | 15B | 33. | 58. | 33. | 58. | 4 | 1050. | 0.01140 | 2.75 | 0.00 | 0. | 20 | 13 | K10 | 0.08 |
| 861411 | 16B | 31. | 55. | 64. | 109. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | K10 | 0.20 |

CONFLUENCE Q'S

861411 17A TA 1156 QA 635. QAB 743. QB 108. 861411 17B TB 1157 QB 109. QBA 743. QA 634.
861411 17AB TAB 1156 QAB 743. QA 635. QB 108.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 17AB | 64. | 109. | 468. | 743. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K10 | 0.00 |
| 861411 | 18A | 0. | 0. | 468. | 743. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 99 | K10 | 0.00 |
| 861411 | 19A | 468. | 19. | 468. | 19. | 4 | 1800. | 0.00830 | 2.00 | 0.00 | 0. | 20 | 0 | K10 | 0.00 |
| 861411 | 20A | 41. | 55. | 509. | 70. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 21 | K10 | 0.35 |
| 861411 | 21B | 38. | 60. | 38. | 60. | 4 | 825. | 0.00440 | 3.50 | 0.00 | 0. | 10 | 18 | K10 | 0.08 |
| 861411 | 22B | 35. | 54. | 73. | 112. | 4 | 300. | 0.00440 | 4.25 | 0.00 | 0. | 10 | 19 | K10 | 0.11 |
| 861411 | 23C | 41. | 98. | 41. | 98. | 4 | 2050. | 0.05400 | 2.50 | 0.00 | 0. | 10 | 9 | K10 | 0.00 |
| 861411 | 24C | 44. | 62. | 85. | 155. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 19 | K10 | 0.14 |
| 861411 | 25D | 40. | 63. | 40. | 63. | 4 | 600. | 0.00660 | 3.25 | 0.00 | 0. | 10 | 18 | K10 | 0.07 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-DEV. WITH 3 BASINS-Q10 — STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONFLUENCE Q'S | | | | | | | | | | | | | | |
| 861411 26C TC 1157 QC | 155. QCD | 217. QD | 63. | 861411 26D TD 1157 QD | 63. QDC | 217. QC | 155. | | | | | | | |
| 861411 26CD TCD 1157 QCD | 217. QC | 155. QD | 63. | | | | | | | | | | | |
| 861411 26CD | 40. | 63. | 125. | 217. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | K10 | 0.00 |
| CONFLUENCE Q'S | | | | | | | | | | | | | | |
| 861411 27B TB 1160 QB | 112. QBC | 321. QC | 209. | 861411 27C TC 1157 QC | 217. QCB | 326. QB | 109. | | | | | | | |
| 861411 27BC TBC 1158 QBC | 328. QB | 111. QC | 217. | | | | | | | | | | | |
| 861411 27BC | 125. | 217. | 198. | 328. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | K10 | 0.00 |
| 861411 28B | 29. | 44. | 227. | 370. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 14 | K10 | 0.00 |
| 861411 29B | 227. | 13. | 227. | 13. | 4 | 350. | 0.00860 | 2.00 | 0.00 | 0. | 30 | 0 | K10 | 0.00 |
| CONFLUENCE Q'S | | | | | | | | | | | | | | |
| 861411 30A TA 1156 QA | 70. QAB | 81. QB | 11. | 861411 30B TB 1173 QB | 13. QBA | 51. QA | 38. | | | | | | | |
| 861411 30AB TAB 1159 QAB | 82. QA | 70. QB | 12. | | | | | | | | | | | |
| 861411 30AB | 227. | 13. | 736. | 82. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 0 | K10 | 0.00 |
| 861411 31A | 0. | 0. | 736. | 82. | 4 | 830. | 0.01440 | 3.00 | 0.00 | 0. | 30 | 99 | K10 | 0.00 |
| 861411 32A | 39. | 76. | 775. | 155. | 4 | 1300. | 0.01540 | 3.75 | 0.00 | 0. | 10 | 13 | K10 | 0.28 |
| 861411 33A | 47. | 82. | 822. | 230. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 13 | K10 | 0.30 |
| 861411 34A | 87. | 144. | 909. | 371. | 4 | 700. | 0.01430 | 5.25 | 0.00 | 0. | 10 | 17 | K10 | 0.17 |
| 861411 35A | 13. | 28. | 922. | 394. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 10 | K10 | 0.46 |
| 861411 36B | 98. | 136. | 98. | 136. | 4 | 1350. | 0.02880 | 3.25 | 0.00 | 0. | 20 | 19 | K10 | 0.08 |
| 861411 37B | 71. | 121. | 169. | 254. | 4 | 150. | 0.02880 | 4.00 | 0.00 | 0. | 10 | 16 | K10 | 0.17 |
| CONFLUENCE Q'S | | | | | | | | | | | | | | |
| 861411 38A TA 1159 QA | 394. QAB | 645. QB | 251. | 861411 38B TB 1157 QB | 254. QBA | 643. QA | 390. | | | | | | | |
| 861411 38AB TAB 1158 QAB | 646. QA | 393. QB | 253. | | | | | | | | | | | |
| 861411 38AB | 169. | 254. | 1091. | 646. | 4 | 750. | 0.00530 | 7.75 | 0.00 | 0. | 10 | 0 | K10 | 0.00 |
| 861411 39A | 0. | 0. | 1091. | 643. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | K10 | 0.00 |
| 861411 40A | 48. | 98. | 1139. | 732. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | L10 | 0.23 |
| 861411 41B | 46. | 103. | 46. | 103. | 4 | 800. | 0.04500 | 2.75 | 0.00 | 0. | 20 | 11 | L10 | 0.12 |
| 861411 42B | 39. | 88. | 85. | 190. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | L10 | 0.16 |
| 861411 43B | 26. | 63. | 111. | 253. | 4 | 750. | 0.04000 | 3.75 | 0.00 | 0. | 20 | 10 | L10 | 0.19 |
| 861411 44B | 28. | 63. | 139. | 313. | 4 | 950. | 0.05260 | 4.00 | 0.00 | 0. | 20 | 11 | L10 | 0.16 |
| 861411 45B | 55. | 82. | 194. | 393. | 4 | 1000. | 0.06000 | 4.25 | 0.00 | 0. | 20 | 21 | L10 | 0.18 |
| 861411 46B | 22. | 57. | 216. | 443. | 4 | 500. | 0.03000 | 5.00 | 0.00 | 0. | 10 | 10 | L10 | 0.15 |
| 861411 47B | 27. | 45. | 243. | 487. | 4 | 550. | 0.03800 | 5.00 | 0.00 | 0. | 10 | 20 | L10 | 0.22 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-DEV. WITH 3 BASINS-Q10 STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

CONFLUENCE Q'S

861411 48A TA 1160 QA 732. QAB 1209. QB 477. 861411 48B TB 1159 QB 485. QBA 1217. QA 732.
861411 48AB TAB 1159 QAB 1217. QA 732. QB 485.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 48AB | 243. | 485. | 1382. | 1217. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | L10 | 0.00 |
| 861411 49A | 0. | 0. | 1382. | 1217. | 5 | 950. | 0.02100 | 10.00 | 0.00 | 0. | 30 | 99 | K10 | 0.00 |
| 861411 50A | 57. | 76. | 1439. | 1287. | 5 | 650. | 0.02150 | 10.00 | 0.00 | 0. | 30 | 19 | K10 | 0.17 |
| 861411 51A | 34. | 77. | 1473. | 1348. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | L10 | 0.16 |
| 861411 52A | 45. | 76. | 1518. | 1418. | 5 | 950. | 0.00630 | 10.00 | 4.00 | 0. | 20 | 14 | K10 | 0.14 |
| 861411 53A | 24. | 62. | 1542. | 1398. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 10 | L10 | 0.02 |
| 861411 54A | 1542. | 830. | 1542. | 830. | 2 | 850. | 0.01650 | 0.00 | 0.00 | 0. | 10 | 0 | L10 | 0.00 |
| 861411 55A | 16. | 41. | 1558. | 833. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | L10 | 0.00 |
| 861411 56B | 25. | 49. | 25. | 49. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | L10 | 0.00 |

CONFLUENCE Q'S

861411 57A TA 1174 QA 833. QAB 840. QB 7. 861411 57B TB 1154 QB 49. QBA 546. QA 498.
861411 57AB TAB 1174 QAB 840. QA 833. QB 7.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 57AB | 25. | 49. | 1583. | 840. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L10 | 0.00 |
| 861411 58A | 0. | 0. | 1583. | 840. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | L10 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY

INFLOW TO FIRST BASIN

HYDROGRAPH AT 861411 18A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 3. | 200 | 3. | 300 | 4. | 400 | 5. |
| 500 | 7. | 600 | 8. | 700 | 10. | 800 | 12. | 900 | 15. |
| 1000 | 32. | 1050 | 52. | 1100 | 73. | 1110 | 103. | 1120 | 141. |
| 1130 | 162. | 1131 | 166. | 1132 | 171. | 1133 | 175. | 1134 | 180. |
| 1135 | 185. | 1136 | 192. | 1137 | 200. | 1138 | 207. | 1139 | 215. |
| 1140 | 223. | 1141 | 234. | 1142 | 244. | 1143 | 255. | 1144 | 265. |
| 1145 | 275. | 1146 | 286. | 1147 | 299. | 1148 | 322. | 1149 | 352. |
| 1150 | 391. | 1151 | 466. | 1152 | 581. | 1153 | 672. | 1154 | 713. |
| 1155 | 735. | 1156 | 743. | 1157 | 743. | 1158 | 739. | 1159 | 730. |
| 1160 | 719. | 1161 | 698. | 1162 | 666. | 1163 | 623. | 1164 | 576. |
| 1165 | 522. | 1166 | 466. | 1167 | 421. | 1168 | 385. | 1169 | 350. |
| 1170 | 308. | 1171 | 250. | 1172 | 187. | 1173 | 145. | 1174 | 125. |
| 1175 | 114. | 1176 | 106. | 1177 | 100. | 1178 | 93. | 1179 | 88. |
| 1180 | 82. | 1181 | 78. | 1182 | 74. | 1183 | 71. | 1184 | 68. |
| 1185 | 65. | 1186 | 63. | 1187 | 60. | 1188 | 58. | 1189 | 55. |
| 1190 | 53. | 1191 | 52. | 1192 | 50. | 1193 | 49. | 1194 | 48. |
| 1195 | 47. | 1196 | 46. | 1197 | 45. | 1198 | 44. | 1199 | 43. |
| 1200 | 42. | 1201 | 41. | 1202 | 40. | 1203 | 40. | 1204 | 39. |
| 1205 | 39. | 1206 | 38. | 1207 | 38. | 1208 | 37. | 1209 | 37. |
| 1210 | 36. | 1211 | 36. | 1212 | 36. | 1213 | 35. | 1214 | 34. |
| 1215 | 33. | 1216 | 32. | 1217 | 31. | 1218 | 29. | 1219 | 28. |
| 1220 | 27. | 1221 | 26. | 1222 | 25. | 1223 | 24. | 1224 | 22. |
| 1225 | 21. | 1226 | 20. | 1227 | 19. | 1228 | 18. | 1229 | 17. |
| 1230 | 17. | 1231 | 16. | 1232 | 16. | 1233 | 15. | 1234 | 15. |
| 1235 | 15. | 1236 | 15. | 1237 | 15. | 1238 | 14. | 1239 | 14. |
| 1240 | 14. | 1241 | 14. | 1242 | 14. | 1243 | 14. | 1244 | 14. |
| 1245 | 14. | 1246 | 13. | 1247 | 13. | 1248 | 13. | 1249 | 13. |
| 1250 | 13. | 1251 | 13. | 1252 | 13. | 1253 | 13. | 1254 | 13. |
| 1255 | 13. | 1256 | 13. | 1257 | 13. | 1258 | 13. | 1259 | 13. |
| 1260 | 13. | 1261 | 13. | 1262 | 13. | 1263 | 13. | 1264 | 13. |
| 1265 | 13. | 1266 | 12. | 1267 | 12. | 1268 | 12. | 1269 | 12. |
| 1270 | 12. | 1271 | 12. | 1272 | 12. | 1273 | 12. | 1274 | 11. |
| 1275 | 11. | 1276 | 11. | 1277 | 11. | 1278 | 11. | 1279 | 11. |
| 1280 | 11. | 1281 | 11. | 1282 | 11. | 1283 | 11. | 1284 | 11. |
| 1285 | 11. | 1286 | 11. | 1287 | 11. | 1288 | 11. | 1289 | 11. |
| 1290 | 11. | 1291 | 11. | 1292 | 11. | 1293 | 11. | 1294 | 11. |
| 1295 | 11. | 1296 | 11. | 1297 | 11. | 1298 | 11. | 1299 | 11. |
| 1300 | 11. | 1310 | 9. | 1320 | 8. | 1330 | 8. | 1340 | 8. |
| 1350 | 6. | 1360 | 5. | 1370 | 5. | 1380 | 5. | 1390 | 5. |
| 1400 | 5. | 1420 | 4. | 1440 | 3. | 1460 | 2. | 1500 | 2. |

MODIFIED RATIONAL METHOD HYDROLOGY

OUTFLOW FROM FIRST BASIN

HYDROGRAPH AT 861411 19A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 2. | 300 | 3. | 400 | 4. |
| 500 | 4. | 600 | 5. | 700 | 6. | 800 | 7. | 900 | 8. |
| 1000 | 10. | 1050 | 11. | 1100 | 13. | 1110 | 13. | 1120 | 14. |
| 1130 | 14. | 1131 | 14. | 1132 | 14. | 1133 | 14. | 1134 | 14. |
| 1135 | 15. | 1136 | 15. | 1137 | 15. | 1138 | 15. | 1139 | 15. |
| 1140 | 15. | 1141 | 15. | 1142 | 15. | 1143 | 15. | 1144 | 15. |
| 1145 | 15. | 1146 | 15. | 1147 | 15. | 1148 | 16. | 1149 | 16. |
| 1150 | 16. | 1151 | 16. | 1152 | 16. | 1153 | 16. | 1154 | 17. |
| 1155 | 17. | 1156 | 17. | 1157 | 17. | 1158 | 17. | 1159 | 17. |
| 1160 | 17. | 1161 | 18. | 1162 | 18. | 1163 | 18. | 1164 | 18. |
| 1165 | 18. | 1166 | 18. | 1167 | 18. | 1168 | 18. | 1169 | 19. |
| 1170 | 19. | 1171 | 19. | 1172 | 19. | 1173 | 19. | 1174 | 19. |
| 1175 | 19. | 1176 | 19. | 1177 | 19. | 1178 | 19. | 1179 | 19. |
| 1180 | 19. | 1181 | 19. | 1182 | 19. | 1183 | 19. | 1184 | 19. |
| 1185 | 19. | 1186 | 19. | 1187 | 19. | 1188 | 19. | 1189 | 19. |
| 1190 | 19. | 1191 | 19. | 1192 | 19. | 1193 | 19. | 1194 | 19. |
| 1195 | 19. | 1196 | 19. | 1197 | 19. | 1198 | 19. | 1199 | 19. |
| 1200 | 19. | 1201 | 19. | 1202 | 19. | 1203 | 19. | 1204 | 19. |
| 1205 | 19. | 1206 | 19. | 1207 | 19. | 1208 | 19. | 1209 | 19. |
| 1210 | 19. | 1211 | 19. | 1212 | 19. | 1213 | 19. | 1214 | 19. |
| 1215 | 19. | 1216 | 19. | 1217 | 19. | 1218 | 19. | 1219 | 19. |
| 1220 | 19. | 1221 | 19. | 1222 | 19. | 1223 | 19. | 1224 | 19. |
| 1225 | 19. | 1226 | 19. | 1227 | 19. | 1228 | 19. | 1229 | 19. |
| 1230 | 19. | 1231 | 19. | 1232 | 19. | 1233 | 19. | 1234 | 19. |
| 1235 | 19. | 1236 | 19. | 1237 | 19. | 1238 | 19. | 1239 | 19. |
| 1240 | 19. | 1241 | 19. | 1242 | 19. | 1243 | 19. | 1244 | 19. |
| 1245 | 19. | 1246 | 19. | 1247 | 19. | 1248 | 19. | 1249 | 19. |
| 1250 | 19. | 1251 | 19. | 1252 | 19. | 1253 | 19. | 1254 | 19. |
| 1255 | 19. | 1256 | 19. | 1257 | 19. | 1258 | 19. | 1259 | 19. |
| 1260 | 19. | 1261 | 19. | 1262 | 19. | 1263 | 19. | 1264 | 19. |
| 1265 | 19. | 1266 | 19. | 1267 | 19. | 1268 | 19. | 1269 | 19. |
| 1270 | 19. | 1271 | 19. | 1272 | 19. | 1273 | 19. | 1274 | 19. |
| 1275 | 19. | 1276 | 19. | 1277 | 19. | 1278 | 19. | 1279 | 19. |
| 1280 | 19. | 1281 | 19. | 1282 | 19. | 1283 | 19. | 1284 | 19. |
| 1285 | 19. | 1286 | 19. | 1287 | 19. | 1288 | 19. | 1289 | 19. |
| 1290 | 19. | 1291 | 19. | 1292 | 19. | 1293 | 19. | 1294 | 19. |
| 1295 | 19. | 1296 | 19. | 1297 | 19. | 1298 | 19. | 1299 | 19. |
| 1300 | 19. | 1310 | 19. | 1320 | 19. | 1330 | 19. | 1340 | 19. |
| 1350 | 19. | 1360 | 19. | 1370 | 19. | 1380 | 19. | 1390 | 19. |
| 1400 | 19. | 1420 | 19. | 1440 | 19. | 1460 | 19. | 1500 | 18. |

MODIFIED RATIONAL METHOD HYDROLOGY

INFLOW TO SECOND BASIN

HYDROGRAPH AT 861411 28B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 2. | 200 | 2. | 300 | 2. | 400 | 2. |
| 500 | 2. | 600 | 3. | 700 | 3. | 800 | 4. | 900 | 5. |
| 1000 | 18. | 1050 | 27. | 1100 | 34. | 1110 | 47. | 1120 | 66. |
| 1130 | 74. | 1131 | 75. | 1132 | 77. | 1133 | 79. | 1134 | 81. |
| 1135 | 84. | 1136 | 87. | 1137 | 90. | 1138 | 94. | 1139 | 99. |
| 1140 | 103. | 1141 | 108. | 1142 | 114. | 1143 | 119. | 1144 | 125. |
| 1145 | 131. | 1146 | 137. | 1147 | 144. | 1148 | 153. | 1149 | 165. |
| 1150 | 181. | 1151 | 207. | 1152 | 248. | 1153 | 292. | 1154 | 326. |
| 1155 | 350. | 1156 | 363. | 1157 | 369. | 1158 | 370. | 1159 | 367. |
| 1160 | 361. | 1161 | 350. | 1162 | 332. | 1163 | 309. | 1164 | 288. |
| 1165 | 268. | 1166 | 247. | 1167 | 229. | 1168 | 216. | 1169 | 201. |
| 1170 | 179. | 1171 | 145. | 1172 | 113. | 1173 | 91. | 1174 | 78. |
| 1175 | 69. | 1176 | 62. | 1177 | 56. | 1178 | 52. | 1179 | 47. |
| 1180 | 44. | 1181 | 41. | 1182 | 39. | 1183 | 37. | 1184 | 35. |
| 1185 | 34. | 1186 | 32. | 1187 | 31. | 1188 | 29. | 1189 | 28. |
| 1190 | 27. | 1191 | 26. | 1192 | 25. | 1193 | 24. | 1194 | 24. |
| 1195 | 23. | 1196 | 23. | 1197 | 22. | 1198 | 22. | 1199 | 21. |
| 1200 | 21. | 1201 | 21. | 1202 | 21. | 1203 | 20. | 1204 | 20. |
| 1205 | 20. | 1206 | 20. | 1207 | 20. | 1208 | 20. | 1209 | 20. |
| 1210 | 20. | 1211 | 19. | 1212 | 19. | 1213 | 19. | 1214 | 18. |
| 1215 | 18. | 1216 | 17. | 1217 | 16. | 1218 | 16. | 1219 | 15. |
| 1220 | 14. | 1221 | 13. | 1222 | 12. | 1223 | 11. | 1224 | 10. |
| 1225 | 10. | 1226 | 9. | 1227 | 8. | 1228 | 8. | 1229 | 7. |
| 1230 | 7. | 1231 | 6. | 1232 | 6. | 1233 | 6. | 1234 | 5. |
| 1235 | 5. | 1236 | 5. | 1237 | 5. | 1238 | 5. | 1239 | 5. |
| 1240 | 5. | 1241 | 4. | 1242 | 4. | 1243 | 4. | 1244 | 4. |
| 1245 | 4. | 1246 | 4. | 1247 | 4. | 1248 | 4. | 1249 | 4. |
| 1250 | 4. | 1251 | 4. | 1252 | 4. | 1253 | 4. | 1254 | 4. |
| 1255 | 4. | 1256 | 4. | 1257 | 4. | 1258 | 4. | 1259 | 4. |
| 1260 | 4. | 1261 | 4. | 1262 | 4. | 1263 | 4. | 1264 | 4. |
| 1265 | 4. | 1266 | 4. | 1267 | 4. | 1268 | 4. | 1269 | 4. |
| 1270 | 4. | 1271 | 4. | 1272 | 4. | 1273 | 4. | 1274 | 4. |
| 1275 | 4. | 1276 | 4. | 1277 | 3. | 1278 | 3. | 1279 | 3. |
| 1280 | 3. | 1281 | 3. | 1282 | 3. | 1283 | 3. | 1284 | 3. |
| 1285 | 3. | 1286 | 3. | 1287 | 3. | 1288 | 3. | 1289 | 3. |
| 1290 | 3. | 1291 | 3. | 1292 | 3. | 1293 | 3. | 1294 | 3. |
| 1295 | 3. | 1296 | 3. | 1297 | 3. | 1298 | 3. | 1299 | 3. |
| 1300 | 3. | 1310 | 3. | 1320 | 3. | 1330 | 3. | 1340 | 3. |
| 1350 | 2. | 1360 | 2. | 1370 | 2. | 1380 | 2. | 1390 | 2. |
| 1400 | 2. | 1420 | 2. | 1440 | 2. | 1460 | 1. | 1500 | 1. |

MODIFIED RATIONAL METHOD HYDROLOGY

OUTFLOW FROM SECOND BASIN

HYDROGRAPH AT 861411 29B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 0. | 200 | 1. | 300 | 2. | 400 | 2. |
| 500 | 2. | 600 | 2. | 700 | 3. | 800 | 3. | 900 | 4. |
| 1000 | 6. | 1050 | 7. | 1100 | 8. | 1110 | 8. | 1120 | 9. |
| 1130 | 10. | 1131 | 10. | 1132 | 10. | 1133 | 10. | 1134 | 10. |
| 1135 | 10. | 1136 | 10. | 1137 | 10. | 1138 | 10. | 1139 | 10. |
| 1140 | 10. | 1141 | 10. | 1142 | 10. | 1143 | 10. | 1144 | 10. |
| 1145 | 10. | 1146 | 10. | 1147 | 10. | 1148 | 10. | 1149 | 11. |
| 1150 | 11. | 1151 | 11. | 1152 | 11. | 1153 | 11. | 1154 | 11. |
| 1155 | 11. | 1156 | 11. | 1157 | 12. | 1158 | 12. | 1159 | 12. |
| 1160 | 12. | 1161 | 12. | 1162 | 12. | 1163 | 12. | 1164 | 12. |
| 1165 | 13. | 1166 | 13. | 1167 | 13. | 1168 | 13. | 1169 | 13. |
| 1170 | 13. | 1171 | 13. | 1172 | 13. | 1173 | 13. | 1174 | 13. |
| 1175 | 13. | 1176 | 13. | 1177 | 13. | 1178 | 13. | 1179 | 13. |
| 1180 | 13. | 1181 | 13. | 1182 | 13. | 1183 | 13. | 1184 | 13. |
| 1185 | 13. | 1186 | 13. | 1187 | 13. | 1188 | 13. | 1189 | 13. |
| 1190 | 13. | 1191 | 13. | 1192 | 13. | 1193 | 13. | 1194 | 13. |
| 1195 | 13. | 1196 | 13. | 1197 | 13. | 1198 | 13. | 1199 | 13. |
| 1200 | 13. | 1201 | 13. | 1202 | 13. | 1203 | 13. | 1204 | 13. |
| 1205 | 13. | 1206 | 13. | 1207 | 13. | 1208 | 13. | 1209 | 13. |
| 1210 | 13. | 1211 | 13. | 1212 | 13. | 1213 | 13. | 1214 | 13. |
| 1215 | 13. | 1216 | 13. | 1217 | 13. | 1218 | 13. | 1219 | 13. |
| 1220 | 13. | 1221 | 13. | 1222 | 13. | 1223 | 13. | 1224 | 13. |
| 1225 | 13. | 1226 | 13. | 1227 | 13. | 1228 | 13. | 1229 | 13. |
| 1230 | 13. | 1231 | 13. | 1232 | 13. | 1233 | 13. | 1234 | 13. |
| 1235 | 13. | 1236 | 13. | 1237 | 13. | 1238 | 13. | 1239 | 13. |
| 1240 | 13. | 1241 | 13. | 1242 | 13. | 1243 | 13. | 1244 | 13. |
| 1245 | 13. | 1246 | 13. | 1247 | 13. | 1248 | 13. | 1249 | 13. |
| 1250 | 13. | 1251 | 13. | 1252 | 13. | 1253 | 13. | 1254 | 13. |
| 1255 | 13. | 1256 | 13. | 1257 | 13. | 1258 | 13. | 1259 | 13. |
| 1260 | 13. | 1261 | 13. | 1262 | 13. | 1263 | 13. | 1264 | 13. |
| 1265 | 13. | 1266 | 13. | 1267 | 13. | 1268 | 13. | 1269 | 13. |
| 1270 | 13. | 1271 | 13. | 1272 | 13. | 1273 | 13. | 1274 | 13. |
| 1275 | 13. | 1276 | 13. | 1277 | 13. | 1278 | 13. | 1279 | 13. |
| 1280 | 13. | 1281 | 13. | 1282 | 13. | 1283 | 13. | 1284 | 13. |
| 1285 | 13. | 1286 | 13. | 1287 | 13. | 1288 | 13. | 1289 | 13. |
| 1290 | 13. | 1291 | 13. | 1292 | 13. | 1293 | 13. | 1294 | 13. |
| 1295 | 13. | 1296 | 13. | 1297 | 13. | 1298 | 13. | 1299 | 13. |
| 1300 | 13. | 1310 | 13. | 1320 | 13. | 1330 | 13. | 1340 | 13. |
| 1350 | 13. | 1360 | 13. | 1370 | 13. | 1380 | 13. | 1390 | 13. |
| 1400 | 13. | 1420 | 13. | 1440 | 13. | 1460 | 13. | 1500 | 12. |

VB-1412

MODIFIED RATIONAL METHOD HYDROLOGY
INFLOW TO THROTTLING STRUCTURE BASIN
HYDROGRAPH AT 861411 53A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 10. | 200 | 12. | 300 | 17. | 400 | 21. |
| 500 | 26. | 600 | 31. | 700 | 39. | 800 | 49. | 900 | 62. |
| 1000 | 115. | 1050 | 155. | 1100 | 201. | 1110 | 226. | 1120 | 284. |
| 1130 | 347. | 1131 | 353. | 1132 | 358. | 1133 | 364. | 1134 | 369. |
| 1135 | 375. | 1136 | 381. | 1137 | 387. | 1138 | 394. | 1139 | 401. |
| 1140 | 409. | 1141 | 417. | 1142 | 427. | 1143 | 437. | 1144 | 448. |
| 1145 | 460. | 1146 | 474. | 1147 | 489. | 1148 | 505. | 1149 | 525. |
| 1150 | 551. | 1151 | 583. | 1152 | 629. | 1153 | 679. | 1154 | 753. |
| 1155 | 848. | 1156 | 950. | 1157 | 1060. | 1158 | 1174. | 1159 | 1275. |
| 1160 | 1345. | 1161 | 1386. | 1162 | 1397. | 1163 | 1398. | 1164 | 1381. |
| 1165 | 1346. | 1166 | 1296. | 1167 | 1231. | 1168 | 1153. | 1169 | 1073. |
| 1170 | 996. | 1171 | 923. | 1172 | 851. | 1173 | 775. | 1174 | 701. |
| 1175 | 634. | 1176 | 579. | 1177 | 530. | 1178 | 483. | 1179 | 440. |
| 1180 | 401. | 1181 | 367. | 1182 | 343. | 1183 | 322. | 1184 | 303. |
| 1185 | 286. | 1186 | 271. | 1187 | 258. | 1188 | 247. | 1189 | 237. |
| 1190 | 229. | 1191 | 221. | 1192 | 214. | 1193 | 208. | 1194 | 203. |
| 1195 | 198. | 1196 | 194. | 1197 | 190. | 1198 | 186. | 1199 | 183. |
| 1200 | 180. | 1201 | 177. | 1202 | 174. | 1203 | 172. | 1204 | 169. |
| 1205 | 167. | 1206 | 164. | 1207 | 162. | 1208 | 160. | 1209 | 158. |
| 1210 | 157. | 1211 | 155. | 1212 | 154. | 1213 | 153. | 1214 | 151. |
| 1215 | 150. | 1216 | 149. | 1217 | 147. | 1218 | 145. | 1219 | 143. |
| 1220 | 141. | 1221 | 139. | 1222 | 137. | 1223 | 134. | 1224 | 131. |
| 1225 | 128. | 1226 | 125. | 1227 | 121. | 1228 | 118. | 1229 | 115. |
| 1230 | 111. | 1231 | 108. | 1232 | 105. | 1233 | 102. | 1234 | 99. |
| 1235 | 97. | 1236 | 95. | 1237 | 93. | 1238 | 91. | 1239 | 90. |
| 1240 | 89. | 1241 | 88. | 1242 | 87. | 1243 | 86. | 1244 | 85. |
| 1245 | 85. | 1246 | 84. | 1247 | 84. | 1248 | 83. | 1249 | 83. |
| 1250 | 82. | 1251 | 82. | 1252 | 82. | 1253 | 81. | 1254 | 81. |
| 1255 | 81. | 1256 | 80. | 1257 | 80. | 1258 | 80. | 1259 | 80. |
| 1260 | 79. | 1261 | 79. | 1262 | 79. | 1263 | 78. | 1264 | 78. |
| 1265 | 78. | 1266 | 77. | 1267 | 77. | 1268 | 77. | 1269 | 76. |
| 1270 | 76. | 1271 | 76. | 1272 | 75. | 1273 | 75. | 1274 | 74. |
| 1275 | 73. | 1276 | 73. | 1277 | 72. | 1278 | 71. | 1279 | 71. |
| 1280 | 70. | 1281 | 70. | 1282 | 69. | 1283 | 69. | 1284 | 68. |
| 1285 | 68. | 1286 | 67. | 1287 | 67. | 1288 | 67. | 1289 | 66. |
| 1290 | 66. | 1291 | 66. | 1292 | 66. | 1293 | 66. | 1294 | 66. |
| 1295 | 66. | 1296 | 65. | 1297 | 65. | 1298 | 65. | 1299 | 65. |
| 1300 | 65. | 1310 | 64. | 1320 | 61. | 1330 | 58. | 1340 | 57. |
| 1350 | 55. | 1360 | 52. | 1370 | 49. | 1380 | 47. | 1390 | 47. |
| 1400 | 47. | 1420 | 45. | 1440 | 42. | 1460 | 39. | 1500 | 34. |

MODIFIED RATIONAL METHOD HYDROLOGY
OUTFLOW FROM THROTTLING STRUCTURE BASIN
HYDROGRAPH AT 861411 54A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 4. | 200 | 11. | 300 | 14. | 400 | 19. |
| 500 | 24. | 600 | 28. | 700 | 35. | 800 | 44. | 900 | 55. |
| 1000 | 87. | 1050 | 130. | 1100 | 175. | 1110 | 201. | 1120 | 238. |
| 1130 | 287. | 1131 | 296. | 1132 | 304. | 1133 | 313. | 1134 | 319. |
| 1135 | 325. | 1136 | 329. | 1137 | 334. | 1138 | 339. | 1139 | 345. |
| 1140 | 351. | 1141 | 355. | 1142 | 361. | 1143 | 369. | 1144 | 375. |
| 1145 | 383. | 1146 | 390. | 1147 | 398. | 1148 | 407. | 1149 | 418. |
| 1150 | 427. | 1151 | 441. | 1152 | 454. | 1153 | 473. | 1154 | 494. |
| 1155 | 521. | 1156 | 548. | 1157 | 578. | 1158 | 613. | 1159 | 647. |
| 1160 | 672. | 1161 | 696. | 1162 | 721. | 1163 | 742. | 1164 | 758. |
| 1165 | 775. | 1166 | 790. | 1167 | 801. | 1168 | 811. | 1169 | 820. |
| 1170 | 825. | 1171 | 829. | 1172 | 830. | 1173 | 829. | 1174 | 828. |
| 1175 | 824. | 1176 | 819. | 1177 | 811. | 1178 | 803. | 1179 | 794. |
| 1180 | 784. | 1181 | 774. | 1182 | 762. | 1183 | 751. | 1184 | 739. |
| 1185 | 726. | 1186 | 711. | 1187 | 695. | 1188 | 679. | 1189 | 663. |
| 1190 | 647. | 1191 | 626. | 1192 | 600. | 1193 | 573. | 1194 | 550. |
| 1195 | 525. | 1196 | 496. | 1197 | 470. | 1198 | 445. | 1199 | 422. |
| 1200 | 399. | 1201 | 380. | 1202 | 360. | 1203 | 343. | 1204 | 328. |
| 1205 | 311. | 1206 | 288. | 1207 | 270. | 1208 | 254. | 1209 | 239. |
| 1210 | 226. | 1211 | 214. | 1212 | 203. | 1213 | 194. | 1214 | 185. |
| 1215 | 179. | 1216 | 173. | 1217 | 168. | 1218 | 164. | 1219 | 161. |
| 1220 | 157. | 1221 | 153. | 1222 | 150. | 1223 | 147. | 1224 | 145. |
| 1225 | 142. | 1226 | 139. | 1227 | 136. | 1228 | 133. | 1229 | 130. |
| 1230 | 127. | 1231 | 124. | 1232 | 121. | 1233 | 118. | 1234 | 115. |
| 1235 | 111. | 1236 | 108. | 1237 | 106. | 1238 | 103. | 1239 | 101. |
| 1240 | 99. | 1241 | 97. | 1242 | 95. | 1243 | 94. | 1244 | 92. |
| 1245 | 91. | 1246 | 90. | 1247 | 89. | 1248 | 87. | 1249 | 87. |
| 1250 | 86. | 1251 | 85. | 1252 | 84. | 1253 | 84. | 1254 | 83. |
| 1255 | 83. | 1256 | 82. | 1257 | 82. | 1258 | 82. | 1259 | 81. |
| 1260 | 81. | 1261 | 80. | 1262 | 80. | 1263 | 80. | 1264 | 80. |
| 1265 | 79. | 1266 | 79. | 1267 | 78. | 1268 | 78. | 1269 | 78. |
| 1270 | 78. | 1271 | 77. | 1272 | 77. | 1273 | 77. | 1274 | 76. |
| 1275 | 76. | 1276 | 75. | 1277 | 74. | 1278 | 74. | 1279 | 73. |
| 1280 | 73. | 1281 | 72. | 1282 | 71. | 1283 | 71. | 1284 | 70. |
| 1285 | 70. | 1286 | 69. | 1287 | 69. | 1288 | 69. | 1289 | 68. |
| 1290 | 67. | 1291 | 67. | 1292 | 67. | 1293 | 66. | 1294 | 66. |
| 1295 | 66. | 1296 | 66. | 1297 | 66. | 1298 | 66. | 1299 | 66. |
| 1300 | 66. | 1310 | 65. | 1320 | 63. | 1330 | 61. | 1340 | 58. |
| 1350 | 56. | 1360 | 54. | 1370 | 52. | 1380 | 48. | 1390 | 48. |
| 1400 | 47. | 1420 | 46. | 1440 | 44. | 1460 | 41. | 1500 | 37. |

MODIFIED RATIONAL METHOD HYDROLOGY
AT DOWNSTREAM STUDY LIMIT
HYDROGRAPH AT 861411 58A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 4. | 200 | 10. | 300 | 14. | 400 | 18. |
| 500 | 24. | 600 | 28. | 700 | 35. | 800 | 43. | 900 | 55. |
| 1000 | 89. | 1050 | 133. | 1100 | 182. | 1110 | 206. | 1120 | 247. |
| 1130 | 295. | 1131 | 301. | 1132 | 307. | 1133 | 315. | 1134 | 324. |
| 1135 | 332. | 1136 | 340. | 1137 | 346. | 1138 | 351. | 1139 | 357. |
| 1140 | 362. | 1141 | 368. | 1142 | 374. | 1143 | 379. | 1144 | 386. |
| 1145 | 393. | 1146 | 402. | 1147 | 411. | 1148 | 421. | 1149 | 435. |
| 1150 | 455. | 1151 | 478. | 1152 | 513. | 1153 | 531. | 1154 | 546. |
| 1155 | 564. | 1156 | 585. | 1157 | 609. | 1158 | 634. | 1159 | 660. |
| 1160 | 686. | 1161 | 703. | 1162 | 723. | 1163 | 742. | 1164 | 757. |
| 1165 | 764. | 1166 | 778. | 1167 | 793. | 1168 | 806. | 1169 | 817. |
| 1170 | 826. | 1171 | 833. | 1172 | 838. | 1173 | 840. | 1174 | 840. |
| 1175 | 838. | 1176 | 836. | 1177 | 831. | 1178 | 824. | 1179 | 816. |
| 1180 | 808. | 1181 | 798. | 1182 | 788. | 1183 | 777. | 1184 | 766. |
| 1185 | 754. | 1186 | 742. | 1187 | 728. | 1188 | 713. | 1189 | 697. |
| 1190 | 681. | 1191 | 665. | 1192 | 647. | 1193 | 624. | 1194 | 600. |
| 1195 | 575. | 1196 | 551. | 1197 | 525. | 1198 | 498. | 1199 | 473. |
| 1200 | 449. | 1201 | 426. | 1202 | 405. | 1203 | 385. | 1204 | 367. |
| 1205 | 350. | 1206 | 334. | 1207 | 317. | 1208 | 298. | 1209 | 280. |
| 1210 | 264. | 1211 | 249. | 1212 | 235. | 1213 | 223. | 1214 | 212. |
| 1215 | 202. | 1216 | 193. | 1217 | 185. | 1218 | 178. | 1219 | 173. |
| 1220 | 168. | 1221 | 164. | 1222 | 160. | 1223 | 156. | 1224 | 153. |
| 1225 | 150. | 1226 | 147. | 1227 | 144. | 1228 | 141. | 1229 | 138. |
| 1230 | 135. | 1231 | 132. | 1232 | 130. | 1233 | 127. | 1234 | 124. |
| 1235 | 121. | 1236 | 118. | 1237 | 115. | 1238 | 112. | 1239 | 109. |
| 1240 | 106. | 1241 | 104. | 1242 | 102. | 1243 | 99. | 1244 | 97. |
| 1245 | 96. | 1246 | 94. | 1247 | 93. | 1248 | 91. | 1249 | 90. |
| 1250 | 89. | 1251 | 88. | 1252 | 87. | 1253 | 86. | 1254 | 85. |
| 1255 | 85. | 1256 | 84. | 1257 | 84. | 1258 | 83. | 1259 | 83. |
| 1260 | 82. | 1261 | 82. | 1262 | 81. | 1263 | 81. | 1264 | 81. |
| 1265 | 80. | 1266 | 80. | 1267 | 80. | 1268 | 79. | 1269 | 79. |
| 1270 | 79. | 1271 | 78. | 1272 | 78. | 1273 | 78. | 1274 | 77. |
| 1275 | 77. | 1276 | 77. | 1277 | 76. | 1278 | 76. | 1279 | 75. |
| 1280 | 75. | 1281 | 74. | 1282 | 74. | 1283 | 73. | 1284 | 72. |
| 1285 | 72. | 1286 | 71. | 1287 | 71. | 1288 | 70. | 1289 | 70. |
| 1290 | 69. | 1291 | 69. | 1292 | 68. | 1293 | 68. | 1294 | 67. |
| 1295 | 67. | 1296 | 67. | 1297 | 66. | 1298 | 66. | 1299 | 66. |
| 1300 | 66. | 1310 | 65. | 1320 | 64. | 1330 | 62. | 1340 | 59. |
| 1350 | 57. | 1360 | 55. | 1370 | 53. | 1380 | 50. | 1390 | 48. |
| 1400 | 47. | 1420 | 46. | 1440 | 45. | 1460 | 42. | 1500 | 37. |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

## BASIN#1

## 10-YEAR STORM

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 3.00 | 100.00 | 1.50 | 0.21 | 0.53 | 0.07 | 0.13 | 828.18 |
| 200.00 | 3.00 | 100.00 | 3.00 | 0.41 | 2.24 | 0.31 | 0.24 | 828.75 |
| 300.00 | 4.00 | 100.00 | 3.50 | 0.48 | 3.03 | 0.42 | 0.30 | 829.01 |
| 400.00 | 5.00 | 100.00 | 4.50 | 0.62 | 3.53 | 0.49 | 0.44 | 829.21 |
| 500.00 | 7.00 | 100.00 | 6.00 | 0.83 | 4.30 | 0.59 | 0.67 | 829.52 |
| 600.00 | 8.00 | 100.00 | 7.50 | 1.03 | 5.29 | 0.73 | 0.98 | 829.91 |
| 700.00 | 10.00 | 100.00 | 9.00 | 1.24 | 6.08 | 0.84 | 1.38 | 830.29 |
| 800.00 | 12.00 | 100.00 | 11.00 | 1.52 | 6.96 | 0.96 | 1.94 | 830.73 |
| 900.00 | 15.00 | 100.00 | 13.50 | 1.86 | 7.97 | 1.10 | 2.70 | 831.23 |
| 1000.00 | 32.00 | 100.00 | 23.50 | 3.24 | 9.77 | 1.35 | 4.59 | 832.18 |
| 1050.00 | 52.00 | 50.00 | 42.00 | 2.89 | 11.06 | 0.76 | 6.72 | 833.04 |
| 1100.00 | 73.00 | 50.00 | 62.50 | 4.30 | 12.64 | 0.87 | 10.15 | 834.09 |
| 1110.00 | 103.00 | 10.00 | 88.00 | 1.21 | 13.04 | 0.18 | 11.19 | 834.36 |
| 1120.00 | 141.00 | 10.00 | 122.00 | 1.68 | 13.63 | 0.19 | 12.68 | 834.75 |
| 1130.00 | 162.00 | 10.00 | 151.50 | 2.09 | 14.26 | 0.20 | 14.57 | 835.22 |
| 1131.00 | 166.00 | 1.00 | 164.00 | 0.23 | 14.31 | 0.02 | 14.78 | 835.26 |
| 1132.00 | 171.00 | 1.00 | 168.50 | 0.23 | 14.36 | 0.02 | 14.99 | 835.30 |
| 1133.00 | 175.00 | 1.00 | 173.00 | 0.24 | 14.42 | 0.02 | 15.21 | 835.35 |
| 1134.00 | 180.00 | 1.00 | 177.50 | 0.24 | 14.47 | 0.02 | 15.43 | 835.39 |
| 1135.00 | 185.00 | 1.00 | 182.50 | 0.25 | 14.52 | 0.02 | 15.66 | 835.44 |
| 1136.00 | 192.00 | 1.00 | 188.50 | 0.26 | 14.58 | 0.02 | 15.90 | 835.48 |
| 1137.00 | 200.00 | 1.00 | 196.00 | 0.27 | 14.66 | 0.02 | 16.15 | 835.55 |
| 1138.00 | 207.00 | 1.00 | 203.50 | 0.28 | 14.71 | 0.02 | 16.41 | 835.59 |
| 1139.00 | 215.00 | 1.00 | 211.00 | 0.29 | 14.79 | 0.02 | 16.68 | 835.66 |
| 1140.00 | 223.00 | 1.00 | 219.00 | 0.30 | 14.84 | 0.02 | 16.96 | 835.70 |
| 1141.00 | 234.00 | 1.00 | 228.50 | 0.31 | 14.92 | 0.02 | 17.26 | 835.77 |
| 1142.00 | 244.00 | 1.00 | 239.00 | 0.33 | 15.00 | 0.02 | 17.57 | 835.83 |
| 1143.00 | 255.00 | 1.00 | 249.50 | 0.34 | 15.08 | 0.02 | 17.89 | 835.90 |
| 1144.00 | 265.00 | 1.00 | 260.00 | 0.36 | 15.16 | 0.02 | 18.23 | 835.96 |
| 1145.00 | 275.00 | 1.00 | 270.00 | 0.37 | 15.24 | 0.02 | 18.58 | 836.03 |
| 1146.00 | 286.00 | 1.00 | 280.50 | 0.39 | 15.32 | 0.02 | 18.94 | 836.10 |
| 1147.00 | 299.00 | 1.00 | 292.50 | 0.40 | 15.44 | 0.02 | 19.32 | 836.18 |
| 1148.00 | 322.00 | 1.00 | 310.50 | 0.43 | 15.52 | 0.02 | 19.73 | 836.25 |
| 1149.00 | 352.00 | 1.00 | 337.00 | 0.46 | 15.64 | 0.02 | 20.17 | 836.34 |
| 1150.00 | 391.00 | 1.00 | 371.50 | 0.51 | 15.78 | 0.02 | 20.66 | 836.45 |
| 1151.00 | 466.00 | 1.00 | 428.50 | 0.59 | 15.93 | 0.02 | 21.23 | 836.56 |
| 1152.00 | 581.00 | 1.00 | 523.50 | 0.72 | 16.10 | 0.02 | 21.93 | 836.69 |
| 1153.00 | 672.00 | 1.00 | 626.50 | 0.86 | 16.30 | 0.02 | 22.77 | 836.84 |
| 1154.00 | 713.00 | 1.00 | 692.50 | 0.95 | 16.52 | 0.02 | 23.70 | 837.02 |
| 1155.00 | 735.00 | 1.00 | 724.00 | 1.00 | 16.67 | 0.02 | 24.68 | 837.17 |
| 1156.00 | 743.00 | 1.00 | 739.00 | 1.02 | 16.83 | 0.02 | 25.67 | 837.33 |
| 1157.00 | 743.00 | 1.00 | 743.00 | 1.02 | 16.96 | 0.02 | 26.67 | 837.46 |
| 1158.00 | 739.00 | 1.00 | 741.00 | 1.02 | 17.11 | 0.02 | 27.67 | 837.61 |
| 1159.00 | 730.00 | 1.00 | 734.50 | 1.01 | 17.27 | 0.02 | 28.66 | 837.77 |
| 1160.00 | 719.00 | 1.00 | 724.50 | 1.00 | 17.40 | 0.02 | 29.63 | 837.90 |
| 1161.00 | 698.00 | 1.00 | 708.50 | 0.98 | 17.56 | 0.02 | 30.58 | 838.05 |
| 1162.00 | 666.00 | 1.00 | 682.00 | 0.94 | 17.72 | 0.02 | 31.50 | 838.19 |
| 1163.00 | 623.00 | 1.00 | 644.50 | 0.89 | 17.88 | 0.02 | 32.36 | 838.32 |
| 1164.00 | 576.00 | 1.00 | 599.50 | 0.83 | 18.01 | 0.02 | 33.16 | 838.43 |
| 1165.00 | 522.00 | 1.00 | 549.00 | 0.76 | 18.15 | 0.02 | 33.89 | 838.54 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1166.00 | 466.00 | 1.00 | 494.00 | 0.68 | 18.25 | 0.03 | 34.55 | 838.63 |
| 1167.00 | 421.00 | 1.00 | 443.50 | 0.61 | 18.36 | 0.03 | 35.13 | 838.71 |
| 1168.00 | 385.00 | 1.00 | 403.00 | 0.56 | 18.46 | 0.03 | 35.66 | 838.80 |
| 1169.00 | 350.00 | 1.00 | 367.50 | 0.51 | 18.54 | 0.03 | 36.14 | 838.87 |
| 1170.00 | 308.00 | 1.00 | 329.00 | 0.45 | 18.62 | 0.03 | 36.57 | 838.93 |
| 1171.00 | 250.00 | 1.00 | 279.00 | 0.38 | 18.67 | 0.03 | 36.93 | 838.98 |
| 1172.00 | 187.00 | 1.00 | 218.50 | 0.30 | 18.72 | 0.03 | 37.20 | 839.02 |
| 1173.00 | 145.00 | 1.00 | 166.00 | 0.23 | 18.74 | 0.03 | 37.41 | 839.04 |
| 1174.00 | 125.00 | 1.00 | 135.00 | 0.19 | 18.75 | 0.03 | 37.57 | 839.07 |
| 1175.00 | 114.00 | 1.00 | 119.50 | 0.16 | 18.77 | 0.03 | 37.71 | 839.09 |
| 1176.00 | 106.00 | 1.00 | 110.00 | 0.15 | 18.79 | 0.03 | 37.83 | 839.11 |
| 1177.00 | 100.00 | 1.00 | 103.00 | 0.14 | 18.79 | 0.03 | 37.95 | 839.11 |
| 1178.00 | 93.00 | 1.00 | 96.50 | 0.13 | 18.81 | 0.03 | 38.06 | 839.13 |
| 1179.00 | 88.00 | 1.00 | 90.50 | 0.12 | 18.81 | 0.03 | 38.15 | 839.13 |
| 1180.00 | 82.00 | 1.00 | 85.00 | 0.12 | 18.82 | 0.03 | 38.25 | 839.15 |
| 1181.00 | 78.00 | 1.00 | 80.00 | 0.11 | 18.82 | 0.03 | 38.33 | 839.15 |
| 1182.00 | 74.00 | 1.00 | 76.00 | 0.10 | 18.84 | 0.03 | 38.41 | 839.18 |
| 1183.00 | 71.00 | 1.00 | 72.50 | 0.10 | 18.84 | 0.03 | 38.48 | 839.18 |
| 1184.00 | 68.00 | 1.00 | 69.50 | 0.10 | 18.86 | 0.03 | 38.55 | 839.20 |
| 1185.00 | 65.00 | 1.00 | 66.50 | 0.09 | 18.86 | 0.03 | 38.62 | 839.20 |
| 1186.00 | 63.00 | 1.00 | 64.00 | 0.09 | 18.86 | 0.03 | 38.68 | 839.20 |
| 1187.00 | 60.00 | 1.00 | 61.50 | 0.08 | 18.88 | 0.03 | 38.74 | 839.22 |
| 1188.00 | 58.00 | 1.00 | 59.00 | 0.08 | 18.88 | 0.03 | 38.79 | 839.22 |
| 1189.00 | 55.00 | 1.00 | 56.50 | 0.08 | 18.88 | 0.03 | 38.85 | 839.22 |
| 1190.00 | 53.00 | 1.00 | 54.00 | 0.07 | 18.89 | 0.03 | 38.89 | 839.24 |
| 1191.00 | 52.00 | 1.00 | 52.50 | 0.07 | 18.89 | 0.03 | 38.94 | 839.24 |
| 1192.00 | 50.00 | 1.00 | 51.00 | 0.07 | 18.89 | 0.03 | 38.98 | 839.24 |
| 1193.00 | 49.00 | 1.00 | 49.50 | 0.07 | 18.89 | 0.03 | 39.03 | 839.24 |
| 1194.00 | 48.00 | 1.00 | 48.50 | 0.07 | 18.91 | 0.03 | 39.07 | 839.26 |
| 1195.00 | 47.00 | 1.00 | 47.50 | 0.07 | 18.91 | 0.03 | 39.11 | 839.26 |
| 1196.00 | 46.00 | 1.00 | 46.50 | 0.06 | 18.91 | 0.03 | 39.14 | 839.26 |
| 1197.00 | 45.00 | 1.00 | 45.50 | 0.06 | 18.91 | 0.03 | 39.18 | 839.26 |
| 1198.00 | 44.00 | 1.00 | 44.50 | 0.06 | 18.91 | 0.03 | 39.22 | 839.26 |
| 1199.00 | 43.00 | 1.00 | 43.50 | 0.06 | 18.93 | 0.03 | 39.25 | 839.29 |
| 1200.00 | 42.00 | 1.00 | 42.50 | 0.06 | 18.93 | 0.03 | 39.28 | 839.29 |
| 1201.00 | 41.00 | 1.00 | 41.50 | 0.06 | 18.93 | 0.03 | 39.31 | 839.29 |
| 1202.00 | 40.00 | 1.00 | 40.50 | 0.06 | 18.93 | 0.03 | 39.34 | 839.29 |
| 1203.00 | 40.00 | 1.00 | 40.00 | 0.06 | 18.93 | 0.03 | 39.37 | 839.29 |
| 1204.00 | 39.00 | 1.00 | 39.50 | 0.05 | 18.93 | 0.03 | 39.40 | 839.29 |
| 1205.00 | 39.00 | 1.00 | 39.00 | 0.05 | 18.95 | 0.03 | 39.43 | 839.31 |
| 1206.00 | 38.00 | 1.00 | 38.50 | 0.05 | 18.95 | 0.03 | 39.46 | 839.31 |
| 1207.00 | 38.00 | 1.00 | 38.00 | 0.05 | 18.95 | 0.03 | 39.48 | 839.31 |
| 1208.00 | 37.00 | 1.00 | 37.50 | 0.05 | 18.95 | 0.03 | 39.51 | 839.31 |
| 1209.00 | 37.00 | 1.00 | 37.00 | 0.05 | 18.95 | 0.03 | 39.53 | 839.31 |
| 1210.00 | 36.00 | 1.00 | 36.50 | 0.05 | 18.95 | 0.03 | 39.56 | 839.31 |
| 1211.00 | 36.00 | 1.00 | 36.00 | 0.05 | 18.95 | 0.03 | 39.58 | 839.31 |
| 1212.00 | 36.00 | 1.00 | 36.00 | 0.05 | 18.96 | 0.03 | 39.60 | 839.33 |
| 1213.00 | 35.00 | 1.00 | 35.50 | 0.05 | 18.96 | 0.03 | 39.63 | 839.33 |
| 1214.00 | 34.00 | 1.00 | 34.50 | 0.05 | 18.96 | 0.03 | 39.65 | 839.33 |
| 1215.00 | 33.00 | 1.00 | 33.50 | 0.05 | 18.96 | 0.03 | 39.67 | 839.33 |
| 1216.00 | 32.00 | 1.00 | 32.50 | 0.04 | 18.96 | 0.03 | 39.69 | 839.33 |
| 1217.00 | 31.00 | 1.00 | 31.50 | 0.04 | 18.96 | 0.03 | 39.70 | 839.33 |
| 1218.00 | 29.00 | 1.00 | 30.00 | 0.04 | 18.96 | 0.03 | 39.72 | 839.33 |
| 1219.00 | 28.00 | 1.00 | 28.50 | 0.04 | 18.96 | 0.03 | 39.73 | 839.33 |
| 1220.00 | 27.00 | 1.00 | 27.50 | 0.04 | 18.96 | 0.03 | 39.74 | 839.33 |
| 1221.00 | 26.00 | 1.00 | 26.50 | 0.04 | 18.96 | 0.03 | 39.75 | 839.33 |
| 1222.00 | 25.00 | 1.00 | 25.50 | 0.04 | 18.96 | 0.03 | 39.76 | 839.33 |
| 1223.00 | 24.00 | 1.00 | 24.50 | 0.03 | 18.98 | 0.03 | 39.77 | 839.35 |
| 1224.00 | 22.00 | 1.00 | 23.00 | 0.03 | 18.98 | 0.03 | 39.78 | 839.35 |
| 1225.00 | 21.00 | 1.00 | 21.50 | 0.03 | 18.98 | 0.03 | 39.78 | 839.35 |
| 1226.00 | 20.00 | 1.00 | 20.50 | 0.03 | 18.98 | 0.03 | 39.78 | 839.35 |
| 1227.00 | 19.00 | 1.00 | 19.50 | 0.03 | 18.98 | 0.03 | 39.78 | 839.35 |
| 1228.00 | 18.00 | 1.00 | 18.50 | 0.03 | 18.98 | 0.03 | 39.78 | 839.35 |
| 1229.00 | 17.00 | 1.00 | 17.50 | 0.02 | 18.98 | 0.03 | 39.78 | 839.35 |
| 1230.00 | 17.00 | 1.00 | 17.00 | 0.02 | 18.98 | 0.03 | 39.78 | 839.35 |
| 1231.00 | 16.00 | 1.00 | 16.50 | 0.02 | 18.98 | 0.03 | 39.77 | 839.35 |

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|---|---|---|---|---|---|---|---|---|
| 1232.00 | 16.00 | 1.00 | 16.00 | 0.02 | 18.98 | 0.03 | 39.77 | 839.35 |
| 1233.00 | 15.00 | 1.00 | 15.50 | 0.02 | 18.98 | 0.03 | 39.76 | 839.35 |
| 1234.00 | 15.00 | 1.00 | 15.00 | 0.02 | 18.96 | 0.03 | 39.76 | 839.33 |
| 1235.00 | 15.00 | 1.00 | 15.00 | 0.02 | 18.96 | 0.03 | 39.75 | 839.33 |
| 1236.00 | 15.00 | 1.00 | 15.00 | 0.02 | 18.96 | 0.03 | 39.75 | 839.33 |
| 1237.00 | 15.00 | 1.00 | 15.00 | 0.02 | 18.96 | 0.03 | 39.74 | 839.33 |
| 1238.00 | 14.00 | 1.00 | 14.50 | 0.02 | 18.96 | 0.03 | 39.74 | 839.33 |
| 1239.00 | 14.00 | 1.00 | 14.00 | 0.02 | 18.96 | 0.03 | 39.73 | 839.33 |
| 1240.00 | 14.00 | 1.00 | 14.00 | 0.02 | 18.96 | 0.03 | 39.72 | 839.33 |
| 1241.00 | 14.00 | 1.00 | 14.00 | 0.02 | 18.96 | 0.03 | 39.72 | 839.33 |
| 1242.00 | 14.00 | 1.00 | 14.00 | 0.02 | 18.96 | 0.03 | 39.71 | 839.33 |
| 1243.00 | 14.00 | 1.00 | 14.00 | 0.02 | 18.96 | 0.03 | 39.70 | 839.33 |
| 1244.00 | 14.00 | 1.00 | 14.00 | 0.02 | 18.96 | 0.03 | 39.70 | 839.33 |
| 1245.00 | 14.00 | 1.00 | 14.00 | 0.02 | 18.96 | 0.03 | 39.69 | 839.33 |
| 1246.00 | 13.00 | 1.00 | 13.50 | 0.02 | 18.96 | 0.03 | 39.68 | 839.33 |
| 1247.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.67 | 839.33 |
| 1248.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.66 | 839.33 |
| 1249.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.66 | 839.33 |
| 1250.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.65 | 839.33 |
| 1251.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.64 | 839.33 |
| 1252.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.63 | 839.33 |
| 1253.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.62 | 839.33 |
| 1254.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.62 | 839.33 |
| 1255.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.61 | 839.33 |
| 1256.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.60 | 839.33 |
| 1257.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.96 | 0.03 | 39.59 | 839.33 |
| 1258.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.95 | 0.03 | 39.58 | 839.31 |
| 1259.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.95 | 0.03 | 39.57 | 839.31 |
| 1260.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.95 | 0.03 | 39.57 | 839.31 |
| 1261.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.95 | 0.03 | 39.56 | 839.31 |
| 1262.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.95 | 0.03 | 39.55 | 839.31 |
| 1263.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.95 | 0.03 | 39.54 | 839.31 |
| 1264.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.95 | 0.03 | 39.53 | 839.31 |
| 1265.00 | 13.00 | 1.00 | 13.00 | 0.02 | 18.95 | 0.03 | 39.53 | 839.31 |
| 1266.00 | 12.00 | 1.00 | 12.50 | 0.02 | 18.95 | 0.03 | 39.52 | 839.31 |
| 1267.00 | 12.00 | 1.00 | 12.00 | 0.02 | 18.95 | 0.03 | 39.51 | 839.31 |
| 1268.00 | 12.00 | 1.00 | 12.00 | 0.02 | 18.95 | 0.03 | 39.50 | 839.31 |
| 1269.00 | 12.00 | 1.00 | 12.00 | 0.02 | 18.95 | 0.03 | 39.49 | 839.31 |
| 1270.00 | 12.00 | 1.00 | 12.00 | 0.02 | 18.95 | 0.03 | 39.48 | 839.31 |
| 1271.00 | 12.00 | 1.00 | 12.00 | 0.02 | 18.95 | 0.03 | 39.47 | 839.31 |
| 1272.00 | 12.00 | 1.00 | 12.00 | 0.02 | 18.95 | 0.03 | 39.46 | 839.31 |
| 1273.00 | 12.00 | 1.00 | 12.00 | 0.02 | 18.95 | 0.03 | 39.45 | 839.31 |
| 1274.00 | 11.00 | 1.00 | 11.50 | 0.02 | 18.95 | 0.03 | 39.44 | 839.31 |
| 1275.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.95 | 0.03 | 39.43 | 839.31 |
| 1276.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.95 | 0.03 | 39.42 | 839.31 |
| 1277.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.41 | 839.29 |
| 1278.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.40 | 839.29 |
| 1279.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.38 | 839.29 |
| 1280.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.37 | 839.29 |
| 1281.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.36 | 839.29 |
| 1282.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.35 | 839.29 |
| 1283.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.34 | 839.29 |
| 1284.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.33 | 839.29 |
| 1285.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.32 | 839.29 |
| 1286.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.31 | 839.29 |
| 1287.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.30 | 839.29 |
| 1288.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.29 | 839.29 |
| 1289.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.28 | 839.29 |
| 1290.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.26 | 839.29 |
| 1291.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.25 | 839.29 |
| 1292.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.24 | 839.29 |
| 1293.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.93 | 0.03 | 39.23 | 839.29 |
| 1294.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.91 | 0.03 | 39.22 | 839.26 |
| 1295.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.91 | 0.03 | 39.21 | 839.26 |
| 1296.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.91 | 0.03 | 39.20 | 839.26 |
| 1297.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.91 | 0.03 | 39.19 | 839.26 |

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|---|---|---|---|---|---|---|---|---|
| 1298.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.91 | 0.03 | 39.18 | 839.26 |
| 1299.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.91 | 0.03 | 39.17 | 839.26 |
| 1300.00 | 11.00 | 1.00 | 11.00 | 0.02 | 18.91 | 0.03 | 39.16 | 839.26 |
| 1310.00 | 9.00 | 10.00 | 10.00 | 0.14 | 18.89 | 0.26 | 39.03 | 839.24 |
| 1320.00 | 8.00 | 10.00 | 8.50 | 0.12 | 18.89 | 0.26 | 38.89 | 839.24 |
| 1330.00 | 8.00 | 10.00 | 8.00 | 0.11 | 18.88 | 0.26 | 38.74 | 839.22 |
| 1340.00 | 8.00 | 10.00 | 8.00 | 0.11 | 18.86 | 0.26 | 38.59 | 839.20 |
| 1350.00 | 6.00 | 10.00 | 7.00 | 0.10 | 18.84 | 0.26 | 38.43 | 839.18 |
| 1360.00 | 5.00 | 10.00 | 5.50 | 0.08 | 18.82 | 0.26 | 38.24 | 839.15 |
| 1370.00 | 5.00 | 10.00 | 5.00 | 0.07 | 18.81 | 0.26 | 38.05 | 839.13 |
| 1380.00 | 5.00 | 10.00 | 5.00 | 0.07 | 18.79 | 0.26 | 37.86 | 839.11 |
| 1390.00 | 5.00 | 10.00 | 5.00 | 0.07 | 18.77 | 0.26 | 37.67 | 839.09 |
| 1400.00 | 5.00 | 10.00 | 5.00 | 0.07 | 18.75 | 0.26 | 37.48 | 839.07 |
| 1420.00 | 4.00 | 20.00 | 4.50 | 0.12 | 18.70 | 0.52 | 37.09 | 839.00 |
| 1440.00 | 3.00 | 20.00 | 3.50 | 0.10 | 18.65 | 0.51 | 36.68 | 838.96 |
| 1460.00 | 2.00 | 20.00 | 2.50 | 0.07 | 18.57 | 0.51 | 36.23 | 838.89 |
| 1500.00 | 2.00 | 40.00 | 2.00 | 0.11 | 18.41 | 1.01 | 35.33 | 838.76 |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

## BASIN#2
## 10-YEAR STORM

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 2.00 | 100.00 | 1.00 | 0.14 | 0.22 | 0.03 | 0.11 | 816.07 |
| 200.00 | 2.00 | 100.00 | 2.00 | 0.28 | 1.48 | 0.20 | 0.18 | 816.48 |
| 300.00 | 2.00 | 100.00 | 2.00 | 0.28 | 1.82 | 0.25 | 0.20 | 816.59 |
| 400.00 | 2.00 | 100.00 | 2.00 | 0.28 | 1.95 | 0.27 | 0.21 | 816.63 |
| 500.00 | 2.00 | 100.00 | 2.00 | 0.28 | 2.00 | 0.27 | 0.21 | 816.64 |
| 600.00 | 3.00 | 100.00 | 2.50 | 0.34 | 2.34 | 0.32 | 0.23 | 816.76 |
| 700.00 | 3.00 | 100.00 | 3.00 | 0.41 | 2.82 | 0.39 | 0.26 | 816.91 |
| 800.00 | 4.00 | 100.00 | 3.50 | 0.48 | 3.19 | 0.44 | 0.30 | 817.04 |
| 900.00 | 5.00 | 100.00 | 4.50 | 0.62 | 3.59 | 0.49 | 0.43 | 817.20 |
| 1000.00 | 18.00 | 100.00 | 11.50 | 1.58 | 5.70 | 0.79 | 1.23 | 818.10 |
| 1050.00 | 27.00 | 50.00 | 22.50 | 1.55 | 6.96 | 0.48 | 2.30 | 818.73 |
| 1100.00 | 34.00 | 50.00 | 30.50 | 2.10 | 8.28 | 0.57 | 3.83 | 819.39 |
| 1110.00 | 47.00 | 10.00 | 40.50 | 0.56 | 8.61 | 0.12 | 4.27 | 819.56 |
| 1120.00 | 66.00 | 10.00 | 56.50 | 0.78 | 9.09 | 0.13 | 4.92 | 819.79 |
| 1130.00 | 74.00 | 10.00 | 70.00 | 0.96 | 9.59 | 0.13 | 5.75 | 820.06 |
| 1131.00 | 75.00 | 1.00 | 74.50 | 0.10 | 9.63 | 0.01 | 5.84 | 820.09 |
| 1132.00 | 77.00 | 1.00 | 76.00 | 0.10 | 9.67 | 0.01 | 5.93 | 820.12 |
| 1133.00 | 79.00 | 1.00 | 78.00 | 0.11 | 9.72 | 0.01 | 6.03 | 820.14 |
| 1134.00 | 81.00 | 1.00 | 80.00 | 0.11 | 9.74 | 0.01 | 6.12 | 820.16 |
| 1135.00 | 84.00 | 1.00 | 82.50 | 0.11 | 9.78 | 0.01 | 6.22 | 820.19 |
| 1136.00 | 87.00 | 1.00 | 85.50 | 0.12 | 9.82 | 0.01 | 6.33 | 820.21 |
| 1137.00 | 90.00 | 1.00 | 88.50 | 0.12 | 9.86 | 0.01 | 6.43 | 820.24 |
| 1138.00 | 94.00 | 1.00 | 92.00 | 0.13 | 9.91 | 0.01 | 6.55 | 820.27 |
| 1139.00 | 99.00 | 1.00 | 96.50 | 0.13 | 9.95 | 0.01 | 6.67 | 820.30 |
| 1140.00 | 103.00 | 1.00 | 101.00 | 0.14 | 10.01 | 0.01 | 6.79 | 820.34 |
| 1141.00 | 108.00 | 1.00 | 105.50 | 0.15 | 10.05 | 0.01 | 6.92 | 820.37 |
| 1142.00 | 114.00 | 1.00 | 111.00 | 0.15 | 10.11 | 0.01 | 7.06 | 820.41 |
| 1143.00 | 119.00 | 1.00 | 116.50 | 0.16 | 10.16 | 0.01 | 7.21 | 820.44 |
| 1144.00 | 125.00 | 1.00 | 122.00 | 0.17 | 10.22 | 0.01 | 7.36 | 820.48 |
| 1145.00 | 131.00 | 1.00 | 128.00 | 0.18 | 10.28 | 0.01 | 7.53 | 820.52 |
| 1146.00 | 137.00 | 1.00 | 134.00 | 0.18 | 10.35 | 0.01 | 7.70 | 820.56 |
| 1147.00 | 144.00 | 1.00 | 140.50 | 0.19 | 10.43 | 0.01 | 7.87 | 820.62 |
| 1148.00 | 153.00 | 1.00 | 148.50 | 0.20 | 10.49 | 0.01 | 8.06 | 820.66 |
| 1149.00 | 165.00 | 1.00 | 159.00 | 0.22 | 10.58 | 0.01 | 8.27 | 820.72 |
| 1150.00 | 181.00 | 1.00 | 173.00 | 0.24 | 10.66 | 0.01 | 8.49 | 820.77 |
| 1151.00 | 207.00 | 1.00 | 194.00 | 0.27 | 10.77 | 0.01 | 8.75 | 820.84 |
| 1152.00 | 248.00 | 1.00 | 227.50 | 0.31 | 10.87 | 0.01 | 9.04 | 820.91 |
| 1153.00 | 292.00 | 1.00 | 270.00 | 0.37 | 11.02 | 0.02 | 9.40 | 821.01 |
| 1154.00 | 326.00 | 1.00 | 309.00 | 0.43 | 11.14 | 0.02 | 9.81 | 821.10 |
| 1155.00 | 350.00 | 1.00 | 338.00 | 0.47 | 11.27 | 0.02 | 10.26 | 821.18 |
| 1156.00 | 363.00 | 1.00 | 356.50 | 0.49 | 11.40 | 0.02 | 10.74 | 821.26 |
| 1157.00 | 369.00 | 1.00 | 366.00 | 0.50 | 11.54 | 0.02 | 11.22 | 821.36 |
| 1158.00 | 370.00 | 1.00 | 369.50 | 0.51 | 11.69 | 0.02 | 11.72 | 821.46 |
| 1159.00 | 367.00 | 1.00 | 368.50 | 0.51 | 11.84 | 0.02 | 12.21 | 821.56 |
| 1160.00 | 361.00 | 1.00 | 364.00 | 0.50 | 11.98 | 0.02 | 12.69 | 821.66 |
| 1161.00 | 350.00 | 1.00 | 355.50 | 0.49 | 12.11 | 0.02 | 13.17 | 821.74 |
| 1162.00 | 332.00 | 1.00 | 341.00 | 0.47 | 12.24 | 0.02 | 13.62 | 821.82 |
| 1163.00 | 309.00 | 1.00 | 320.50 | 0.44 | 12.36 | 0.02 | 14.04 | 821.91 |
| 1164.00 | 288.00 | 1.00 | 298.50 | 0.41 | 12.49 | 0.02 | 14.44 | 821.99 |
| 1165.00 | 268.00 | 1.00 | 278.00 | 0.38 | 12.57 | 0.02 | 14.80 | 822.05 |

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|---|---|---|---|---|---|---|---|---|
| 1166.00 | 247.00 | 1.00 | 257.50 | 0.35 | 12.66 | 0.02 | 15.14 | 822.10 |
| 1167.00 | 229.00 | 1.00 | 238.00 | 0.33 | 12.72 | 0.02 | 15.45 | 822.15 |
| 1168.00 | 216.00 | 1.00 | 222.50 | 0.31 | 12.78 | 0.02 | 15.74 | 822.19 |
| 1169.00 | 201.00 | 1.00 | 208.50 | 0.29 | 12.84 | 0.02 | 16.01 | 822.23 |
| 1170.00 | 179.00 | 1.00 | 190.00 | 0.26 | 12.91 | 0.02 | 16.25 | 822.27 |
| 1171.00 | 145.00 | 1.00 | 162.00 | 0.22 | 12.95 | 0.02 | 16.46 | 822.30 |
| 1172.00 | 113.00 | 1.00 | 129.00 | 0.18 | 12.99 | 0.02 | 16.62 | 822.33 |
| 1173.00 | 91.00 | 1.00 | 102.00 | 0.14 | 13.01 | 0.02 | 16.74 | 822.34 |
| 1174.00 | 78.00 | 1.00 | 84.50 | 0.12 | 13.03 | 0.02 | 16.84 | 822.36 |
| 1175.00 | 69.00 | 1.00 | 73.50 | 0.10 | 13.05 | 0.02 | 16.92 | 822.37 |
| 1176.00 | 62.00 | 1.00 | 65.50 | 0.09 | 13.08 | 0.02 | 16.99 | 822.38 |
| 1177.00 | 56.00 | 1.00 | 59.00 | 0.08 | 13.08 | 0.02 | 17.06 | 822.38 |
| 1178.00 | 52.00 | 1.00 | 54.00 | 0.07 | 13.10 | 0.02 | 17.11 | 822.40 |
| 1179.00 | 47.00 | 1.00 | 49.50 | 0.07 | 13.12 | 0.02 | 17.16 | 822.41 |
| 1180.00 | 44.00 | 1.00 | 45.50 | 0.06 | 13.12 | 0.02 | 17.21 | 822.41 |
| 1181.00 | 41.00 | 1.00 | 42.50 | 0.06 | 13.12 | 0.02 | 17.25 | 822.41 |
| 1182.00 | 39.00 | 1.00 | 40.00 | 0.06 | 13.14 | 0.02 | 17.29 | 822.43 |
| 1183.00 | 37.00 | 1.00 | 38.00 | 0.05 | 13.14 | 0.02 | 17.32 | 822.43 |
| 1184.00 | 35.00 | 1.00 | 36.00 | 0.05 | 13.16 | 0.02 | 17.35 | 822.44 |
| 1185.00 | 34.00 | 1.00 | 34.50 | 0.05 | 13.16 | 0.02 | 17.38 | 822.44 |
| 1186.00 | 32.00 | 1.00 | 33.00 | 0.05 | 13.16 | 0.02 | 17.41 | 822.44 |
| 1187.00 | 31.00 | 1.00 | 31.50 | 0.04 | 13.16 | 0.02 | 17.43 | 822.44 |
| 1188.00 | 29.00 | 1.00 | 30.00 | 0.04 | 13.18 | 0.02 | 17.46 | 822.45 |
| 1189.00 | 28.00 | 1.00 | 28.50 | 0.04 | 13.18 | 0.02 | 17.48 | 822.45 |
| 1190.00 | 27.00 | 1.00 | 27.50 | 0.04 | 13.18 | 0.02 | 17.50 | 822.45 |
| 1191.00 | 26.00 | 1.00 | 26.50 | 0.04 | 13.18 | 0.02 | 17.52 | 822.45 |
| 1192.00 | 25.00 | 1.00 | 25.50 | 0.04 | 13.20 | 0.02 | 17.53 | 822.47 |
| 1193.00 | 24.00 | 1.00 | 24.50 | 0.03 | 13.20 | 0.02 | 17.55 | 822.47 |
| 1194.00 | 24.00 | 1.00 | 24.00 | 0.03 | 13.20 | 0.02 | 17.56 | 822.47 |
| 1195.00 | 23.00 | 1.00 | 23.50 | 0.03 | 13.20 | 0.02 | 17.58 | 822.47 |
| 1196.00 | 23.00 | 1.00 | 23.00 | 0.03 | 13.20 | 0.02 | 17.59 | 822.47 |
| 1197.00 | 22.00 | 1.00 | 22.50 | 0.03 | 13.20 | 0.02 | 17.60 | 822.47 |
| 1198.00 | 22.00 | 1.00 | 22.00 | 0.03 | 13.20 | 0.02 | 17.62 | 822.47 |
| 1199.00 | 21.00 | 1.00 | 21.50 | 0.03 | 13.22 | 0.02 | 17.63 | 822.48 |
| 1200.00 | 21.00 | 1.00 | 21.00 | 0.03 | 13.22 | 0.02 | 17.64 | 822.48 |
| 1201.00 | 21.00 | 1.00 | 21.00 | 0.03 | 13.22 | 0.02 | 17.65 | 822.48 |
| 1202.00 | 21.00 | 1.00 | 21.00 | 0.03 | 13.22 | 0.02 | 17.66 | 822.48 |
| 1203.00 | 20.00 | 1.00 | 20.50 | 0.03 | 13.22 | 0.02 | 17.67 | 822.48 |
| 1204.00 | 20.00 | 1.00 | 20.00 | 0.03 | 13.22 | 0.02 | 17.68 | 822.48 |
| 1205.00 | 20.00 | 1.00 | 20.00 | 0.03 | 13.22 | 0.02 | 17.69 | 822.48 |
| 1206.00 | 20.00 | 1.00 | 20.00 | 0.03 | 13.22 | 0.02 | 17.70 | 822.48 |
| 1207.00 | 20.00 | 1.00 | 20.00 | 0.03 | 13.22 | 0.02 | 17.71 | 822.48 |
| 1208.00 | 20.00 | 1.00 | 20.00 | 0.03 | 13.24 | 0.02 | 17.72 | 822.50 |
| 1209.00 | 20.00 | 1.00 | 20.00 | 0.03 | 13.24 | 0.02 | 17.73 | 822.50 |
| 1210.00 | 20.00 | 1.00 | 20.00 | 0.03 | 13.24 | 0.02 | 17.74 | 822.50 |
| 1211.00 | 19.00 | 1.00 | 19.50 | 0.03 | 13.24 | 0.02 | 17.74 | 822.50 |
| 1212.00 | 19.00 | 1.00 | 19.00 | 0.03 | 13.24 | 0.02 | 17.75 | 822.50 |
| 1213.00 | 19.00 | 1.00 | 19.00 | 0.03 | 13.24 | 0.02 | 17.76 | 822.50 |
| 1214.00 | 18.00 | 1.00 | 18.50 | 0.03 | 13.24 | 0.02 | 17.77 | 822.50 |
| 1215.00 | 18.00 | 1.00 | 18.00 | 0.02 | 13.24 | 0.02 | 17.77 | 822.50 |
| 1216.00 | 17.00 | 1.00 | 17.50 | 0.02 | 13.24 | 0.02 | 17.78 | 822.50 |
| 1217.00 | 16.00 | 1.00 | 16.50 | 0.02 | 13.24 | 0.02 | 17.78 | 822.50 |
| 1218.00 | 16.00 | 1.00 | 16.00 | 0.02 | 13.24 | 0.02 | 17.79 | 822.50 |
| 1219.00 | 15.00 | 1.00 | 15.50 | 0.02 | 13.24 | 0.02 | 17.79 | 822.50 |
| 1220.00 | 14.00 | 1.00 | 14.50 | 0.02 | 13.24 | 0.02 | 17.79 | 822.50 |
| 1221.00 | 13.00 | 1.00 | 13.50 | 0.02 | 13.24 | 0.02 | 17.79 | 822.50 |
| 1222.00 | 12.00 | 1.00 | 12.50 | 0.02 | 13.24 | 0.02 | 17.79 | 822.50 |
| 1223.00 | 11.00 | 1.00 | 11.50 | 0.02 | 13.24 | 0.02 | 17.79 | 822.50 |
| 1224.00 | 10.00 | 1.00 | 10.50 | 0.01 | 13.24 | 0.02 | 17.79 | 822.50 |
| 1225.00 | 10.00 | 1.00 | 10.00 | 0.01 | 13.24 | 0.02 | 17.78 | 822.50 |
| 1226.00 | 9.00 | 1.00 | 9.50 | 0.01 | 13.24 | 0.02 | 17.78 | 822.50 |
| 1227.00 | 8.00 | 1.00 | 8.50 | 0.01 | 13.24 | 0.02 | 17.77 | 822.50 |
| 1228.00 | 8.00 | 1.00 | 8.00 | 0.01 | 13.24 | 0.02 | 17.76 | 822.50 |
| 1229.00 | 7.00 | 1.00 | 7.50 | 0.01 | 13.24 | 0.02 | 17.75 | 822.50 |
| 1230.00 | 7.00 | 1.00 | 7.00 | 0.01 | 13.24 | 0.02 | 17.75 | 822.50 |
| 1231.00 | 6.00 | 1.00 | 6.50 | 0.01 | 13.24 | 0.02 | 17.74 | 822.50 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 6.00 | 1.00 | 6.00 | 0.01 | 13.24 | 0.02 | 17.73 | 822.50 |
| 1233.00 | 6.00 | 1.00 | 6.00 | 0.01 | 13.24 | 0.02 | 17.72 | 822.50 |
| 1234.00 | 5.00 | 1.00 | 5.50 | 0.01 | 13.22 | 0.02 | 17.71 | 822.48 |
| 1235.00 | 5.00 | 1.00 | 5.00 | 0.01 | 13.22 | 0.02 | 17.69 | 822.48 |
| 1236.00 | 5.00 | 1.00 | 5.00 | 0.01 | 13.22 | 0.02 | 17.68 | 822.48 |
| 1237.00 | 5.00 | 1.00 | 5.00 | 0.01 | 13.22 | 0.02 | 17.67 | 822.48 |
| 1238.00 | 5.00 | 1.00 | 5.00 | 0.01 | 13.22 | 0.02 | 17.66 | 822.48 |
| 1239.00 | 5.00 | 1.00 | 5.00 | 0.01 | 13.22 | 0.02 | 17.65 | 822.48 |
| 1240.00 | 5.00 | 1.00 | 5.00 | 0.01 | 13.22 | 0.02 | 17.64 | 822.48 |
| 1241.00 | 4.00 | 1.00 | 4.50 | 0.01 | 13.22 | 0.02 | 17.63 | 822.48 |
| 1242.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.20 | 0.02 | 17.61 | 822.47 |
| 1243.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.20 | 0.02 | 17.60 | 822.47 |
| 1244.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.20 | 0.02 | 17.59 | 822.47 |
| 1245.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.20 | 0.02 | 17.58 | 822.47 |
| 1246.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.20 | 0.02 | 17.56 | 822.47 |
| 1247.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.20 | 0.02 | 17.55 | 822.47 |
| 1248.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.20 | 0.02 | 17.54 | 822.47 |
| 1249.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.18 | 0.02 | 17.52 | 822.45 |
| 1250.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.18 | 0.02 | 17.51 | 822.45 |
| 1251.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.18 | 0.02 | 17.50 | 822.45 |
| 1252.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.18 | 0.02 | 17.49 | 822.45 |
| 1253.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.18 | 0.02 | 17.47 | 822.45 |
| 1254.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.18 | 0.02 | 17.46 | 822.45 |
| 1255.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.18 | 0.02 | 17.45 | 822.45 |
| 1256.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.16 | 0.02 | 17.44 | 822.44 |
| 1257.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.16 | 0.02 | 17.42 | 822.44 |
| 1258.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.16 | 0.02 | 17.41 | 822.44 |
| 1259.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.16 | 0.02 | 17.40 | 822.44 |
| 1260.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.16 | 0.02 | 17.39 | 822.44 |
| 1261.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.16 | 0.02 | 17.37 | 822.44 |
| 1262.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.16 | 0.02 | 17.36 | 822.44 |
| 1263.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.16 | 0.02 | 17.35 | 822.44 |
| 1264.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.14 | 0.02 | 17.34 | 822.43 |
| 1265.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.14 | 0.02 | 17.32 | 822.43 |
| 1266.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.14 | 0.02 | 17.31 | 822.43 |
| 1267.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.14 | 0.02 | 17.30 | 822.43 |
| 1268.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.14 | 0.02 | 17.28 | 822.43 |
| 1269.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.14 | 0.02 | 17.27 | 822.43 |
| 1270.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.14 | 0.02 | 17.26 | 822.43 |
| 1271.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.12 | 0.02 | 17.25 | 822.41 |
| 1272.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.12 | 0.02 | 17.23 | 822.41 |
| 1273.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.12 | 0.02 | 17.22 | 822.41 |
| 1274.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.12 | 0.02 | 17.21 | 822.41 |
| 1275.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.12 | 0.02 | 17.20 | 822.41 |
| 1276.00 | 4.00 | 1.00 | 4.00 | 0.01 | 13.12 | 0.02 | 17.18 | 822.41 |
| 1277.00 | 3.00 | 1.00 | 3.50 | 0.00 | 13.12 | 0.02 | 17.17 | 822.41 |
| 1278.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.10 | 0.02 | 17.16 | 822.40 |
| 1279.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.10 | 0.02 | 17.14 | 822.40 |
| 1280.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.10 | 0.02 | 17.13 | 822.40 |
| 1281.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.10 | 0.02 | 17.12 | 822.40 |
| 1282.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.10 | 0.02 | 17.10 | 822.40 |
| 1283.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.10 | 0.02 | 17.09 | 822.40 |
| 1284.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.10 | 0.02 | 17.07 | 822.40 |
| 1285.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.08 | 0.02 | 17.06 | 822.38 |
| 1286.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.08 | 0.02 | 17.05 | 822.38 |
| 1287.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.08 | 0.02 | 17.03 | 822.38 |
| 1288.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.08 | 0.02 | 17.02 | 822.38 |
| 1289.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.08 | 0.02 | 17.00 | 822.38 |
| 1290.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.08 | 0.02 | 16.99 | 822.38 |
| 1291.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.08 | 0.02 | 16.98 | 822.38 |
| 1292.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.05 | 0.02 | 16.96 | 822.37 |
| 1293.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.05 | 0.02 | 16.95 | 822.37 |
| 1294.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.05 | 0.02 | 16.93 | 822.37 |
| 1295.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.05 | 0.02 | 16.92 | 822.37 |
| 1296.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.05 | 0.02 | 16.91 | 822.37 |
| 1297.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.05 | 0.02 | 16.89 | 822.37 |

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|---|---|---|---|---|---|---|---|---|
| 1298.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.03 | 0.02 | 16.88 | 822.36 |
| 1299.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.03 | 0.02 | 16.87 | 822.36 |
| 1300.00 | 3.00 | 1.00 | 3.00 | 0.00 | 13.03 | 0.02 | 16.85 | 822.36 |
| 1310.00 | 3.00 | 10.00 | 3.00 | 0.04 | 13.01 | 0.18 | 16.71 | 822.34 |
| 1320.00 | 3.00 | 10.00 | 3.00 | 0.04 | 12.97 | 0.18 | 16.58 | 822.31 |
| 1330.00 | 3.00 | 10.00 | 3.00 | 0.04 | 12.95 | 0.18 | 16.44 | 822.30 |
| 1340.00 | 3.00 | 10.00 | 3.00 | 0.04 | 12.91 | 0.18 | 16.30 | 822.27 |
| 1350.00 | 2.00 | 10.00 | 2.50 | 0.03 | 12.89 | 0.18 | 16.16 | 822.26 |
| 1360.00 | 2.00 | 10.00 | 2.00 | 0.03 | 12.84 | 0.18 | 16.01 | 822.23 |
| 1370.00 | 2.00 | 10.00 | 2.00 | 0.03 | 12.80 | 0.18 | 15.86 | 822.20 |
| 1380.00 | 2.00 | 10.00 | 2.00 | 0.03 | 12.78 | 0.18 | 15.71 | 822.19 |
| 1390.00 | 2.00 | 10.00 | 2.00 | 0.03 | 12.74 | 0.18 | 15.57 | 822.16 |
| 1400.00 | 2.00 | 10.00 | 2.00 | 0.03 | 12.72 | 0.18 | 15.42 | 822.15 |
| 1420.00 | 2.00 | 20.00 | 2.00 | 0.06 | 12.64 | 0.35 | 15.12 | 822.09 |
| 1440.00 | 2.00 | 20.00 | 2.00 | 0.06 | 12.57 | 0.35 | 14.83 | 822.05 |
| 1460.00 | 1.00 | 20.00 | 1.50 | 0.04 | 12.51 | 0.34 | 14.53 | 822.01 |
| 1500.00 | 1.00 | 40.00 | 1.00 | 0.06 | 12.32 | 0.68 | 13.91 | 821.88 |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

**BASIN #3**

**10-YEAR STORM**

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 10.00 | 100.00 | 5.00 | 0.69 | 4.32 | 0.59 | 0.09 | 724.14 |
| 200.00 | 12.00 | 100.00 | 11.00 | 1.52 | 10.56 | 1.45 | 0.15 | 724.35 |
| 300.00 | 17.00 | 100.00 | 14.50 | 2.00 | 14.40 | 1.98 | 0.17 | 724.48 |
| 400.00 | 21.00 | 100.00 | 19.00 | 2.62 | 18.72 | 2.58 | 0.21 | 724.62 |
| 500.00 | 26.00 | 100.00 | 23.50 | 3.24 | 23.52 | 3.24 | 0.20 | 724.78 |
| 600.00 | 31.00 | 100.00 | 28.50 | 3.93 | 28.32 | 3.90 | 0.23 | 724.94 |
| 700.00 | 39.00 | 100.00 | 35.00 | 4.82 | 34.68 | 4.78 | 0.27 | 725.10 |
| 800.00 | 49.00 | 100.00 | 44.00 | 6.06 | 44.04 | 6.07 | 0.27 | 725.31 |
| 900.00 | 62.00 | 100.00 | 55.50 | 7.64 | 54.84 | 7.55 | 0.36 | 725.55 |
| 1000.00 | 115.00 | 100.00 | 88.50 | 12.19 | 87.48 | 12.05 | 0.50 | 726.19 |
| 1050.00 | 155.00 | 50.00 | 135.00 | 9.30 | 130.12 | 8.96 | 0.83 | 726.85 |
| 1100.00 | 201.00 | 50.00 | 178.00 | 12.26 | 174.68 | 12.03 | 1.06 | 727.41 |
| 1110.00 | 226.00 | 10.00 | 213.50 | 2.94 | 200.52 | 2.76 | 1.24 | 727.71 |
| 1120.00 | 284.00 | 10.00 | 255.00 | 3.51 | 237.96 | 3.28 | 1.48 | 728.14 |
| 1130.00 | 347.00 | 10.00 | 315.50 | 4.35 | 286.92 | 3.95 | 1.87 | 728.69 |
| 1131.00 | 353.00 | 1.00 | 350.00 | 0.48 | 295.56 | 0.41 | 1.95 | 728.78 |
| 1132.00 | 358.00 | 1.00 | 355.50 | 0.49 | 304.20 | 0.42 | 2.02 | 728.88 |
| 1133.00 | 364.00 | 1.00 | 361.00 | 0.50 | 312.84 | 0.43 | 2.08 | 728.98 |
| 1134.00 | 369.00 | 1.00 | 366.50 | 0.50 | 318.80 | 0.44 | 2.15 | 729.04 |
| 1135.00 | 375.00 | 1.00 | 372.00 | 0.51 | 324.88 | 0.45 | 2.21 | 729.10 |
| 1136.00 | 381.00 | 1.00 | 378.00 | 0.52 | 329.44 | 0.45 | 2.28 | 729.15 |
| 1137.00 | 387.00 | 1.00 | 384.00 | 0.53 | 334.00 | 0.46 | 2.35 | 729.20 |
| 1138.00 | 394.00 | 1.00 | 390.50 | 0.54 | 338.56 | 0.47 | 2.42 | 729.25 |
| 1139.00 | 401.00 | 1.00 | 397.50 | 0.55 | 344.64 | 0.47 | 2.49 | 729.31 |
| 1140.00 | 409.00 | 1.00 | 405.00 | 0.56 | 350.72 | 0.48 | 2.57 | 729.38 |
| 1141.00 | 417.00 | 1.00 | 413.00 | 0.57 | 355.28 | 0.49 | 2.65 | 729.42 |
| 1142.00 | 427.00 | 1.00 | 422.00 | 0.58 | 361.36 | 0.50 | 2.73 | 729.49 |
| 1143.00 | 437.00 | 1.00 | 432.00 | 0.60 | 368.96 | 0.51 | 2.82 | 729.57 |
| 1144.00 | 448.00 | 1.00 | 442.50 | 0.61 | 375.04 | 0.52 | 2.91 | 729.63 |
| 1145.00 | 460.00 | 1.00 | 454.00 | 0.63 | 382.64 | 0.53 | 3.01 | 729.71 |
| 1146.00 | 474.00 | 1.00 | 467.00 | 0.64 | 390.24 | 0.54 | 3.11 | 729.79 |
| 1147.00 | 489.00 | 1.00 | 481.50 | 0.66 | 397.84 | 0.55 | 3.23 | 729.87 |
| 1148.00 | 505.00 | 1.00 | 497.00 | 0.68 | 406.96 | 0.56 | 3.35 | 729.97 |
| 1149.00 | 525.00 | 1.00 | 515.00 | 0.71 | 417.68 | 0.58 | 3.49 | 730.06 |
| 1150.00 | 551.00 | 1.00 | 538.00 | 0.74 | 427.28 | 0.59 | 3.64 | 730.14 |
| 1151.00 | 583.00 | 1.00 | 567.00 | 0.78 | 440.72 | 0.61 | 3.81 | 730.26 |
| 1152.00 | 629.00 | 1.00 | 606.00 | 0.83 | 454.16 | 0.63 | 4.02 | 730.37 |
| 1153.00 | 679.00 | 1.00 | 654.00 | 0.90 | 473.36 | 0.65 | 4.27 | 730.53 |
| 1154.00 | 753.00 | 1.00 | 716.00 | 0.99 | 494.48 | 0.68 | 4.58 | 730.70 |
| 1155.00 | 848.00 | 1.00 | 800.50 | 1.10 | 521.36 | 0.72 | 4.96 | 730.93 |
| 1156.00 | 950.00 | 1.00 | 899.00 | 1.24 | 548.48 | 0.76 | 5.44 | 731.17 |
| 1157.00 | 1060.00 | 1.00 | 1005.00 | 1.38 | 578.40 | 0.80 | 6.03 | 731.44 |
| 1158.00 | 1174.00 | 1.00 | 1117.00 | 1.54 | 613.60 | 0.85 | 6.73 | 731.76 |
| 1159.00 | 1275.00 | 1.00 | 1224.50 | 1.69 | 647.20 | 0.89 | 7.52 | 732.08 |
| 1160.00 | 1345.00 | 1.00 | 1310.00 | 1.80 | 671.68 | 0.93 | 8.40 | 732.35 |
| 1161.00 | 1386.00 | 1.00 | 1365.50 | 1.88 | 696.16 | 0.96 | 9.32 | 732.62 |
| 1162.00 | 1397.00 | 1.00 | 1391.50 | 1.92 | 720.64 | 0.99 | 10.25 | 732.90 |
| 1163.00 | 1398.00 | 1.00 | 1397.50 | 1.92 | 742.24 | 1.02 | 11.15 | 733.14 |
| 1164.00 | 1381.00 | 1.00 | 1389.50 | 1.91 | 758.08 | 1.04 | 12.02 | 733.31 |
| 1165.00 | 1346.00 | 1.00 | 1363.50 | 1.88 | 775.36 | 1.07 | 12.83 | 733.50 |

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|---|---|---|---|---|---|---|---|---|
| 1166.00 | 1296.00 | 1.00 | 1321.00 | 1.82 | 789.76 | 1.09 | 13.56 | 733.66 |
| 1167.00 | 1231.00 | 1.00 | 1263.50 | 1.74 | 801.28 | 1.10 | 14.20 | 733.79 |
| 1168.00 | 1153.00 | 1.00 | 1192.00 | 1.64 | 811.36 | 1.12 | 14.72 | 733.90 |
| 1169.00 | 1073.00 | 1.00 | 1113.00 | 1.53 | 820.00 | 1.13 | 15.12 | 734.00 |
| 1170.00 | 996.00 | 1.00 | 1034.50 | 1.42 | 825.12 | 1.14 | 15.41 | 734.06 |
| 1171.00 | 923.00 | 1.00 | 959.50 | 1.32 | 828.96 | 1.14 | 15.59 | 734.11 |
| 1172.00 | 851.00 | 1.00 | 887.00 | 1.22 | 830.24 | 1.14 | 15.67 | 734.13 |
| 1173.00 | 775.00 | 1.00 | 813.00 | 1.12 | 828.96 | 1.14 | 15.65 | 734.11 |
| 1174.00 | 701.00 | 1.00 | 738.00 | 1.02 | 827.68 | 1.14 | 15.53 | 734.10 |
| 1175.00 | 634.00 | 1.00 | 667.50 | 0.92 | 823.84 | 1.13 | 15.31 | 734.05 |
| 1176.00 | 579.00 | 1.00 | 606.50 | 0.84 | 818.56 | 1.13 | 15.02 | 733.98 |
| 1177.00 | 530.00 | 1.00 | 554.50 | 0.76 | 811.36 | 1.12 | 14.66 | 733.90 |
| 1178.00 | 483.00 | 1.00 | 506.50 | 0.70 | 802.72 | 1.11 | 14.26 | 733.81 |
| 1179.00 | 440.00 | 1.00 | 461.50 | 0.64 | 794.08 | 1.09 | 13.80 | 733.71 |
| 1180.00 | 401.00 | 1.00 | 420.50 | 0.58 | 784.00 | 1.08 | 13.30 | 733.60 |
| 1181.00 | 367.00 | 1.00 | 384.00 | 0.53 | 773.92 | 1.07 | 12.76 | 733.49 |
| 1182.00 | 343.00 | 1.00 | 355.00 | 0.49 | 762.40 | 1.05 | 12.20 | 733.36 |
| 1183.00 | 322.00 | 1.00 | 332.50 | 0.46 | 750.88 | 1.03 | 11.62 | 733.23 |
| 1184.00 | 303.00 | 1.00 | 312.50 | 0.43 | 739.36 | 1.02 | 11.04 | 733.10 |
| 1185.00 | 286.00 | 1.00 | 294.50 | 0.41 | 726.40 | 1.00 | 10.44 | 732.96 |
| 1186.00 | 271.00 | 1.00 | 278.50 | 0.38 | 710.56 | 0.98 | 9.85 | 732.78 |
| 1187.00 | 258.00 | 1.00 | 264.50 | 0.36 | 694.72 | 0.96 | 9.25 | 732.61 |
| 1188.00 | 247.00 | 1.00 | 252.50 | 0.35 | 678.88 | 0.94 | 8.67 | 732.43 |
| 1189.00 | 237.00 | 1.00 | 242.00 | 0.33 | 663.04 | 0.91 | 8.09 | 732.26 |
| 1190.00 | 229.00 | 1.00 | 233.00 | 0.32 | 647.20 | 0.89 | 7.51 | 732.08 |
| 1191.00 | 221.00 | 1.00 | 225.00 | 0.31 | 625.92 | 0.86 | 6.96 | 731.87 |
| 1192.00 | 214.00 | 1.00 | 217.50 | 0.30 | 599.52 | 0.83 | 6.44 | 731.63 |
| 1193.00 | 208.00 | 1.00 | 211.00 | 0.29 | 573.12 | 0.79 | 5.94 | 731.39 |
| 1194.00 | 203.00 | 1.00 | 205.50 | 0.28 | 550.24 | 0.76 | 5.46 | 731.18 |
| 1195.00 | 198.00 | 1.00 | 200.50 | 0.28 | 525.20 | 0.72 | 5.02 | 730.96 |
| 1196.00 | 194.00 | 1.00 | 196.00 | 0.27 | 496.40 | 0.68 | 4.60 | 730.72 |
| 1197.00 | 190.00 | 1.00 | 192.00 | 0.26 | 469.52 | 0.65 | 4.22 | 730.50 |
| 1198.00 | 186.00 | 1.00 | 188.00 | 0.26 | 444.56 | 0.61 | 3.87 | 730.29 |
| 1199.00 | 183.00 | 1.00 | 184.50 | 0.25 | 421.52 | 0.58 | 3.54 | 730.10 |
| 1200.00 | 180.00 | 1.00 | 181.50 | 0.25 | 399.36 | 0.55 | 3.24 | 729.89 |
| 1201.00 | 177.00 | 1.00 | 178.50 | 0.25 | 379.60 | 0.52 | 2.96 | 729.68 |
| 1202.00 | 174.00 | 1.00 | 175.50 | 0.24 | 359.84 | 0.50 | 2.71 | 729.47 |
| 1203.00 | 172.00 | 1.00 | 173.00 | 0.24 | 343.12 | 0.47 | 2.47 | 729.30 |
| 1204.00 | 169.00 | 1.00 | 170.50 | 0.23 | 327.92 | 0.45 | 2.26 | 729.14 |
| 1205.00 | 167.00 | 1.00 | 168.00 | 0.23 | 311.40 | 0.43 | 2.06 | 728.96 |
| 1206.00 | 164.00 | 1.00 | 165.50 | 0.23 | 288.36 | 0.40 | 1.89 | 728.70 |
| 1207.00 | 162.00 | 1.00 | 163.00 | 0.22 | 269.64 | 0.37 | 1.74 | 728.50 |
| 1208.00 | 160.00 | 1.00 | 161.00 | 0.22 | 253.80 | 0.35 | 1.62 | 728.32 |
| 1209.00 | 158.00 | 1.00 | 159.00 | 0.22 | 239.40 | 0.33 | 1.51 | 728.16 |
| 1210.00 | 157.00 | 1.00 | 157.50 | 0.22 | 226.44 | 0.31 | 1.41 | 728.02 |
| 1211.00 | 155.00 | 1.00 | 156.00 | 0.21 | 214.12 | 0.29 | 1.33 | 727.87 |
| 1212.00 | 154.00 | 1.00 | 154.50 | 0.21 | 203.24 | 0.28 | 1.26 | 727.74 |
| 1213.00 | 153.00 | 1.00 | 153.50 | 0.21 | 193.72 | 0.27 | 1.21 | 727.63 |
| 1214.00 | 151.00 | 1.00 | 152.00 | 0.21 | 185.56 | 0.26 | 1.16 | 727.54 |
| 1215.00 | 150.00 | 1.00 | 150.50 | 0.21 | 178.76 | 0.25 | 1.12 | 727.46 |
| 1216.00 | 149.00 | 1.00 | 149.50 | 0.21 | 173.32 | 0.24 | 1.09 | 727.39 |
| 1217.00 | 147.00 | 1.00 | 148.00 | 0.20 | 167.88 | 0.23 | 1.06 | 727.33 |
| 1218.00 | 145.00 | 1.00 | 146.00 | 0.20 | 163.80 | 0.23 | 1.04 | 727.28 |
| 1219.00 | 143.00 | 1.00 | 144.00 | 0.20 | 161.08 | 0.22 | 1.01 | 727.25 |
| 1220.00 | 141.00 | 1.00 | 142.00 | 0.20 | 157.00 | 0.22 | 0.99 | 727.20 |
| 1221.00 | 139.00 | 1.00 | 140.00 | 0.19 | 152.92 | 0.21 | 0.98 | 727.15 |
| 1222.00 | 137.00 | 1.00 | 138.00 | 0.19 | 150.20 | 0.21 | 0.96 | 727.12 |
| 1223.00 | 134.00 | 1.00 | 135.50 | 0.19 | 147.48 | 0.20 | 0.94 | 727.09 |
| 1224.00 | 131.00 | 1.00 | 132.50 | 0.18 | 144.76 | 0.20 | 0.93 | 727.06 |
| 1225.00 | 128.00 | 1.00 | 129.50 | 0.18 | 142.04 | 0.20 | 0.91 | 727.02 |
| 1226.00 | 125.00 | 1.00 | 126.50 | 0.17 | 139.48 | 0.19 | 0.89 | 726.99 |
| 1227.00 | 121.00 | 1.00 | 123.00 | 0.17 | 136.36 | 0.19 | 0.87 | 726.94 |
| 1228.00 | 118.00 | 1.00 | 119.50 | 0.16 | 133.24 | 0.18 | 0.85 | 726.90 |
| 1229.00 | 115.00 | 1.00 | 116.50 | 0.16 | 130.12 | 0.18 | 0.83 | 726.85 |
| 1230.00 | 111.00 | 1.00 | 113.00 | 0.16 | 127.00 | 0.17 | 0.82 | 726.80 |
| 1231.00 | 108.00 | 1.00 | 109.50 | 0.15 | 123.88 | 0.17 | 0.80 | 726.75 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 105.00 | 1.00 | 106.50 | 0.15 | 120.76 | 0.17 | 0.78 | 726.70 |
| 1233.00 | 102.00 | 1.00 | 103.50 | 0.14 | 117.64 | 0.16 | 0.76 | 726.66 |
| 1234.00 | 99.00 | 1.00 | 100.50 | 0.14 | 114.52 | 0.16 | 0.74 | 726.61 |
| 1235.00 | 97.00 | 1.00 | 98.00 | 0.13 | 111.40 | 0.15 | 0.72 | 726.56 |
| 1236.00 | 95.00 | 1.00 | 96.00 | 0.13 | 108.28 | 0.15 | 0.70 | 726.51 |
| 1237.00 | 93.00 | 1.00 | 94.00 | 0.13 | 106.20 | 0.15 | 0.68 | 726.48 |
| 1238.00 | 91.00 | 1.00 | 92.00 | 0.13 | 103.08 | 0.14 | 0.67 | 726.43 |
| 1239.00 | 90.00 | 1.00 | 90.50 | 0.12 | 101.00 | 0.14 | 0.66 | 726.40 |
| 1240.00 | 89.00 | 1.00 | 89.50 | 0.12 | 98.92 | 0.14 | 0.64 | 726.37 |
| 1241.00 | 88.00 | 1.00 | 88.50 | 0.12 | 96.84 | 0.13 | 0.63 | 726.34 |
| 1242.00 | 87.00 | 1.00 | 87.50 | 0.12 | 94.76 | 0.13 | 0.62 | 726.30 |
| 1243.00 | 86.00 | 1.00 | 86.50 | 0.12 | 93.72 | 0.13 | 0.61 | 726.29 |
| 1244.00 | 85.00 | 1.00 | 85.50 | 0.12 | 91.64 | 0.13 | 0.60 | 726.26 |
| 1245.00 | 85.00 | 1.00 | 85.00 | 0.12 | 90.60 | 0.12 | 0.59 | 726.24 |
| 1246.00 | 84.00 | 1.00 | 84.50 | 0.12 | 89.56 | 0.12 | 0.59 | 726.22 |
| 1247.00 | 84.00 | 1.00 | 84.00 | 0.12 | 88.52 | 0.12 | 0.58 | 726.21 |
| 1248.00 | 83.00 | 1.00 | 83.50 | 0.12 | 87.48 | 0.12 | 0.58 | 726.19 |
| 1249.00 | 83.00 | 1.00 | 83.00 | 0.11 | 87.48 | 0.12 | 0.57 | 726.19 |
| 1250.00 | 82.00 | 1.00 | 82.50 | 0.11 | 86.44 | 0.12 | 0.56 | 726.18 |
| 1251.00 | 82.00 | 1.00 | 82.00 | 0.11 | 85.40 | 0.12 | 0.56 | 726.16 |
| 1252.00 | 82.00 | 1.00 | 82.00 | 0.11 | 84.36 | 0.12 | 0.56 | 726.14 |
| 1253.00 | 81.00 | 1.00 | 81.50 | 0.11 | 84.36 | 0.12 | 0.55 | 726.14 |
| 1254.00 | 81.00 | 1.00 | 81.00 | 0.11 | 83.32 | 0.11 | 0.55 | 726.13 |
| 1255.00 | 81.00 | 1.00 | 81.00 | 0.11 | 83.32 | 0.11 | 0.55 | 726.13 |
| 1256.00 | 80.00 | 1.00 | 80.50 | 0.11 | 82.28 | 0.11 | 0.54 | 726.11 |
| 1257.00 | 80.00 | 1.00 | 80.00 | 0.11 | 82.28 | 0.11 | 0.54 | 726.11 |
| 1258.00 | 80.00 | 1.00 | 80.00 | 0.11 | 82.28 | 0.11 | 0.54 | 726.11 |
| 1259.00 | 80.00 | 1.00 | 80.00 | 0.11 | 81.24 | 0.11 | 0.54 | 726.10 |
| 1260.00 | 79.00 | 1.00 | 79.50 | 0.11 | 81.24 | 0.11 | 0.53 | 726.10 |
| 1261.00 | 79.00 | 1.00 | 79.00 | 0.11 | 80.20 | 0.11 | 0.53 | 726.08 |
| 1262.00 | 79.00 | 1.00 | 79.00 | 0.11 | 80.20 | 0.11 | 0.53 | 726.08 |
| 1263.00 | 78.00 | 1.00 | 78.50 | 0.11 | 80.20 | 0.11 | 0.53 | 726.08 |
| 1264.00 | 78.00 | 1.00 | 78.00 | 0.11 | 80.20 | 0.11 | 0.52 | 726.08 |
| 1265.00 | 78.00 | 1.00 | 78.00 | 0.11 | 79.16 | 0.11 | 0.52 | 726.06 |
| 1266.00 | 77.00 | 1.00 | 77.50 | 0.11 | 79.16 | 0.11 | 0.52 | 726.06 |
| 1267.00 | 77.00 | 1.00 | 77.00 | 0.11 | 78.12 | 0.11 | 0.52 | 726.05 |
| 1268.00 | 77.00 | 1.00 | 77.00 | 0.11 | 78.12 | 0.11 | 0.52 | 726.05 |
| 1269.00 | 76.00 | 1.00 | 76.50 | 0.11 | 78.12 | 0.11 | 0.52 | 726.05 |
| 1270.00 | 76.00 | 1.00 | 76.00 | 0.10 | 78.12 | 0.11 | 0.51 | 726.05 |
| 1271.00 | 76.00 | 1.00 | 76.00 | 0.10 | 77.08 | 0.11 | 0.51 | 726.03 |
| 1272.00 | 75.00 | 1.00 | 75.50 | 0.10 | 77.08 | 0.11 | 0.51 | 726.03 |
| 1273.00 | 75.00 | 1.00 | 75.00 | 0.10 | 77.08 | 0.11 | 0.51 | 726.03 |
| 1274.00 | 74.00 | 1.00 | 74.50 | 0.10 | 76.04 | 0.10 | 0.50 | 726.02 |
| 1275.00 | 73.00 | 1.00 | 73.50 | 0.10 | 76.04 | 0.10 | 0.50 | 726.02 |
| 1276.00 | 73.00 | 1.00 | 73.00 | 0.10 | 75.00 | 0.10 | 0.50 | 726.00 |
| 1277.00 | 72.00 | 1.00 | 72.50 | 0.10 | 74.28 | 0.10 | 0.49 | 725.98 |
| 1278.00 | 71.00 | 1.00 | 71.50 | 0.10 | 73.56 | 0.10 | 0.49 | 725.97 |
| 1279.00 | 71.00 | 1.00 | 71.00 | 0.10 | 72.84 | 0.10 | 0.49 | 725.95 |
| 1280.00 | 70.00 | 1.00 | 70.50 | 0.10 | 72.84 | 0.10 | 0.49 | 725.95 |
| 1281.00 | 70.00 | 1.00 | 70.00 | 0.10 | 72.12 | 0.10 | 0.48 | 725.94 |
| 1282.00 | 69.00 | 1.00 | 69.50 | 0.10 | 71.40 | 0.10 | 0.48 | 725.92 |
| 1283.00 | 69.00 | 1.00 | 69.00 | 0.10 | 70.68 | 0.10 | 0.48 | 725.90 |
| 1284.00 | 68.00 | 1.00 | 68.50 | 0.09 | 69.96 | 0.10 | 0.48 | 725.89 |
| 1285.00 | 68.00 | 1.00 | 68.00 | 0.09 | 69.96 | 0.10 | 0.47 | 725.89 |
| 1286.00 | 67.00 | 1.00 | 67.50 | 0.09 | 69.24 | 0.10 | 0.47 | 725.87 |
| 1287.00 | 67.00 | 1.00 | 67.00 | 0.09 | 68.52 | 0.09 | 0.47 | 725.86 |
| 1288.00 | 67.00 | 1.00 | 67.00 | 0.09 | 68.52 | 0.09 | 0.47 | 725.86 |
| 1289.00 | 66.00 | 1.00 | 66.50 | 0.09 | 67.80 | 0.09 | 0.47 | 725.84 |
| 1290.00 | 66.00 | 1.00 | 66.00 | 0.09 | 67.08 | 0.09 | 0.46 | 725.82 |
| 1291.00 | 66.00 | 1.00 | 66.00 | 0.09 | 67.08 | 0.09 | 0.46 | 725.82 |
| 1292.00 | 66.00 | 1.00 | 66.00 | 0.09 | 67.08 | 0.09 | 0.46 | 725.82 |
| 1293.00 | 66.00 | 1.00 | 66.00 | 0.09 | 66.36 | 0.09 | 0.46 | 725.81 |
| 1294.00 | 66.00 | 1.00 | 66.00 | 0.09 | 66.36 | 0.09 | 0.46 | 725.81 |
| 1295.00 | 66.00 | 1.00 | 66.00 | 0.09 | 66.36 | 0.09 | 0.46 | 725.81 |
| 1296.00 | 65.00 | 1.00 | 65.50 | 0.09 | 66.36 | 0.09 | 0.46 | 725.81 |
| 1297.00 | 65.00 | 1.00 | 65.00 | 0.09 | 65.64 | 0.09 | 0.46 | 725.79 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1298.00 | 65.00 | 1.00 | 65.00 | 0.09 | 65.64 | 0.09 | 0.46 | 725.79 |
| 1299.00 | 65.00 | 1.00 | 65.00 | 0.09 | 65.64 | 0.09 | 0.46 | 725.79 |
| 1300.00 | 65.00 | 1.00 | 65.00 | 0.09 | 65.64 | 0.09 | 0.45 | 725.79 |
| 1310.00 | 64.00 | 10.00 | 64.50 | 0.89 | 64.92 | 0.89 | 0.45 | 725.78 |
| 1320.00 | 61.00 | 10.00 | 62.50 | 0.86 | 62.76 | 0.86 | 0.45 | 725.73 |
| 1330.00 | 58.00 | 10.00 | 59.50 | 0.82 | 60.60 | 0.83 | 0.43 | 725.68 |
| 1340.00 | 57.00 | 10.00 | 57.50 | 0.79 | 58.44 | 0.80 | 0.42 | 725.63 |
| 1350.00 | 55.00 | 10.00 | 56.00 | 0.77 | 56.28 | 0.78 | 0.41 | 725.58 |
| 1360.00 | 52.00 | 10.00 | 53.50 | 0.74 | 54.12 | 0.75 | 0.40 | 725.54 |
| 1370.00 | 49.00 | 10.00 | 50.50 | 0.70 | 51.96 | 0.72 | 0.38 | 725.49 |
| 1380.00 | 47.00 | 10.00 | 48.00 | 0.66 | 48.36 | 0.67 | 0.38 | 725.41 |
| 1390.00 | 47.00 | 10.00 | 47.00 | 0.65 | 47.64 | 0.66 | 0.37 | 725.39 |
| 1400.00 | 47.00 | 10.00 | 47.00 | 0.65 | 46.92 | 0.65 | 0.37 | 725.38 |
| 1420.00 | 45.00 | 20.00 | 46.00 | 1.27 | 46.20 | 1.27 | 0.37 | 725.36 |
| 1440.00 | 42.00 | 20.00 | 43.50 | 1.20 | 44.04 | 1.21 | 0.35 | 725.31 |
| 1460.00 | 39.00 | 20.00 | 40.50 | 1.12 | 41.16 | 1.13 | 0.33 | 725.25 |
| 1500.00 | 34.00 | 40.00 | 36.50 | 2.01 | 36.84 | 2.03 | 0.31 | 725.15 |

CONEJO MOUNTAIN CREEK

50-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-DEV. WITH 3 BASINS-Q50 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1A | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | K50 | 0.00 |
| 861411 | 2A | 58. | 142. | 58. | 142. | 4 | 1200. | 0.04167 | 3.00 | 0.00 | 0. | 10 | 14 | K50 | 0.15 |
| 861411 | 3A | 59. | 151. | 117. | 288. | 4 | 1050. | 0.05700 | 3.75 | 0.00 | 0. | 20 | 15 | L50 | 0.13 |
| 861411 | 4A | 30. | 66. | 147. | 350. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 13 | K50 | 0.12 |
| 861411 | 5A | 77. | 159. | 224. | 505. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 16 | K50 | 0.06 |
| 861411 | 6B | 58. | 142. | 58. | 142. | 4 | 1050. | 0.02570 | 3.25 | 0.00 | 0. | 20 | 16 | L50 | 0.11 |

CONFLUENCE Q'S

861411 7A TA 1156 QA 505. QAB 645. QB 139. 861411 7B TB 1157 QB 140. QBA 644. QA 504.
861411 7AB TAB 1156 QAB 645. QA 505. QB 139.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 7AB | 58. | 140. | 282. | 645. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K50 | 0.00 |
| 861411 | 8A | 0. | 0. | 282. | 645. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | K50 | 0.00 |
| 861411 | 9A | 35. | 94. | 317. | 734. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | K50 | 0.08 |
| 861411 | 10B | 42. | 106. | 42. | 106. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | K50 | 0.08 |

CONFLUENCE Q'S

861411 11A TA 1156 QA 734. QAB 836. QB 103. 861411 11B TB 1154 QB 106. QBA 807. QA 701.
861411 11AB TAB 1156 QAB 836. QA 734. QB 103.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 11AB | 42. | 106. | 359. | 836. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K50 | 0.00 |
| 861411 | 12A | 0. | 0. | 359. | 836. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | K50 | 0.00 |
| 861411 | 13A | 11. | 29. | 370. | 864. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | K50 | 0.00 |
| 861411 | 14A | 34. | 97. | 404. | 956. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | K50 | 0.14 |
| 861411 | 15B | 33. | 84. | 33. | 84. | 4 | 1050. | 0.01140 | 3.25 | 0.00 | 0. | 20 | 11 | K50 | 0.08 |
| 861411 | 16B | 31. | 80. | 64. | 157. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | K50 | 0.20 |

CONFLUENCE Q'S

861411 17A TA 1156 QA 956. QAB 1113. QB 157. 861411 17B TB 1156 QB 157. QBA 1113. QA 956.
861411 17AB TAB 1156 QAB 1113. QA 956. QB 157.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 17AB | 64. | 157. | 468. | 1113. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | K50 | 0.00 |
| 861411 | 18A | 0. | 0. | 468. | 1113. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 99 | K50 | 0.00 |
| 861411 | 19A | 468. | 23. | 468. | 23. | 4 | 1800. | 0.00830 | 2.25 | 0.00 | 0. | 20 | 0 | K50 | 0.00 |
| 861411 | 20A | 41. | 78. | 509. | 98. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 19 | K50 | 0.35 |
| 861411 | 21B | 38. | 89. | 38. | 89. | 4 | 825. | 0.00440 | 4.00 | 0.00 | 0. | 10 | 15 | K50 | 0.08 |
| 861411 | 22B | 35. | 79. | 73. | 163. | 4 | 300. | 0.00440 | 5.00 | 0.00 | 0. | 10 | 16 | K50 | 0.11 |
| 861411 | 23C | 41. | 132. | 41. | 132. | 4 | 2050. | 0.05400 | 3.00 | 0.00 | 0. | 10 | 8 | K50 | 0.00 |
| 861411 | 24C | 44. | 92. | 85. | 218. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 16 | K50 | 0.14 |
| 861411 | 25D | 40. | 93. | 40. | 93. | 4 | 600. | 0.00660 | 3.75 | 0.00 | 0. | 10 | 15 | K50 | 0.07 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-DEV. WITH 3 BASINS-Q50 — STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONFLUENCE Q'S | | | | | | | | | | | | | | |
| 861411 26C TC 1156 QC | 218. QCD | 310. QD | 92. | 861411 26D TD 1156 QD | 92. QDC | 310. QC | 218. | | | | | | | |
| 861411 26CD TCD 1156 QCD | 310. QC | 218. QD | 92. | | | | | | | | | | | |
| 861411 26CD | 40. | 92. | 125. | 310. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | K50 | 0.00 |
| CONFLUENCE Q'S | | | | | | | | | | | | | | |
| 861411 27B TB 1158 QB | 162. QBC | 465. QC | 303. | 861411 27C TC 1156 QC | 310. QCB | 468. QB | 157. | | | | | | | |
| 861411 27BC TBC 1157 QBC | 470. QB | 161. QC | 309. | | | | | | | | | | | |
| 861411 27BC | 125. | 310. | 198. | 470. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | K50 | 0.00 |
| 861411 28B | 29. | 62. | 227. | 529. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 13 | K50 | 0.00 |
| 861411 29B | 227. | 16. | 227. | 16. | 4 | 350. | 0.00860 | 2.00 | 0.00 | 0. | 30 | 0 | K50 | 0.00 |
| CONFLUENCE Q'S | | | | | | | | | | | | | | |
| 861411 30A TA 1154 QA | 98. QAB | 112. QB | 14. | 861411 30B TB 1198 QB | 16. QBA | 47. QA | 31. | | | | | | | |
| 861411 30AB TAB 1154 QAB | 112. QA | 98. QB | 14. | | | | | | | | | | | |
| 861411 30AB | 227. | 16. | 736. | 112. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 0 | K50 | 0.00 |
| 861411 31A | 0. | 0. | 736. | 112. | 4 | 830. | 0.01440 | 3.50 | 0.00 | 0. | 30 | 99 | K50 | 0.00 |
| 861411 32A | 39. | 108. | 775. | 216. | 4 | 1300. | 0.01540 | 4.25 | 0.00 | 0. | 10 | 11 | K50 | 0.28 |
| 861411 33A | 47. | 118. | 822. | 320. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 11 | K50 | 0.30 |
| 861411 34A | 87. | 205. | 909. | 517. | 4 | 700. | 0.01430 | 6.00 | 0.00 | 0. | 10 | 15 | K50 | 0.17 |
| 861411 35A | 13. | 37. | 922. | 549. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 9 | K50 | 0.46 |
| 861411 36B | 98. | 203. | 98. | 203. | 4 | 1350. | 0.02880 | 3.75 | 0.00 | 0. | 20 | 16 | K50 | 0.08 |
| 861411 37B | 71. | 174. | 169. | 368. | 4 | 150. | 0.02880 | 4.75 | 0.00 | 0. | 10 | 14 | K50 | 0.17 |
| CONFLUENCE Q'S | | | | | | | | | | | | | | |
| 861411 38A TA 1157 QA | 549. QAB | 916. QB | 366. | 861411 38B TB 1156 QB | 368. QBA | 911. QA | 544. | | | | | | | |
| 861411 38AB TAB 1157 QAB | 916. QA | 549. QB | 366. | | | | | | | | | | | |
| 861411 38AB | 169. | 368. | 1091. | 916. | 5 | 750. | 0.00530 | 11.00 | 0.00 | 0. | 10 | 0 | K50 | 0.00 |
| 861411 39A | 0. | 0. | 1091. | 912. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | K50 | 0.00 |
| 861411 40A | 48. | 149. | 1139. | 1053. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | L50 | 0.23 |
| 861411 41B | 46. | 150. | 46. | 150. | 4 | 800. | 0.04500 | 3.00 | 0.00 | 0. | 20 | 10 | L50 | 0.12 |
| 861411 42B | 39. | 128. | 85. | 276. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | L50 | 0.16 |
| 861411 43B | 26. | 92. | 111. | 367. | 4 | 750. | 0.04000 | 4.50 | 0.00 | 0. | 20 | 9 | L50 | 0.19 |
| 861411 44B | 28. | 92. | 139. | 455. | 4 | 950. | 0.05260 | 4.50 | 0.00 | 0. | 20 | 10 | L50 | 0.16 |
| 861411 45B | 55. | 131. | 194. | 583. | 4 | 1000. | 0.06000 | 4.75 | 0.00 | 0. | 20 | 17 | L50 | 0.18 |
| 861411 46B | 22. | 82. | 216. | 654. | 4 | 500. | 0.03000 | 5.75 | 0.00 | 0. | 10 | 9 | L50 | 0.15 |
| 861411 47B | 27. | 72. | 243. | 722. | 4 | 550. | 0.03800 | 5.75 | 0.00 | 0. | 10 | 16 | L50 | 0.22 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-DEV. WITH 3 BASINS-Q50 STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

CONFLUENCE Q'S

861411 48A TA 1158 QA 1053. QAB 1773. QB 719. 861411 48B TB 1158 QB 719. QBA 1773. QA 1053.
861411 48AB TAB 1158 QAB 1773. QA 1053. QB 719.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 48AB | 243. | 719. | 1382. | 1773. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | L50 | 0.00 |
| 861411 49A | 0. | 0. | 1382. | 1773. | 5 | 950. | 0.02100 | 11.00 | 0.00 | 0. | 30 | 99 | K50 | 0.00 |
| 861411 50A | 57. | 110. | 1439. | 1870. | 5 | 650. | 0.02150 | 11.00 | 0.00 | 0. | 30 | 17 | K50 | 0.17 |
| 861411 51A | 34. | 112. | 1473. | 1962. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | L50 | 0.16 |
| 861411 52A | 45. | 110. | 1518. | 2060. | 5 | 950. | 0.00630 | 10.00 | 4.00 | 0. | 20 | 12 | K50 | 0.14 |
| 861411 53A | 24. | 89. | 1542. | 2039. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 9 | L50 | 0.02 |
| 861411 54A | 1542. | 979. | 1542. | 979. | 2 | 850. | 0.01650 | 0.00 | 0.00 | 0. | 10 | 0 | L50 | 0.00 |
| 861411 55A | 16. | 60. | 1558. | 986. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 8 | L50 | 0.00 |
| 861411 56B | 25. | 76. | 25. | 76. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | L50 | 0.00 |

CONFLUENCE Q'S

861411 57A TA 1173 QA 986. QAB 999. QB 13. 861411 57B TB 1154 QB 76. QBA 775. QA 699.
861411 57AB TAB 1173 QAB 999. QA 986. QB 13.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 57AB | 25. | 76. | 1583. | 999. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L50 | 0.00 |
| 861411 58A | 0. | 0. | 1583. | 999. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | L50 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY

INFLOW TO FIRST BASIN

HYDROGRAPH AT 861411 18A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 3. | 200 | 5. | 300 | 7. | 400 | 9. |
| 500 | 12. | 600 | 15. | 700 | 25. | 800 | 39. | 900 | 57. |
| 1000 | 99. | 1050 | 113. | 1100 | 155. | 1110 | 172. | 1120 | 211. |
| 1130 | 243. | 1131 | 246. | 1132 | 250. | 1133 | 253. | 1134 | 257. |
| 1135 | 261. | 1136 | 274. | 1137 | 288. | 1138 | 303. | 1139 | 318. |
| 1140 | 333. | 1141 | 355. | 1142 | 377. | 1143 | 399. | 1144 | 423. |
| 1145 | 445. | 1146 | 469. | 1147 | 491. | 1148 | 515. | 1149 | 545. |
| 1150 | 597. | 1151 | 714. | 1152 | 867. | 1153 | 1015. | 1154 | 1080. |
| 1155 | 1108. | 1156 | 1113. | 1157 | 1101. | 1158 | 1081. | 1159 | 1052. |
| 1160 | 1006. | 1161 | 932. | 1162 | 838. | 1163 | 749. | 1164 | 672. |
| 1165 | 611. | 1166 | 544. | 1167 | 463. | 1168 | 369. | 1169 | 285. |
| 1170 | 237. | 1171 | 209. | 1172 | 195. | 1173 | 185. | 1174 | 178. |
| 1175 | 171. | 1176 | 164. | 1177 | 160. | 1178 | 156. | 1179 | 153. |
| 1180 | 150. | 1181 | 148. | 1182 | 146. | 1183 | 144. | 1184 | 142. |
| 1185 | 140. | 1186 | 138. | 1187 | 137. | 1188 | 136. | 1189 | 136. |
| 1190 | 136. | 1191 | 134. | 1192 | 132. | 1193 | 129. | 1194 | 126. |
| 1195 | 123. | 1196 | 120. | 1197 | 117. | 1198 | 113. | 1199 | 110. |
| 1200 | 108. | 1201 | 105. | 1202 | 103. | 1203 | 102. | 1204 | 100. |
| 1205 | 99. | 1206 | 97. | 1207 | 96. | 1208 | 96. | 1209 | 96. |
| 1210 | 96. | 1211 | 94. | 1212 | 92. | 1213 | 89. | 1214 | 87. |
| 1215 | 84. | 1216 | 81. | 1217 | 78. | 1218 | 75. | 1219 | 72. |
| 1220 | 69. | 1221 | 67. | 1222 | 65. | 1223 | 63. | 1224 | 62. |
| 1225 | 60. | 1226 | 58. | 1227 | 57. | 1228 | 57. | 1229 | 57. |
| 1230 | 56. | 1231 | 55. | 1232 | 54. | 1233 | 52. | 1234 | 51. |
| 1235 | 50. | 1236 | 49. | 1237 | 49. | 1238 | 48. | 1239 | 47. |
| 1240 | 46. | 1241 | 46. | 1242 | 45. | 1243 | 44. | 1244 | 44. |
| 1245 | 43. | 1246 | 42. | 1247 | 42. | 1248 | 41. | 1249 | 41. |
| 1250 | 41. | 1251 | 41. | 1252 | 41. | 1253 | 41. | 1254 | 41. |
| 1255 | 41. | 1256 | 41. | 1257 | 41. | 1258 | 41. | 1259 | 41. |
| 1260 | 41. | 1261 | 41. | 1262 | 41. | 1263 | 40. | 1264 | 39. |
| 1265 | 38. | 1266 | 37. | 1267 | 36. | 1268 | 35. | 1269 | 34. |
| 1270 | 33. | 1271 | 32. | 1272 | 31. | 1273 | 30. | 1274 | 29. |
| 1275 | 28. | 1276 | 28. | 1277 | 27. | 1278 | 26. | 1279 | 26. |
| 1280 | 26. | 1281 | 26. | 1282 | 26. | 1283 | 26. | 1284 | 26. |
| 1285 | 26. | 1286 | 26. | 1287 | 26. | 1288 | 26. | 1289 | 26. |
| 1290 | 26. | 1291 | 26. | 1292 | 26. | 1293 | 26. | 1294 | 26. |
| 1295 | 26. | 1296 | 26. | 1297 | 26. | 1298 | 26. | 1299 | 26. |
| 1300 | 26. | 1310 | 18. | 1320 | 13. | 1330 | 13. | 1340 | 13. |
| 1350 | 10. | 1360 | 8. | 1370 | 8. | 1380 | 8. | 1390 | 8. |
| 1400 | 8. | 1420 | 4. | 1440 | 4. | 1460 | 2. | 1500 | 2. |

MODIFIED RATIONAL METHOD HYDROLOGY

OUTFLOW FROM FIRST BASIN

HYDROGRAPH AT 861411 19A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 3. | 300 | 4. | 400 | 5. |
| 500 | 6. | 600 | 8. | 700 | 9. | 800 | 11. | 900 | 13. |
| 1000 | 16. | 1050 | 17. | 1100 | 18. | 1110 | 19. | 1120 | 19. |
| 1130 | 19. | 1131 | 19. | 1132 | 19. | 1133 | 19. | 1134 | 19. |
| 1135 | 19. | 1136 | 19. | 1137 | 19. | 1138 | 19. | 1139 | 19. |
| 1140 | 19. | 1141 | 20. | 1142 | 20. | 1143 | 20. | 1144 | 20. |
| 1145 | 20. | 1146 | 20. | 1147 | 20. | 1148 | 20. | 1149 | 20. |
| 1150 | 20. | 1151 | 20. | 1152 | 20. | 1153 | 21. | 1154 | 21. |
| 1155 | 21. | 1156 | 21. | 1157 | 21. | 1158 | 21. | 1159 | 21. |
| 1160 | 21. | 1161 | 21. | 1162 | 22. | 1163 | 22. | 1164 | 22. |
| 1165 | 22. | 1166 | 22. | 1167 | 22. | 1168 | 22. | 1169 | 22. |
| 1170 | 22. | 1171 | 22. | 1172 | 22. | 1173 | 22. | 1174 | 22. |
| 1175 | 22. | 1176 | 22. | 1177 | 22. | 1178 | 22. | 1179 | 22. |
| 1180 | 22. | 1181 | 22. | 1182 | 22. | 1183 | 22. | 1184 | 22. |
| 1185 | 22. | 1186 | 22. | 1187 | 22. | 1188 | 22. | 1189 | 22. |
| 1190 | 22. | 1191 | 22. | 1192 | 22. | 1193 | 22. | 1194 | 22. |
| 1195 | 22. | 1196 | 22. | 1197 | 22. | 1198 | 22. | 1199 | 22. |
| 1200 | 22. | 1201 | 22. | 1202 | 22. | 1203 | 22. | 1204 | 22. |
| 1205 | 22. | 1206 | 22. | 1207 | 22. | 1208 | 22. | 1209 | 22. |
| 1210 | 23. | 1211 | 23. | 1212 | 23. | 1213 | 23. | 1214 | 23. |
| 1215 | 23. | 1216 | 23. | 1217 | 23. | 1218 | 23. | 1219 | 23. |
| 1220 | 23. | 1221 | 23. | 1222 | 23. | 1223 | 23. | 1224 | 23. |
| 1225 | 23. | 1226 | 23. | 1227 | 23. | 1228 | 23. | 1229 | 23. |
| 1230 | 23. | 1231 | 23. | 1232 | 23. | 1233 | 23. | 1234 | 23. |
| 1235 | 23. | 1236 | 23. | 1237 | 23. | 1238 | 23. | 1239 | 23. |
| 1240 | 23. | 1241 | 23. | 1242 | 23. | 1243 | 23. | 1244 | 23. |
| 1245 | 23. | 1246 | 23. | 1247 | 23. | 1248 | 23. | 1249 | 23. |
| 1250 | 23. | 1251 | 23. | 1252 | 23. | 1253 | 23. | 1254 | 23. |
| 1255 | 23. | 1256 | 23. | 1257 | 23. | 1258 | 23. | 1259 | 23. |
| 1260 | 23. | 1261 | 23. | 1262 | 23. | 1263 | 23. | 1264 | 23. |
| 1265 | 23. | 1266 | 23. | 1267 | 23. | 1268 | 23. | 1269 | 23. |
| 1270 | 23. | 1271 | 23. | 1272 | 23. | 1273 | 23. | 1274 | 23. |
| 1275 | 23. | 1276 | 23. | 1277 | 23. | 1278 | 23. | 1279 | 23. |
| 1280 | 23. | 1281 | 23. | 1282 | 23. | 1283 | 23. | 1284 | 23. |
| 1285 | 23. | 1286 | 23. | 1287 | 23. | 1288 | 23. | 1289 | 23. |
| 1290 | 23. | 1291 | 23. | 1292 | 23. | 1293 | 23. | 1294 | 23. |
| 1295 | 23. | 1296 | 23. | 1297 | 23. | 1298 | 23. | 1299 | 23. |
| 1300 | 23. | 1310 | 23. | 1320 | 23. | 1330 | 23. | 1340 | 23. |
| 1350 | 23. | 1360 | 23. | 1370 | 23. | 1380 | 23. | 1390 | 23. |
| 1400 | 23. | 1420 | 23. | 1440 | 23. | 1460 | 22. | 1500 | 22. |

MODIFIED RATIONAL METHOD HYDROLOGY

INFLOW TO SECOND BASIN

HYDROGRAPH AT 861411 28B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 2. | 200 | 2. | 300 | 3. | 400 | 3. |
| 500 | 4. | 600 | 5. | 700 | 8. | 800 | 13. | 900 | 24. |
| 1000 | 44. | 1050 | 47. | 1100 | 68. | 1110 | 77. | 1120 | 97. |
| 1130 | 114. | 1131 | 115. | 1132 | 116. | 1133 | 117. | 1134 | 119. |
| 1135 | 120. | 1136 | 124. | 1137 | 128. | 1138 | 134. | 1139 | 142. |
| 1140 | 149. | 1141 | 159. | 1142 | 169. | 1143 | 181. | 1144 | 193. |
| 1145 | 206. | 1146 | 218. | 1147 | 231. | 1148 | 244. | 1149 | 258. |
| 1150 | 277. | 1151 | 315. | 1152 | 370. | 1153 | 434. | 1154 | 483. |
| 1155 | 514. | 1156 | 528. | 1157 | 529. | 1158 | 522. | 1159 | 510. |
| 1160 | 491. | 1161 | 462. | 1162 | 429. | 1163 | 396. | 1164 | 363. |
| 1165 | 331. | 1166 | 299. | 1167 | 261. | 1168 | 213. | 1169 | 165. |
| 1170 | 133. | 1171 | 113. | 1172 | 101. | 1173 | 92. | 1174 | 86. |
| 1175 | 81. | 1176 | 77. | 1177 | 74. | 1178 | 72. | 1179 | 70. |
| 1180 | 68. | 1181 | 67. | 1182 | 66. | 1183 | 65. | 1184 | 65. |
| 1185 | 64. | 1186 | 63. | 1187 | 63. | 1188 | 63. | 1189 | 63. |
| 1190 | 63. | 1191 | 62. | 1192 | 61. | 1193 | 60. | 1194 | 59. |
| 1195 | 58. | 1196 | 57. | 1197 | 55. | 1198 | 54. | 1199 | 52. |
| 1200 | 51. | 1201 | 49. | 1202 | 48. | 1203 | 47. | 1204 | 46. |
| 1205 | 45. | 1206 | 44. | 1207 | 43. | 1208 | 43. | 1209 | 43. |
| 1210 | 43. | 1211 | 42. | 1212 | 41. | 1213 | 41. | 1214 | 40. |
| 1215 | 39. | 1216 | 38. | 1217 | 36. | 1218 | 35. | 1219 | 34. |
| 1220 | 33. | 1221 | 31. | 1222 | 30. | 1223 | 29. | 1224 | 28. |
| 1225 | 27. | 1226 | 26. | 1227 | 26. | 1228 | 25. | 1229 | 25. |
| 1230 | 25. | 1231 | 24. | 1232 | 24. | 1233 | 24. | 1234 | 23. |
| 1235 | 22. | 1236 | 22. | 1237 | 21. | 1238 | 21. | 1239 | 20. |
| 1240 | 19. | 1241 | 18. | 1242 | 18. | 1243 | 17. | 1244 | 17. |
| 1245 | 16. | 1246 | 16. | 1247 | 15. | 1248 | 15. | 1249 | 15. |
| 1250 | 14. | 1251 | 14. | 1252 | 14. | 1253 | 14. | 1254 | 14. |
| 1255 | 14. | 1256 | 14. | 1257 | 14. | 1258 | 14. | 1259 | 14. |
| 1260 | 14. | 1261 | 14. | 1262 | 14. | 1263 | 14. | 1264 | 14. |
| 1265 | 14. | 1266 | 13. | 1267 | 13. | 1268 | 13. | 1269 | 12. |
| 1270 | 12. | 1271 | 12. | 1272 | 11. | 1273 | 11. | 1274 | 11. |
| 1275 | 10. | 1276 | 10. | 1277 | 10. | 1278 | 10. | 1279 | 10. |
| 1280 | 10. | 1281 | 10. | 1282 | 9. | 1283 | 9. | 1284 | 9. |
| 1285 | 9. | 1286 | 9. | 1287 | 9. | 1288 | 9. | 1289 | 9. |
| 1290 | 9. | 1291 | 9. | 1292 | 9. | 1293 | 9. | 1294 | 9. |
| 1295 | 9. | 1296 | 9. | 1297 | 9. | 1298 | 9. | 1299 | 9. |
| 1300 | 9. | 1310 | 7. | 1320 | 5. | 1330 | 4. | 1340 | 4. |
| 1350 | 3. | 1360 | 3. | 1370 | 3. | 1380 | 3. | 1390 | 3. |
| 1400 | 3. | 1420 | 2. | 1440 | 2. | 1460 | 1. | 1500 | 1. |

MODIFIED RATIONAL METHOD HYDROLOGY

OUTFLOW FROM SECOND BASIN

HYDROGRAPH AT 861411- 298 STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 0. | 200 | 1. | 300 | 2. | 400 | 3. |
| 500 | 3. | 600 | 4. | 700 | 4. | 800 | 6. | 900 | 8. |
| 1000 | 10. | 1050 | 11. | 1100 | 12. | 1110 | 12. | 1120 | 12. |
| 1130 | 13. | 1131 | 13. | 1132 | 13. | 1133 | 13. | 1134 | 13. |
| 1135 | 13. | 1136 | 13. | 1137 | 13. | 1138 | 13. | 1139 | 13. |
| 1140 | 13. | 1141 | 13. | 1142 | 13. | 1143 | 13. | 1144 | 13. |
| 1145 | 13. | 1146 | 13. | 1147 | 13. | 1148 | 13. | 1149 | 13. |
| 1150 | 14. | 1151 | 14. | 1152 | 14. | 1153 | 14. | 1154 | 14. |
| 1155 | 14. | 1156 | 14. | 1157 | 14. | 1158 | 14. | 1159 | 15. |
| 1160 | 15. | 1161 | 15. | 1162 | 15. | 1163 | 15. | 1164 | 15. |
| 1165 | 15. | 1166 | 15. | 1167 | 15. | 1168 | 15. | 1169 | 15. |
| 1170 | 15. | 1171 | 15. | 1172 | 15. | 1173 | 15. | 1174 | 15. |
| 1175 | 15. | 1176 | 15. | 1177 | 15. | 1178 | 15. | 1179 | 15. |
| 1180 | 15. | 1181 | 15. | 1182 | 15. | 1183 | 15. | 1184 | 15. |
| 1185 | 15. | 1186 | 15. | 1187 | 15. | 1188 | 15. | 1189 | 15. |
| 1190 | 16. | 1191 | 16. | 1192 | 16. | 1193 | 16. | 1194 | 16. |
| 1195 | 16. | 1196 | 16. | 1197 | 16. | 1198 | 16. | 1199 | 16. |
| 1200 | 16. | 1201 | 16. | 1202 | 16. | 1203 | 16. | 1204 | 16. |
| 1205 | 16. | 1206 | 16. | 1207 | 16. | 1208 | 16. | 1209 | 16. |
| 1210 | 16. | 1211 | 16. | 1212 | 16. | 1213 | 16. | 1214 | 16. |
| 1215 | 16. | 1216 | 16. | 1217 | 16. | 1218 | 16. | 1219 | 16. |
| 1220 | 16. | 1221 | 16. | 1222 | 16. | 1223 | 16. | 1224 | 16. |
| 1225 | 16. | 1226 | 16. | 1227 | 16. | 1228 | 16. | 1229 | 16. |
| 1230 | 16. | 1231 | 16. | 1232 | 16. | 1233 | 16. | 1234 | 16. |
| 1235 | 16. | 1236 | 16. | 1237 | 16. | 1238 | 16. | 1239 | 16. |
| 1240 | 16. | 1241 | 16. | 1242 | 16. | 1243 | 16. | 1244 | 16. |
| 1245 | 16. | 1246 | 16. | 1247 | 16. | 1248 | 16. | 1249 | 16. |
| 1250 | 16. | 1251 | 16. | 1252 | 16. | 1253 | 16. | 1254 | 16. |
| 1255 | 16. | 1256 | 16. | 1257 | 16. | 1258 | 16. | 1259 | 16. |
| 1260 | 16. | 1261 | 16. | 1262 | 16. | 1263 | 16. | 1264 | 16. |
| 1265 | 16. | 1266 | 16. | 1267 | 16. | 1268 | 16. | 1269 | 16. |
| 1270 | 16. | 1271 | 16. | 1272 | 16. | 1273 | 16. | 1274 | 16. |
| 1275 | 16. | 1276 | 16. | 1277 | 16. | 1278 | 16. | 1279 | 16. |
| 1280 | 16. | 1281 | 16. | 1282 | 16. | 1283 | 16. | 1284 | 16. |
| 1285 | 16. | 1286 | 16. | 1287 | 16. | 1288 | 16. | 1289 | 16. |
| 1290 | 16. | 1291 | 16. | 1292 | 16. | 1293 | 16. | 1294 | 16. |
| 1295 | 16. | 1296 | 16. | 1297 | 16. | 1298 | 16. | 1299 | 16. |
| 1300 | 16. | 1310 | 16. | 1320 | 16. | 1330 | 16. | 1340 | 16. |
| 1350 | 16. | 1360 | 16. | 1370 | 16. | 1380 | 16. | 1390 | 15. |
| 1400 | 15. | 1420 | 15. | 1440 | 15. | 1460 | 15. | 1500 | 15. |

MODIFIED RATIONAL METHOD HYDROLOGY
INFLOW TO THROTTLING STRUCTURE BASIN
HYDROGRAPH AT 861411 53A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 10. | 200 | 16. | 300 | 27. | 400 | 35. |
| 500 | 45. | 600 | 61. | 700 | 93. | 800 | 136. | 900 | 184. |
| 1000 | 256. | 1050 | 296. | 1100 | 363. | 1110 | 385. | 1120 | 425. |
| 1130 | 490. | 1131 | 498. | 1132 | 505. | 1133 | 513. | 1134 | 520. |
| 1135 | 528. | 1136 | 536. | 1137 | 544. | 1138 | 553. | 1139 | 563. |
| 1140 | 575. | 1141 | 588. | 1142 | 604. | 1143 | 623. | 1144 | 644. |
| 1145 | 670. | 1146 | 702. | 1147 | 736. | 1148 | 771. | 1149 | 811. |
| 1150 | 854. | 1151 | 908. | 1152 | 983. | 1153 | 1066. | 1154 | 1183. |
| 1155 | 1330. | 1156 | 1491. | 1157 | 1660. | 1158 | 1821. | 1159 | 1946. |
| 1160 | 2018. | 1161 | 2039. | 1162 | 2037. | 1163 | 2002. | 1164 | 1932. |
| 1165 | 1834. | 1166 | 1713. | 1167 | 1585. | 1168 | 1460. | 1169 | 1340. |
| 1170 | 1213. | 1171 | 1089. | 1172 | 978. | 1173 | 879. | 1174 | 787. |
| 1175 | 705. | 1176 | 638. | 1177 | 593. | 1178 | 554. | 1179 | 521. |
| 1180 | 492. | 1181 | 467. | 1182 | 446. | 1183 | 428. | 1184 | 412. |
| 1185 | 399. | 1186 | 388. | 1187 | 379. | 1188 | 371. | 1189 | 365. |
| 1190 | 361. | 1191 | 357. | 1192 | 353. | 1193 | 350. | 1194 | 347. |
| 1195 | 344. | 1196 | 342. | 1197 | 339. | 1198 | 336. | 1199 | 333. |
| 1200 | 329. | 1201 | 325. | 1202 | 321. | 1203 | 316. | 1204 | 312. |
| 1205 | 307. | 1206 | 303. | 1207 | 299. | 1208 | 294. | 1209 | 291. |
| 1210 | 287. | 1211 | 284. | 1212 | 281. | 1213 | 278. | 1214 | 276. |
| 1215 | 273. | 1216 | 271. | 1217 | 268. | 1218 | 266. | 1219 | 263. |
| 1220 | 259. | 1221 | 256. | 1222 | 252. | 1223 | 247. | 1224 | 243. |
| 1225 | 239. | 1226 | 235. | 1227 | 231. | 1228 | 227. | 1229 | 223. |
| 1230 | 220. | 1231 | 217. | 1232 | 214. | 1233 | 212. | 1234 | 210. |
| 1235 | 208. | 1236 | 206. | 1237 | 204. | 1238 | 203. | 1239 | 201. |
| 1240 | 199. | 1241 | 198. | 1242 | 196. | 1243 | 193. | 1244 | 191. |
| 1245 | 189. | 1246 | 187. | 1247 | 185. | 1248 | 183. | 1249 | 181. |
| 1250 | 179. | 1251 | 177. | 1252 | 176. | 1253 | 175. | 1254 | 174. |
| 1255 | 173. | 1256 | 172. | 1257 | 172. | 1258 | 171. | 1259 | 171. |
| 1260 | 171. | 1261 | 170. | 1262 | 170. | 1263 | 170. | 1264 | 169. |
| 1265 | 168. | 1266 | 168. | 1267 | 167. | 1268 | 165. | 1269 | 164. |
| 1270 | 162. | 1271 | 160. | 1272 | 158. | 1273 | 155. | 1274 | 153. |
| 1275 | 150. | 1276 | 147. | 1277 | 144. | 1278 | 142. | 1279 | 139. |
| 1280 | 137. | 1281 | 135. | 1282 | 133. | 1283 | 131. | 1284 | 130. |
| 1285 | 129. | 1286 | 128. | 1287 | 127. | 1288 | 126. | 1289 | 126. |
| 1290 | 125. | 1291 | 125. | 1292 | 125. | 1293 | 124. | 1294 | 124. |
| 1295 | 124. | 1296 | 124. | 1297 | 124. | 1298 | 124. | 1299 | 124. |
| 1300 | 124. | 1310 | 114. | 1320 | 98. | 1330 | 86. | 1340 | 83. |
| 1350 | 78. | 1360 | 71. | 1370 | 65. | 1380 | 62. | 1390 | 62. |
| 1400 | 62. | 1420 | 56. | 1440 | 50. | 1460 | 46. | 1500 | 40. |

MODIFIED RATIONAL METHOD HYDROLOGY
OUTFLOW FROM THROTTLING STRUCTURE BASIN
HYDROGRAPH AT 861411 54A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 4. | 200 | 12. | 300 | 21. | 400 | 31. |
| 500 | 40. | 600 | 52. | 700 | 77. | 800 | 112. | 900 | 158. |
| 1000 | 217. | 1050 | 271. | 1100 | 322. | 1110 | 349. | 1120 | 377. |
| 1130 | 418. | 1131 | 423. | 1132 | 429. | 1133 | 437. | 1134 | 445. |
| 1135 | 450. | 1136 | 458. | 1137 | 466. | 1138 | 473. | 1139 | 481. |
| 1140 | 489. | 1141 | 496. | 1142 | 500. | 1143 | 506. | 1144 | 518. |
| 1145 | 531. | 1146 | 540. | 1147 | 552. | 1148 | 566. | 1149 | 580. |
| 1150 | 596. | 1151 | 615. | 1152 | 636. | 1153 | 653. | 1154 | 669. |
| 1155 | 690. | 1156 | 716. | 1157 | 742. | 1158 | 770. | 1159 | 798. |
| 1160 | 829. | 1161 | 858. | 1162 | 887. | 1163 | 908. | 1164 | 923. |
| 1165 | 937. | 1166 | 949. | 1167 | 958. | 1168 | 965. | 1169 | 971. |
| 1170 | 976. | 1171 | 978. | 1172 | 979. | 1173 | 978. | 1174 | 976. |
| 1175 | 974. | 1176 | 969. | 1177 | 964. | 1178 | 958. | 1179 | 953. |
| 1180 | 946. | 1181 | 940. | 1182 | 933. | 1183 | 927. | 1184 | 920. |
| 1185 | 912. | 1186 | 905. | 1187 | 896. | 1188 | 883. | 1189 | 871. |
| 1190 | 858. | 1191 | 846. | 1192 | 834. | 1193 | 823. | 1194 | 810. |
| 1195 | 798. | 1196 | 785. | 1197 | 774. | 1198 | 762. | 1199 | 751. |
| 1200 | 739. | 1201 | 729. | 1202 | 713. | 1203 | 700. | 1204 | 686. |
| 1205 | 673. | 1206 | 660. | 1207 | 647. | 1208 | 629. | 1209 | 607. |
| 1210 | 585. | 1211 | 566. | 1212 | 547. | 1213 | 529. | 1214 | 508. |
| 1215 | 487. | 1216 | 468. | 1217 | 450. | 1218 | 433. | 1219 | 420. |
| 1220 | 404. | 1221 | 392. | 1222 | 378. | 1223 | 367. | 1224 | 355. |
| 1225 | 345. | 1226 | 336. | 1227 | 326. | 1228 | 317. | 1229 | 304. |
| 1230 | 291. | 1231 | 281. | 1232 | 271. | 1233 | 262. | 1234 | 254. |
| 1235 | 248. | 1236 | 241. | 1237 | 237. | 1238 | 231. | 1239 | 226. |
| 1240 | 222. | 1241 | 217. | 1242 | 213. | 1243 | 210. | 1244 | 206. |
| 1245 | 203. | 1246 | 201. | 1247 | 198. | 1248 | 195. | 1249 | 192. |
| 1250 | 191. | 1251 | 188. | 1252 | 186. | 1253 | 184. | 1254 | 181. |
| 1255 | 180. | 1256 | 179. | 1257 | 177. | 1258 | 176. | 1259 | 176. |
| 1260 | 175. | 1261 | 173. | 1262 | 173. | 1263 | 172. | 1264 | 172. |
| 1265 | 172. | 1266 | 171. | 1267 | 171. | 1268 | 169. | 1269 | 168. |
| 1270 | 168. | 1271 | 167. | 1272 | 165. | 1273 | 162. | 1274 | 161. |
| 1275 | 160. | 1276 | 157. | 1277 | 156. | 1278 | 153. | 1279 | 150. |
| 1280 | 149. | 1281 | 146. | 1282 | 143. | 1283 | 142. | 1284 | 139. |
| 1285 | 137. | 1286 | 135. | 1287 | 134. | 1288 | 133. | 1289 | 131. |
| 1290 | 130. | 1291 | 129. | 1292 | 129. | 1293 | 128. | 1294 | 127. |
| 1295 | 127. | 1296 | 126. | 1297 | 126. | 1298 | 125. | 1299 | 125. |
| 1300 | 125. | 1310 | 121. | 1320 | 111. | 1330 | 98. | 1340 | 89. |
| 1350 | 82. | 1360 | 77. | 1370 | 71. | 1380 | 65. | 1390 | 63. |
| 1400 | 62. | 1420 | 60. | 1440 | 54. | 1460 | 48. | 1500 | 43. |

MODIFIED RATIONAL METHOD HYDROLOGY
AT DOWNSTREAM STUDY LIMIT
HYDROGRAPH AT 861411 - 58A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 4. | 200 | 11. | 300 | 21. | 400 | 30. |
| 500 | 40. | 600 | 51. | 700 | 79. | 800 | 117. | 900 | 166. |
| 1000 | 228. | 1050 | 284. | 1100 | 340. | 1110 | 362. | 1120 | 395. |
| 1130 | 436. | 1131 | 441. | 1132 | 447. | 1133 | 453. | 1134 | 460. |
| 1135 | 468. | 1136 | 476. | 1137 | 484. | 1138 | 493. | 1139 | 502. |
| 1140 | 510. | 1141 | 520. | 1142 | 529. | 1143 | 536. | 1144 | 543. |
| 1145 | 552. | 1146 | 565. | 1147 | 578. | 1148 | 591. | 1149 | 611. |
| 1150 | 635. | 1151 | 669. | 1152 | 721. | 1153 | 753. | 1154 | 775. |
| 1155 | 792. | 1156 | 808. | 1157 | 825. | 1158 | 844. | 1159 | 859. |
| 1160 | 865. | 1161 | 882. | 1162 | 898. | 1163 | 907. | 1164 | 924. |
| 1165 | 940. | 1166 | 954. | 1167 | 966. | 1168 | 977. | 1169 | 985. |
| 1170 | 991. | 1171 | 995. | 1172 | 998. | 1173 | 999. | 1174 | 998. |
| 1175 | 997. | 1176 | 994. | 1177 | 989. | 1178 | 984. | 1179 | 978. |
| 1180 | 972. | 1181 | 966. | 1182 | 960. | 1183 | 953. | 1184 | 947. |
| 1185 | 940. | 1186 | 933. | 1187 | 925. | 1188 | 916. | 1189 | 906. |
| 1190 | 894. | 1191 | 881. | 1192 | 868. | 1193 | 856. | 1194 | 844. |
| 1195 | 832. | 1196 | 819. | 1197 | 807. | 1198 | 794. | 1199 | 783. |
| 1200 | 771. | 1201 | 760. | 1202 | 748. | 1203 | 736. | 1204 | 722. |
| 1205 | 708. | 1206 | 695. | 1207 | 682. | 1208 | 669. | 1209 | 654. |
| 1210 | 635. | 1211 | 614. | 1212 | 594. | 1213 | 574. | 1214 | 555. |
| 1215 | 536. | 1216 | 516. | 1217 | 496. | 1218 | 477. | 1219 | 459. |
| 1220 | 443. | 1221 | 428. | 1222 | 414. | 1223 | 401. | 1224 | 389. |
| 1225 | 377. | 1226 | 366. | 1227 | 356. | 1228 | 346. | 1229 | 337. |
| 1230 | 327. | 1231 | 315. | 1232 | 303. | 1233 | 292. | 1234 | 282. |
| 1235 | 273. | 1236 | 265. | 1237 | 258. | 1238 | 252. | 1239 | 246. |
| 1240 | 241. | 1241 | 236. | 1242 | 231. | 1243 | 226. | 1244 | 222. |
| 1245 | 219. | 1246 | 215. | 1247 | 212. | 1248 | 209. | 1249 | 207. |
| 1250 | 204. | 1251 | 201. | 1252 | 199. | 1253 | 197. | 1254 | 194. |
| 1255 | 192. | 1256 | 190. | 1257 | 188. | 1258 | 187. | 1259 | 185. |
| 1260 | 184. | 1261 | 183. | 1262 | 181. | 1263 | 180. | 1264 | 179. |
| 1265 | 177. | 1266 | 177. | 1267 | 176. | 1268 | 175. | 1269 | 174. |
| 1270 | 173. | 1271 | 171. | 1272 | 171. | 1273 | 170. | 1274 | 168. |
| 1275 | 166. | 1276 | 165. | 1277 | 163. | 1278 | 161. | 1279 | 159. |
| 1280 | 157. | 1281 | 155. | 1282 | 153. | 1283 | 150. | 1284 | 148. |
| 1285 | 146. | 1286 | 144. | 1287 | 142. | 1288 | 140. | 1289 | 138. |
| 1290 | 137. | 1291 | 135. | 1292 | 134. | 1293 | 133. | 1294 | 132. |
| 1295 | 131. | 1296 | 131. | 1297 | 130. | 1298 | 129. | 1299 | 129. |
| 1300 | 128. | 1310 | 122. | 1320 | 114. | 1330 | 102. | 1340 | 92. |
| 1350 | 84. | 1360 | 79. | 1370 | 73. | 1380 | 67. | 1390 | 64. |
| 1400 | 62. | 1420 | 60. | 1440 | 55. | 1460 | 49. | 1500 | 43. |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

## BASIN#1

## 50-YEAR STORM

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 3.00 | 100.00 | 1.50 | 0.21 | 0.53 | 0.07 | 0.13 | 828.18 |
| 200.00 | 5.00 | 100.00 | 4.00 | 0.55 | 2.90 | 0.40 | 0.28 | 828.97 |
| 300.00 | 7.00 | 100.00 | 6.00 | 0.83 | 3.91 | 0.54 | 0.57 | 829.36 |
| 400.00 | 9.00 | 100.00 | 8.00 | 1.10 | 5.23 | 0.72 | 0.95 | 829.89 |
| 500.00 | 12.00 | 100.00 | 10.50 | 1.45 | 6.30 | 0.87 | 1.53 | 830.40 |
| 600.00 | 15.00 | 100.00 | 13.50 | 1.86 | 7.57 | 1.04 | 2.35 | 831.04 |
| 700.00 | 25.00 | 100.00 | 20.00 | 2.75 | 9.16 | 1.26 | 3.84 | 831.83 |
| 800.00 | 39.00 | 100.00 | 32.00 | 4.41 | 11.09 | 1.53 | 6.72 | 833.06 |
| 900.00 | 57.00 | 100.00 | 48.00 | 6.61 | 13.17 | 1.81 | 11.52 | 834.45 |
| 1000.00 | 99.00 | 100.00 | 78.00 | 10.74 | 15.64 | 2.15 | 20.11 | 836.34 |
| 1050.00 | 113.00 | 50.00 | 106.00 | 7.30 | 16.89 | 1.16 | 26.25 | 837.39 |
| 1100.00 | 155.00 | 50.00 | 134.00 | 9.23 | 18.20 | 1.25 | 34.22 | 838.58 |
| 1110.00 | 172.00 | 10.00 | 163.50 | 2.25 | 18.57 | 0.26 | 36.22 | 838.89 |
| 1120.00 | 211.00 | 10.00 | 191.50 | 2.64 | 18.86 | 0.26 | 38.60 | 839.20 |
| 1130.00 | 243.00 | 10.00 | 227.00 | 3.13 | 19.14 | 0.26 | 41.46 | 839.55 |
| 1131.00 | 246.00 | 1.00 | 244.50 | 0.34 | 19.18 | 0.03 | 41.77 | 839.59 |
| 1132.00 | 250.00 | 1.00 | 248.00 | 0.34 | 19.21 | 0.03 | 42.09 | 839.64 |
| 1133.00 | 253.00 | 1.00 | 251.50 | 0.35 | 19.23 | 0.03 | 42.41 | 839.66 |
| 1134.00 | 257.00 | 1.00 | 255.00 | 0.35 | 19.26 | 0.03 | 42.73 | 839.70 |
| 1135.00 | 261.00 | 1.00 | 259.00 | 0.36 | 19.30 | 0.03 | 43.06 | 839.75 |
| 1136.00 | 274.00 | 1.00 | 267.50 | 0.37 | 19.33 | 0.03 | 43.40 | 839.79 |
| 1137.00 | 288.00 | 1.00 | 281.00 | 0.39 | 19.37 | 0.03 | 43.76 | 839.84 |
| 1138.00 | 303.00 | 1.00 | 295.50 | 0.41 | 19.40 | 0.03 | 44.14 | 839.88 |
| 1139.00 | 318.00 | 1.00 | 310.50 | 0.43 | 19.44 | 0.03 | 44.54 | 839.92 |
| 1140.00 | 333.00 | 1.00 | 325.50 | 0.45 | 19.49 | 0.03 | 44.97 | 839.99 |
| 1141.00 | 355.00 | 1.00 | 344.00 | 0.47 | 19.53 | 0.03 | 45.41 | 840.03 |
| 1142.00 | 377.00 | 1.00 | 366.00 | 0.50 | 19.60 | 0.03 | 45.89 | 840.10 |
| 1143.00 | 399.00 | 1.00 | 388.00 | 0.53 | 19.64 | 0.03 | 46.40 | 840.14 |
| 1144.00 | 423.00 | 1.00 | 411.00 | 0.57 | 19.71 | 0.03 | 46.94 | 840.21 |
| 1145.00 | 445.00 | 1.00 | 434.00 | 0.60 | 19.78 | 0.03 | 47.51 | 840.28 |
| 1146.00 | 469.00 | 1.00 | 457.00 | 0.63 | 19.84 | 0.03 | 48.11 | 840.34 |
| 1147.00 | 491.00 | 1.00 | 480.00 | 0.66 | 19.91 | 0.03 | 48.74 | 840.41 |
| 1148.00 | 515.00 | 1.00 | 503.00 | 0.69 | 20.00 | 0.03 | 49.41 | 840.50 |
| 1149.00 | 545.00 | 1.00 | 530.00 | 0.73 | 20.06 | 0.03 | 50.11 | 840.56 |
| 1150.00 | 597.00 | 1.00 | 571.00 | 0.79 | 20.15 | 0.03 | 50.87 | 840.65 |
| 1151.00 | 714.00 | 1.00 | 655.50 | 0.90 | 20.24 | 0.03 | 51.74 | 840.74 |
| 1152.00 | 867.00 | 1.00 | 790.50 | 1.09 | 20.37 | 0.03 | 52.80 | 840.87 |
| 1153.00 | 1015.00 | 1.00 | 941.00 | 1.30 | 20.50 | 0.03 | 54.07 | 841.00 |
| 1154.00 | 1080.00 | 1.00 | 1047.50 | 1.44 | 20.62 | 0.03 | 55.49 | 841.18 |
| 1155.00 | 1108.00 | 1.00 | 1094.00 | 1.51 | 20.75 | 0.03 | 56.97 | 841.35 |
| 1156.00 | 1113.00 | 1.00 | 1110.50 | 1.53 | 20.87 | 0.03 | 58.47 | 841.53 |
| 1157.00 | 1101.00 | 1.00 | 1107.00 | 1.52 | 20.99 | 0.03 | 59.96 | 841.71 |
| 1158.00 | 1081.00 | 1.00 | 1091.00 | 1.50 | 21.12 | 0.03 | 61.44 | 841.88 |
| 1159.00 | 1052.00 | 1.00 | 1066.50 | 1.47 | 21.23 | 0.03 | 62.88 | 842.04 |
| 1160.00 | 1006.00 | 1.00 | 1029.00 | 1.42 | 21.37 | 0.03 | 64.26 | 842.21 |
| 1161.00 | 932.00 | 1.00 | 969.00 | 1.33 | 21.49 | 0.03 | 65.57 | 842.37 |
| 1162.00 | 838.00 | 1.00 | 885.00 | 1.22 | 21.60 | 0.03 | 66.76 | 842.50 |
| 1163.00 | 749.00 | 1.00 | 793.50 | 1.09 | 21.70 | 0.03 | 67.82 | 842.63 |
| 1164.00 | 672.00 | 1.00 | 710.50 | 0.98 | 21.79 | 0.03 | 68.77 | 842.74 |
| 1165.00 | 611.00 | 1.00 | 641.50 | 0.88 | 21.86 | 0.03 | 69.62 | 842.83 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1166.00 | 544.00 | 1.00 | 577.50 | 0.80 | 21.95 | 0.03 | 70.39 | 842.94 |
| 1167.00 | 463.00 | 1.00 | 503.50 | 0.69 | 22.00 | 0.03 | 71.05 | 843.00 |
| 1168.00 | 369.00 | 1.00 | 416.00 | 0.57 | 22.04 | 0.03 | 71.59 | 843.07 |
| 1169.00 | 285.00 | 1.00 | 327.00 | 0.45 | 22.07 | 0.03 | 72.01 | 843.11 |
| 1170.00 | 237.00 | 1.00 | 261.00 | 0.36 | 22.09 | 0.03 | 72.34 | 843.16 |
| 1171.00 | 209.00 | 1.00 | 223.00 | 0.31 | 22.11 | 0.03 | 72.62 | 843.18 |
| 1172.00 | 195.00 | 1.00 | 202.00 | 0.28 | 22.12 | 0.03 | 72.87 | 843.20 |
| 1173.00 | 185.00 | 1.00 | 190.00 | 0.26 | 22.13 | 0.03 | 73.10 | 843.22 |
| 1174.00 | 178.00 | 1.00 | 181.50 | 0.25 | 22.16 | 0.03 | 73.32 | 843.27 |
| 1175.00 | 171.00 | 1.00 | 174.50 | 0.24 | 22.17 | 0.03 | 73.53 | 843.29 |
| 1176.00 | 164.00 | 1.00 | 167.50 | 0.23 | 22.19 | 0.03 | 73.73 | 843.31 |
| 1177.00 | 160.00 | 1.00 | 162.00 | 0.22 | 22.20 | 0.03 | 73.92 | 843.33 |
| 1178.00 | 156.00 | 1.00 | 158.00 | 0.22 | 22.21 | 0.03 | 74.11 | 843.36 |
| 1179.00 | 153.00 | 1.00 | 154.50 | 0.21 | 22.21 | 0.03 | 74.29 | 843.36 |
| 1180.00 | 150.00 | 1.00 | 151.50 | 0.21 | 22.23 | 0.03 | 74.47 | 843.38 |
| 1181.00 | 148.00 | 1.00 | 149.00 | 0.21 | 22.24 | 0.03 | 74.64 | 843.40 |
| 1182.00 | 146.00 | 1.00 | 147.00 | 0.20 | 22.25 | 0.03 | 74.81 | 843.42 |
| 1183.00 | 144.00 | 1.00 | 145.00 | 0.20 | 22.27 | 0.03 | 74.98 | 843.44 |
| 1184.00 | 142.00 | 1.00 | 143.00 | 0.20 | 22.28 | 0.03 | 75.15 | 843.47 |
| 1185.00 | 140.00 | 1.00 | 141.00 | 0.19 | 22.29 | 0.03 | 75.31 | 843.49 |
| 1186.00 | 138.00 | 1.00 | 139.00 | 0.19 | 22.29 | 0.03 | 75.47 | 843.49 |
| 1187.00 | 137.00 | 1.00 | 137.50 | 0.19 | 22.31 | 0.03 | 75.63 | 843.51 |
| 1188.00 | 136.00 | 1.00 | 136.50 | 0.19 | 22.32 | 0.03 | 75.79 | 843.53 |
| 1189.00 | 136.00 | 1.00 | 136.00 | 0.19 | 22.33 | 0.03 | 75.95 | 843.55 |
| 1190.00 | 136.00 | 1.00 | 136.00 | 0.19 | 22.35 | 0.03 | 76.10 | 843.58 |
| 1191.00 | 134.00 | 1.00 | 135.00 | 0.19 | 22.35 | 0.03 | 76.26 | 843.58 |
| 1192.00 | 132.00 | 1.00 | 133.00 | 0.18 | 22.36 | 0.03 | 76.41 | 843.60 |
| 1193.00 | 129.00 | 1.00 | 130.50 | 0.18 | 22.37 | 0.03 | 76.56 | 843.62 |
| 1194.00 | 126.00 | 1.00 | 127.50 | 0.18 | 22.39 | 0.03 | 76.70 | 843.64 |
| 1195.00 | 123.00 | 1.00 | 124.50 | 0.17 | 22.39 | 0.03 | 76.85 | 843.64 |
| 1196.00 | 120.00 | 1.00 | 121.50 | 0.17 | 22.40 | 0.03 | 76.98 | 843.66 |
| 1197.00 | 117.00 | 1.00 | 118.50 | 0.16 | 22.41 | 0.03 | 77.11 | 843.69 |
| 1198.00 | 113.00 | 1.00 | 115.00 | 0.16 | 22.41 | 0.03 | 77.24 | 843.69 |
| 1199.00 | 110.00 | 1.00 | 111.50 | 0.15 | 22.42 | 0.03 | 77.36 | 843.71 |
| 1200.00 | 108.00 | 1.00 | 109.00 | 0.15 | 22.44 | 0.03 | 77.48 | 843.73 |
| 1201.00 | 105.00 | 1.00 | 106.50 | 0.15 | 22.44 | 0.03 | 77.60 | 843.73 |
| 1202.00 | 103.00 | 1.00 | 104.00 | 0.14 | 22.45 | 0.03 | 77.71 | 843.75 |
| 1203.00 | 102.00 | 1.00 | 102.50 | 0.14 | 22.45 | 0.03 | 77.82 | 843.75 |
| 1204.00 | 100.00 | 1.00 | 101.00 | 0.14 | 22.46 | 0.03 | 77.93 | 843.77 |
| 1205.00 | 99.00 | 1.00 | 99.50 | 0.14 | 22.46 | 0.03 | 78.04 | 843.77 |
| 1206.00 | 97.00 | 1.00 | 98.00 | 0.13 | 22.48 | 0.03 | 78.14 | 843.80 |
| 1207.00 | 96.00 | 1.00 | 96.50 | 0.13 | 22.48 | 0.03 | 78.24 | 843.80 |
| 1208.00 | 96.00 | 1.00 | 96.00 | 0.13 | 22.49 | 0.03 | 78.34 | 843.82 |
| 1209.00 | 96.00 | 1.00 | 96.00 | 0.13 | 22.49 | 0.03 | 78.44 | 843.82 |
| 1210.00 | 96.00 | 1.00 | 96.00 | 0.13 | 22.50 | 0.03 | 78.55 | 843.84 |
| 1211.00 | 94.00 | 1.00 | 95.00 | 0.13 | 22.50 | 0.03 | 78.65 | 843.84 |
| 1212.00 | 92.00 | 1.00 | 93.00 | 0.13 | 22.52 | 0.03 | 78.74 | 843.86 |
| 1213.00 | 89.00 | 1.00 | 90.50 | 0.12 | 22.52 | 0.03 | 78.84 | 843.86 |
| 1214.00 | 87.00 | 1.00 | 88.00 | 0.12 | 22.53 | 0.03 | 78.93 | 843.88 |
| 1215.00 | 84.00 | 1.00 | 85.50 | 0.12 | 22.53 | 0.03 | 79.01 | 843.88 |
| 1216.00 | 81.00 | 1.00 | 82.50 | 0.11 | 22.54 | 0.03 | 79.10 | 843.91 |
| 1217.00 | 78.00 | 1.00 | 79.50 | 0.11 | 22.54 | 0.03 | 79.17 | 843.91 |
| 1218.00 | 75.00 | 1.00 | 76.50 | 0.11 | 22.54 | 0.03 | 79.25 | 843.91 |
| 1219.00 | 72.00 | 1.00 | 73.50 | 0.10 | 22.56 | 0.03 | 79.32 | 843.93 |
| 1220.00 | 69.00 | 1.00 | 70.50 | 0.10 | 22.56 | 0.03 | 79.38 | 843.93 |
| 1221.00 | 67.00 | 1.00 | 68.00 | 0.09 | 22.56 | 0.03 | 79.45 | 843.93 |
| 1222.00 | 65.00 | 1.00 | 66.00 | 0.09 | 22.57 | 0.03 | 79.51 | 843.95 |
| 1223.00 | 63.00 | 1.00 | 64.00 | 0.09 | 22.57 | 0.03 | 79.56 | 843.95 |
| 1224.00 | 62.00 | 1.00 | 62.50 | 0.09 | 22.57 | 0.03 | 79.62 | 843.95 |
| 1225.00 | 60.00 | 1.00 | 61.00 | 0.08 | 22.58 | 0.03 | 79.67 | 843.97 |
| 1226.00 | 58.00 | 1.00 | 59.00 | 0.08 | 22.58 | 0.03 | 79.72 | 843.97 |
| 1227.00 | 57.00 | 1.00 | 57.50 | 0.08 | 22.58 | 0.03 | 79.77 | 843.97 |
| 1228.00 | 57.00 | 1.00 | 57.00 | 0.08 | 22.58 | 0.03 | 79.82 | 843.97 |
| 1229.00 | 57.00 | 1.00 | 57.00 | 0.08 | 22.60 | 0.03 | 79.87 | 843.99 |
| 1230.00 | 56.00 | 1.00 | 56.50 | 0.08 | 22.60 | 0.03 | 79.91 | 843.99 |
| 1231.00 | 55.00 | 1.00 | 55.50 | 0.08 | 22.60 | 0.03 | 79.96 | 843.99 |

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|---|---|---|---|---|---|---|---|---|
| 1232.00 | 54.00 | 1.00 | 54.50 | 0.08 | 22.60 | 0.03 | 80.00 | 843.99 |
| 1233.00 | 52.00 | 1.00 | 53.00 | 0.07 | 22.60 | 0.03 | 80.04 | 843.99 |
| 1234.00 | 51.00 | 1.00 | 51.50 | 0.07 | 22.61 | 0.03 | 80.08 | 844.02 |
| 1235.00 | 50.00 | 1.00 | 50.50 | 0.07 | 22.61 | 0.03 | 80.12 | 844.02 |
| 1236.00 | 49.00 | 1.00 | 49.50 | 0.07 | 22.61 | 0.03 | 80.16 | 844.02 |
| 1237.00 | 49.00 | 1.00 | 49.00 | 0.07 | 22.61 | 0.03 | 80.19 | 844.02 |
| 1238.00 | 48.00 | 1.00 | 48.50 | 0.07 | 22.61 | 0.03 | 80.23 | 844.02 |
| 1239.00 | 47.00 | 1.00 | 47.50 | 0.07 | 22.62 | 0.03 | 80.26 | 844.04 |
| 1240.00 | 46.00 | 1.00 | 46.50 | 0.06 | 22.62 | 0.03 | 80.30 | 844.04 |
| 1241.00 | 46.00 | 1.00 | 46.00 | 0.06 | 22.62 | 0.03 | 80.33 | 844.04 |
| 1242.00 | 45.00 | 1.00 | 45.50 | 0.06 | 22.62 | 0.03 | 80.36 | 844.04 |
| 1243.00 | 44.00 | 1.00 | 44.50 | 0.06 | 22.62 | 0.03 | 80.39 | 844.04 |
| 1244.00 | 44.00 | 1.00 | 44.00 | 0.06 | 22.62 | 0.03 | 80.42 | 844.04 |
| 1245.00 | 43.00 | 1.00 | 43.50 | 0.06 | 22.64 | 0.03 | 80.45 | 844.06 |
| 1246.00 | 42.00 | 1.00 | 42.50 | 0.06 | 22.64 | 0.03 | 80.48 | 844.06 |
| 1247.00 | 42.00 | 1.00 | 42.00 | 0.06 | 22.64 | 0.03 | 80.50 | 844.06 |
| 1248.00 | 41.00 | 1.00 | 41.50 | 0.06 | 22.64 | 0.03 | 80.53 | 844.06 |
| 1249.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.64 | 0.03 | 80.56 | 844.06 |
| 1250.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.64 | 0.03 | 80.58 | 844.06 |
| 1251.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.64 | 0.03 | 80.61 | 844.06 |
| 1252.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.65 | 0.03 | 80.63 | 844.08 |
| 1253.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.65 | 0.03 | 80.66 | 844.08 |
| 1254.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.65 | 0.03 | 80.68 | 844.08 |
| 1255.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.65 | 0.03 | 80.71 | 844.08 |
| 1256.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.65 | 0.03 | 80.73 | 844.08 |
| 1257.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.65 | 0.03 | 80.76 | 844.08 |
| 1258.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.65 | 0.03 | 80.78 | 844.08 |
| 1259.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.66 | 0.03 | 80.81 | 844.10 |
| 1260.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.66 | 0.03 | 80.83 | 844.10 |
| 1261.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.66 | 0.03 | 80.86 | 844.10 |
| 1262.00 | 41.00 | 1.00 | 41.00 | 0.06 | 22.66 | 0.03 | 80.88 | 844.10 |
| 1263.00 | 40.00 | 1.00 | 40.50 | 0.06 | 22.66 | 0.03 | 80.91 | 844.10 |
| 1264.00 | 39.00 | 1.00 | 39.50 | 0.05 | 22.66 | 0.03 | 80.93 | 844.10 |
| 1265.00 | 38.00 | 1.00 | 38.50 | 0.05 | 22.66 | 0.03 | 80.95 | 844.10 |
| 1266.00 | 37.00 | 1.00 | 37.50 | 0.05 | 22.66 | 0.03 | 80.97 | 844.10 |
| 1267.00 | 36.00 | 1.00 | 36.50 | 0.05 | 22.68 | 0.03 | 80.99 | 844.13 |
| 1268.00 | 35.00 | 1.00 | 35.50 | 0.05 | 22.68 | 0.03 | 81.01 | 844.13 |
| 1269.00 | 34.00 | 1.00 | 34.50 | 0.05 | 22.68 | 0.03 | 81.03 | 844.13 |
| 1270.00 | 33.00 | 1.00 | 33.50 | 0.05 | 22.68 | 0.03 | 81.04 | 844.13 |
| 1271.00 | 32.00 | 1.00 | 32.50 | 0.04 | 22.68 | 0.03 | 81.06 | 844.13 |
| 1272.00 | 31.00 | 1.00 | 31.50 | 0.04 | 22.68 | 0.03 | 81.07 | 844.13 |
| 1273.00 | 30.00 | 1.00 | 30.50 | 0.04 | 22.68 | 0.03 | 81.08 | 844.13 |
| 1274.00 | 29.00 | 1.00 | 29.50 | 0.04 | 22.68 | 0.03 | 81.09 | 844.13 |
| 1275.00 | 28.00 | 1.00 | 28.50 | 0.04 | 22.68 | 0.03 | 81.10 | 844.13 |
| 1276.00 | 28.00 | 1.00 | 28.00 | 0.04 | 22.68 | 0.03 | 81.10 | 844.13 |
| 1277.00 | 27.00 | 1.00 | 27.50 | 0.04 | 22.68 | 0.03 | 81.11 | 844.13 |
| 1278.00 | 26.00 | 1.00 | 26.50 | 0.04 | 22.68 | 0.03 | 81.11 | 844.13 |
| 1279.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.12 | 844.13 |
| 1280.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.12 | 844.13 |
| 1281.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.13 | 844.13 |
| 1282.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.13 | 844.13 |
| 1283.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.14 | 844.13 |
| 1284.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.14 | 844.13 |
| 1285.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.15 | 844.13 |
| 1286.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.15 | 844.13 |
| 1287.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.16 | 844.13 |
| 1288.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.16 | 844.13 |
| 1289.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.16 | 844.13 |
| 1290.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.68 | 0.03 | 81.17 | 844.13 |
| 1291.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.17 | 844.15 |
| 1292.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.18 | 844.15 |
| 1293.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.18 | 844.15 |
| 1294.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.19 | 844.15 |
| 1295.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.19 | 844.15 |
| 1296.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.20 | 844.15 |
| 1297.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.20 | 844.15 |

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|---|---|---|---|---|---|---|---|---|
| 1298.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.21 | 844.15 |
| 1299.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.21 | 844.15 |
| 1300.00 | 26.00 | 1.00 | 26.00 | 0.04 | 22.69 | 0.03 | 81.22 | 844.15 |
| 1310.00 | 18.00 | 10.00 | 22.00 | 0.30 | 22.69 | 0.31 | 81.21 | 844.15 |
| 1320.00 | 13.00 | 10.00 | 15.50 | 0.21 | 22.68 | 0.31 | 81.11 | 844.13 |
| 1330.00 | 13.00 | 10.00 | 13.00 | 0.18 | 22.66 | 0.31 | 80.97 | 844.10 |
| 1340.00 | 13.00 | 10.00 | 13.00 | 0.18 | 22.66 | 0.31 | 80.84 | 844.10 |
| 1350.00 | 10.00 | 10.00 | 11.50 | 0.16 | 22.65 | 0.31 | 80.69 | 844.08 |
| 1360.00 | 8.00 | 10.00 | 9.00 | 0.12 | 22.64 | 0.31 | 80.50 | 844.06 |
| 1370.00 | 8.00 | 10.00 | 8.00 | 0.11 | 22.62 | 0.31 | 80.30 | 844.04 |
| 1380.00 | 8.00 | 10.00 | 8.00 | 0.11 | 22.61 | 0.31 | 80.10 | 844.02 |
| 1390.00 | 8.00 | 10.00 | 8.00 | 0.11 | 22.60 | 0.31 | 79.90 | 843.99 |
| 1400.00 | 8.00 | 10.00 | 8.00 | 0.11 | 22.58 | 0.31 | 79.69 | 843.97 |
| 1420.00 | 4.00 | 20.00 | 6.00 | 0.17 | 22.54 | 0.62 | 79.24 | 843.91 |
| 1440.00 | 4.00 | 20.00 | 4.00 | 0.11 | 22.52 | 0.62 | 78.73 | 843.86 |
| 1460.00 | 2.00 | 20.00 | 3.00 | 0.08 | 22.48 | 0.62 | 78.19 | 843.80 |
| 1500.00 | 2.00 | 40.00 | 2.00 | 0.11 | 22.40 | 1.23 | 77.07 | 843.66 |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

**BASIN #2**

**50-YEAR STORM**

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 2.00 | 100.00 | 1.00 | 0.14 | 0.22 | 0.03 | 0.11 | 816.07 |
| 200.00 | 2.00 | 100.00 | 2.00 | 0.28 | 1.48 | 0.20 | 0.18 | 816.48 |
| 300.00 | 3.00 | 100.00 | 2.50 | 0.34 | 2.17 | 0.30 | 0.23 | 816.70 |
| 400.00 | 3.00 | 100.00 | 3.00 | 0.41 | 2.78 | 0.38 | 0.26 | 816.90 |
| 500.00 | 4.00 | 100.00 | 3.50 | 0.48 | 3.19 | 0.44 | 0.30 | 817.04 |
| 600.00 | 5.00 | 100.00 | 4.50 | 0.62 | 3.56 | 0.49 | 0.43 | 817.19 |
| 700.00 | 8.00 | 100.00 | 6.50 | 0.90 | 4.43 | 0.61 | 0.71 | 817.55 |
| 800.00 | 13.00 | 100.00 | 10.50 | 1.45 | 5.84 | 0.80 | 1.36 | 818.17 |
| 900.00 | 24.00 | 100.00 | 18.50 | 2.55 | 7.58 | 1.04 | 2.86 | 819.04 |
| 1000.00 | 44.00 | 100.00 | 34.00 | 4.68 | 9.78 | 1.35 | 6.20 | 820.19 |
| 1050.00 | 47.00 | 50.00 | 45.50 | 3.13 | 10.70 | 0.74 | 8.59 | 820.80 |
| 1100.00 | 68.00 | 50.00 | 57.50 | 3.96 | 11.69 | 0.81 | 11.75 | 821.46 |
| 1110.00 | 77.00 | 10.00 | 72.50 | 1.00 | 11.94 | 0.16 | 12.58 | 821.63 |
| 1120.00 | 97.00 | 10.00 | 87.00 | 1.20 | 12.24 | 0.17 | 13.61 | 821.82 |
| 1130.00 | 114.00 | 10.00 | 105.50 | 1.45 | 12.59 | 0.17 | 14.89 | 822.06 |
| 1131.00 | 115.00 | 1.00 | 114.50 | 0.16 | 12.64 | 0.02 | 15.03 | 822.09 |
| 1132.00 | 116.00 | 1.00 | 115.50 | 0.16 | 12.66 | 0.02 | 15.17 | 822.10 |
| 1133.00 | 117.00 | 1.00 | 116.50 | 0.16 | 12.70 | 0.02 | 15.32 | 822.13 |
| 1134.00 | 119.00 | 1.00 | 118.00 | 0.16 | 12.72 | 0.02 | 15.46 | 822.15 |
| 1135.00 | 120.00 | 1.00 | 119.50 | 0.16 | 12.76 | 0.02 | 15.61 | 822.17 |
| 1136.00 | 124.00 | 1.00 | 122.00 | 0.17 | 12.78 | 0.02 | 15.76 | 822.19 |
| 1137.00 | 128.00 | 1.00 | 126.00 | 0.17 | 12.82 | 0.02 | 15.92 | 822.22 |
| 1138.00 | 134.00 | 1.00 | 131.00 | 0.18 | 12.87 | 0.02 | 16.08 | 822.24 |
| 1139.00 | 142.00 | 1.00 | 138.00 | 0.19 | 12.91 | 0.02 | 16.25 | 822.27 |
| 1140.00 | 149.00 | 1.00 | 145.50 | 0.20 | 12.95 | 0.02 | 16.43 | 822.30 |
| 1141.00 | 159.00 | 1.00 | 154.00 | 0.21 | 12.99 | 0.02 | 16.63 | 822.33 |
| 1142.00 | 169.00 | 1.00 | 164.00 | 0.23 | 13.03 | 0.02 | 16.84 | 822.36 |
| 1143.00 | 181.00 | 1.00 | 175.00 | 0.24 | 13.08 | 0.02 | 17.06 | 822.38 |
| 1144.00 | 193.00 | 1.00 | 187.00 | 0.26 | 13.14 | 0.02 | 17.30 | 822.43 |
| 1145.00 | 206.00 | 1.00 | 199.50 | 0.27 | 13.20 | 0.02 | 17.55 | 822.47 |
| 1146.00 | 218.00 | 1.00 | 212.00 | 0.29 | 13.27 | 0.02 | 17.83 | 822.51 |
| 1147.00 | 231.00 | 1.00 | 224.50 | 0.31 | 13.33 | 0.02 | 18.12 | 822.55 |
| 1148.00 | 244.00 | 1.00 | 237.50 | 0.33 | 13.39 | 0.02 | 18.43 | 822.59 |
| 1149.00 | 258.00 | 1.00 | 251.00 | 0.35 | 13.48 | 0.02 | 18.76 | 822.65 |
| 1150.00 | 277.00 | 1.00 | 267.50 | 0.37 | 13.56 | 0.02 | 19.10 | 822.71 |
| 1151.00 | 315.00 | 1.00 | 296.00 | 0.41 | 13.64 | 0.02 | 19.49 | 822.76 |
| 1152.00 | 370.00 | 1.00 | 342.50 | 0.47 | 13.75 | 0.02 | 19.95 | 822.83 |
| 1153.00 | 434.00 | 1.00 | 402.00 | 0.55 | 13.85 | 0.02 | 20.48 | 822.90 |
| 1154.00 | 483.00 | 1.00 | 458.50 | 0.63 | 14.00 | 0.02 | 21.09 | 823.00 |
| 1155.00 | 514.00 | 1.00 | 498.50 | 0.69 | 14.10 | 0.02 | 21.76 | 823.08 |
| 1156.00 | 528.00 | 1.00 | 521.00 | 0.72 | 14.20 | 0.02 | 22.46 | 823.17 |
| 1157.00 | 529.00 | 1.00 | 528.50 | 0.73 | 14.30 | 0.02 | 23.17 | 823.25 |
| 1158.00 | 522.00 | 1.00 | 525.50 | 0.72 | 14.40 | 0.02 | 23.87 | 823.34 |
| 1159.00 | 510.00 | 1.00 | 516.00 | 0.71 | 14.50 | 0.02 | 24.56 | 823.42 |
| 1160.00 | 491.00 | 1.00 | 500.50 | 0.69 | 14.60 | 0.02 | 25.23 | 823.50 |
| 1161.00 | 462.00 | 1.00 | 476.50 | 0.66 | 14.71 | 0.02 | 25.87 | 823.59 |
| 1162.00 | 429.00 | 1.00 | 445.50 | 0.61 | 14.79 | 0.02 | 26.46 | 823.66 |
| 1163.00 | 396.00 | 1.00 | 412.50 | 0.57 | 14.87 | 0.02 | 27.01 | 823.73 |
| 1164.00 | 363.00 | 1.00 | 379.50 | 0.52 | 14.94 | 0.02 | 27.51 | 823.78 |
| 1165.00 | 331.00 | 1.00 | 347.00 | 0.48 | 15.01 | 0.02 | 27.97 | 823.84 |

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|---|---|---|---|---|---|---|---|---|
| 1166.00 | 299.00 | 1.00 | 315.00 | 0.43 | 15.06 | 0.02 | 28.38 | 823.88 |
| 1167.00 | 261.00 | 1.00 | 280.00 | 0.39 | 15.13 | 0.02 | 28.75 | 823.94 |
| 1168.00 | 213.00 | 1.00 | 237.00 | 0.33 | 15.16 | 0.02 | 29.05 | 823.97 |
| 1169.00 | 165.00 | 1.00 | 189.00 | 0.26 | 15.19 | 0.02 | 29.29 | 823.99 |
| 1170.00 | 133.00 | 1.00 | 149.00 | 0.21 | 15.23 | 0.02 | 29.47 | 824.02 |
| 1171.00 | 113.00 | 1.00 | 123.00 | 0.17 | 15.25 | 0.02 | 29.62 | 824.04 |
| 1172.00 | 101.00 | 1.00 | 107.00 | 0.15 | 15.26 | 0.02 | 29.75 | 824.05 |
| 1173.00 | 92.00 | 1.00 | 96.50 | 0.13 | 15.28 | 0.02 | 29.86 | 824.06 |
| 1174.00 | 86.00 | 1.00 | 89.00 | 0.12 | 15.30 | 0.02 | 29.96 | 824.08 |
| 1175.00 | 81.00 | 1.00 | 83.50 | 0.12 | 15.32 | 0.02 | 30.06 | 824.09 |
| 1176.00 | 77.00 | 1.00 | 79.00 | 0.11 | 15.34 | 0.02 | 30.14 | 824.11 |
| 1177.00 | 74.00 | 1.00 | 75.50 | 0.10 | 15.36 | 0.02 | 30.23 | 824.12 |
| 1178.00 | 72.00 | 1.00 | 73.00 | 0.10 | 15.36 | 0.02 | 30.31 | 824.12 |
| 1179.00 | 70.00 | 1.00 | 71.00 | 0.10 | 15.37 | 0.02 | 30.38 | 824.13 |
| 1180.00 | 68.00 | 1.00 | 69.00 | 0.10 | 15.39 | 0.02 | 30.46 | 824.15 |
| 1181.00 | 67.00 | 1.00 | 67.50 | 0.09 | 15.39 | 0.02 | 30.53 | 824.15 |
| 1182.00 | 66.00 | 1.00 | 66.50 | 0.09 | 15.41 | 0.02 | 30.60 | 824.16 |
| 1183.00 | 65.00 | 1.00 | 65.50 | 0.09 | 15.43 | 0.02 | 30.67 | 824.18 |
| 1184.00 | 65.00 | 1.00 | 65.00 | 0.09 | 15.43 | 0.02 | 30.74 | 824.18 |
| 1185.00 | 64.00 | 1.00 | 64.50 | 0.09 | 15.45 | 0.02 | 30.80 | 824.19 |
| 1186.00 | 63.00 | 1.00 | 63.50 | 0.09 | 15.47 | 0.02 | 30.87 | 824.20 |
| 1187.00 | 63.00 | 1.00 | 63.00 | 0.09 | 15.47 | 0.02 | 30.94 | 824.20 |
| 1188.00 | 63.00 | 1.00 | 63.00 | 0.09 | 15.48 | 0.02 | 31.00 | 824.22 |
| 1189.00 | 63.00 | 1.00 | 63.00 | 0.09 | 15.48 | 0.02 | 31.07 | 824.22 |
| 1190.00 | 63.00 | 1.00 | 63.00 | 0.09 | 15.50 | 0.02 | 31.13 | 824.23 |
| 1191.00 | 62.00 | 1.00 | 62.50 | 0.09 | 15.50 | 0.02 | 31.20 | 824.23 |
| 1192.00 | 61.00 | 1.00 | 61.50 | 0.08 | 15.52 | 0.02 | 31.26 | 824.25 |
| 1193.00 | 60.00 | 1.00 | 60.50 | 0.08 | 15.54 | 0.02 | 31.32 | 824.26 |
| 1194.00 | 59.00 | 1.00 | 59.50 | 0.08 | 15.54 | 0.02 | 31.38 | 824.26 |
| 1195.00 | 58.00 | 1.00 | 58.50 | 0.08 | 15.56 | 0.02 | 31.44 | 824.27 |
| 1196.00 | 57.00 | 1.00 | 57.50 | 0.08 | 15.56 | 0.02 | 31.50 | 824.27 |
| 1197.00 | 55.00 | 1.00 | 56.00 | 0.08 | 15.57 | 0.02 | 31.56 | 824.29 |
| 1198.00 | 54.00 | 1.00 | 54.50 | 0.08 | 15.57 | 0.02 | 31.61 | 824.29 |
| 1199.00 | 52.00 | 1.00 | 53.00 | 0.07 | 15.59 | 0.02 | 31.66 | 824.30 |
| 1200.00 | 51.00 | 1.00 | 51.50 | 0.07 | 15.59 | 0.02 | 31.71 | 824.30 |
| 1201.00 | 49.00 | 1.00 | 50.00 | 0.07 | 15.59 | 0.02 | 31.76 | 824.30 |
| 1202.00 | 48.00 | 1.00 | 48.50 | 0.07 | 15.61 | 0.02 | 31.80 | 824.32 |
| 1203.00 | 47.00 | 1.00 | 47.50 | 0.07 | 15.61 | 0.02 | 31.85 | 824.32 |
| 1204.00 | 46.00 | 1.00 | 46.50 | 0.06 | 15.63 | 0.02 | 31.89 | 824.33 |
| 1205.00 | 45.00 | 1.00 | 45.50 | 0.06 | 15.63 | 0.02 | 31.93 | 824.33 |
| 1206.00 | 44.00 | 1.00 | 44.50 | 0.06 | 15.63 | 0.02 | 31.97 | 824.33 |
| 1207.00 | 43.00 | 1.00 | 43.50 | 0.06 | 15.65 | 0.02 | 32.01 | 824.34 |
| 1208.00 | 43.00 | 1.00 | 43.00 | 0.06 | 15.65 | 0.02 | 32.05 | 824.34 |
| 1209.00 | 43.00 | 1.00 | 43.00 | 0.06 | 15.65 | 0.02 | 32.08 | 824.34 |
| 1210.00 | 43.00 | 1.00 | 43.00 | 0.06 | 15.67 | 0.02 | 32.12 | 824.36 |
| 1211.00 | 42.00 | 1.00 | 42.50 | 0.06 | 15.67 | 0.02 | 32.16 | 824.36 |
| 1212.00 | 41.00 | 1.00 | 41.50 | 0.06 | 15.67 | 0.02 | 32.19 | 824.36 |
| 1213.00 | 41.00 | 1.00 | 41.00 | 0.06 | 15.68 | 0.02 | 32.23 | 824.37 |
| 1214.00 | 40.00 | 1.00 | 40.50 | 0.06 | 15.68 | 0.02 | 32.26 | 824.37 |
| 1215.00 | 39.00 | 1.00 | 39.50 | 0.05 | 15.68 | 0.02 | 32.30 | 824.37 |
| 1216.00 | 38.00 | 1.00 | 38.50 | 0.05 | 15.70 | 0.02 | 32.33 | 824.39 |
| 1217.00 | 36.00 | 1.00 | 37.00 | 0.05 | 15.70 | 0.02 | 32.36 | 824.39 |
| 1218.00 | 35.00 | 1.00 | 35.50 | 0.05 | 15.70 | 0.02 | 32.38 | 824.39 |
| 1219.00 | 34.00 | 1.00 | 34.50 | 0.05 | 15.70 | 0.02 | 32.41 | 824.39 |
| 1220.00 | 33.00 | 1.00 | 33.50 | 0.05 | 15.70 | 0.02 | 32.43 | 824.39 |
| 1221.00 | 31.00 | 1.00 | 32.00 | 0.04 | 15.72 | 0.02 | 32.46 | 824.40 |
| 1222.00 | 30.00 | 1.00 | 30.50 | 0.04 | 15.72 | 0.02 | 32.48 | 824.40 |
| 1223.00 | 29.00 | 1.00 | 29.50 | 0.04 | 15.72 | 0.02 | 32.50 | 824.40 |
| 1224.00 | 28.00 | 1.00 | 28.50 | 0.04 | 15.72 | 0.02 | 32.51 | 824.40 |
| 1225.00 | 27.00 | 1.00 | 27.50 | 0.04 | 15.72 | 0.02 | 32.53 | 824.40 |
| 1226.00 | 26.00 | 1.00 | 26.50 | 0.04 | 15.72 | 0.02 | 32.54 | 824.40 |
| 1227.00 | 26.00 | 1.00 | 26.00 | 0.04 | 15.74 | 0.02 | 32.56 | 824.41 |
| 1228.00 | 25.00 | 1.00 | 25.50 | 0.04 | 15.74 | 0.02 | 32.57 | 824.41 |
| 1229.00 | 25.00 | 1.00 | 25.00 | 0.03 | 15.74 | 0.02 | 32.58 | 824.41 |
| 1230.00 | 25.00 | 1.00 | 25.00 | 0.03 | 15.74 | 0.02 | 32.60 | 824.41 |
| 1231.00 | 24.00 | 1.00 | 24.50 | 0.03 | 15.74 | 0.02 | 32.61 | 824.41 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 24.00 | 1.00 | 24.00 | 0.03 | 15.74 | 0.02 | 32.62 | 824.41 |
| 1233.00 | 24.00 | 1.00 | 24.00 | 0.03 | 15.74 | 0.02 | 32.63 | 824.41 |
| 1234.00 | 23.00 | 1.00 | 23.50 | 0.03 | 15.74 | 0.02 | 32.64 | 824.41 |
| 1235.00 | 22.00 | 1.00 | 22.50 | 0.03 | 15.74 | 0.02 | 32.65 | 824.41 |
| 1236.00 | 22.00 | 1.00 | 22.00 | 0.03 | 15.74 | 0.02 | 32.66 | 824.41 |
| 1237.00 | 21.00 | 1.00 | 21.50 | 0.03 | 15.76 | 0.02 | 32.67 | 824.43 |
| 1238.00 | 21.00 | 1.00 | 21.00 | 0.03 | 15.76 | 0.02 | 32.68 | 824.43 |
| 1239.00 | 20.00 | 1.00 | 20.50 | 0.03 | 15.76 | 0.02 | 32.68 | 824.43 |
| 1240.00 | 19.00 | 1.00 | 19.50 | 0.03 | 15.76 | 0.02 | 32.69 | 824.43 |
| 1241.00 | 18.00 | 1.00 | 18.50 | 0.03 | 15.76 | 0.02 | 32.69 | 824.43 |
| 1242.00 | 18.00 | 1.00 | 18.00 | 0.02 | 15.76 | 0.02 | 32.69 | 824.43 |
| 1243.00 | 17.00 | 1.00 | 17.50 | 0.02 | 15.76 | 0.02 | 32.70 | 824.43 |
| 1244.00 | 17.00 | 1.00 | 17.00 | 0.02 | 15.76 | 0.02 | 32.70 | 824.43 |
| 1245.00 | 16.00 | 1.00 | 16.50 | 0.02 | 15.76 | 0.02 | 32.70 | 824.43 |
| 1246.00 | 16.00 | 1.00 | 16.00 | 0.02 | 15.76 | 0.02 | 32.70 | 824.43 |
| 1247.00 | 15.00 | 1.00 | 15.50 | 0.02 | 15.76 | 0.02 | 32.70 | 824.43 |
| 1248.00 | 15.00 | 1.00 | 15.00 | 0.02 | 15.76 | 0.02 | 32.70 | 824.43 |
| 1249.00 | 15.00 | 1.00 | 15.00 | 0.02 | 15.76 | 0.02 | 32.70 | 824.43 |
| 1250.00 | 14.00 | 1.00 | 14.50 | 0.02 | 15.76 | 0.02 | 32.70 | 824.43 |
| 1251.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.69 | 824.43 |
| 1252.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.69 | 824.43 |
| 1253.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.69 | 824.43 |
| 1254.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.69 | 824.43 |
| 1255.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.68 | 824.43 |
| 1256.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.68 | 824.43 |
| 1257.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.68 | 824.43 |
| 1258.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.68 | 824.43 |
| 1259.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.67 | 824.43 |
| 1260.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.67 | 824.43 |
| 1261.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.67 | 824.43 |
| 1262.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.67 | 824.43 |
| 1263.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.66 | 824.43 |
| 1264.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.76 | 0.02 | 32.66 | 824.43 |
| 1265.00 | 14.00 | 1.00 | 14.00 | 0.02 | 15.74 | 0.02 | 32.66 | 824.41 |
| 1266.00 | 13.00 | 1.00 | 13.50 | 0.02 | 15.74 | 0.02 | 32.66 | 824.41 |
| 1267.00 | 13.00 | 1.00 | 13.00 | 0.02 | 15.74 | 0.02 | 32.65 | 824.41 |
| 1268.00 | 13.00 | 1.00 | 13.00 | 0.02 | 15.74 | 0.02 | 32.65 | 824.41 |
| 1269.00 | 12.00 | 1.00 | 12.50 | 0.02 | 15.74 | 0.02 | 32.64 | 824.41 |
| 1270.00 | 12.00 | 1.00 | 12.00 | 0.02 | 15.74 | 0.02 | 32.64 | 824.41 |
| 1271.00 | 12.00 | 1.00 | 12.00 | 0.02 | 15.74 | 0.02 | 32.63 | 824.41 |
| 1272.00 | 11.00 | 1.00 | 11.50 | 0.02 | 15.74 | 0.02 | 32.63 | 824.41 |
| 1273.00 | 11.00 | 1.00 | 11.00 | 0.02 | 15.74 | 0.02 | 32.62 | 824.41 |
| 1274.00 | 11.00 | 1.00 | 11.00 | 0.02 | 15.74 | 0.02 | 32.62 | 824.41 |
| 1275.00 | 10.00 | 1.00 | 10.50 | 0.01 | 15.74 | 0.02 | 32.61 | 824.41 |
| 1276.00 | 10.00 | 1.00 | 10.00 | 0.01 | 15.74 | 0.02 | 32.60 | 824.41 |
| 1277.00 | 10.00 | 1.00 | 10.00 | 0.01 | 15.74 | 0.02 | 32.59 | 824.41 |
| 1278.00 | 10.00 | 1.00 | 10.00 | 0.01 | 15.74 | 0.02 | 32.58 | 824.41 |
| 1279.00 | 10.00 | 1.00 | 10.00 | 0.01 | 15.74 | 0.02 | 32.58 | 824.41 |
| 1280.00 | 10.00 | 1.00 | 10.00 | 0.01 | 15.74 | 0.02 | 32.57 | 824.41 |
| 1281.00 | 10.00 | 1.00 | 10.00 | 0.01 | 15.74 | 0.02 | 32.56 | 824.41 |
| 1282.00 | 9.00 | 1.00 | 9.50 | 0.01 | 15.74 | 0.02 | 32.55 | 824.41 |
| 1283.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.54 | 824.40 |
| 1284.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.53 | 824.40 |
| 1285.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.52 | 824.40 |
| 1286.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.52 | 824.40 |
| 1287.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.51 | 824.40 |
| 1288.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.50 | 824.40 |
| 1289.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.49 | 824.40 |
| 1290.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.48 | 824.40 |
| 1291.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.47 | 824.40 |
| 1292.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.46 | 824.40 |
| 1293.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.45 | 824.40 |
| 1294.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.72 | 0.02 | 32.44 | 824.40 |
| 1295.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.70 | 0.02 | 32.43 | 824.39 |
| 1296.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.70 | 0.02 | 32.42 | 824.39 |
| 1297.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.70 | 0.02 | 32.41 | 824.39 |

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|---|---|---|---|---|---|---|---|---|
| 1298.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.70 | 0.02 | 32.40 | 824.39 |
| 1299.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.70 | 0.02 | 32.40 | 824.39 |
| 1300.00 | 9.00 | 1.00 | 9.00 | 0.01 | 15.70 | 0.02 | 32.39 | 824.39 |
| 1310.00 | 7.00 | 10.00 | 8.00 | 0.11 | 15.68 | 0.22 | 32.28 | 824.37 |
| 1320.00 | 5.00 | 10.00 | 6.00 | 0.08 | 15.67 | 0.22 | 32.15 | 824.36 |
| 1330.00 | 4.00 | 10.00 | 4.50 | 0.06 | 15.65 | 0.22 | 31.99 | 824.34 |
| 1340.00 | 4.00 | 10.00 | 4.00 | 0.06 | 15.61 | 0.22 | 31.83 | 824.32 |
| 1350.00 | 3.00 | 10.00 | 3.50 | 0.05 | 15.59 | 0.21 | 31.67 | 824.30 |
| 1360.00 | 3.00 | 10.00 | 3.00 | 0.04 | 15.56 | 0.21 | 31.49 | 824.27 |
| 1370.00 | 3.00 | 10.00 | 3.00 | 0.04 | 15.54 | 0.21 | 31.32 | 824.26 |
| 1380.00 | 3.00 | 10.00 | 3.00 | 0.04 | 15.50 | 0.21 | 31.15 | 824.23 |
| 1390.00 | 3.00 | 10.00 | 3.00 | 0.04 | 15.47 | 0.21 | 30.98 | 824.20 |
| 1400.00 | 3.00 | 10.00 | 3.00 | 0.04 | 15.45 | 0.21 | 30.81 | 824.19 |
| 1420.00 | 2.00 | 20.00 | 2.50 | 0.07 | 15.39 | 0.42 | 30.45 | 824.15 |
| 1440.00 | 2.00 | 20.00 | 2.00 | 0.06 | 15.32 | 0.42 | 30.08 | 824.09 |
| 1460.00 | 1.00 | 20.00 | 1.50 | 0.04 | 15.26 | 0.42 | 29.70 | 824.05 |
| 1500.00 | 1.00 | 40.00 | 1.00 | 0.06 | 15.14 | 0.83 | 28.93 | 823.95 |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

# BASIN #3
## 50-YEAR STORM

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 10.00 | 100.00 | 5.00 | 0.69 | 4.32 | 0.59 | 0.09 | 724.14 |
| 200.00 | 16.00 | 100.00 | 13.00 | 1.79 | 12.48 | 1.72 | 0.17 | 724.42 |
| 300.00 | 27.00 | 100.00 | 21.50 | 2.96 | 21.12 | 2.91 | 0.22 | 724.70 |
| 400.00 | 35.00 | 100.00 | 31.00 | 4.27 | 31.08 | 4.28 | 0.21 | 725.02 |
| 500.00 | 45.00 | 100.00 | 40.00 | 5.51 | 39.72 | 5.47 | 0.25 | 725.22 |
| 600.00 | 61.00 | 100.00 | 53.00 | 7.30 | 51.96 | 7.16 | 0.39 | 725.49 |
| 700.00 | 93.00 | 100.00 | 77.00 | 10.61 | 77.08 | 10.62 | 0.38 | 726.03 |
| 800.00 | 136.00 | 100.00 | 114.50 | 15.77 | 112.44 | 15.49 | 0.66 | 726.58 |
| 900.00 | 184.00 | 100.00 | 160.00 | 22.04 | 158.36 | 21.81 | 0.89 | 727.22 |
| 1000.00 | 256.00 | 100.00 | 220.00 | 30.30 | 216.84 | 29.87 | 1.32 | 727.90 |
| 1050.00 | 296.00 | 50.00 | 276.00 | 19.01 | 271.08 | 18.67 | 1.66 | 728.51 |
| 1100.00 | 363.00 | 50.00 | 329.50 | 22.69 | 321.84 | 22.17 | 2.19 | 729.07 |
| 1110.00 | 385.00 | 10.00 | 374.00 | 5.15 | 349.20 | 4.81 | 2.53 | 729.36 |
| 1120.00 | 425.00 | 10.00 | 405.00 | 5.58 | 376.56 | 5.19 | 2.92 | 729.65 |
| 1130.00 | 490.00 | 10.00 | 457.50 | 6.30 | 417.68 | 5.75 | 3.47 | 730.06 |
| 1131.00 | 498.00 | 1.00 | 494.00 | 0.68 | 423.44 | 0.58 | 3.57 | 730.11 |
| 1132.00 | 505.00 | 1.00 | 501.50 | 0.69 | 429.20 | 0.59 | 3.67 | 730.16 |
| 1133.00 | 513.00 | 1.00 | 509.00 | 0.70 | 436.88 | 0.60 | 3.77 | 730.22 |
| 1134.00 | 520.00 | 1.00 | 516.50 | 0.71 | 444.56 | 0.61 | 3.87 | 730.29 |
| 1135.00 | 528.00 | 1.00 | 524.00 | 0.72 | 450.32 | 0.62 | 3.97 | 730.34 |
| 1136.00 | 536.00 | 1.00 | 532.00 | 0.73 | 458.00 | 0.63 | 4.07 | 730.40 |
| 1137.00 | 544.00 | 1.00 | 540.00 | 0.74 | 465.68 | 0.64 | 4.17 | 730.46 |
| 1138.00 | 553.00 | 1.00 | 548.50 | 0.76 | 473.36 | 0.65 | 4.28 | 730.53 |
| 1139.00 | 563.00 | 1.00 | 558.00 | 0.77 | 481.04 | 0.66 | 4.38 | 730.59 |
| 1140.00 | 575.00 | 1.00 | 569.00 | 0.78 | 488.72 | 0.67 | 4.49 | 730.66 |
| 1141.00 | 588.00 | 1.00 | 581.50 | 0.80 | 496.40 | 0.68 | 4.61 | 730.72 |
| 1142.00 | 504.00 | 1.00 | 546.00 | 0.75 | 500.24 | 0.69 | 4.67 | 730.75 |
| 1143.00 | 623.00 | 1.00 | 563.50 | 0.78 | 506.00 | 0.70 | 4.75 | 730.80 |
| 1144.00 | 644.00 | 1.00 | 633.50 | 0.87 | 517.52 | 0.71 | 4.91 | 730.90 |
| 1145.00 | 670.00 | 1.00 | 657.00 | 0.90 | 530.88 | 0.73 | 5.08 | 731.01 |
| 1146.00 | 702.00 | 1.00 | 686.00 | 0.94 | 539.68 | 0.74 | 5.29 | 731.09 |
| 1147.00 | 736.00 | 1.00 | 719.00 | 0.99 | 552.00 | 0.76 | 5.52 | 731.20 |
| 1148.00 | 771.00 | 1.00 | 753.50 | 1.04 | 566.08 | 0.78 | 5.77 | 731.33 |
| 1149.00 | 811.00 | 1.00 | 791.00 | 1.09 | 580.16 | 0.80 | 6.06 | 731.46 |
| 1150.00 | 854.00 | 1.00 | 832.50 | 1.15 | 596.00 | 0.82 | 6.39 | 731.60 |
| 1151.00 | 908.00 | 1.00 | 881.00 | 1.21 | 615.36 | 0.85 | 6.76 | 731.78 |
| 1152.00 | 983.00 | 1.00 | 945.50 | 1.30 | 636.48 | 0.88 | 7.18 | 731.97 |
| 1153.00 | 1066.00 | 1.00 | 1024.50 | 1.41 | 652.96 | 0.90 | 7.69 | 732.14 |
| 1154.00 | 1183.00 | 1.00 | 1124.50 | 1.55 | 668.80 | 0.92 | 8.32 | 732.32 |
| 1155.00 | 1330.00 | 1.00 | 1256.50 | 1.73 | 690.40 | 0.95 | 9.10 | 732.56 |
| 1156.00 | 1491.00 | 1.00 | 1410.50 | 1.94 | 716.32 | 0.99 | 10.06 | 732.85 |
| 1157.00 | 1660.00 | 1.00 | 1575.50 | 2.17 | 742.24 | 1.02 | 11.21 | 733.14 |
| 1158.00 | 1821.00 | 1.00 | 1740.50 | 2.40 | 769.60 | 1.06 | 12.54 | 733.44 |
| 1159.00 | 1946.00 | 1.00 | 1883.50 | 2.59 | 798.40 | 1.10 | 14.04 | 733.76 |
| 1160.00 | 2018.00 | 1.00 | 1982.00 | 2.73 | 828.96 | 1.14 | 15.63 | 734.11 |
| 1161.00 | 2039.00 | 1.00 | 2028.50 | 2.79 | 858.40 | 1.18 | 17.24 | 734.48 |
| 1162.00 | 2037.00 | 1.00 | 2038.00 | 2.81 | 886.56 | 1.22 | 18.82 | 734.83 |
| 1163.00 | 2002.00 | 1.00 | 2019.50 | 2.78 | 907.80 | 1.25 | 20.35 | 735.10 |
| 1164.00 | 1932.00 | 1.00 | 1967.00 | 2.71 | 923.40 | 1.27 | 21.79 | 735.31 |
| 1165.00 | 1834.00 | 1.00 | 1883.00 | 2.59 | 936.60 | 1.29 | 23.10 | 735.49 |

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|---|---|---|---|---|---|---|---|---|
| 1166.00 | 1713.00 | 1.00 | 1773.50 | 2.44 | 948.60 | 1.31 | 24.23 | 735.65 |
| 1167.00 | 1585.00 | 1.00 | 1649.00 | 2.27 | 958.20 | 1.32 | 25.18 | 735.78 |
| 1168.00 | 1460.00 | 1.00 | 1522.50 | 2.10 | 965.40 | 1.33 | 25.95 | 735.87 |
| 1169.00 | 1340.00 | 1.00 | 1400.00 | 1.93 | 971.40 | 1.34 | 26.54 | 735.95 |
| 1170.00 | 1213.00 | 1.00 | 1276.50 | 1.76 | 975.96 | 1.34 | 26.95 | 736.02 |
| 1171.00 | 1089.00 | 1.00 | 1151.00 | 1.59 | 977.88 | 1.35 | 27.19 | 736.05 |
| 1172.00 | 978.00 | 1.00 | 1033.50 | 1.42 | 978.84 | 1.35 | 27.27 | 736.06 |
| 1173.00 | 879.00 | 1.00 | 928.50 | 1.28 | 977.88 | 1.35 | 27.20 | 736.05 |
| 1174.00 | 787.00 | 1.00 | 833.00 | 1.15 | 975.96 | 1.34 | 27.00 | 736.02 |
| 1175.00 | 705.00 | 1.00 | 746.00 | 1.03 | 973.80 | 1.34 | 26.69 | 735.98 |
| 1176.00 | 638.00 | 1.00 | 671.50 | 0.92 | 969.00 | 1.33 | 26.28 | 735.92 |
| 1177.00 | 593.00 | 1.00 | 615.50 | 0.85 | 964.20 | 1.33 | 25.80 | 735.86 |
| 1178.00 | 554.00 | 1.00 | 573.50 | 0.79 | 958.20 | 1.32 | 25.27 | 735.78 |
| 1179.00 | 521.00 | 1.00 | 537.50 | 0.74 | 953.40 | 1.31 | 24.70 | 735.71 |
| 1180.00 | 492.00 | 1.00 | 506.50 | 0.70 | 946.20 | 1.30 | 24.09 | 735.62 |
| 1181.00 | 467.00 | 1.00 | 479.50 | 0.66 | 940.20 | 1.30 | 23.46 | 735.54 |
| 1182.00 | 446.00 | 1.00 | 456.50 | 0.63 | 933.00 | 1.29 | 22.80 | 735.44 |
| 1183.00 | 428.00 | 1.00 | 437.00 | 0.60 | 927.00 | 1.28 | 22.13 | 735.36 |
| 1184.00 | 412.00 | 1.00 | 420.00 | 0.58 | 919.80 | 1.27 | 21.44 | 735.26 |
| 1185.00 | 399.00 | 1.00 | 405.50 | 0.56 | 912.60 | 1.26 | 20.74 | 735.17 |
| 1186.00 | 388.00 | 1.00 | 393.50 | 0.54 | 905.40 | 1.25 | 20.03 | 735.07 |
| 1187.00 | 379.00 | 1.00 | 383.50 | 0.53 | 895.52 | 1.23 | 19.33 | 734.94 |
| 1188.00 | 371.00 | 1.00 | 375.00 | 0.52 | 882.72 | 1.22 | 18.63 | 734.78 |
| 1189.00 | 365.00 | 1.00 | 368.00 | 0.51 | 871.20 | 1.20 | 17.94 | 734.64 |
| 1190.00 | 351.00 | 1.00 | 358.00 | 0.49 | 858.40 | 1.18 | 17.25 | 734.48 |
| 1191.00 | 357.00 | 1.00 | 354.00 | 0.49 | 845.60 | 1.16 | 16.57 | 734.32 |
| 1192.00 | 353.00 | 1.00 | 355.00 | 0.49 | 834.08 | 1.15 | 15.91 | 734.18 |
| 1193.00 | 350.00 | 1.00 | 351.50 | 0.48 | 822.56 | 1.13 | 15.26 | 734.03 |
| 1194.00 | 347.00 | 1.00 | 348.50 | 0.48 | 809.92 | 1.12 | 14.63 | 733.89 |
| 1195.00 | 344.00 | 1.00 | 345.50 | 0.48 | 798.40 | 1.10 | 14.00 | 733.76 |
| 1196.00 | 342.00 | 1.00 | 343.00 | 0.47 | 785.44 | 1.08 | 13.39 | 733.62 |
| 1197.00 | 339.00 | 1.00 | 340.50 | 0.47 | 773.92 | 1.07 | 12.80 | 733.49 |
| 1198.00 | 336.00 | 1.00 | 337.50 | 0.46 | 762.40 | 1.05 | 12.21 | 733.36 |
| 1199.00 | 333.00 | 1.00 | 334.50 | 0.46 | 750.88 | 1.03 | 11.64 | 733.23 |
| 1200.00 | 329.00 | 1.00 | 331.00 | 0.46 | 739.36 | 1.02 | 11.07 | 733.10 |
| 1201.00 | 325.00 | 1.00 | 327.00 | 0.45 | 729.28 | 1.00 | 10.52 | 732.99 |
| 1202.00 | 321.00 | 1.00 | 323.00 | 0.44 | 713.44 | 0.98 | 9.98 | 732.82 |
| 1203.00 | 316.00 | 1.00 | 318.50 | 0.44 | 700.48 | 0.96 | 9.46 | 732.67 |
| 1204.00 | 312.00 | 1.00 | 314.00 | 0.43 | 686.08 | 0.95 | 8.94 | 732.51 |
| 1205.00 | 307.00 | 1.00 | 309.50 | 0.43 | 673.12 | 0.93 | 8.44 | 732.37 |
| 1206.00 | 303.00 | 1.00 | 305.00 | 0.42 | 660.16 | 0.91 | 7.95 | 732.22 |
| 1207.00 | 299.00 | 1.00 | 301.00 | 0.41 | 647.20 | 0.89 | 7.48 | 732.08 |
| 1208.00 | 294.00 | 1.00 | 296.50 | 0.41 | 629.44 | 0.87 | 7.02 | 731.90 |
| 1209.00 | 291.00 | 1.00 | 292.50 | 0.40 | 606.56 | 0.84 | 6.59 | 731.70 |
| 1210.00 | 287.00 | 1.00 | 289.00 | 0.40 | 585.44 | 0.81 | 6.18 | 731.50 |
| 1211.00 | 284.00 | 1.00 | 285.50 | 0.39 | 566.08 | 0.78 | 5.79 | 731.33 |
| 1212.00 | 281.00 | 1.00 | 282.50 | 0.39 | 546.72 | 0.75 | 5.43 | 731.15 |
| 1213.00 | 278.00 | 1.00 | 279.50 | 0.38 | 529.04 | 0.73 | 5.08 | 730.99 |
| 1214.00 | 276.00 | 1.00 | 277.00 | 0.38 | 507.92 | 0.70 | 4.76 | 730.82 |
| 1215.00 | 273.00 | 1.00 | 274.50 | 0.38 | 486.80 | 0.67 | 4.47 | 730.64 |
| 1216.00 | 271.00 | 1.00 | 272.00 | 0.37 | 467.60 | 0.64 | 4.20 | 730.48 |
| 1217.00 | 268.00 | 1.00 | 269.50 | 0.37 | 450.32 | 0.62 | 3.95 | 730.34 |
| 1218.00 | 266.00 | 1.00 | 267.00 | 0.37 | 433.04 | 0.60 | 3.72 | 730.19 |
| 1219.00 | 263.00 | 1.00 | 264.50 | 0.36 | 419.60 | 0.58 | 3.51 | 730.08 |
| 1220.00 | 259.00 | 1.00 | 261.00 | 0.36 | 403.92 | 0.56 | 3.31 | 729.94 |
| 1221.00 | 256.00 | 1.00 | 257.50 | 0.35 | 391.76 | 0.54 | 3.13 | 729.81 |
| 1222.00 | 252.00 | 1.00 | 254.00 | 0.35 | 378.08 | 0.52 | 2.96 | 729.66 |
| 1223.00 | 247.00 | 1.00 | 249.50 | 0.34 | 367.44 | 0.51 | 2.80 | 729.55 |
| 1224.00 | 243.00 | 1.00 | 245.00 | 0.34 | 355.28 | 0.49 | 2.64 | 729.42 |
| 1225.00 | 239.00 | 1.00 | 241.00 | 0.33 | 344.64 | 0.47 | 2.50 | 729.31 |
| 1226.00 | 235.00 | 1.00 | 237.00 | 0.33 | 335.52 | 0.46 | 2.37 | 729.22 |
| 1227.00 | 231.00 | 1.00 | 233.00 | 0.32 | 326.40 | 0.45 | 2.24 | 729.12 |
| 1228.00 | 227.00 | 1.00 | 229.00 | 0.32 | 317.28 | 0.44 | 2.12 | 729.02 |
| 1229.00 | 223.00 | 1.00 | 225.00 | 0.31 | 304.20 | 0.42 | 2.01 | 728.88 |
| 1230.00 | 220.00 | 1.00 | 221.50 | 0.31 | 291.24 | 0.40 | 1.91 | 728.74 |
| 1231.00 | 217.00 | 1.00 | 218.50 | 0.30 | 281.16 | 0.39 | 1.82 | 728.62 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 214.00 | 1.00 | 215.50 | 0.30 | 271.08 | 0.37 | 1.75 | 728.51 |
| 1233.00 | 212.00 | 1.00 | 213.00 | 0.29 | 262.44 | 0.36 | 1.68 | 728.42 |
| 1234.00 | 210.00 | 1.00 | 211.00 | 0.29 | 253.80 | 0.35 | 1.62 | 728.32 |
| 1235.00 | 208.00 | 1.00 | 209.00 | 0.29 | 248.04 | 0.34 | 1.57 | 728.26 |
| 1236.00 | 206.00 | 1.00 | 207.00 | 0.29 | 240.84 | 0.33 | 1.52 | 728.18 |
| 1237.00 | 204.00 | 1.00 | 205.00 | 0.28 | 236.52 | 0.33 | 1.48 | 728.13 |
| 1238.00 | 203.00 | 1.00 | 203.50 | 0.28 | 230.76 | 0.32 | 1.44 | 728.06 |
| 1239.00 | 201.00 | 1.00 | 202.00 | 0.28 | 226.44 | 0.31 | 1.41 | 728.02 |
| 1240.00 | 199.00 | 1.00 | 200.00 | 0.28 | 222.28 | 0.31 | 1.37 | 727.97 |
| 1241.00 | 198.00 | 1.00 | 198.50 | 0.27 | 216.84 | 0.30 | 1.35 | 727.90 |
| 1242.00 | 196.00 | 1.00 | 197.00 | 0.27 | 212.76 | 0.29 | 1.33 | 727.86 |
| 1243.00 | 193.00 | 1.00 | 194.50 | 0.27 | 210.04 | 0.29 | 1.31 | 727.82 |
| 1244.00 | 191.00 | 1.00 | 192.00 | 0.26 | 205.96 | 0.28 | 1.29 | 727.78 |
| 1245.00 | 189.00 | 1.00 | 190.00 | 0.26 | 203.24 | 0.28 | 1.27 | 727.74 |
| 1246.00 | 187.00 | 1.00 | 188.00 | 0.26 | 200.52 | 0.28 | 1.25 | 727.71 |
| 1247.00 | 185.00 | 1.00 | 186.00 | 0.26 | 197.80 | 0.27 | 1.24 | 727.68 |
| 1248.00 | 183.00 | 1.00 | 184.00 | 0.25 | 195.08 | 0.27 | 1.22 | 727.65 |
| 1249.00 | 181.00 | 1.00 | 182.00 | 0.25 | 192.36 | 0.26 | 1.21 | 727.62 |
| 1250.00 | 179.00 | 1.00 | 180.00 | 0.25 | 191.00 | 0.26 | 1.19 | 727.60 |
| 1251.00 | 177.00 | 1.00 | 178.00 | 0.25 | 188.28 | 0.26 | 1.18 | 727.57 |
| 1252.00 | 176.00 | 1.00 | 176.50 | 0.24 | 185.56 | 0.26 | 1.16 | 727.54 |
| 1253.00 | 175.00 | 1.00 | 175.50 | 0.24 | 184.20 | 0.25 | 1.15 | 727.52 |
| 1254.00 | 174.00 | 1.00 | 174.50 | 0.24 | 181.48 | 0.25 | 1.14 | 727.49 |
| 1255.00 | 173.00 | 1.00 | 173.50 | 0.24 | 180.12 | 0.25 | 1.13 | 727.47 |
| 1256.00 | 172.00 | 1.00 | 172.50 | 0.24 | 178.76 | 0.25 | 1.12 | 727.46 |
| 1257.00 | 172.00 | 1.00 | 172.00 | 0.24 | 177.40 | 0.24 | 1.12 | 727.44 |
| 1258.00 | 171.00 | 1.00 | 171.50 | 0.24 | 176.04 | 0.24 | 1.11 | 727.42 |
| 1259.00 | 171.00 | 1.00 | 171.00 | 0.24 | 176.04 | 0.24 | 1.10 | 727.42 |
| 1260.00 | 171.00 | 1.00 | 171.00 | 0.24 | 174.68 | 0.24 | 1.10 | 727.41 |
| 1261.00 | 170.00 | 1.00 | 170.50 | 0.23 | 173.32 | 0.24 | 1.10 | 727.39 |
| 1262.00 | 170.00 | 1.00 | 170.00 | 0.23 | 173.32 | 0.24 | 1.09 | 727.39 |
| 1263.00 | 170.00 | 1.00 | 170.00 | 0.23 | 171.96 | 0.24 | 1.09 | 727.38 |
| 1264.00 | 169.00 | 1.00 | 169.50 | 0.23 | 171.96 | 0.24 | 1.08 | 727.38 |
| 1265.00 | 168.00 | 1.00 | 168.50 | 0.23 | 171.96 | 0.24 | 1.08 | 727.38 |
| 1266.00 | 168.00 | 1.00 | 168.00 | 0.23 | 170.60 | 0.23 | 1.08 | 727.36 |
| 1267.00 | 167.00 | 1.00 | 167.50 | 0.23 | 170.60 | 0.23 | 1.07 | 727.36 |
| 1268.00 | 165.00 | 1.00 | 166.00 | 0.23 | 169.24 | 0.23 | 1.07 | 727.34 |
| 1269.00 | 164.00 | 1.00 | 164.50 | 0.23 | 167.88 | 0.23 | 1.06 | 727.33 |
| 1270.00 | 162.00 | 1.00 | 163.00 | 0.22 | 167.88 | 0.23 | 1.06 | 727.33 |
| 1271.00 | 160.00 | 1.00 | 161.00 | 0.22 | 166.52 | 0.23 | 1.05 | 727.31 |
| 1272.00 | 158.00 | 1.00 | 159.00 | 0.22 | 165.16 | 0.23 | 1.04 | 727.30 |
| 1273.00 | 155.00 | 1.00 | 156.50 | 0.22 | 162.44 | 0.22 | 1.03 | 727.26 |
| 1274.00 | 153.00 | 1.00 | 154.00 | 0.21 | 161.08 | 0.22 | 1.02 | 727.25 |
| 1275.00 | 150.00 | 1.00 | 151.50 | 0.21 | 159.72 | 0.22 | 1.01 | 727.23 |
| 1276.00 | 147.00 | 1.00 | 148.50 | 0.20 | 157.00 | 0.22 | 1.00 | 727.20 |
| 1277.00 | 144.00 | 1.00 | 145.50 | 0.20 | 155.64 | 0.21 | 0.99 | 727.18 |
| 1278.00 | 142.00 | 1.00 | 143.00 | 0.20 | 152.92 | 0.21 | 0.97 | 727.15 |
| 1279.00 | 139.00 | 1.00 | 140.50 | 0.19 | 150.20 | 0.21 | 0.96 | 727.12 |
| 1280.00 | 137.00 | 1.00 | 138.00 | 0.19 | 148.84 | 0.21 | 0.94 | 727.10 |
| 1281.00 | 135.00 | 1.00 | 136.00 | 0.19 | 146.12 | 0.20 | 0.93 | 727.07 |
| 1282.00 | 133.00 | 1.00 | 134.00 | 0.18 | 143.40 | 0.20 | 0.92 | 727.04 |
| 1283.00 | 131.00 | 1.00 | 132.00 | 0.18 | 142.04 | 0.20 | 0.90 | 727.02 |
| 1284.00 | 130.00 | 1.00 | 130.50 | 0.18 | 139.48 | 0.19 | 0.89 | 726.99 |
| 1285.00 | 129.00 | 1.00 | 129.50 | 0.18 | 137.40 | 0.19 | 0.88 | 726.96 |
| 1286.00 | 128.00 | 1.00 | 128.50 | 0.18 | 135.32 | 0.19 | 0.87 | 726.93 |
| 1287.00 | 127.00 | 1.00 | 127.50 | 0.18 | 134.28 | 0.18 | 0.86 | 726.91 |
| 1288.00 | 126.00 | 1.00 | 126.50 | 0.17 | 133.24 | 0.18 | 0.85 | 726.90 |
| 1289.00 | 126.00 | 1.00 | 126.00 | 0.17 | 131.16 | 0.18 | 0.84 | 726.86 |
| 1290.00 | 125.00 | 1.00 | 125.50 | 0.17 | 130.12 | 0.18 | 0.84 | 726.85 |
| 1291.00 | 125.00 | 1.00 | 125.00 | 0.17 | 129.08 | 0.18 | 0.83 | 726.83 |
| 1292.00 | 125.00 | 1.00 | 125.00 | 0.17 | 129.08 | 0.18 | 0.83 | 726.83 |
| 1293.00 | 124.00 | 1.00 | 124.50 | 0.17 | 128.04 | 0.18 | 0.82 | 726.82 |
| 1294.00 | 124.00 | 1.00 | 124.00 | 0.17 | 127.00 | 0.17 | 0.82 | 726.80 |
| 1295.00 | 124.00 | 1.00 | 124.00 | 0.17 | 127.00 | 0.17 | 0.81 | 726.80 |
| 1296.00 | 124.00 | 1.00 | 124.00 | 0.17 | 125.96 | 0.17 | 0.81 | 726.78 |
| 1297.00 | 124.00 | 1.00 | 124.00 | 0.17 | 125.96 | 0.17 | 0.81 | 726.78 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1298.00 | 124.00 | 1.00 | 124.00 | 0.17 | 124.92 | 0.17 | 0.81 | 726.77 |
| 1299.00 | 124.00 | 1.00 | 124.00 | 0.17 | 124.92 | 0.17 | 0.81 | 726.77 |
| 1300.00 | 124.00 | 1.00 | 124.00 | 0.17 | 124.92 | 0.17 | 0.80 | 726.77 |
| 1310.00 | 114.00 | 10.00 | 119.00 | 1.64 | 120.76 | 1.66 | 0.78 | 726.70 |
| 1320.00 | 98.00 | 10.00 | 106.00 | 1.46 | 111.40 | 1.53 | 0.71 | 726.56 |
| 1330.00 | 86.00 | 10.00 | 92.00 | 1.27 | 97.88 | 1.35 | 0.62 | 726.35 |
| 1340.00 | 83.00 | 10.00 | 84.50 | 1.16 | 88.52 | 1.22 | 0.57 | 726.21 |
| 1350.00 | 78.00 | 10.00 | 80.50 | 1.11 | 82.28 | 1.13 | 0.54 | 726.11 |
| 1360.00 | 71.00 | 10.00 | 74.50 | 1.03 | 77.08 | 1.06 | 0.51 | 726.03 |
| 1370.00 | 65.00 | 10.00 | 68.00 | 0.94 | 70.68 | 0.97 | 0.47 | 725.90 |
| 1380.00 | 62.00 | 10.00 | 63.50 | 0.87 | 64.92 | 0.89 | 0.45 | 725.78 |
| 1390.00 | 62.00 | 10.00 | 62.00 | 0.85 | 62.76 | 0.86 | 0.44 | 725.73 |
| 1400.00 | 62.00 | 10.00 | 62.00 | 0.85 | 62.04 | 0.85 | 0.44 | 725.71 |
| 1420.00 | 56.00 | 20.00 | 59.00 | 1.63 | 59.88 | 1.65 | 0.42 | 725.66 |
| 1440.00 | 50.00 | 20.00 | 53.00 | 1.46 | 54.12 | 1.49 | 0.39 | 725.54 |
| 1460.00 | 46.00 | 20.00 | 48.00 | 1.32 | 48.36 | 1.33 | 0.38 | 725.41 |
| 1500.00 | 40.00 | 40.00 | 43.00 | 2.37 | 43.32 | 2.39 | 0.36 | 725.30 |

CONEJO MOUNTAIN CREEK

100-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-DEV. WITH 3 BASINS-Q100 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1A | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 861411 | 2A | 58. | 180. | 58. | 180. | 4 | 1200. | 0.04167 | 3.25 | 0.00 | 0. | 10 | 11 | B98 | 0.15 |
| 861411 | 3A | 59. | 191. | 117. | 366. | 4 | 1050. | 0.05700 | 4.00 | 0.00 | 0. | 20 | 12 | C99 | 0.13 |
| 861411 | 4A | 30. | 78. | 147. | 440. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 12 | B98 | 0.12 |
| 861411 | 5A | 77. | 200. | 224. | 638. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | B98 | 0.06 |
| 861411 | 6B | 58. | 180. | 58. | 180. | 4 | 1050. | 0.02570 | 3.75 | 0.00 | 0. | 20 | 13 | C99 | 0.11 |

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* CONFLUENCE Q'S *
* 861411 7A TA 1156 QA 638. QAB 817. QB 179. 861411 7B TB 1156 QB 179. QBA 817. QA 638. *
* 861411 7AB TAB 1156 QAB 817. QA 638. QB 179. *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 7AB | 58. | 179. | 282. | 817. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 861411 | 8A | 0. | 0. | 282. | 817. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 861411 | 9A | 35. | 121. | 317. | 932. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 8 | B98 | 0.08 |
| 861411 | 10B | 42. | 136. | 42. | 136. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | B98 | 0.08 |

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* CONFLUENCE Q'S *
* 861411 11A TA 1156 QA 932. QAB 1062. QB 130. 861411 11B TB 1153 QB 136. QBA 975. QA 839. *
* 861411 11AB TAB 1156 QAB 1062. QA 932. QB 130. *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 11AB | 42. | 136. | 359. | 1062. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 861411 | 12A | 0. | 0. | 359. | 1062. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 861411 | 13A | 11. | 35. | 370. | 1096. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | B98 | 0.00 |
| 861411 | 14A | 34. | 118. | 404. | 1209. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 8 | B98 | 0.14 |
| 861411 | 15B | 33. | 107. | 33. | 107. | 4 | 1050. | 0.01140 | 3.50 | 0.00 | 0. | 20 | 9 | B98 | 0.08 |
| 861411 | 16B | 31. | 97. | 64. | 195. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | B98 | 0.20 |

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* CONFLUENCE Q'S *
* 861411 17A TA 1156 QA 1209. QAB 1404. QB 195. 861411 17B TB 1156 QB 195. QBA 1404. QA 1209. *
* 861411 17AB TAB 1156 QAB 1404. QA 1209. QB 195. *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 17AB | 64. | 195. | 468. | 1404. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 861411 | 18A | 0. | 0. | 468. | 1404. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 99 | B98 | 0.00 |
| 861411 | 19A | 468. | 25. | 468. | 25. | 4 | 1800. | 0.00830 | 2.25 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 861411 | 20A | 41. | 92. | 509. | 114. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 17 | B98 | 0.35 |
| 861411 | 21B | 38. | 112. | 38. | 112. | 4 | 825. | 0.00440 | 4.25 | 0.00 | 0. | 10 | 12 | B98 | 0.08 |
| 861411 | 22B | 35. | 98. | 73. | 206. | 4 | 300. | 0.00440 | 5.25 | 0.00 | 0. | 10 | 13 | B98 | 0.11 |
| 861411 | 23C | 41. | 150. | 41. | 150. | 4 | 2050. | 0.05400 | 3.00 | 0.00 | 0. | 10 | 8 | B98 | 0.00 |
| 861411 | 24C | 44. | 116. | 85. | 259. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | B98 | 0.14 |
| 861411 | 25D | 40. | 118. | 40. | 118. | 4 | 600. | 0.00660 | 4.00 | 0.00 | 0. | 10 | 12 | B98 | 0.07 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-DEV. WITH 3 BASINS-Q100 — STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

CONFLUENCE Q'S

861411 26C TC 1156 QC 259. QCD 376. QD 117. 861411 26D TD 1157 QD 117. QDC 376. QC 259.
861411 26CD TCD 1157 QCD 376. QC 259. QD 117.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 26CD | 40. | 117. | 125. | 376. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | B98 | 0.00 |

CONFLUENCE Q'S

861411 27B TB 1158 QB 205. QBC 570. QC 365. 861411 27C TC 1157 QC 376. QCB 579. QB 203.
861411 27BC TBC 1157 QBC 579. QB 203. QC 376.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 27BC | 125. | 376. | 198. | 579. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | B98 | 0.00 |
| 861411 28B | 29. | 74. | 227. | 650. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 12 | B98 | 0.00 |
| 861411 29B | 227. | 17. | 227. | 17. | 4 | 350. | 0.00860 | 2.00 | 0.00 | 0. | 30 | 0 | B98 | 0.00 |

CONFLUENCE Q'S

861411 30A TA 1156 QA 114. QAB 129. QB 15. 861411 30B TB 1172 QB 17. QBA 61. QA 44.
861411 30AB TAB 1157 QAB 129. QA 113. QB 16.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 30AB | 227. | 17. | 736. | 129. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 0 | B98 | 0.00 |
| 861411 31A | 0. | 0. | 736. | 129. | 4 | 830. | 0.01440 | 3.50 | 0.00 | 0. | 30 | 99 | B98 | 0.00 |
| 861411 32A | 39. | 129. | 775. | 251. | 4 | 1300. | 0.01540 | 4.50 | 0.00 | 0. | 10 | 10 | B98 | 0.28 |
| 861411 33A | 47. | 142. | 822. | 378. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 10 | B98 | 0.30 |
| 861411 34A | 87. | 245. | 909. | 619. | 4 | 700. | 0.01430 | 6.50 | 0.00 | 0. | 10 | 13 | B98 | 0.17 |
| 861411 35A | 13. | 45. | 922. | 654. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 8 | B98 | 0.46 |
| 861411 36B | 98. | 256. | 98. | 256. | 4 | 1350. | 0.02880 | 4.00 | 0.00 | 0. | 20 | 13 | B98 | 0.08 |
| 861411 37B | 71. | 210. | 169. | 460. | 4 | 150. | 0.02880 | 5.00 | 0.00 | 0. | 10 | 12 | B98 | 0.17 |

CONFLUENCE Q'S

861411 38A TA 1157 QA 654. QAB 1112. QB 458. 861411 38B TB 1157 QB 458. QBA 1112. QA 654.
861411 38AB TAB 1157 QAB 1112. QA 654. QB 458.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 38AB | 169. | 458. | 1091. | 1112. | 5 | 750. | 0.00530 | 12.00 | 0.00 | 0. | 10 | 0 | B98 | 0.00 |
| 861411 39A | 0. | 0. | 1091. | 1108. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 861411 40A | 48. | 174. | 1139. | 1273. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.23 |
| 861411 41B | 46. | 175. | 46. | 175. | 4 | 800. | 0.04500 | 3.25 | 0.00 | 0. | 20 | 9 | C99 | 0.12 |
| 861411 42B | 39. | 149. | 85. | 323. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | C99 | 0.16 |
| 861411 43B | 26. | 107. | 111. | 429. | 4 | 750. | 0.04000 | 4.75 | 0.00 | 0. | 20 | 8 | C99 | 0.19 |
| 861411 44B | 28. | 107. | 139. | 532. | 4 | 950. | 0.05260 | 4.75 | 0.00 | 0. | 20 | 9 | C99 | 0.16 |
| 861411 45B | 55. | 166. | 194. | 692. | 4 | 1000. | 0.06000 | 5.25 | 0.00 | 0. | 20 | 14 | C99 | 0.18 |
| 861411 46B | 22. | 94. | 216. | 773. | 4 | 500. | 0.03000 | 6.00 | 0.00 | 0. | 10 | 8 | C99 | 0.15 |
| 861411 47B | 27. | 89. | 243. | 858. | 4 | 550. | 0.03800 | 6.00 | 0.00 | 0. | 10 | 13 | C99 | 0.22 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/CONEJO MTN. CREEK-DEV. WITH 3 BASINS-Q100 STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

CONFLUENCE Q'S

861411 48A TA 1158 QA 1273. QAB 2126. QB 853. 861411 48B TB 1158 QB 853. QBA 2126. QA 1273.
861411 48AB TAB 1158 QAB 2126. QA 1273. QB 853.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 48AB | 243. | 853. | 1382. | 2126. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | C99 | 0.00 |
| 861411 49A | 0. | 0. | 1382. | 2126. | 5 | 950. | 0.02100 | 12.00 | 0.00 | 0. | 30 | 99 | B98 | 0.00 |
| 861411 50A | 57. | 127. | 1439. | 2243. | 5 | 650. | 0.02150 | 12.00 | 0.00 | 0. | 30 | 16 | B98 | 0.17 |
| 861411 51A | 34. | 130. | 1473. | 2335. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | C99 | 0.16 |
| 861411 52A | 45. | 131. | 1518. | 2456. | 5 | 950. | 0.00630 | 10.00 | 4.00 | 0. | 20 | 11 | B98 | 0.14 |
| 861411 53A | 24. | 103. | 1542. | 2426. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 8 | C99 | 0.02 |
| 861411 54A | 1542. | 1034. | 1542. | 1034. | 2 | 850. | 0.01650 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 861411 55A | 16. | 70. | 1558. | 1043. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 7 | C99 | 0.00 |
| 861411 56B | 25. | 89. | 25. | 89. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.00 |

CONFLUENCE Q'S

861411 57A TA 1172 QA 1043. QAB 1057. QB 14. 861411 57B TB 1154 QB 89. QBA 864. QA 776.
861411 57AB TAB 1172 QAB 1057. QA 1043. QB 14.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 57AB | 25. | 89. | 1583. | 1057. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 861411 58A | 0. | 0. | 1583. | 1057. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY

INFLOW TO FIRST BASIN

HYDROGRAPH AT 861411 18A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 18. | 200 | 23. | 300 | 28. | 400 | 29. |
| 500 | 32. | 600 | 35. | 700 | 41. | 800 | 46. | 900 | 68. |
| 1000 | 104. | 1050 | 144. | 1100 | 165. | 1110 | 228. | 1120 | 226. |
| 1130 | 305. | 1131 | 313. | 1132 | 319. | 1133 | 329. | 1134 | 339. |
| 1135 | 347. | 1136 | 348. | 1137 | 359. | 1138 | 369. | 1139 | 377. |
| 1140 | 388. | 1141 | 405. | 1142 | 421. | 1143 | 440. | 1144 | 462. |
| 1145 | 494. | 1146 | 525. | 1147 | 555. | 1148 | 586. | 1149 | 697. |
| 1150 | 830. | 1151 | 882. | 1152 | 1142. | 1153 | 1295. | 1154 | 1366. |
| 1155 | 1400. | 1156 | 1404. | 1157 | 1362. | 1158 | 1289. | 1159 | 1231. |
| 1160 | 1123. | 1161 | 992. | 1162 | 847. | 1163 | 723. | 1164 | 623. |
| 1165 | 479. | 1166 | 379. | 1167 | 315. | 1168 | 276. | 1169 | 260. |
| 1170 | 235. | 1171 | 224. | 1172 | 210. | 1173 | 199. | 1174 | 193. |
| 1175 | 187. | 1176 | 180. | 1177 | 168. | 1178 | 163. | 1179 | 159. |
| 1180 | 155. | 1181 | 149. | 1182 | 144. | 1183 | 141. | 1184 | 139. |
| 1185 | 138. | 1186 | 135. | 1187 | 134. | 1188 | 134. | 1189 | 134. |
| 1190 | 134. | 1191 | 137. | 1192 | 137. | 1193 | 138. | 1194 | 139. |
| 1195 | 139. | 1196 | 137. | 1197 | 137. | 1198 | 137. | 1199 | 135. |
| 1200 | 136. | 1201 | 132. | 1202 | 129. | 1203 | 124. | 1204 | 121. |
| 1205 | 117. | 1206 | 113. | 1207 | 111. | 1208 | 107. | 1209 | 106. |
| 1210 | 104. | 1211 | 102. | 1212 | 101. | 1213 | 100. | 1214 | 100. |
| 1215 | 98. | 1216 | 99. | 1217 | 99. | 1218 | 99. | 1219 | 98. |
| 1220 | 99. | 1221 | 99. | 1222 | 98. | 1223 | 98. | 1224 | 99. |
| 1225 | 99. | 1226 | 98. | 1227 | 98. | 1228 | 99. | 1229 | 99. |
| 1230 | 98. | 1231 | 98. | 1232 | 99. | 1233 | 97. | 1234 | 95. |
| 1235 | 96. | 1236 | 95. | 1237 | 93. | 1238 | 93. | 1239 | 93. |
| 1240 | 91. | 1241 | 92. | 1242 | 91. | 1243 | 89. | 1244 | 90. |
| 1245 | 89. | 1246 | 89. | 1247 | 90. | 1248 | 89. | 1249 | 89. |
| 1250 | 90. | 1251 | 89. | 1252 | 89. | 1253 | 90. | 1254 | 89. |
| 1255 | 89. | 1256 | 90. | 1257 | 89. | 1258 | 89. | 1259 | 90. |
| 1260 | 89. | 1261 | 89. | 1262 | 87. | 1263 | 84. | 1264 | 83. |
| 1265 | 82. | 1266 | 79. | 1267 | 76. | 1268 | 75. | 1269 | 73. |
| 1270 | 71. | 1271 | 69. | 1272 | 69. | 1273 | 68. | 1274 | 66. |
| 1275 | 66. | 1276 | 66. | 1277 | 66. | 1278 | 65. | 1279 | 65. |
| 1280 | 66. | 1281 | 66. | 1282 | 65. | 1283 | 65. | 1284 | 66. |
| 1285 | 66. | 1286 | 65. | 1287 | 65. | 1288 | 66. | 1289 | 66. |
| 1290 | 65. | 1291 | 65. | 1292 | 66. | 1293 | 65. | 1294 | 65. |
| 1295 | 65. | 1296 | 66. | 1297 | 66. | 1298 | 65. | 1299 | 65. |
| 1300 | 66. | 1310 | 45. | 1320 | 38. | 1330 | 38. | 1340 | 38. |
| 1350 | 26. | 1360 | 19. | 1370 | 19. | 1380 | 19. | 1390 | 19. |
| 1400 | 19. | 1420 | 17. | 1440 | 17. | 1460 | 12. | 1500 | 12. |

MODIFIED RATIONAL METHOD HYDROLOGY
OUTFLOW FROM FIRST BASIN
HYDROGRAPH AT 861411 19A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 4. | 200 | 8. | 300 | 10. | 400 | 11. |
| 500 | 12. | 600 | 13. | 700 | 14. | 800 | 15. | 900 | 17. |
| 1000 | 18. | 1050 | 19. | 1100 | 20. | 1110 | 20. | 1120 | 21. |
| 1130 | 21. | 1131 | 21. | 1132 | 21. | 1133 | 21. | 1134 | 21. |
| 1135 | 21. | 1136 | 21. | 1137 | 21. | 1138 | 21. | 1139 | 21. |
| 1140 | 21. | 1141 | 21. | 1142 | 21. | 1143 | 21. | 1144 | 22. |
| 1145 | 22. | 1146 | 22. | 1147 | 22. | 1148 | 22. | 1149 | 22. |
| 1150 | 22. | 1151 | 22. | 1152 | 22. | 1153 | 22. | 1154 | 22. |
| 1155 | 23. | 1156 | 23. | 1157 | 23. | 1158 | 23. | 1159 | 23. |
| 1160 | 23. | 1161 | 23. | 1162 | 23. | 1163 | 23. | 1164 | 24. |
| 1165 | 24. | 1166 | 24. | 1167 | 24. | 1168 | 24. | 1169 | 24. |
| 1170 | 24. | 1171 | 24. | 1172 | 24. | 1173 | 24. | 1174 | 24. |
| 1175 | 24. | 1176 | 24. | 1177 | 24. | 1178 | 24. | 1179 | 24. |
| 1180 | 24. | 1181 | 24. | 1182 | 24. | 1183 | 24. | 1184 | 24. |
| 1185 | 24. | 1186 | 24. | 1187 | 24. | 1188 | 24. | 1189 | 24. |
| 1190 | 24. | 1191 | 24. | 1192 | 24. | 1193 | 24. | 1194 | 24. |
| 1195 | 24. | 1196 | 24. | 1197 | 24. | 1198 | 24. | 1199 | 24. |
| 1200 | 24. | 1201 | 24. | 1202 | 24. | 1203 | 24. | 1204 | 24. |
| 1205 | 24. | 1206 | 24. | 1207 | 24. | 1208 | 24. | 1209 | 24. |
| 1210 | 24. | 1211 | 24. | 1212 | 24. | 1213 | 24. | 1214 | 24. |
| 1215 | 24. | 1216 | 24. | 1217 | 24. | 1218 | 24. | 1219 | 25. |
| 1220 | 25. | 1221 | 25. | 1222 | 25. | 1223 | 25. | 1224 | 25. |
| 1225 | 25. | 1226 | 25. | 1227 | 25. | 1228 | 25. | 1229 | 25. |
| 1230 | 25. | 1231 | 25. | 1232 | 25. | 1233 | 25. | 1234 | 25. |
| 1235 | 25. | 1236 | 25. | 1237 | 25. | 1238 | 25. | 1239 | 25. |
| 1240 | 25. | 1241 | 25. | 1242 | 25. | 1243 | 25. | 1244 | 25. |
| 1245 | 25. | 1246 | 25. | 1247 | 25. | 1248 | 25. | 1249 | 25. |
| 1250 | 25. | 1251 | 25. | 1252 | 25. | 1253 | 25. | 1254 | 25. |
| 1255 | 25. | 1256 | 25. | 1257 | 25. | 1258 | 25. | 1259 | 25. |
| 1260 | 25. | 1261 | 25. | 1262 | 25. | 1263 | 25. | 1264 | 25. |
| 1265 | 25. | 1266 | 25. | 1267 | 25. | 1268 | 25. | 1269 | 25. |
| 1270 | 25. | 1271 | 25. | 1272 | 25. | 1273 | 25. | 1274 | 25. |
| 1275 | 25. | 1276 | 25. | 1277 | 25. | 1278 | 25. | 1279 | 25. |
| 1280 | 25. | 1281 | 25. | 1282 | 25. | 1283 | 25. | 1284 | 25. |
| 1285 | 25. | 1286 | 25. | 1287 | 25. | 1288 | 25. | 1289 | 25. |
| 1290 | 25. | 1291 | 25. | 1292 | 25. | 1293 | 25. | 1294 | 25. |
| 1295 | 25. | 1296 | 25. | 1297 | 25. | 1298 | 25. | 1299 | 25. |
| 1300 | 25. | 1310 | 25. | 1320 | 25. | 1330 | 25. | 1340 | 25. |
| 1350 | 25. | 1360 | 25. | 1370 | 25. | 1380 | 25. | 1390 | 25. |
| 1400 | 25. | 1420 | 25. | 1440 | 25. | 1460 | 25. | 1500 | 25. |

MODIFIED RATIONAL METHOD HYDROLOGY

INFLOW TO SECOND BASIN

HYDROGRAPH AT 861411 28B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 4. | 200 | 5. | 300 | 10. | 400 | 11. |
| 500 | 13. | 600 | 16. | 700 | 19. | 800 | 22. | 900 | 30. |
| 1000 | 45. | 1050 | 64. | 1100 | 73. | 1110 | 101. | 1120 | 108. |
| 1130 | 138. | 1131 | 144. | 1132 | 149. | 1133 | 154. | 1134 | 158. |
| 1135 | 162. | 1136 | 164. | 1137 | 168. | 1138 | 171. | 1139 | 175. |
| 1140 | 180. | 1141 | 187. | 1142 | 194. | 1143 | 202. | 1144 | 211. |
| 1145 | 223. | 1146 | 236. | 1147 | 250. | 1148 | 266. | 1149 | 303. |
| 1150 | 351. | 1151 | 387. | 1152 | 466. | 1153 | 535. | 1154 | 593. |
| 1155 | 628. | 1156 | 646. | 1157 | 650. | 1158 | 639. | 1159 | 615. |
| 1160 | 589. | 1161 | 550. | 1162 | 485. | 1163 | 422. | 1164 | 367. |
| 1165 | 290. | 1166 | 225. | 1167 | 181. | 1168 | 154. | 1169 | 137. |
| 1170 | 123. | 1171 | 114. | 1172 | 106. | 1173 | 99. | 1174 | 94. |
| 1175 | 90. | 1176 | 85. | 1177 | 80. | 1178 | 77. | 1179 | 74. |
| 1180 | 71. | 1181 | 69. | 1182 | 66. | 1183 | 65. | 1184 | 63. |
| 1185 | 62. | 1186 | 61. | 1187 | 60. | 1188 | 59. | 1189 | 59. |
| 1190 | 59. | 1191 | 59. | 1192 | 59. | 1193 | 59. | 1194 | 58. |
| 1195 | 58. | 1196 | 58. | 1197 | 58. | 1198 | 58. | 1199 | 58. |
| 1200 | 58. | 1201 | 58. | 1202 | 57. | 1203 | 56. | 1204 | 55. |
| 1205 | 54. | 1206 | 52. | 1207 | 51. | 1208 | 49. | 1209 | 48. |
| 1210 | 46. | 1211 | 45. | 1212 | 44. | 1213 | 43. | 1214 | 42. |
| 1215 | 42. | 1216 | 42. | 1217 | 42. | 1218 | 42. | 1219 | 42. |
| 1220 | 42. | 1221 | 42. | 1222 | 42. | 1223 | 42. | 1224 | 42. |
| 1225 | 42. | 1226 | 42. | 1227 | 42. | 1228 | 42. | 1229 | 42. |
| 1230 | 42. | 1231 | 42. | 1232 | 42. | 1233 | 42. | 1234 | 42. |
| 1235 | 42. | 1236 | 42. | 1237 | 41. | 1238 | 41. | 1239 | 41. |
| 1240 | 41. | 1241 | 41. | 1242 | 40. | 1243 | 40. | 1244 | 40. |
| 1245 | 40. | 1246 | 40. | 1247 | 40. | 1248 | 40. | 1249 | 40. |
| 1250 | 40. | 1251 | 40. | 1252 | 40. | 1253 | 40. | 1254 | 40. |
| 1255 | 40. | 1256 | 40. | 1257 | 40. | 1258 | 40. | 1259 | 40. |
| 1260 | 40. | 1261 | 40. | 1262 | 40. | 1263 | 39. | 1264 | 39. |
| 1265 | 38. | 1266 | 37. | 1267 | 36. | 1268 | 36. | 1269 | 35. |
| 1270 | 34. | 1271 | 33. | 1272 | 32. | 1273 | 32. | 1274 | 31. |
| 1275 | 31. | 1276 | 31. | 1277 | 31. | 1278 | 30. | 1279 | 30. |
| 1280 | 30. | 1281 | 30. | 1282 | 30. | 1283 | 30. | 1284 | 30. |
| 1285 | 30. | 1286 | 30. | 1287 | 30. | 1288 | 30. | 1289 | 30. |
| 1290 | 30. | 1291 | 30. | 1292 | 30. | 1293 | 30. | 1294 | 30. |
| 1295 | 30. | 1296 | 30. | 1297 | 30. | 1298 | 30. | 1299 | 30. |
| 1300 | 30. | 1310 | 22. | 1320 | 17. | 1330 | 17. | 1340 | 16. |
| 1350 | 10. | 1360 | 5. | 1370 | 5. | 1380 | 5. | 1390 | 5. |
| 1400 | 5. | 1420 | 4. | 1440 | 4. | 1460 | 3. | 1500 | 3. |

MODIFIED RATIONAL METHOD HYDROLOGY
OUTFLOW FROM SECOND BASIN
HYDROGRAPH AT 861411 29B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 1. | 200 | 3. | 300 | 5. | 400 | 6. |
| 500 | 7. | 600 | 8. | 700 | 9. | 800 | 10. | 900 | 10. |
| 1000 | 12. | 1050 | 12. | 1100 | 13. | 1110 | 14. | 1120 | 14. |
| 1130 | 14. | 1131 | 14. | 1132 | 14. | 1133 | 14. | 1134 | 14. |
| 1135 | 14. | 1136 | 14. | 1137 | 14. | 1138 | 14. | 1139 | 14. |
| 1140 | 14. | 1141 | 14. | 1142 | 14. | 1143 | 15. | 1144 | 15. |
| 1145 | 15. | 1146 | 15. | 1147 | 15. | 1148 | 15. | 1149 | 15. |
| 1150 | 15. | 1151 | 15. | 1152 | 15. | 1153 | 15. | 1154 | 15. |
| 1155 | 15. | 1156 | 16. | 1157 | 16. | 1158 | 16. | 1159 | 16. |
| 1160 | 16. | 1161 | 16. | 1162 | 16. | 1163 | 16. | 1164 | 16. |
| 1165 | 17. | 1166 | 17. | 1167 | 17. | 1168 | 17. | 1169 | 17. |
| 1170 | 17. | 1171 | 17. | 1172 | 17. | 1173 | 17. | 1174 | 17. |
| 1175 | 17. | 1176 | 17. | 1177 | 17. | 1178 | 17. | 1179 | 17. |
| 1180 | 17. | 1181 | 17. | 1182 | 17. | 1183 | 17. | 1184 | 17. |
| 1185 | 17. | 1186 | 17. | 1187 | 17. | 1188 | 17. | 1189 | 17. |
| 1190 | 17. | 1191 | 17. | 1192 | 17. | 1193 | 17. | 1194 | 17. |
| 1195 | 17. | 1196 | 17. | 1197 | 17. | 1198 | 17. | 1199 | 17. |
| 1200 | 17. | 1201 | 17. | 1202 | 17. | 1203 | 17. | 1204 | 17. |
| 1205 | 17. | 1206 | 17. | 1207 | 17. | 1208 | 17. | 1209 | 17. |
| 1210 | 17. | 1211 | 17. | 1212 | 17. | 1213 | 17. | 1214 | 17. |
| 1215 | 17. | 1216 | 17. | 1217 | 17. | 1218 | 17. | 1219 | 17. |
| 1220 | 17. | 1221 | 17. | 1222 | 17. | 1223 | 17. | 1224 | 17. |
| 1225 | 17. | 1226 | 17. | 1227 | 17. | 1228 | 17. | 1229 | 17. |
| 1230 | 17. | 1231 | 17. | 1232 | 17. | 1233 | 17. | 1234 | 17. |
| 1235 | 17. | 1236 | 17. | 1237 | 17. | 1238 | 17. | 1239 | 17. |
| 1240 | 17. | 1241 | 17. | 1242 | 17. | 1243 | 17. | 1244 | 17. |
| 1245 | 17. | 1246 | 17. | 1247 | 17. | 1248 | 17. | 1249 | 17. |
| 1250 | 17. | 1251 | 17. | 1252 | 17. | 1253 | 17. | 1254 | 17. |
| 1255 | 17. | 1256 | 17. | 1257 | 17. | 1258 | 17. | 1259 | 17. |
| 1260 | 17. | 1261 | 17. | 1262 | 17. | 1263 | 17. | 1264 | 17. |
| 1265 | 17. | 1266 | 17. | 1267 | 17. | 1268 | 17. | 1269 | 17. |
| 1270 | 17. | 1271 | 17. | 1272 | 17. | 1273 | 17. | 1274 | 17. |
| 1275 | 17. | 1276 | 17. | 1277 | 17. | 1278 | 17. | 1279 | 17. |
| 1280 | 17. | 1281 | 17. | 1282 | 17. | 1283 | 17. | 1284 | 17. |
| 1285 | 17. | 1286 | 17. | 1287 | 17. | 1288 | 17. | 1289 | 17. |
| 1290 | 17. | 1291 | 17. | 1292 | 17. | 1293 | 17. | 1294 | 17. |
| 1295 | 17. | 1296 | 17. | 1297 | 17. | 1298 | 17. | 1299 | 17. |
| 1300 | 17. | 1310 | 17. | 1320 | 17. | 1330 | 17. | 1340 | 17. |
| 1350 | 17. | 1360 | 17. | 1370 | 17. | 1380 | 17. | 1390 | 17. |
| 1400 | 17. | 1420 | 17. | 1440 | 17. | 1460 | 17. | 1500 | 17. |

MODIFIED RATIONAL METHOD HYDROLOGY
INFLOW TO THROTTLING STRUCTURE BASIN
HYDROGRAPH AT 861411 53A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 69. | 200 | 85. | 300 | 105. | 400 | 112. |
| 500 | 121. | 600 | 132. | 700 | 151. | 800 | 167. | 900 | 206. |
| 1000 | 276. | 1050 | 341. | 1100 | 398. | 1110 | 436. | 1120 | 494. |
| 1130 | 563. | 1131 | 572. | 1132 | 580. | 1133 | 591. | 1134 | 602. |
| 1135 | 616. | 1136 | 630. | 1137 | 646. | 1138 | 663. | 1139 | 682. |
| 1140 | 701. | 1141 | 718. | 1142 | 736. | 1143 | 754. | 1144 | 775. |
| 1145 | 798. | 1146 | 824. | 1147 | 854. | 1148 | 888. | 1149 | 937. |
| 1150 | 993. | 1151 | 1069. | 1152 | 1171. | 1153 | 1309. | 1154 | 1472. |
| 1155 | 1672. | 1156 | 1888. | 1157 | 2083. | 1158 | 2246. | 1159 | 2364. |
| 1160 | 2426. | 1161 | 2425. | 1162 | 2379. | 1163 | 2287. | 1164 | 2163. |
| 1165 | 2009. | 1166 | 1838. | 1167 | 1659. | 1168 | 1487. | 1169 | 1325. |
| 1170 | 1169. | 1171 | 1029. | 1172 | 919. | 1173 | 822. | 1174 | 741. |
| 1175 | 676. | 1176 | 630. | 1177 | 597. | 1178 | 566. | 1179 | 538. |
| 1180 | 513. | 1181 | 491. | 1182 | 470. | 1183 | 452. | 1184 | 436. |
| 1185 | 421. | 1186 | 409. | 1187 | 398. | 1188 | 388. | 1189 | 381. |
| 1190 | 375. | 1191 | 369. | 1192 | 365. | 1193 | 362. | 1194 | 360. |
| 1195 | 360. | 1196 | 360. | 1197 | 360. | 1198 | 360. | 1199 | 361. |
| 1200 | 361. | 1201 | 360. | 1202 | 359. | 1203 | 356. | 1204 | 353. |
| 1205 | 350. | 1206 | 346. | 1207 | 342. | 1208 | 338. | 1209 | 334. |
| 1210 | 330. | 1211 | 326. | 1212 | 321. | 1213 | 317. | 1214 | 313. |
| 1215 | 309. | 1216 | 306. | 1217 | 302. | 1218 | 299. | 1219 | 296. |
| 1220 | 293. | 1221 | 291. | 1222 | 289. | 1223 | 288. | 1224 | 287. |
| 1225 | 285. | 1226 | 285. | 1227 | 284. | 1228 | 283. | 1229 | 283. |
| 1230 | 283. | 1231 | 283. | 1232 | 282. | 1233 | 282. | 1234 | 282. |
| 1235 | 281. | 1236 | 281. | 1237 | 280. | 1238 | 279. | 1239 | 279. |
| 1240 | 278. | 1241 | 276. | 1242 | 275. | 1243 | 274. | 1244 | 272. |
| 1245 | 270. | 1246 | 269. | 1247 | 267. | 1248 | 266. | 1249 | 265. |
| 1250 | 264. | 1251 | 263. | 1252 | 263. | 1253 | 262. | 1254 | 262. |
| 1255 | 262. | 1256 | 262. | 1257 | 262. | 1258 | 262. | 1259 | 261. |
| 1260 | 261. | 1261 | 261. | 1262 | 261. | 1263 | 261. | 1264 | 260. |
| 1265 | 259. | 1266 | 259. | 1267 | 258. | 1268 | 256. | 1269 | 254. |
| 1270 | 252. | 1271 | 250. | 1272 | 247. | 1273 | 244. | 1274 | 241. |
| 1275 | 239. | 1276 | 236. | 1277 | 233. | 1278 | 230. | 1279 | 228. |
| 1280 | 226. | 1281 | 224. | 1282 | 223. | 1283 | 222. | 1284 | 221. |
| 1285 | 220. | 1286 | 220. | 1287 | 220. | 1288 | 219. | 1289 | 219. |
| 1290 | 219. | 1291 | 219. | 1292 | 219. | 1293 | 219. | 1294 | 219. |
| 1295 | 219. | 1296 | 219. | 1297 | 219. | 1298 | 219. | 1299 | 219. |
| 1300 | 219. | 1310 | 204. | 1320 | 179. | 1330 | 166. | 1340 | 164. |
| 1350 | 148. | 1360 | 126. | 1370 | 109. | 1380 | 106. | 1390 | 105. |
| 1400 | 105. | 1420 | 98. | 1440 | 93. | 1460 | 84. | 1500 | 71. |

MODIFIED RATIONAL METHOD HYDROLOGY
OUTFLOW FROM THROTTLING STRUCTURE BASIN
HYDROGRAPH AT 861411 54A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 33. | 200 | 76. | 300 | 94. | 400 | 108. |
| 500 | 116. | 600 | 127. | 700 | 141. | 800 | 158. | 900 | 186. |
| 1000 | 238. | 1050 | 301. | 1100 | 358. | 1110 | 389. | 1120 | 427. |
| 1130 | 477. | 1131 | 483. | 1132 | 491. | 1133 | 500. | 1134 | 508. |
| 1135 | 518. | 1136 | 527. | 1137 | 534. | 1138 | 543. | 1139 | 550. |
| 1140 | 561. | 1141 | 570. | 1142 | 580. | 1143 | 591. | 1144 | 603. |
| 1145 | 615. | 1146 | 628. | 1147 | 641. | 1148 | 649. | 1149 | 659. |
| 1150 | 670. | 1151 | 683. | 1152 | 698. | 1153 | 718. | 1154 | 739. |
| 1155 | 761. | 1156 | 788. | 1157 | 820. | 1158 | 852. | 1159 | 888. |
| 1160 | 914. | 1161 | 935. | 1162 | 956. | 1163 | 975. | 1164 | 988. |
| 1165 | 1001. | 1166 | 1011. | 1167 | 1020. | 1168 | 1027. | 1169 | 1031. |
| 1170 | 1034. | 1171 | 1034. | 1172 | 1034. | 1173 | 1032. | 1174 | 1029. |
| 1175 | 1025. | 1176 | 1021. | 1177 | 1016. | 1178 | 1011. | 1179 | 1006. |
| 1180 | 1001. | 1181 | 995. | 1182 | 988. | 1183 | 983. | 1184 | 977. |
| 1185 | 969. | 1186 | 962. | 1187 | 955. | 1188 | 946. | 1189 | 939. |
| 1190 | 931. | 1191 | 923. | 1192 | 915. | 1193 | 908. | 1194 | 899. |
| 1195 | 887. | 1196 | 874. | 1197 | 861. | 1198 | 849. | 1199 | 837. |
| 1200 | 825. | 1201 | 814. | 1202 | 801. | 1203 | 790. | 1204 | 778. |
| 1205 | 767. | 1206 | 757. | 1207 | 745. | 1208 | 735. | 1209 | 722. |
| 1210 | 708. | 1211 | 693. | 1212 | 680. | 1213 | 667. | 1214 | 656. |
| 1215 | 643. | 1216 | 622. | 1217 | 601. | 1218 | 582. | 1219 | 564. |
| 1220 | 547. | 1221 | 529. | 1222 | 508. | 1223 | 489. | 1224 | 470. |
| 1225 | 454. | 1226 | 439. | 1227 | 425. | 1228 | 412. | 1229 | 401. |
| 1230 | 390. | 1231 | 380. | 1232 | 372. | 1233 | 363. | 1234 | 355. |
| 1235 | 349. | 1236 | 343. | 1237 | 337. | 1238 | 332. | 1239 | 326. |
| 1240 | 322. | 1241 | 319. | 1242 | 313. | 1243 | 307. | 1244 | 303. |
| 1245 | 298. | 1246 | 294. | 1247 | 290. | 1248 | 285. | 1249 | 283. |
| 1250 | 280. | 1251 | 278. | 1252 | 275. | 1253 | 274. | 1254 | 273. |
| 1255 | 270. | 1256 | 270. | 1257 | 268. | 1258 | 267. | 1259 | 267. |
| 1260 | 265. | 1261 | 265. | 1262 | 264. | 1263 | 264. | 1264 | 264. |
| 1265 | 262. | 1266 | 262. | 1267 | 261. | 1268 | 261. | 1269 | 260. |
| 1270 | 260. | 1271 | 258. | 1272 | 257. | 1273 | 254. | 1274 | 252. |
| 1275 | 251. | 1276 | 249. | 1277 | 247. | 1278 | 244. | 1279 | 242. |
| 1280 | 239. | 1281 | 238. | 1282 | 235. | 1283 | 234. | 1284 | 232. |
| 1285 | 231. | 1286 | 228. | 1287 | 228. | 1288 | 226. | 1289 | 225. |
| 1290 | 224. | 1291 | 222. | 1292 | 222. | 1293 | 221. | 1294 | 221. |
| 1295 | 221. | 1296 | 221. | 1297 | 220. | 1298 | 220. | 1299 | 220. |
| 1300 | 220. | 1310 | 214. | 1320 | 199. | 1330 | 180. | 1340 | 169. |
| 1350 | 160. | 1360 | 143. | 1370 | 126. | 1380 | 113. | 1390 | 107. |
| 1400 | 106. | 1420 | 102. | 1440 | 97. | 1460 | 91. | 1500 | 79. |

MODIFIED RATIONAL METHOD HYDROLOGY
AT DOWNSTREAM STUDY LIMIT
HYDROGRAPH AT 861411 58A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 34. | 200 | 76. | 300 | 98. | 400 | 110. |
| 500 | 121. | 600 | 130. | 700 | 148. | 800 | 164. | 900 | 196. |
| 1000 | 250. | 1050 | 316. | 1100 | 377. | 1110 | 407. | 1120 | 445. |
| 1130 | 499. | 1131 | 505. | 1132 | 510. | 1133 | 518. | 1134 | 527. |
| 1135 | 537. | 1136 | 547. | 1137 | 557. | 1138 | 567. | 1139 | 576. |
| 1140 | 584. | 1141 | 596. | 1142 | 609. | 1143 | 620. | 1144 | 633. |
| 1145 | 647. | 1146 | 661. | 1147 | 677. | 1148 | 691. | 1149 | 722. |
| 1150 | 752. | 1151 | 782. | 1152 | 814. | 1153 | 847. | 1154 | 864. |
| 1155 | 884. | 1156 | 894. | 1157 | 907. | 1158 | 924. | 1159 | 933. |
| 1160 | 943. | 1161 | 960. | 1162 | 971. | 1163 | 980. | 1164 | 997. |
| 1165 | 1010. | 1166 | 1022. | 1167 | 1032. | 1168 | 1040. | 1169 | 1047. |
| 1170 | 1052. | 1171 | 1055. | 1172 | 1057. | 1173 | 1057. | 1174 | 1055. |
| 1175 | 1052. | 1176 | 1048. | 1177 | 1044. | 1178 | 1038. | 1179 | 1032. |
| 1180 | 1026. | 1181 | 1021. | 1182 | 1015. | 1183 | 1009. | 1184 | 1003. |
| 1185 | 997. | 1186 | 990. | 1187 | 983. | 1188 | 976. | 1189 | 970. |
| 1190 | 964. | 1191 | 956. | 1192 | 948. | 1193 | 939. | 1194 | 932. |
| 1195 | 923. | 1196 | 911. | 1197 | 898. | 1198 | 886. | 1199 | 873. |
| 1200 | 860. | 1201 | 848. | 1202 | 836. | 1203 | 824. | 1204 | 812. |
| 1205 | 800. | 1206 | 789. | 1207 | 778. | 1208 | 767. | 1209 | 756. |
| 1210 | 745. | 1211 | 731. | 1212 | 717. | 1213 | 704. | 1214 | 690. |
| 1215 | 678. | 1216 | 666. | 1217 | 650. | 1218 | 630. | 1219 | 611. |
| 1220 | 592. | 1221 | 575. | 1222 | 557. | 1223 | 539. | 1224 | 519. |
| 1225 | 501. | 1226 | 483. | 1227 | 467. | 1228 | 453. | 1229 | 439. |
| 1230 | 427. | 1231 | 415. | 1232 | 404. | 1233 | 394. | 1234 | 386. |
| 1235 | 377. | 1236 | 369. | 1237 | 362. | 1238 | 356. | 1239 | 350. |
| 1240 | 345. | 1241 | 339. | 1242 | 335. | 1243 | 331. | 1244 | 325. |
| 1245 | 320. | 1246 | 316. | 1247 | 311. | 1248 | 307. | 1249 | 303. |
| 1250 | 299. | 1251 | 296. | 1252 | 293. | 1253 | 290. | 1254 | 288. |
| 1255 | 287. | 1256 | 285. | 1257 | 283. | 1258 | 282. | 1259 | 280. |
| 1260 | 280. | 1261 | 278. | 1262 | 277. | 1263 | 276. | 1264 | 275. |
| 1265 | 274. | 1266 | 274. | 1267 | 272. | 1268 | 271. | 1269 | 271. |
| 1270 | 270. | 1271 | 270. | 1272 | 269. | 1273 | 267. | 1274 | 266. |
| 1275 | 264. | 1276 | 262. | 1277 | 260. | 1278 | 259. | 1279 | 257. |
| 1280 | 254. | 1281 | 251. | 1282 | 249. | 1283 | 248. | 1284 | 245. |
| 1285 | 243. | 1286 | 242. | 1287 | 241. | 1288 | 239. | 1289 | 237. |
| 1290 | 236. | 1291 | 235. | 1292 | 233. | 1293 | 232. | 1294 | 231. |
| 1295 | 231. | 1296 | 230. | 1297 | 230. | 1298 | 230. | 1299 | 230. |
| 1300 | 229. | 1310 | 221. | 1320 | 209. | 1330 | 190. | 1340 | 177. |
| 1350 | 163. | 1360 | 149. | 1370 | 132. | 1380 | 118. | 1390 | 109. |
| 1400 | 107. | 1420 | 103. | 1440 | 98. | 1460 | 92. | 1500 | 80. |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

## BASIN#1

## 100-YEAR STORM

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 18.00 | 100.00 | 9.00 | 1.24 | 4.24 | 0.58 | 0.66 | 829.50 |
| 200.00 | 23.00 | 100.00 | 20.50 | 2.82 | 7.66 | 1.06 | 2.42 | 831.08 |
| 300.00 | 28.00 | 100.00 | 25.50 | 3.51 | 9.77 | 1.35 | 4.59 | 832.18 |
| 400.00 | 29.00 | 100.00 | 28.50 | 3.93 | 11.19 | 1.54 | 6.98 | 833.13 |
| 500.00 | 32.00 | 100.00 | 30.50 | 4.20 | 12.34 | 1.70 | 9.48 | 833.90 |
| 600.00 | 35.00 | 100.00 | 33.50 | 4.61 | 13.47 | 1.85 | 12.24 | 834.64 |
| 700.00 | 41.00 | 100.00 | 38.00 | 5.23 | 14.47 | 1.99 | 15.48 | 835.39 |
| 800.00 | 46.00 | 100.00 | 43.50 | 5.99 | 15.44 | 2.13 | 19.34 | 836.18 |
| 900.00 | 68.00 | 100.00 | 57.00 | 7.85 | 16.70 | 2.30 | 24.89 | 837.20 |
| 1000.00 | 104.00 | 100.00 | 86.00 | 11.85 | 18.20 | 2.51 | 34.23 | 838.58 |
| 1050.00 | 144.00 | 50.00 | 124.00 | 8.54 | 19.14 | 1.32 | 41.45 | 839.55 |
| 1100.00 | 165.00 | 50.00 | 154.50 | 10.64 | 20.13 | 1.39 | 50.71 | 840.63 |
| 1110.00 | 228.00 | 10.00 | 196.50 | 2.71 | 20.39 | 0.28 | 53.13 | 840.89 |
| 1120.00 | 226.00 | 10.00 | 227.00 | 3.13 | 20.66 | 0.28 | 55.98 | 841.22 |
| 1130.00 | 305.00 | 10.00 | 265.50 | 3.66 | 20.93 | 0.29 | 59.35 | 841.62 |
| 1131.00 | 313.00 | 1.00 | 309.00 | 0.43 | 20.98 | 0.03 | 59.74 | 841.68 |
| 1132.00 | 319.00 | 1.00 | 316.00 | 0.44 | 21.01 | 0.03 | 60.15 | 841.73 |
| 1133.00 | 329.00 | 1.00 | 324.00 | 0.45 | 21.04 | 0.03 | 60.57 | 841.77 |
| 1134.00 | 339.00 | 1.00 | 334.00 | 0.46 | 21.07 | 0.03 | 61.00 | 841.82 |
| 1135.00 | 347.00 | 1.00 | 343.00 | 0.47 | 21.12 | 0.03 | 61.44 | 841.88 |
| 1136.00 | 348.00 | 1.00 | 347.50 | 0.48 | 21.15 | 0.03 | 61.89 | 841.93 |
| 1137.00 | 359.00 | 1.00 | 353.50 | 0.49 | 21.19 | 0.03 | 62.35 | 841.99 |
| 1138.00 | 369.00 | 1.00 | 364.00 | 0.50 | 21.23 | 0.03 | 62.82 | 842.04 |
| 1139.00 | 377.00 | 1.00 | 373.00 | 0.51 | 21.28 | 0.03 | 63.30 | 842.10 |
| 1140.00 | 388.00 | 1.00 | 382.50 | 0.53 | 21.32 | 0.03 | 63.80 | 842.15 |
| 1141.00 | 405.00 | 1.00 | 396.50 | 0.55 | 21.37 | 0.03 | 64.32 | 842.21 |
| 1142.00 | 421.00 | 1.00 | 413.00 | 0.57 | 21.42 | 0.03 | 64.86 | 842.28 |
| 1143.00 | 440.00 | 1.00 | 430.50 | 0.59 | 21.48 | 0.03 | 65.42 | 842.34 |
| 1144.00 | 462.00 | 1.00 | 451.00 | 0.62 | 21.53 | 0.03 | 66.01 | 842.41 |
| 1145.00 | 494.00 | 1.00 | 478.00 | 0.66 | 21.58 | 0.03 | 66.64 | 842.48 |
| 1146.00 | 525.00 | 1.00 | 509.50 | 0.70 | 21.65 | 0.03 | 67.31 | 842.56 |
| 1147.00 | 555.00 | 1.00 | 540.00 | 0.74 | 21.72 | 0.03 | 68.03 | 842.65 |
| 1148.00 | 586.00 | 1.00 | 570.50 | 0.79 | 21.79 | 0.03 | 68.78 | 842.74 |
| 1149.00 | 697.00 | 1.00 | 641.50 | 0.88 | 21.86 | 0.03 | 69.64 | 842.83 |
| 1150.00 | 830.00 | 1.00 | 763.50 | 1.05 | 21.97 | 0.03 | 70.66 | 842.96 |
| 1151.00 | 882.00 | 1.00 | 856.00 | 1.18 | 22.06 | 0.03 | 71.81 | 843.09 |
| 1152.00 | 1142.00 | 1.00 | 1012.00 | 1.39 | 22.15 | 0.03 | 73.17 | 843.25 |
| 1153.00 | 1295.00 | 1.00 | 1218.50 | 1.68 | 22.25 | 0.03 | 74.82 | 843.42 |
| 1154.00 | 1366.00 | 1.00 | 1330.50 | 1.83 | 22.37 | 0.03 | 76.62 | 843.62 |
| 1155.00 | 1400.00 | 1.00 | 1383.00 | 1.90 | 22.50 | 0.03 | 78.49 | 843.84 |
| 1156.00 | 1404.00 | 1.00 | 1402.00 | 1.93 | 22.62 | 0.03 | 80.39 | 844.04 |
| 1157.00 | 1362.00 | 1.00 | 1383.00 | 1.90 | 22.75 | 0.03 | 82.27 | 844.26 |
| 1158.00 | 1289.00 | 1.00 | 1325.50 | 1.83 | 22.89 | 0.03 | 84.06 | 844.48 |
| 1159.00 | 1231.00 | 1.00 | 1260.00 | 1.74 | 23.01 | 0.03 | 85.76 | 844.68 |
| 1160.00 | 1123.00 | 1.00 | 1177.00 | 1.62 | 23.12 | 0.03 | 87.35 | 844.87 |
| 1161.00 | 992.00 | 1.00 | 1057.50 | 1.46 | 23.22 | 0.03 | 88.78 | 845.03 |
| 1162.00 | 847.00 | 1.00 | 919.50 | 1.27 | 23.35 | 0.03 | 90.01 | 845.18 |
| 1163.00 | 723.00 | 1.00 | 785.00 | 1.08 | 23.43 | 0.03 | 91.06 | 845.29 |
| 1164.00 | 623.00 | 1.00 | 673.00 | 0.93 | 23.52 | 0.03 | 91.96 | 845.40 |
| 1165.00 | 479.00 | 1.00 | 551.00 | 0.76 | 23.59 | 0.03 | 92.68 | 845.49 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1166.00 | 379.00 | 1.00 | 429.00 | 0.59 | 23.64 | 0.03 | 93.24 | 845.56 |
| 1167.00 | 315.00 | 1.00 | 347.00 | 0.48 | 23.68 | 0.03 | 93.69 | 845.60 |
| 1168.00 | 276.00 | 1.00 | 295.50 | 0.41 | 23.72 | 0.03 | 94.06 | 845.64 |
| 1169.00 | 260.00 | 1.00 | 268.00 | 0.37 | 23.75 | 0.03 | 94.40 | 845.69 |
| 1170.00 | 235.00 | 1.00 | 247.50 | 0.34 | 23.79 | 0.03 | 94.71 | 845.73 |
| 1171.00 | 224.00 | 1.00 | 229.50 | 0.32 | 23.80 | 0.03 | 94.99 | 845.75 |
| 1172.00 | 210.00 | 1.00 | 217.00 | 0.30 | 23.84 | 0.03 | 95.26 | 845.80 |
| 1173.00 | 199.00 | 1.00 | 204.50 | 0.28 | 23.86 | 0.03 | 95.50 | 845.82 |
| 1174.00 | 193.00 | 1.00 | 196.00 | 0.27 | 23.87 | 0.03 | 95.74 | 845.84 |
| 1175.00 | 187.00 | 1.00 | 190.00 | 0.26 | 23.91 | 0.03 | 95.97 | 845.89 |
| 1176.00 | 180.00 | 1.00 | 183.50 | 0.25 | 23.93 | 0.03 | 96.19 | 845.91 |
| 1177.00 | 168.00 | 1.00 | 174.00 | 0.24 | 23.94 | 0.03 | 96.40 | 845.93 |
| 1178.00 | 163.00 | 1.00 | 165.50 | 0.23 | 23.96 | 0.03 | 96.59 | 845.95 |
| 1179.00 | 159.00 | 1.00 | 161.00 | 0.22 | 23.98 | 0.03 | 96.78 | 845.97 |
| 1180.00 | 155.00 | 1.00 | 157.00 | 0.22 | 24.00 | 0.03 | 96.96 | 846.00 |
| 1181.00 | 149.00 | 1.00 | 152.00 | 0.21 | 24.01 | 0.03 | 97.14 | 846.02 |
| 1182.00 | 144.00 | 1.00 | 146.50 | 0.20 | 24.03 | 0.03 | 97.31 | 846.04 |
| 1183.00 | 141.00 | 1.00 | 142.50 | 0.20 | 24.05 | 0.03 | 97.47 | 846.06 |
| 1184.00 | 139.00 | 1.00 | 140.00 | 0.19 | 24.07 | 0.03 | 97.63 | 846.08 |
| 1185.00 | 138.00 | 1.00 | 138.50 | 0.19 | 24.07 | 0.03 | 97.79 | 846.08 |
| 1186.00 | 135.00 | 1.00 | 136.50 | 0.19 | 24.08 | 0.03 | 97.94 | 846.11 |
| 1187.00 | 134.00 | 1.00 | 134.50 | 0.19 | 24.10 | 0.03 | 98.10 | 846.13 |
| 1188.00 | 134.00 | 1.00 | 134.00 | 0.18 | 24.12 | 0.03 | 98.25 | 846.15 |
| 1189.00 | 134.00 | 1.00 | 134.00 | 0.18 | 24.14 | 0.03 | 98.40 | 846.17 |
| 1190.00 | 134.00 | 1.00 | 134.00 | 0.18 | 24.14 | 0.03 | 98.55 | 846.17 |
| 1191.00 | 137.00 | 1.00 | 135.50 | 0.19 | 24.16 | 0.03 | 98.70 | 846.19 |
| 1192.00 | 137.00 | 1.00 | 137.00 | 0.19 | 24.17 | 0.03 | 98.86 | 846.22 |
| 1193.00 | 138.00 | 1.00 | 137.50 | 0.19 | 24.19 | 0.03 | 99.01 | 846.24 |
| 1194.00 | 139.00 | 1.00 | 138.50 | 0.19 | 24.21 | 0.03 | 99.17 | 846.26 |
| 1195.00 | 139.00 | 1.00 | 139.00 | 0.19 | 24.23 | 0.03 | 99.33 | 846.28 |
| 1196.00 | 137.00 | 1.00 | 138.00 | 0.19 | 24.23 | 0.03 | 99.49 | 846.28 |
| 1197.00 | 137.00 | 1.00 | 137.00 | 0.19 | 24.24 | 0.03 | 99.64 | 846.30 |
| 1198.00 | 137.00 | 1.00 | 137.00 | 0.19 | 24.26 | 0.03 | 99.80 | 846.33 |
| 1199.00 | 135.00 | 1.00 | 136.00 | 0.19 | 24.28 | 0.03 | 99.95 | 846.35 |
| 1200.00 | 136.00 | 1.00 | 135.50 | 0.19 | 24.30 | 0.03 | 100.10 | 846.37 |
| 1201.00 | 132.00 | 1.00 | 134.00 | 0.18 | 24.31 | 0.03 | 100.26 | 846.39 |
| 1202.00 | 129.00 | 1.00 | 130.50 | 0.18 | 24.31 | 0.03 | 100.40 | 846.39 |
| 1203.00 | 124.00 | 1.00 | 126.50 | 0.17 | 24.33 | 0.03 | 100.54 | 846.41 |
| 1204.00 | 121.00 | 1.00 | 122.50 | 0.17 | 24.35 | 0.03 | 100.68 | 846.44 |
| 1205.00 | 117.00 | 1.00 | 119.00 | 0.16 | 24.37 | 0.03 | 100.81 | 846.46 |
| 1206.00 | 113.00 | 1.00 | 115.00 | 0.16 | 24.37 | 0.03 | 100.93 | 846.46 |
| 1207.00 | 111.00 | 1.00 | 112.00 | 0.15 | 24.38 | 0.03 | 101.05 | 846.48 |
| 1208.00 | 107.00 | 1.00 | 109.00 | 0.15 | 24.38 | 0.03 | 101.17 | 846.48 |
| 1209.00 | 106.00 | 1.00 | 106.50 | 0.15 | 24.40 | 0.03 | 101.28 | 846.50 |
| 1210.00 | 104.00 | 1.00 | 105.00 | 0.14 | 24.42 | 0.03 | 101.39 | 846.52 |
| 1211.00 | 102.00 | 1.00 | 103.00 | 0.14 | 24.42 | 0.03 | 101.50 | 846.52 |
| 1212.00 | 101.00 | 1.00 | 101.50 | 0.14 | 24.44 | 0.03 | 101.61 | 846.55 |
| 1213.00 | 100.00 | 1.00 | 100.50 | 0.14 | 24.44 | 0.03 | 101.71 | 846.55 |
| 1214.00 | 100.00 | 1.00 | 100.00 | 0.14 | 24.45 | 0.03 | 101.82 | 846.57 |
| 1215.00 | 98.00 | 1.00 | 99.00 | 0.14 | 24.45 | 0.03 | 101.92 | 846.57 |
| 1216.00 | 99.00 | 1.00 | 98.50 | 0.14 | 24.47 | 0.03 | 102.02 | 846.59 |
| 1217.00 | 99.00 | 1.00 | 99.00 | 0.14 | 24.49 | 0.03 | 102.12 | 846.61 |
| 1218.00 | 99.00 | 1.00 | 99.00 | 0.14 | 24.49 | 0.03 | 102.23 | 846.61 |
| 1219.00 | 98.00 | 1.00 | 98.50 | 0.14 | 24.51 | 0.03 | 102.33 | 846.63 |
| 1220.00 | 99.00 | 1.00 | 98.50 | 0.14 | 24.51 | 0.03 | 102.43 | 846.63 |
| 1221.00 | 99.00 | 1.00 | 99.00 | 0.14 | 24.52 | 0.03 | 102.53 | 846.66 |
| 1222.00 | 98.00 | 1.00 | 98.50 | 0.14 | 24.52 | 0.03 | 102.64 | 846.66 |
| 1223.00 | 98.00 | 1.00 | 98.00 | 0.13 | 24.54 | 0.03 | 102.74 | 846.68 |
| 1224.00 | 99.00 | 1.00 | 98.50 | 0.14 | 24.54 | 0.03 | 102.84 | 846.68 |
| 1225.00 | 99.00 | 1.00 | 99.00 | 0.14 | 24.56 | 0.03 | 102.94 | 846.70 |
| 1226.00 | 98.00 | 1.00 | 98.50 | 0.14 | 24.56 | 0.03 | 103.04 | 846.70 |
| 1227.00 | 98.00 | 1.00 | 98.00 | 0.13 | 24.58 | 0.03 | 103.14 | 846.72 |
| 1228.00 | 99.00 | 1.00 | 98.50 | 0.14 | 24.60 | 0.03 | 103.25 | 846.74 |
| 1229.00 | 99.00 | 1.00 | 99.00 | 0.14 | 24.60 | 0.03 | 103.35 | 846.74 |
| 1230.00 | 98.00 | 1.00 | 98.50 | 0.14 | 24.61 | 0.03 | 103.45 | 846.77 |
| 1231.00 | 98.00 | 1.00 | 98.00 | 0.13 | 24.61 | 0.03 | 103.55 | 846.77 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 99.00 | 1.00 | 98.50 | 0.14 | 24.63 | 0.03 | 103.65 | 846.79 |
| 1233.00 | 97.00 | 1.00 | 98.00 | 0.13 | 24.63 | 0.03 | 103.75 | 846.79 |
| 1234.00 | 95.00 | 1.00 | 96.00 | 0.13 | 24.65 | 0.03 | 103.85 | 846.81 |
| 1235.00 | 96.00 | 1.00 | 95.50 | 0.13 | 24.65 | 0.03 | 103.95 | 846.81 |
| 1236.00 | 95.00 | 1.00 | 95.50 | 0.13 | 24.67 | 0.03 | 104.05 | 846.83 |
| 1237.00 | 93.00 | 1.00 | 94.00 | 0.13 | 24.67 | 0.03 | 104.14 | 846.83 |
| 1238.00 | 93.00 | 1.00 | 93.00 | 0.13 | 24.68 | 0.03 | 104.24 | 846.85 |
| 1239.00 | 93.00 | 1.00 | 93.00 | 0.13 | 24.68 | 0.03 | 104.33 | 846.85 |
| 1240.00 | 91.00 | 1.00 | 92.00 | 0.13 | 24.70 | 0.03 | 104.42 | 846.88 |
| 1241.00 | 92.00 | 1.00 | 91.50 | 0.13 | 24.70 | 0.03 | 104.52 | 846.88 |
| 1242.00 | 91.00 | 1.00 | 91.50 | 0.13 | 24.72 | 0.03 | 104.61 | 846.90 |
| 1243.00 | 89.00 | 1.00 | 90.00 | 0.12 | 24.72 | 0.03 | 104.70 | 846.90 |
| 1244.00 | 90.00 | 1.00 | 89.50 | 0.12 | 24.74 | 0.03 | 104.79 | 846.92 |
| 1245.00 | 89.00 | 1.00 | 89.50 | 0.12 | 24.74 | 0.03 | 104.88 | 846.92 |
| 1246.00 | 89.00 | 1.00 | 89.00 | 0.12 | 24.75 | 0.03 | 104.96 | 846.94 |
| 1247.00 | 90.00 | 1.00 | 89.50 | 0.12 | 24.75 | 0.03 | 105.05 | 846.94 |
| 1248.00 | 89.00 | 1.00 | 89.50 | 0.12 | 24.77 | 0.03 | 105.14 | 846.96 |
| 1249.00 | 89.00 | 1.00 | 89.00 | 0.12 | 24.77 | 0.03 | 105.23 | 846.96 |
| 1250.00 | 90.00 | 1.00 | 89.50 | 0.12 | 24.79 | 0.03 | 105.32 | 846.99 |
| 1251.00 | 89.00 | 1.00 | 89.50 | 0.12 | 24.79 | 0.03 | 105.41 | 846.99 |
| 1252.00 | 89.00 | 1.00 | 89.00 | 0.12 | 24.80 | 0.03 | 105.50 | 847.01 |
| 1253.00 | 90.00 | 1.00 | 89.50 | 0.12 | 24.80 | 0.03 | 105.59 | 847.01 |
| 1254.00 | 89.00 | 1.00 | 89.50 | 0.12 | 24.82 | 0.03 | 105.68 | 847.03 |
| 1255.00 | 89.00 | 1.00 | 89.00 | 0.12 | 24.82 | 0.03 | 105.76 | 847.03 |
| 1256.00 | 90.00 | 1.00 | 89.50 | 0.12 | 24.82 | 0.03 | 105.85 | 847.03 |
| 1257.00 | 89.00 | 1.00 | 89.50 | 0.12 | 24.83 | 0.03 | 105.94 | 847.05 |
| 1258.00 | 89.00 | 1.00 | 89.00 | 0.12 | 24.83 | 0.03 | 106.03 | 847.05 |
| 1259.00 | 90.00 | 1.00 | 89.50 | 0.12 | 24.84 | 0.03 | 106.12 | 847.07 |
| 1260.00 | 89.00 | 1.00 | 89.50 | 0.12 | 24.84 | 0.03 | 106.21 | 847.07 |
| 1261.00 | 89.00 | 1.00 | 89.00 | 0.12 | 24.86 | 0.03 | 106.30 | 847.10 |
| 1262.00 | 87.00 | 1.00 | 88.00 | 0.12 | 24.86 | 0.03 | 106.38 | 847.10 |
| 1263.00 | 84.00 | 1.00 | 85.50 | 0.12 | 24.87 | 0.03 | 106.47 | 847.12 |
| 1264.00 | 83.00 | 1.00 | 83.50 | 0.12 | 24.87 | 0.03 | 106.55 | 847.12 |
| 1265.00 | 82.00 | 1.00 | 82.50 | 0.11 | 24.88 | 0.03 | 106.63 | 847.14 |
| 1266.00 | 79.00 | 1.00 | 80.50 | 0.11 | 24.88 | 0.03 | 106.70 | 847.14 |
| 1267.00 | 76.00 | 1.00 | 77.50 | 0.11 | 24.88 | 0.03 | 106.78 | 847.14 |
| 1268.00 | 75.00 | 1.00 | 75.50 | 0.10 | 24.90 | 0.03 | 106.85 | 847.16 |
| 1269.00 | 73.00 | 1.00 | 74.00 | 0.10 | 24.90 | 0.03 | 106.91 | 847.16 |
| 1270.00 | 71.00 | 1.00 | 72.00 | 0.10 | 24.91 | 0.03 | 106.98 | 847.18 |
| 1271.00 | 69.00 | 1.00 | 70.00 | 0.10 | 24.91 | 0.03 | 107.04 | 847.18 |
| 1272.00 | 69.00 | 1.00 | 69.00 | 0.10 | 24.91 | 0.03 | 107.10 | 847.18 |
| 1273.00 | 68.00 | 1.00 | 68.50 | 0.09 | 24.91 | 0.03 | 107.16 | 847.18 |
| 1274.00 | 66.00 | 1.00 | 67.00 | 0.09 | 24.92 | 0.03 | 107.22 | 847.21 |
| 1275.00 | 66.00 | 1.00 | 66.00 | 0.09 | 24.92 | 0.03 | 107.28 | 847.21 |
| 1276.00 | 66.00 | 1.00 | 66.00 | 0.09 | 24.92 | 0.03 | 107.33 | 847.21 |
| 1277.00 | 66.00 | 1.00 | 66.00 | 0.09 | 24.94 | 0.03 | 107.39 | 847.23 |
| 1278.00 | 65.00 | 1.00 | 65.50 | 0.09 | 24.94 | 0.03 | 107.45 | 847.23 |
| 1279.00 | 65.00 | 1.00 | 65.00 | 0.09 | 24.94 | 0.03 | 107.50 | 847.23 |
| 1280.00 | 66.00 | 1.00 | 65.50 | 0.09 | 24.95 | 0.03 | 107.56 | 847.25 |
| 1281.00 | 66.00 | 1.00 | 66.00 | 0.09 | 24.95 | 0.03 | 107.61 | 847.25 |
| 1282.00 | 65.00 | 1.00 | 65.50 | 0.09 | 24.95 | 0.03 | 107.67 | 847.25 |
| 1283.00 | 65.00 | 1.00 | 65.00 | 0.09 | 24.95 | 0.03 | 107.72 | 847.25 |
| 1284.00 | 66.00 | 1.00 | 65.50 | 0.09 | 24.96 | 0.03 | 107.78 | 847.27 |
| 1285.00 | 66.00 | 1.00 | 66.00 | 0.09 | 24.96 | 0.03 | 107.84 | 847.27 |
| 1286.00 | 65.00 | 1.00 | 65.50 | 0.09 | 24.96 | 0.03 | 107.89 | 847.27 |
| 1287.00 | 65.00 | 1.00 | 65.00 | 0.09 | 24.98 | 0.03 | 107.95 | 847.29 |
| 1288.00 | 66.00 | 1.00 | 65.50 | 0.09 | 24.98 | 0.03 | 108.00 | 847.29 |
| 1289.00 | 66.00 | 1.00 | 66.00 | 0.09 | 24.98 | 0.03 | 108.06 | 847.29 |
| 1290.00 | 65.00 | 1.00 | 65.50 | 0.09 | 24.99 | 0.03 | 108.12 | 847.32 |
| 1291.00 | 65.00 | 1.00 | 65.00 | 0.09 | 24.99 | 0.03 | 108.17 | 847.32 |
| 1292.00 | 66.00 | 1.00 | 65.50 | 0.09 | 24.99 | 0.03 | 108.23 | 847.32 |
| 1293.00 | 65.00 | 1.00 | 65.50 | 0.09 | 24.99 | 0.03 | 108.28 | 847.32 |
| 1294.00 | 65.00 | 1.00 | 65.00 | 0.09 | 25.00 | 0.03 | 108.34 | 847.34 |
| 1295.00 | 65.00 | 1.00 | 65.00 | 0.09 | 25.00 | 0.03 | 108.39 | 847.34 |
| 1296.00 | 66.00 | 1.00 | 65.50 | 0.09 | 25.00 | 0.03 | 108.45 | 847.34 |
| 1297.00 | 66.00 | 1.00 | 66.00 | 0.09 | 25.02 | 0.03 | 108.51 | 847.36 |

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|---|---|---|---|---|---|---|---|---|
| 1298.00 | 65.00 | 1.00 | 65.50 | 0.09 | 25.02 | 0.03 | 108.56 | 847.36 |
| 1299.00 | 65.00 | 1.00 | 65.00 | 0.09 | 25.02 | 0.03 | 108.62 | 847.36 |
| 1300.00 | 66.00 | 1.00 | 65.50 | 0.09 | 25.03 | 0.03 | 108.67 | 847.38 |
| 1310.00 | 45.00 | 10.00 | 55.50 | 0.76 | 25.06 | 0.35 | 109.09 | 847.43 |
| 1320.00 | 38.00 | 10.00 | 41.50 | 0.57 | 25.07 | 0.35 | 109.32 | 847.45 |
| 1330.00 | 38.00 | 10.00 | 38.00 | 0.52 | 25.08 | 0.35 | 109.50 | 847.47 |
| 1340.00 | 38.00 | 10.00 | 38.00 | 0.52 | 25.10 | 0.35 | 109.67 | 847.49 |
| 1350.00 | 26.00 | 10.00 | 32.00 | 0.44 | 25.10 | 0.35 | 109.77 | 847.49 |
| 1360.00 | 19.00 | 10.00 | 22.50 | 0.31 | 25.10 | 0.35 | 109.73 | 847.49 |
| 1370.00 | 19.00 | 10.00 | 19.00 | 0.26 | 25.10 | 0.35 | 109.65 | 847.49 |
| 1380.00 | 19.00 | 10.00 | 19.00 | 0.26 | 25.08 | 0.35 | 109.56 | 847.47 |
| 1390.00 | 19.00 | 10.00 | 19.00 | 0.26 | 25.08 | 0.35 | 109.48 | 847.47 |
| 1400.00 | 19.00 | 10.00 | 19.00 | 0.26 | 25.07 | 0.35 | 109.40 | 847.45 |
| 1420.00 | 17.00 | 20.00 | 18.00 | 0.50 | 25.06 | 0.69 | 109.20 | 847.43 |
| 1440.00 | 17.00 | 20.00 | 17.00 | 0.47 | 25.04 | 0.69 | 108.98 | 847.40 |
| 1460.00 | 12.00 | 20.00 | 14.50 | 0.40 | 25.03 | 0.69 | 108.69 | 847.38 |
| 1500.00 | 12.00 | 40.00 | 12.00 | 0.66 | 24.98 | 1.38 | 107.98 | 847.29 |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

## BASIN#2

## 100-YEAR STORM

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 4.00 | 100.00 | 2.00 | 0.28 | 0.91 | 0.13 | 0.15 | 816.29 |
| 200.00 | 5.00 | 100.00 | 4.50 | 0.62 | 3.25 | 0.45 | 0.32 | 817.06 |
| 300.00 | 10.00 | 100.00 | 7.50 | 1.03 | 4.50 | 0.62 | 0.74 | 817.58 |
| 400.00 | 11.00 | 100.00 | 10.50 | 1.45 | 5.87 | 0.81 | 1.37 | 818.18 |
| 500.00 | 13.00 | 100.00 | 12.00 | 1.65 | 6.74 | 0.93 | 2.10 | 818.62 |
| 600.00 | 16.00 | 100.00 | 14.50 | 2.00 | 7.72 | 1.06 | 3.03 | 819.11 |
| 700.00 | 19.00 | 100.00 | 17.50 | 2.41 | 8.61 | 1.19 | 4.26 | 819.56 |
| 800.00 | 22.00 | 100.00 | 20.50 | 2.82 | 9.61 | 1.32 | 5.76 | 820.07 |
| 900.00 | 30.00 | 100.00 | 26.00 | 3.58 | 10.43 | 1.44 | 7.90 | 820.62 |
| 1000.00 | 45.00 | 100.00 | 37.50 | 5.17 | 11.63 | 1.60 | 11.47 | 821.42 |
| 1050.00 | 64.00 | 50.00 | 54.50 | 3.75 | 12.47 | 0.86 | 14.36 | 821.98 |
| 1100.00 | 73.00 | 50.00 | 68.50 | 4.72 | 13.33 | 0.92 | 18.16 | 822.55 |
| 1110.00 | 101.00 | 10.00 | 87.00 | 1.20 | 13.56 | 0.19 | 19.17 | 822.71 |
| 1120.00 | 108.00 | 10.00 | 104.50 | 1.44 | 13.85 | 0.19 | 20.42 | 822.90 |
| 1130.00 | 138.00 | 10.00 | 123.00 | 1.69 | 14.12 | 0.19 | 21.92 | 823.10 |
| 1131.00 | 144.00 | 1.00 | 141.00 | 0.19 | 14.15 | 0.02 | 22.09 | 823.13 |
| 1132.00 | 149.00 | 1.00 | 146.50 | 0.20 | 14.17 | 0.02 | 22.28 | 823.14 |
| 1133.00 | 154.00 | 1.00 | 151.50 | 0.21 | 14.20 | 0.02 | 22.47 | 823.17 |
| 1134.00 | 158.00 | 1.00 | 156.00 | 0.21 | 14.24 | 0.02 | 22.66 | 823.20 |
| 1135.00 | 162.00 | 1.00 | 160.00 | 0.22 | 14.25 | 0.02 | 22.86 | 823.21 |
| 1136.00 | 164.00 | 1.00 | 163.00 | 0.22 | 14.29 | 0.02 | 23.07 | 823.24 |
| 1137.00 | 168.00 | 1.00 | 166.00 | 0.23 | 14.32 | 0.02 | 23.28 | 823.27 |
| 1138.00 | 171.00 | 1.00 | 169.50 | 0.23 | 14.35 | 0.02 | 23.49 | 823.29 |
| 1139.00 | 175.00 | 1.00 | 173.00 | 0.24 | 14.39 | 0.02 | 23.71 | 823.32 |
| 1140.00 | 180.00 | 1.00 | 177.50 | 0.24 | 14.42 | 0.02 | 23.93 | 823.35 |
| 1141.00 | 187.00 | 1.00 | 183.50 | 0.25 | 14.45 | 0.02 | 24.17 | 823.38 |
| 1142.00 | 194.00 | 1.00 | 190.50 | 0.26 | 14.49 | 0.02 | 24.41 | 823.41 |
| 1143.00 | 202.00 | 1.00 | 198.00 | 0.27 | 14.52 | 0.02 | 24.66 | 823.43 |
| 1144.00 | 211.00 | 1.00 | 206.50 | 0.28 | 14.55 | 0.02 | 24.92 | 823.46 |
| 1145.00 | 223.00 | 1.00 | 217.00 | 0.30 | 14.60 | 0.02 | 25.20 | 823.50 |
| 1146.00 | 236.00 | 1.00 | 229.50 | 0.32 | 14.64 | 0.02 | 25.50 | 823.53 |
| 1147.00 | 250.00 | 1.00 | 243.00 | 0.33 | 14.69 | 0.02 | 25.81 | 823.57 |
| 1148.00 | 266.00 | 1.00 | 258.00 | 0.36 | 14.74 | 0.02 | 26.15 | 823.62 |
| 1149.00 | 303.00 | 1.00 | 284.50 | 0.39 | 14.79 | 0.02 | 26.52 | 823.66 |
| 1150.00 | 351.00 | 1.00 | 327.00 | 0.45 | 14.86 | 0.02 | 26.95 | 823.71 |
| 1151.00 | 387.00 | 1.00 | 369.00 | 0.51 | 14.92 | 0.02 | 27.44 | 823.77 |
| 1152.00 | 466.00 | 1.00 | 426.50 | 0.59 | 15.01 | 0.02 | 28.01 | 823.84 |
| 1153.00 | 535.00 | 1.00 | 500.50 | 0.69 | 15.11 | 0.02 | 28.67 | 823.92 |
| 1154.00 | 593.00 | 1.00 | 564.00 | 0.78 | 15.23 | 0.02 | 29.43 | 824.02 |
| 1155.00 | 628.00 | 1.00 | 610.50 | 0.84 | 15.36 | 0.02 | 30.25 | 824.12 |
| 1156.00 | 646.00 | 1.00 | 637.00 | 0.88 | 15.50 | 0.02 | 31.11 | 824.23 |
| 1157.00 | 650.00 | 1.00 | 648.00 | 0.89 | 15.63 | 0.02 | 31.98 | 824.33 |
| 1158.00 | 639.00 | 1.00 | 644.50 | 0.89 | 15.77 | 0.02 | 32.84 | 824.44 |
| 1159.00 | 615.00 | 1.00 | 627.00 | 0.86 | 15.92 | 0.02 | 33.68 | 824.55 |
| 1160.00 | 589.00 | 1.00 | 602.00 | 0.83 | 16.05 | 0.02 | 34.49 | 824.65 |
| 1161.00 | 550.00 | 1.00 | 569.50 | 0.78 | 16.17 | 0.02 | 35.25 | 824.75 |
| 1162.00 | 485.00 | 1.00 | 517.50 | 0.71 | 16.28 | 0.02 | 35.94 | 824.83 |
| 1163.00 | 422.00 | 1.00 | 453.50 | 0.62 | 16.38 | 0.02 | 36.55 | 824.90 |
| 1164.00 | 367.00 | 1.00 | 394.50 | 0.54 | 16.47 | 0.02 | 37.07 | 824.97 |
| 1165.00 | 290.00 | 1.00 | 328.50 | 0.45 | 16.53 | 0.02 | 37.50 | 825.03 |

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|---|---|---|---|---|---|---|---|---|
| 1166.00 | 225.00 | 1.00 | 257.50 | 0.35 | 16.56 | 0.02 | 37.83 | 825.06 |
| 1167.00 | 181.00 | 1.00 | 203.00 | 0.28 | 16.60 | 0.02 | 38.08 | 825.10 |
| 1168.00 | 154.00 | 1.00 | 167.50 | 0.23 | 16.63 | 0.02 | 38.29 | 825.13 |
| 1169.00 | 137.00 | 1.00 | 145.50 | 0.20 | 16.64 | 0.02 | 38.47 | 825.14 |
| 1170.00 | 123.00 | 1.00 | 130.00 | 0.18 | 16.66 | 0.02 | 38.63 | 825.16 |
| 1171.00 | 114.00 | 1.00 | 118.50 | 0.16 | 16.68 | 0.02 | 38.77 | 825.18 |
| 1172.00 | 106.00 | 1.00 | 110.00 | 0.15 | 16.70 | 0.02 | 38.90 | 825.20 |
| 1173.00 | 99.00 | 1.00 | 102.50 | 0.14 | 16.71 | 0.02 | 39.01 | 825.21 |
| 1174.00 | 94.00 | 1.00 | 96.50 | 0.13 | 16.73 | 0.02 | 39.12 | 825.23 |
| 1175.00 | 90.00 | 1.00 | 92.00 | 0.13 | 16.74 | 0.02 | 39.23 | 825.24 |
| 1176.00 | 85.00 | 1.00 | 87.50 | 0.12 | 16.74 | 0.02 | 39.32 | 825.24 |
| 1177.00 | 80.00 | 1.00 | 82.50 | 0.11 | 16.75 | 0.02 | 39.41 | 825.25 |
| 1178.00 | 77.00 | 1.00 | 78.50 | 0.11 | 16.77 | 0.02 | 39.50 | 825.27 |
| 1179.00 | 74.00 | 1.00 | 75.50 | 0.10 | 16.78 | 0.02 | 39.58 | 825.28 |
| 1180.00 | 71.00 | 1.00 | 72.50 | 0.10 | 16.78 | 0.02 | 39.66 | 825.28 |
| 1181.00 | 69.00 | 1.00 | 70.00 | 0.10 | 16.80 | 0.02 | 39.73 | 825.30 |
| 1182.00 | 66.00 | 1.00 | 67.50 | 0.09 | 16.81 | 0.02 | 39.80 | 825.31 |
| 1183.00 | 65.00 | 1.00 | 65.50 | 0.09 | 16.81 | 0.02 | 39.87 | 825.31 |
| 1184.00 | 63.00 | 1.00 | 64.00 | 0.09 | 16.82 | 0.02 | 39.93 | 825.32 |
| 1185.00 | 62.00 | 1.00 | 62.50 | 0.09 | 16.82 | 0.02 | 40.00 | 825.32 |
| 1186.00 | 61.00 | 1.00 | 61.50 | 0.08 | 16.84 | 0.02 | 40.06 | 825.34 |
| 1187.00 | 60.00 | 1.00 | 60.50 | 0.08 | 16.84 | 0.02 | 40.12 | 825.34 |
| 1188.00 | 59.00 | 1.00 | 59.50 | 0.08 | 16.85 | 0.02 | 40.18 | 825.35 |
| 1189.00 | 59.00 | 1.00 | 59.00 | 0.08 | 16.85 | 0.02 | 40.23 | 825.35 |
| 1190.00 | 59.00 | 1.00 | 59.00 | 0.08 | 16.87 | 0.02 | 40.29 | 825.37 |
| 1191.00 | 59.00 | 1.00 | 59.00 | 0.08 | 16.87 | 0.02 | 40.35 | 825.37 |
| 1192.00 | 59.00 | 1.00 | 59.00 | 0.08 | 16.88 | 0.02 | 40.41 | 825.38 |
| 1193.00 | 59.00 | 1.00 | 59.00 | 0.08 | 16.88 | 0.02 | 40.47 | 825.38 |
| 1194.00 | 58.00 | 1.00 | 58.50 | 0.08 | 16.89 | 0.02 | 40.52 | 825.39 |
| 1195.00 | 58.00 | 1.00 | 58.00 | 0.08 | 16.89 | 0.02 | 40.58 | 825.39 |
| 1196.00 | 58.00 | 1.00 | 58.00 | 0.08 | 16.91 | 0.02 | 40.64 | 825.41 |
| 1197.00 | 58.00 | 1.00 | 58.00 | 0.08 | 16.91 | 0.02 | 40.69 | 825.41 |
| 1198.00 | 58.00 | 1.00 | 58.00 | 0.08 | 16.92 | 0.02 | 40.75 | 825.42 |
| 1199.00 | 58.00 | 1.00 | 58.00 | 0.08 | 16.92 | 0.02 | 40.81 | 825.42 |
| 1200.00 | 58.00 | 1.00 | 58.00 | 0.08 | 16.94 | 0.02 | 40.86 | 825.44 |
| 1201.00 | 58.00 | 1.00 | 58.00 | 0.08 | 16.94 | 0.02 | 40.92 | 825.44 |
| 1202.00 | 57.00 | 1.00 | 57.50 | 0.08 | 16.95 | 0.02 | 40.98 | 825.45 |
| 1203.00 | 56.00 | 1.00 | 56.50 | 0.08 | 16.95 | 0.02 | 41.03 | 825.45 |
| 1204.00 | 55.00 | 1.00 | 55.50 | 0.08 | 16.96 | 0.02 | 41.08 | 825.46 |
| 1205.00 | 54.00 | 1.00 | 54.50 | 0.08 | 16.96 | 0.02 | 41.13 | 825.46 |
| 1206.00 | 52.00 | 1.00 | 53.00 | 0.07 | 16.98 | 0.02 | 41.18 | 825.48 |
| 1207.00 | 51.00 | 1.00 | 51.50 | 0.07 | 16.98 | 0.02 | 41.23 | 825.48 |
| 1208.00 | 49.00 | 1.00 | 50.00 | 0.07 | 16.98 | 0.02 | 41.28 | 825.48 |
| 1209.00 | 48.00 | 1.00 | 48.50 | 0.07 | 16.99 | 0.02 | 41.32 | 825.49 |
| 1210.00 | 46.00 | 1.00 | 47.00 | 0.06 | 16.99 | 0.02 | 41.36 | 825.49 |
| 1211.00 | 45.00 | 1.00 | 45.50 | 0.06 | 16.99 | 0.02 | 41.40 | 825.49 |
| 1212.00 | 44.00 | 1.00 | 44.50 | 0.06 | 17.01 | 0.02 | 41.44 | 825.51 |
| 1213.00 | 43.00 | 1.00 | 43.50 | 0.06 | 17.01 | 0.02 | 41.48 | 825.51 |
| 1214.00 | 42.00 | 1.00 | 42.50 | 0.06 | 17.01 | 0.02 | 41.51 | 825.51 |
| 1215.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.02 | 0.02 | 41.55 | 825.52 |
| 1216.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.02 | 0.02 | 41.58 | 825.52 |
| 1217.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.02 | 0.02 | 41.61 | 825.52 |
| 1218.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.03 | 0.02 | 41.65 | 825.53 |
| 1219.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.03 | 0.02 | 41.68 | 825.53 |
| 1220.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.03 | 0.02 | 41.72 | 825.53 |
| 1221.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.03 | 0.02 | 41.75 | 825.53 |
| 1222.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.05 | 0.02 | 41.79 | 825.55 |
| 1223.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.05 | 0.02 | 41.82 | 825.55 |
| 1224.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.05 | 0.02 | 41.85 | 825.55 |
| 1225.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.06 | 0.02 | 41.89 | 825.56 |
| 1226.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.06 | 0.02 | 41.92 | 825.56 |
| 1227.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.06 | 0.02 | 41.96 | 825.56 |
| 1228.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.08 | 0.02 | 41.99 | 825.58 |
| 1229.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.08 | 0.02 | 42.03 | 825.58 |
| 1230.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.08 | 0.02 | 42.06 | 825.58 |
| 1231.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.08 | 0.02 | 42.10 | 825.58 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.09 | 0.02 | 42.13 | 825.59 |
| 1233.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.09 | 0.02 | 42.16 | 825.59 |
| 1234.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.09 | 0.02 | 42.20 | 825.59 |
| 1235.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.10 | 0.02 | 42.23 | 825.60 |
| 1236.00 | 42.00 | 1.00 | 42.00 | 0.06 | 17.10 | 0.02 | 42.27 | 825.60 |
| 1237.00 | 41.00 | 1.00 | 41.50 | 0.06 | 17.10 | 0.02 | 42.30 | 825.60 |
| 1238.00 | 41.00 | 1.00 | 41.00 | 0.06 | 17.12 | 0.02 | 42.33 | 825.62 |
| 1239.00 | 41.00 | 1.00 | 41.00 | 0.06 | 17.12 | 0.02 | 42.37 | 825.62 |
| 1240.00 | 41.00 | 1.00 | 41.00 | 0.06 | 17.12 | 0.02 | 42.40 | 825.62 |
| 1241.00 | 41.00 | 1.00 | 41.00 | 0.06 | 17.12 | 0.02 | 42.43 | 825.62 |
| 1242.00 | 40.00 | 1.00 | 40.50 | 0.06 | 17.13 | 0.02 | 42.46 | 825.63 |
| 1243.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.13 | 0.02 | 42.50 | 825.63 |
| 1244.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.13 | 0.02 | 42.53 | 825.63 |
| 1245.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.13 | 0.02 | 42.56 | 825.63 |
| 1246.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.15 | 0.02 | 42.59 | 825.65 |
| 1247.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.15 | 0.02 | 42.62 | 825.65 |
| 1248.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.15 | 0.02 | 42.65 | 825.65 |
| 1249.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.16 | 0.02 | 42.68 | 825.66 |
| 1250.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.16 | 0.02 | 42.72 | 825.66 |
| 1251.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.16 | 0.02 | 42.75 | 825.66 |
| 1252.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.16 | 0.02 | 42.78 | 825.66 |
| 1253.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.17 | 0.02 | 42.81 | 825.67 |
| 1254.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.17 | 0.02 | 42.84 | 825.67 |
| 1255.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.17 | 0.02 | 42.87 | 825.67 |
| 1256.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.17 | 0.02 | 42.90 | 825.67 |
| 1257.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.19 | 0.02 | 42.94 | 825.69 |
| 1258.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.19 | 0.02 | 42.97 | 825.69 |
| 1259.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.19 | 0.02 | 43.00 | 825.69 |
| 1260.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.20 | 0.02 | 43.03 | 825.70 |
| 1261.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.20 | 0.02 | 43.06 | 825.70 |
| 1262.00 | 40.00 | 1.00 | 40.00 | 0.06 | 17.20 | 0.02 | 43.09 | 825.70 |
| 1263.00 | 39.00 | 1.00 | 39.50 | 0.05 | 17.20 | 0.02 | 43.12 | 825.70 |
| 1264.00 | 39.00 | 1.00 | 39.00 | 0.05 | 17.22 | 0.02 | 43.15 | 825.72 |
| 1265.00 | 38.00 | 1.00 | 38.50 | 0.05 | 17.22 | 0.02 | 43.18 | 825.72 |
| 1266.00 | 37.00 | 1.00 | 37.50 | 0.05 | 17.22 | 0.02 | 43.21 | 825.72 |
| 1267.00 | 36.00 | 1.00 | 36.50 | 0.05 | 17.22 | 0.02 | 43.24 | 825.72 |
| 1268.00 | 36.00 | 1.00 | 36.00 | 0.05 | 17.23 | 0.02 | 43.26 | 825.73 |
| 1269.00 | 35.00 | 1.00 | 35.50 | 0.05 | 17.23 | 0.02 | 43.29 | 825.73 |
| 1270.00 | 34.00 | 1.00 | 34.50 | 0.05 | 17.23 | 0.02 | 43.31 | 825.73 |
| 1271.00 | 33.00 | 1.00 | 33.50 | 0.05 | 17.23 | 0.02 | 43.33 | 825.73 |
| 1272.00 | 32.00 | 1.00 | 32.50 | 0.04 | 17.23 | 0.02 | 43.36 | 825.73 |
| 1273.00 | 32.00 | 1.00 | 32.00 | 0.04 | 17.24 | 0.02 | 43.38 | 825.74 |
| 1274.00 | 31.00 | 1.00 | 31.50 | 0.04 | 17.24 | 0.02 | 43.40 | 825.74 |
| 1275.00 | 31.00 | 1.00 | 31.00 | 0.04 | 17.24 | 0.02 | 43.41 | 825.74 |
| 1276.00 | 31.00 | 1.00 | 31.00 | 0.04 | 17.24 | 0.02 | 43.43 | 825.74 |
| 1277.00 | 31.00 | 1.00 | 31.00 | 0.04 | 17.24 | 0.02 | 43.45 | 825.74 |
| 1278.00 | 30.00 | 1.00 | 30.50 | 0.04 | 17.24 | 0.02 | 43.47 | 825.74 |
| 1279.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.26 | 0.02 | 43.49 | 825.76 |
| 1280.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.26 | 0.02 | 43.51 | 825.76 |
| 1281.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.26 | 0.02 | 43.52 | 825.76 |
| 1282.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.26 | 0.02 | 43.54 | 825.76 |
| 1283.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.26 | 0.02 | 43.56 | 825.76 |
| 1284.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.26 | 0.02 | 43.58 | 825.76 |
| 1285.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.26 | 0.02 | 43.59 | 825.76 |
| 1286.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.27 | 0.02 | 43.61 | 825.77 |
| 1287.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.27 | 0.02 | 43.63 | 825.77 |
| 1288.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.27 | 0.02 | 43.65 | 825.77 |
| 1289.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.27 | 0.02 | 43.66 | 825.77 |
| 1290.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.27 | 0.02 | 43.68 | 825.77 |
| 1291.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.27 | 0.02 | 43.70 | 825.77 |
| 1292.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.27 | 0.02 | 43.72 | 825.77 |
| 1293.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.29 | 0.02 | 43.73 | 825.79 |
| 1294.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.29 | 0.02 | 43.75 | 825.79 |
| 1295.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.29 | 0.02 | 43.77 | 825.79 |
| 1296.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.29 | 0.02 | 43.79 | 825.79 |
| 1297.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.29 | 0.02 | 43.80 | 825.79 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1298.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.29 | 0.02 | 43.82 | 825.79 |
| 1299.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.30 | 0.02 | 43.84 | 825.80 |
| 1300.00 | 30.00 | 1.00 | 30.00 | 0.04 | 17.30 | 0.02 | 43.86 | 825.80 |
| 1310.00 | 22.00 | 10.00 | 26.00 | 0.36 | 17.31 | 0.24 | 43.98 | 825.81 |
| 1320.00 | 17.00 | 10.00 | 19.50 | 0.27 | 17.31 | 0.24 | 44.01 | 825.81 |
| 1330.00 | 17.00 | 10.00 | 17.00 | 0.23 | 17.31 | 0.24 | 44.00 | 825.81 |
| 1340.00 | 16.00 | 10.00 | 16.50 | 0.23 | 17.31 | 0.24 | 43.99 | 825.81 |
| 1350.00 | 10.00 | 10.00 | 13.00 | 0.18 | 17.30 | 0.24 | 43.93 | 825.80 |
| 1360.00 | 5.00 | 10.00 | 7.50 | 0.10 | 17.29 | 0.24 | 43.80 | 825.79 |
| 1370.00 | 5.00 | 10.00 | 5.00 | 0.07 | 17.27 | 0.24 | 43.63 | 825.77 |
| 1380.00 | 5.00 | 10.00 | 5.00 | 0.07 | 17.24 | 0.24 | 43.46 | 825.74 |
| 1390.00 | 5.00 | 10.00 | 5.00 | 0.07 | 17.23 | 0.24 | 43.29 | 825.73 |
| 1400.00 | 5.00 | 10.00 | 5.00 | 0.07 | 17.20 | 0.24 | 43.12 | 825.70 |
| 1420.00 | 4.00 | 20.00 | 4.50 | 0.12 | 17.16 | 0.47 | 42.77 | 825.66 |
| 1440.00 | 4.00 | 20.00 | 4.00 | 0.11 | 17.12 | 0.47 | 42.41 | 825.62 |
| 1460.00 | 3.00 | 20.00 | 3.50 | 0.10 | 17.08 | 0.47 | 42.04 | 825.58 |
| 1500.00 | 3.00 | 40.00 | 3.00 | 0.17 | 16.98 | 0.94 | 41.27 | 825.48 |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

## BASIN#3
## 100-YEAR STORM

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 69.00 | 100.00 | 34.50 | 4.75 | 32.52 | 4.48 | 0.27 | 725.06 |
| 200.00 | 85.00 | 100.00 | 77.00 | 10.61 | 76.04 | 10.47 | 0.40 | 726.02 |
| 300.00 | 105.00 | 100.00 | 95.00 | 13.09 | 93.72 | 12.91 | 0.58 | 726.29 |
| 400.00 | 112.00 | 100.00 | 108.50 | 14.94 | 108.28 | 14.91 | 0.61 | 726.51 |
| 500.00 | 121.00 | 100.00 | 116.50 | 16.05 | 115.56 | 15.92 | 0.74 | 726.62 |
| 600.00 | 132.00 | 100.00 | 126.50 | 17.42 | 127.00 | 17.49 | 0.67 | 726.80 |
| 700.00 | 151.00 | 100.00 | 141.50 | 19.49 | 140.68 | 19.38 | 0.78 | 727.01 |
| 800.00 | 167.00 | 100.00 | 159.00 | 21.90 | 158.36 | 21.81 | 0.87 | 727.22 |
| 900.00 | 206.00 | 100.00 | 186.50 | 25.69 | 185.56 | 25.56 | 1.00 | 727.54 |
| 1000.00 | 276.00 | 100.00 | 241.00 | 33.20 | 237.96 | 32.78 | 1.42 | 728.14 |
| 1050.00 | 341.00 | 50.00 | 308.50 | 21.25 | 301.32 | 20.75 | 1.92 | 728.85 |
| 1100.00 | 398.00 | 50.00 | 369.50 | 25.45 | 358.32 | 24.68 | 2.69 | 729.46 |
| 1110.00 | 436.00 | 10.00 | 417.00 | 5.74 | 388.72 | 5.35 | 3.07 | 729.78 |
| 1120.00 | 494.00 | 10.00 | 465.00 | 6.40 | 427.28 | 5.89 | 3.59 | 730.14 |
| 1130.00 | 563.00 | 10.00 | 528.50 | 7.28 | 477.20 | 6.57 | 4.30 | 730.56 |
| 1131.00 | 572.00 | 1.00 | 567.50 | 0.78 | 482.96 | 0.67 | 4.42 | 730.61 |
| 1132.00 | 580.00 | 1.00 | 576.00 | 0.79 | 490.64 | 0.68 | 4.54 | 730.67 |
| 1133.00 | 591.00 | 1.00 | 585.50 | 0.81 | 500.24 | 0.69 | 4.65 | 730.75 |
| 1134.00 | 602.00 | 1.00 | 596.50 | 0.82 | 507.92 | 0.70 | 4.77 | 730.82 |
| 1135.00 | 616.00 | 1.00 | 609.00 | 0.84 | 517.52 | 0.71 | 4.90 | 730.90 |
| 1136.00 | 630.00 | 1.00 | 623.00 | 0.86 | 527.12 | 0.73 | 5.03 | 730.98 |
| 1137.00 | 646.00 | 1.00 | 638.00 | 0.88 | 534.40 | 0.74 | 5.18 | 731.04 |
| 1138.00 | 663.00 | 1.00 | 654.50 | 0.90 | 543.20 | 0.75 | 5.33 | 731.12 |
| 1139.00 | 682.00 | 1.00 | 672.50 | 0.93 | 550.24 | 0.76 | 5.50 | 731.18 |
| 1140.00 | 701.00 | 1.00 | 691.50 | 0.95 | 560.80 | 0.77 | 5.68 | 731.28 |
| 1141.00 | 718.00 | 1.00 | 709.50 | 0.98 | 569.60 | 0.78 | 5.87 | 731.36 |
| 1142.00 | 736.00 | 1.00 | 727.00 | 1.00 | 580.16 | 0.80 | 6.07 | 731.46 |
| 1143.00 | 754.00 | 1.00 | 745.00 | 1.03 | 590.72 | 0.81 | 6.28 | 731.55 |
| 1144.00 | 775.00 | 1.00 | 764.50 | 1.05 | 603.04 | 0.83 | 6.51 | 731.66 |
| 1145.00 | 798.00 | 1.00 | 786.50 | 1.08 | 615.36 | 0.85 | 6.74 | 731.78 |
| 1146.00 | 824.00 | 1.00 | 811.00 | 1.12 | 627.68 | 0.86 | 7.00 | 731.89 |
| 1147.00 | 854.00 | 1.00 | 839.00 | 1.16 | 641.44 | 0.88 | 7.27 | 732.02 |
| 1148.00 | 888.00 | 1.00 | 871.00 | 1.20 | 648.64 | 0.89 | 7.57 | 732.10 |
| 1149.00 | 937.00 | 1.00 | 912.50 | 1.26 | 658.72 | 0.91 | 7.92 | 732.21 |
| 1150.00 | 993.00 | 1.00 | 965.00 | 1.33 | 670.24 | 0.92 | 8.33 | 732.34 |
| 1151.00 | 1069.00 | 1.00 | 1031.00 | 1.42 | 683.20 | 0.94 | 8.81 | 732.48 |
| 1152.00 | 1171.00 | 1.00 | 1120.00 | 1.54 | 697.60 | 0.96 | 9.39 | 732.64 |
| 1153.00 | 1309.00 | 1.00 | 1240.00 | 1.71 | 717.76 | 0.99 | 10.11 | 732.86 |
| 1154.00 | 1472.00 | 1.00 | 1390.50 | 1.92 | 739.36 | 1.02 | 11.01 | 733.10 |
| 1155.00 | 1672.00 | 1.00 | 1572.00 | 2.17 | 760.96 | 1.05 | 12.12 | 733.34 |
| 1156.00 | 1888.00 | 1.00 | 1780.00 | 2.45 | 788.32 | 1.09 | 13.49 | 733.65 |
| 1157.00 | 2083.00 | 1.00 | 1985.50 | 2.73 | 820.00 | 1.13 | 15.09 | 734.00 |
| 1158.00 | 2246.00 | 1.00 | 2164.50 | 2.98 | 852.00 | 1.17 | 16.90 | 734.40 |
| 1159.00 | 2364.00 | 1.00 | 2305.00 | 3.17 | 887.84 | 1.22 | 18.85 | 734.85 |
| 1160.00 | 2426.00 | 1.00 | 2395.00 | 3.30 | 913.80 | 1.26 | 20.89 | 735.18 |
| 1161.00 | 2425.00 | 1.00 | 2425.50 | 3.34 | 935.40 | 1.29 | 22.95 | 735.47 |
| 1162.00 | 2379.00 | 1.00 | 2402.00 | 3.31 | 955.80 | 1.32 | 24.94 | 735.74 |
| 1163.00 | 2287.00 | 1.00 | 2333.00 | 3.21 | 975.00 | 1.34 | 26.81 | 736.00 |
| 1164.00 | 2163.00 | 1.00 | 2225.00 | 3.06 | 988.44 | 1.36 | 28.51 | 736.22 |
| 1165.00 | 2009.00 | 1.00 | 2086.00 | 2.87 | 1000.92 | 1.38 | 30.01 | 736.43 |

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|---|---|---|---|---|---|---|---|---|
| 1166.00 | 1838.00 | 1.00 | 1923.50 | 2.65 | 1011.48 | 1.39 | 31.26 | 736.61 |
| 1167.00 | 1659.00 | 1.00 | 1748.50 | 2.41 | 1020.12 | 1.41 | 32.27 | 736.75 |
| 1168.00 | 1487.00 | 1.00 | 1573.00 | 2.17 | 1026.84 | 1.41 | 33.02 | 736.86 |
| 1169.00 | 1325.00 | 1.00 | 1406.00 | 1.94 | 1030.68 | 1.42 | 33.54 | 736.93 |
| 1170.00 | 1169.00 | 1.00 | 1247.00 | 1.72 | 1033.56 | 1.42 | 33.83 | 736.98 |
| 1171.00 | 1029.00 | 1.00 | 1099.00 | 1.51 | 1033.56 | 1.42 | 33.92 | 736.98 |
| 1172.00 | 919.00 | 1.00 | 974.00 | 1.34 | 1033.56 | 1.42 | 33.84 | 736.98 |
| 1173.00 | 822.00 | 1.00 | 870.50 | 1.20 | 1031.64 | 1.42 | 33.62 | 736.94 |
| 1174.00 | 741.00 | 1.00 | 781.50 | 1.08 | 1028.76 | 1.42 | 33.28 | 736.90 |
| 1175.00 | 676.00 | 1.00 | 708.50 | 0.98 | 1024.92 | 1.41 | 32.84 | 736.83 |
| 1176.00 | 630.00 | 1.00 | 653.00 | 0.90 | 1021.08 | 1.41 | 32.33 | 736.77 |
| 1177.00 | 597.00 | 1.00 | 613.50 | 0.85 | 1016.28 | 1.40 | 31.78 | 736.69 |
| 1178.00 | 566.00 | 1.00 | 581.50 | 0.80 | 1011.48 | 1.39 | 31.19 | 736.61 |
| 1179.00 | 538.00 | 1.00 | 552.00 | 0.76 | 1005.72 | 1.39 | 30.56 | 736.51 |
| 1180.00 | 513.00 | 1.00 | 525.50 | 0.72 | 1000.92 | 1.38 | 29.91 | 736.43 |
| 1181.00 | 491.00 | 1.00 | 502.00 | 0.69 | 995.16 | 1.37 | 29.23 | 736.34 |
| 1182.00 | 470.00 | 1.00 | 480.50 | 0.66 | 988.44 | 1.36 | 28.53 | 736.22 |
| 1183.00 | 452.00 | 1.00 | 461.00 | 0.63 | 982.68 | 1.35 | 27.81 | 736.13 |
| 1184.00 | 436.00 | 1.00 | 444.00 | 0.61 | 976.92 | 1.35 | 27.07 | 736.03 |
| 1185.00 | 421.00 | 1.00 | 428.50 | 0.59 | 969.00 | 1.33 | 26.33 | 735.92 |
| 1186.00 | 409.00 | 1.00 | 415.00 | 0.57 | 961.80 | 1.32 | 25.58 | 735.82 |
| 1187.00 | 398.00 | 1.00 | 403.50 | 0.56 | 954.60 | 1.31 | 24.82 | 735.73 |
| 1188.00 | 388.00 | 1.00 | 393.00 | 0.54 | 946.20 | 1.30 | 24.06 | 735.62 |
| 1189.00 | 381.00 | 1.00 | 384.50 | 0.53 | 939.00 | 1.29 | 23.29 | 735.52 |
| 1190.00 | 375.00 | 1.00 | 378.00 | 0.52 | 930.60 | 1.28 | 22.53 | 735.41 |
| 1191.00 | 369.00 | 1.00 | 372.00 | 0.51 | 923.40 | 1.27 | 21.77 | 735.31 |
| 1192.00 | 365.00 | 1.00 | 367.00 | 0.51 | 915.00 | 1.26 | 21.02 | 735.20 |
| 1193.00 | 362.00 | 1.00 | 363.50 | 0.50 | 907.80 | 1.25 | 20.27 | 735.10 |
| 1194.00 | 360.00 | 1.00 | 361.00 | 0.50 | 899.36 | 1.24 | 19.53 | 734.99 |
| 1195.00 | 360.00 | 1.00 | 360.00 | 0.50 | 886.56 | 1.22 | 18.80 | 734.83 |
| 1196.00 | 360.00 | 1.00 | 360.00 | 0.50 | 873.76 | 1.20 | 18.09 | 734.67 |
| 1197.00 | 360.00 | 1.00 | 360.00 | 0.50 | 860.96 | 1.19 | 17.40 | 734.51 |
| 1198.00 | 360.00 | 1.00 | 360.00 | 0.50 | 849.44 | 1.17 | 16.73 | 734.37 |
| 1199.00 | 361.00 | 1.00 | 360.50 | 0.50 | 836.64 | 1.15 | 16.07 | 734.21 |
| 1200.00 | 361.00 | 1.00 | 361.00 | 0.50 | 825.12 | 1.14 | 15.43 | 734.06 |
| 1201.00 | 360.00 | 1.00 | 360.50 | 0.50 | 814.24 | 1.12 | 14.81 | 733.94 |
| 1202.00 | 359.00 | 1.00 | 359.50 | 0.50 | 801.28 | 1.10 | 14.20 | 733.79 |
| 1203.00 | 356.00 | 1.00 | 357.50 | 0.49 | 789.76 | 1.09 | 13.60 | 733.66 |
| 1204.00 | 353.00 | 1.00 | 354.50 | 0.49 | 778.24 | 1.07 | 13.02 | 733.54 |
| 1205.00 | 350.00 | 1.00 | 351.50 | 0.48 | 766.72 | 1.06 | 12.45 | 733.41 |
| 1206.00 | 346.00 | 1.00 | 348.00 | 0.48 | 756.64 | 1.04 | 11.89 | 733.30 |
| 1207.00 | 342.00 | 1.00 | 344.00 | 0.47 | 745.12 | 1.03 | 11.33 | 733.17 |
| 1208.00 | 338.00 | 1.00 | 340.00 | 0.47 | 735.04 | 1.01 | 10.79 | 733.06 |
| 1209.00 | 334.00 | 1.00 | 336.00 | 0.46 | 722.08 | 0.99 | 10.26 | 732.91 |
| 1210.00 | 330.00 | 1.00 | 332.00 | 0.46 | 707.68 | 0.97 | 9.74 | 732.75 |
| 1211.00 | 326.00 | 1.00 | 328.00 | 0.45 | 693.28 | 0.95 | 9.24 | 732.59 |
| 1212.00 | 321.00 | 1.00 | 323.50 | 0.45 | 680.32 | 0.94 | 8.75 | 732.45 |
| 1213.00 | 317.00 | 1.00 | 319.00 | 0.44 | 667.36 | 0.92 | 8.27 | 732.30 |
| 1214.00 | 313.00 | 1.00 | 315.00 | 0.43 | 655.84 | 0.90 | 7.80 | 732.18 |
| 1215.00 | 309.00 | 1.00 | 311.00 | 0.43 | 642.88 | 0.89 | 7.34 | 732.03 |
| 1216.00 | 306.00 | 1.00 | 307.50 | 0.42 | 622.40 | 0.86 | 6.91 | 731.84 |
| 1217.00 | 302.00 | 1.00 | 304.00 | 0.42 | 601.28 | 0.83 | 6.50 | 731.65 |
| 1218.00 | 299.00 | 1.00 | 300.50 | 0.41 | 581.92 | 0.80 | 6.11 | 731.47 |
| 1219.00 | 296.00 | 1.00 | 297.50 | 0.41 | 564.32 | 0.78 | 5.74 | 731.31 |
| 1220.00 | 293.00 | 1.00 | 294.50 | 0.41 | 546.72 | 0.75 | 5.39 | 731.15 |
| 1221.00 | 291.00 | 1.00 | 292.00 | 0.40 | 529.04 | 0.73 | 5.07 | 730.99 |
| 1222.00 | 289.00 | 1.00 | 290.00 | 0.40 | 507.92 | 0.70 | 4.77 | 730.82 |
| 1223.00 | 288.00 | 1.00 | 288.50 | 0.40 | 488.72 | 0.67 | 4.49 | 730.66 |
| 1224.00 | 287.00 | 1.00 | 287.50 | 0.40 | 469.52 | 0.65 | 4.24 | 730.50 |
| 1225.00 | 285.00 | 1.00 | 286.00 | 0.39 | 454.16 | 0.63 | 4.01 | 730.37 |
| 1226.00 | 285.00 | 1.00 | 285.00 | 0.39 | 438.80 | 0.60 | 3.80 | 730.24 |
| 1227.00 | 284.00 | 1.00 | 284.50 | 0.39 | 425.36 | 0.59 | 3.60 | 730.13 |
| 1228.00 | 283.00 | 1.00 | 283.50 | 0.39 | 411.92 | 0.57 | 3.43 | 730.02 |
| 1229.00 | 283.00 | 1.00 | 283.00 | 0.39 | 400.88 | 0.55 | 3.26 | 729.90 |
| 1230.00 | 283.00 | 1.00 | 283.00 | 0.39 | 390.24 | 0.54 | 3.12 | 729.79 |
| 1231.00 | 283.00 | 1.00 | 283.00 | 0.39 | 379.60 | 0.52 | 2.98 | 729.68 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 282.00 | 1.00 | 282.50 | 0.39 | 372.00 | 0.51 | 2.86 | 729.60 |
| 1233.00 | 282.00 | 1.00 | 282.00 | 0.39 | 362.88 | 0.50 | 2.75 | 729.50 |
| 1234.00 | 282.00 | 1.00 | 282.00 | 0.39 | 355.28 | 0.49 | 2.65 | 729.42 |
| 1235.00 | 281.00 | 1.00 | 281.50 | 0.39 | 349.20 | 0.48 | 2.55 | 729.36 |
| 1236.00 | 281.00 | 1.00 | 281.00 | 0.39 | 343.12 | 0.47 | 2.47 | 729.30 |
| 1237.00 | 280.00 | 1.00 | 280.50 | 0.39 | 337.04 | 0.46 | 2.39 | 729.23 |
| 1238.00 | 279.00 | 1.00 | 279.50 | 0.38 | 332.48 | 0.46 | 2.32 | 729.18 |
| 1239.00 | 279.00 | 1.00 | 279.00 | 0.38 | 326.40 | 0.45 | 2.25 | 729.12 |
| 1240.00 | 278.00 | 1.00 | 278.50 | 0.38 | 321.84 | 0.44 | 2.19 | 729.07 |
| 1241.00 | 276.00 | 1.00 | 277.00 | 0.38 | 318.80 | 0.44 | 2.13 | 729.04 |
| 1242.00 | 275.00 | 1.00 | 275.50 | 0.38 | 312.84 | 0.43 | 2.08 | 728.98 |
| 1243.00 | 274.00 | 1.00 | 274.50 | 0.38 | 307.08 | 0.42 | 2.04 | 728.91 |
| 1244.00 | 272.00 | 1.00 | 273.00 | 0.38 | 302.76 | 0.42 | 2.00 | 728.86 |
| 1245.00 | 270.00 | 1.00 | 271.00 | 0.37 | 298.44 | 0.41 | 1.96 | 728.82 |
| 1246.00 | 269.00 | 1.00 | 269.50 | 0.37 | 294.12 | 0.41 | 1.93 | 728.77 |
| 1247.00 | 267.00 | 1.00 | 268.00 | 0.37 | 289.80 | 0.40 | 1.90 | 728.72 |
| 1248.00 | 266.00 | 1.00 | 266.50 | 0.37 | 285.48 | 0.39 | 1.87 | 728.67 |
| 1249.00 | 265.00 | 1.00 | 265.50 | 0.37 | 282.60 | 0.39 | 1.85 | 728.64 |
| 1250.00 | 264.00 | 1.00 | 264.50 | 0.36 | 279.72 | 0.39 | 1.82 | 728.61 |
| 1251.00 | 263.00 | 1.00 | 263.50 | 0.36 | 278.28 | 0.38 | 1.80 | 728.59 |
| 1252.00 | 263.00 | 1.00 | 263.00 | 0.36 | 275.40 | 0.38 | 1.79 | 728.56 |
| 1253.00 | 262.00 | 1.00 | 262.50 | 0.36 | 273.96 | 0.38 | 1.77 | 728.54 |
| 1254.00 | 262.00 | 1.00 | 262.00 | 0.36 | 272.52 | 0.38 | 1.76 | 728.53 |
| 1255.00 | 262.00 | 1.00 | 262.00 | 0.36 | 269.64 | 0.37 | 1.75 | 728.50 |
| 1256.00 | 262.00 | 1.00 | 262.00 | 0.36 | 269.64 | 0.37 | 1.74 | 728.50 |
| 1257.00 | 262.00 | 1.00 | 262.00 | 0.36 | 268.20 | 0.37 | 1.73 | 728.48 |
| 1258.00 | 262.00 | 1.00 | 262.00 | 0.36 | 266.76 | 0.37 | 1.72 | 728.46 |
| 1259.00 | 261.00 | 1.00 | 261.50 | 0.36 | 266.76 | 0.37 | 1.71 | 728.46 |
| 1260.00 | 261.00 | 1.00 | 261.00 | 0.36 | 265.32 | 0.37 | 1.71 | 728.45 |
| 1261.00 | 261.00 | 1.00 | 261.00 | 0.36 | 265.32 | 0.37 | 1.70 | 728.45 |
| 1262.00 | 261.00 | 1.00 | 261.00 | 0.36 | 263.88 | 0.36 | 1.70 | 728.43 |
| 1263.00 | 261.00 | 1.00 | 261.00 | 0.36 | 263.88 | 0.36 | 1.69 | 728.43 |
| 1264.00 | 260.00 | 1.00 | 260.50 | 0.36 | 263.88 | 0.36 | 1.69 | 728.43 |
| 1265.00 | 259.00 | 1.00 | 259.50 | 0.36 | 262.44 | 0.36 | 1.69 | 728.42 |
| 1266.00 | 259.00 | 1.00 | 259.00 | 0.36 | 262.44 | 0.36 | 1.68 | 728.42 |
| 1267.00 | 258.00 | 1.00 | 258.50 | 0.36 | 261.00 | 0.36 | 1.68 | 728.40 |
| 1268.00 | 256.00 | 1.00 | 257.00 | 0.35 | 261.00 | 0.36 | 1.67 | 728.40 |
| 1269.00 | 254.00 | 1.00 | 255.00 | 0.35 | 259.56 | 0.36 | 1.67 | 728.38 |
| 1270.00 | 252.00 | 1.00 | 253.00 | 0.35 | 259.56 | 0.36 | 1.66 | 728.38 |
| 1271.00 | 250.00 | 1.00 | 251.00 | 0.35 | 258.12 | 0.36 | 1.65 | 728.37 |
| 1272.00 | 247.00 | 1.00 | 248.50 | 0.34 | 256.68 | 0.35 | 1.64 | 728.35 |
| 1273.00 | 244.00 | 1.00 | 245.50 | 0.34 | 253.80 | 0.35 | 1.62 | 728.32 |
| 1274.00 | 241.00 | 1.00 | 242.50 | 0.33 | 252.36 | 0.35 | 1.61 | 728.30 |
| 1275.00 | 239.00 | 1.00 | 240.00 | 0.33 | 250.92 | 0.35 | 1.60 | 728.29 |
| 1276.00 | 236.00 | 1.00 | 237.50 | 0.33 | 249.48 | 0.34 | 1.58 | 728.27 |
| 1277.00 | 233.00 | 1.00 | 234.50 | 0.32 | 246.60 | 0.34 | 1.56 | 728.24 |
| 1278.00 | 230.00 | 1.00 | 231.50 | 0.32 | 243.72 | 0.34 | 1.55 | 728.21 |
| 1279.00 | 228.00 | 1.00 | 229.00 | 0.32 | 242.28 | 0.33 | 1.53 | 728.19 |
| 1280.00 | 226.00 | 1.00 | 227.00 | 0.31 | 239.40 | 0.33 | 1.51 | 728.16 |
| 1281.00 | 224.00 | 1.00 | 225.00 | 0.31 | 237.96 | 0.33 | 1.49 | 728.14 |
| 1282.00 | 223.00 | 1.00 | 223.50 | 0.31 | 235.08 | 0.32 | 1.48 | 728.11 |
| 1283.00 | 222.00 | 1.00 | 222.50 | 0.31 | 233.64 | 0.32 | 1.46 | 728.10 |
| 1284.00 | 221.00 | 1.00 | 221.50 | 0.31 | 232.20 | 0.32 | 1.45 | 728.08 |
| 1285.00 | 220.00 | 1.00 | 220.50 | 0.30 | 230.76 | 0.32 | 1.43 | 728.06 |
| 1286.00 | 220.00 | 1.00 | 220.00 | 0.30 | 227.88 | 0.31 | 1.42 | 728.03 |
| 1287.00 | 220.00 | 1.00 | 220.00 | 0.30 | 227.88 | 0.31 | 1.41 | 728.03 |
| 1288.00 | 219.00 | 1.00 | 219.50 | 0.30 | 226.44 | 0.31 | 1.40 | 728.02 |
| 1289.00 | 219.00 | 1.00 | 219.00 | 0.30 | 225.00 | 0.31 | 1.39 | 728.00 |
| 1290.00 | 219.00 | 1.00 | 219.00 | 0.30 | 223.64 | 0.31 | 1.39 | 727.98 |
| 1291.00 | 219.00 | 1.00 | 219.00 | 0.30 | 222.28 | 0.31 | 1.38 | 727.97 |
| 1292.00 | 219.00 | 1.00 | 219.00 | 0.30 | 222.28 | 0.31 | 1.38 | 727.97 |
| 1293.00 | 219.00 | 1.00 | 219.00 | 0.30 | 220.92 | 0.30 | 1.37 | 727.95 |
| 1294.00 | 219.00 | 1.00 | 219.00 | 0.30 | 220.92 | 0.30 | 1.37 | 727.95 |
| 1295.00 | 219.00 | 1.00 | 219.00 | 0.30 | 220.92 | 0.30 | 1.37 | 727.95 |
| 1296.00 | 219.00 | 1.00 | 219.00 | 0.30 | 220.92 | 0.30 | 1.37 | 727.95 |
| 1297.00 | 219.00 | 1.00 | 219.00 | 0.30 | 219.56 | 0.30 | 1.37 | 727.94 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1298.00 | 219.00 | 1.00 | 219.00 | 0.30 | 219.56 | 0.30 | 1.36 | 727.94 |
| 1299.00 | 219.00 | 1.00 | 219.00 | 0.30 | 219.56 | 0.30 | 1.36 | 727.94 |
| 1300.00 | 219.00 | 1.00 | 219.00 | 0.30 | 219.56 | 0.30 | 1.36 | 727.94 |
| 1310.00 | 204.00 | 10.00 | 211.50 | 2.91 | 214.12 | 2.95 | 1.33 | 727.87 |
| 1320.00 | 179.00 | 10.00 | 191.50 | 2.64 | 199.16 | 2.74 | 1.22 | 727.70 |
| 1330.00 | 166.00 | 10.00 | 172.50 | 2.38 | 180.12 | 2.48 | 1.12 | 727.47 |
| 1340.00 | 164.00 | 10.00 | 165.00 | 2.27 | 169.24 | 2.33 | 1.06 | 727.34 |
| 1350.00 | 148.00 | 10.00 | 156.00 | 2.15 | 159.72 | 2.20 | 1.01 | 727.23 |
| 1360.00 | 126.00 | 10.00 | 137.00 | 1.89 | 143.40 | 1.98 | 0.92 | 727.04 |
| 1370.00 | 109.00 | 10.00 | 117.50 | 1.62 | 125.96 | 1.73 | 0.80 | 726.78 |
| 1380.00 | 106.00 | 10.00 | 107.50 | 1.48 | 113.48 | 1.56 | 0.72 | 726.59 |
| 1390.00 | 105.00 | 10.00 | 105.50 | 1.45 | 107.24 | 1.48 | 0.70 | 726.50 |
| 1400.00 | 105.00 | 10.00 | 105.00 | 1.45 | 106.20 | 1.46 | 0.68 | 726.48 |
| 1420.00 | 98.00 | 20.00 | 101.50 | 2.80 | 102.04 | 2.81 | 0.66 | 726.42 |
| 1440.00 | 93.00 | 20.00 | 95.50 | 2.63 | 96.84 | 2.67 | 0.63 | 726.34 |
| 1460.00 | 84.00 | 20.00 | 88.50 | 2.44 | 90.60 | 2.50 | 0.57 | 726.24 |
| 1500.00 | 71.00 | 40.00 | 77.50 | 4.27 | 79.16 | 4.36 | 0.48 | 726.06 |

TRIBUTARY TO SOUTH BRANCH ARROYO CONEJO

10-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/TRIB. TO SOUTH BRANCH-DEV. WITH RET. BASIN - Q10 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | L10 | 0.00 |
| 861411 | 2D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | L10 | 0.00 |
| 861411 | 3D | 36. | 71. | 36. | 71. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 15 | L10 | 0.05 |
| 861411 | 4D | 53. | 115. | 89. | 186. | 4 | 500. | 0.01400 | 4.25 | 0.00 | 0. | 10 | 13 | L10 | 0.15 |
| 861411 | 5E | 29. | 74. | 29. | 74. | 4 | 1150. | 0.05650 | 2.25 | 0.00 | 0. | 10 | 10 | L10 | 0.02 |
| 861411 | 6D | 13. | 30. | 102. | 215. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 12 | L10 | 0.05 |

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*****************************************************************************************************************
*                                                CONFLUENCE Q'S                                                 *
* 861411    7D  TD 1155 QD     215. QDE     288. QE      73.  861411    7E  TE 1156 QE      74. QED     287. QD     214.  *
*                              861411    7DE TDE 1155 QDE     288. QD     215. QE      73.                                *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 7DE | 29. | 74. | 131. | 288. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | L10 | 0.00 |
| 861411 | 8D | 0. | 0. | 131. | 288. | 4 | 2750. | 0.00982 | 5.25 | 0.00 | 0. | 10 | 99 | L10 | 0.00 |
| 861411 | 9D | 56. | 89. | 187. | 354. | 4 | 800. | 0.03370 | 4.50 | 0.00 | 0. | 20 | 18 | L10 | 0.05 |
| 861411 | 10D | 74. | 190. | 261. | 464. | 4 | 550. | 0.04540 | 4.75 | 0.00 | 0. | 20 | 9 | L10 | 0.05 |
| 861411 | 11D | 32. | 60. | 293. | 518. | 4 | 100. | 0.03880 | 5.00 | 0.00 | 0. | 20 | 14 | L10 | 0.04 |
| 861411 | 12D | 20. | 41. | 313. | 555. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 12 | L10 | 0.03 |
| 861411 | 13E | 60. | 114. | 60. | 114. | 4 | 850. | 0.02590 | 3.00 | 0.00 | 0. | 20 | 14 | L10 | 0.12 |

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*                                                CONFLUENCE Q'S                                                 *
* 861411   14D  TD 1159 QD     555. QDE     666. QE     110.  861411   14E  TE 1156 QE     113. QED     633. QD     520.  *
*                              861411   14DE TDE 1159 QDE     666. QD     555. QE     110.                                *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 14DE | 60. | 113. | 373. | 666. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L10 | 0.00 |
| 861411 | 15D | 0. | 0. | 373. | 666. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | L10 | 0.00 |
| 861411 | 16D | 373. | 281. | 373. | 281. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L10 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY

INFLOW TO BASIN

HYDROGRAPH AT 861411 15D STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 2. | 200 | 2. | 300 | 3. | 400 | 3. |
| 500 | 4. | 600 | 6. | 700 | 7. | 800 | 10. | 900 | 19. |
| 1000 | 51. | 1050 | 76. | 1100 | 108. | 1110 | 128. | 1120 | 166. |
| 1130 | 194. | 1131 | 196. | 1132 | 200. | 1133 | 203. | 1134 | 206. |
| 1135 | 209. | 1136 | 212. | 1137 | 215. | 1138 | 218. | 1139 | 221. |
| 1140 | 224. | 1141 | 226. | 1142 | 229. | 1143 | 232. | 1144 | 235. |
| 1145 | 238. | 1146 | 244. | 1147 | 253. | 1148 | 266. | 1149 | 287. |
| 1150 | 325. | 1151 | 383. | 1152 | 476. | 1153 | 554. | 1154 | 594. |
| 1155 | 616. | 1156 | 633. | 1157 | 651. | 1158 | 664. | 1159 | 666. |
| 1160 | 652. | 1161 | 615. | 1162 | 574. | 1163 | 550. | 1164 | 521. |
| 1165 | 491. | 1166 | 448. | 1167 | 403. | 1168 | 363. | 1169 | 324. |
| 1170 | 286. | 1171 | 246. | 1172 | 213. | 1173 | 187. | 1174 | 170. |
| 1175 | 156. | 1176 | 146. | 1177 | 137. | 1178 | 131. | 1179 | 125. |
| 1180 | 120. | 1181 | 116. | 1182 | 113. | 1183 | 110. | 1184 | 107. |
| 1185 | 104. | 1186 | 102. | 1187 | 100. | 1188 | 98. | 1189 | 97. |
| 1190 | 95. | 1191 | 93. | 1192 | 91. | 1193 | 89. | 1194 | 87. |
| 1195 | 85. | 1196 | 84. | 1197 | 82. | 1198 | 80. | 1199 | 78. |
| 1200 | 76. | 1201 | 75. | 1202 | 73. | 1203 | 72. | 1204 | 71. |
| 1205 | 69. | 1206 | 68. | 1207 | 67. | 1208 | 66. | 1209 | 66. |
| 1210 | 65. | 1211 | 64. | 1212 | 62. | 1213 | 59. | 1214 | 57. |
| 1215 | 54. | 1216 | 52. | 1217 | 50. | 1218 | 47. | 1219 | 45. |
| 1220 | 42. | 1221 | 40. | 1222 | 39. | 1223 | 37. | 1224 | 35. |
| 1225 | 33. | 1226 | 32. | 1227 | 30. | 1228 | 29. | 1229 | 28. |
| 1230 | 27. | 1231 | 26. | 1232 | 25. | 1233 | 24. | 1234 | 23. |
| 1235 | 23. | 1236 | 22. | 1237 | 22. | 1238 | 22. | 1239 | 21. |
| 1240 | 21. | 1241 | 21. | 1242 | 21. | 1243 | 21. | 1244 | 21. |
| 1245 | 20. | 1246 | 20. | 1247 | 20. | 1248 | 20. | 1249 | 20. |
| 1250 | 20. | 1251 | 20. | 1252 | 20. | 1253 | 20. | 1254 | 20. |
| 1255 | 19. | 1256 | 19. | 1257 | 19. | 1258 | 19. | 1259 | 19. |
| 1260 | 19. | 1261 | 19. | 1262 | 19. | 1263 | 19. | 1264 | 19. |
| 1265 | 19. | 1266 | 19. | 1267 | 19. | 1268 | 19. | 1269 | 18. |
| 1270 | 18. | 1271 | 18. | 1272 | 18. | 1273 | 17. | 1274 | 17. |
| 1275 | 16. | 1276 | 16. | 1277 | 15. | 1278 | 14. | 1279 | 14. |
| 1280 | 13. | 1281 | 12. | 1282 | 12. | 1283 | 11. | 1284 | 11. |
| 1285 | 10. | 1286 | 10. | 1287 | 10. | 1288 | 9. | 1289 | 9. |
| 1290 | 9. | 1291 | 9. | 1292 | 9. | 1293 | 8. | 1294 | 8. |
| 1295 | 8. | 1296 | 8. | 1297 | 8. | 1298 | 8. | 1299 | 8. |
| 1300 | 8. | 1310 | 7. | 1320 | 6. | 1330 | 6. | 1340 | 6. |
| 1350 | 5. | 1360 | 4. | 1370 | 4. | 1380 | 3. | 1390 | 3. |
| 1400 | 3. | 1420 | 3. | 1440 | 2. | 1460 | 2. | 1500 | 2. |

MODIFIED RATIONAL METHOD HYDROLOGY

OUTFLOW FROM BASIN

HYDROGRAPH AT 861411 16D STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 0. | 200 | 2. | 300 | 3. | 400 | 3. |
| 500 | 3. | 600 | 5. | 700 | 6. | 800 | 9. | 900 | 14. |
| 1000 | 33. | 1050 | 57. | 1100 | 82. | 1110 | 93. | 1120 | 109. |
| 1130 | 129. | 1131 | 131. | 1132 | 134. | 1133 | 136. | 1134 | 139. |
| 1135 | 141. | 1136 | 144. | 1137 | 146. | 1138 | 149. | 1139 | 151. |
| 1140 | 154. | 1141 | 155. | 1142 | 158. | 1143 | 159. | 1144 | 161. |
| 1145 | 163. | 1146 | 165. | 1147 | 167. | 1148 | 170. | 1149 | 172. |
| 1150 | 176. | 1151 | 181. | 1152 | 188. | 1153 | 196. | 1154 | 204. |
| 1155 | 212. | 1156 | 218. | 1157 | 227. | 1158 | 234. | 1159 | 242. |
| 1160 | 248. | 1161 | 254. | 1162 | 260. | 1163 | 265. | 1164 | 269. |
| 1165 | 273. | 1166 | 276. | 1167 | 278. | 1168 | 280. | 1169 | 281. |
| 1170 | 281. | 1171 | 281. | 1172 | 280. | 1173 | 279. | 1174 | 278. |
| 1175 | 276. | 1176 | 273. | 1177 | 271. | 1178 | 269. | 1179 | 267. |
| 1180 | 265. | 1181 | 263. | 1182 | 260. | 1183 | 258. | 1184 | 255. |
| 1185 | 253. | 1186 | 250. | 1187 | 248. | 1188 | 246. | 1189 | 244. |
| 1190 | 241. | 1191 | 238. | 1192 | 236. | 1193 | 233. | 1194 | 231. |
| 1195 | 228. | 1196 | 225. | 1197 | 223. | 1198 | 220. | 1199 | 218. |
| 1200 | 215. | 1201 | 213. | 1202 | 210. | 1203 | 208. | 1204 | 205. |
| 1205 | 203. | 1206 | 201. | 1207 | 198. | 1208 | 194. | 1209 | 190. |
| 1210 | 187. | 1211 | 184. | 1212 | 180. | 1213 | 178. | 1214 | 175. |
| 1215 | 171. | 1216 | 168. | 1217 | 165. | 1218 | 162. | 1219 | 159. |
| 1220 | 156. | 1221 | 153. | 1222 | 149. | 1223 | 145. | 1224 | 141. |
| 1225 | 137. | 1226 | 134. | 1227 | 129. | 1228 | 126. | 1229 | 122. |
| 1230 | 119. | 1231 | 115. | 1232 | 112. | 1233 | 109. | 1234 | 106. |
| 1235 | 103. | 1236 | 99. | 1237 | 96. | 1238 | 92. | 1239 | 89. |
| 1240 | 86. | 1241 | 83. | 1242 | 81. | 1243 | 78. | 1244 | 76. |
| 1245 | 73. | 1246 | 71. | 1247 | 69. | 1248 | 67. | 1249 | 64. |
| 1250 | 61. | 1251 | 58. | 1252 | 55. | 1253 | 53. | 1254 | 51. |
| 1255 | 49. | 1256 | 47. | 1257 | 45. | 1258 | 43. | 1259 | 42. |
| 1260 | 40. | 1261 | 38. | 1262 | 37. | 1263 | 36. | 1264 | 35. |
| 1265 | 34. | 1266 | 33. | 1267 | 32. | 1268 | 30. | 1269 | 30. |
| 1270 | 29. | 1271 | 28. | 1272 | 27. | 1273 | 26. | 1274 | 25. |
| 1275 | 24. | 1276 | 23. | 1277 | 23. | 1278 | 22. | 1279 | 21. |
| 1280 | 20. | 1281 | 20. | 1282 | 19. | 1283 | 19. | 1284 | 18. |
| 1285 | 17. | 1286 | 17. | 1287 | 16. | 1288 | 15. | 1289 | 15. |
| 1290 | 14. | 1291 | 14. | 1292 | 13. | 1293 | 13. | 1294 | 12. |
| 1295 | 11. | 1296 | 11. | 1297 | 10. | 1298 | 9. | 1299 | 9. |
| 1300 | 9. | 1310 | 8. | 1320 | 7. | 1330 | 6. | 1340 | 6. |
| 1350 | 6. | 1360 | 5. | 1370 | 4. | 1380 | 4. | 1390 | 3. |
| 1400 | 3. | 1420 | 3. | 1440 | 2. | 1460 | 2. | 1500 | 2. |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

## BASIN#1
## 10-YEAR STORM
## TRIB. TO SOUTH BRANCH

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 2.00 | 100.00 | 1.00 | 0.14 | 0.41 | 0.06 | 0.08 | 783.03 |
| 200.00 | 2.00 | 100.00 | 2.00 | 0.28 | 1.84 | 0.25 | 0.10 | 783.15 |
| 300.00 | 3.00 | 100.00 | 2.50 | 0.34 | 2.65 | 0.37 | 0.08 | 783.22 |
| 400.00 | 3.00 | 100.00 | 3.00 | 0.41 | 2.86 | 0.39 | 0.10 | 783.24 |
| 500.00 | 4.00 | 100.00 | 3.50 | 0.48 | 3.47 | 0.48 | 0.11 | 783.29 |
| 600.00 | 6.00 | 100.00 | 5.00 | 0.69 | 5.10 | 0.70 | 0.09 | 783.42 |
| 700.00 | 7.00 | 100.00 | 6.50 | 0.90 | 6.32 | 0.87 | 0.12 | 783.53 |
| 800.00 | 10.00 | 100.00 | 8.50 | 1.17 | 8.57 | 1.18 | 0.11 | 783.71 |
| 900.00 | 19.00 | 100.00 | 14.50 | 2.00 | 14.32 | 1.97 | 0.13 | 784.12 |
| 1000.00 | 51.00 | 100.00 | 35.00 | 4.82 | 32.94 | 4.54 | 0.42 | 785.06 |
| 1050.00 | 76.00 | 50.00 | 63.50 | 4.37 | 57.21 | 3.94 | 0.85 | 785.77 |
| 1100.00 | 108.00 | 50.00 | 92.00 | 6.34 | 82.14 | 5.66 | 1.53 | 786.45 |
| 1110.00 | 128.00 | 10.00 | 118.00 | 1.63 | 93.12 | 1.28 | 1.87 | 786.74 |
| 1120.00 | 166.00 | 10.00 | 147.00 | 2.02 | 109.42 | 1.51 | 2.39 | 787.13 |
| 1130.00 | 194.00 | 10.00 | 180.00 | 2.48 | 128.58 | 1.77 | 3.10 | 787.52 |
| 1131.00 | 196.00 | 1.00 | 195.00 | 0.27 | 131.08 | 0.18 | 3.19 | 787.57 |
| 1132.00 | 200.00 | 1.00 | 198.00 | 0.27 | 133.58 | 0.18 | 3.28 | 787.62 |
| 1133.00 | 203.00 | 1.00 | 201.50 | 0.28 | 136.07 | 0.19 | 3.37 | 787.67 |
| 1134.00 | 206.00 | 1.00 | 204.50 | 0.28 | 138.57 | 0.19 | 3.46 | 787.73 |
| 1135.00 | 209.00 | 1.00 | 207.50 | 0.29 | 141.07 | 0.19 | 3.55 | 787.78 |
| 1136.00 | 212.00 | 1.00 | 210.50 | 0.29 | 143.57 | 0.20 | 3.64 | 787.83 |
| 1137.00 | 215.00 | 1.00 | 213.50 | 0.29 | 146.07 | 0.20 | 3.73 | 787.88 |
| 1138.00 | 218.00 | 1.00 | 216.50 | 0.30 | 148.57 | 0.20 | 3.83 | 787.93 |
| 1139.00 | 221.00 | 1.00 | 219.50 | 0.30 | 151.07 | 0.21 | 3.92 | 787.98 |
| 1140.00 | 224.00 | 1.00 | 222.50 | 0.31 | 153.54 | 0.21 | 4.02 | 788.03 |
| 1141.00 | 226.00 | 1.00 | 225.00 | 0.31 | 155.17 | 0.21 | 4.11 | 788.07 |
| 1142.00 | 229.00 | 1.00 | 227.50 | 0.31 | 157.62 | 0.22 | 4.21 | 788.12 |
| 1143.00 | 232.00 | 1.00 | 230.50 | 0.32 | 159.25 | 0.22 | 4.31 | 788.15 |
| 1144.00 | 235.00 | 1.00 | 233.50 | 0.32 | 160.88 | 0.22 | 4.41 | 788.18 |
| 1145.00 | 238.00 | 1.00 | 236.50 | 0.33 | 163.33 | 0.22 | 4.51 | 788.24 |
| 1146.00 | 244.00 | 1.00 | 241.00 | 0.33 | 164.96 | 0.23 | 4.61 | 788.27 |
| 1147.00 | 253.00 | 1.00 | 248.50 | 0.34 | 167.41 | 0.23 | 4.72 | 788.32 |
| 1148.00 | 266.00 | 1.00 | 259.50 | 0.36 | 169.86 | 0.23 | 4.85 | 788.37 |
| 1149.00 | 287.00 | 1.00 | 276.50 | 0.38 | 172.30 | 0.24 | 4.99 | 788.42 |
| 1150.00 | 325.00 | 1.00 | 306.00 | 0.42 | 176.38 | 0.24 | 5.17 | 788.51 |
| 1151.00 | 383.00 | 1.00 | 354.00 | 0.49 | 181.28 | 0.25 | 5.41 | 788.61 |
| 1152.00 | 476.00 | 1.00 | 429.50 | 0.59 | 187.81 | 0.26 | 5.74 | 788.75 |
| 1153.00 | 554.00 | 1.00 | 515.00 | 0.71 | 195.97 | 0.27 | 6.18 | 788.92 |
| 1154.00 | 594.00 | 1.00 | 574.00 | 0.79 | 204.12 | 0.28 | 6.69 | 789.10 |
| 1155.00 | 616.00 | 1.00 | 605.00 | 0.83 | 211.60 | 0.29 | 7.23 | 789.29 |
| 1156.00 | 633.00 | 1.00 | 624.50 | 0.86 | 218.40 | 0.30 | 7.79 | 789.46 |
| 1157.00 | 651.00 | 1.00 | 642.00 | 0.88 | 226.56 | 0.31 | 8.36 | 789.66 |
| 1158.00 | 664.00 | 1.00 | 657.50 | 0.91 | 234.04 | 0.32 | 8.95 | 789.85 |
| 1159.00 | 666.00 | 1.00 | 665.00 | 0.92 | 241.52 | 0.33 | 9.53 | 790.04 |
| 1160.00 | 652.00 | 1.00 | 659.00 | 0.91 | 248.32 | 0.34 | 10.09 | 790.21 |
| 1161.00 | 615.00 | 1.00 | 633.50 | 0.87 | 254.44 | 0.35 | 10.62 | 790.36 |
| 1162.00 | 574.00 | 1.00 | 594.50 | 0.82 | 259.88 | 0.36 | 11.08 | 790.50 |
| 1163.00 | 550.00 | 1.00 | 562.00 | 0.77 | 264.64 | 0.36 | 11.49 | 790.62 |
| 1164.00 | 521.00 | 1.00 | 535.50 | 0.74 | 268.72 | 0.37 | 11.85 | 790.72 |
| 1165.00 | 491.00 | 1.00 | 506.00 | 0.70 | 272.80 | 0.38 | 12.18 | 790.82 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1166.00 | 448.00 | 1.00 | 469.50 | 0.65 | 275.52 | 0.38 | 12.44 | 790.89 |
| 1167.00 | 403.00 | 1.00 | 425.50 | 0.59 | 278.24 | 0.38 | 12.65 | 790.96 |
| 1168.00 | 363.00 | 1.00 | 383.00 | 0.53 | 279.60 | 0.39 | 12.79 | 790.99 |
| 1169.00 | 324.00 | 1.00 | 343.50 | 0.47 | 280.84 | 0.39 | 12.87 | 791.02 |
| 1170.00 | 286.00 | 1.00 | 305.00 | 0.42 | 280.84 | 0.39 | 12.91 | 791.02 |
| 1171.00 | 246.00 | 1.00 | 266.00 | 0.37 | 280.84 | 0.39 | 12.89 | 791.02 |
| 1172.00 | 213.00 | 1.00 | 229.50 | 0.32 | 280.25 | 0.39 | 12.82 | 791.01 |
| 1173.00 | 187.00 | 1.00 | 200.00 | 0.28 | 278.92 | 0.38 | 12.71 | 790.97 |
| 1174.00 | 170.00 | 1.00 | 178.50 | 0.25 | 277.56 | 0.38 | 12.57 | 790.94 |
| 1175.00 | 156.00 | 1.00 | 163.00 | 0.22 | 275.52 | 0.38 | 12.42 | 790.89 |
| 1176.00 | 146.00 | 1.00 | 151.00 | 0.21 | 273.48 | 0.38 | 12.25 | 790.84 |
| 1177.00 | 137.00 | 1.00 | 141.50 | 0.19 | 271.44 | 0.37 | 12.07 | 790.79 |
| 1178.00 | 131.00 | 1.00 | 134.00 | 0.18 | 269.40 | 0.37 | 11.88 | 790.73 |
| 1179.00 | 125.00 | 1.00 | 128.00 | 0.18 | 266.68 | 0.37 | 11.69 | 790.67 |
| 1180.00 | 120.00 | 1.00 | 122.50 | 0.17 | 264.64 | 0.36 | 11.50 | 790.62 |
| 1181.00 | 116.00 | 1.00 | 118.00 | 0.16 | 262.60 | 0.36 | 11.30 | 790.57 |
| 1182.00 | 113.00 | 1.00 | 114.50 | 0.16 | 259.88 | 0.36 | 11.10 | 790.50 |
| 1183.00 | 110.00 | 1.00 | 111.50 | 0.15 | 257.84 | 0.36 | 10.90 | 790.45 |
| 1184.00 | 107.00 | 1.00 | 108.50 | 0.15 | 255.12 | 0.35 | 10.69 | 790.38 |
| 1185.00 | 104.00 | 1.00 | 105.50 | 0.15 | 253.08 | 0.35 | 10.49 | 790.33 |
| 1186.00 | 102.00 | 1.00 | 103.00 | 0.14 | 250.36 | 0.34 | 10.29 | 790.26 |
| 1187.00 | 100.00 | 1.00 | 101.00 | 0.14 | 248.32 | 0.34 | 10.08 | 790.21 |
| 1188.00 | 98.00 | 1.00 | 99.00 | 0.14 | 245.60 | 0.34 | 9.88 | 790.14 |
| 1189.00 | 97.00 | 1.00 | 97.50 | 0.13 | 243.56 | 0.34 | 9.68 | 790.09 |
| 1190.00 | 95.00 | 1.00 | 96.00 | 0.13 | 240.84 | 0.33 | 9.48 | 790.02 |
| 1191.00 | 93.00 | 1.00 | 94.00 | 0.13 | 238.12 | 0.33 | 9.28 | 789.95 |
| 1192.00 | 91.00 | 1.00 | 92.00 | 0.13 | 236.08 | 0.33 | 9.08 | 789.90 |
| 1193.00 | 89.00 | 1.00 | 90.00 | 0.12 | 233.36 | 0.32 | 8.89 | 789.83 |
| 1194.00 | 87.00 | 1.00 | 88.00 | 0.12 | 230.64 | 0.32 | 8.69 | 789.77 |
| 1195.00 | 85.00 | 1.00 | 86.00 | 0.12 | 227.92 | 0.31 | 8.50 | 789.70 |
| 1196.00 | 84.00 | 1.00 | 84.50 | 0.12 | 225.20 | 0.31 | 8.30 | 789.63 |
| 1197.00 | 82.00 | 1.00 | 83.00 | 0.11 | 223.16 | 0.31 | 8.11 | 789.58 |
| 1198.00 | 80.00 | 1.00 | 81.00 | 0.11 | 220.44 | 0.30 | 7.92 | 789.51 |
| 1199.00 | 78.00 | 1.00 | 79.00 | 0.11 | 217.72 | 0.30 | 7.73 | 789.44 |
| 1200.00 | 76.00 | 1.00 | 77.00 | 0.11 | 215.00 | 0.30 | 7.54 | 789.37 |
| 1201.00 | 75.00 | 1.00 | 75.50 | 0.10 | 212.96 | 0.29 | 7.35 | 789.32 |
| 1202.00 | 73.00 | 1.00 | 74.00 | 0.10 | 210.24 | 0.29 | 7.16 | 789.26 |
| 1203.00 | 72.00 | 1.00 | 72.50 | 0.10 | 208.20 | 0.29 | 6.97 | 789.21 |
| 1204.00 | 71.00 | 1.00 | 71.50 | 0.10 | 205.48 | 0.28 | 6.79 | 789.14 |
| 1205.00 | 69.00 | 1.00 | 70.00 | 0.10 | 202.76 | 0.28 | 6.60 | 789.07 |
| 1206.00 | 68.00 | 1.00 | 68.50 | 0.09 | 200.72 | 0.28 | 6.42 | 789.02 |
| 1207.00 | 67.00 | 1.00 | 67.50 | 0.09 | 197.60 | 0.27 | 6.24 | 788.95 |
| 1208.00 | 66.00 | 1.00 | 66.50 | 0.09 | 193.52 | 0.27 | 6.07 | 788.86 |
| 1209.00 | 66.00 | 1.00 | 66.00 | 0.09 | 190.26 | 0.26 | 5.90 | 788.80 |
| 1210.00 | 65.00 | 1.00 | 65.50 | 0.09 | 186.99 | 0.26 | 5.73 | 788.73 |
| 1211.00 | 64.00 | 1.00 | 64.50 | 0.09 | 183.73 | 0.25 | 5.56 | 788.66 |
| 1212.00 | 62.00 | 1.00 | 63.00 | 0.09 | 180.46 | 0.25 | 5.40 | 788.59 |
| 1213.00 | 59.00 | 1.00 | 60.50 | 0.08 | 178.02 | 0.25 | 5.24 | 788.54 |
| 1214.00 | 57.00 | 1.00 | 58.00 | 0.08 | 174.75 | 0.24 | 5.08 | 788.47 |
| 1215.00 | 54.00 | 1.00 | 55.50 | 0.08 | 171.49 | 0.24 | 4.92 | 788.41 |
| 1216.00 | 52.00 | 1.00 | 53.00 | 0.07 | 168.22 | 0.23 | 4.76 | 788.34 |
| 1217.00 | 50.00 | 1.00 | 51.00 | 0.07 | 164.96 | 0.23 | 4.60 | 788.27 |
| 1218.00 | 47.00 | 1.00 | 48.50 | 0.07 | 161.70 | 0.22 | 4.45 | 788.20 |
| 1219.00 | 45.00 | 1.00 | 46.00 | 0.06 | 159.25 | 0.22 | 4.29 | 788.15 |
| 1220.00 | 42.00 | 1.00 | 43.50 | 0.06 | 155.98 | 0.21 | 4.14 | 788.08 |
| 1221.00 | 40.00 | 1.00 | 41.00 | 0.06 | 152.72 | 0.21 | 3.98 | 788.02 |
| 1222.00 | 39.00 | 1.00 | 39.50 | 0.05 | 148.57 | 0.20 | 3.83 | 787.93 |
| 1223.00 | 37.00 | 1.00 | 38.00 | 0.05 | 145.24 | 0.20 | 3.69 | 787.86 |
| 1224.00 | 35.00 | 1.00 | 36.00 | 0.05 | 141.07 | 0.19 | 3.54 | 787.78 |
| 1225.00 | 33.00 | 1.00 | 34.00 | 0.05 | 136.91 | 0.19 | 3.40 | 787.69 |
| 1226.00 | 32.00 | 1.00 | 32.50 | 0.04 | 133.58 | 0.18 | 3.26 | 787.62 |
| 1227.00 | 30.00 | 1.00 | 31.00 | 0.04 | 129.41 | 0.18 | 3.12 | 787.54 |
| 1228.00 | 29.00 | 1.00 | 29.50 | 0.04 | 126.08 | 0.17 | 2.99 | 787.47 |
| 1229.00 | 28.00 | 1.00 | 28.50 | 0.04 | 121.91 | 0.17 | 2.86 | 787.39 |
| 1230.00 | 27.00 | 1.00 | 27.50 | 0.04 | 118.58 | 0.16 | 2.74 | 787.32 |
| 1231.00 | 26.00 | 1.00 | 26.50 | 0.04 | 115.25 | 0.16 | 2.62 | 787.25 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 25.00 | 1.00 | 25.50 | 0.04 | 111.92 | 0.15 | 2.50 | 787.18 |
| 1233.00 | 24.00 | 1.00 | 24.50 | 0.03 | 108.59 | 0.15 | 2.38 | 787.11 |
| 1234.00 | 23.00 | 1.00 | 23.50 | 0.03 | 106.09 | 0.15 | 2.27 | 787.06 |
| 1235.00 | 23.00 | 1.00 | 23.00 | 0.03 | 102.81 | 0.14 | 2.16 | 786.99 |
| 1236.00 | 22.00 | 1.00 | 22.50 | 0.03 | 98.93 | 0.14 | 2.05 | 786.89 |
| 1237.00 | 22.00 | 1.00 | 22.00 | 0.03 | 95.70 | 0.13 | 1.95 | 786.81 |
| 1238.00 | 22.00 | 1.00 | 22.00 | 0.03 | 92.47 | 0.13 | 1.85 | 786.72 |
| 1239.00 | 21.00 | 1.00 | 21.50 | 0.03 | 89.24 | 0.12 | 1.76 | 786.64 |
| 1240.00 | 21.00 | 1.00 | 21.00 | 0.03 | 86.01 | 0.12 | 1.67 | 786.55 |
| 1241.00 | 21.00 | 1.00 | 21.00 | 0.03 | 83.43 | 0.11 | 1.58 | 786.48 |
| 1242.00 | 21.00 | 1.00 | 21.00 | 0.03 | 80.85 | 0.11 | 1.50 | 786.42 |
| 1243.00 | 21.00 | 1.00 | 21.00 | 0.03 | 78.26 | 0.11 | 1.42 | 786.35 |
| 1244.00 | 21.00 | 1.00 | 21.00 | 0.03 | 75.68 | 0.10 | 1.35 | 786.28 |
| 1245.00 | 20.00 | 1.00 | 20.50 | 0.03 | 73.09 | 0.10 | 1.28 | 786.21 |
| 1246.00 | 20.00 | 1.00 | 20.00 | 0.03 | 71.16 | 0.10 | 1.20 | 786.16 |
| 1247.00 | 20.00 | 1.00 | 20.00 | 0.03 | 68.57 | 0.09 | 1.14 | 786.09 |
| 1248.00 | 20.00 | 1.00 | 20.00 | 0.03 | 66.64 | 0.09 | 1.07 | 786.04 |
| 1249.00 | 20.00 | 1.00 | 20.00 | 0.03 | 64.15 | 0.09 | 1.01 | 785.97 |
| 1250.00 | 20.00 | 1.00 | 20.00 | 0.03 | 60.68 | 0.08 | 0.96 | 785.87 |
| 1251.00 | 20.00 | 1.00 | 20.00 | 0.03 | 58.37 | 0.08 | 0.90 | 785.80 |
| 1252.00 | 20.00 | 1.00 | 20.00 | 0.03 | 55.48 | 0.08 | 0.85 | 785.72 |
| 1253.00 | 20.00 | 1.00 | 20.00 | 0.03 | 53.17 | 0.07 | 0.81 | 785.65 |
| 1254.00 | 20.00 | 1.00 | 20.00 | 0.03 | 50.86 | 0.07 | 0.77 | 785.58 |
| 1255.00 | 19.00 | 1.00 | 19.50 | 0.03 | 48.54 | 0.07 | 0.73 | 785.52 |
| 1256.00 | 19.00 | 1.00 | 19.00 | 0.03 | 46.81 | 0.06 | 0.69 | 785.47 |
| 1257.00 | 19.00 | 1.00 | 19.00 | 0.03 | 44.50 | 0.06 | 0.65 | 785.40 |
| 1258.00 | 19.00 | 1.00 | 19.00 | 0.03 | 42.76 | 0.06 | 0.62 | 785.35 |
| 1259.00 | 19.00 | 1.00 | 19.00 | 0.03 | 41.61 | 0.06 | 0.59 | 785.31 |
| 1260.00 | 19.00 | 1.00 | 19.00 | 0.03 | 39.87 | 0.05 | 0.56 | 785.26 |
| 1261.00 | 19.00 | 1.00 | 19.00 | 0.03 | 38.14 | 0.05 | 0.53 | 785.21 |
| 1262.00 | 19.00 | 1.00 | 19.00 | 0.03 | 36.98 | 0.05 | 0.51 | 785.18 |
| 1263.00 | 19.00 | 1.00 | 19.00 | 0.03 | 35.83 | 0.05 | 0.49 | 785.14 |
| 1264.00 | 19.00 | 1.00 | 19.00 | 0.03 | 34.67 | 0.05 | 0.46 | 785.11 |
| 1265.00 | 19.00 | 1.00 | 19.00 | 0.03 | 33.52 | 0.05 | 0.44 | 785.07 |
| 1266.00 | 19.00 | 1.00 | 19.00 | 0.03 | 32.94 | 0.05 | 0.43 | 785.06 |
| 1267.00 | 19.00 | 1.00 | 19.00 | 0.03 | 31.78 | 0.04 | 0.41 | 785.02 |
| 1268.00 | 19.00 | 1.00 | 19.00 | 0.03 | 30.47 | 0.04 | 0.39 | 784.97 |
| 1269.00 | 18.00 | 1.00 | 18.50 | 0.03 | 29.50 | 0.04 | 0.38 | 784.92 |
| 1270.00 | 18.00 | 1.00 | 18.00 | 0.02 | 28.53 | 0.04 | 0.36 | 784.87 |
| 1271.00 | 18.00 | 1.00 | 18.00 | 0.02 | 27.56 | 0.04 | 0.35 | 784.82 |
| 1272.00 | 18.00 | 1.00 | 18.00 | 0.02 | 26.59 | 0.04 | 0.34 | 784.77 |
| 1273.00 | 17.00 | 1.00 | 17.50 | 0.02 | 25.62 | 0.04 | 0.33 | 784.72 |
| 1274.00 | 17.00 | 1.00 | 17.00 | 0.02 | 24.98 | 0.03 | 0.32 | 784.68 |
| 1275.00 | 16.00 | 1.00 | 16.50 | 0.02 | 24.33 | 0.03 | 0.30 | 784.65 |
| 1276.00 | 16.00 | 1.00 | 16.00 | 0.02 | 23.36 | 0.03 | 0.29 | 784.60 |
| 1277.00 | 15.00 | 1.00 | 15.50 | 0.02 | 22.72 | 0.03 | 0.28 | 784.56 |
| 1278.00 | 14.00 | 1.00 | 14.50 | 0.02 | 22.07 | 0.03 | 0.27 | 784.53 |
| 1279.00 | 14.00 | 1.00 | 14.00 | 0.02 | 21.10 | 0.03 | 0.26 | 784.48 |
| 1280.00 | 13.00 | 1.00 | 13.50 | 0.02 | 20.46 | 0.03 | 0.25 | 784.45 |
| 1281.00 | 12.00 | 1.00 | 12.50 | 0.02 | 19.81 | 0.03 | 0.24 | 784.41 |
| 1282.00 | 12.00 | 1.00 | 12.00 | 0.02 | 19.16 | 0.03 | 0.23 | 784.38 |
| 1283.00 | 11.00 | 1.00 | 11.50 | 0.02 | 18.52 | 0.03 | 0.23 | 784.34 |
| 1284.00 | 11.00 | 1.00 | 11.00 | 0.02 | 17.87 | 0.02 | 0.22 | 784.31 |
| 1285.00 | 10.00 | 1.00 | 10.50 | 0.01 | 16.90 | 0.02 | 0.21 | 784.26 |
| 1286.00 | 10.00 | 1.00 | 10.00 | 0.01 | 16.58 | 0.02 | 0.20 | 784.24 |
| 1287.00 | 10.00 | 1.00 | 10.00 | 0.01 | 15.93 | 0.02 | 0.19 | 784.21 |
| 1288.00 | 9.00 | 1.00 | 9.50 | 0.01 | 15.29 | 0.02 | 0.18 | 784.17 |
| 1289.00 | 9.00 | 1.00 | 9.00 | 0.01 | 14.64 | 0.02 | 0.17 | 784.14 |
| 1290.00 | 9.00 | 1.00 | 9.00 | 0.01 | 13.99 | 0.02 | 0.17 | 784.10 |
| 1291.00 | 9.00 | 1.00 | 9.00 | 0.01 | 13.67 | 0.02 | 0.16 | 784.09 |
| 1292.00 | 9.00 | 1.00 | 9.00 | 0.01 | 13.35 | 0.02 | 0.15 | 784.07 |
| 1293.00 | 8.00 | 1.00 | 8.50 | 0.01 | 12.70 | 0.02 | 0.15 | 784.04 |
| 1294.00 | 8.00 | 1.00 | 8.00 | 0.01 | 12.38 | 0.02 | 0.14 | 784.02 |
| 1295.00 | 8.00 | 1.00 | 8.00 | 0.01 | 11.42 | 0.02 | 0.14 | 783.95 |
| 1296.00 | 8.00 | 1.00 | 8.00 | 0.01 | 10.61 | 0.01 | 0.13 | 783.88 |
| 1297.00 | 8.00 | 1.00 | 8.00 | 0.01 | 9.79 | 0.01 | 0.13 | 783.82 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1298.00 | 8.00 | 1.00 | 8.00 | 0.01 | 9.18 | 0.01 | 0.13 | 783.77 |
| 1299.00 | 8.00 | 1.00 | 8.00 | 0.01 | 8.98 | 0.01 | 0.13 | 783.75 |
| 1300.00 | 8.00 | 1.00 | 8.00 | 0.01 | 8.57 | 0.01 | 0.13 | 783.71 |
| 1310.00 | 7.00 | 10.00 | 7.50 | 0.10 | 7.75 | 0.11 | 0.12 | 783.65 |
| 1320.00 | 6.00 | 10.00 | 6.50 | 0.09 | 6.73 | 0.09 | 0.12 | 783.56 |
| 1330.00 | 6.00 | 10.00 | 6.00 | 0.08 | 6.12 | 0.08 | 0.12 | 783.51 |
| 1340.00 | 6.00 | 10.00 | 6.00 | 0.08 | 6.12 | 0.08 | 0.12 | 783.51 |
| 1350.00 | 5.00 | 10.00 | 5.50 | 0.08 | 5.51 | 0.08 | 0.12 | 783.46 |
| 1360.00 | 4.00 | 10.00 | 4.50 | 0.06 | 4.69 | 0.06 | 0.12 | 783.39 |
| 1370.00 | 4.00 | 10.00 | 4.00 | 0.06 | 4.28 | 0.06 | 0.11 | 783.36 |
| 1380.00 | 3.00 | 10.00 | 3.50 | 0.05 | 3.67 | 0.05 | 0.11 | 783.31 |
| 1390.00 | 3.00 | 10.00 | 3.00 | 0.04 | 3.06 | 0.04 | 0.11 | 783.26 |
| 1400.00 | 3.00 | 10.00 | 3.00 | 0.04 | 3.06 | 0.04 | 0.11 | 783.26 |
| 1420.00 | 3.00 | 20.00 | 3.00 | 0.08 | 3.06 | 0.08 | 0.11 | 783.26 |
| 1440.00 | 2.00 | 20.00 | 2.50 | 0.07 | 2.45 | 0.07 | 0.11 | 783.20 |
| 1460.00 | 2.00 | 20.00 | 2.00 | 0.06 | 2.04 | 0.06 | 0.11 | 783.17 |
| 1500.00 | 2.00 | 40.00 | 2.00 | 0.11 | 2.04 | 0.11 | 0.10 | 783.17 |

TRIBUTARY TO SOUTH BRANCH ARROYO CONEJO

50-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/TRIB. TO SOUTH BRANCH-DEV. WITH RET. BASIN - G50 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | L50 | 0.00 |
| 861411 | 2D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | L50 | 0.00 |
| 861411 | 3D | 36. | 106. | 36. | 106. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 13 | L50 | 0.05 |
| 861411 | 4D | 53. | 174. | 89. | 280. | 4 | 500. | 0.01400 | 4.75 | 0.00 | 0. | 10 | 11 | L50 | 0.15 |
| 861411 | 5E | 29. | 107. | 29. | 107. | 4 | 1150. | 0.05650 | 2.75 | 0.00 | 0. | 10 | 9 | L50 | 0.02 |
| 861411 | 6D | 13. | 45. | 102. | 323. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 10 | L50 | 0.05 |

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* CONFLUENCE Q'S *

* 861411 7D TD 1155 QD 323. QDE 428. QE 105. 861411 7E TE 1156 QE 106. QED 429. QD 323. *

* 861411 7DE TDE 1156 QDE 429. QD 323. QE 106. *

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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 7DE | 29. | 106. | 131. | 429. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | L50 | 0.00 |
| 861411 | 8D | 0. | 0. | 131. | 429. | 4 | 2750. | 0.00982 | 6.00 | 0.00 | 0. | 10 | 99 | L50 | 0.00 |
| 861411 | 9D | 56. | 141. | 187. | 535. | 4 | 800. | 0.03370 | 5.25 | 0.00 | 0. | 20 | 15 | L50 | 0.05 |
| 861411 | 10D | 74. | 278. | 261. | 698. | 4 | 550. | 0.04540 | 5.50 | 0.00 | 0. | 20 | 8 | L50 | 0.05 |
| 861411 | 11D | 32. | 92. | 293. | 781. | 4 | 100. | 0.03880 | 5.75 | 0.00 | 0. | 20 | 12 | L50 | 0.04 |
| 861411 | 12D | 20. | 65. | 313. | 839. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | L50 | 0.03 |
| 861411 | 13E | 60. | 175. | 60. | 175. | 4 | 850. | 0.02590 | 3.75 | 0.00 | 0. | 20 | 12 | L50 | 0.12 |

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* CONFLUENCE Q'S *

* 861411 14D TD 1158 QD 839. QDE 1010. QE 170. 861411 14E TE 1156 QE 174. QED 978. QD 804. *

* 861411 14DE TDE 1158 QDE 1010. QD 839. QE 170. *

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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 14DE | 60. | 174. | 373. | 1010. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L50 | 0.00 |
| 861411 | 15D | 0. | 0. | 373. | 1010. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | L50 | 0.00 |
| 861411 | 16D | 373. | 354. | 373. | 354. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | L50 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY

INFLOW TO BASIN
HYDROGRAPH AT 861411 15D STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 2. | 200 | 3. | 300 | 4. | 400 | 6. |
| 500 | 8. | 600 | 18. | 700 | 46. | 800 | 80. | 900 | 107. |
| 1000 | 139. | 1050 | 169. | 1100 | 200. | 1110 | 204. | 1120 | 223. |
| 1130 | 255. | 1131 | 259. | 1132 | 265. | 1133 | 270. | 1134 | 275. |
| 1135 | 280. | 1136 | 287. | 1137 | 295. | 1138 | 304. | 1139 | 313. |
| 1140 | 321. | 1141 | 330. | 1142 | 340. | 1143 | 352. | 1144 | 362. |
| 1145 | 372. | 1146 | 384. | 1147 | 397. | 1148 | 414. | 1149 | 443. |
| 1150 | 488. | 1151 | 567. | 1152 | 707. | 1153 | 835. | 1154 | 907. |
| 1155 | 949. | 1156 | 978. | 1157 | 1000. | 1158 | 1010. | 1159 | 998. |
| 1160 | 949. | 1161 | 884. | 1162 | 834. | 1163 | 787. | 1164 | 724. |
| 1165 | 656. | 1166 | 589. | 1167 | 520. | 1168 | 452. | 1169 | 392. |
| 1170 | 349. | 1171 | 315. | 1172 | 288. | 1173 | 268. | 1174 | 252. |
| 1175 | 239. | 1176 | 229. | 1177 | 220. | 1178 | 213. | 1179 | 206. |
| 1180 | 201. | 1181 | 197. | 1182 | 192. | 1183 | 189. | 1184 | 185. |
| 1185 | 182. | 1186 | 180. | 1187 | 178. | 1188 | 176. | 1189 | 175. |
| 1190 | 173. | 1191 | 172. | 1192 | 170. | 1193 | 168. | 1194 | 166. |
| 1195 | 163. | 1196 | 161. | 1197 | 159. | 1198 | 157. | 1199 | 155. |
| 1200 | 153. | 1201 | 151. | 1202 | 150. | 1203 | 148. | 1204 | 147. |
| 1205 | 145. | 1206 | 144. | 1207 | 143. | 1208 | 143. | 1209 | 142. |
| 1210 | 142. | 1211 | 141. | 1212 | 139. | 1213 | 137. | 1214 | 135. |
| 1215 | 132. | 1216 | 130. | 1217 | 128. | 1218 | 125. | 1219 | 123. |
| 1220 | 121. | 1221 | 119. | 1222 | 117. | 1223 | 115. | 1224 | 114. |
| 1225 | 112. | 1226 | 111. | 1227 | 110. | 1228 | 109. | 1229 | 108. |
| 1230 | 107. | 1231 | 107. | 1232 | 106. | 1233 | 104. | 1234 | 103. |
| 1235 | 102. | 1236 | 101. | 1237 | 99. | 1238 | 98. | 1239 | 97. |
| 1240 | 96. | 1241 | 95. | 1242 | 94. | 1243 | 93. | 1244 | 92. |
| 1245 | 91. | 1246 | 91. | 1247 | 90. | 1248 | 89. | 1249 | 89. |
| 1250 | 89. | 1251 | 88. | 1252 | 88. | 1253 | 88. | 1254 | 88. |
| 1255 | 88. | 1256 | 88. | 1257 | 88. | 1258 | 88. | 1259 | 88. |
| 1260 | 88. | 1261 | 87. | 1262 | 85. | 1263 | 83. | 1264 | 80. |
| 1265 | 78. | 1266 | 75. | 1267 | 73. | 1268 | 70. | 1269 | 67. |
| 1270 | 65. | 1271 | 63. | 1272 | 61. | 1273 | 59. | 1274 | 57. |
| 1275 | 55. | 1276 | 54. | 1277 | 52. | 1278 | 51. | 1279 | 50. |
| 1280 | 49. | 1281 | 48. | 1282 | 48. | 1283 | 47. | 1284 | 47. |
| 1285 | 47. | 1286 | 46. | 1287 | 46. | 1288 | 46. | 1289 | 46. |
| 1290 | 46. | 1291 | 46. | 1292 | 46. | 1293 | 46. | 1294 | 46. |
| 1295 | 46. | 1296 | 46. | 1297 | 46. | 1298 | 46. | 1299 | 46. |
| 1300 | 46. | 1310 | 31. | 1320 | 21. | 1330 | 17. | 1340 | 14. |
| 1350 | 12. | 1360 | 9. | 1370 | 6. | 1380 | 5. | 1390 | 5. |
| 1400 | 5. | 1420 | 3. | 1440 | 3. | 1460 | 2. | 1500 | 2. |

MODIFIED RATIONAL METHOD HYDROLOGY

OUTFLOW FROM BASIN

HYDROGRAPH AT 861411 160 STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 0. | 200 | 2. | 300 | 3. | 400 | 5. |
| 500 | 7. | 600 | 13. | 700 | 30. | 800 | 60. | 900 | 87. |
| 1000 | 116. | 1050 | 141. | 1100 | 167. | 1110 | 175. | 1120 | 183. |
| 1130 | 195. | 1131 | 197. | 1132 | 198. | 1133 | 200. | 1134 | 201. |
| 1135 | 203. | 1136 | 204. | 1137 | 205. | 1138 | 208. | 1139 | 210. |
| 1140 | 211. | 1141 | 213. | 1142 | 216. | 1143 | 218. | 1144 | 220. |
| 1145 | 223. | 1146 | 226. | 1147 | 229. | 1148 | 232. | 1149 | 235. |
| 1150 | 239. | 1151 | 244. | 1152 | 250. | 1153 | 259. | 1154 | 268. |
| 1155 | 279. | 1156 | 288. | 1157 | 297. | 1158 | 306. | 1159 | 314. |
| 1160 | 321. | 1161 | 328. | 1162 | 333. | 1163 | 338. | 1164 | 342. |
| 1165 | 345. | 1166 | 349. | 1167 | 351. | 1168 | 353. | 1169 | 354. |
| 1170 | 354. | 1171 | 354. | 1172 | 353. | 1173 | 352. | 1174 | 351. |
| 1175 | 349. | 1176 | 348. | 1177 | 347. | 1178 | 345. | 1179 | 344. |
| 1180 | 342. | 1181 | 341. | 1182 | 340. | 1183 | 338. | 1184 | 337. |
| 1185 | 335. | 1186 | 333. | 1187 | 332. | 1188 | 330. | 1189 | 329. |
| 1190 | 327. | 1191 | 326. | 1192 | 324. | 1193 | 322. | 1194 | 321. |
| 1195 | 319. | 1196 | 317. | 1197 | 316. | 1198 | 314. | 1199 | 312. |
| 1200 | 310. | 1201 | 308. | 1202 | 306. | 1203 | 304. | 1204 | 302. |
| 1205 | 300. | 1206 | 298. | 1207 | 296. | 1208 | 295. | 1209 | 292. |
| 1210 | 290. | 1211 | 289. | 1212 | 287. | 1213 | 285. | 1214 | 283. |
| 1215 | 281. | 1216 | 279. | 1217 | 277. | 1218 | 274. | 1219 | 272. |
| 1220 | 269. | 1221 | 267. | 1222 | 265. | 1223 | 263. | 1224 | 260. |
| 1225 | 258. | 1226 | 255. | 1227 | 253. | 1228 | 250. | 1229 | 248. |
| 1230 | 246. | 1231 | 244. | 1232 | 242. | 1233 | 239. | 1234 | 237. |
| 1235 | 235. | 1236 | 232. | 1237 | 230. | 1238 | 227. | 1239 | 225. |
| 1240 | 223. | 1241 | 220. | 1242 | 218. | 1243 | 216. | 1244 | 214. |
| 1245 | 212. | 1246 | 210. | 1247 | 208. | 1248 | 205. | 1249 | 203. |
| 1250 | 201. | 1251 | 198. | 1252 | 196. | 1253 | 193. | 1254 | 190. |
| 1255 | 188. | 1256 | 185. | 1257 | 182. | 1258 | 180. | 1259 | 177. |
| 1260 | 175. | 1261 | 173. | 1262 | 171. | 1263 | 168. | 1264 | 166. |
| 1265 | 163. | 1266 | 162. | 1267 | 159. | 1268 | 157. | 1269 | 154. |
| 1270 | 152. | 1271 | 149. | 1272 | 145. | 1273 | 143. | 1274 | 139. |
| 1275 | 136. | 1276 | 134. | 1277 | 130. | 1278 | 128. | 1279 | 124. |
| 1280 | 122. | 1281 | 119. | 1282 | 117. | 1283 | 114. | 1284 | 112. |
| 1285 | 109. | 1286 | 107. | 1287 | 104. | 1288 | 102. | 1289 | 100. |
| 1290 | 98. | 1291 | 95. | 1292 | 93. | 1293 | 91. | 1294 | 89. |
| 1295 | 87. | 1296 | 85. | 1297 | 83. | 1298 | 82. | 1299 | 80. |
| 1300 | 79. | 1310 | 66. | 1320 | 50. | 1330 | 37. | 1340 | 27. |
| 1350 | 20. | 1360 | 15. | 1370 | 11. | 1380 | 7. | 1390 | 5. |
| 1400 | 5. | 1420 | 4. | 1440 | 3. | 1460 | 2. | 1500 | 2. |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

# BASIN#1
## 50-YEAR STORM
## TRIB. TO SOUTH BRANCH

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 2.00 | 100.00 | 1.00 | 0.14 | 0.41 | 0.06 | 0.08 | 783.03 |
| 200.00 | 3.00 | 100.00 | 2.50 | 0.34 | 2.45 | 0.34 | 0.09 | 783.20 |
| 300.00 | 4.00 | 100.00 | 3.50 | 0.48 | 3.47 | 0.48 | 0.09 | 783.29 |
| 400.00 | 6.00 | 100.00 | 5.00 | 0.69 | 4.90 | 0.67 | 0.11 | 783.41 |
| 500.00 | 8.00 | 100.00 | 7.00 | 0.96 | 6.94 | 0.96 | 0.12 | 783.58 |
| 600.00 | 18.00 | 100.00 | 13.00 | 1.79 | 13.03 | 1.79 | 0.11 | 784.05 |
| 700.00 | 46.00 | 100.00 | 32.00 | 4.41 | 30.15 | 4.15 | 0.37 | 784.96 |
| 800.00 | 80.00 | 100.00 | 63.00 | 8.68 | 59.53 | 8.20 | 0.85 | 785.84 |
| 900.00 | 107.00 | 100.00 | 93.50 | 12.88 | 87.31 | 12.03 | 1.70 | 786.59 |
| 1000.00 | 139.00 | 100.00 | 123.00 | 16.94 | 116.08 | 15.99 | 2.65 | 787.27 |
| 1050.00 | 169.00 | 50.00 | 154.00 | 10.61 | 141.07 | 9.72 | 3.54 | 787.78 |
| 1100.00 | 200.00 | 50.00 | 184.50 | 12.71 | 167.41 | 11.53 | 4.72 | 788.32 |
| 1110.00 | 204.00 | 10.00 | 202.00 | 2.78 | 174.75 | 2.41 | 5.10 | 788.47 |
| 1120.00 | 223.00 | 10.00 | 213.50 | 2.94 | 182.91 | 2.52 | 5.52 | 788.64 |
| 1130.00 | 255.00 | 10.00 | 239.00 | 3.29 | 195.15 | 2.69 | 6.12 | 788.90 |
| 1131.00 | 259.00 | 1.00 | 257.00 | 0.35 | 196.78 | 0.27 | 6.20 | 788.93 |
| 1132.00 | 265.00 | 1.00 | 262.00 | 0.36 | 198.42 | 0.27 | 6.29 | 788.97 |
| 1133.00 | 270.00 | 1.00 | 267.50 | 0.37 | 200.04 | 0.28 | 6.38 | 789.00 |
| 1134.00 | 275.00 | 1.00 | 272.50 | 0.38 | 201.40 | 0.28 | 6.48 | 789.03 |
| 1135.00 | 280.00 | 1.00 | 277.50 | 0.38 | 202.76 | 0.28 | 6.59 | 789.07 |
| 1136.00 | 287.00 | 1.00 | 283.50 | 0.39 | 204.12 | 0.28 | 6.69 | 789.10 |
| 1137.00 | 295.00 | 1.00 | 291.00 | 0.40 | 205.48 | 0.28 | 6.81 | 789.14 |
| 1138.00 | 304.00 | 1.00 | 299.50 | 0.41 | 207.52 | 0.29 | 6.94 | 789.19 |
| 1139.00 | 313.00 | 1.00 | 308.50 | 0.42 | 209.56 | 0.29 | 7.08 | 789.24 |
| 1140.00 | 321.00 | 1.00 | 317.00 | 0.44 | 210.92 | 0.29 | 7.22 | 789.27 |
| 1141.00 | 330.00 | 1.00 | 325.50 | 0.45 | 212.96 | 0.29 | 7.38 | 789.32 |
| 1142.00 | 340.00 | 1.00 | 335.00 | 0.46 | 215.68 | 0.30 | 7.54 | 789.39 |
| 1143.00 | 352.00 | 1.00 | 346.00 | 0.48 | 217.72 | 0.30 | 7.72 | 789.44 |
| 1144.00 | 362.00 | 1.00 | 357.00 | 0.49 | 220.44 | 0.30 | 7.91 | 789.51 |
| 1145.00 | 372.00 | 1.00 | 367.00 | 0.51 | 223.16 | 0.31 | 8.10 | 789.58 |
| 1146.00 | 384.00 | 1.00 | 378.00 | 0.52 | 225.88 | 0.31 | 8.31 | 789.65 |
| 1147.00 | 397.00 | 1.00 | 390.50 | 0.54 | 228.60 | 0.31 | 8.54 | 789.72 |
| 1148.00 | 414.00 | 1.00 | 405.50 | 0.56 | 232.00 | 0.32 | 8.78 | 789.80 |
| 1149.00 | 443.00 | 1.00 | 428.50 | 0.59 | 235.40 | 0.32 | 9.04 | 789.89 |
| 1150.00 | 488.00 | 1.00 | 465.50 | 0.64 | 239.48 | 0.33 | 9.35 | 789.99 |
| 1151.00 | 567.00 | 1.00 | 527.50 | 0.73 | 244.24 | 0.34 | 9.74 | 790.11 |
| 1152.00 | 707.00 | 1.00 | 637.00 | 0.88 | 250.36 | 0.34 | 10.28 | 790.26 |
| 1153.00 | 835.00 | 1.00 | 771.00 | 1.06 | 258.52 | 0.36 | 10.98 | 790.46 |
| 1154.00 | 907.00 | 1.00 | 871.00 | 1.20 | 268.04 | 0.37 | 11.81 | 790.70 |
| 1155.00 | 949.00 | 1.00 | 928.00 | 1.28 | 278.92 | 0.38 | 12.71 | 790.97 |
| 1156.00 | 978.00 | 1.00 | 963.50 | 1.33 | 287.98 | 0.40 | 13.64 | 791.23 |
| 1157.00 | 1000.00 | 1.00 | 989.00 | 1.36 | 296.90 | 0.41 | 14.59 | 791.48 |
| 1158.00 | 1010.00 | 1.00 | 1005.00 | 1.38 | 305.83 | 0.42 | 15.55 | 791.74 |
| 1159.00 | 998.00 | 1.00 | 1004.00 | 1.38 | 314.16 | 0.43 | 16.50 | 791.98 |
| 1160.00 | 949.00 | 1.00 | 973.50 | 1.34 | 321.42 | 0.44 | 17.40 | 792.21 |
| 1161.00 | 884.00 | 1.00 | 916.50 | 1.26 | 327.54 | 0.45 | 18.21 | 792.42 |
| 1162.00 | 834.00 | 1.00 | 859.00 | 1.18 | 332.64 | 0.46 | 18.94 | 792.59 |
| 1163.00 | 787.00 | 1.00 | 810.50 | 1.12 | 337.74 | 0.47 | 19.59 | 792.76 |
| 1164.00 | 724.00 | 1.00 | 755.50 | 1.04 | 341.82 | 0.47 | 20.16 | 792.89 |
| 1165.00 | 656.00 | 1.00 | 690.00 | 0.95 | 345.39 | 0.48 | 20.63 | 793.01 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1166.00 | 589.00 | 1.00 | 622.50 | 0.86 | 348.96 | 0.48 | 21.01 | 793.13 |
| 1167.00 | 520.00 | 1.00 | 554.50 | 0.76 | 351.00 | 0.48 | 21.29 | 793.20 |
| 1168.00 | 452.00 | 1.00 | 486.00 | 0.67 | 352.53 | 0.49 | 21.47 | 793.25 |
| 1169.00 | 392.00 | 1.00 | 422.00 | 0.58 | 353.55 | 0.49 | 21.57 | 793.28 |
| 1170.00 | 349.00 | 1.00 | 370.50 | 0.51 | 353.55 | 0.49 | 21.59 | 793.28 |
| 1171.00 | 315.00 | 1.00 | 332.00 | 0.46 | 353.55 | 0.49 | 21.56 | 793.28 |
| 1172.00 | 288.00 | 1.00 | 301.50 | 0.42 | 353.04 | 0.49 | 21.49 | 793.27 |
| 1173.00 | 268.00 | 1.00 | 278.00 | 0.38 | 352.02 | 0.48 | 21.39 | 793.23 |
| 1174.00 | 252.00 | 1.00 | 260.00 | 0.36 | 351.00 | 0.48 | 21.26 | 793.20 |
| 1175.00 | 239.00 | 1.00 | 245.50 | 0.34 | 349.47 | 0.48 | 21.12 | 793.15 |
| 1176.00 | 229.00 | 1.00 | 234.00 | 0.32 | 348.45 | 0.48 | 20.96 | 793.11 |
| 1177.00 | 220.00 | 1.00 | 224.50 | 0.31 | 346.92 | 0.48 | 20.79 | 793.06 |
| 1178.00 | 213.00 | 1.00 | 216.50 | 0.30 | 345.39 | 0.48 | 20.62 | 793.01 |
| 1179.00 | 206.00 | 1.00 | 209.50 | 0.29 | 343.86 | 0.47 | 20.43 | 792.96 |
| 1180.00 | 201.00 | 1.00 | 203.50 | 0.28 | 342.33 | 0.47 | 20.24 | 792.91 |
| 1181.00 | 197.00 | 1.00 | 199.00 | 0.27 | 341.31 | 0.47 | 20.04 | 792.88 |
| 1182.00 | 192.00 | 1.00 | 194.50 | 0.27 | 339.78 | 0.47 | 19.84 | 792.83 |
| 1183.00 | 189.00 | 1.00 | 190.50 | 0.26 | 338.25 | 0.47 | 19.64 | 792.78 |
| 1184.00 | 185.00 | 1.00 | 187.00 | 0.26 | 336.72 | 0.46 | 19.43 | 792.72 |
| 1185.00 | 182.00 | 1.00 | 183.50 | 0.25 | 335.19 | 0.46 | 19.23 | 792.67 |
| 1186.00 | 180.00 | 1.00 | 181.00 | 0.25 | 333.15 | 0.46 | 19.02 | 792.60 |
| 1187.00 | 178.00 | 1.00 | 179.00 | 0.25 | 331.62 | 0.46 | 18.81 | 792.55 |
| 1188.00 | 176.00 | 1.00 | 177.00 | 0.24 | 330.09 | 0.45 | 18.59 | 792.50 |
| 1189.00 | 175.00 | 1.00 | 175.50 | 0.24 | 328.56 | 0.45 | 18.38 | 792.45 |
| 1190.00 | 173.00 | 1.00 | 174.00 | 0.24 | 327.03 | 0.45 | 18.17 | 792.40 |
| 1191.00 | 172.00 | 1.00 | 172.50 | 0.24 | 325.50 | 0.45 | 17.96 | 792.35 |
| 1192.00 | 170.00 | 1.00 | 171.00 | 0.24 | 323.97 | 0.45 | 17.75 | 792.30 |
| 1193.00 | 168.00 | 1.00 | 169.00 | 0.23 | 322.44 | 0.44 | 17.54 | 792.25 |
| 1194.00 | 166.00 | 1.00 | 167.00 | 0.23 | 320.91 | 0.44 | 17.33 | 792.20 |
| 1195.00 | 163.00 | 1.00 | 164.50 | 0.23 | 318.87 | 0.44 | 17.12 | 792.13 |
| 1196.00 | 161.00 | 1.00 | 162.00 | 0.22 | 317.34 | 0.44 | 16.90 | 792.08 |
| 1197.00 | 159.00 | 1.00 | 160.00 | 0.22 | 315.81 | 0.43 | 16.69 | 792.03 |
| 1198.00 | 157.00 | 1.00 | 158.00 | 0.22 | 314.16 | 0.43 | 16.47 | 791.98 |
| 1199.00 | 155.00 | 1.00 | 156.00 | 0.21 | 312.37 | 0.43 | 16.26 | 791.92 |
| 1200.00 | 153.00 | 1.00 | 154.00 | 0.21 | 309.99 | 0.43 | 16.04 | 791.86 |
| 1201.00 | 151.00 | 1.00 | 152.00 | 0.21 | 308.21 | 0.42 | 15.83 | 791.81 |
| 1202.00 | 150.00 | 1.00 | 150.50 | 0.21 | 306.43 | 0.42 | 15.61 | 791.76 |
| 1203.00 | 148.00 | 1.00 | 149.00 | 0.21 | 304.05 | 0.42 | 15.40 | 791.69 |
| 1204.00 | 147.00 | 1.00 | 147.50 | 0.20 | 302.26 | 0.42 | 15.18 | 791.64 |
| 1205.00 | 145.00 | 1.00 | 146.00 | 0.20 | 300.48 | 0.41 | 14.97 | 791.59 |
| 1206.00 | 144.00 | 1.00 | 144.50 | 0.20 | 298.10 | 0.41 | 14.76 | 791.52 |
| 1207.00 | 143.00 | 1.00 | 143.50 | 0.20 | 296.31 | 0.41 | 14.55 | 791.47 |
| 1208.00 | 143.00 | 1.00 | 143.00 | 0.20 | 294.52 | 0.41 | 14.34 | 791.41 |
| 1209.00 | 142.00 | 1.00 | 142.50 | 0.20 | 292.14 | 0.40 | 14.14 | 791.35 |
| 1210.00 | 142.00 | 1.00 | 142.00 | 0.20 | 290.36 | 0.40 | 13.93 | 791.30 |
| 1211.00 | 141.00 | 1.00 | 141.50 | 0.19 | 288.57 | 0.40 | 13.73 | 791.24 |
| 1212.00 | 139.00 | 1.00 | 140.00 | 0.19 | 286.79 | 0.40 | 13.53 | 791.19 |
| 1213.00 | 137.00 | 1.00 | 138.00 | 0.19 | 285.01 | 0.39 | 13.32 | 791.14 |
| 1214.00 | 135.00 | 1.00 | 136.00 | 0.19 | 283.22 | 0.39 | 13.12 | 791.09 |
| 1215.00 | 132.00 | 1.00 | 133.50 | 0.18 | 280.84 | 0.39 | 12.92 | 791.02 |
| 1216.00 | 130.00 | 1.00 | 131.00 | 0.18 | 278.92 | 0.38 | 12.71 | 790.97 |
| 1217.00 | 128.00 | 1.00 | 129.00 | 0.18 | 276.88 | 0.38 | 12.51 | 790.92 |
| 1218.00 | 125.00 | 1.00 | 126.50 | 0.17 | 274.16 | 0.38 | 12.31 | 790.85 |
| 1219.00 | 123.00 | 1.00 | 124.00 | 0.17 | 272.12 | 0.37 | 12.10 | 790.80 |
| 1220.00 | 121.00 | 1.00 | 122.00 | 0.17 | 269.40 | 0.37 | 11.90 | 790.73 |
| 1221.00 | 119.00 | 1.00 | 120.00 | 0.17 | 267.36 | 0.37 | 11.70 | 790.68 |
| 1222.00 | 117.00 | 1.00 | 118.00 | 0.16 | 264.64 | 0.36 | 11.49 | 790.62 |
| 1223.00 | 115.00 | 1.00 | 116.00 | 0.16 | 262.60 | 0.36 | 11.29 | 790.57 |
| 1224.00 | 114.00 | 1.00 | 114.50 | 0.16 | 259.88 | 0.36 | 11.09 | 790.50 |
| 1225.00 | 112.00 | 1.00 | 113.00 | 0.16 | 257.84 | 0.36 | 10.89 | 790.45 |
| 1226.00 | 111.00 | 1.00 | 111.50 | 0.15 | 255.12 | 0.35 | 10.70 | 790.38 |
| 1227.00 | 110.00 | 1.00 | 110.50 | 0.15 | 253.08 | 0.35 | 10.50 | 790.33 |
| 1228.00 | 109.00 | 1.00 | 109.50 | 0.15 | 250.36 | 0.34 | 10.31 | 790.26 |
| 1229.00 | 108.00 | 1.00 | 108.50 | 0.15 | 248.32 | 0.34 | 10.11 | 790.21 |
| 1230.00 | 107.00 | 1.00 | 107.50 | 0.15 | 246.28 | 0.34 | 9.92 | 790.16 |
| 1231.00 | 107.00 | 1.00 | 107.00 | 0.15 | 244.24 | 0.34 | 9.73 | 790.11 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 106.00 | 1.00 | 106.50 | 0.15 | 241.52 | 0.33 | 9.55 | 790.04 |
| 1233.00 | 104.00 | 1.00 | 105.00 | 0.14 | 239.48 | 0.33 | 9.36 | 789.99 |
| 1234.00 | 103.00 | 1.00 | 103.50 | 0.14 | 236.76 | 0.33 | 9.18 | 789.92 |
| 1235.00 | 102.00 | 1.00 | 102.50 | 0.14 | 234.72 | 0.32 | 9.00 | 789.87 |
| 1236.00 | 101.00 | 1.00 | 101.50 | 0.14 | 232.00 | 0.32 | 8.82 | 789.80 |
| 1237.00 | 99.00 | 1.00 | 100.00 | 0.14 | 229.96 | 0.32 | 8.64 | 789.75 |
| 1238.00 | 98.00 | 1.00 | 98.50 | 0.14 | 227.24 | 0.31 | 8.46 | 789.68 |
| 1239.00 | 97.00 | 1.00 | 97.50 | 0.13 | 225.20 | 0.31 | 8.28 | 789.63 |
| 1240.00 | 96.00 | 1.00 | 96.50 | 0.13 | 223.16 | 0.31 | 8.11 | 789.58 |
| 1241.00 | 95.00 | 1.00 | 95.50 | 0.13 | 220.44 | 0.30 | 7.94 | 789.51 |
| 1242.00 | 94.00 | 1.00 | 94.50 | 0.13 | 218.40 | 0.30 | 7.77 | 789.46 |
| 1243.00 | 93.00 | 1.00 | 93.50 | 0.13 | 216.36 | 0.30 | 7.60 | 789.41 |
| 1244.00 | 92.00 | 1.00 | 92.50 | 0.13 | 213.64 | 0.29 | 7.43 | 789.34 |
| 1245.00 | 91.00 | 1.00 | 91.50 | 0.13 | 211.60 | 0.29 | 7.26 | 789.29 |
| 1246.00 | 91.00 | 1.00 | 91.00 | 0.13 | 209.56 | 0.29 | 7.10 | 789.24 |
| 1247.00 | 90.00 | 1.00 | 90.50 | 0.12 | 207.52 | 0.29 | 6.94 | 789.19 |
| 1248.00 | 89.00 | 1.00 | 89.50 | 0.12 | 205.48 | 0.28 | 6.78 | 789.14 |
| 1249.00 | 89.00 | 1.00 | 89.00 | 0.12 | 203.44 | 0.28 | 6.62 | 789.09 |
| 1250.00 | 89.00 | 1.00 | 89.00 | 0.12 | 201.40 | 0.28 | 6.47 | 789.03 |
| 1251.00 | 88.00 | 1.00 | 88.50 | 0.12 | 198.42 | 0.27 | 6.32 | 788.97 |
| 1252.00 | 88.00 | 1.00 | 88.00 | 0.12 | 195.97 | 0.27 | 6.17 | 788.92 |
| 1253.00 | 88.00 | 1.00 | 88.00 | 0.12 | 192.71 | 0.27 | 6.02 | 788.85 |
| 1254.00 | 88.00 | 1.00 | 88.00 | 0.12 | 190.26 | 0.26 | 5.88 | 788.80 |
| 1255.00 | 88.00 | 1.00 | 88.00 | 0.12 | 187.81 | 0.26 | 5.75 | 788.75 |
| 1256.00 | 88.00 | 1.00 | 88.00 | 0.12 | 184.54 | 0.25 | 5.61 | 788.68 |
| 1257.00 | 88.00 | 1.00 | 88.00 | 0.12 | 182.10 | 0.25 | 5.48 | 788.63 |
| 1258.00 | 88.00 | 1.00 | 88.00 | 0.12 | 179.65 | 0.25 | 5.36 | 788.58 |
| 1259.00 | 88.00 | 1.00 | 88.00 | 0.12 | 177.20 | 0.24 | 5.23 | 788.53 |
| 1260.00 | 88.00 | 1.00 | 88.00 | 0.12 | 174.75 | 0.24 | 5.11 | 788.47 |
| 1261.00 | 87.00 | 1.00 | 87.50 | 0.12 | 173.12 | 0.24 | 5.00 | 788.44 |
| 1262.00 | 85.00 | 1.00 | 86.00 | 0.12 | 170.67 | 0.24 | 4.88 | 788.39 |
| 1263.00 | 83.00 | 1.00 | 84.00 | 0.12 | 168.22 | 0.23 | 4.76 | 788.34 |
| 1264.00 | 80.00 | 1.00 | 81.50 | 0.11 | 165.78 | 0.23 | 4.65 | 788.29 |
| 1265.00 | 78.00 | 1.00 | 79.00 | 0.11 | 163.33 | 0.22 | 4.53 | 788.24 |
| 1266.00 | 75.00 | 1.00 | 76.50 | 0.11 | 161.70 | 0.22 | 4.41 | 788.20 |
| 1267.00 | 73.00 | 1.00 | 74.00 | 0.10 | 159.25 | 0.22 | 4.30 | 788.15 |
| 1268.00 | 70.00 | 1.00 | 71.50 | 0.10 | 156.80 | 0.22 | 4.18 | 788.10 |
| 1269.00 | 67.00 | 1.00 | 68.50 | 0.09 | 154.35 | 0.21 | 4.06 | 788.05 |
| 1270.00 | 65.00 | 1.00 | 66.00 | 0.09 | 151.90 | 0.21 | 3.94 | 788.00 |
| 1271.00 | 63.00 | 1.00 | 64.00 | 0.09 | 148.57 | 0.20 | 3.83 | 787.93 |
| 1272.00 | 61.00 | 1.00 | 62.00 | 0.09 | 145.24 | 0.20 | 3.71 | 787.86 |
| 1273.00 | 59.00 | 1.00 | 60.00 | 0.08 | 142.74 | 0.20 | 3.60 | 787.81 |
| 1274.00 | 57.00 | 1.00 | 58.00 | 0.08 | 139.41 | 0.19 | 3.49 | 787.74 |
| 1275.00 | 55.00 | 1.00 | 56.00 | 0.08 | 136.07 | 0.19 | 3.37 | 787.67 |
| 1276.00 | 54.00 | 1.00 | 54.50 | 0.08 | 133.58 | 0.18 | 3.27 | 787.62 |
| 1277.00 | 52.00 | 1.00 | 53.00 | 0.07 | 130.25 | 0.18 | 3.16 | 787.56 |
| 1278.00 | 51.00 | 1.00 | 51.50 | 0.07 | 127.75 | 0.18 | 3.05 | 787.51 |
| 1279.00 | 50.00 | 1.00 | 50.50 | 0.07 | 124.41 | 0.17 | 2.95 | 787.44 |
| 1280.00 | 49.00 | 1.00 | 49.50 | 0.07 | 121.91 | 0.17 | 2.85 | 787.39 |
| 1281.00 | 48.00 | 1.00 | 48.50 | 0.07 | 119.42 | 0.16 | 2.76 | 787.34 |
| 1282.00 | 48.00 | 1.00 | 48.00 | 0.07 | 116.92 | 0.16 | 2.66 | 787.28 |
| 1283.00 | 47.00 | 1.00 | 47.50 | 0.07 | 114.42 | 0.16 | 2.57 | 787.23 |
| 1284.00 | 47.00 | 1.00 | 47.00 | 0.06 | 111.92 | 0.15 | 2.48 | 787.18 |
| 1285.00 | 47.00 | 1.00 | 47.00 | 0.06 | 109.42 | 0.15 | 2.39 | 787.13 |
| 1286.00 | 46.00 | 1.00 | 46.50 | 0.06 | 106.92 | 0.15 | 2.31 | 787.08 |
| 1287.00 | 46.00 | 1.00 | 46.00 | 0.06 | 104.42 | 0.14 | 2.23 | 787.03 |
| 1288.00 | 46.00 | 1.00 | 46.00 | 0.06 | 102.17 | 0.14 | 2.15 | 786.98 |
| 1289.00 | 46.00 | 1.00 | 46.00 | 0.06 | 100.23 | 0.14 | 2.08 | 786.93 |
| 1290.00 | 46.00 | 1.00 | 46.00 | 0.06 | 97.64 | 0.13 | 2.01 | 786.86 |
| 1291.00 | 46.00 | 1.00 | 46.00 | 0.06 | 95.06 | 0.13 | 1.94 | 786.79 |
| 1292.00 | 46.00 | 1.00 | 46.00 | 0.06 | 93.12 | 0.13 | 1.87 | 786.74 |
| 1293.00 | 46.00 | 1.00 | 46.00 | 0.06 | 91.18 | 0.13 | 1.81 | 786.69 |
| 1294.00 | 46.00 | 1.00 | 46.00 | 0.06 | 89.24 | 0.12 | 1.75 | 786.64 |
| 1295.00 | 46.00 | 1.00 | 46.00 | 0.06 | 87.31 | 0.12 | 1.69 | 786.59 |
| 1296.00 | 46.00 | 1.00 | 46.00 | 0.06 | 85.37 | 0.12 | 1.64 | 786.54 |
| 1297.00 | 46.00 | 1.00 | 46.00 | 0.06 | 83.43 | 0.11 | 1.59 | 786.48 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1298.00 | 46.00 | 1.00 | 46.00 | 0.06 | 82.14 | 0.11 | 1.54 | 786.45 |
| 1299.00 | 46.00 | 1.00 | 46.00 | 0.06 | 80.20 | 0.11 | 1.49 | 786.40 |
| 1300.00 | 46.00 | 1.00 | 46.00 | 0.06 | 78.91 | 0.11 | 1.45 | 786.37 |
| 1310.00 | 31.00 | 10.00 | 38.50 | 0.53 | 65.99 | 0.91 | 1.07 | 786.03 |
| 1320.00 | 21.00 | 10.00 | 26.00 | 0.36 | 49.70 | 0.68 | 0.74 | 785.55 |
| 1330.00 | 17.00 | 10.00 | 19.00 | 0.26 | 36.98 | 0.51 | 0.49 | 785.18 |
| 1340.00 | 14.00 | 10.00 | 15.50 | 0.21 | 26.91 | 0.37 | 0.34 | 784.78 |
| 1350.00 | 12.00 | 10.00 | 13.00 | 0.18 | 19.81 | 0.27 | 0.24 | 784.41 |
| 1360.00 | 9.00 | 10.00 | 10.50 | 0.14 | 15.29 | 0.21 | 0.18 | 784.17 |
| 1370.00 | 6.00 | 10.00 | 7.50 | 0.10 | 10.61 | 0.15 | 0.13 | 783.88 |
| 1380.00 | 5.00 | 10.00 | 5.50 | 0.08 | 6.53 | 0.09 | 0.12 | 783.54 |
| 1390.00 | 5.00 | 10.00 | 5.00 | 0.07 | 5.30 | 0.07 | 0.12 | 783.44 |
| 1400.00 | 5.00 | 10.00 | 5.00 | 0.07 | 5.10 | 0.07 | 0.11 | 783.42 |
| 1420.00 | 3.00 | 20.00 | 4.00 | 0.11 | 4.08 | 0.11 | 0.11 | 783.34 |
| 1440.00 | 3.00 | 20.00 | 3.00 | 0.08 | 3.26 | 0.09 | 0.11 | 783.27 |
| 1460.00 | 2.00 | 20.00 | 2.50 | 0.07 | 2.45 | 0.07 | 0.11 | 783.20 |
| 1500.00 | 2.00 | 40.00 | 2.00 | 0.11 | 2.04 | 0.11 | 0.10 | 783.17 |

TRIBUTARY TO SOUTH BRANCH ARROYO CONEJO

100-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS/TRIB. TO SOUTH BRANCH-DEV. WITH RET. BASIN-Q100 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 1D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | C99 | 0.00 |
| 861411 | 2D | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | C99 | 0.00 |
| 861411 | 3D | 36. | 123. | 36. | 123. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 12 | C99 | 0.05 |
| 861411 | 4D | 53. | 213. | 89. | 336. | 4 | 500. | 0.01400 | 5.25 | 0.00 | 0. | 10 | 9 | C99 | 0.15 |
| 861411 | 5E | 29. | 124. | 29. | 124. | 4 | 1150. | 0.05650 | 2.75 | 0.00 | 0. | 10 | 8 | C99 | 0.02 |
| 861411 | 6D | 13. | 56. | 102. | 391. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 8 | C99 | 0.05 |

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*                                                CONFLUENCE Q'S                                                 *
* 861411    7D  TD 1155 QD     391. QDE     514. QE     123.  861411    7E  TE 1156 QE     124. QED     512. QD     388.  *
*                              861411    7DE TDE 1155 QDE     514. QD     391. QE     123.                                *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 7DE | 29. | 124. | 131. | 514. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 0 | C99 | 0.00 |
| 861411 | 8D | 0. | 0. | 131. | 514. | 4 | 2750. | 0.00982 | 6.50 | 0.00 | 0. | 10 | 99 | C99 | 0.00 |
| 861411 | 9D | 56. | 180. | 187. | 646. | 4 | 800. | 0.03370 | 5.50 | 0.00 | 0. | 20 | 12 | C99 | 0.05 |
| 861411 | 10D | 74. | 326. | 261. | 813. | 4 | 550. | 0.04540 | 5.75 | 0.00 | 0. | 20 | 7 | C99 | 0.05 |
| 861411 | 11D | 32. | 108. | 293. | 918. | 4 | 100. | 0.03880 | 6.25 | 0.00 | 0. | 20 | 11 | C99 | 0.04 |
| 861411 | 12D | 20. | 81. | 313. | 996. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 8 | C99 | 0.03 |
| 861411 | 13E | 60. | 215. | 60. | 215. | 4 | 850. | 0.02590 | 4.00 | 0.00 | 0. | 20 | 10 | C99 | 0.12 |

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*                                                CONFLUENCE Q'S                                                 *
* 861411   14D  TD 1156 QD     996. QDE    1210. QE     214.  861411   14E  TE 1155 QE     214. QED    1188. QD     974.  *
*                              861411   14DE TDE 1156 QDE    1210. QD     996. QE     214.                                *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 861411 | 14DE | 60. | 214. | 373. | 1210. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 861411 | 15D | 0. | 0. | 373. | 1210. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 861411 | 16D | 373. | 384. | 373. | 384. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY

INFLOW TO BASIN

HYDROGRAPH AT 861411 15D STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 34. | 200 | 46. | 300 | 51. | 400 | 55. |
| 500 | 60. | 600 | 64. | 700 | 79. | 800 | 86. | 900 | 113. |
| 1000 | 152. | 1050 | 185. | 1100 | 213. | 1110 | 237. | 1120 | 251. |
| 1130 | 295. | 1131 | 302. | 1132 | 304. | 1133 | 310. | 1134 | 318. |
| 1135 | 326. | 1136 | 335. | 1137 | 344. | 1138 | 351. | 1139 | 358. |
| 1140 | 365. | 1141 | 376. | 1142 | 393. | 1143 | 411. | 1144 | 428. |
| 1145 | 446. | 1146 | 466. | 1147 | 487. | 1148 | 505. | 1149 | 567. |
| 1150 | 674. | 1151 | 795. | 1152 | 919. | 1153 | 1046. | 1154 | 1135. |
| 1155 | 1188. | 1156 | 1210. | 1157 | 1193. | 1158 | 1166. | 1159 | 1122. |
| 1160 | 1042. | 1161 | 958. | 1162 | 885. | 1163 | 789. | 1164 | 686. |
| 1165 | 594. | 1166 | 515. | 1167 | 452. | 1168 | 404. | 1169 | 363. |
| 1170 | 331. | 1171 | 306. | 1172 | 287. | 1173 | 273. | 1174 | 260. |
| 1175 | 249. | 1176 | 241. | 1177 | 234. | 1178 | 227. | 1179 | 219. |
| 1180 | 211. | 1181 | 205. | 1182 | 201. | 1183 | 197. | 1184 | 194. |
| 1185 | 191. | 1186 | 190. | 1187 | 188. | 1188 | 188. | 1189 | 189. |
| 1190 | 195. | 1191 | 198. | 1192 | 199. | 1193 | 198. | 1194 | 197. |
| 1195 | 197. | 1196 | 195. | 1197 | 191. | 1198 | 188. | 1199 | 188. |
| 1200 | 186. | 1201 | 182. | 1202 | 179. | 1203 | 176. | 1204 | 173. |
| 1205 | 170. | 1206 | 168. | 1207 | 166. | 1208 | 164. | 1209 | 162. |
| 1210 | 161. | 1211 | 160. | 1212 | 158. | 1213 | 157. | 1214 | 156. |
| 1215 | 155. | 1216 | 154. | 1217 | 154. | 1218 | 153. | 1219 | 153. |
| 1220 | 152. | 1221 | 151. | 1222 | 152. | 1223 | 151. | 1224 | 150. |
| 1225 | 150. | 1226 | 150. | 1227 | 150. | 1228 | 149. | 1229 | 149. |
| 1230 | 150. | 1231 | 150. | 1232 | 148. | 1233 | 146. | 1234 | 146. |
| 1235 | 144. | 1236 | 143. | 1237 | 141. | 1238 | 140. | 1239 | 139. |
| 1240 | 138. | 1241 | 137. | 1242 | 136. | 1243 | 135. | 1244 | 134. |
| 1245 | 133. | 1246 | 133. | 1247 | 133. | 1248 | 132. | 1249 | 132. |
| 1250 | 132. | 1251 | 131. | 1252 | 132. | 1253 | 131. | 1254 | 131. |
| 1255 | 131. | 1256 | 131. | 1257 | 131. | 1258 | 131. | 1259 | 131. |
| 1260 | 131. | 1261 | 130. | 1262 | 129. | 1263 | 127. | 1264 | 126. |
| 1265 | 124. | 1266 | 122. | 1267 | 120. | 1268 | 119. | 1269 | 117. |
| 1270 | 115. | 1271 | 114. | 1272 | 113. | 1273 | 112. | 1274 | 110. |
| 1275 | 109. | 1276 | 109. | 1277 | 108. | 1278 | 107. | 1279 | 107. |
| 1280 | 107. | 1281 | 107. | 1282 | 106. | 1283 | 106. | 1284 | 106. |
| 1285 | 106. | 1286 | 105. | 1287 | 106. | 1288 | 106. | 1289 | 106. |
| 1290 | 105. | 1291 | 106. | 1292 | 106. | 1293 | 106. | 1294 | 105. |
| 1295 | 105. | 1296 | 106. | 1297 | 106. | 1298 | 105. | 1299 | 105. |
| 1300 | 106. | 1310 | 86. | 1320 | 75. | 1330 | 74. | 1340 | 72. |
| 1350 | 49. | 1360 | 35. | 1370 | 33. | 1380 | 33. | 1390 | 33. |
| 1400 | 33. | 1420 | 33. | 1440 | 33. | 1460 | 33. | 1500 | 33. |

MODIFIED RATIONAL METHOD HYDROLOGY

OUTFLOW FROM BASIN

HYDROGRAPH AT 861411 16D STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 16. | 200 | 38. | 300 | 47. | 400 | 52. |
| 500 | 57. | 600 | 61. | 700 | 70. | 800 | 80. | 900 | 96. |
| 1000 | 125. | 1050 | 153. | 1100 | 180. | 1110 | 189. | 1120 | 201. |
| 1130 | 212. | 1131 | 213. | 1132 | 215. | 1133 | 216. | 1134 | 218. |
| 1135 | 220. | 1136 | 222. | 1137 | 224. | 1138 | 227. | 1139 | 229. |
| 1140 | 231. | 1141 | 233. | 1142 | 236. | 1143 | 239. | 1144 | 242. |
| 1145 | 245. | 1146 | 248. | 1147 | 252. | 1148 | 256. | 1149 | 261. |
| 1150 | 266. | 1151 | 273. | 1152 | 283. | 1153 | 292. | 1154 | 302. |
| 1155 | 312. | 1156 | 322. | 1157 | 331. | 1158 | 340. | 1159 | 348. |
| 1160 | 357. | 1161 | 364. | 1162 | 371. | 1163 | 376. | 1164 | 379. |
| 1165 | 381. | 1166 | 383. | 1167 | 383. | 1168 | 384. | 1169 | 384. |
| 1170 | 383. | 1171 | 383. | 1172 | 382. | 1173 | 381. | 1174 | 381. |
| 1175 | 379. | 1176 | 378. | 1177 | 377. | 1178 | 376. | 1179 | 374. |
| 1180 | 372. | 1181 | 370. | 1182 | 368. | 1183 | 366. | 1184 | 364. |
| 1185 | 363. | 1186 | 361. | 1187 | 359. | 1188 | 357. | 1189 | 355. |
| 1190 | 353. | 1191 | 351. | 1192 | 349. | 1193 | 347. | 1194 | 345. |
| 1195 | 344. | 1196 | 342. | 1197 | 341. | 1198 | 339. | 1199 | 338. |
| 1200 | 336. | 1201 | 335. | 1202 | 333. | 1203 | 332. | 1204 | 330. |
| 1205 | 329. | 1206 | 327. | 1207 | 325. | 1208 | 323. | 1209 | 322. |
| 1210 | 320. | 1211 | 318. | 1212 | 317. | 1213 | 315. | 1214 | 314. |
| 1215 | 311. | 1216 | 309. | 1217 | 308. | 1218 | 305. | 1219 | 303. |
| 1220 | 302. | 1221 | 300. | 1222 | 298. | 1223 | 296. | 1224 | 294. |
| 1225 | 292. | 1226 | 290. | 1227 | 289. | 1228 | 287. | 1229 | 285. |
| 1230 | 284. | 1231 | 282. | 1232 | 280. | 1233 | 278. | 1234 | 276. |
| 1235 | 274. | 1236 | 272. | 1237 | 269. | 1238 | 267. | 1239 | 265. |
| 1240 | 263. | 1241 | 262. | 1242 | 260. | 1243 | 258. | 1244 | 256. |
| 1245 | 254. | 1246 | 252. | 1247 | 250. | 1248 | 248. | 1249 | 246. |
| 1250 | 244. | 1251 | 242. | 1252 | 241. | 1253 | 239. | 1254 | 237. |
| 1255 | 235. | 1256 | 233. | 1257 | 231. | 1258 | 229. | 1259 | 228. |
| 1260 | 226. | 1261 | 225. | 1262 | 222. | 1263 | 221. | 1264 | 219. |
| 1265 | 218. | 1266 | 216. | 1267 | 214. | 1268 | 212. | 1269 | 211. |
| 1270 | 209. | 1271 | 208. | 1272 | 205. | 1273 | 204. | 1274 | 203. |
| 1275 | 201. | 1276 | 198. | 1277 | 196. | 1278 | 194. | 1279 | 192. |
| 1280 | 189. | 1281 | 187. | 1282 | 185. | 1283 | 183. | 1284 | 181. |
| 1285 | 179. | 1286 | 177. | 1287 | 176. | 1288 | 173. | 1289 | 171. |
| 1290 | 170. | 1291 | 168. | 1292 | 167. | 1293 | 165. | 1294 | 163. |
| 1295 | 162. | 1296 | 160. | 1297 | 159. | 1298 | 158. | 1299 | 156. |
| 1300 | 155. | 1310 | 139. | 1320 | 124. | 1330 | 109. | 1340 | 99. |
| 1350 | 87. | 1360 | 72. | 1370 | 59. | 1380 | 48. | 1390 | 42. |
| 1400 | 38. | 1420 | 35. | 1440 | 34. | 1460 | 34. | 1500 | 33. |

BASIN STORAGE CAPACITY

HAWKS & ASSOCIATES
2590 E. Main St. Suite 201
VENTURA, CALIFORNIA 93003
Phone 648-3237

## BASIN#1

## 100-YEAR STORM

## TRIB. TO SOUTH BRANCH

| TIME (MIN) | FLOW IN (CFS) | DELTA TIME (MIN) | AVE FLOW IN (CFS) | AVE VOLUME IN (AF) | AVE FLOW OUT (CFS) | AVE VOLUME OUT (AF) | STORAGE VOLUME (AF) | WATER SURFACE ELEV (FT) |
|---|---|---|---|---|---|---|---|---|
| 100.00 | 34.00 | 100.00 | 17.00 | 2.34 | 15.93 | 2.19 | 0.15 | 784.21 |
| 200.00 | 46.00 | 100.00 | 40.00 | 5.51 | 37.56 | 5.17 | 0.48 | 785.19 |
| 300.00 | 51.00 | 100.00 | 48.50 | 6.68 | 47.39 | 6.53 | 0.64 | 785.48 |
| 400.00 | 55.00 | 100.00 | 53.00 | 7.30 | 52.01 | 7.16 | 0.77 | 785.62 |
| 500.00 | 60.00 | 100.00 | 57.50 | 7.92 | 57.21 | 7.88 | 0.81 | 785.77 |
| 600.00 | 64.00 | 100.00 | 62.00 | 8.54 | 61.26 | 8.44 | 0.91 | 785.89 |
| 700.00 | 79.00 | 100.00 | 71.50 | 9.85 | 69.86 | 9.62 | 1.14 | 786.13 |
| 800.00 | 86.00 | 100.00 | 82.50 | 11.36 | 80.20 | 11.05 | 1.46 | 786.40 |
| 900.00 | 113.00 | 100.00 | 99.50 | 13.71 | 96.35 | 13.27 | 1.89 | 786.83 |
| 1000.00 | 152.00 | 100.00 | 132.50 | 18.25 | 125.24 | 17.25 | 2.89 | 787.45 |
| 1050.00 | 185.00 | 50.00 | 168.50 | 11.60 | 152.72 | 10.52 | 3.98 | 788.02 |
| 1100.00 | 213.00 | 50.00 | 199.00 | 13.71 | 179.65 | 12.37 | 5.31 | 788.58 |
| 1110.00 | 237.00 | 10.00 | 225.00 | 3.10 | 188.62 | 2.60 | 5.81 | 788.76 |
| 1120.00 | 251.00 | 10.00 | 244.00 | 3.36 | 200.72 | 2.76 | 6.41 | 789.02 |
| 1130.00 | 295.00 | 10.00 | 273.00 | 3.76 | 211.60 | 2.91 | 7.25 | 789.29 |
| 1131.00 | 302.00 | 1.00 | 298.50 | 0.41 | 212.96 | 0.29 | 7.37 | 789.32 |
| 1132.00 | 304.00 | 1.00 | 303.00 | 0.42 | 215.00 | 0.30 | 7.49 | 789.37 |
| 1133.00 | 310.00 | 1.00 | 307.00 | 0.42 | 216.36 | 0.30 | 7.62 | 789.41 |
| 1134.00 | 318.00 | 1.00 | 314.00 | 0.43 | 218.40 | 0.30 | 7.75 | 789.46 |
| 1135.00 | 326.00 | 1.00 | 322.00 | 0.44 | 219.76 | 0.30 | 7.89 | 789.49 |
| 1136.00 | 335.00 | 1.00 | 330.50 | 0.46 | 221.80 | 0.31 | 8.04 | 789.54 |
| 1137.00 | 344.00 | 1.00 | 339.50 | 0.47 | 223.84 | 0.31 | 8.20 | 789.60 |
| 1138.00 | 351.00 | 1.00 | 347.50 | 0.48 | 226.56 | 0.31 | 8.36 | 789.66 |
| 1139.00 | 358.00 | 1.00 | 354.50 | 0.49 | 228.60 | 0.31 | 8.54 | 789.72 |
| 1140.00 | 365.00 | 1.00 | 361.50 | 0.50 | 230.64 | 0.32 | 8.72 | 789.77 |
| 1141.00 | 376.00 | 1.00 | 370.50 | 0.51 | 233.36 | 0.32 | 8.91 | 789.83 |
| 1142.00 | 393.00 | 1.00 | 384.50 | 0.53 | 236.08 | 0.33 | 9.11 | 789.90 |
| 1143.00 | 411.00 | 1.00 | 402.00 | 0.55 | 238.80 | 0.33 | 9.34 | 789.97 |
| 1144.00 | 428.00 | 1.00 | 419.50 | 0.58 | 242.20 | 0.33 | 9.58 | 790.05 |
| 1145.00 | 446.00 | 1.00 | 437.00 | 0.60 | 244.92 | 0.34 | 9.84 | 790.12 |
| 1146.00 | 466.00 | 1.00 | 456.00 | 0.63 | 248.32 | 0.34 | 10.13 | 790.21 |
| 1147.00 | 487.00 | 1.00 | 476.50 | 0.66 | 252.40 | 0.35 | 10.44 | 790.31 |
| 1148.00 | 505.00 | 1.00 | 496.00 | 0.68 | 255.80 | 0.35 | 10.77 | 790.40 |
| 1149.00 | 567.00 | 1.00 | 536.00 | 0.74 | 260.56 | 0.36 | 11.15 | 790.51 |
| 1150.00 | 674.00 | 1.00 | 620.50 | 0.85 | 266.00 | 0.37 | 11.64 | 790.65 |
| 1151.00 | 795.00 | 1.00 | 734.50 | 1.01 | 273.48 | 0.38 | 12.27 | 790.84 |
| 1152.00 | 919.00 | 1.00 | 857.00 | 1.18 | 282.63 | 0.39 | 13.06 | 791.08 |
| 1153.00 | 1046.00 | 1.00 | 982.50 | 1.35 | 291.55 | 0.40 | 14.01 | 791.33 |
| 1154.00 | 1135.00 | 1.00 | 1090.50 | 1.50 | 301.67 | 0.42 | 15.10 | 791.62 |
| 1155.00 | 1188.00 | 1.00 | 1161.50 | 1.60 | 312.37 | 0.43 | 16.27 | 791.92 |
| 1156.00 | 1210.00 | 1.00 | 1199.00 | 1.65 | 321.93 | 0.44 | 17.48 | 792.23 |
| 1157.00 | 1193.00 | 1.00 | 1201.50 | 1.65 | 330.60 | 0.46 | 18.68 | 792.52 |
| 1158.00 | 1166.00 | 1.00 | 1179.50 | 1.62 | 339.78 | 0.47 | 19.84 | 792.83 |
| 1159.00 | 1122.00 | 1.00 | 1144.00 | 1.58 | 347.94 | 0.48 | 20.93 | 793.10 |
| 1160.00 | 1042.00 | 1.00 | 1082.00 | 1.49 | 356.61 | 0.49 | 21.93 | 793.39 |
| 1161.00 | 958.00 | 1.00 | 1000.00 | 1.38 | 364.26 | 0.50 | 22.81 | 793.64 |
| 1162.00 | 885.00 | 1.00 | 921.50 | 1.27 | 370.89 | 0.51 | 23.57 | 793.86 |
| 1163.00 | 789.00 | 1.00 | 837.00 | 1.15 | 375.83 | 0.52 | 24.20 | 794.03 |
| 1164.00 | 686.00 | 1.00 | 737.50 | 1.02 | 378.80 | 0.52 | 24.69 | 794.15 |
| 1165.00 | 594.00 | 1.00 | 640.00 | 0.88 | 381.35 | 0.53 | 25.05 | 794.25 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1166.00 | 515.00 | 1.00 | 554.50 | 0.76 | 382.62 | 0.53 | 25.29 | 794.30 |
| 1167.00 | 452.00 | 1.00 | 483.50 | 0.67 | 383.47 | 0.53 | 25.43 | 794.34 |
| 1168.00 | 404.00 | 1.00 | 428.00 | 0.59 | 383.90 | 0.53 | 25.49 | 794.36 |
| 1169.00 | 363.00 | 1.00 | 383.50 | 0.53 | 383.90 | 0.53 | 25.49 | 794.36 |
| 1170.00 | 331.00 | 1.00 | 347.00 | 0.48 | 383.47 | 0.53 | 25.44 | 794.34 |
| 1171.00 | 306.00 | 1.00 | 318.50 | 0.44 | 383.05 | 0.53 | 25.35 | 794.32 |
| 1172.00 | 287.00 | 1.00 | 296.50 | 0.41 | 382.20 | 0.53 | 25.23 | 794.29 |
| 1173.00 | 273.00 | 1.00 | 280.00 | 0.39 | 381.35 | 0.53 | 25.09 | 794.25 |
| 1174.00 | 260.00 | 1.00 | 266.50 | 0.37 | 380.50 | 0.52 | 24.93 | 794.22 |
| 1175.00 | 249.00 | 1.00 | 254.50 | 0.35 | 379.23 | 0.52 | 24.76 | 794.17 |
| 1176.00 | 241.00 | 1.00 | 245.00 | 0.34 | 378.38 | 0.52 | 24.58 | 794.14 |
| 1177.00 | 234.00 | 1.00 | 237.50 | 0.33 | 377.10 | 0.52 | 24.38 | 794.08 |
| 1178.00 | 227.00 | 1.00 | 230.50 | 0.32 | 375.83 | 0.52 | 24.18 | 794.03 |
| 1179.00 | 219.00 | 1.00 | 223.00 | 0.31 | 373.95 | 0.52 | 23.98 | 793.97 |
| 1180.00 | 211.00 | 1.00 | 215.00 | 0.30 | 372.42 | 0.51 | 23.76 | 793.91 |
| 1181.00 | 205.00 | 1.00 | 208.00 | 0.29 | 370.38 | 0.51 | 23.54 | 793.85 |
| 1182.00 | 201.00 | 1.00 | 203.00 | 0.28 | 368.34 | 0.51 | 23.31 | 793.78 |
| 1183.00 | 197.00 | 1.00 | 199.00 | 0.27 | 366.30 | 0.50 | 23.08 | 793.71 |
| 1184.00 | 194.00 | 1.00 | 195.50 | 0.27 | 364.26 | 0.50 | 22.84 | 793.64 |
| 1185.00 | 191.00 | 1.00 | 192.50 | 0.27 | 362.73 | 0.50 | 22.61 | 793.59 |
| 1186.00 | 190.00 | 1.00 | 190.50 | 0.26 | 360.69 | 0.50 | 22.38 | 793.52 |
| 1187.00 | 188.00 | 1.00 | 189.00 | 0.26 | 358.65 | 0.49 | 22.14 | 793.46 |
| 1188.00 | 188.00 | 1.00 | 188.00 | 0.26 | 356.61 | 0.49 | 21.91 | 793.39 |
| 1189.00 | 189.00 | 1.00 | 188.50 | 0.26 | 354.57 | 0.49 | 21.68 | 793.32 |
| 1190.00 | 195.00 | 1.00 | 192.00 | 0.26 | 352.53 | 0.49 | 21.46 | 793.25 |
| 1191.00 | 198.00 | 1.00 | 196.50 | 0.27 | 351.00 | 0.48 | 21.25 | 793.20 |
| 1192.00 | 199.00 | 1.00 | 198.50 | 0.27 | 348.96 | 0.48 | 21.04 | 793.13 |
| 1193.00 | 198.00 | 1.00 | 198.50 | 0.27 | 347.43 | 0.48 | 20.83 | 793.08 |
| 1194.00 | 197.00 | 1.00 | 197.50 | 0.27 | 345.39 | 0.48 | 20.63 | 793.01 |
| 1195.00 | 197.00 | 1.00 | 197.00 | 0.27 | 343.86 | 0.47 | 20.43 | 792.96 |
| 1196.00 | 195.00 | 1.00 | 196.00 | 0.27 | 342.33 | 0.47 | 20.23 | 792.91 |
| 1197.00 | 191.00 | 1.00 | 193.00 | 0.27 | 340.80 | 0.47 | 20.02 | 792.86 |
| 1198.00 | 188.00 | 1.00 | 189.50 | 0.26 | 339.27 | 0.47 | 19.82 | 792.81 |
| 1199.00 | 188.00 | 1.00 | 188.00 | 0.26 | 337.74 | 0.47 | 19.61 | 792.76 |
| 1200.00 | 186.00 | 1.00 | 187.00 | 0.26 | 336.21 | 0.46 | 19.41 | 792.71 |
| 1201.00 | 182.00 | 1.00 | 184.00 | 0.25 | 334.68 | 0.46 | 19.20 | 792.66 |
| 1202.00 | 179.00 | 1.00 | 180.50 | 0.25 | 333.15 | 0.46 | 18.99 | 792.60 |
| 1203.00 | 176.00 | 1.00 | 177.50 | 0.24 | 331.62 | 0.46 | 18.78 | 792.55 |
| 1204.00 | 173.00 | 1.00 | 174.50 | 0.24 | 330.09 | 0.45 | 18.56 | 792.50 |
| 1205.00 | 170.00 | 1.00 | 171.50 | 0.24 | 328.56 | 0.45 | 18.34 | 792.45 |
| 1206.00 | 168.00 | 1.00 | 169.00 | 0.23 | 326.52 | 0.45 | 18.13 | 792.38 |
| 1207.00 | 166.00 | 1.00 | 167.00 | 0.23 | 324.99 | 0.45 | 17.91 | 792.33 |
| 1208.00 | 164.00 | 1.00 | 165.00 | 0.23 | 323.46 | 0.45 | 17.69 | 792.28 |
| 1209.00 | 162.00 | 1.00 | 163.00 | 0.22 | 321.93 | 0.44 | 17.47 | 792.23 |
| 1210.00 | 161.00 | 1.00 | 161.50 | 0.22 | 320.40 | 0.44 | 17.25 | 792.18 |
| 1211.00 | 160.00 | 1.00 | 160.50 | 0.22 | 318.36 | 0.44 | 17.04 | 792.11 |
| 1212.00 | 158.00 | 1.00 | 159.00 | 0.22 | 316.83 | 0.44 | 16.82 | 792.06 |
| 1213.00 | 157.00 | 1.00 | 157.50 | 0.22 | 315.30 | 0.43 | 16.60 | 792.01 |
| 1214.00 | 156.00 | 1.00 | 156.50 | 0.22 | 313.56 | 0.43 | 16.39 | 791.96 |
| 1215.00 | 155.00 | 1.00 | 155.50 | 0.21 | 311.18 | 0.43 | 16.17 | 791.89 |
| 1216.00 | 154.00 | 1.00 | 154.50 | 0.21 | 309.40 | 0.43 | 15.96 | 791.84 |
| 1217.00 | 154.00 | 1.00 | 154.00 | 0.21 | 307.62 | 0.42 | 15.75 | 791.79 |
| 1218.00 | 153.00 | 1.00 | 153.50 | 0.21 | 305.24 | 0.42 | 15.54 | 791.72 |
| 1219.00 | 153.00 | 1.00 | 153.00 | 0.21 | 303.45 | 0.42 | 15.33 | 791.67 |
| 1220.00 | 152.00 | 1.00 | 152.50 | 0.21 | 301.67 | 0.42 | 15.12 | 791.62 |
| 1221.00 | 151.00 | 1.00 | 151.50 | 0.21 | 299.88 | 0.41 | 14.92 | 791.57 |
| 1222.00 | 152.00 | 1.00 | 151.50 | 0.21 | 298.10 | 0.41 | 14.72 | 791.52 |
| 1223.00 | 151.00 | 1.00 | 151.50 | 0.21 | 295.71 | 0.41 | 14.52 | 791.45 |
| 1224.00 | 150.00 | 1.00 | 150.50 | 0.21 | 293.93 | 0.40 | 14.32 | 791.40 |
| 1225.00 | 150.00 | 1.00 | 150.00 | 0.21 | 292.14 | 0.40 | 14.13 | 791.35 |
| 1226.00 | 150.00 | 1.00 | 150.00 | 0.21 | 290.36 | 0.40 | 13.93 | 791.30 |
| 1227.00 | 150.00 | 1.00 | 150.00 | 0.21 | 288.57 | 0.40 | 13.74 | 791.24 |
| 1228.00 | 149.00 | 1.00 | 149.50 | 0.21 | 286.79 | 0.40 | 13.55 | 791.19 |
| 1229.00 | 149.00 | 1.00 | 149.00 | 0.21 | 285.01 | 0.39 | 13.37 | 791.14 |
| 1230.00 | 150.00 | 1.00 | 149.50 | 0.21 | 283.82 | 0.39 | 13.18 | 791.11 |
| 1231.00 | 150.00 | 1.00 | 150.00 | 0.21 | 282.03 | 0.39 | 13.00 | 791.06 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1232.00 | 148.00 | 1.00 | 149.00 | 0.21 | 280.25 | 0.39 | 12.82 | 791.01 |
| 1233.00 | 146.00 | 1.00 | 147.00 | 0.20 | 278.24 | 0.38 | 12.64 | 790.96 |
| 1234.00 | 146.00 | 1.00 | 146.00 | 0.20 | 276.20 | 0.38 | 12.46 | 790.91 |
| 1235.00 | 144.00 | 1.00 | 145.00 | 0.20 | 274.16 | 0.38 | 12.28 | 790.85 |
| 1236.00 | 143.00 | 1.00 | 143.50 | 0.20 | 272.12 | 0.37 | 12.10 | 790.80 |
| 1237.00 | 141.00 | 1.00 | 142.00 | 0.20 | 269.40 | 0.37 | 11.93 | 790.73 |
| 1238.00 | 140.00 | 1.00 | 140.50 | 0.19 | 267.36 | 0.37 | 11.75 | 790.68 |
| 1239.00 | 139.00 | 1.00 | 139.50 | 0.19 | 265.32 | 0.37 | 11.58 | 790.63 |
| 1240.00 | 138.00 | 1.00 | 138.50 | 0.19 | 263.28 | 0.36 | 11.41 | 790.58 |
| 1241.00 | 137.00 | 1.00 | 137.50 | 0.19 | 261.92 | 0.36 | 11.24 | 790.55 |
| 1242.00 | 136.00 | 1.00 | 136.50 | 0.19 | 259.88 | 0.36 | 11.07 | 790.50 |
| 1243.00 | 135.00 | 1.00 | 135.50 | 0.19 | 257.84 | 0.36 | 10.90 | 790.45 |
| 1244.00 | 134.00 | 1.00 | 134.50 | 0.19 | 255.80 | 0.35 | 10.73 | 790.40 |
| 1245.00 | 133.00 | 1.00 | 133.50 | 0.18 | 253.76 | 0.35 | 10.56 | 790.34 |
| 1246.00 | 133.00 | 1.00 | 133.00 | 0.18 | 251.72 | 0.35 | 10.40 | 790.29 |
| 1247.00 | 133.00 | 1.00 | 133.00 | 0.18 | 249.68 | 0.34 | 10.24 | 790.24 |
| 1248.00 | 132.00 | 1.00 | 132.50 | 0.18 | 248.32 | 0.34 | 10.08 | 790.21 |
| 1249.00 | 132.00 | 1.00 | 132.00 | 0.18 | 246.28 | 0.34 | 9.92 | 790.16 |
| 1250.00 | 132.00 | 1.00 | 132.00 | 0.18 | 244.24 | 0.34 | 9.77 | 790.11 |
| 1251.00 | 131.00 | 1.00 | 131.50 | 0.18 | 242.20 | 0.33 | 9.62 | 790.05 |
| 1252.00 | 132.00 | 1.00 | 131.50 | 0.18 | 240.84 | 0.33 | 9.47 | 790.02 |
| 1253.00 | 131.00 | 1.00 | 131.50 | 0.18 | 238.80 | 0.33 | 9.32 | 789.97 |
| 1254.00 | 131.00 | 1.00 | 131.00 | 0.18 | 236.76 | 0.33 | 9.17 | 789.92 |
| 1255.00 | 131.00 | 1.00 | 131.00 | 0.18 | 234.72 | 0.32 | 9.03 | 789.87 |
| 1256.00 | 131.00 | 1.00 | 131.00 | 0.18 | 233.36 | 0.32 | 8.89 | 789.83 |
| 1257.00 | 131.00 | 1.00 | 131.00 | 0.18 | 231.32 | 0.32 | 8.75 | 789.78 |
| 1258.00 | 131.00 | 1.00 | 131.00 | 0.18 | 229.28 | 0.32 | 8.62 | 789.73 |
| 1259.00 | 131.00 | 1.00 | 131.00 | 0.18 | 227.92 | 0.31 | 8.48 | 789.70 |
| 1260.00 | 131.00 | 1.00 | 131.00 | 0.18 | 225.88 | 0.31 | 8.35 | 789.65 |
| 1261.00 | 130.00 | 1.00 | 130.50 | 0.18 | 224.52 | 0.31 | 8.22 | 789.61 |
| 1262.00 | 129.00 | 1.00 | 129.50 | 0.18 | 222.48 | 0.31 | 8.09 | 789.56 |
| 1263.00 | 127.00 | 1.00 | 128.00 | 0.18 | 221.12 | 0.30 | 7.97 | 789.53 |
| 1264.00 | 126.00 | 1.00 | 126.50 | 0.17 | 219.08 | 0.30 | 7.84 | 789.48 |
| 1265.00 | 124.00 | 1.00 | 125.00 | 0.17 | 217.72 | 0.30 | 7.71 | 789.44 |
| 1266.00 | 122.00 | 1.00 | 123.00 | 0.17 | 215.68 | 0.30 | 7.58 | 789.39 |
| 1267.00 | 120.00 | 1.00 | 121.00 | 0.17 | 214.32 | 0.30 | 7.45 | 789.36 |
| 1268.00 | 119.00 | 1.00 | 119.50 | 0.16 | 212.28 | 0.29 | 7.33 | 789.31 |
| 1269.00 | 117.00 | 1.00 | 118.00 | 0.16 | 210.92 | 0.29 | 7.20 | 789.27 |
| 1270.00 | 115.00 | 1.00 | 116.00 | 0.16 | 208.88 | 0.29 | 7.07 | 789.22 |
| 1271.00 | 114.00 | 1.00 | 114.50 | 0.16 | 207.52 | 0.29 | 6.94 | 789.19 |
| 1272.00 | 113.00 | 1.00 | 113.50 | 0.16 | 205.48 | 0.28 | 6.82 | 789.14 |
| 1273.00 | 112.00 | 1.00 | 112.50 | 0.15 | 204.12 | 0.28 | 6.69 | 789.10 |
| 1274.00 | 110.00 | 1.00 | 111.00 | 0.15 | 202.76 | 0.28 | 6.56 | 789.07 |
| 1275.00 | 109.00 | 1.00 | 109.50 | 0.15 | 200.72 | 0.28 | 6.44 | 789.02 |
| 1276.00 | 109.00 | 1.00 | 109.00 | 0.15 | 198.42 | 0.27 | 6.31 | 788.97 |
| 1277.00 | 108.00 | 1.00 | 108.50 | 0.15 | 195.97 | 0.27 | 6.19 | 788.92 |
| 1278.00 | 107.00 | 1.00 | 107.50 | 0.15 | 194.34 | 0.27 | 6.07 | 788.88 |
| 1279.00 | 107.00 | 1.00 | 107.00 | 0.15 | 191.89 | 0.26 | 5.96 | 788.83 |
| 1280.00 | 107.00 | 1.00 | 107.00 | 0.15 | 189.44 | 0.26 | 5.84 | 788.78 |
| 1281.00 | 107.00 | 1.00 | 107.00 | 0.15 | 186.99 | 0.26 | 5.73 | 788.73 |
| 1282.00 | 106.00 | 1.00 | 106.50 | 0.15 | 185.36 | 0.26 | 5.62 | 788.70 |
| 1283.00 | 106.00 | 1.00 | 106.00 | 0.15 | 182.91 | 0.25 | 5.52 | 788.64 |
| 1284.00 | 106.00 | 1.00 | 106.00 | 0.15 | 181.28 | 0.25 | 5.41 | 788.61 |
| 1285.00 | 106.00 | 1.00 | 106.00 | 0.15 | 178.83 | 0.25 | 5.31 | 788.56 |
| 1286.00 | 105.00 | 1.00 | 105.50 | 0.15 | 177.20 | 0.24 | 5.22 | 788.53 |
| 1287.00 | 106.00 | 1.00 | 105.50 | 0.15 | 175.57 | 0.24 | 5.12 | 788.49 |
| 1288.00 | 106.00 | 1.00 | 106.00 | 0.15 | 173.12 | 0.24 | 5.03 | 788.44 |
| 1289.00 | 106.00 | 1.00 | 106.00 | 0.15 | 171.49 | 0.24 | 4.94 | 788.41 |
| 1290.00 | 105.00 | 1.00 | 105.50 | 0.15 | 169.86 | 0.23 | 4.85 | 788.37 |
| 1291.00 | 106.00 | 1.00 | 105.50 | 0.15 | 168.22 | 0.23 | 4.76 | 788.34 |
| 1292.00 | 106.00 | 1.00 | 106.00 | 0.15 | 166.59 | 0.23 | 4.68 | 788.30 |
| 1293.00 | 106.00 | 1.00 | 106.00 | 0.15 | 164.96 | 0.23 | 4.60 | 788.27 |
| 1294.00 | 105.00 | 1.00 | 105.50 | 0.15 | 163.33 | 0.22 | 4.52 | 788.24 |
| 1295.00 | 105.00 | 1.00 | 105.00 | 0.14 | 161.70 | 0.22 | 4.44 | 788.20 |
| 1296.00 | 106.00 | 1.00 | 105.50 | 0.15 | 160.07 | 0.22 | 4.36 | 788.17 |
| 1297.00 | 106.00 | 1.00 | 106.00 | 0.15 | 159.25 | 0.22 | 4.29 | 788.15 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1298.00 | 105.00 | 1.00 | 105.50 | 0.15 | 157.62 | 0.22 | 4.22 | 788.12 |
| 1299.00 | 105.00 | 1.00 | 105.00 | 0.14 | 155.98 | 0.21 | 4.15 | 788.08 |
| 1300.00 | 106.00 | 1.00 | 105.50 | 0.15 | 155.17 | 0.21 | 4.08 | 788.07 |
| 1310.00 | 86.00 | 10.00 | 96.00 | 1.32 | 139.41 | 1.92 | 3.48 | 787.74 |
| 1320.00 | 75.00 | 10.00 | 80.50 | 1.11 | 123.58 | 1.70 | 2.89 | 787.42 |
| 1330.00 | 74.00 | 10.00 | 74.50 | 1.03 | 109.42 | 1.51 | 2.41 | 787.13 |
| 1340.00 | 72.00 | 10.00 | 73.00 | 1.01 | 98.93 | 1.36 | 2.05 | 786.89 |
| 1350.00 | 49.00 | 10.00 | 60.50 | 0.83 | 87.31 | 1.20 | 1.68 | 786.59 |
| 1360.00 | 35.00 | 10.00 | 42.00 | 0.58 | 72.45 | 1.00 | 1.26 | 786.20 |
| 1370.00 | 33.00 | 10.00 | 34.00 | 0.47 | 58.95 | 0.81 | 0.92 | 785.82 |
| 1380.00 | 33.00 | 10.00 | 33.00 | 0.45 | 47.97 | 0.66 | 0.71 | 785.50 |
| 1390.00 | 33.00 | 10.00 | 33.00 | 0.45 | 41.61 | 0.57 | 0.59 | 785.31 |
| 1400.00 | 33.00 | 10.00 | 33.00 | 0.45 | 38.14 | 0.53 | 0.52 | 785.21 |
| 1420.00 | 33.00 | 20.00 | 33.00 | 0.91 | 35.25 | 0.97 | 0.46 | 785.12 |
| 1440.00 | 33.00 | 20.00 | 33.00 | 0.91 | 33.52 | 0.92 | 0.45 | 785.07 |
| 1460.00 | 33.00 | 20.00 | 33.00 | 0.91 | 33.52 | 0.92 | 0.43 | 785.07 |
| 1500.00 | 33.00 | 40.00 | 33.00 | 1.82 | 32.94 | 1.81 | 0.44 | 785.06 |

# APPENDIX C

# VCFCD COMPUTER PRINTOUTS

EXISTING CONDITIONS

100-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

SO.BR.ARR.CON..PRESENT CONDITION UP-DATE, Q-100 P DDT/CH 4/86 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 1A | 62. | 190. | 62. | 190. | 1 | 1050. | 0.01400 | 0.00 | 0.00 | 0. | 10 | 15 | C99 | 0.00 |
| 84901 | 2A | 63. | 186. | 125. | 339. | 1 | 1400. | 0.01800 | 0.00 | 0.00 | 0. | 20 | 14 | C99 | 0.00 |
| 84901 | 3A | 58. | 165. | 183. | 446. | 1 | 1400. | 0.01800 | 0.00 | 0.00 | 0. | 20 | 15 | C99 | 0.00 |
| 84901 | 4A | 68. | 193. | 251. | 529. | 1 | 600. | 0.01800 | 0.00 | 0.00 | 0. | 20 | 15 | C99 | 0.00 |
| 84901 | 5A | 45. | 133. | 296. | 596. | 1 | 1650. | 0.01500 | 0.00 | 0.00 | 0. | 20 | 14 | C99 | 0.00 |
| 84901 | 6A | 36. | 110. | 332. | 598. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | C99 | 0.00 |
| 84901 | 7B | 63. | 193. | 63. | 193. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 15 | C99 | 0.00 |
| 84901 | 8B | 58. | 184. | 121. | 377. | 1 | 1900. | 0.04700 | 0.00 | 0.00 | 0. | 10 | 14 | C99 | 0.00 |
| 84901 | 9B | 74. | 210. | 195. | 548. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 15 | C99 | 0.00 |
| 84901 | 10B | 38. | 127. | 233. | 664. | 5 | 2150. | 0.02100 | 10.00 | 0.00 | 0. | 20 | 11 | C99 | 0.00 |
| 84901 | 11B | 52. | 149. | 285. | 788. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 16 | C99 | 0.05 |

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*                                          CONFLUENCE Q'S                                           *
*  84901   12A  TA 1169 QA     598. QAB     1070. QB     472.   84901   12B  TB 1161 QB     788. QBA     1331. QA     543.   *
*                              84901   12AB TAB 1161 QAB     1331. QA     543. QB     788.                                   *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 12AB | 285. | 788. | 617. | 1331. | 1 | 800. | 0.01500 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 84901 | 13A | 85. | 223. | 702. | 1513. | 5 | 100. | 0.01500 | 3.00 | 2.00 | 0. | 20 | 17 | C99 | 0.00 |
| 84901 | 14A | 0. | 0. | 702. | 1512. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 | 15C | 72. | 187. | 72. | 187. | 5 | 1600. | 0.01000 | 1.00 | 3.00 | 0. | 10 | 15 | B98 | 0.05 |
| 84901 | 16C | 59. | 187. | 131. | 340. | 5 | 1400. | 0.01000 | 3.00 | 2.00 | 0. | 10 | 14 | C99 | 0.00 |
| 84901 | 17C | 76. | 216. | 207. | 513. | 5 | 1600. | 0.02500 | 3.00 | 2.00 | 0. | 20 | 15 | C99 | 0.00 |
| 84901 | 18C | 46. | 141. | 253. | 587. | 5 | 1000. | 0.04000 | 2.00 | 2.00 | 0. | 20 | 13 | C99 | 0.00 |
| 84901 | 19C | 52. | 154. | 305. | 712. | 5 | 200. | 0.02500 | 8.00 | 0.00 | 0. | 20 | 14 | C99 | 0.05 |
| 84901 | 20C | 363. | 958. | 363. | 958. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 84901 | 21D | 16. | 51. | 16. | 51. | 5 | 800. | 0.01900 | 1.00 | 2.00 | 0. | 10 | 14 | C99 | 0.00 |
| 84901 | 22D | 0. | 0. | 16. | 49. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 | 23CD | 16. | 49. | 379. | 1007. | 4 | 1450. | 0.02300 | 7.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 84901 | 24C | 41. | 148. | 420. | 1109. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.23 |

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*                                          CONFLUENCE Q'S                                           *
*  84901   25A  TA 1164 QA     1512. QAC     2457. QC     945.   84901   25C  TC 1159 QC     1109. QCA     2445. QA     1336.   *
*                              84901   25AC TAC 1162 QAC     2522. QA     1481. QC     1041.                                   *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 25AC | 420. | 1109. | 1122. | 2522. | 5 | 1250. | 0.00800 | 15.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 84901 | 26A | 0. | 0. | 1122. | 2514. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 | 27B | 70. | 251. | 70. | 251. | 1 | 1300. | 0.11500 | 0.00 | 0.00 | 0. | 10 | 11 | C99 | 0.00 |
| 84901 | 28B | 129. | 396. | 199. | 633. | 1 | 1500. | 0.05300 | 0.00 | 0.00 | 0. | 10 | 15 | C99 | 0.00 |
| 84901 | 29B | 69. | 211. | 268. | 814. | 1 | 500. | 0.06000 | 0.00 | 0.00 | 0. | 20 | 13 | C99 | 0.00 |
| 84901 | 30B | 80. | 245. | 348. | 1040. | 1 | 1600. | 0.04400 | 0.00 | 0.00 | 0. | 10 | 15 | C99 | 0.00 |
| 84901 | 31B | 71. | 225. | 419. | 1214. | 1 | 1900. | 0.02100 | 0.00 | 0.00 | 0. | 10 | 14 | C99 | 0.00 |
| 84901 | 32B | 70. | 206. | 489. | 1229. | 1 | 1800. | 0.02200 | 0.00 | 0.00 | 0. | 20 | 14 | C99 | 0.00 |
| 84901 | 33B | 77. | 197. | 566. | 1241. | 5 | 100. | 0.01500 | 10.00 | 0.00 | 0. | 30 | 16 | C99 | 0.00 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

SO.BR.ARR.CON.,PRESENT CONDITION UP-DATE, Q-100 P DOT/CH 4/86 STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

CONFLUENCE Q'S

84901 34A TA 1163 QA 2514. QAB 3572. QB 1058. 84901 34B TB 1170 QB 1240. QBA 3250. QA 2010.
84901 34AB TAB 1165 QAB 3625. QA 2462. QB 1164.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 34AB | 566. | 1240. | 1688. | 3625. | 5 | 700. | 0.01100 | 18.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 84901 35A | 0. | 0. | 1688. | 3620. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 36C | 53. | 174. | 53. | 174. | 1 | 2200. | 0.06800 | 0.00 | 0.00 | 0. | 10 | 13 | C99 | 0.00 |
| 84901 37C | 60. | 190. | 113. | 331. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 14 | C99 | 0.00 |
| 84901 38C | 51. | 168. | 164. | 487. | 4 | 1900. | 0.03900 | 5.00 | 0.00 | 0. | 10 | 13 | C99 | 0.03 |
| 84901 39C | 39. | 133. | 203. | 602. | 4 | 350. | 0.02900 | 5.50 | 0.00 | 0. | 20 | 11 | C99 | 0.20 |
| 84901 40C | 0. | 0. | 203. | 599. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 41D | 38. | 137. | 38. | 137. | 3 | 1450. | 0.04500 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.22 |
| 84901 42D | 54. | 195. | 92. | 312. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.21 |

CONFLUENCE Q'S

84901 43C TC 1159 QC 599. QCD 887. QD 288. 84901 43D TD 1158 QD 312. QDC 902. QC 591.
84901 43CD TCD 1158 QCD 902. QC 591. QD 312.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 43CD | 92. | 312. | 295. | 902. | 5 | 200. | 0.05000 | 3.00 | 2.00 | 0. | 20 | 0 | C99 | 0.00 |
| 84901 44C | 0. | 0. | 295. | 900. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | C99 | 0.00 |
| 84901 45E | 40. | 131. | 40. | 131. | 1 | 1100. | 0.06800 | 0.00 | 0.00 | 0. | 10 | 13 | C99 | 0.00 |
| 84901 46E | 0. | 0. | 40. | 128. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |

CONFLUENCE Q'S

84901 47C TC 1158 QC 900. QCE 1027. QE 127. 84901 47E TE 1159 QE 128. QEC 1019. QC 892.
84901 47CE TCE 1158 QCE 1027. QC 900. QE 127.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 47CE | 40. | 128. | 335. | 1027. | 2 | 300. | 0.02900 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 84901 48C | 60. | 191. | 395. | 1204. | 2 | 2200. | 0.01400 | 0.00 | 0.00 | 0. | 10 | 14 | C99 | 0.05 |
| 84901 49C | 51. | 153. | 446. | 1298. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 14 | C99 | 0.18 |
| 84901 50C | 62. | 197. | 508. | 1470. | 5 | 200. | 0.00830 | 4.00 | 2.00 | 0. | 10 | 14 | C99 | 0.00 |
| 84901 51C | 0. | 0. | 508. | 1467. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 52D | 0. | 0. | 0. | 312. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 53D | 17. | 63. | 17. | 63. | 5 | 1600. | 0.03800 | 1.00 | 2.00 | 0. | 30 | 9 | C99 | 0.25 |
| 84901 54D | 55. | 163. | 72. | 216. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 14 | C99 | 0.05 |

CONFLUENCE Q'S

84901 55C TC 1162 QC 1467. QCD 1657. QD 190. 84901 55D TD 1157 QD 216. QDC 1404. QC 1188.
84901 55CD TCD 1162 QCD 1657. QC 1467. QD 190.

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 55CD | 72. | 216. | 580. | 1657. | 5 | 600. | 0.00830 | 2.00 | 2.00 | 0. | 20 | 0 | C99 | 0.00 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

SO.BR.ARR.CON.,PRESENT CONDITION UP-DATE, Q-100 P DDT/CH 4/86 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 56C | 39. | 141. | 619. | 1727. | 5 | 300. | 0.01200 | 6.00 | 0.00 | 0. | 10 | 11 | C99 | 0.23 |
| 84901 | 57C | 28. | 96. | 647. | 1777. | 5 | 800. | 0.00500 | 4.00 | 1.50 | 0. | 20 | 11 | C99 | 0.23 |
| 84901 | 58C | 0. | 0. | 647. | 1770. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |

CONFLUENCE Q'S

84901 59A TA 1165 QA 3620. QAC 5305. QC 1685. 84801 59C TC 1163 QC 1770. QCA 5305. QA 3535.
84901 59AC TAC 1164 QAC 5333. QA 3591. QC 1742.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 59AC | 647. | 1770. | 2335. | 5333. | 5 | 550. | 0.01100 | 20.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 84901 | 60A | 67. | 230. | 2402. | 5389. | 5 | 600. | 0.01000 | 14.00 | 2.00 | 0. | 20 | 11 | C99 | 0.23 |
| 84901 | 61A | 0. | 0. | 2402. | 5381. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 | 62A | 80. | 291. | 2482. | 5451. | 5 | 350. | 0.01000 | 14.00 | 2.00 | 0. | 20 | 10 | C99 | 0.30 |
| 84901 | 63A | 62. | 185. | 2544. | 5538. | 5 | 1600. | 0.01500 | 14.00 | 2.00 | 0. | 20 | 14 | C99 | 0.10 |
| 84901 | 64A | 0. | 0. | 2544. | 5507. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 | 65A | 0. | 0. | 2544. | 5507. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 | 66A | 0. | 0. | 2544. | 5507. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 84901 | 67B | 61. | 145. | 61. | 145. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 15 | B98 | 0.00 |
| 84901 | 68B | 40. | 117. | 101. | 262. | 1 | 1650. | 0.06100 | 0.00 | 0.00 | 0. | 10 | 12 | B98 | 0.00 |
| 84901 | 69B | 31. | 101. | 132. | 332. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 10 | B98 | 0.00 |
| 84901 | 70C | 64. | 154. | 64. | 154. | 1 | 800. | 0.05000 | 0.00 | 0.00 | 0. | 10 | 17 | B98 | 0.00 |
| 84901 | 71C | 12. | 39. | 76. | 184. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | B98 | 0.00 |

CONFLUENCE Q'S

84901 72B TB 1158 QB 332. QBC 514. QC 182. 84901 72C TC 1157 QC 184. QCB 507. QB 323.
84901 72BC TBC 1158 QBC 514. QB 332. QC 182.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 72BC | 76. | 184. | 208. | 514. | 1 | 850. | 0.04700 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 84901 | 73B | 53. | 144. | 261. | 631. | 1 | 800. | 0.01900 | 0.00 | 0.00 | 0. | 20 | 12 | B98 | 0.00 |
| 84901 | 74B | 51. | 132. | 312. | 730. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 15 | B98 | 0.00 |
| 84901 | 75D | 45. | 139. | 45. | 139. | 1 | 2500. | 0.05800 | 0.00 | 0.00 | 0. | 10 | 11 | B98 | 0.00 |
| 84901 | 76D | 39. | 99. | 84. | 191. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 12 | B98 | 0.00 |

CONFLUENCE Q'S

84901 77B TB 1162 QB 730. QBD 905. QD 176. 84901 77D TD 1160 QD 191. QDB 896. QB 705.
84901 77BD TBD 1161 QBD 909. QB 725. QD 184.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 77BD | 84. | 191. | 396. | 909. | 1 | 400. | 0.01000 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 84901 | 78B | 0. | 0. | 396. | 903. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 84901 | 79B | 44. | 113. | 440. | 978. | 1 | 1150. | 0.01000 | 0.00 | 0.00 | 0. | 20 | 13 | B98 | 0.00 |
| 84901 | 80B | 67. | 173. | 507. | 973. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | B98 | 0.00 |
| 84901 | 81E | 50. | 164. | 50. | 164. | 1 | 1550. | 0.05200 | 0.00 | 0.00 | 0. | 10 | 10 | B98 | 0.00 |
| 84901 | 82E | 73. | 196. | 123. | 329. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 14 | B98 | 0.00 |
| 84901 | 83E | 50. | 146. | 173. | 467. | 1 | 1450. | 0.00690 | 0.00 | 0.00 | 0. | 10 | 12 | B98 | 0.00 |
| 84901 | 84E | 47. | 114. | 220. | 456. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 13 | B98 | 0.00 |

FORM: WRDK - 08/23/86

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

SD.BR.ARR.CON.,PRESENT CONDITION UP-DATE, Q-100 P DDT/CH 4/86 STORM DAY 4

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*****************************************************************************************************************
*                                                CONFLUENCE Q'S                                                 *
*  84901   85B  TB 1164 QB     973. QBE     1429. QE      456.   84901   85E  TE 1164 QE     456. QEB     1429. QB     973.  *
*                                84901   85BE TBE 1164 QBE    1429. QB     973. QE     456.                                  *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 85BE | 220. | 456. | 727. | 1429. | 1 | 900. | 0.00560 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 84901 | 86B | 58. | 148. | 785. | 1397. | 1 | 750. | 0.00670 | 0.00 | 0.00 | 0. | 30 | 12 | B98 | 0.00 |
| 84901 | 87B | 41. | 117. | 826. | 1392. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 11 | B98 | 0.00 |
| 84901 | 88B | 64. | 172. | 890. | 1421. | 1 | 750. | 0.00670 | 0.00 | 0.00 | 0. | 10 | 14 | B98 | 0.00 |
| 84901 | 89B | 42. | 113. | 932. | 1411. | 1 | 1200. | 0.02100 | 0.00 | 0.00 | 0. | 30 | 11 | B98 | 0.00 |
| 84901 | 90B | 38. | 90. | 970. | 1407. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 15 | B98 | 0.00 |
| 84901 | 91C | 51. | 167. | 51. | 167. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 10 | B98 | 0.00 |
| 84901 | 92C | 41. | 141. | 92. | 308. | 1 | 900. | 0.02800 | 0.00 | 0.00 | 0. | 10 | 9 | B98 | 0.00 |
| 84901 | 93C | 54. | 146. | 146. | 428. | 1 | 1350. | 0.02200 | 0.00 | 0.00 | 0. | 20 | 12 | B98 | 0.00 |
| 84901 | 94C | 29. | 73. | 175. | 440. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 40 | 11 | B98 | 0.00 |

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*                                                CONFLUENCE Q'S                                                 *
*  84901   95B  TB 1179 QB    1407. QBC     1497. QC       90.   84901   95C  TC 1162 QC     440. QCB     1459. QB    1019.  *
*                                84901   95BC TBC 1178 QBC    1501. QB    1404. QC      97.                                  *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 95BC | 175. | 440. | 1145. | 1501. | 1 | 1150. | 0.01100 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 84901 | 96B | 67. | 165. | 1212. | 1503. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 14 | B98 | 0.00 |
| 84901 | 97D | 50. | 152. | 50. | 152. | 1 | 850. | 0.05900 | 0.00 | 0.00 | 0. | 20 | 10 | B98 | 0.00 |
| 84901 | 98D | 60. | 155. | 110. | 298. | 1 | 1600. | 0.05600 | 0.00 | 0.00 | 0. | 10 | 15 | B98 | 0.00 |
| 84901 | 99D | 71. | 175. | 181. | 439. | 1 | 2350. | 0.03000 | 0.00 | 0.00 | 0. | 20 | 14 | B98 | 0.00 |
| 84901 | 100D | 38. | 116. | 219. | 415. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | B98 | 0.00 |

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*                                                CONFLUENCE Q'S                                                 *
*  84901  101B  TB 1181 QB    1503. QBD     1676. QD      173.   84901  101D  TD 1167 QD     415. QDB     1899. QB    1485.  *
*                                84901  101BD TBD 1166 QBD    1899. QB    1486. QD     413.                                  *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 101BD | 219. | 415. | 1431. | 1899. | 1 | 550. | 0.01500 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 84901 | 102B | 80. | 263. | 1511. | 1941. | 1 | 850. | 0.01500 | 0.00 | 0.00 | 0. | 10 | 10 | B98 | 0.13 |
| 84901 | 103B | 1579. | 2196. | 1579. | 2196. | 1 | 1500. | 0.01500 | 0.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |
| 84901 | 104B | 62. | 191. | 1641. | 2205. | 1 | 1100. | 0.01300 | 0.00 | 0.00 | 0. | 20 | 10 | B98 | 0.10 |
| 84901 | 105B | 45. | 144. | 1686. | 2209. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 9 | B98 | 0.00 |

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*                                                CONFLUENCE Q'S                                                 *
*  84901  106A  TA 1167 QA    5507. QAB     7248. QB     1741.   84901  106B  TB 1179 QB    2209. QBA     6044. QA    3835.  *
*                                84901  106AB TAB 1169 QAB    7335. QA    5445. QB    1889.                                  *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84901 | 106AB | 1686. | 2209. | 4230. | 7335. | 5 | 1300. | 0.00800 | 8.00 | 4.00 | 0. | 20 | 0 | B98 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY
SO.BR.ARR.CON PRESENT CONDITION VIA HILSMANN Q100 4/86
HYDROGRAPH AT B4901 20C STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 37. | 200 | 48. | 300 | 54. | 400 | 58. |
| 500 | 63. | 600 | 66. | 700 | 80. | 800 | 88. | 900 | 113. |
| 1000 | 153. | 1050 | 182. | 1100 | 211. | 1110 | 228. | 1120 | 241. |
| 1130 | 275. | 1131 | 279. | 1132 | 283. | 1133 | 288. | 1134 | 293. |
| 1135 | 299. | 1136 | 305. | 1137 | 311. | 1138 | 317. | 1139 | 323. |
| 1140 | 329. | 1141 | 338. | 1142 | 349. | 1143 | 360. | 1144 | 372. |
| 1145 | 386. | 1146 | 399. | 1147 | 414. | 1148 | 429. | 1149 | 466. |
| 1150 | 519. | 1151 | 587. | 1152 | 665. | 1153 | 750. | 1154 | 815. |
| 1155 | 868. | 1156 | 905. | 1157 | 935. | 1158 | 958. | 1159 | 955. |
| 1160 | 942. | 1161 | 916. | 1162 | 880. | 1163 | 835. | 1164 | 796. |
| 1165 | 749. | 1166 | 704. | 1167 | 661. | 1168 | 621. | 1169 | 585. |
| 1170 | 553. | 1171 | 522. | 1172 | 493. | 1173 | 466. | 1174 | 440. |
| 1175 | 418. | 1176 | 397. | 1177 | 377. | 1178 | 357. | 1179 | 338. |
| 1180 | 320. | 1181 | 304. | 1182 | 289. | 1183 | 276. | 1184 | 265. |
| 1185 | 255. | 1186 | 246. | 1187 | 238. | 1188 | 232. | 1189 | 227. |
| 1190 | 225. | 1191 | 222. | 1192 | 220. | 1193 | 217. | 1194 | 215. |
| 1195 | 212. | 1196 | 209. | 1197 | 207. | 1198 | 205. | 1199 | 201. |
| 1200 | 197. | 1201 | 195. | 1202 | 192. | 1203 | 189. | 1204 | 186. |
| 1205 | 184. | 1206 | 182. | 1207 | 180. | 1208 | 178. | 1209 | 176. |
| 1210 | 175. | 1211 | 173. | 1212 | 172. | 1213 | 171. | 1214 | 169. |
| 1215 | 168. | 1216 | 167. | 1217 | 166. | 1218 | 165. | 1219 | 164. |
| 1220 | 163. | 1221 | 162. | 1222 | 161. | 1223 | 159. | 1224 | 159. |
| 1225 | 158. | 1226 | 157. | 1227 | 157. | 1228 | 156. | 1229 | 156. |
| 1230 | 155. | 1231 | 155. | 1232 | 154. | 1233 | 153. | 1234 | 152. |
| 1235 | 151. | 1236 | 150. | 1237 | 149. | 1238 | 148. | 1239 | 147. |
| 1240 | 146. | 1241 | 145. | 1242 | 144. | 1243 | 143. | 1244 | 142. |
| 1245 | 142. | 1246 | 141. | 1247 | 140. | 1248 | 140. | 1249 | 139. |
| 1250 | 139. | 1251 | 139. | 1252 | 138. | 1253 | 138. | 1254 | 137. |
| 1255 | 137. | 1256 | 137. | 1257 | 137. | 1258 | 136. | 1259 | 136. |
| 1260 | 136. | 1261 | 135. | 1262 | 134. | 1263 | 134. | 1264 | 132. |
| 1265 | 131. | 1266 | 130. | 1267 | 129. | 1268 | 127. | 1269 | 126. |
| 1270 | 125. | 1271 | 124. | 1272 | 122. | 1273 | 121. | 1274 | 120. |
| 1275 | 120. | 1276 | 119. | 1277 | 118. | 1278 | 117. | 1279 | 117. |
| 1280 | 116. | 1281 | 115. | 1282 | 115. | 1283 | 115. | 1284 | 114. |
| 1285 | 113. | 1286 | 113. | 1287 | 113. | 1288 | 112. | 1289 | 112. |
| 1290 | 112. | 1291 | 111. | 1292 | 111. | 1293 | 110. | 1294 | 110. |
| 1295 | 110. | 1296 | 110. | 1297 | 109. | 1298 | 110. | 1299 | 110. |
| 1300 | 109. | 1310 | 97. | 1320 | 86. | 1330 | 82. | 1340 | 78. |
| 1350 | 62. | 1360 | 50. | 1370 | 43. | 1380 | 39. | 1390 | 36. |
| 1400 | 36. | 1420 | 36. | 1440 | 36. | 1460 | 36. | 1500 | 36. |

MODIFIED RATIONAL METHOD HYDROLOGY

SO.BR.ARR.CON. PRES.COND.BY HILSMANN ABOVE 19C Q100 N.MT.CK.

HYDROGRAPH AT 84901 66A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 240. | 200 | 297. | 300 | 355. | 400 | 376. |
| 500 | 412. | 600 | 439. | 700 | 522. | 800 | 592. | 900 | 730. |
| 1000 | 1006. | 1050 | 1189. | 1100 | 1406. | 1110 | 1462. | 1120 | 1547. |
| 1130 | 1678. | 1131 | 1694. | 1132 | 1711. | 1133 | 1728. | 1134 | 1746. |
| 1135 | 1766. | 1136 | 1788. | 1137 | 1812. | 1138 | 1839. | 1139 | 1868. |
| 1140 | 1898. | 1141 | 1929. | 1142 | 1961. | 1143 | 1996. | 1144 | 2035. |
| 1145 | 2077. | 1146 | 2122. | 1147 | 2170. | 1148 | 2222. | 1149 | 2279. |
| 1150 | 2345. | 1151 | 2433. | 1152 | 2552. | 1153 | 2704. | 1154 | 2885. |
| 1155 | 3095. | 1156 | 3342. | 1157 | 3612. | 1158 | 3890. | 1159 | 4182. |
| 1160 | 4476. | 1161 | 4740. | 1162 | 4968. | 1163 | 5164. | 1164 | 5318. |
| 1165 | 5420. | 1166 | 5482. | 1167 | 5507. | 1168 | 5495. | 1169 | 5445. |
| 1170 | 5360. | 1171 | 5238. | 1172 | 5088. | 1173 | 4921. | 1174 | 4740. |
| 1175 | 4552. | 1176 | 4364. | 1177 | 4181. | 1178 | 4002. | 1179 | 3835. |
| 1180 | 3667. | 1181 | 3501. | 1182 | 3342. | 1183 | 3189. | 1184 | 3053. |
| 1185 | 2919. | 1186 | 2789. | 1187 | 2665. | 1188 | 2550. | 1189 | 2446. |
| 1190 | 2354. | 1191 | 2269. | 1192 | 2189. | 1193 | 2114. | 1194 | 2045. |
| 1195 | 1982. | 1196 | 1923. | 1197 | 1869. | 1198 | 1820. | 1199 | 1779. |
| 1200 | 1742. | 1201 | 1705. | 1202 | 1670. | 1203 | 1637. | 1204 | 1605. |
| 1205 | 1575. | 1206 | 1547. | 1207 | 1520. | 1208 | 1495. | 1209 | 1471. |
| 1210 | 1449. | 1211 | 1426. | 1212 | 1405. | 1213 | 1384. | 1214 | 1364. |
| 1215 | 1345. | 1216 | 1327. | 1217 | 1310. | 1218 | 1294. | 1219 | 1279. |
| 1220 | 1264. | 1221 | 1250. | 1222 | 1237. | 1223 | 1225. | 1224 | 1213. |
| 1225 | 1202. | 1226 | 1192. | 1227 | 1183. | 1228 | 1173. | 1229 | 1164. |
| 1230 | 1155. | 1231 | 1147. | 1232 | 1139. | 1233 | 1131. | 1234 | 1124. |
| 1235 | 1117. | 1236 | 1109. | 1237 | 1102. | 1238 | 1095. | 1239 | 1089. |
| 1240 | 1082. | 1241 | 1075. | 1242 | 1068. | 1243 | 1061. | 1244 | 1055. |
| 1245 | 1048. | 1246 | 1041. | 1247 | 1035. | 1248 | 1029. | 1249 | 1023. |
| 1250 | 1017. | 1251 | 1011. | 1252 | 1005. | 1253 | 1000. | 1254 | 995. |
| 1255 | 990. | 1256 | 985. | 1257 | 980. | 1258 | 976. | 1259 | 971. |
| 1260 | 967. | 1261 | 964. | 1262 | 960. | 1263 | 956. | 1264 | 952. |
| 1265 | 949. | 1266 | 945. | 1267 | 941. | 1268 | 936. | 1269 | 932. |
| 1270 | 927. | 1271 | 922. | 1272 | 916. | 1273 | 911. | 1274 | 905. |
| 1275 | 899. | 1276 | 893. | 1277 | 887. | 1278 | 881. | 1279 | 875. |
| 1280 | 868. | 1281 | 862. | 1282 | 856. | 1283 | 850. | 1284 | 844. |
| 1285 | 839. | 1286 | 833. | 1287 | 828. | 1288 | 823. | 1289 | 818. |
| 1290 | 813. | 1291 | 809. | 1292 | 804. | 1293 | 800. | 1294 | 796. |
| 1295 | 792. | 1296 | 789. | 1297 | 785. | 1298 | 782. | 1299 | 779. |
| 1300 | 776. | 1310 | 735. | 1320 | 680. | 1330 | 623. | 1340 | 582. |
| 1350 | 529. | 1360 | 460. | 1370 | 393. | 1380 | 339. | 1390 | 298. |
| 1400 | 272. | 1420 | 243. | 1440 | 240. | 1460 | 240. | 1500 | 240. |

MODIFIED RATIONAL METHOD HYDROLOGY

CONEJO MT.CREEK PRES.COND.BY VCFCD W/OUT C ZONE RAIN Q 100P

HYDROGRAPH AT 84901 101B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 2. | 200 | 2. | 300 | 6. | 400 | 15. |
| 500 | 25. | 600 | 35. | 700 | 47. | 800 | 62. | 900 | 97. |
| 1000 | 175. | 1050 | 256. | 1100 | 342. | 1110 | 382. | 1120 | 421. |
| 1130 | 502. | 1131 | 511. | 1132 | 520. | 1133 | 530. | 1134 | 542. |
| 1135 | 552. | 1136 | 560. | 1137 | 572. | 1138 | 584. | 1139 | 597. |
| 1140 | 611. | 1141 | 627. | 1142 | 643. | 1143 | 659. | 1144 | 677. |
| 1145 | 699. | 1146 | 724. | 1147 | 747. | 1148 | 771. | 1149 | 822. |
| 1150 | 876. | 1151 | 898. | 1152 | 993. | 1153 | 1059. | 1154 | 1107. |
| 1155 | 1159. | 1156 | 1221. | 1157 | 1290. | 1158 | 1368. | 1159 | 1443. |
| 1160 | 1527. | 1161 | 1631. | 1162 | 1705. | 1163 | 1769. | 1164 | 1834. |
| 1165 | 1896. | 1166 | 1899. | 1167 | 1899. | 1168 | 1898. | 1169 | 1887. |
| 1170 | 1855. | 1171 | 1821. | 1172 | 1787. | 1173 | 1755. | 1174 | 1728. |
| 1175 | 1711. | 1176 | 1699. | 1177 | 1692. | 1178 | 1687. | 1179 | 1685. |
| 1180 | 1683. | 1181 | 1676. | 1182 | 1663. | 1183 | 1642. | 1184 | 1617. |
| 1185 | 1584. | 1186 | 1545. | 1187 | 1502. | 1188 | 1456. | 1189 | 1407. |
| 1190 | 1357. | 1191 | 1306. | 1192 | 1256. | 1193 | 1207. | 1194 | 1159. |
| 1195 | 1113. | 1196 | 1068. | 1197 | 1025. | 1198 | 984. | 1199 | 945. |
| 1200 | 908. | 1201 | 872. | 1202 | 838. | 1203 | 805. | 1204 | 775. |
| 1205 | 745. | 1206 | 718. | 1207 | 692. | 1208 | 666. | 1209 | 643. |
| 1210 | 620. | 1211 | 599. | 1212 | 579. | 1213 | 560. | 1214 | 541. |
| 1215 | 524. | 1216 | 508. | 1217 | 493. | 1218 | 477. | 1219 | 463. |
| 1220 | 450. | 1221 | 438. | 1222 | 425. | 1223 | 413. | 1224 | 402. |
| 1225 | 392. | 1226 | 381. | 1227 | 371. | 1228 | 363. | 1229 | 355. |
| 1230 | 346. | 1231 | 338. | 1232 | 332. | 1233 | 325. | 1234 | 318. |
| 1235 | 312. | 1236 | 307. | 1237 | 302. | 1238 | 297. | 1239 | 292. |
| 1240 | 287. | 1241 | 284. | 1242 | 279. | 1243 | 275. | 1244 | 272. |
| 1245 | 268. | 1246 | 264. | 1247 | 261. | 1248 | 258. | 1249 | 254. |
| 1250 | 252. | 1251 | 249. | 1252 | 246. | 1253 | 244. | 1254 | 241. |
| 1255 | 239. | 1256 | 237. | 1257 | 235. | 1258 | 233. | 1259 | 231. |
| 1260 | 229. | 1261 | 227. | 1262 | 225. | 1263 | 222. | 1264 | 220. |
| 1265 | 218. | 1266 | 216. | 1267 | 213. | 1268 | 212. | 1269 | 210. |
| 1270 | 207. | 1271 | 205. | 1272 | 204. | 1273 | 203. | 1274 | 200. |
| 1275 | 198. | 1276 | 197. | 1277 | 196. | 1278 | 194. | 1279 | 192. |
| 1280 | 191. | 1281 | 190. | 1282 | 188. | 1283 | 186. | 1284 | 185. |
| 1285 | 184. | 1286 | 182. | 1287 | 179. | 1288 | 178. | 1289 | 177. |
| 1290 | 175. | 1291 | 174. | 1292 | 173. | 1293 | 171. | 1294 | 170. |
| 1295 | 168. | 1296 | 168. | 1297 | 167. | 1298 | 166. | 1299 | 164. |
| 1300 | 164. | 1310 | 150. | 1320 | 139. | 1330 | 126. | 1340 | 112. |
| 1350 | 99. | 1360 | 89. | 1370 | 79. | 1380 | 69. | 1390 | 60. |
| 1400 | 52. | 1420 | 39. | 1440 | 29. | 1460 | 22. | 1500 | 13. |

MODIFIED RATIONAL METHOD HYDROLOGY

SO.BR.ARR.CON. PRESENT CONDITION 6/78 Q-100 AFTER JCT CON.MT.CK

HYDROGRAPH AT 84901 106A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 270. | 200 | 332. | 300 | 402. | 400 | 433. |
| 500 | 479. | 600 | 517. | 700 | 616. | 800 | 708. | 900 | 892. |
| 1000 | 1271. | 1050 | 1548. | 1100 | 1879. | 1110 | 1974. | 1120 | 2096. |
| 1130 | 2294. | 1131 | 2318. | 1132 | 2343. | 1133 | 2368. | 1134 | 2396. |
| 1135 | 2424. | 1136 | 2454. | 1137 | 2488. | 1138 | 2526. | 1139 | 2565. |
| 1140 | 2607. | 1141 | 2651. | 1142 | 2697. | 1143 | 2746. | 1144 | 2800. |
| 1145 | 2861. | 1146 | 2924. | 1147 | 2993. | 1148 | 3067. | 1149 | 3161. |
| 1150 | 3266. | 1151 | 3378. | 1152 | 3569. | 1153 | 3773. | 1154 | 3999. |
| 1155 | 4264. | 1156 | 4567. | 1157 | 4895. | 1158 | 5216. | 1159 | 5554. |
| 1160 | 5913. | 1161 | 6197. | 1162 | 6459. | 1163 | 6701. | 1164 | 6899. |
| 1165 | 7043. | 1166 | 7158. | 1167 | 7248. | 1168 | 7308. | 1169 | 7335. |
| 1170 | 7322. | 1171 | 7267. | 1172 | 7171. | 1173 | 7045. | 1174 | 6896. |
| 1175 | 6731. | 1176 | 6559. | 1177 | 6386. | 1178 | 6210. | 1179 | 6044. |
| 1180 | 5871. | 1181 | 5696. | 1182 | 5525. | 1183 | 5357. | 1184 | 5202. |
| 1185 | 5047. | 1186 | 4893. | 1187 | 4743. | 1188 | 4598. | 1189 | 4460. |
| 1190 | 4332. | 1191 | 4207. | 1192 | 4084. | 1193 | 3964. | 1194 | 3848. |
| 1195 | 3735. | 1196 | 3626. | 1197 | 3521. | 1198 | 3421. | 1199 | 3329. |
| 1200 | 3241. | 1201 | 3154. | 1202 | 3070. | 1203 | 2988. | 1204 | 2910. |
| 1205 | 2835. | 1206 | 2762. | 1207 | 2692. | 1208 | 2626. | 1209 | 2564. |
| 1210 | 2504. | 1211 | 2445. | 1212 | 2390. | 1213 | 2336. | 1214 | 2286. |
| 1215 | 2238. | 1216 | 2192. | 1217 | 2149. | 1218 | 2107. | 1219 | 2068. |
| 1220 | 2032. | 1221 | 1996. | 1222 | 1962. | 1223 | 1931. | 1224 | 1901. |
| 1225 | 1872. | 1226 | 1845. | 1227 | 1820. | 1228 | 1796. | 1229 | 1773. |
| 1230 | 1750. | 1231 | 1728. | 1232 | 1707. | 1233 | 1687. | 1234 | 1667. |
| 1235 | 1650. | 1236 | 1632. | 1237 | 1615. | 1238 | 1598. | 1239 | 1582. |
| 1240 | 1566. | 1241 | 1551. | 1242 | 1536. | 1243 | 1522. | 1244 | 1508. |
| 1245 | 1494. | 1246 | 1481. | 1247 | 1468. | 1248 | 1455. | 1249 | 1443. |
| 1250 | 1431. | 1251 | 1419. | 1252 | 1408. | 1253 | 1398. | 1254 | 1387. |
| 1255 | 1378. | 1256 | 1368. | 1257 | 1359. | 1258 | 1351. | 1259 | 1343. |
| 1260 | 1336. | 1261 | 1329. | 1262 | 1321. | 1263 | 1314. | 1264 | 1308. |
| 1265 | 1301. | 1266 | 1293. | 1267 | 1286. | 1268 | 1278. | 1269 | 1271. |
| 1270 | 1263. | 1271 | 1254. | 1272 | 1246. | 1273 | 1238. | 1274 | 1228. |
| 1275 | 1219. | 1276 | 1211. | 1277 | 1202. | 1278 | 1193. | 1279 | 1184. |
| 1280 | 1175. | 1281 | 1167. | 1282 | 1158. | 1283 | 1149. | 1284 | 1141. |
| 1285 | 1133. | 1286 | 1125. | 1287 | 1117. | 1288 | 1110. | 1289 | 1103. |
| 1290 | 1096. | 1291 | 1090. | 1292 | 1084. | 1293 | 1078. | 1294 | 1072. |
| 1295 | 1066. | 1296 | 1061. | 1297 | 1056. | 1298 | 1051. | 1299 | 1047. |
| 1300 | 1043. | 1310 | 985. | 1320 | 911. | 1330 | 837. | 1340 | 778. |
| 1350 | 709. | 1360 | 621. | 1370 | 537. | 1380 | 466. | 1390 | 412. |
| 1400 | 374. | 1420 | 323. | 1440 | 304. | 1460 | 292. | 1500 | 277. |

FORM: WRDK - 08/12/88

DEVELOPED CONDITIONS

100-YEAR STORM

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

SO.BR.ARR.CON.0100F.DOS VIENTOS DEV.W/3 BSN. & S.B.,DDT/CH 4/86 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 | 1A | 62. | 190. | 62. | 190. | 1 | 1050. | 0.01400 | 0.00 | 0.00 | 0. | 10 | 15 | C99 | 0.00 |
| 48651 | 2A | 63. | 186. | 125. | 339. | 1 | 1400. | 0.01800 | 0.00 | 0.00 | 0. | 20 | 14 | C99 | 0.00 |
| 48651 | 3A | 58. | 165. | 183. | 446. | 1 | 1400. | 0.01800 | 0.00 | 0.00 | 0. | 20 | 15 | C99 | 0.00 |
| 48651 | 4A | 68. | 193. | 251. | 529. | 1 | 600. | 0.01800 | 0.00 | 0.00 | 0. | 20 | 15 | C99 | 0.00 |
| 48651 | 5A | 45. | 133. | 296. | 596. | 1 | 1650. | 0.01500 | 0.00 | 0.00 | 0. | 20 | 14 | C99 | 0.00 |
| 48651 | 6A | 36. | 110. | 332. | 598. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | C99 | 0.00 |
| 48651 | 7B | 63. | 193. | 63. | 193. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 15 | C99 | 0.00 |
| 48651 | 8B | 58. | 184. | 121. | 377. | 1 | 1900. | 0.04700 | 0.00 | 0.00 | 0. | 10 | 14 | C99 | 0.00 |
| 48651 | 9B | 74. | 210. | 195. | 548. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 15 | C99 | 0.00 |
| 48651 | 10B | 38. | 127. | 233. | 664. | 4 | 2150. | 0.02100 | 6.25 | 0.00 | 0. | 20 | 11 | C99 | 0.00 |
| 48651 | 11B | 52. | 149. | 285. | 786. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 15 | C99 | 0.05 |

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*                                          CONFLUENCE Q'S                                           *
*  48651   12A  TA 1169 QA     598. QAB     1073. QB      475.   48651   12B  TB 1161 QB     786. QBA     1329. QA     543.   *
*                              48651   12AB TAB 1162 QAB     1332. QA     553. QB     779.                                    *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 | 12AB | 285. | 786. | 617. | 1332. | 1 | 900. | 0.00600 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 48651 | 13A | 85. | 268. | 702. | 1409. | 5 | 100. | 0.01500 | 11.00 | 0.00 | 0. | 20 | 13 | C99 | 0.27 |
| 48651 | 14A | 0. | 0. | 702. | 1409. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 48651 | 15C | 72. | 224. | 72. | 224. | 4 | 1600. | 0.01000 | 4.75 | 0.00 | 0. | 10 | 11 | B98 | 0.20 |
| 48651 | 16C | 59. | 213. | 131. | 420. | 4 | 1400. | 0.01000 | 6.00 | 0.00 | 0. | 10 | 11 | C99 | 0.18 |
| 48651 | 17C | 76. | 248. | 207. | 643. | 4 | 1600. | 0.02500 | 6.00 | 0.00 | 0. | 20 | 12 | C99 | 0.20 |
| 48651 | 18C | 46. | 149. | 253. | 774. | 4 | 1000. | 0.04000 | 5.75 | 0.00 | 0. | 20 | 12 | C99 | 0.17 |
| 48651 | 19C | 52. | 177. | 305. | 920. | 4 | 200. | 0.02500 | 6.75 | 0.00 | 0. | 20 | 11 | C99 | 0.17 |
| 48651 | 20C | 373. | 384. | 373. | 384. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 48651 | 21D | 16. | 61. | 16. | 61. | 3 | 800. | 0.01900 | 0.00 | 0.00 | 0. | 10 | 10 | C99 | 0.12 |
| 48651 | 22D | 0. | 0. | 16. | 58. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |

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*                                          CONFLUENCE Q'S                                           *
*  48651   23C  TC 1168 QC     384. QCD     405. QD       21.   48651   23D  TD 1159 QD      58. QDC     406. QC     348.   *
*                              48651   23CD TCD 1162 QCD     422. QC     371. QD     51.                                     *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 | 23CD | 16. | 58. | 389. | 422. | 4 | 1450. | 0.02300 | 5.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 48651 | 24C | 41. | 148. | 430. | 515. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.23 |
| 48651 | 25AC | 430. | 515. | 1132. | 1866. | 5 | 1250. | 0.00800 | 14.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 48651 | 26A | 0. | 0. | 1132. | 1860. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 48651 | 27B | 70. | 251. | 70. | 251. | 1 | 1300. | 0.11500 | 0.00 | 0.00 | 0. | 10 | 11 | C99 | 0.00 |
| 48651 | 28B | 129. | 409. | 199. | 646. | 1 | 1500. | 0.05300 | 0.00 | 0.00 | 0. | 10 | 14 | C99 | 0.00 |
| 48651 | 29B | 69. | 211. | 268. | 827. | 1 | 500. | 0.06000 | 0.00 | 0.00 | 0. | 20 | 13 | C99 | 0.00 |
| 48651 | 30B | 80. | 245. | 348. | 1053. | 1 | 1600. | 0.04400 | 0.00 | 0.00 | 0. | 10 | 15 | C99 | 0.00 |
| 48651 | 31B | 71. | 233. | 419. | 1218. | 1 | 1900. | 0.02100 | 0.00 | 0.00 | 0. | 10 | 13 | C99 | 0.00 |
| 48651 | 32B | 70. | 206. | 489. | 1243. | 4 | 1600. | 0.02600 | 7.50 | 0.00 | 0. | 20 | 14 | C99 | 0.00 |
| 48651 | 33B | 77. | 197. | 566. | 1355. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 16 | C99 | 0.00 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

SD BR ARR CON Q100F DOS VIENTOS DEV W/3 BSN. & S.B. DOT/CH 4/86 STORM DAY 4

| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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*****************************************************************************************************************
*                                                CONFLUENCE Q'S                                                 *
* 48651   34A  TA 1165 QA    1860. QAB    3216. QB    1355.   48651   34B  TB 1165 QB    1355. QBA    3216. QA    1860.  *
*                            48651   34AB TAB 1165 QAB    3216. QA    1860. QB    1355.                                  *
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| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 34AB | 566. | 1355. | 1698. | 3216. | 5 | 700. | 0.01100 | 16.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 48651 35A | 0. | 0. | 1698. | 3212. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 48651 36C | 53. | 182. | 53. | 182. | 1 | 2200. | 0.06800 | 0.00 | 0.00 | 0. | 10 | 12 | C99 | 0.17 |
| 48651 37C | 60. | 216. | 113. | 359. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 11 | C99 | 0.12 |
| 48651 38C | 51. | 158. | 164. | 517. | 4 | 1900. | 0.03900 | 5.00 | 0.00 | 0. | 10 | 13 | C99 | 0.09 |
| 48651 39C | 39. | 133. | 203. | 632. | 4 | 350. | 0.02900 | 5.75 | 0.00 | 0. | 20 | 11 | C99 | 0.20 |
| 48651 40C | 0. | 0. | 203. | 629. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 48651 41D | 38. | 137. | 38. | 137. | 3 | 1450. | 0.04500 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.22 |
| 48651 42D | 54. | 195. | 92. | 312. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 10 | C99 | 0.21 |

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*                                                CONFLUENCE Q'S                                                 *
* 48651   43C  TC 1159 QC    629. QCD     917. QD     288.   48651   43D  TD 1158 QD     312. QDC     933. QC     621.   *
*                            48651   43CD TCD 1158 QCD     933. QC     621. QD     312.                                   *
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| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 43CD | 92. | 312. | 295. | 933. | 4 | 200. | 0.05000 | 6.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 48651 44C | 0. | 0. | 295. | 932. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | C99 | 0.00 |
| 48651 45E | 40. | 144. | 40. | 144. | 3 | 1100. | 0.06800 | 0.00 | 0.00 | 0. | 10 | 11 | C99 | 0.10 |
| 48651 46E | 0. | 0. | 40. | 140. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |

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*                                                CONFLUENCE Q'S                                                 *
* 48651   47C  TC 1158 QC    932. QCE    1072. QE     140.   48651   47E  TE 1158 QE     140. QEC    1072. QC     932.   *
*                            48651   47CE TCE 1158 QCE    1072. QC     932. QE     140.                                   *
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| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 47CE | 40. | 140. | 335. | 1072. | 4 | 300. | 0.02900 | 7.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 48651 48C | 60. | 198. | 395. | 1258. | 5 | 2200. | 0.01400 | 11.00 | 0.00 | 0. | 10 | 13 | C99 | 0.12 |
| 48651 49C | 51. | 153. | 446. | 1386. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 14 | C99 | 0.18 |
| 48651 50C | 62. | 213. | 508. | 1581. | 5 | 200. | 0.00830 | 13.00 | 0.00 | 0. | 10 | 12 | C99 | 0.20 |
| 48651 51C | 0. | 0. | 508. | 1580. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 48651 52D | 0. | 0. | 0. | 312. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 48651 53D | 17. | 63. | 17. | 63. | 4 | 1600. | 0.03800 | 2.25 | 0.00 | 0. | 30 | 9 | C99 | 0.25 |
| 48651 54D | 55. | 171. | 72. | 228. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 13 | C99 | 0.16 |

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*                                                CONFLUENCE Q'S                                                 *
* 48651   55C  TC 1160 QC    1580. QCD    1792. QD     212.   48651   55D  TD 1156 QD     228. QDC    1646. QC    1417.   *
*                            48651   55CD TCD 1160 QCD    1792. QC    1580. QD     212.                                   *
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| LOCATION | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 55CD | 72. | 228. | 580. | 1792. | 5 | 600. | 0.00830 | 13.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

SD.BR.ARR.CON.Q100F,DOS VIENTOS DEV.W/3 BSN. & S.B.,DOT/CH 4/86 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 | 56C | 0. | 0. | 580. | 1790. | 5 | 300. | 0.01200 | 13.00 | 0.00 | 0. | 10 | 99 | C99 | 0.00 |
| 48651 | 57C | 51. | 175. | 631. | 1927. | 5 | 800. | 0.00500 | 15.00 | 0.00 | 0. | 20 | 11 | C99 | 0.23 |
| 48651 | 58C | 0. | 0. | 631. | 1919. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |

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*                                                CONFLUENCE Q'S                                                 *
*  48651   59A  TA 1166 QA    3212. QAC    4671. QC    1460.   48651   59C  TC 1161 QC    1919. QCA    4801. QA    2882.  *
*                             48651   59AC TAC 1163 QAC    4920. QA    3093. QC    1827.                                  *
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| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 | 59AC | 631. | 1919. | 2329. | 4920. | 5 | 550. | 0.01100 | 19.00 | 0.00 | 0. | 20 | 0 | C99 | 0.00 |
| 48651 | 60A | 67. | 230. | 2396. | 5002. | 5 | 600. | 0.01000 | 19.00 | 0.00 | 0. | 20 | 11 | C99 | 0.23 |
| 48651 | 61A | 0. | 0. | 2396. | 4990. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 48651 | 62A | 80. | 291. | 2476. | 5074. | 5 | 350. | 0.01000 | 19.00 | 0.00 | 0. | 20 | 10 | C99 | 0.30 |
| 48651 | 63A | 62. | 204. | 2538. | 5189. | 5 | 1600. | 0.01500 | 18.00 | 0.00 | 0. | 20 | 12 | C99 | 0.28 |
| 48651 | 64A | 0. | 0. | 2538. | 5177. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | C99 | 0.00 |
| 48651 | 65A | 0. | 0. | 2538. | 5177. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 66A | 0. | 0. | 2538. | 5177. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 67B | 0. | 0. | 0. | 1355. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 68B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 69B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 70B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 71B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 72B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 73B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 74B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 75B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 76B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 99 | B98 | 0.00 |
| 48651 | 77B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 78B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 79B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 80B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 81B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 82B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 83B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 84B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 99 | B98 | 0.00 |
| 48651 | 85B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 86B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 99 | B98 | 0.00 |
| 48651 | 87B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 88B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 89B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 30 | 99 | B98 | 0.00 |
| 48651 | 90B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 91B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 92B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 93B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 94B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 40 | 99 | B98 | 0.00 |
| 48651 | 95B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 96B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 97B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 98B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

SD.BR.ARR.CON.Q100F.DOS VIENTOS DEV.W/3 BSN. 8 S.B. DDT/CH 4/86 STORM DAY 4

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 | 99B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 100B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 101B | 0. | 0. | 0. | 0. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 99 | B98 | 0.00 |
| 48651 | 102B | 1583. | 1057. | 1583. | 1057. | 5 | 1500. | 0.01500 | 3.00 | 2.00 | 0. | 20 | 0 | B98 | 0.00 |
| 48651 | 103B | 0. | 0. | 1583. | 1055. | 5 | 850. | 0.01388 | 12.00 | 0.00 | 0. | 10 | 99 | B98 | 0.00 |
| 48651 | 104B | 62. | 171. | 1645. | 1074. | 5 | 800. | 0.01388 | 12.00 | 0.00 | 0. | 20 | 12 | B98 | 0.15 |
| 48651 | 105B | 45. | 126. | 1690. | 1149. | 0 | 0. | 0.00000 | 0.00 | 0.00 | 0. | 20 | 12 | B98 | 0.24 |

CONFLUENCE Q'S

48651 106A TA 1164 QA 5177. QAB 6289. QB 1083. 48651 106B TB 1160 QB 1149. QBA 6059. QA 4909.
48651 106AB TAB 1163 QAB 6291. QA 5176. QB 1115.

| LOCATION | | SUBAREA AREA | SUBAREA Q | TOTAL AREA | TOTAL Q | CONV TYPE | CONV LNGTH | CONV SLOPE | CONV SIZE | CONV Z | CONTROL Q | SOIL NAME | TC | RAIN ZONE | PCT IMPV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48651 | 106AB | 1690. | 1149. | 4228. | 6291. | 5 | 1300. | 0.00800 | 21.00 | 0.00 | 0. | 20 | 0 | B98 | 0.00 |

MODIFIED RATIONAL METHOD HYDROLOGY

DOS VIENTOS RET.DAM NR.PORTRERO, SD.BR.ARR.CON.Q100F RTED BY CH

HYDROGRAPH AT 48651 20C STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 16. | 200 | 38. | 300 | 47. | 400 | 52. |
| 500 | 57. | 600 | 61. | 700 | 70. | 800 | 80. | 900 | 96. |
| 1000 | 125. | 1050 | 153. | 1100 | 180. | 1110 | 189. | 1120 | 201. |
| 1130 | 212. | 1131 | 213. | 1132 | 215. | 1133 | 216. | 1134 | 218. |
| 1135 | 220. | 1136 | 222. | 1137 | 224. | 1138 | 227. | 1139 | 229. |
| 1140 | 231. | 1141 | 233. | 1142 | 236. | 1143 | 239. | 1144 | 242. |
| 1145 | 245. | 1146 | 248. | 1147 | 252. | 1148 | 256. | 1149 | 261. |
| 1150 | 266. | 1151 | 273. | 1152 | 283. | 1153 | 292. | 1154 | 302. |
| 1155 | 312. | 1156 | 322. | 1157 | 331. | 1158 | 340. | 1159 | 348. |
| 1160 | 357. | 1161 | 364. | 1162 | 371. | 1163 | 376. | 1164 | 379. |
| 1165 | 381. | 1166 | 383. | 1167 | 383. | 1168 | 384. | 1169 | 384. |
| 1170 | 383. | 1171 | 383. | 1172 | 382. | 1173 | 381. | 1174 | 381. |
| 1175 | 379. | 1176 | 378. | 1177 | 377. | 1178 | 376. | 1179 | 374. |
| 1180 | 372. | 1181 | 370. | 1182 | 368. | 1183 | 366. | 1184 | 364. |
| 1185 | 363. | 1186 | 361. | 1187 | 359. | 1188 | 357. | 1189 | 355. |
| 1190 | 353. | 1191 | 351. | 1192 | 349. | 1193 | 347. | 1194 | 345. |
| 1195 | 344. | 1196 | 342. | 1197 | 341. | 1198 | 339. | 1199 | 338. |
| 1200 | 336. | 1201 | 335. | 1202 | 333. | 1203 | 332. | 1204 | 330. |
| 1205 | 329. | 1206 | 327. | 1207 | 325. | 1208 | 323. | 1209 | 322. |
| 1210 | 320. | 1211 | 318. | 1212 | 317. | 1213 | 315. | 1214 | 314. |
| 1215 | 311. | 1216 | 309. | 1217 | 308. | 1218 | 305. | 1219 | 303. |
| 1220 | 302. | 1221 | 300. | 1222 | 298. | 1223 | 296. | 1224 | 294. |
| 1225 | 292. | 1226 | 290. | 1227 | 289. | 1228 | 287. | 1229 | 285. |
| 1230 | 284. | 1231 | 282. | 1232 | 280. | 1233 | 278. | 1234 | 276. |
| 1235 | 274. | 1236 | 272. | 1237 | 269. | 1238 | 267. | 1239 | 265. |
| 1240 | 263. | 1241 | 262. | 1242 | 260. | 1243 | 258. | 1244 | 256. |
| 1245 | 254. | 1246 | 252. | 1247 | 250. | 1248 | 248. | 1249 | 246. |
| 1250 | 244. | 1251 | 242. | 1252 | 241. | 1253 | 239. | 1254 | 237. |
| 1255 | 235. | 1256 | 233. | 1257 | 231. | 1258 | 229. | 1259 | 228. |
| 1260 | 226. | 1261 | 225. | 1262 | 222. | 1263 | 221. | 1264 | 219. |
| 1265 | 218. | 1266 | 216. | 1267 | 214. | 1268 | 212. | 1269 | 211. |
| 1270 | 209. | 1271 | 208. | 1272 | 205. | 1273 | 204. | 1274 | 203. |
| 1275 | 201. | 1276 | 198. | 1277 | 196. | 1278 | 194. | 1279 | 192. |
| 1280 | 189. | 1281 | 187. | 1282 | 185. | 1283 | 183. | 1284 | 181. |
| 1285 | 179. | 1286 | 177. | 1287 | 176. | 1288 | 173. | 1289 | 171. |
| 1290 | 170. | 1291 | 168. | 1292 | 167. | 1293 | 165. | 1294 | 163. |
| 1295 | 162. | 1296 | 160. | 1297 | 159. | 1298 | 158. | 1299 | 156. |
| 1300 | 155. | 1310 | 139. | 1320 | 124. | 1330 | 109. | 1340 | 99. |
| 1350 | 87. | 1360 | 72. | 1370 | 59. | 1380 | 48. | 1390 | 42. |
| 1400 | 38. | 1420 | 35. | 1440 | 34. | 1460 | 34. | 1500 | 33. |

MODIFIED RATIONAL METHOD HYDROLOGY

CONEJO MT.CK.AT OLD DAM SITE W/3 BASINS PER C.H.DOS VIENTOS 0100

HYDROGRAPH AT 4865I 102B STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 34. | 200 | 76. | 300 | 98. | 400 | 110. |
| 500 | 121. | 600 | 130. | 700 | 148. | 800 | 164. | 900 | 196. |
| 1000 | 250. | 1050 | 316. | 1100 | 377. | 1110 | 407. | 1120 | 445. |
| 1130 | 499. | 1131 | 505. | 1132 | 510. | 1133 | 518. | 1134 | 527. |
| 1135 | 537. | 1136 | 547. | 1137 | 557. | 1138 | 567. | 1139 | 576. |
| 1140 | 584. | 1141 | 596. | 1142 | 609. | 1143 | 620. | 1144 | 633. |
| 1145 | 647. | 1146 | 661. | 1147 | 677. | 1148 | 691. | 1149 | 722. |
| 1150 | 752. | 1151 | 782. | 1152 | 814. | 1153 | 847. | 1154 | 864. |
| 1155 | 884. | 1156 | 894. | 1157 | 907. | 1158 | 924. | 1159 | 933. |
| 1160 | 943. | 1161 | 960. | 1162 | 971. | 1163 | 980. | 1164 | 997. |
| 1165 | 1010. | 1166 | 1022. | 1167 | 1032. | 1168 | 1040. | 1169 | 1047. |
| 1170 | 1052. | 1171 | 1055. | 1172 | 1057. | 1173 | 1057. | 1174 | 1055. |
| 1175 | 1052. | 1176 | 1048. | 1177 | 1044. | 1178 | 1038. | 1179 | 1032. |
| 1180 | 1026. | 1181 | 1021. | 1182 | 1015. | 1183 | 1009. | 1184 | 1003. |
| 1185 | 997. | 1186 | 990. | 1187 | 983. | 1188 | 976. | 1189 | 970. |
| 1190 | 964. | 1191 | 956. | 1192 | 948. | 1193 | 939. | 1194 | 932. |
| 1195 | 923. | 1196 | 911. | 1197 | 898. | 1198 | 886. | 1199 | 873. |
| 1200 | 860. | 1201 | 848. | 1202 | 836. | 1203 | 824. | 1204 | 812. |
| 1205 | 800. | 1206 | 789. | 1207 | 778. | 1208 | 767. | 1209 | 756. |
| 1210 | 745. | 1211 | 731. | 1212 | 717. | 1213 | 704. | 1214 | 690. |
| 1215 | 678. | 1216 | 666. | 1217 | 650. | 1218 | 630. | 1219 | 611. |
| 1220 | 592. | 1221 | 575. | 1222 | 557. | 1223 | 539. | 1224 | 519. |
| 1225 | 501. | 1226 | 483. | 1227 | 467. | 1228 | 453. | 1229 | 439. |
| 1230 | 427. | 1231 | 415. | 1232 | 404. | 1233 | 394. | 1234 | 386. |
| 1235 | 377. | 1236 | 369. | 1237 | 362. | 1238 | 356. | 1239 | 350. |
| 1240 | 345. | 1241 | 339. | 1242 | 335. | 1243 | 331. | 1244 | 325. |
| 1245 | 320. | 1246 | 316. | 1247 | 311. | 1248 | 307. | 1249 | 303. |
| 1250 | 299. | 1251 | 296. | 1252 | 293. | 1253 | 290. | 1254 | 288. |
| 1255 | 287. | 1256 | 285. | 1257 | 283. | 1258 | 282. | 1259 | 280. |
| 1260 | 280. | 1261 | 278. | 1262 | 277. | 1263 | 276. | 1264 | 275. |
| 1265 | 274. | 1266 | 274. | 1267 | 272. | 1268 | 271. | 1269 | 271. |
| 1270 | 270. | 1271 | 270. | 1272 | 269. | 1273 | 267. | 1274 | 266. |
| 1275 | 264. | 1276 | 262. | 1277 | 260. | 1278 | 259. | 1279 | 257. |
| 1280 | 254. | 1281 | 251. | 1282 | 249. | 1283 | 248. | 1284 | 245. |
| 1285 | 243. | 1286 | 242. | 1287 | 241. | 1288 | 239. | 1289 | 237. |
| 1290 | 236. | 1291 | 235. | 1292 | 233. | 1293 | 232. | 1294 | 231. |
| 1295 | 231. | 1296 | 230. | 1297 | 230. | 1298 | 230. | 1299 | 230. |
| 1300 | 229. | 1310 | 221. | 1320 | 209. | 1330 | 190. | 1340 | 177. |
| 1350 | 163. | 1360 | 149. | 1370 | 132. | 1380 | 118. | 1390 | 109. |
| 1400 | 107. | 1420 | 103. | 1440 | 98. | 1460 | 92. | 1500 | 80. |

MODIFIED RATIONAL METHOD HYDROLOGY

SD.BR.ARR.CON. PRIOR TO JCT.W/ CON.CK. W/ DAM ON SD.BR.@ 100F

HYDROGRAPH AT 48651 66A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 240. | 200 | 311. | 300 | 370. | 400 | 390. |
| 500 | 428. | 600 | 453. | 700 | 538. | 800 | 601. | 900 | 744. |
| 1000 | 1004. | 1050 | 1194. | 1100 | 1403. | 1110 | 1468. | 1120 | 1561. |
| 1130 | 1704. | 1131 | 1724. | 1132 | 1743. | 1133 | 1763. | 1134 | 1784. |
| 1135 | 1808. | 1136 | 1833. | 1137 | 1861. | 1138 | 1891. | 1139 | 1922. |
| 1140 | 1953. | 1141 | 1985. | 1142 | 2021. | 1143 | 2063. | 1144 | 2109. |
| 1145 | 2159. | 1146 | 2214. | 1147 | 2274. | 1148 | 2339. | 1149 | 2416. |
| 1150 | 2528. | 1151 | 2684. | 1152 | 2880. | 1153 | 3118. | 1154 | 3394. |
| 1155 | 3681. | 1156 | 3963. | 1157 | 4235. | 1158 | 4491. | 1159 | 4720. |
| 1160 | 4909. | 1161 | 5050. | 1162 | 5137. | 1163 | 5176. | 1164 | 5177. |
| 1165 | 5145. | 1166 | 5081. | 1167 | 4984. | 1168 | 4854. | 1169 | 4694. |
| 1170 | 4516. | 1171 | 4332. | 1172 | 4154. | 1173 | 3985. | 1174 | 3822. |
| 1175 | 3664. | 1176 | 3509. | 1177 | 3360. | 1178 | 3217. | 1179 | 3080. |
| 1180 | 2950. | 1181 | 2827. | 1182 | 2712. | 1183 | 2604. | 1184 | 2507. |
| 1185 | 2419. | 1186 | 2337. | 1187 | 2262. | 1188 | 2194. | 1189 | 2131. |
| 1190 | 2076. | 1191 | 2029. | 1192 | 1986. | 1193 | 1947. | 1194 | 1911. |
| 1195 | 1878. | 1196 | 1848. | 1197 | 1820. | 1198 | 1794. | 1199 | 1769. |
| 1200 | 1745. | 1201 | 1721. | 1202 | 1696. | 1203 | 1673. | 1204 | 1650. |
| 1205 | 1628. | 1206 | 1607. | 1207 | 1585. | 1208 | 1563. | 1209 | 1542. |
| 1210 | 1522. | 1211 | 1503. | 1212 | 1486. | 1213 | 1469. | 1214 | 1453. |
| 1215 | 1438. | 1216 | 1424. | 1217 | 1410. | 1218 | 1397. | 1219 | 1384. |
| 1220 | 1372. | 1221 | 1360. | 1222 | 1348. | 1223 | 1337. | 1224 | 1326. |
| 1225 | 1315. | 1226 | 1305. | 1227 | 1296. | 1228 | 1286. | 1229 | 1278. |
| 1230 | 1270. | 1231 | 1262. | 1232 | 1254. | 1233 | 1247. | 1234 | 1239. |
| 1235 | 1232. | 1236 | 1224. | 1237 | 1216. | 1238 | 1209. | 1239 | 1201. |
| 1240 | 1193. | 1241 | 1186. | 1242 | 1178. | 1243 | 1170. | 1244 | 1162. |
| 1245 | 1155. | 1246 | 1147. | 1247 | 1140. | 1248 | 1133. | 1249 | 1126. |
| 1250 | 1119. | 1251 | 1113. | 1252 | 1107. | 1253 | 1102. | 1254 | 1096. |
| 1255 | 1091. | 1256 | 1085. | 1257 | 1080. | 1258 | 1076. | 1259 | 1071. |
| 1260 | 1067. | 1261 | 1062. | 1262 | 1057. | 1263 | 1052. | 1264 | 1047. |
| 1265 | 1041. | 1266 | 1035. | 1267 | 1028. | 1268 | 1022. | 1269 | 1015. |
| 1270 | 1008. | 1271 | 1000. | 1272 | 993. | 1273 | 986. | 1274 | 978. |
| 1275 | 971. | 1276 | 963. | 1277 | 956. | 1278 | 949. | 1279 | 942. |
| 1280 | 935. | 1281 | 928. | 1282 | 922. | 1283 | 916. | 1284 | 910. |
| 1285 | 904. | 1286 | 898. | 1287 | 893. | 1288 | 887. | 1289 | 882. |
| 1290 | 877. | 1291 | 871. | 1292 | 867. | 1293 | 862. | 1294 | 858. |
| 1295 | 853. | 1296 | 849. | 1297 | 845. | 1298 | 841. | 1299 | 837. |
| 1300 | 833. | 1310 | 776. | 1320 | 704. | 1330 | 649. | 1340 | 607. |
| 1350 | 542. | 1360 | 458. | 1370 | 393. | 1380 | 344. | 1390 | 309. |
| 1400 | 287. | 1420 | 256. | 1440 | 244. | 1460 | 240. | 1500 | 240. |

FORM: WDS - 09/1989

MODIFIED RATIONAL METHOD HYDROLOGY

SO.BR.ARR.CON.W/3 BSNS ON CON.CK.& ON SO.BR.ADJ.POTRERO Q 100F

HYDROGRAPH AT 48651 106A STORM DAY 4 REDUCTION FACTOR = 1.000

| TIME | Q | TIME | Q | TIME | Q | TIME | Q | TIME | Q |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0. | 100 | 280. | 200 | 387. | 300 | 475. | 400 | 504. |
| 500 | 557. | 600 | 588. | 700 | 693. | 800 | 772. | 900 | 951. |
| 1000 | 1271. | 1050 | 1530. | 1100 | 1807. | 1110 | 1906. | 1120 | 2033. |
| 1130 | 2241. | 1131 | 2269. | 1132 | 2296. | 1133 | 2323. | 1134 | 2352. |
| 1135 | 2383. | 1136 | 2415. | 1137 | 2451. | 1138 | 2491. | 1139 | 2532. |
| 1140 | 2574. | 1141 | 2619. | 1142 | 2669. | 1143 | 2725. | 1144 | 2785. |
| 1145 | 2851. | 1146 | 2924. | 1147 | 3002. | 1148 | 3088. | 1149 | 3201. |
| 1150 | 3356. | 1151 | 3540. | 1152 | 3797. | 1153 | 4096. | 1154 | 4418. |
| 1155 | 4740. | 1156 | 5053. | 1157 | 5349. | 1158 | 5621. | 1159 | 5861. |
| 1160 | 6059. | 1161 | 6188. | 1162 | 6255. | 1163 | 6291. | 1164 | 6259. |
| 1165 | 6197. | 1166 | 6121. | 1167 | 6025. | 1168 | 5902. | 1169 | 5752. |
| 1170 | 5581. | 1171 | 5404. | 1172 | 5231. | 1173 | 5068. | 1174 | 4909. |
| 1175 | 4753. | 1176 | 4598. | 1177 | 4448. | 1178 | 4303. | 1179 | 4164. |
| 1180 | 4030. | 1181 | 3901. | 1182 | 3780. | 1183 | 3667. | 1184 | 3564. |
| 1185 | 3470. | 1186 | 3382. | 1187 | 3301. | 1188 | 3227. | 1189 | 3158. |
| 1190 | 3097. | 1191 | 3042. | 1192 | 2993. | 1193 | 2947. | 1194 | 2904. |
| 1195 | 2864. | 1196 | 2826. | 1197 | 2790. | 1198 | 2756. | 1199 | 2721. |
| 1200 | 2687. | 1201 | 2650. | 1202 | 2613. | 1203 | 2577. | 1204 | 2542. |
| 1205 | 2507. | 1206 | 2472. | 1207 | 2438. | 1208 | 2404. | 1209 | 2370. |
| 1210 | 2338. | 1211 | 2307. | 1212 | 2278. | 1213 | 2250. | 1214 | 2223. |
| 1215 | 2196. | 1216 | 2170. | 1217 | 2144. | 1218 | 2119. | 1219 | 2094. |
| 1220 | 2069. | 1221 | 2043. | 1222 | 2015. | 1223 | 1987. | 1224 | 1958. |
| 1225 | 1929. | 1226 | 1902. | 1227 | 1874. | 1228 | 1846. | 1229 | 1819. |
| 1230 | 1794. | 1231 | 1769. | 1232 | 1746. | 1233 | 1724. | 1234 | 1703. |
| 1235 | 1684. | 1236 | 1666. | 1237 | 1647. | 1238 | 1630. | 1239 | 1614. |
| 1240 | 1598. | 1241 | 1582. | 1242 | 1568. | 1243 | 1553. | 1244 | 1538. |
| 1245 | 1525. | 1246 | 1512. | 1247 | 1499. | 1248 | 1487. | 1249 | 1475. |
| 1250 | 1464. | 1251 | 1453. | 1252 | 1442. | 1253 | 1432. | 1254 | 1422. |
| 1255 | 1413. | 1256 | 1404. | 1257 | 1396. | 1258 | 1388. | 1259 | 1381. |
| 1260 | 1374. | 1261 | 1368. | 1262 | 1360. | 1263 | 1353. | 1264 | 1346. |
| 1265 | 1338. | 1266 | 1330. | 1267 | 1322. | 1268 | 1314. | 1269 | 1306. |
| 1270 | 1297. | 1271 | 1288. | 1272 | 1279. | 1273 | 1271. | 1274 | 1263. |
| 1275 | 1255. | 1276 | 1247. | 1277 | 1238. | 1278 | 1230. | 1279 | 1221. |
| 1280 | 1213. | 1281 | 1205. | 1282 | 1197. | 1283 | 1189. | 1284 | 1181. |
| 1285 | 1174. | 1286 | 1165. | 1287 | 1157. | 1288 | 1150. | 1289 | 1143. |
| 1290 | 1136. | 1291 | 1129. | 1292 | 1123. | 1293 | 1116. | 1294 | 1110. |
| 1295 | 1104. | 1296 | 1099. | 1297 | 1093. | 1298 | 1088. | 1299 | 1083. |
| 1300 | 1079. | 1310 | 1010. | 1320 | 928. | 1330 | 858. | 1340 | 800. |
| 1350 | 721. | 1360 | 622. | 1370 | 543. | 1380 | 478. | 1390 | 431. |
| 1400 | 401. | 1420 | 364. | 1440 | 348. | 1460 | 335. | 1500 | 323. |

# Geotechnical Evaluation (C)

GORIAN AND ASSOCIATES, Inc.
Soil and Foundation Engineers
Applied Earth Sciences

October 15, 1984

Haaland and Associates, Inc.
One Boardwalk, Suite 200
Thousand Oaks, CA 91360

Work Order: 1450-1-10
Log Number: 9738

Attention: Mr. Robert Haaland

Subject: Additional Geotechnical Evaluation, Dos Vientos Ranch, City of Thousand Oaks, California

References:
1) Converse Foundation Engineers, February 25, 1966, Geologic and Soil Investigation, Proposed Kimber Drive Alignment, Dos Vientos Ranchos, Newbury Park, Ventura County, California

2) Leighton and Associates, March 2, 1977, Geotechnical Environmental Impact and Land Planning Study, Portion of Rancho Guadalasca, West Potrero Road, West Thousand Oaks Area, Ventura County, California

3) Leighton and Associates, December 9, 1977, Geotechnical Environmental Impact and Land Planning Study, Portion of Rancho Dos Vientos, (Courtly Homes and Jackson Appliance Properties), West Thousand Oaks Area, Ventura County, California

Mr. Haaland:

The following report presents additional geotechnical data requested by the City of Thousand Oaks Planning Department for inclusion in the Environmental Impact Report on the subject property.

Four geotechnical issues were identified by Mr. Greg Smith (City of Thousand Oaks) as requiring additional evaluation. The four issues, liquefaction potential, seismicity, cut slope stability and excavation characteristics are discussed below.

766 Lakefield Road, Suite A, Westlake Village, Calif. 91361
(805) 497-9363 (805) 482-6207 (213) 889-2137

LIQUEFACTION POTENTIAL

Subsurface data acquired in eleven borings by Converse Foundation Engineers (1966) and described in their boring logs and laboratory test results indicate that alluvial soils and shallow groundwater are present with the proposed project. Under some circumstances, areas underlain by soft alluvial soils and shallow groundwater may undergo a phenomenon known as liquefaction during strong seismic shaking.

In order for liquefaction to occur the following factors must be present:

1. The water table must be relatively shallow, generally less than 35 feet deep.
2. The soil below the water table must be unconsolidated silt and fine sand with low relative density.
3. The seismic groundshaking level must be of sufficient intensity and duration.

A review of the data contained in the Converse report (see attached Boring Logs and Location Map) shows that the alluvial soils are composed of various admixtures of sand, silt and clay and that a significant gravel fraction is present (10%-30%) throughout. This reported composition indicates that the alluvial deposits underlying the site are apparently too hetergeneous (poorly sorted) to undergo liquefaction. It is our opinion that the potential for liquefaction on the Dos Vientos project is very low to non-existent.

## SEISMICITY

### Faulting

No active or potentially active faults are known to traverse the property nor are any in close proximity to the site.

### Groundshaking

The closest potentially active fault is the Malibu Coast fault located offshore, approximately 7½ miles south of the project. This fault is believed capable of generating a Magnitude 6 1/2-6 3/4 (Richter) earthquake which would produce maximum repeatable ground accelerations at the site of about 0.20g-0.30g over a duration of 15-20 seconds. Based on available evidence, it appears that the event would leave a low probability of occurrence during the 50-75 year life of the development.

The most likely, significant earthquake, which will affect the project, would be generated on the San Andreas fault approximately 42 miles to the northeast. A magnitude 8-8½ event is considered imminent and would produce maximum repeatable ground accelerations of 0.10g-0.15g for a period of 50-60 seconds.

## CUT SLOPE STABILITY

The Conejo Volcanics bedrock, which underlies the entire project, represents one of the least troublesome geologic formations in the Conejo Valley from the standpoint of cut slope stability. Cut slopes are routinely manufactured at a gradient of 1½:1 and in many cases 1:1 gradients to 60 feet high have been satisfactory.

EXCAVATION CHARACTERISTICS

Cutting operations in areas underlain by Conejo Volanics bedrock may encounter difficult ripping which may require special handling (single-shank ripping, blasting or jack-hammering). Areas, in which cuts of deeper than ten feet are proposed, should be investigated in detail to determine the depths of rippable material.

Utility trenching in cut areas underlain by Conejo Volcanics will require blasting or jack-hammering unless they are undercut to below the deepest utility and replaced with compacted fill.

If you have any questions, please do not hesitate to call.

Respectfully,

Gorian and Associates, Inc.

By: Charles A. Swift
EG 948

Attachments: Boring Logs (Converse)
Location Map

Distribution: Addressee (6)

CAS/gm

# SUMMARY—BORING NO. 1

DATE: January 25, 1966

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | soft | dark brown | CLAYEY SILT porous + frequent andesite chips to ¼" + organic debris & sand streaks | ML/CL | 1.6 | 22.5 | 101.5 | |
| 5 | moist | medium firm & soft | brown & light brown | CLAYEY SILT-SAND slightly porous + 5 to 10% andesite chips to 3/4" + occasional sand & clay streaks | ML/CL & SP & CL | 3.3<br>3.3 | 21.0<br>18.2 | 105.2<br>102.6 | |
| | | medium firm | lt.gr. brown& olive | SILTY CLAY & caliche +5% pea gravel | CL | | | | |
| 10 | | firm & very firm | brown & light brown | CLAYEY SILT-SAND + 15 to 20% gravel to 1" + occasional fine caliche streaks | ML/CL | 7.7 | 19.2 | 100.3 | |
| 15 | sl. moist | v.firm &dense | lt.brn &olive | BASALTIC ANDESITE highly weathered&frac | | 15.7 | 17.3 | 111.3 | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 2

CONVERSE FOUNDATION ENGINEERS PASADENA • SANTA ANA, CALIF

PROJ. NO. 65-72G-AII

# SUMMARY—BORINGS NO. 2 & 3

DATE: January 25, 1966

## BORING NO. 2

| Depth in Feet | Sample No. | Elevation 1010' | | | | | Classification | Dry Density lb/cu ft | Field M % Dry W | Dry Density lb/cu ft | Shear Strength kips/sq ft |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | moist | soft | dark brown | SANDY SILT | porous + 0 to 5% pea gravel & silty clay strks. +hair roots & basalt & andesite fragments | ML & CL | 1.4 | 20.4 | 93.8 | |
| | 2 | | | | | | | 1.6 | 19.5 | 100.6 | |
| 5 | 3 | | medium firm | | | | | 3.3 | 18.5 | 102.4 | |
| 10 | 4 | | firm to very firm | light brown & gray brown | | + random clay strks. +10% andesite chips & occasional caliche stk. | | 9.7 | 15.7 | 104.2 | |
| | 5 | sl. moist | very firm & dense | light brown & olive | BASALT, highly weathered & fractured | | | 23.7 | 11.4 | 121.8 | |
| 15 | | | | | | | | | | | |

DATE: January 25, 1966

ELEVATION: 1065'

## BORING NO. 3

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | moist | soft | dk. brn. | SANDY SILT, sl. porous +0 to 5% pea gravel | | ML | | | | |
| | sl. moist to moist | firm to very firm | light & yellow brown & gray brown | BASALT & ANDESITE | very highly weathered & fractured +silt & clay filler | | | | | |
| 5 | | very firm to medium hard to hard | | | weathered, highly fractured, granules to 3" blocks | | | | | |
| | moist | hard | purple & bl. gray | ANDESITE | | | | | | |
| 10 | | | | | | | | | | |

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 3

CONVERSE FOUNDATION ENGINEERS PASADENA · SANTA ANA, CALIF. PROJ. NO. 65-726-AH

# SUMMARY—BORING NO. 4

DATE: January 25, 1966

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | moist | soft | dk. br. | SANDY SILT+25% gravel | | ML | | | | |
| | | very firm to medium hard | light brown & light gray | HORNBLENDE ANDESITE highly fractured | highly weathered | | | | | |
| 5 | sl. | medium | gray brown& olive green | | sl.to m. weathered +fine basalt layers | | | | | |
| 10 | moist | hard | gray brown & light brown to white | BASALT | &with layers hornblende andesite slightly to moderately weathered, highly fractured& jointed, granules to 6 blocks | | | | | |
| 15 | | v.hard to m.hard | olive green & gray | | weathered + fine dacite stringers | | | | | |
| 20 | | medium hard to hard | | | | | | | | |
| 25 | | | | | | | | | | |
| 30 | | | | | | | | | | |

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 4

CONVERSE FOUNDATION ENGINEERS PASADENA · SANTA ANA, CALIF. PROJ. NO. 65-726-A11

# SUMMARY—BORING NO. 5

DATE: January 26, 1966

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | moist | soft & medium firm | dark brown to red brown | SANDY SILT, porous + hair roots & 25% grav. to 1/2" + fine caliche streaks & limonite stains | ML | | | | |
| 5 | | very firm to m. hard | gray brown to olive | BASALT | +andesite highly weathered & fractured | | | | |
| | sl. | medium | olive & gray brown | | weathered & highly fractured | | | | |
| 10 | moist | hard | & green gray | | + random calcareous filled fractures | | | | |
| 15 | | | | | irregular blocky fracture, granules to 3 1/2" blocks | | | | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 5

CONVERSE FOUNDATION ENGINEERS PASADENA • SANTA ANA, CALIF

PROJ. NO. 65-726-A11

SUMMARY — BORINGS NO. 6 & 7

DATE: January 26, 1966

## BORING NO. 6

ELEVATION: 913'

| Depth in feet | Sample No. | Code Classification | Drive Energy Ft. Kips/Ft | Field Moisture % Dry Weight | Dry Density Lb/Cu Ft | Shear Resistance Kips/Sq Ft |
|---|---|---|---|---|---|---|
| 0–5 | 1 | moist; medium firm to firm to very firm; dark brown & gray brown & yellow brown & rust; SANDY SILT; porous + hair roots &10 to 20% pea gravel +freq.andesite chips to 2 1/2" | ML & | 9.7 | 17.9 | 109.5 |
| 5–10 | 2 | moist; medium firm to firm to very firm; gray brown & yellow brown & rust; SANDY SILT; +15 to 25% gravel to 1" + fine clayey silt-sand streaks | ML/CL | 11.7 | 14.4 | 112.2 |
| 10–15 | 3 | moist; very firm & dense; gray brown; SANDY SILT; + clayey silt-sand with 25 to 35% grav. to 3" & freq. rk. to 8" | ML/CL | 9.7 | 21.2 | 105.4 |
| 15–20 | 4 | to very moist; firm; & yellow & rust; SANDY SILT / ANDESITE; +10 to 20% gravel to 2 1/2" & fine calliche & sand streaks | ML & SP | 9.7 | 20.6 | 106.5 |

DATE: January 26, 1966

ELEVATION: 885'

## BORING NO. 7

| Depth in feet | Sample No. | Code Classification | Drive Energy Ft. Kips/Ft | Field Moisture % Dry Weight | Dry Density Lb/Cu Ft | Shear Resistance Kips/Sq Ft |
|---|---|---|---|---|---|---|
| 0–5 | 1 | moist; soft to firm; dark brown; CLAYEY SILT porous + hair roots + fine sandy silt streaks | ML/CL & CL | 1.8 | 22.6 | 101.1 |
| 5– | | sl. moist to m.; v.firm &dense / m.hard to hard; lt.green brown &olive; ANDESITE & BASALT; v.highly weathered & fractured / sl.weathered highly frac. | | | 19.3 | 107.4 |

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 6

CONVERSE FOUNDATION ENGINEERS PASADENA • SANTA ANA, CALIF.

PROJ. NO. 65-726-A11

# SUMMARY—BORING NO. 8

DATE: January 26, 1966

ELEVATION: 835'

| Depth | Sample | Consistency | Color | Soil Type | Description | USCS | Dry Density (lb/cf) | Field Moisture | Dry Density (lb/cf) | Shear Strength (psf) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | soft | dark | | por.+hair roots&occ. pea gravel | ML & | | | | |
| | ① | medium firm to very firm & dense | brown | | +cl.silt+ 5%pea grav. | ML/CL | 7.7 | | | |
| 5 | ② | | gray brown | SANDY SILT | +15 to 25% gravel to 1 1/2" & occ. to 2 1/2" + fine caliche streaks | ML | 17.7 | | | |
| | | moist | & | | | | | | | |
| 10 | ③ | firm | yellow & red brown | | +20%pea gr. &occ.to 2½" weathered+ limonite& caliche stks. &f.s.sand stks. | & SM | 11.7 | | | |
| 15 | ④ | medium firm to firm | | | +clayey silt-sand lyrs.,very por.+silty sand strks. w/25%gravel to 1" | ML & ML/CL & SM | 7.7 | | | |
| 20 | ⑤ | to very moist | | | | | | | | |
| | | firm to very firm & dense | brown | SILTY SAND | slightly porous + 25 to 30% gravel to 2" | SM | 11.7 | | | |
| 25 | | very moist | | | +clayey sand strks. &frequent gravel to 3" | & SC | | | | |
| | | very firm | gray brown & gray | CLAYEY SILT-SAND | + 20% pea gravel to 2 1/2" | ML/CL | | | | |
| | | to wet | &brown &yellow | SANDY SILT +25% grav. + clayey silt | | ML& ML/CL | | | | |
| 30 | | | | | | | | | | |

(CONT'D.)

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 7

CONVERSE FOUNDATION ENGINEERS PASADENA • SANTA ANA, CALIF

PROJ. NO. 65-726-A11

## SUMMARY—BORING NO. 8 (CONT'D.)

DATE January 26, 1966

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| * | | very moist to wet | very firm | gray brown & brown & yellow | SANDY SILT | +1/2 to 1 1/2 +f. clayey silt strks. + fine sand streaks | +occ gray. to 3" | ML & ML/CL ML & SP | | | |
| 35 | | | | | | | | | | | |

* Ground water seepage in fine sand streaks.

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 8

CONVERSE FOUNDATION ENGINEERS PASADENA - SANTA ANA, CALIF. PROJ. NO. 65-726-A11

# SUMMARY—BORING NO. 9

DATE January 27, 1966

ELEVATION 795'

| Depth | Sample | Moisture | Consistency | Color | Description | Soil Classification | Dry Density (lb/cu ft) | Field Moisture % Dry Wt. | Shear Strength (kips/sq ft) |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | moist | m.firm to soft | brown | SANDY SILT sl.porous hair roots &occ.gr.to 1" | ML | | | |
| | | | soft | dark brown to dark gray | v.por. +10 to 15% gr. to 1" &occ. to 2" | | 1.4 | 18.3 | 100.8 |
| 5 | 2 | & v.moist | | | +cl. silt-and | ML/CL | 1.9 | 20.9 | 106.5 |
| | 3 | moist | medium firm & firm | brown &light brown &gray brown | CLAYEY SILT-SAND porous +10% pea grav. & hair roots + silt in cracks | ML/CL & ML | 7.7 | | |
| 10 | | | | | SANDY SILT slightly porous + 15 to 20% gravel to 1/2" | ML | | | |
| | | sl. moist | m.hard to hard | lt.brn. to olive | BASALT, highly weathered and fractured | | | | |
| 15 | | | | | | | | | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 9

CONVERSE FOUNDATION ENGINEERS PASADENA • SANTA ANA, CALIF

PROJ. NO. 65-726-AH

# SUMMARY — BORING NO. 10

DATE: January 27, 1966

| Depth | Sample | Moisture | Consistency | Color | Description | Remarks | USCS Classification | Drive Pressure (ft. lbs./ft.) | Field Moisture % Dry Weight | Dry Density lb/cu ft | Shear Strength kips/sq ft |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | moist to very moist | very soft | dark brown & dark gray | SANDY SILT | v. porous + hair roots, 5 to 10% pea gravel &occ. to 1" | ML | | 1.4 | | |
| 5 | 2 | moist | soft to medium firm | dark brown & gray brown | | porous+10 to 15% pea gravel & occ. to 1½" +cl. s.s. strks. | & ML/CL | | 3.3 | | |
| 10 | 3 | very moist to wet | soft | gray brown | CLAYEY SILT-SAND | porous + 10% pea gr. & occ.to 1" very porous + organic debris | ML/CL | | 3.3 1.6 | | |
| 15 | 5 | moist | to medium firm | light brown& gray brown | SANDY SILT slightly porous + occ. pea gravel + fine caliche strks. | | ML | | 3.3 | | |
| 20 | | v.m. & wet | to firm very firm & dense | gray brown to olive & yellow & gray brown | CLAYEY SILT-SAND | +20% pea gravel & occasional to 3" +silty sand strks.w/15 to 25% grav. to 3"&occ. rock to 12" | ML/CL & SM | | | | |
| * 25 | | water | | | | | | | | | |
| 30 | | | | | | | | | | | |

* Water at 23' during drilling.

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 10

CONVERSE FOUNDATION ENGINEERS PASADENA · SANTA ANA, CALIF

PROJ. NO. 65-726-AH

# SUMMARY—BORING NO. 11

DATE January 27, 1966

| Depth (ft) | Sample | Moisture | Consistency | Color | Description | Classification | Field Moisture (% dry wt.) | Dry Density (lb/cf) | Shear Str. (ksf) |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | moist to very moist | soft to m.firm | dark brown to dk. gray | SILTY CLAY & CLAY; SILT layers, porous + hair roots & occ. pea gravel | CL & ML/CL | 3.3 | 23.2 | 103.0 |
| 5 | 2 | sl. moist to moist | firm to very firm & dense | light gray brown | porous+occ. pea gravel& frequent calcareous streaks | ML | 23.7 | 15.5 | 91.8 |
| | | | | light brown & yellow brown | sl.por. +15%p. grav. &occ. tol" | | | | |
| 10 | 3 | moist | | | +fine s.s. strks. &caliche &limonite stks. | & SM | 15.7 | 22.2 | 104.5 |
| | | | medium firm to firm | gray blue & green blue | +occasional pea gravel | | 7.5 | 28.4 | 95.0 |
| 15 | 4 | | | | | ML | | | |
| | | | firm to very firm & dense | | +10 to 20% pea gravel &occasional gravel to3" | | | | |
| *20 | 5 | & very moist water | | | &rock to 12" | | 15.7 | 13.2 | 115.2 |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |

SANDY SILT

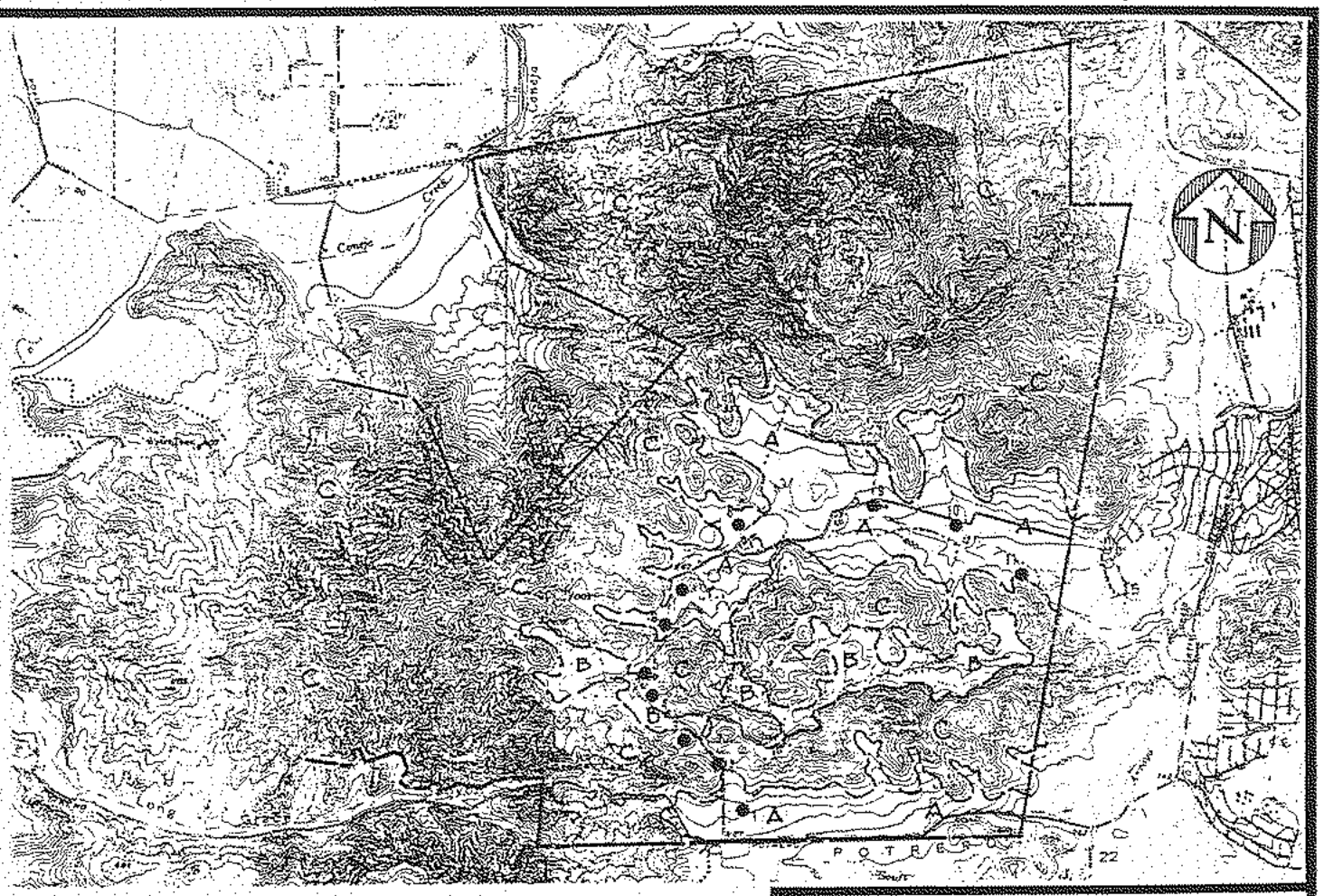
* Water at 20' during drilling.

KIMBER DRIVE ROAD ALIGNMENT, DOS VIENTOS RANCHOS, NEWBURY PARK, CALIFORNIA FOR LOUIS LESSER ENTERPRISES, INCORPORATED

DRAWING NO. 11

CONVERSE FOUNDATION ENGINEERS PASADENA • SANTA ANA, CALIF

PROJ. NO. 65-726-AII




EXPLANATION

- A — ALLUVIUM
- B — OLD ALLUVIUM
- C — CONEJO VOLCANICS
- ⊙ 11 — LOCATION OF BORING (CONVERSE, 1966)

# LOCATION MAP

DOS VIENTOS RANCH

CITY OF THOUSAND OAKS

| | | |
|---|---|---|
| SOIL AND FOUNDATION ENGINEERS — GORIAN AND ASSOCIATES, Inc. — APPLIED EARTH SCIENCES | | |
| JOB NUMBER: 1450-1-10 | DATE: 10-15-84 | |
| SCALE: 1" = 2000' | APPROVED BY: | DRAWN BY: |
| | | LOG NO: 2156 |

# Supplemental Geologic Report (C1)

GORIAN AND ASSOCIATES, Inc.
*Soil and Foundation Engineers*
*Applied Earth Sciences*

April 23, 1986

Haaland and Associates, Inc.
One Boardwalk, Suite 200
Thousand Oaks, California 91360

Work Order: 1450-1-12
Log Number: 10794

Attention: Mssrs. Robert Haaland and Robert Talmadge

Subject: Supplemental Geotechnical Evaluation for Final E.I.R. --- Five Water Reservoir Locations Dos Vientos Ranch Project; Specific Plan Numbers 8 and 9, City of Thousand Oaks, California.

References:

1) Converse Foundation Engineers, February 25, 1966, Geologic and Soil Investigation, Proposed Kimber Drive Alignment, Dos Vientos Ranchos, Newbury Park, Ventura County, California.

2) Leighton and Associates, March 2, 1977, Geotechnical Environmental Impact and Land Planning Study, Portion of Rancho Guadalasca, West Potrero Road, West Thousand Oaks Area, Ventura County, California.

3) Leighton and Associates, December 9, 1977, Geotechnical Environmental Impact and Land Planning Study, Portion of Rancho Dos Vientos, (Courtly Homes and Jackson Appliance Properties), West Thousand Oaks Area, Ventura County, California.

4) Gorian and Associates, Inc. October 15, 1984, Additional Geotechnical Evaluation, Dos Vientos Ranch, City of Thousand Oaks, California, Work Order: 1450-1-10, Log Number: 9738.

5) City of Thousand Oaks-Planning and Community Development Department Letter, Dated March 31, 1986: Final E.I.R., Dos Vientos Ranch; Specific Plan Numbers 8 and 9.

Gentlemen:

In the following report we present our supplemental geotechnical feasibility evaluation for construction of the proposed water reservoir facilities at the five sites identified

*766 Lakefield Road, Suite A, Westlake Village, Calif. 91361*
*(805) 497-9363 (805) 987-0821 (818) 889-2137*

on the Specific Plan Numbers 8 and 9 of the subject property. Based on these plans as well as 200' and 100' scale grading studies and cross sections of the tank sites supplied by your office, four of the five tank sites (Tank R-2 through Tank R-5) are to be situated on ridges or ridge flanks. These sites will require excavating level pads into the hillside with maximum vertical depth of cuts ranging from 26 to 60 vertical feet. The building area for Tank R-1 is situated within an existing topographic draw and a daylight cut/fill grading operation is proposed to develop the building pad. Earthern berming and landscaping are proposed as a means of reducing the viewshed impacts for all of the five tank sites.

## SCOPE OF WORK

Our investigation, conducted during March and April of 1986, included the following:

1) A review of pertinent published and unpublished literature in our files including previous geotechnical reports by various private consultants.
2) Field reconnaisance and geologic mapping of each site and adjacent areas. (topographic base map 1"=200').
3) Performing five shallow seismic refraction survey traverses (one per site) to provide a preliminary evaluation of rock hardness and excavation characteristics.
4) A preliminary geotechnical feasibility evaluation of each site based on the above fieldwork data and proposed grading plans.
5) Report preparation.

## GEOLOGIC SETTING

With the exception of Tank R-1 each site is underlain by bedrock of the Miocene-aged Conejo Volcanics with only minor soil cover. Although no subsurface excavations were performed as part of this evaluation, geologic mapping indicates that a relatively

thin (<15±) section of Older Alluvium overlies the Conejo Volcanics bedrock in the vicinity of the Tank R-1 site specific. The attached generalized preliminary Geotechnical Maps reflect the areal distribution of these units.

Conejo Volcanics

As discussed in previous reports, the Conejo Volcanics within the Dos Vientos project area consist primarily of massively bedded,extrusive and minor shallow intrusive igneous rocks ranging in composition from andesite to basalt as well as basaltic to andesitic breccias and agglomerate. Minor dacite and porphyritic hornblende dacite units were,however, also noted as underlying the major ridge of Tanks R-2 and R-3.

Structurally, the massively bedded volcanics underlying the project sites are regionally inclined towards the north at shallow to moderate dips. Minor variations to this regional trend are evident locally and is common in volcanic flow deposits. Another structural feature of the Conejo Volcanics on the sites are the numerous fractures and joint sets. However, they are expected to have negligible structural geologic significance due to their random nature and discontinuity (i.e. they attenuate with depth). The degree of fracturing and related weathering does, however, affect the excavation characterstics of the bedrock. This will be discussed in the subsequent rock rippability section of this report.

Older Alluvium

The Older Alluvium encountered in the vicinity of Tank R-1 appears to vary from sandy silty clays to sandy silt and silty to clayey sand with varying amounts of gravel and pebble sized clasts derived from nearby volcanic rock sources.

Topsoil

Where slope gradients allow, a thin mantle of residual clayey topsoil has formed. Grey brown to black in color, these soils are typically porous with scattered to abundant rootlets and roothairs, and abundant angular rock fragments ranging from granule to cobble size.

Landslides and Rockfall

No evidence for rotational or translational landslides or other shallow mass wasting phenomena were observed on any of the tank sites or adjacent areas. However, a rockfall hazard is present on the south facing ridge flank of the proposed Tank R-4. Large blocks and boulders have ravelled from the crags of the major ridgeline to the north. It is likely that these bold precipitous rock outcrop areas will be sources for future rockfall occurrances, especially during strong seismic events.

Faulting and Seismicity

No faults were encounted on or adjacent to any of the tanksites during field mapping nor are any major active or potentially active faults known to exist on or in close proximity to the Dos Vientos Ranch site. The five sites will, however, be subject to strong groundshaking from seismic events occurring on more distant regionally active faults (as would any site in the Thousand Oaks area). A discussion of groundshaking was presented in our previous referenced report dated October 15, 1984 and is repeated here for completeness.

Groundshaking

The closest potentially active fault is the Malibu Coast fault located offshore, approximately 7½ miles south of the project. This fault is believed capable of

generating a Magnitude 6 1/2- 6 3/4 (Richter) earthquake which would produce maximum repeatable ground accelerations at the site of about 0.20g-0.30g over a duration of 15-20 seconds. Based on available evidence, it appears that the event would have a low probability of occurrence during the 50-75 year life of the development.

The most likely, significant earthquake, which will affect the project, would be generated on the San Andreas fault approximately 42 miles to the northeast. A magnitude 8-8½ event is considered imminent and would produce maximum repeatable ground accelerations of 0.10g-0.15g for a period of 50-60 seconds.

Groundwater

No groundwater or seepages were encountered on or around any of the tank sites at the time of our field work except for Tank R-1. Just west of the proposed tank location, a minor seep was encountered within the volcanics in the incised draw. This, however, is not a significant feature as seepages occur as precipitation migrates through fractures for weeks to months after the rainy season.

Rock Rippability Study

One shallow seismic refraction survey traverse per tank site utilizing a Nimbus Instrument Model ES-125 Signal Enhancement Exploration Seismograph System (hammer strike wave generation) was performed to evaluate the rippability characteristics of the earth materials underlying the site.

The excavation characteristics of rock material is a function of its lithology, seismic velocity, geologic structure, ripping equipment capacity and operation. The shallow seismic refraction survey traverses measure the compressional wave

velocities (p-wave) travelling through the underlying earth materials. These velocities can then be correlated with the rippability of these materials by conventional construction equipment. These correlations are not precise but rather are intended to represent a generalized means of indicating relative excavation characteristics.

Recent experience, based on full scale rippability tests at other site indicates materials can be ripped to a maximum compression wave velocity of approximately 7000 feet/second, utilizing a D8K or D9G Caterpillar Tractor or equivalent bulldozer in good condition with a single shank, variable pitch ripper. Although rippable, oversized rock can be generated in materials above 5000 ft./sec. Other tests with a Caterpillar D-10 Bulldozer equipped with a single shank variable pitch ripper indicated that the D-10 was able to rip bedrock at production rates to within the 10,000 to 12,000 ft./sec. range. At higher velocities, however, very difficult ripping was encountered and considerable quantities of oversized rock was generated.

Our rippability classifications are based on local experience and on rippability curves published by the Caterpillar Tractor Company. Rippability comments presented in the following table are based on utilization of a D8K or D9G Bulldozer.

The results of our traverses are as follows;

RESULTS OF SHALLOW SEISMIC
REFRACTION SURVEY TRAVERSES

| TRAVERSE NUMBER | LAYER | VELOCITY-ft/sec. | DEPTH-ft. | COMMENTS |
|---|---|---|---|---|
| ST-1 | 1 | 1450 | 0 - 14 | Easy Ripping |
| (Tank Site R-1) | 2 | 9200 | > 14 | Blasting |

RESULTS OF SHALLOW SEISMIC
REFRACTION SURVEY TRAVERSES

| TRAVERSE NUMBER | LAYER | VELOCITY-ft/sec | DEPTH-ft | COMMENTS |
|---|---|---|---|---|
| ST-2 | 1 | 1500 | 0 - 3½ | Easy Ripping |
| (Tank Site R-2) | 2 | 5000 | 3½- 23 | Heavy Ripping |
| | 3 | 7000 assumed | | Rippable to at least 23' |
| ST-3 | 1 | 1550 | 0 - 4 | Easy Ripping |
| (Tank Site R-3) | 2 | 4500 | 4 - 26 | Moderate to heavy ripping |
| | 3 | 7000 assumed | | Rippable to at least 26' |
| ST-4 | 1 | 2333 | 0 - 1½ | Easy Ripping |
| (Tank Site R-4) | 2 | 4545 | 1½-12½ | Heavy Ripping |
| | 3 | 8696 | >12½ | Blasting |
| ST-5 | 1 | 3044 | 0 - 22 | Moderate Ripping |
| (Tank Site R-5) | 2 | 6976 | > 22 | Probable Blasting below 22' |

The traverse locations are shown on our attached Generalized Preliminary Geotechnical Maps.

## CONCLUSIONS AND RECOMMENDATIONS

1. General

The five water reservoir locations are geotechnically suitable for the proposed construction. Geologic factors are generally favorable for the proposed

development. No major faults, landslides or other extensive areas of non-mitagable adverse geologic conditions are present on or affect the subject sites. However, because of the preliminary nature of this study, at the proper stage of design, additional detailed geotechnical field investigation including detailed geologic mapping, borings, test pits and additional shallow seismic refraction survey traverses should be conducted to confirm and further refine these findings.

2. Cut Slope Stability

The Conejo Volcanics bedrock underlying the entire project, represents one of the least troublesome geologic formations in the Conejo Valley from the standpoint of gross slope stability because of its inherently high shear strength and lack of significant zones of weakness. Cut slopes are routinely manufactured at a gradient of 1½:1 and in many casses 1:1 gradients to 60 feet high have been satisfactory. The proposed east, west, and southerly orientation for cut slopes in the development of tank pads mitigates the possibility of daylighted bedding assuming consistancy of the regional northerly dip of the volcanics.

3. Rockfall Hazard

Only tanksite R-4 is situated in an area subject to a rockfall hazard. However, this hazard does not preclude development. Possible mitigation measures include: construction of protective barriers, i.e. earthen berms, deflection or impact walls; construction of catchment areas; structurally reinforcing the tank sides and top for impact; and/or removals of unstable rocks(appropriate for isolated boulder litter from previous falls littering the slope). Final design of

mitigation measures may be determined when detailed grading plans become available. Protective barriers have been successfully utilized in other tracts in the Thousand Oaks area.

4. Faulting and Seismicity

Since no active or potentially active faults were encountered on any of the sites, the likelihood for ground surface rupture caused by fault movement is remote. Groundshaking levels are anticipated to be within the design limits addressed by the current Uniform Building Code and City of Thousand Oaks Standards. Other secondary seismic hazards such as liquefaction, seismically induced settlement, etc., are considered to be slight to nil.

5. Seepage Problems

In view of the minor seep occurring within the draw of Tanksite R-1, subdrains will be required in all fills constructed within major drainage courses.

6. Rock Rippability

Based on our preliminary shallow seismic refraction traverse surveys, depths of rippable rock varies from 12' to approximately 26'. Consequently, except for Tanksite R-1 which appears to have no rippability problems, anywhere from 10% to approximately 30% (for tank R-4) of the proposed remaining tanksite cuts may require special handling (single-shank ripping, blasting or jackhammering) to achieve pad grades. Although non-precluding as far as development feasibility other factors that will need to be addressed in future investigations include refining of the existing data base with additional traverses and evaluating suitability of cut materials for use as fill, i.e. oversize rock generation, and

maintenance of strength values (cohesion) for fill slope faces, especially for adjacent berm construction.

Please call if you have any questions.

Respectfully,

Gorian and Associates, Inc.

By: William F. Cavan, Jr.
EG 1161

By: Rudy M Pacal
RCE 21278

Attachments: Location Map
Generalized Geotechnical Maps (4 sheets)

Distribution: Addressee (10)
(for submittals and redistribution)

WFC/RMP/ dw

SPECIFIC PLAN NOS. 8 AND 9

# WATER

LEGEND

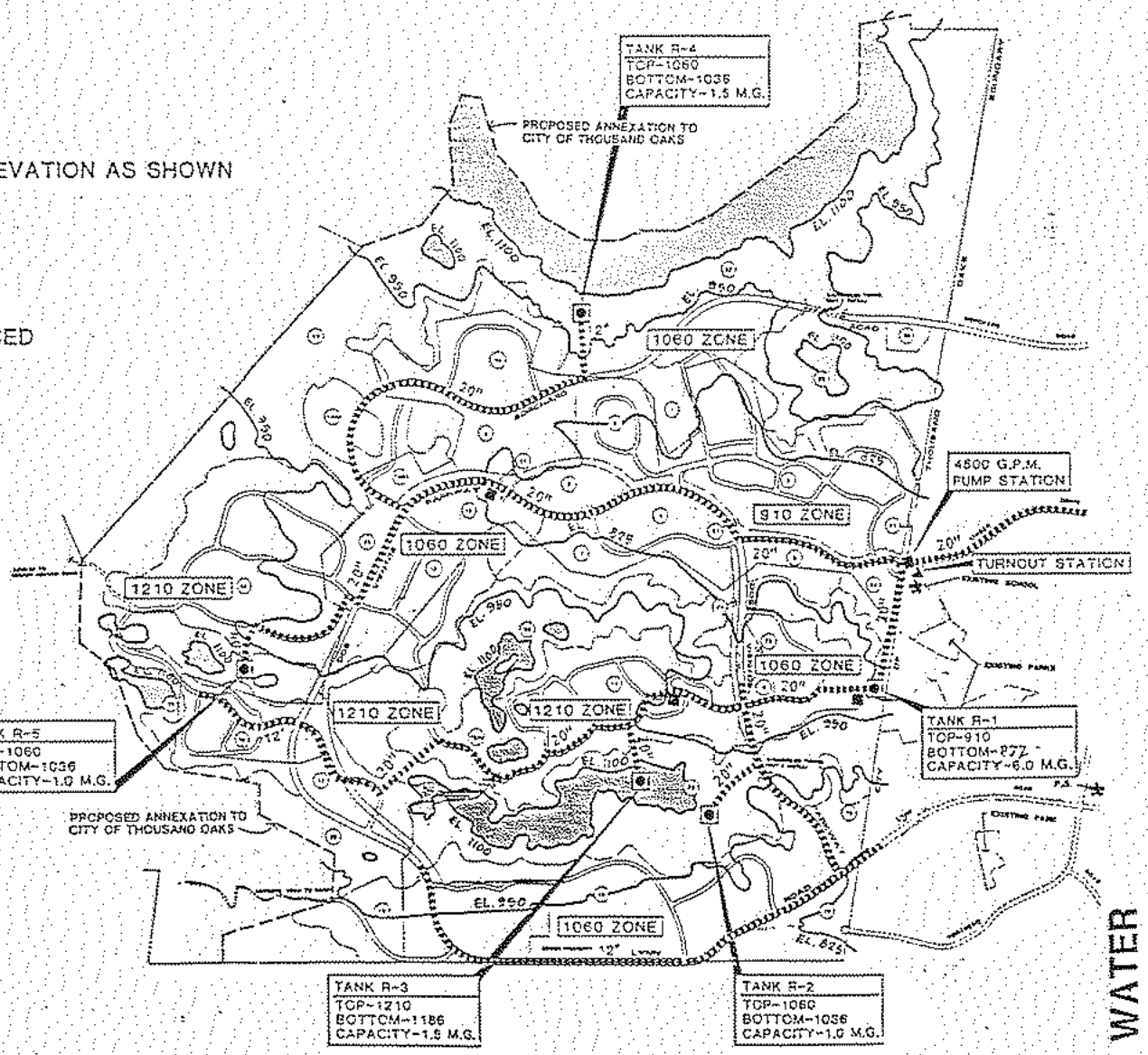
- RESERVOIR SITE CAPACITY AND ELEVATION AS SHOWN
- BOOSTER PUMP STATION
- TURNOUT STATION
- A.C. PIPE , SIZE AS INDICATED
- EL. 950 ZONE CONTOUR LINE, AS INDICATED
- 1210 ZONE OVER 1100'; NOT SERVICED

## TANK SITE LOCATION MAP

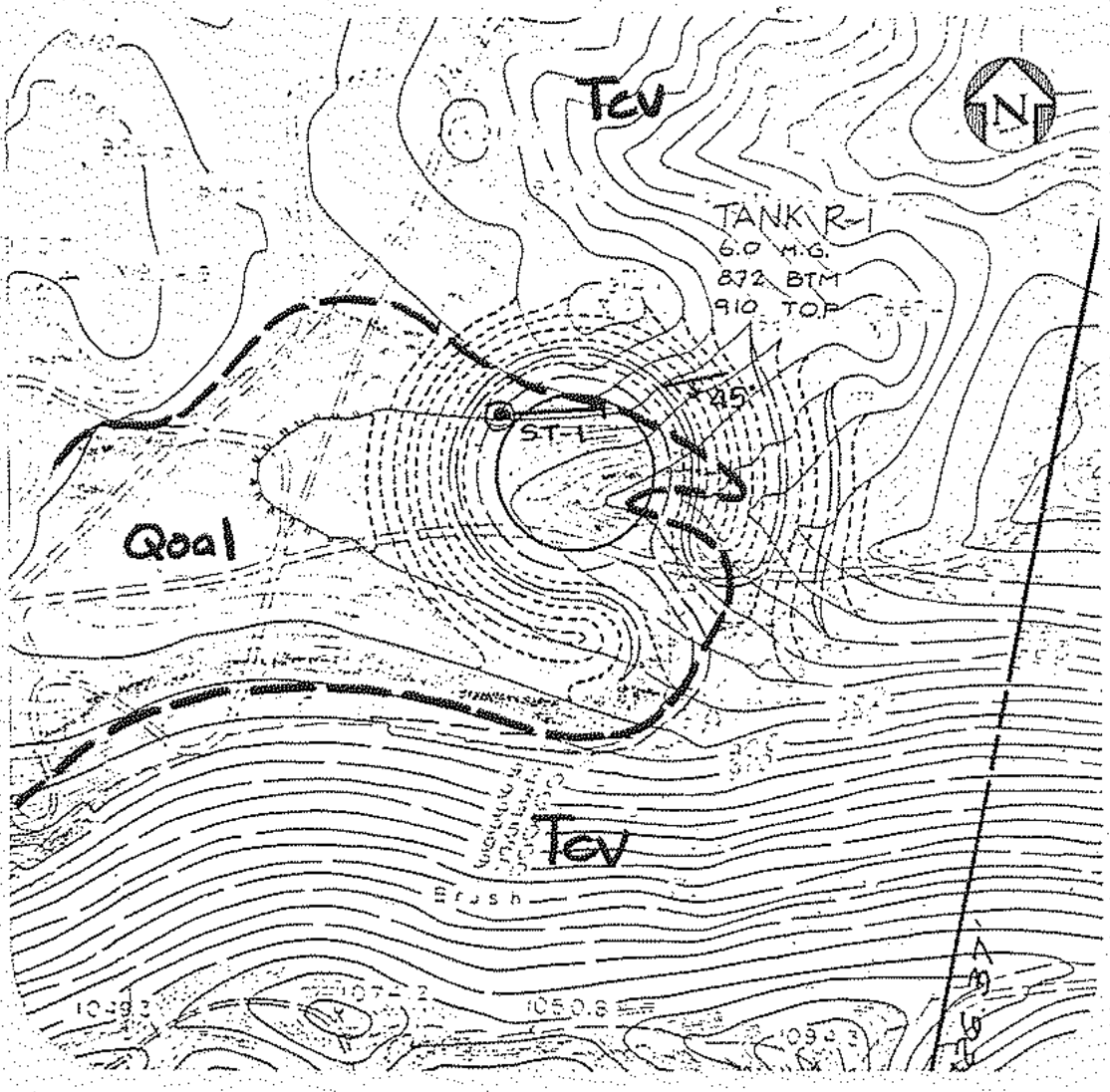
| | | |
|---|---|---|
| SOIL AND FOUNDATION ENGINEERS — GORIAN AND ASSOCIATES, Inc. — APPLIED EARTH SCIENCES | | |
| JOB NUMBER: 1450-1-12 | DATE: 4/22/86 | |
| SCALE: AS SHOWN | APPROVED BY: BC | DRAWN BY: BC<br>LOG NO: 10724 |

Dos Vientos Ranch

HAALAND AND ASSOCIATES INC




FIGURE



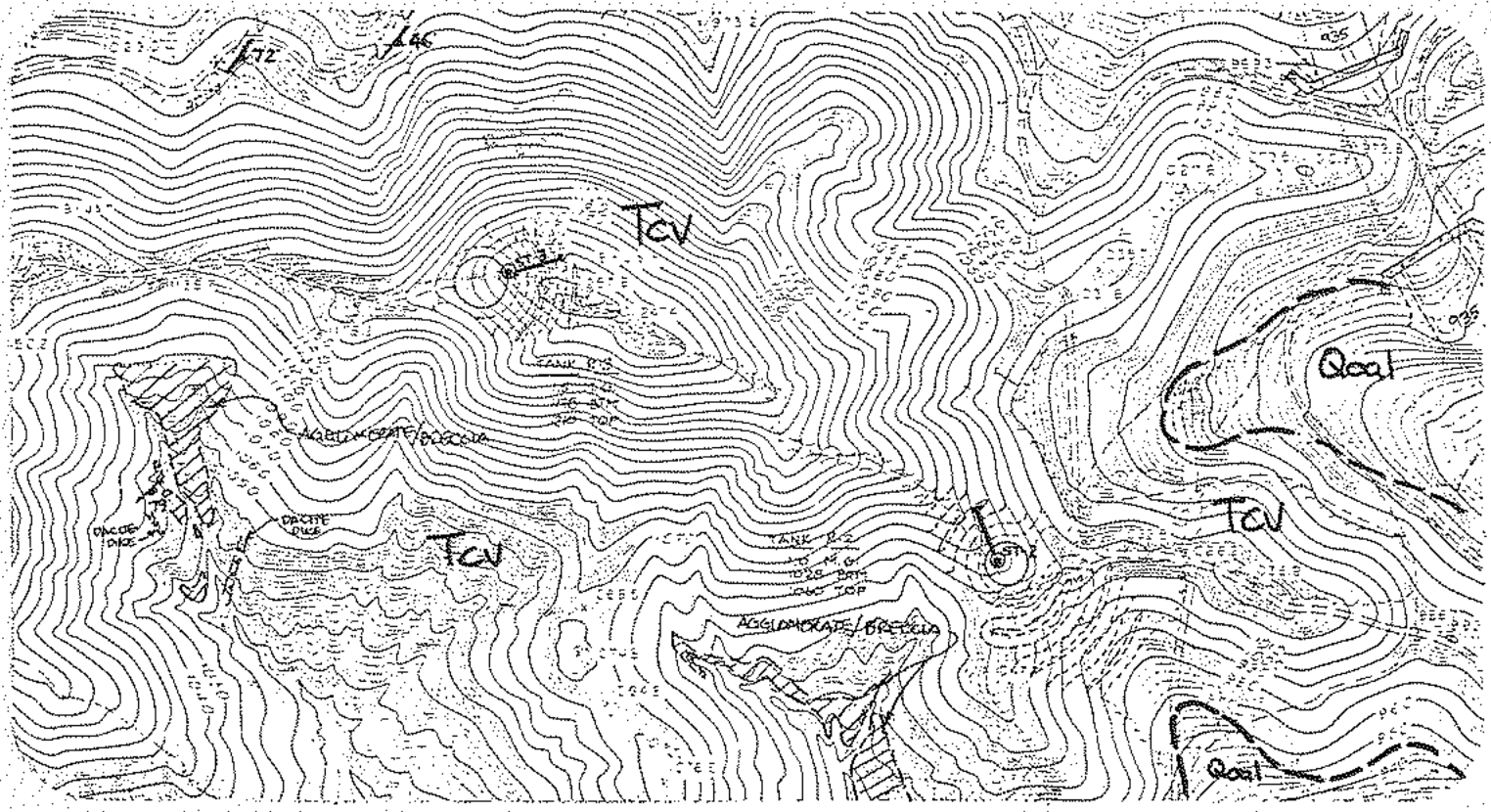

# GENERALIZED PRELIMINARY GEOLOGIC MAP
# PROPOSED TANKSITE R-1 DOS VIENTOS RANCH

EXPLANATION

Qoal - Older Alluvium
Tcv - Conejo Volcanics
48° Strike And Dip of Shear Plane
ST-1 - Location of shallow Seismic Refraction Survey Traverses

| | | |
|---|---|---|
| SOIL AND FOUNDATION ENGINEERS — GORIAN AND ASSOCIATES, Inc. — APPLIED EARTH SCIENCES | | |
| JOB NUMBER: 1450-1-12 | DATE: 4/22/86 | |
| SCALE: 1" = 200' | APPROVED BY: BC | DRAWN BY: BC<br>LOG NO: 15744 |

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-1242




EXPLANATION

Qoal - Older Alluvium
Tcv - Conejo Volcanics
- Strike and Dip of Layering
- Strike and Dip of Joint Set
- Location of Shallow Seismic Refraction Survey Traverse

# GENERALIZED PRELIMINARY GEOLOGIC MAP
## PROPOSED TANKSITES R-2 & R-3 DOS VIENTOS RANCH

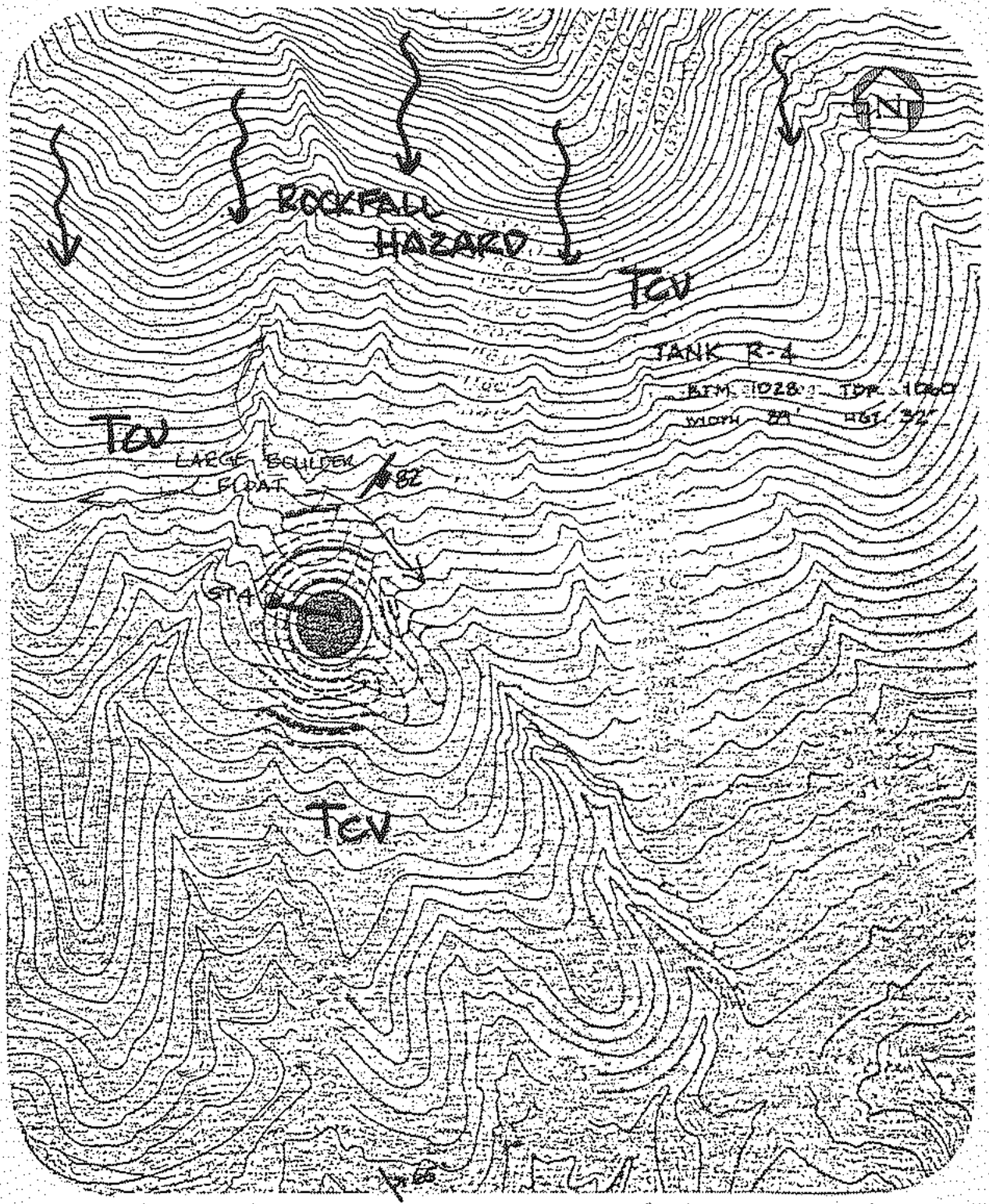
N

SOIL AND FOUNDATION ENGINEERS — GORIAN AND ASSOCIATES, Inc. — APPLIED EARTH SCIENCES

JOB NUMBER: 1460-1-12 | DATE: 4/22/86

SCALE: 1" = 200' | APPROVED BY: BC | DRAWN BY: BC

FIG NO: 1074G

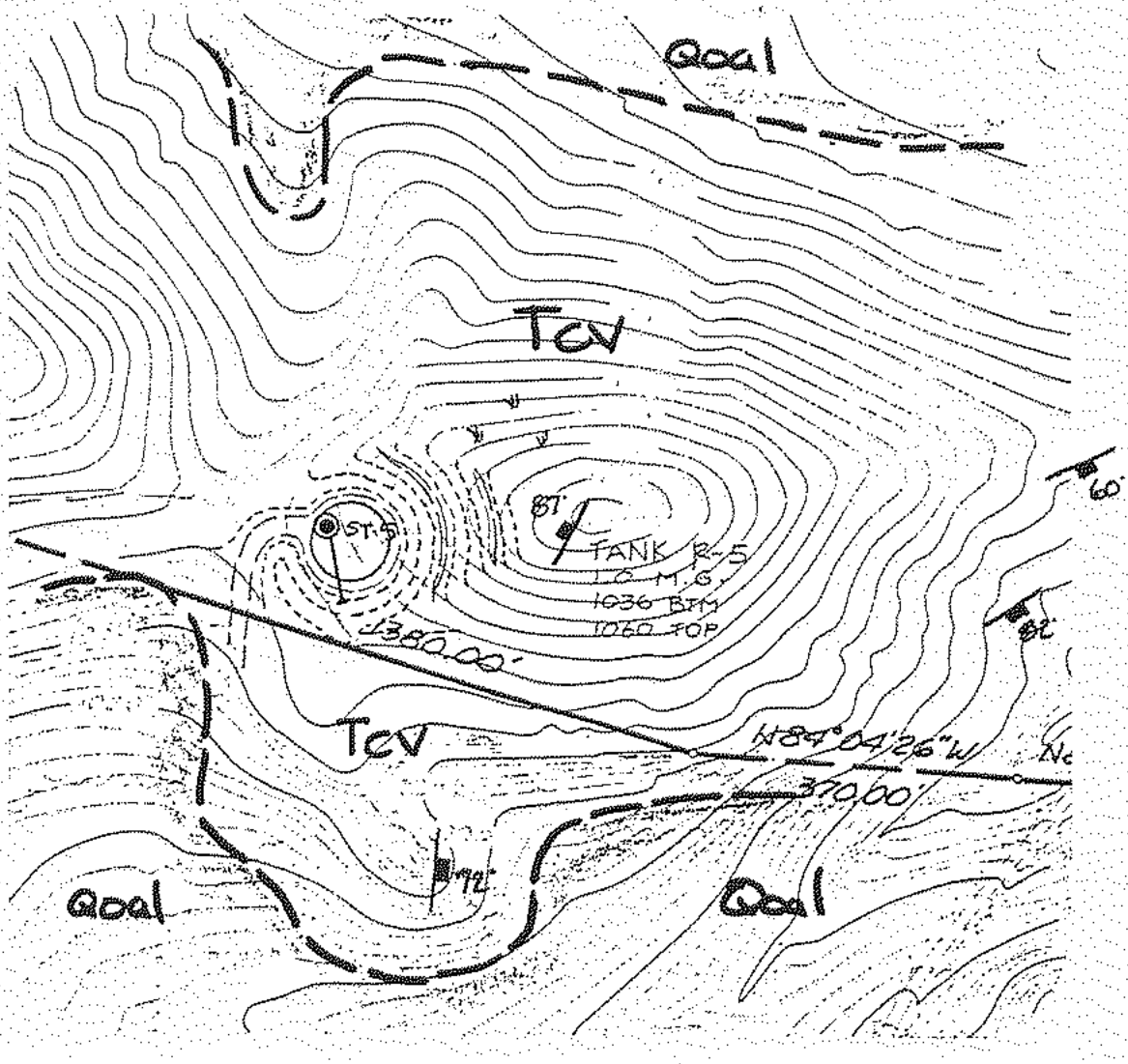



# GENERALIZED PRELIMINARY GEOLOGIC MAP
## PROPOSED TANKSITE R-4 DOS VIENTOS RANCH

EXPLANATION

Tcv - Conejo Volcanics
48 - Strike and Dip of Shear Plane
82 - Strike and Dip of Joint Set
... - Location of Shallow Seismic Refraction Survey Traverse
ST4

| | | |
|---|---|---|
| SOIL AND FOUNDATION ENGINEERS | GORIAN AND ASSOCIATES, Inc. | APPLIED EARTH SCIENCES |
| JOB NUMBER: 1450-1-12 | DATE: 4/22/86 | |
| SCALE: 1"=200' | APPROVED BY: BC | DRAWN BY: BC |
| | | LOG NO: 10792 |




# GENERALIZED PRELIMINARY GEOLOGIC MAP
# PROPOSED TANKSITE R-5 DOS VIENTOS RANCH

EXPLANATION

Qoal - older Alluvium
Tcv - Conejo Volcanics
82° - Strike and Dip of Joint set
ST-5 - Location of shallow Seismic Refraction Survey Traverse
- Phreatophytes

N

| | | |
|---|---|---|
| SOIL AND FOUNDATION ENGINEERS — GORIAN AND ASSOCIATES, Inc. — APPLIED EARTH SCIENCES | | |
| JOB NUMBER: 1450-1-12 | DATE: 4/22/86 | |
| SCALE: 1"=200' | APPROVED BY: BC | DRAWN BY: BC<br>LOG NO: 10797 |

BISHOP GRAPHICS/ACCUPRESS

Public School Facilities Report (D)

5743 Corsa Avenue, Suite 111 Westlake Village, CA 91362 • 805/497-8557 • 800/322-7026

PLANNING NEGOTIATIONS MANAGEMENT SERVICES

# DOS VIENTOS RANCH

# PUBLIC SCHOOL FACILITIES

# ANALYSIS AND MITIGATION PLAN

FOR

DRAFT ENVIRONMENTAL IMPACT REPORT

JUNE, 1985

Prepared by:

Sage Institute, Inc.

DOS VIENTOS RANCH

PUBLIC SCHOOL FACILITIES
ANALYSIS AND MITIGATION PLAN

SECTION (A)

INTRODUCTION

This Public School Facility Analysis and Mitigation Plan recognizes that the quality and availability of public education is fundamental to community planning and new residential development. Therefore, this study is to determine the extent to which the existing and proposed future residential housing in the Portrero Valley and specifically on the Dos Vientos Ranch may effect the Conejo Valley Unified School District ("District") and its facilities in that particular area of Newbury Park. If there is a student increase in excess of in-place school facilities, the study offers mitigation measures consistent with existing District standards, and master plan goals and student enrollments in the Newbury Park planning area. Joint use of adjacent existing and proposed neighborhood parks also has been analyzed.

This study pertaining to the Dos Vientos Ranch ("Project") addresses existing student enrollments, other future projects, cumulative student enrollments, school capacities, and estimated future facilities, administrative and instructional delivery needs. These educational requirements take into consideration general and student population trends, housing types and sizes, community and neighborhood demographics; laws, ordinances, policies and regulations of Federal, State, and local government. Project and other residential development phasing and market absorption are also considered. In Thousand Oaks rate of growth limitation ordinances are material and have also been considered.

The base data used herein relating to enrollment statistics, facilities, instruction and education goals was provided by the

Conejo Valley Unified School District Planning Office and the City of Thousand Oaks Planning Department.

This study identifies and recommends planning actions and mitigation measures based upon existing and projected policies and educational values of the Conejo Valley Unified School District ("CVUSD").

This study has further evaluated and determined the capability of existing and future elementary, intermediate and high schools to house the projected students from the project and the project planning area. The schools within the project planning area are Cypress Elementary School, Sequoia Intermediate School, and Newbury Park High School.

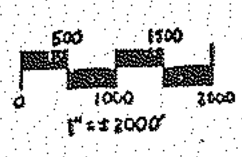
ASSESSMENT

Community Design Elements

The Dos Vientos Ranch is a proposed master planned residential development within the Portrero Valley sector of the Newbury Park Community. Proposed Specific Plans provide for a variety of residential community uses and maximum residential densities. Based upon state statutes and local ordinances, including the existing Thousand Oaks General Plan which governs this project under the city's sphere of influence policies, the Dos Vientos Ranch proposes 3940 residential units( Table I). Public school facilities and instructional needs, including school sites to adequately house project and cumulative generated students, are based upon existing and proposed residences within the project planning area.

# PROPOSED SCHOOL AND PARK SITES

## *Dos Vientos Ranch*



PROPOSED ANNEXATION TO CITY OF THOUSAND OAKS

OLD CONEJO RD.

NEWBURY PARK HIGH SCHOOL

BORCHARD RD.

SEQUOI INTERM SCHOOL

PARK SITE 44.7 AC.

RESERVED ELEMENTARY SCHOOL SITE 9.1 AC.

PARK SITE 9.1 AC.

KIMBER DR.

MAPLE ELEM SCHOOL

CYPRESS ELEM. SCHOOL

PROPOSED SCHOOL SITE
28.6 GROSS ACRES
23.8 NET ACRES
9.1 AC. ELEMENTARY USE
14.7 AC. INTERMEDIATE USE

DOS VIENTOS PKWY.

REINO RD.

BANYAN EL SCHOOL

LYNN RD.

POTRERO RD.

PROPOSED ANNEXATION TO CITY OF THOUSAND OAKS

POTRERO RD. CUL-DE-SAC

Illustration -A-

TABLE I

When fully developed the Dos Vientos Ranch as currently planned will have the following residential mix:

| | | |
|---|---|---|
| <u>Very Low Density</u> | | |
| 0 - 3.0 DU/AC | | |
| Single Family Detached | 194 Units | 4.9% |
| <u>Low Density</u> | | |
| 3.1 - 5.0 DU/AC | | |
| Single Family Detached | | |
| Zero Lot Line | | |
| Patio Homes | 1290 Units Total | |
| | 531 Affordable | 13.5% |
| | 759 Market Rate | 19.3% |
| <u>Medium Density</u> | | |
| 5.1 - 10.0 DU/AC | | |
| Townhouses | | |
| Manufactured - SFD | | |
| Mobile Homes | 1670 Units Total | |
| | 257 Mobile Homes | 6.5% |
| | 1413 Coventional | 35.9% |

High Density

| | | |
|---|---|---|
| 10.1 - 18.0 DU/AC | 786 Units Total | |
| Townhouses | 221 Senior Housing | 5.6% |
| Condominiums | 346 Affordable | 8.8% |
| | 219 Market Rate | 5.6% |
| TOTALS | 3940 Units | 100% |

*Total may not equal 100% due to rounding.

Phasing Plan

Pursuant to Measure A, the City of Thousand Oaks restricts the number of new home building permits which may be allotted in a single year. Phasing plans call for approximately 200 D/U per year. Two significant points in the preceding section should be summarized. First, the Dos Vientos Ranch will, in part, expand an already developed region; and second, individuals who choose to locate in medium and higher-density dwelling units tend to have fewer school age children living at home. This generalization is supported by evidence from District planning data over the past 10 years.

Existing Schools (Table II)

Cypress Elementary School should be considered the "home" school for elementary school students generated from dwelling units within the project area. Banyan and Maple Elementary Schools are evaluated as existing backup facilities due to their proximity and inclusion within the intermediate and high school attendance boundaries. Sequoia Intermediate and Newbury Park High School serve grades 7-8 and 9-12, respectively.

TABLE II

| | Bd Apprvd Capacity | 1984/85 2nd Month Enrollment | Available Space |
|---|---|---|---|
| Cypress | 552 | 519 | 33 |
| Banyan | 585 | 470 | 115 |
| Maple | 585 | 415 | 170 |
| Total: | 1722 | 1404 | 318 |
| Sequoia Intermediate | 1004 | 907 | 97 |
| Newbury Park H.S. | 2253 | 2349 | (96) |

Source: Coneyo Valley Unified School District
Note: High School "capacities" do not reflect scheduling alternatives or projected "pass through" declines as a result of lower grade level declines:

Initially, the District's data reveals significant adequate space at the K-8 levels in those schools close to the proposed residential plan. The 9-12 levels are at capacity at present but should begin to realize the "pass through" factor from current declining enrollments at the lower levels of instruction.

Demographic Factors

Information on the number of school children per residential unit in the CVUSD is shown in Table III.

TABLE III

STUDENTS PER HOME IN NEWBURY PARK

| | Districtwide Average | | | |
|---|---|---|---|---|
| | K-6 | 7-8 | 9-12 | K-12 |
| Single Family | .40 | .15 | .28 | .83 |
| Multi Family | .15 | .08 | .18 | .41 |
| Affordable | . 3 | .08 | .18 | .29 |

Source: Conejo Valley Unified School District

It is assumed that the buildout rate from inception to project conclusion will be 200 units per year (76 single family low density and very low density; and 124 medium to high density units) are projected. On this basis approximately 110 new students per year could enter the school system. The grade level distribution is estimated as follows:

| | |
|---|---|
| K-6 | 49 students |
| 7-8 | 20 students |
| 9-12 | 41 students |
| Total | 110 students* |

Note: Estimates are adjusted to account for affordable and senior housing units.

Cumulative Effects

Table IV illustrates both the estimated annual and cumulative development plans for Dos Vientos Ranch and project planning area.

Table IV

DEVELOPMENT SCHEDULE -- DOS VIENTOS RANCH

(@ 200 dwelling units per year)

| | ANNUAL DEVELOPMENT | | CUMULATIVE DEVELOPMENT | |
|---|---|---|---|---|
| | Low Density | Med/High Density | Low Density | Med/High Density |
| 1986 | 76 | 124 | 76 | 124 |
| 1987 | 76 | 124 | 152 | 248 |
| 1988 | 76 | 124 | 228 | 372 |
| 1989 | 76 | 124 | 304 | 496 |
| 1990 | 76 | 124 | 380 | 620 |
| 1991 | 76 | 124 | 456 | 744 |
| 1992 | 76 | 124 | 532 | 868 |
| 1993 | 76 | 124 | 608 | 992 |
| 1994 | 76 | 124 | 684 | 1116 |
| 1995 | 76 | 124 | 760 | 1240 |
| 1996 | 76 | 124 | 836 | 1364 |
| 1997 | 76 | 124 | 912 | 1488 |
| 1998 | 76 | 124 | 988 | 1612 |
| 1999 | 76 | 124 | 1064 | 1736 |
| 2000 | 76 | 124 | 1140 | 1860 |
| 2001 | 76 | 124 | 1216 | 1984 |
| 2002 | 76 | 124 | 1292 | 1208 |
| 2003 | 76 | 124 | 1368 | 2232 |
| 2004 | 76 | 124 | 1444 | 2356 |
| 2005 | 76 | 124 | 1484 | 2456 |
| | 1484 | 2456 | | |

At an assumed thirty students per classroom, the maximum student population housing would entail:

| | |
|---|---|
| K-6 | 32 classrooms |
| 7-8 | 13 classrooms |
| 9-12 | 27 classrooms |

Table V illustrates the cumulative effect of this building plan on school enrollments.

CVUSD policy requires that no elementary school be planned for fewer than 400 or to accommodate more than 600 students. The CVUSD has surplus elementary schoolroom capacity districtwide. The CVUSD has closed schools and, by Board resolution, targeted additional existing schools and designated sites as surplus.

There would be no need for a complete elementary school until approximately 1994-95 (see Table V).

In addition, Table II revealed that there is currently significant student space at the three elementary schools closest in proximity to the project. As of 1983-84 there exists a total of 318 surplus student spaces, and with the existing trend of declining enrollment this surplus number can be expected to increase in the future.

A specific breakdown by grade levels for all the schools serving the Dos Vientos Plan is represented on Table VII.

Table V

STUDENT GENERATION -- CUMULATIVE BY GRADE LEVEL

| | K-6 | 7-8 | 9-12 |
|---|---|---|---|
| 1986 | 49 | 20 | 41 |
| 1987 | 98 | 40 | 82 |
| 1988 | 147 | 60 | 123 |
| 1989 | 196 | 80 | 164 |
| 1990 | 245 | 100 | 205 |
| 1991 | 294 | 120 | 246 |
| 1992 | 343 | 140 | 287 |
| 1993 | 392 | 160 | 328 |
| 1994 | 441 | 180 | 369 |
| 1995 | 490 | 200 | 410 |
| 1996 | 539 | 220 | 451 |
| 1997 | 588 | 240 | 492 |
| 1998 | 637 | 260 | 533 |
| 1999 | 686 | 280 | 574 |
| 2000 | 735 | 300 | 615 |
| 2001 | 784 | 320 | 656 |
| 2002 | 833 | 340 | 697 |
| 2003 | 882 | 360 | 738 |
| 2004 | 931 | 380 | 779 |
| 2005 | 962 | 400 | 820 |

The projections below include maturation and/or attrition variables which could range from 10 to 30% as related to the current history of the CVUSD and therefore lower the projected student populations by the following numbers:

| | | | |
|---|---|---|---|
| -10% | 96 | 40 | 82 |
| -20% | 192 | 80 | 164 |
| -30% | 288 | 120 | 246 |

Conditions in Surrounding Elementary Schools

Table II reveals that the elementary schools serving the Newbury Park area generally are operating below District adopted capacities. During 1984-85, Maple was at 71% capacity; in 1985-86, it is projected that Maple will be at 68% capacity. Cypress is enrolled at 94 % of capacity and is projected at 94% in 1985-86. Manzanita is at 86% in 1984-85 and is projected at 84% in 1985-86.

Conditions in Surrounding Intermediate and High Schools

Realignment of attendance boundaries and other steps have been taken by the District to resolve the imbalance in enrollment which exists among the intermediate schools. Within 1 year, however, the declining enrollment of the elementary schools will relieve any crowding problem at the intermediate school level and shortly thereafter, at the high school level.

A contingency plan for new approvals could be implemented to reduce impaction at the intermediate and high school levels of instruction in the event of increases in enrollments. The following are some options:

- Comply with the State Aid Building Program
- Re-evaluate "Board capacity"
- Boundary changes and readjustments
- Re-distribute district surplus facilities and sites
- Use of additional relocatables for peak enrollment years.

Table V illustrates that no additional intermediate or high school will be needed to exclusively serve Dos Vientos.

Table II illustrates a decline in student enrollments at Sequoia Intermediate School commencing in 1984 due to significant "pass-through" declines at the K-6 levels and a possible realignment of intermediate school attendance boundaries.

TABLE VI

STUDENT ENROLLMENTS FOR 1982-83, 1983-84, 1984-85

NEWBURY PARK AREA SCHOOLS K-12

| Grade | Banyan Elementary | | | Cypress Elementary | | | Maple Elementary | | | Sequoia Intermediate | | | Newbury Park High | | | Total | Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 82/83 | 83/84 | 84/85 | 82/83 | 83/84 | 84/85 | 82/83 | 83/84 | 84/85 | 82/83 | 83/84 | 84/85 | 82/83 | 83/84 | 84/85 | 82/83 | 83/84 | 84/85 |
| K | 46 | 64 | 72 | 66 | 60 | 74 | 56 | 53 | 45 | | | | | | | 168 | 177 | 191 |
| 1 | 70 | 72 | 65 | 78 | 71 | 64 | 50 | 47 | 65 | | | | | | | 198 | 190 | 194 |
| 2 | 52 | 52 | 75 | 65 | 59 | 70 | 58 | 52 | 47 | | | | | | | 175 | 163 | 192 |
| 3 | 73 | 79 | 56 | 83 | 77 | 61 | 54 | 59 | 56 | | | | | | | 210 | 215 | 173 |
| 4 | 71 | 71 | 76 | 90 | 83 | 81 | 73 | 71 | 70 | | | | | | | 234 | 225 | 227 |
| 5 | 60 | 51 | 75 | 86 | 87 | 80 | 64 | 61 | 69 | | | | | | | 210 | 199 | 224 |
| 6 | 85 | 85 | 51 | 58 | 54 | 89 | 92 | 88 | 63 | | | | | | | 235 | 227 | 203 |
| 7 | | | | | | | | | | 547 | 509 | 379 | | | | 547 | 509 | 379 |
| 8 | | | | | | | | | | 560 | 576 | 528 | | | | 560 | 576 | 520 |
| 9 | | | | | | | | | | | | | 610 | 590 | 592 | 610 | 590 | 592 |
| 10 | | | | | | | | | | | | | 568 | 531 | 646 | 568 | 531 | 646 |
| 11 | | | | | | | | | | | | | 548 | 495 | 634 | 548 | 495 | 634 |
| 12 | | | | | | | | | | | | | 589 | 509 | 555 | 589 | 509 | 555 |
| SubTotal | 457 | 474 | 470 | 526 | 491 | 519 | 447 | 431 | 415 | 1107 | 1085 | 907 | 2315 | 2125 | 2427 | 4852 | 4606 | 4738 |
| Spec ED | --- | --- | --- | --- | --- | --- | --- | --- | --- | 13 | 11 | | 25 | 16 | 78 | 38 | 27 | 78 |
| TOTAL | 457 | 474 | 470 | 526 | 491 | 510 | 447 | 431 | 415 | 1120 | 1096 | 907 | 2340 | 2141 | 2349 | 4890 | 4633 | 4660 |

Source: Conejo Valley Unified School District



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Table VII

NEWBURY PARK AREA ELEMENTARY SCHOOLS

CAPACITIES AND ENROLLMENTS

| Schools | Capacity State Formula | Capacity Board Approved | 1984/85 Enrollment | 1985/86 Enrollment | Existing Space Board Approved | Percent Utilized |
|---|---|---|---|---|---|---|
| Banyan | 614 | 585 | 470 | 481 | 115 | 80% |
| Cypress | 581 | 552 | 519 | 524 | 33 | 94% |
| Maple | 614 | 585 | 415 | 396 | 170 | 71% |
| Walnut | 526 | 439 | 340 | 343 | 99 | 77% |
| Manzanita | 638 | 580 | 499 | 485 | 81 | 86% |
| | 2973 | 2741 | 2243 | 2229 | 512 | 81% |

Source: Conejo Valley Unified School District

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Table VIII

SEQUOIA INTERMEDIATE SCHOOL ENROLLMENT

ACTUAL VS PROJECTED*

| Capacity | | Actual Enrollments | | Projected Enrollments |
|---|---|---|---|---|
| State Guidelines | District Policy | 83/84 | 84/85 | 85/86 |
| 1154 | 1004 | 1085 | 907 | 723 |

*Board Action 3/84 to realigning attendance boundaries between Redwood Intermediate School and Sequoia Intermediate School -- Result is significant reduction in future enrollment projections for Sequoia Intermediate School.

Source: Conejo Valley Unified School District



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Table IX

PROJECTED NEWBURY PARK HIGH SCHOOL ENROLLMENTS*

BY GRADE LEVEL

| | NINTH | TENTH | ELEVENTH | TWELFTH | **TOTAL |
|---|---|---|---|---|---|
| 1984 | 590 | 531 | 495 | 509 | 2125 |
| 1985 | 592 | 646 | 634 | 555 | 2349 |
| ***1986 | 402 | 613 | 667 | 655 | 2259 |
| 1987 | 389 | 437 | 655 | 709 | 2111 |
| 1988 | 431 | 427 | 475 | 699 | 1954 |
| 1993 | 511 | 568 | 572 | 568 | 2443 |
| 1998 | 596 | 603 | 660 | 664 | 2445 |

Note: Declines at elementary and intermediate should commence "pass-through" the high school in 1987.

**Totals reflect the subtraction of 78 students attending Conejo Valley High School.

***Figures from 1986 through Maturity are based on the Board approved attendance boundary.

Source: Conejo Valley Unified School District

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Table X

DISTRICTWIDE ENROLLMENT AND BOARD CAPACITY DATA

| | Total Current Enrollment | | Total Current "Board Capacity" | Difference | Percent Utilized |
|---|---|---|---|---|---|
| | 83/84 | 84/85 | | | |
| K-6 | 7593 | 7464 | *8863 | +1399 | 84% |
| 7-8 | 3320 | 2929 | 3322 | +393 | 88% |
| 9-12 | 6863 | 7138 | 6953 | -185 | 103% |
| Special Ed | 329 | 328 | 329 | 0 | — |
| TOTAL | 18,105 | 17,859 | 19,467 | 1,608 | 92% |

Note: The above surplus does not include existing surplus estimated at 2 closed elementary schools closed in 1985 or capacity ratings per the state aid building program.

Source: Cohejo Valley Unified School District



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## Mitigation Analysis

The District's data summary (Table VI-X) illustrates that total enrollments at the K-6 level are below or at "Board Capacity" at some schools and declining. The 7-8 level of instruction is operating at "Board Capacity" and declining; and the 9-12 level of instruction is operating at 103% of "Board Capacity" and projected for declines. However, according to formulas used by the State of California Department of Education for determining capacity and using standard practice methods, the CVUSD currently has and is expected to continue to have a significant "districtwide" surplus in total schoolroom square footage per student and will be significantly under-utilized for the foreseeable future.

## MITIGATION
## SECTION B
## FUNDING SITES and FACILITIES

Capital requirements for existing and new schools should consider and may come from the following:

Funding Element

The State Building Program at this time has funds available for construction.Renovation of facilities requires legislative compliance. However, there are many variables for both state and local mitigation. This section sets forth options for projected capital requirements. Elementary School Districts may need both local and state support depending upon the magnitude of land and existing facility requirements of individual districts

Current law permits counties, cities and/or school districts under certain circumstances to engage in alternative methods of assisting impacted school districts in acquiring new school facilities. However, because most, if not all, of the alternatives have limiting features, no single option appears to provide a solution to all current facility needs.

The CVUSD currently has significant surplus space districtwide. Based on student enrollment projections, such surpluses will fluctuate but be sustained through build out under City of Thousand Oaks General Plan maximum densities. Estimated capital outlay requirements for new school construction is within CVUSD finance ability provided that the CVUSD exercises its discretion to sell or lease such surplus properties, and exercise prudent use of its surplus space.

The Leroy F. Greene Lease Purchase Act is also an available source of funding for new facilities construction. It appropriates funds to reconstruct or replace existing school buildings which are educationally or structurally inadequate, to acquire new school sites and to construct improvements for education delivery.

The Leroy F. Greene Lease-Purchase Act, precludes requiring new development to contribute funds for capital projects based upon student generation therefrom. However, developers may donate school sites and contribute funds and improvements. CVUSD should place emphasis on qualifying for funding under this State Aid Program. Certain findings must be made to qualify as discussed below:

Existing or Projected Overcrowding

Overcrowding must be found current or to follow new residential construction. Under existing surplus conditions, the CVUSD is limited to temporary mitigation measures.

The per-unit amount of impaction fees and the number of sites required should be limited to actual need to support future student populations and regularly monitored.

Financial Planning

Funds and capital resources are discrete. Certain capital resources utilized by the CVUSD require approval of local agencies or special legislation:

1. Developer Fees (S.B. 201)
   Under Government Code Section 65974 (Senate Bill 201, Chapter 955, Statutes of 1977), a city, county or city and county may, by ordinance, require from developers, the dedication of land and/or the payment of fees as a condition of prior approval for residential development. This provision to levy fees (commonly referred to as "201 fees") was established to provide interim classroom facilities where overcrowding exists while permanent facilities are under construction. The fee is collected on an attendance area basis at the time a building permit is issued to a developer for new home construction. If all attendance areas in a district are deemed impacted, the fee can apply districtwide.

   The City has adopted a school impaction ordinance which permits the levying of fees on developers of new residential construction.

The amount of the fee may vary according to the degree of impaction. Non capital mitigation measures to eliminate the overcrowding such as boundary adjustments, student transportation, program adjustments or a combination thereof must be taken into consideration.

2. California Environmental Quality Act mitigation fees. Since the passage of Proposition 13, an increasing number of local agencies are using impact or "mitigation" fees to finance additional public capital improvement projects caused by new residential or commercial development. The fees may be levied according to a local ordinance or based on a policy of a city or county which places restrictions on land use approval. Such fees are "authorized" under the California Environmental Quality Act (CEQA, Public Resources Code, Section 21000 et. seq.).

   Under CEQA, an environmental impact report (EIR) is required for any project which may have a significant effect on the environment. If, as demonstrated in a artificial EIR, a particular development will cause negative impact on service areas of the city or county, new development may be conditioned to remedy the impact by mitigating or avoiding the identified effects.

   CEQA is generally cited as the authority for unofficial agreements between mitigation often times take the form of levying a fee on each residential unit within a new development and/or the dedication of land. In the case of fees, the funds are paid directly to the "impacted" school district. The funds are then used to finance interim facilities. Also, the fees can be used to finance district services--e.g., transportation.

3. State School Building Aid (Leroy F. Greene)
This is the major source of funds at the State level for new construction. Adequate funding is not provided to satisfy the needs of all new school construction in the state and competition for these funds is intense. Funds are allocated to school districts on a priority basis depending upon degree of impaction and previous calls for funding. At present, Districts must be severely impacted to qualify.
The principal school construction program operates under the Leroy F. Greene State School Building Lease-Purchase Law of 1976 (commencing with Chapter 22 of the Education Code).

4. Emergency Classroom Acts of 1979-1980
AB 8 (Chapter 282, Statutes of 1979) made available to school districts $13 million for the purpose of acquiring portable classrooms.

In 1980, two other legislative measures (Chapters 1191 and 1354) added $15,750,000. Classrooms are purchased by the State and leased to school districts for no less than $1.00 and no more than $2,000/year. The portables are an effective means of providing immediate classroom space and can be used by the district as long as it can demonstrate the need for the facilities. There are no governing statutes which limit the time a district retains the facilities; however, the portables are considered only an interim solution.

5. Redevelopment Agency. (Tax Increment Financing)
Local agencies may establish a redevelopment agency. Tax increment from redevelopment within a redevelopment area of such an agency may be requested and used by a district to improve, repair and renovate its facilities. A school district works with an RDA to determine location, need, priority, and use of such funds.

Statutory provisions (Health and Safety Code, Section 33000 et. seq.) which govern redevelopment financing require that redevelopment plans address the extent to which services provided by taxing authorities within the boundaries will be affected by the redevelopment efforts. According to the provisions, revenues to finance projects in the redevelopment plan can be generated from the incremental increase in property tax revenues resulting from the assessed value of new construction.

Although State law requires that the effects of a redevelopment plan on taxing authorities be considered, a redevelopment agency is not obligated to fund school capital improvements. Thus, the amount of revenues available to a redevelopment agency and the expected demand/competition for the funds must be considered.

6. Special Taxes.

Article XIII A of the California Constitution (created by Proposition 13) precludes local agencies from levying additional taxes based on an ad valorum tax on real property. Nonetheless, other provisions of the Article allow local agencies to impose certain other "special taxes" if approved by two-thirds vote of a local agency's qualified electors. Although "special taxes" are not defined in the Article and subsequent legislation has not been passed to clarify the issue, some local agencies are levying new taxes based on the Constitutional provision.

7. Joint Use and Occupancy Development.

The Education Code allows joint use and occupancy where a private developer constructs joint educational and commercial facilities on district owned land. For example, a developer may provide school facilities rent-free to the district in exchange for long-term ground lease for commercial use.

Joint use and joint venture agreements between public and private agencies are increasingly common.

8. Joint Powers.

Joint powers agreements are permitted between agencies such as the Recreation and Park District and school district to jointly develop and utilize public property. For example, the Recreation and Park District could install playing fields in return for land for a combined park and school facility.

9. Deferred Maintenance.

This State program supplements general fund revenues of the district for the purpose of accomplishing needed maintenance that would not normally be able to be funded out of the general fund revenues. The level of such funding locally has been inadequate to fund district deferred maintenance programs. As the school facilities become older, this becomes a more serious problem.

10. Benefit Assessment Districts.

Specific geographical areas can be identified for the establishment of benefit assessment districts where all property owners within the boundaries of the assessment district would be assessed for certain capital improvements.

Benefit assessments are based on the (added) benefit/value to the property resulting from the improvement--i.e., resulting from the capital asset financed with the assessment revenue.

This form of revenue appears to be outside the taxing limits imposed by Proposition 13. Some courts have found that such assessments are not included within the limitations of "special taxes" set by the Constitutional Amendment. As such, assessments are not required to adhere to the two-thirds vote provision for "special taxes." However, despite the rulings, courts have warned that simply calling a "special tax" a "benefit assessment" does not meet the intent of the law.

11. In-Lieu Permanent Facilities.

In some cases, it may be desirable for the developer of a major project to provide permanent school facilities in lieu of payment of developer fees for interim facilities. The provision of a community school within the project could enhance the marketing of the project. The mechanism for in lieu of site and facility considerations is typically a voluntary agreement between developers and school districts.

12. Site Designations.

Sites which may be required for new school facilities can be designated in a plan.

13. General Fund.

Since severe budget constraints have required substantial restraints in the district's general fund, it is not expected that funds will be available for the sites or facilities needs as described in this plan.

14. Lease Purchase and Relocatable Structures

Section 23 of the Education Code (commencing with Chapter 2, Section 39240 and Chapter 3, Section 39290) establishes procedures under which a district may lease temporary and permanent buildings and land for school purposes. The law establishes time frames and circumstances under which facilities can be leased or leased-purchase. For example, "temporary use" buildings for students which do not conform to the Field Act requirements can not be leased for more than three years. Lease and lease-purchase agreements pertaining to relocatable units may not exceed ten years. The duration of other agreements varies from 12 to 66 years, depending upon the use of the facilities and statutes which regulate their use.

15. Lease purchase of Sites and Facilities through Non-Profit Corporation.

Education Code Section 39327 provides school districts with the authority to enter into a lease-purchase agreement for school facilities with nonprofit corporations. Also known as the "Poway Plan," several districts have attempted to use this method to finance school construction, but for numerous reasons, the plan has been unsuccessful.

The "Poway Plan" allows for the establishment of a nonprofit corporation whose function is to sell bonds and build school facilities and, in turn, lease the facilities to the school district. The bonds are financed through development liens or property assessments based on size rather than value of the property.

One disincentive of the plan is that all property owners must approve the assessment. Another is the marketability of bonds. To date, revenue bonds for this purpose have not been sold, and their attractiveness in the financial market is questionable. In addition, administrative time and cost for this plan is high. It has been estimated that this plan may increase the total cost of construction by approximately 50 percent. Thus, a $3 million school could cost 4.5 million if constructed under this plan.

16. Funds from sale or lease of school district property. Some school districts are financing new school facilities from the sale or lease of surplus property. Under certain condition, the State Allocation Board is allowing districts to retain all or a portion of the funds derived from the sale of surplus property which otherwise would be returned to the State. The funds are used to finance construction projects or, in some cases, deferred maintenance.

17. Community Facilities Act of 1982

A community facilities district is a governmental entity which is established to carry on specific activities within defined boundaries. It may also provide for the purchase, construction, expansion or rehabilitation of any real or tangible property with an estimated useful life of five years or longer.

The procedure to establish a community facilities district may be initiated in three ways: (1) by a local legislative body on its own initiative; (2) by two members of a local legislative body filing a request with their agency; and (3) by a petition signed by at least ten percent of the registered voters residing within the proposed boundaries of the new district. The request and petition must describe the boundaries of the proposed district and specify the type(s) of facilities or services to be provided. The local agency must within forty days of the filing of the request or petition adopt a resolution of intention to establish a community facilities district.

18. Private Ownership of School Facilities and Leaseback Agreements with School Districts

The concept of private ownership of school facilities which are leased back to school districts is an option which is presently available to school districts. Nevertheless, because its use is not widespread, some changes or compliance to State Education Code may be necessary in order to implement the lease back.

19. Secured Bond Sales with Lien on Real Property

The ability of school districts to issue bonds for purposes of acquiring school facilities has been nullified by Proposition 13. Prior to Proposition 13, bond sales were secured with a lien on homeowners' property. However, when

California voters approved the Constitutional Amendment, school districts were prohibited from imposing new taxes based on an ad valorum tax on real property.

As one method of meeting the current need for new schools, the State Legislature could adopt a measure which places a Constitutional Amendment before California's voters to reinstate the ability of school districts to levy an ad valorum tax. The revenues from such a tax could be restricted for use only in constructing new school facilities. The amendment could require local voter approval of bond sales secured with a lien on real property by a simple majority or by a 2/3 vote. In this manner, local communities would participate in decisions to acquire new facilities.

20. Certificates of Participation

Certificates of participation (in a lease) are a relatively new concept in municipal financing which has been developed to assist public entities acquire new capital assets. Generally speaking, public entities have not been actively involved in the private, financial market place in their attempts to finance new municipal projects because recent tax cutting measures have affected their ability to issue general obligation bonds. To overcome the problem, this concept involves the merging of bonding and leasing authority which is currently available to certain public agencies.

The concept of certificates of participation has been modeled after a nonprofit corporation's ability to issue tax exempt bonds. Since certificates of participation are not bonds, they are not regulated by statutes which govern interest rates and discount provisions of bonds. Moreover, unlike bond sales, certificates of participation are not required to be sold at a public sale. Rather, their sale can be negotiated with an underwriter.

In addition, income from the securities to the certificate holders is considered tax exempt. Although there is no statutory authority for this exemption, bond counsels indicate that the exemption applies to both Federal and State income taxes. However, because the income is considered tax exempt, bond counsels and financial advisors further indicate that the certificate holders are not entitled to claim derivative depreciation. In their judgement, this would constitute "double dipping" and could violate IRS rules.

21. New Special Legislation

Because the Amendment lacks a definition of "special tax", the State could take appropriate action to clarify. Also, the State could take action to permit the levying of benefit assessment fees for financing school facilities.

## Mitigation Analysis & Summary

### Mitigation Measures

The District should continue to attempt to minimize the number of facilities needed to house its students without adversely affecting the educational process. The most cost effective method of providing housing for students is to maximize the use of its existing resources especially during peak enrollments. The following are variables that should be considered by the District:

### Cumulative Mitigation Measures

The CVUSD is in a position to generate the necessary funds to build the needed facilities through the use of existing impaction fees and revenues from surplus property.

Student population growth at the projected cumulative level may require a new educational K-6 site and school. The CVUSD has financial resources to provide site and facilities through the disposition of surplus property. However, the district could maintain current levels of educational standards, although it may be necessary to come into compliance with the requirements of the State aided Leroy F. Green Lease-Purchase Act.

Competition among school districts for funding under the Leroy F. Green Lease-Purchase Act is intense. The School District should make every effort to comply with the regulations set forth in the program, and they must consider other options for building school facilities if the State is unable to finance the construction of educational facilities.

### Interim Mitigation

Mitigation measures on an interim basis could include the use of existing surplus classrooms or a variety of relocatable facilities and may, in fact, necessitate implementing alter-

native scheduling as an option for peak enrollments. The District currently has surplus relocatables in its inventory.

Developer Agreement

Developer agreement for interim use of sites and facilities provide another option.

## DISTRICT MITIGATION

Academic Scheduling Changes

This would entail evaluating the current facilities to assure that they were scheduled to be fully utilized consistent with sound K-6 programs and instructional policies.

Boundary Adjustments

Boundary adjustments should be considered on an ongoing basis to more fully utilize facilities.

Revised Grade Configuration

Revising the current grade configuration could be evaluated on a regular basis in order to balance enrollments and capacities (if needed).

Transportation

Transportation of students from high growth areas to facilities with available space, should be analyzed on a annual basis.

Surplus Property

The District could apply revenues from the sale or lease of surplus properties towards the purchase of new sites and facilities if needed.

## RECOMMENDATIONS

Immediate Action

That the plan provide for a combined K-8 site and additional contingency K-6 site (Illustration A). That if at all possible said sites should be considered for joint use with the local park district.

Sites

That sites be made available through a lease arrangement to the District until the site or sites can be purchased by the District.

Funding

That funding for both sites and facilities come from the State Aid Building Program or district wide approved mitigation programs.

Mitigation

That district wide surpluses be used for 7-8 and 9-12 students. That district surpluses be used at the K-6 level of instruction until enough students are generated for the proposed school sites.

Planning

That the District continue to plan for the absorption of students into existing facilities and that timely application for state funding for capital outlay be implemented.

Implementation Process

- Use of existing surplus
- Application for state aid
- Purchase or lease site
- Construct elementary school when needed
- House 7-12 in existing facilities

## FINDINGS

The School District has options for maximizing the use of its educational facilities.

The School District is assigning developer fees under the provisions of a local ordinance.

The School District is decreasing its student populations at a steady rate.

There are both surplus sites and facilities district wide.

## SUMMARY

The CVUSD is currently collecting developer donation fees. The District classroom loading policies have for some time exceeded the guidelines "policy" established for qualification under the Leroy F. Greene Lease-Purchase Act or the State School Building Program. Even if enrollments were to increase beyond the District's current allocation of square footage, existing District policies and surplus classrooms would prohibit the District from qualifying under the State program for capital improvements. However, the District is in the process of reallocating resources to be more in compliance with the State Aid Building Program. The Specific Plan for Dos Vientos Ranch should provide for identification and reservation of school sites determined by the District subject to confirmation by the City.

The Dos Vientos Ranch will be a planned community with low, medium and high density land uses predetermined as described in planning documents. The City of Thousand Oaks has in effect Measure A which places significant restrictions on the number of building permits which can be allocated through 1991. Said ordinance significantly limits the rate of home production capability in the Dos Vientos Ranch.

At the elementary level of instruction, Cypress Elementary is the primary feeder elementary school for the Dos Vientos Ranch. Banyan and Maple Elementary Schools could be considered as backup elementary facilities due to proximity, inclusion in the Newbury Park High School attendance area and that they are within the Intermediate School attendance area.

The intermediate and high schools were at capacity, but existing declines due to the historic student pass-through pattern of the feeder elementary schools are now being realized. A new intermediate and/or high school in the Dos Vientos region can not be foreseen at any particular time in the future. Due to current

declining enrollments, the slow down of new home construction, limitations on housing startups, (Measure A), and the existing significant surpluses both districtwide and in the neighboring Dos Vientos region, The Dos Vientos Ranch Specific Plan should identify an additional elementary site for future facilities if the district so desires a site within the specific plan. Other mitigation measurs, if needed, should be evaluated or set forth in this document.

# Preliminary Oak Tree Report (E)

# PRELIMINARY OAK TREE REPORT

DOS VIENTOS RANCH

PREPARED FOR:

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PREPARED BY:

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DATE: February 19, 1985

JOB: 1100-010

DATE: February 19, 1985

PREPARED FOR: HAALAND & ASSOCIATES, INC.

PREPARED BY: LEE NEWMAN & ASSOCIATES, INC.
31320 Via Colinas, Suite 108
Westlake Village, California 91362

# PRELIMINARY OAK TREE REPORT

## SITE LOCATIONS

The site, Dos Vientos Ranch, is located in an unincorporated area of Ventura County.

## OBJECTIVES

The objectives of this report are to qualify the present condition of the Oak trees.

This is to involve the following:

1. Determine the physiological condition of the trees addressed.
2. Provide guidance to minimize any impacts upon the trees.

## METHODS OF STUDY

1. Qualifications of the Oak trees were accomplished by the use of our standard visual survey and was conducted on the designated trees.

   In the course of field work (February 14, 15, 18, 1985), we performed the following tasks:

   A. The trunk diameters of 4" in diameter and larger, at breast height (DBH) were measured (as measured 4 1/2' above mean natural grade).

   B. The compass bearing for the tending direction of any low branching of 15' and lower was taken.

C. The trees were assessed for plant quality.

1. The health of the trees were visually determined from a macroscopic inspection of signs and symptoms of disease.

   The trees were rated on a scale of "A", "B", "C", "D", & "F", with "F" representing a dead tree. An "A" tree is a near perfect specimen and is reasonably free from signs and symptoms of disease. A tree rating of "D" and lower is in a low state of vigor and naturally a meaningful level of recovery is doubtful.

2. The aesthetic qualilty of the trees were visually determined from an overall inspection of appearance.

   The trees were rated on a scale of "A" to "D". An "A" tree is a visually perfect tree having the ideal form and appearance for the species. A "D" tree has few, if any positive characteristics and may detract from the beauty of the landscape.

2. The Topographical Map, prepared by Haaland & Associates, Inc., was received by this office on February 13, 1985.

OAK SPECIES

The species of Oaks present on the site are *Quercus agrifolia* (Coast Live Oak) and *Quercus lobata* (Valley Oak).

TREE LOCATIONS

Refer to the PRELIMINARY OAK TREE LOCATION MAP included herein for reference locations.

RESULTS OF STUDY

1. Physiological Condition of the Oaks

   The physiological condition of the trees are detailed in the SUMMARY OF FIELD INSPECTION contained within this report.

## RECOMMENDATIONS

As development occurs near these Oak trees, they will become dependent upon the future residents for their care and preservation. Consideration of disease and pest control will play a major role in such a program and for the most part will be long range. The best defense against disease is to build up the tree's natural defenses by proper watering and fertilization and to avoid wounding whenever possible. A maintenance program must encourage vigorous growth within the trees so their systems of compartmentalization can effectively control diseases.

The following list of recommendations, if followed, should insure that these trees will remain as a valuable asset to the community:

1. The trees should be fenced at the dripline with a 6' high chainlink fence before any grading commences. This fence shall remain during all phases of construction and shall not be be moved or removed without final certification by the Oak Tree Consultant.

2. No equipment storage, parking, or debris dumping shall take place within any Oak tree dripline.

3. No grading within the driplines shall be attempted. If said grading is approved by the governing agency, the Oak Tree Consultant shall be present during all initial construction within the driplines.

4. All footings and/or grading within the driplines shall be done by hand. Any roots encountered shall be properly attended to.

5. No planting or irrigation and utility lines shall be designed and/or installed within the dripline of any Oak tree.

6. All deadwooding and/or pruning of the Oak trees shall be done by a qualified Arborist under the direct supervision of the Oak Tree Consultant.

7. Dust accumulation on the trees foliage shall be hosed off periodically during construction (in accordance to the Oak Tree Consultant).

8. "Prime-Coat" or similar material shall not be applied to the soil prior to paving within the dripline of any Oak tree.

9. No chemical herbicides shall be used within one hundred feet (100') of any Oak tree dripline.

10. Tree health should be monitored to identify problems as the arise so that prompt treatment can be given if necessary.

PUBLIC SAFETY CONSIDERATIONS

Oak trees, due to their universal aesthetic appeal, draw people to them to enjoy their shade and comfort. Unbeknown to these people are the dangers which prevail in and around the Oaks.

Oaks, being living things, are subject to the destructive force of nature. Disease, the major force, often works insidiously with an Oak, weakening the internal structure while showing little outward signs of its existence. Occasionally, a tree will react with suddeness and great force to the loss of structural stability; thus, humans in close association with an Oak tree are exposed to a hazard.

It is important to understand, by all involved with Oaks, that a significant risk to human safety exist at every large tree. These risks to public safety should be equated to the aesthetic benefits of preservation of the Oaks.

Respectfully submitted,

LEE NEWMAN & ASSOCIATES, INC.

Richard Ibarra

Richard Ibarra
Horticultural Consultant

RI/sp

# SUMMARY OF FIELD INSPECTION

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc

TRACT: Dos Vientos Ranch

JOB NO: 1100-010

DATE: 2/14/85



| FORM | | | | | | N W E S | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TREE NUMBER | SPECIES Q. AGRIFOLIA | SPECIES Q. LOBATA | SPECIES | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 1 | X | | | 1 | 18" | | X | | | | | X | | | | | | | | | | | | | | | | | | B | A | Cattle damage to lower foliage; Earhorn Scale; |
| — | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | compaction within drip-line (from cattle); |
| — | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | good vigor |
| 2 | X | | | 2 | 5", 6" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | Good vigor |
| 3 | X | | | 6 | 2x6", 2x8", | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Good vigor; future cabling required |
| — | | | | | 4", 10" | • | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | X | | | 1 | 9" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Excellent vigor |
| 5 | X | | | 3 | 3",6", 8" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Excellent vigor |
| 6 | X | | | 2 | 5", 6" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Good vigor |
| 7 | X | | | 3 | 4",6", 8" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Excellent vigor |
| 8 | X | | | 3 | 2x7", 4" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Excellent vigor |
| 8A | X | | | 1 | 4" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | UNDERSIZED TREE: excellent vigor |
| 9 | X | | | 2 | 4", 6" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | Excellent vigor |
| 10 | X | | | 2 | 2",5" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | Excellent vigor |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.
TRACT: Dos Vientos Ranch
JOB NO: 1100-010
DATE: 2/14/85
2/7

| FORM | | | | | | | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPECIES | | | | | N W°S E | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 11 | X | | | 6 | 2x5", 2x6" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | A | Future cabling to be required; good vigor; |
| – | | | | | 2x7" | | | | | | | | | | | | | | | | | | | | | | | | | | | cucumber vine growing into tree; excellent |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | vigor |
| 11A | X | | | MANY | | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | Good vigor |
| 12 | X | | | 4 | 1", 4", 2x2" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | A | Good vigor |
| 13 | X | | | 2 | 4", 10" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | A | Good vigor |
| 14 | | X | | 1 | 20" | | | | | | X | | | | | | | | | X | | E'ly | | | X | X | | | | B | A | Cynipid Wasp Galls; tree being used as |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | fence post-4 strands of barbwire are attached |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | to north side of trunk; Scale |
| 15 | | X | | 3 | 12", 14", 16" | | | | X | | X | | | | | | | | | X | | | | | X | X | | Cable X | B | B | Tree being used as fence post-wrapped in |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 strands of barb wire; Scale |
| 16 | | X | | 1 | 24" | | | | | | X | | | | | X | X | | | X | | | | X | | | | | | C- | A | Beehive in basal trunk cavity; tree being used |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | as fence post-4 strands of barb wire attached |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | to nort- side of trunk; Scale |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.

TRACT: Dos Vientos Ranch

JOB NO:1100-010

DATE: 2/14/85



| FORM | | | | | | N W E S | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TREE NUMBER | SPECIES Q. AGRIFOLIA | SPECIES Q. LOBATA | SPECIES | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 17 | | X | | 1 | 20" | | | | | | | | | | | X | X | | | X | | | | X | | | | | | C- | A | Beehive in basal trunk cavity; Scale |
| 17A | X | | | 1 | 2" | | X | | | | X | | | | | | | | | | | W | | | | | | | | B | C+ | UNDERSIZED; Good vigor |
| 18 | X | | | 1 | 5" | | X | | | | X | X | | X | | | | | | | | S | | | | | | | | C | C+ | |
| 19 | | X | | 2 | 28" | | | | | | | | | | | X | | | | X | | | | X | | | | | | C- | A | Large main crotch cavity with beehive; |
| — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | good vigor; scale |
| 20 | X | | | 1 | 18" | | X | | | | | X | X | | | | | | | | | | | | X | | | | | B | A | Good vigor |
| 21 | | X | | 2 | 5", 18" | | | | | | X | | | | X | | | X | | X | | | | | X | | | | | C | B- | 5" trunk is dead;Scale |
| 22 | | X | | 1 | 24" | | | | | | X | | | | X | | | | | X | | | X | | X | | | | | B | B | Scale |
| 23 | | X | | 1 | 20" | | | | | | X | | | | | | | | | X | | | | | X | | | | | B | A | Scale |
| — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 2/15/85 | | | | | | | | | | | | | | | | | | |
| 24 | | X | | 1 | 36" | | X | | | | X | | X | | | | | | | X | | | | | X | | | | | B | A | Excellent vigor; Scale |
| 25 | | X | | 1 | 10" | | X | | | | X | | | | | | | | | | | | | | | | | | | C | C+ | Within creekbed; moderate burn damage |
| 26 | X | | | 2 | 18" | | X | | | | X | X | X | X | X | | X | | | | | | | | X | | | | | B- | B- | 10' south of creekbed; good vigor |
| 27 | X | | | 2 | 8",14' | | X | | | | X | X | X | X | X | | X | | | | | W | X | | X | | | | | B | B | Much basal growth from 8" trunk |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.
TRACT: Dos Vientos Ranch
JOB NO: 1100-010
DATE: 2/15/85
4/7

| FORM | | | | | | N W E S | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPECIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | |
| 28 | X | | | 2 | 18", 24" | | X | | | | X | X | X | X | | | X | | | | | | X | | X | | | | | B | C | Good vigor; 20'± north of existing creekbed |
| 29 | X | | | 2 | 12", 16" | | X | | | | X | X | | | | | | | | | | | | | X | | | | | B | A | Growing out of (large) rock bed; axe damage |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | in upper tree-remnants of treehouse (previously |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | pruned). |
| 30 | X | | | 1 | 40" | | X | | | | X | | X | X | | | X | X | | X | | W'ly | | | X | | X | | | C | A+ | Shading out; bark beetle; foliage at |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | ground; twig galls; trunk cankers |
| 31A | X | | | 1 | 48" | | X | | | | X | | X | X | X | X | X | | | X | | | NE | | X | | X | | | C- | A+ | Heart rot in main trunk; foliage at ground; barb |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | wire in main trunk; Shading out; POSSIBLY |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | OFF-PROPERTY |
| 32 | X | | | 1 | 24" | | X | | | | X | | X | X | | | | | | | | SW'ly | | | X | | | | | B | A | Cabling may by required in the future |
| 32A | | X | | 1 | 28" | ↓ | X | | | | X | | X | | X | | | | | X | | | N | | X | | | | | B | B | Scale; OFF PROPERTY |
| 32B | X | | | 1 | 28" | | X | | | | X | | X | X | X | | | | | X | | W'ly | | | X | | X | | | B | A+ | OFF-PROPERTY; ants; Shading out; foliage |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | at ground; scale |
| 33 | | X | | 1 | 18" | | X | | | | | | | | | | | | | X | | | | | X | | | | | B | A+ | Earhorn Scale |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.
TRACT: Dos Vientos Ranch
JOB NO: 1100-010
DATE: 2/15/85



| FORM | | | | | | | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPECIES | | | | | N W E S | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 34 | | X | | 1 | 24" | | X | | | | | | | | | | | | | | X | | | | X | | | | | B | A+ | Earhorn Scale |
| 35 | X | | | 1 | 18" | | X | | | | | | | | | | | | | | | | | | | | | | | B+ | A | Shading out |
| 36 | X | | | 2 | 6",8" | | X | | | | | | | | | | | | | | | | | | | | | | | B+ | A | |
| 37 | X | | | 3 | 2",4", 7" | | X | | | | | | | | | | | | | | | | | | | | | | | B | A | |
| 38 | X | | | 1 | 6" | | X | | | | | | | | | | | | | | | | | | | | | | | B | A | |
| 39 | X | | | 1 | 4" | | X | | | | | | | | | | | | | | | | | | | | | | | B | C | Being shaded out by #40 |
| 40 | X | | | 1 | 18" | | X | | | | X | X | X | | | | | | | | | | | | X | | | | | B | B | Shading out |
| 41 | X | | | 3 | 12",13' 15" | | X | | | | X | X | X | | X | | | | | X | | | | | | | | | | B- | B | Ants; axe damage-remnants of tree house |
| 42 | X | | | 2 | 6" | | X | | | | | X | | | | | | | | | | | | | | | | | | B | A | |
| 43 | | X | | 1 | 13" | | | | | | X | | | | | | | | | X | | | | | X | | | | | B | A | Cynipid Wasp Galls; good vigor; Scale |
| 44 | X | | | 1 | 4" | | | | | | | | | | | | | | | | | | | | | | | | | B | B | |
| 45 | X | | | 3 | 2"X4" 3" | | X | | | | X | | | | | | | | | | | | | | | | | | | B | B+ | |
| 46 | X | | | 3 | 3",4", 6" | | X | | | | X | | | | | | | | | | | | | | | | | | | B | B+ | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.
TRACT: Dos Vientos Ranch
JOB NO: 1100-010
DATE: 2/18/85
6/7

| FORM | | | | | | N W E S | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPECIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 47 | | X | | 1 | 14" | | | | | | X | | X | | | X | | X | | | | S | | X | | | | | | C | A | Heart rot & water trap in trunk; foliage to ground |
| 48 | | X | | 2 | 12", 14" | | X | | | | X | | X | | | | | | | X | | | | | X | | | | | B | A | Scale |
| 49 | X | | | 3 | 8", 2x10" | | X | | | | | | | | | | | | | | | | | | X | | | | | B | A | |
| 50 | | X | | 1 | 10" | | | | | | X | | | | | | | | | | | | | | X | | | | | B | B | Cynipid Wasp Galls |
| 51 | X | | | 1 | 14" | | X | | | | X | | | | | | | | | | | SE | | | X | | | | | B | A+ | Foliage on ground |
| 52 | | X | | 2 | 8", 10" | | X | | | | | | | | | | | | | | | | | | X | | | | | B | B | |
| 53 | | X | | 1 | 20" | | X | | | | | | | | | | | | | | | E'ly | | | X | | | | | B | A | Good vigor |
| 54 | X | | | 2 | 3",6" | | X | | | | | | | | | | | | | | | E | | | | | | | | B | B | Cucumber vine growing into tree; good vigor |
| 55 | X | | | 1 | 8" | | X | | | | | | | | | | | | | | | E | | | | | | | | B | B | Cucumber vine growing into tree; good vigor |
| 56 | | X | | 1 | 6" | | | | | | | | X | | | | | | | | | E | | | | | | | | C | C | |
| 57 | X | | | 1 | 8" | | X | | | | | | | | | | | | | | | E | | | | | | | | B | A | Good vigor |
| 58 | X | | | 1 | 5" | | X | | | | | | | | | | | | | | | E | | | | | | | | B | B | Good vigor |
| 59 | X | | | 1 | 10" | | X | | | | | | | | | | | | | | | | | | | | | | | B | A | Good vigor |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.

TRACT: Dos Vientos Ranch

JOB NO: 1100-010

DATE: 2/18/85



| FORM | | | | | | N W E S | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPECIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 60 | X | | | 1 | 8" | ↻ | X | | | | | X | | | | | | | | | | | X | | | | | | | B | A | Good vigor |
| 61 | | X | | 1 | 10" | • | | | | | X | X | | | | | | X | | | | SE | | | | | | | | C+ | B- | |
| 62 | X | | | 1 | 8" | ↻ | X | | | | X | | | | | | | | | | | | | | | | | | | B | B | Good vigor |
| 63 | X | | | 1 | 28" | ↻ | X | | | | X | X | | | | | | | | | | | | | | | | | | B+ | A+ | Foliage on ground; excellent vigor |
| 64 | X | | | 2 | 3",6" | ↻ | X | | | | X | | | | | | | | | | | SE | | | | | | | | B | B | |
| 65 | | X | | 1 | 10" | ↻ | | | | | X | | | | | | | | | | | | | | | | | | | B | A | |
| | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | |

# Biological Assessment (F)

# Dos Vientos Ranch

## Proposed Development Plan

## Biological Assessment

Prepared for the

City of Thousand Oaks
Department of Planning and Community Development

Contact: Mr. Greg Smith, Associate Planner

May 31, 1985

McClelland Environmental Services

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DOS VIENTOS RANCH DEVELOPMENT PLAN

BIOLOGICAL RESOURCES


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# I. ENVIRONMENTAL SETTING

This section is based primarily on existing literature supplemented with limited field survey. The main source of the information contained herein regarding existing conditions is the Draft Environmental Impact Report, Specific Plans 8 and 9, Annexation 89, Dos Vientos Ranch prepared in 1978 by the city of Thousand Oaks. Additional information has been gained through verbal contacts with the city planning staff and the applicant and through analysis of aerial photographs.

This section provides a summary of the detailed description of flora and fauna contained in the above-referenced document, available for review in the city of Thousand Oaks Planning Department, 401 W. Hillcrest Drive, and hereby incorporated by reference.

## A. EXISTING CONDITIONS

### 1. Flora

The vegetation of the Dos Vientos Ranch is composed of four distinct plant communities. Figure 1 delineates the distribution of vegetation types onsite, and Appendix A provides a list of plants that have been identified. In order of occurrence frequency the communities are:

- coastal sage scrub
- chaparral
- grassland/disturbance
- riparian/freshwater marsh

With the exception of the grassland areas, which are composed primarily of introduced annual grasses, these plant communities are dominated by native plants. Numerous introduced, agricultural and ornamental species are also present throughout each of the plant communities.

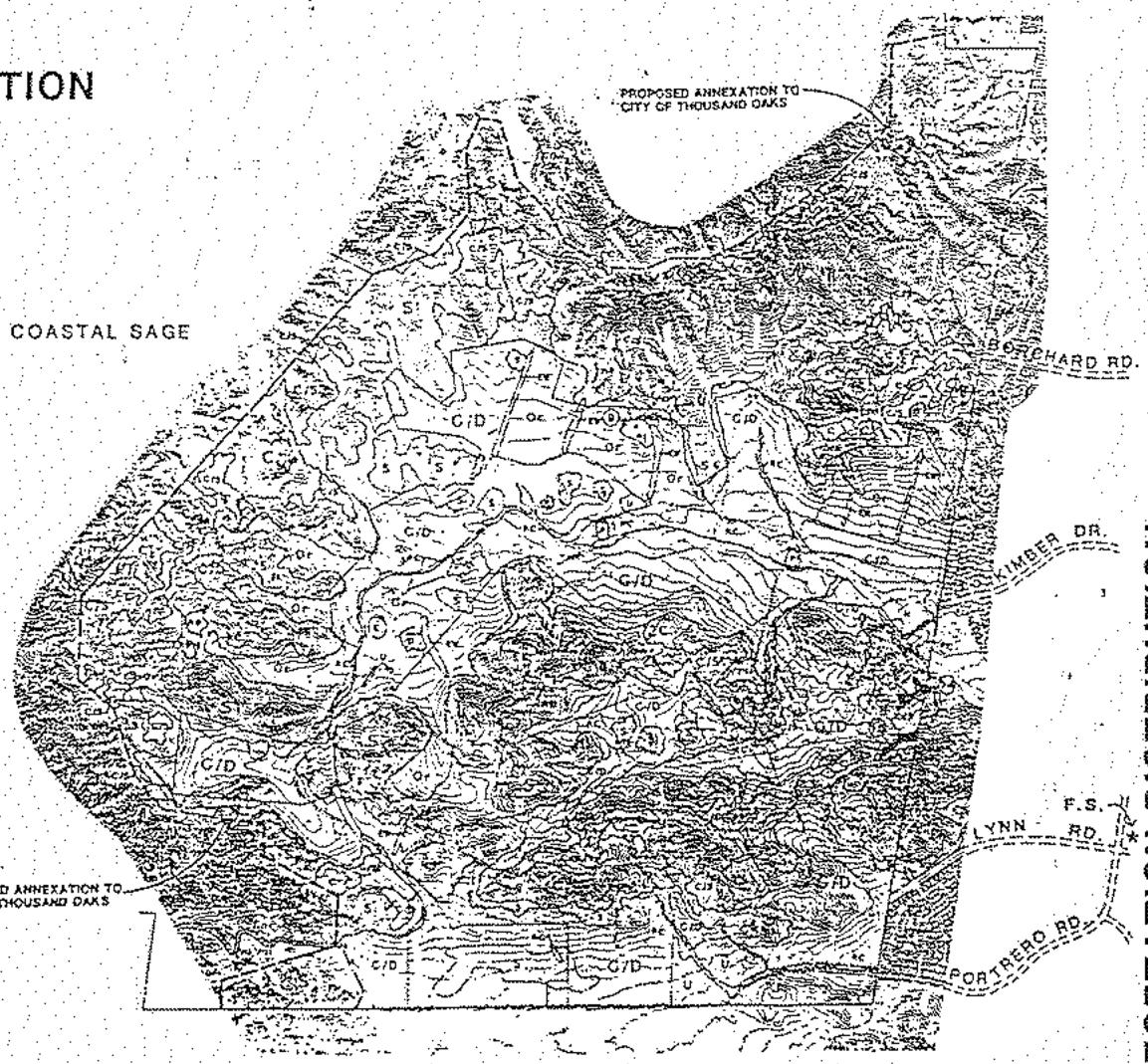
The coastal sage scrub community appears to be the climax vegetative covertype of the Dos Vientos Ranch. The occurrence of this community as

SPECIFIC PLAN NOS. 8 AND 9

# VEGETATION DISTRIBUTION

LEGEND

| | |
|---|---|
| G/D | GRASSLAND & DISTURBED |
| S | COASTAL SAGE SCRUB |
| C | INLAND SAGE SCRUB |
| C/S | INTERMIXED CHAPARRAL / COASTAL SAGE |
| Or | OLD ORCHARD |
| RC | RIPARIAN CORRIDOR |
| EW | EUCALYPTUS WINDROW |
| RB | RETENTION BASIN |
| U | URBAN |
| M | MARSH |
| P | POND |
| * | INDIVIDUAL OAK TREE |
| (9) | OAK GROVE WITH NUMBER OF TREES INDICATED (SEE OAK TREE REPORT FOR EXACT LOCATIONS AND DATA) |




Dos Vientos Ranch

HAALAND AND ASSOCIATES INC

VEGETATION DISTRIBUTION

FIGURE 1

opposed to the expected interior sage scrub is indicative of the strong maritime influence experienced at this location. Plant species that are more typical of areas closer to the coast are found here, such as coast buckwheat (Eriogonum cinereum).

Portions of the property were previously planted with citrus and walnut orchards, long since abandoned, and cattle grazing continues over much of the site. These past agricultural pursuits resulted in the loss of scrub and chaparral habitat which has been replaced by successional grassland species. A benefit of the agricultural activities has been the creation of several annual and two perennial water sources and associated riparian areas due to the irrigation system installed to provide water to the cattle and orchards.

Of particular botanical interest is the unique plant assemblage on the site found in association with the rock outcrops known as the Conejo volcanics. These outcrops and their attendant shallow soils create an unusual soil matrix and a different microclimate than the surrounding substrate. The result is the occurrence of an unusually high diversity of native herbaceous plant species, several of which are considered to be locally uncommon. The plant species found to commonly occur in this association on the site include club moss (Selaginella sp.), lance-leafed dudleya (Dudleya lanceolata), purple needlegrass (Stipa pulchra), shooting stars (Dodecatheon clevelandii), and wild onion (Allium haemotochiton). Various cactus may also be found, such as cholla (Opunta parryi) and prickly pear (Opuntia littoralis).

Another locally uncommon plant community found in scattered areas onsite are small remnants of a southern oak woodland. The dominant trees of this covertype are coast live oak (Quercus agrifolia) and valley oak (Q. lobata). These small areas are intergraded with grassland and chaparral in areas of the site that are generally situated from strong maritime influence. This community was once a widespread habitat in the vicinity, and now is restricted to relic stands in areas protected from agricultural and/or urban development. The oak trees onsite were the subject of a specific study that analyzed the health of the trees and mapped their location. This report, entitled "Preliminary Oak Tree Report", is hereby incorporated by reference in accordance with CEQA guidelines, and is included in Appendix C of this

report.[1] The report identified a total of 65 oaks, all in good to moderate health. The highest oak tree concentration is adjacent to the eastern boundary of the site, within planning units 6A and 22.

a. Rare, Endangered, and Special Interest Species. There is one plant which may occur onsite that has been listed by the State of California as threatened; the Conejo buckwheat (*Eriogonum crocatum*). This plant has been identified in several locations, most in the vicinity of the Conejo Grade, and Wildwood Park areas of Thousand Oaks. The California Native Plant Society (CNPS) describes the plant as being endangered in a portion of its range, with an occurrence confined to several populations. There are two additional plants listed by the California Native Plant Society (CNPS) which are likely to occur onsite; Conejo dudleya (*Dudleya parva*), and Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*). The former is on CNPS's List 1B (plants rare or endangered in California and elsewhere), and the latter is on List 4 (plants of limited distribution - a "watch" list). Both plants occur on rocky outcrops along cliffs and canyons in both chaparral and coastal sage scrub plant communities. On the project site, these species would be likely to occur in proximity to the outcrops of the Conejo volcanics, or in other rocky places.

Several other special interest species may occur onsite, including a locally uncommon Yerba Santa species (*Eriodictyon crassifolium*) and a chaetopappa species (*Chaetopappa* (*Pentchaeta*) *lyonii*) which has a limited distribution and is on the CNPS List 1B. Other species of interest include numerous types of wildflowers, such as shooting stars, blue dicks, California poppy, lupine, and mariposa lily. The Yerba Santa and several of the wildflowers have been identified onsite, and suitable habitat exists for many other species. Detailed field survey, as would be appropriate at the Specific Plan phase of project implementation, would be necessary to positively identify the occurrence and distribution of these species.

2. Fauna

The diversity of plant communities onsite, the relatively undisturbed nature of the property, the availability of surface water, and the site's

[1] Lee Newman and Associates, Inc. February 19, 1985. Preliminary Oak Tree Report Dos Vientos Ranch. Prepared for Haaland and Associates.

proximity to large areas of additional undisturbed land combine to provide important habitat for a wide variety of wildlife. Both resident and transient species typical of southern California cismontane habitats can be expected to occur within the Dos Vientos Ranch. This site is unique from many similar habitats in the region by virtue of the presence of year-round water, an important resource in this generally arid region. Figure 2 delineates the undisturbed areas of the site and Appendix B provides a species list of the site's fauna. Several animals of particular interest are discussed below.

a. Raptors. The project site provides high quality raptor habitat utilized by several species. The numerous raptors found onsite use the many rocky outcrops and the windrows of large eucalyptus trees for nesting and observation sites. The outcrops also provide thermal lift necessary for soaring, employed by the birds for hunting. The grassland areas are the primary foraging habitats used by these birds, although they may hunt anywhere throughout the site. Raptors that have been seen onsite include turkey vultures, kestrels, red-tail hawks, northern harriers and barn owls, and suitable habitat exists for several other raptors. Of particular interest on this site are golden eagles which have been seen soaring and foraging over the area and may nest onsite. The primary ecological concern regarding raptors in this area is decreasing habitat availability and the restriction of foraging areas.

Of the fifteen species of raptors which could potentially utilize the site, three of them, the northern harrier, the sharp-shinned hawk and the merlin are migrants and would only use the site for foraging purposes en route to other areas. Two others, the turkey vulture and the golden eagle lack suitable nesting habitat. The remaining 10 species are discussed below:[1]

- black-shouldered (white-tailed) kite - Although its status on site is unknown, black-shouldered kites typically breed in areas with scattered trees which are adjacent to agricultural fields or grasslands. Thought to be nearing extinction in the earlier part of this century, the black-shouldered kite has responded well to

[1] This information has been excerpted from the "Adams Canyon Biological Assessment" prepared by Richard A. Burgess and Gregory P. Smith, November 7, 1983, pages 24-27.

SPECIFIC PLAN NOS. 8 AND 9

# WILDLIFE HABITAT & PLANT RESOURCE SENSITIVITY EXHIBIT

LEGEND

- PROPOSED DEVELOPMENT AREA
- EXISTING RETENTION BASIN OR POND (A-F)
- APPROXIMATE BOUNDARY OF UNDISTURBED PLANT HABITAT
- RECOMMENDED CORRIDOR LOCATIONS FOR LARGE MAMMAL MIGRATION

CORRIDOR TABLE

| CORRIDOR | RECOMMENDED WIDTH | PROVIDED WIDTH |
|---|---|---|
| C1 | 200' | 300' |
| C2 | 100' | 300' | 
| C3 | 100'-200' | 350' |
| C4 | 100'-200' | 100' |

Dos Vientos Ranch

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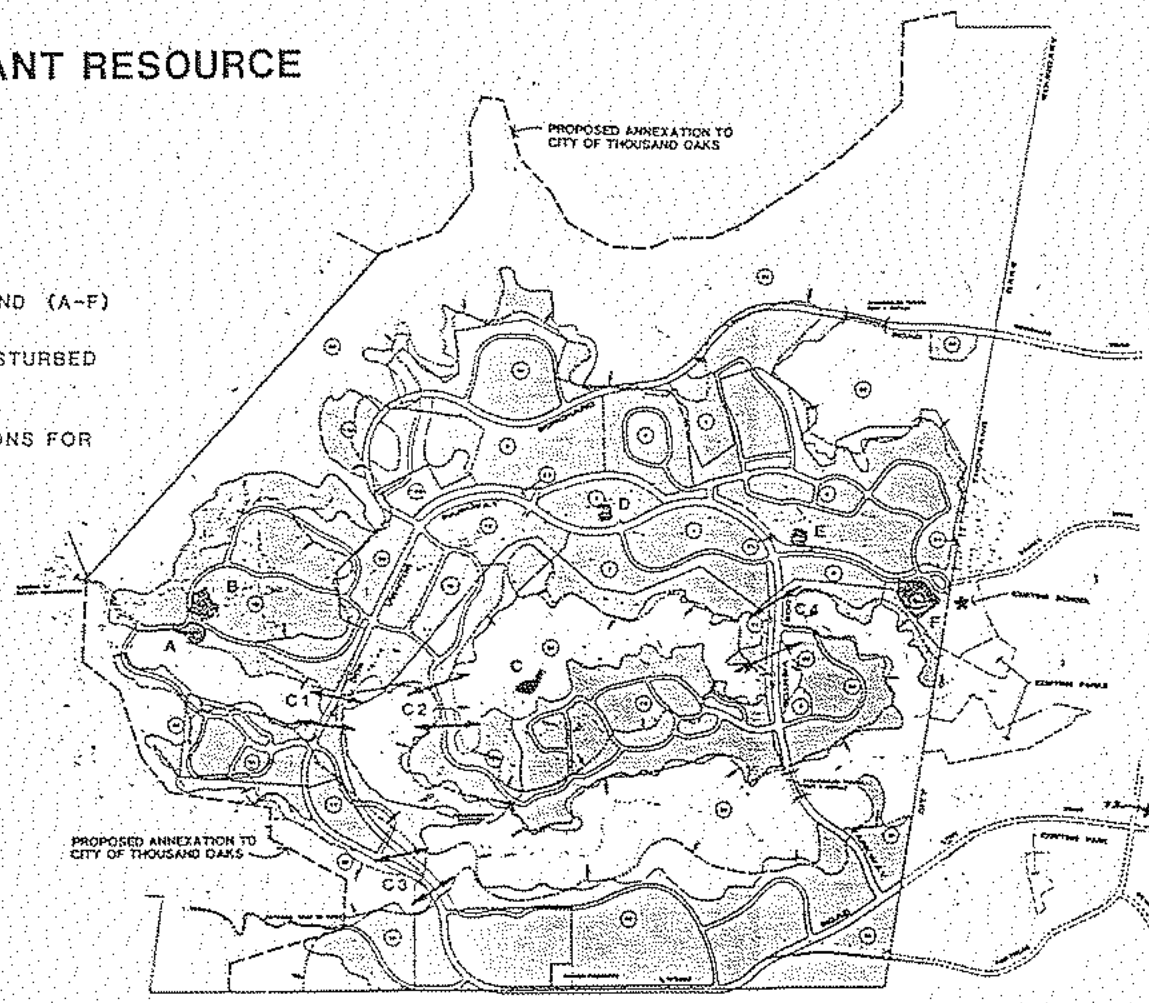


WILDLIFE HABITAT & PLANT RESOURCE SENSITIVITY

FIGURE 2

protection and has increased dramatically, although local population fluctuations in coastal areas make its present status difficult to determine (Garrett and Dunn, 1981).

- Cooper's hawk - Although locally more common than the preceding species, the red-shouldered hawk is on the National Audubon Society's Blue List of birds which have shown clear, recent signs of population decline in all or major portions of their ranges. It is possible that this species utilizes the oak trees on site for breeding purposes.

- red-tailed hawk - The red-tailed hawk is widely distributed and common throughout North America. This bird appears to be highly tolerant of human disturbance and is often common even in suburban areas. Red-tailed hawks almost certainly nest in woodlands or on rocky cliffs throughout the project vicinity.

- American Kestrel - Although considered of special concern in some areas of North America, American kestrel populations appear to be stable in southern California (Tate and Tate, 1982). Kestrels generally nest in tree cavities and probably breed in vicinity woodlands.

- prairie falcon = Prairie falcons would be expected to utilize the site for foraging, chiefly in winter when they become more common in lowland areas. There is a slight possibility that some birds may remain to breed on rocky cliffs in more remote portions of the property. However, there has been a marked decline of breeding prairie falcons in coastal areas during recent years (Garrett and Dunn, 1981) and it is unlikely that they remain on the property year round.

- barn owl - The status of the barn owl is similar to that of the American kestrel; although declining in some areas, it is common in lowland portions of Ventura County. The mixture of agricultural land, groves of trees and weedy fields on the property represents optimum habitat for this nocturnal predator. Barn owls utilize old barns, tree cavities and, less frequently, potholes in cliffs for nesting.

- western screech-owl - The western screech owl is rather uncommon in this portion of Ventura county, being generally absent from developed coastal lowlands (Garrett and Dunn, 1981). Although screech owls may nest in tree cavities on site, more suitable breeding habitat is present in the undeveloped areas surrounding the project area.

- great horned owl - The great horned owl is more tolerant of human activity than most species of owls and is common even in suburban areas. This large, nocturnal predator is expected to breed on site in abandoned hawk or raven nests.

- burrowing owl - The burrowing owl has become scarce in coastal lowlands because of conversion of grasslands and agricultural areas into residential developments. Although none was observed on site, these birds are known to occur in similar habitat in Canada Larga to the west of the property (R. Burgess, personal observation).

b. Mammals. Mountain lions are known to use the site, as tracks, scat and animals have been seen. These cats require large areas for hunting, due to both their size and their territorial nature which tends to limit the number of lions which can inhabit the same area. The population numbers of these animals appear to be stable or slightly increasing in recent years, particularly in the Santa Monica Mountains. Decreasing habitat availability, competion for space, and incompatibility with intensive human activities are the principal concerns with continuing population success.

Mule deer are frequently seen onsite and in the vicinity. These are browsing animals that depend on free access to large grassland and scrub areas to provide sufficient forage and they require water daily. They are typically shy animals which are stressed by intensive human activities, particularly traffic and domestic animals. Loss of secluded habitat, restriction of foraging ranges, fawning areas, and increases in predatory domestic pets and traffic have severely impacted local population in southern California.

Coyotes are very common in the area and are a source of potential conflict with human habitation. As suitable habitat is removed, the animals are forced into developed areas to find food and water.

c. Mammal Migration Corridors. Migration corridors are defined in this report as routes utilized by large mammals through an area to gain access to preferred foraging, nesting and breeding areas. Animals must have access to these critical areas for maintenance of their populations in a healthy condition. In the project vicinity, these corridors also function as important access routes between surrounding undeveloped parcels and the Dos Vientos Ranch. Valuable open space areas occur nearby, the largest and most important to wildlife being the Santa Monica Mountains National Recreation Area and Pt. Mugu State Park, both located to the south of the project site. As such undisturbed habitats become increasingly surrounded by various urban

development, they become isolated habitats, cut-off from neighboring areas. In this condition of geographic isolation, migration corridors provide critical linkage between islands of open space, isolated foraging and breeding habitats and other important wildlife use areas.

The natural conditions of the Dos Vientos Ranch currently provide for essentially unrestricted wildlife movement within and through the site by the larger animal species present, particularly deer, coyote, bobcat and mountain lion. While all of these animals range freely throughout the site, particularly when foraging, preferential use of specific areas is exhibited by each. Mule deer prefer narrow canyon areas for movement, where the thicker brush provides cover. The mountain lion and bobcat usually use the ridges, but would also be found to use deer trails and valley corridors extensively. Coyotes tend to favor valleys and existing trails for movement.

d. Rare, Endangered and Special Interest Species. There have been no officially designated or candidate species identified as occurring on the site. However, numerous species of raptors (legally protected species) and two National Species of Special Emphasis (golden eagle and mountain lion) do occur onsite.[1] The mountain lion has been designated a "protected non-game species" by the California Department of Fish and Game. Appendix B lists fauna identified or expected to occur onsite.

In addition to the raptors noted above, several other bird species which potentially occur on site are on the Audubon Society's Blue List of birds which have shown population declines in all or portions of their ranges. The hairy woodpecker, Bewick's wren, the loggerhead shrike and the yellow warbler are all Blue-listed species. Of these, the first three are apparently stable and fairly common in this area (Garrett and Dunn, 1981). However, the yellow warbler has suffered considerable declines as a breeding species in coastal

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[1] National Species of Special Emphasis (NSSE) are administered by the U.S. Fish and Wildlife Service. These are species of "high biological, legal, and/or public interest" for which detailed management plans are developed by FWS (Federal Register 48 No. 237). Although these species are not legally protected, they "merit special effort and attention by [FWS] at the national level."

lowlands. Although no definite reasons for this decline have been established, it is believed that cowbird brood parasitism, destruction of riparian habitats and loss of tropical forest wintering areas may all be contributing factors (Garrett and Dunn, 1981; Tate and Tate, 1982).[1]

3. Water Resources

The existing water sources onsite consist of a series of retention basins and connecting canals artificially created to provide water to irrigate the former citrus and walnut orchards and to produce a perennial drinking water supply for livestock. There are six retention basins onsite, and two of them provide true aquatic habitat and contain water year-round. The other four basins exhibit characteristics of vernal pools to varying degrees. These characteristics include a "hardpan" substrate, holding water through the rainy season and into spring, and the emergence of annual plants in concentric rings around the perimeter as the water recedes with the approach of the summer dry season. True vernal pools typically are vegetated by a unique and specialized flora. Such a well-developed, distinct assemblage has not developed in association with the vernal areas on the ranch, probably due to extensive trampling by cattle along the margins of the ponds.

For simplicity of discussion, the six basins on the project site have been delineated A through F, as indicated on Figure 2. Basins A and B in the western portion of the site and Basin C within the central ridgeline exhibit the vernal pool characteristic of limited riparian vegetation and typically do not contain water all year. Although these basins are deep (about 30 feet), they are also wide and are underlain by moderately well-drained soils. Basins D and E in the center of the property are the smallest and deepest of the basins. These areas contain water year-round and support moderately dense riparian and aquatic plant growth around their margins, although this growth is partially suppressed by cattle trampling. Various aquatic species are present, including fish, turtles, numerous insects, and

[1] This paragraph was excerpted from the "Adams Canyon Biological Assessment" prepared by Richard A. Burgess and Gregory P. Smith, November 7, 1983, page 27.

birds common to marshlands such as herons and egrets are often seen here. Basin F in the far eastern border of the site is a large, relatively shallow basin. This vernal area tends to remain moist during most of the year but does not necessarily contain standing water year-round. This basin is hydrologically downstream from the natural and artificial drainages through the center of the site and it therefore receives surface and subsurface run-off from those areas throughout the year.

## II. IMPACT ANALYSIS

### A. Direct/Indirect Impacts

#### 1. Flora

Direct Impacts. Project development will result in the direct removal of native and non-native species of plants over approximately 55 percent of the project site. Specifically, the proposed construction will involve the removal of riparian corridor vegetation, eucalyptus windrows, possibly some oak trees, and areas of the native coastal sage scrub and chaparral habitats. The majority of vegetation to be removed is the disturbed/ruderal grassland and abandoned orchards.

A large portion of the existing native vegetation onsite will remain intact in those areas designated on the proposed development plan for preservation as open space. These areas are primarily vegetated with coastal sage scrub with small areas of chaparral, and include the largest contiguous cluster of oak trees. The open space areas and new retention basins occupy approximately 45 percent of the total site area.

The overall significance of vegetation removal is considered low since the majority of affected vegetation will be the disturbed grassland.

Indirect Impacts. Construction grading will change drainage patterns onsite and alter the soil profile, and the construction of structures in previously open areas will create shadows as well as subtle alterations to surface wind patterns. These indirect impacts are important in those areas where the existing vegetation is to be preserved in close juxtaposition to development. The most sensitive resource in this regard are the oak trees, which are very sensitive to alterations of drainage patterns, and in particular, changes to ground conditions within the tree's dripline. The number of oaks that could be adversly impacted significantly by these indirect effects of construction activities cannot be determined accurately at this time. Approximately 13 trees appear to be within the proposed development area, with the remainder within the designated open space areas. It should be noted that the applicant intends to preserve all oak trees.

An additional indirect impact to the site's native vegetation is the introduction through landscaping of various intrusive, non-native (introduced

exotic/ornamental) plant species. Many exotic species have the ability to competitively exclude native species and over time may result in the loss of numerous types of native plant species as the introduced species invade surrounding natural areas.

Another indirect impact associated with this type of development is the increased use of horses and off-road vehicles (ORVs) in the remaining open space areas. Unless these types of recreational uses are restricted to developed trail systems (which is very difficult to enforce), impacts to vegetation includes trampling, crushing and even inadvertant removal of entire plants. These impacts are particularly important in the relict oak woodland areas where the loss of sapling trees would remove potential replacement trees. The long-term effect is the loss of the woodland since there would be no young trees to replace the old ones as they die out from age or disease.

2. Fauna

Direct Impacts. Construction activities such as vegetation clearing, grading and blasting will result in the direct mortality of small animals which are too small and/or slow to abandon the area. The more mobile species, such as birds and larger mammals, and many of those individuals near the margins of the development area would be displaced at least temporarily from their territories. Survival of these individuals will depend upon their success in establishing new territories away from the construction area and the rate of recovery of suitable vegetation on the site. Populations of animals having small home ranges, particularly rodents and reptiles, would also be disrupted. Individuals losing all or most of their territories are generally unable to establish a new territory in adjacent undeveloped areas and will most likely perish. The increase in human and equipment activity will cause many species to abandon the area, either permanently or until construction is completed.

Direct loss of habitat due to vegetation removal is the most significant direct impact to wildlife. Loss of habitat causes animals to move into adjacent areas of similar habitat which may already be at the carrying

capacity for that species.[1] Resultant overcrowding introduces additional stress to the local population of the species, a factor that becomes critical in populations under existing stresses for survival, such as those with low population numbers, or those with unique habitat requirements.

The two perennial ponds and the associated riparian corridors located in the central portion of the site greatly enhance the ability of the site and the surroudning area to support wildlife. The Conejo Valley and project vicinity are characterized by generally arid conditions and low annual rainfall. The occurrence of perennial surface water resources is extremely limited in the region, making the ponds onsite of high value to the local wildlife. These aquatic resources and their associated riparian vegetation provide increased habitat diversity which supports a higher variety of wildlife species than a similar area without surface water.

Three other habitats of particular value to wildlife will be directly impacted by development; the remnant stands of southern oak woodland, areas of rocky outcrops and the eucalyptus windrows. The proposed development plan requires the removal of a majority of the eucalyptus trees and possibly some oak trees. The significance to wildlife of the removal of these mature trees is related to the scarcity of such arboreal habitats on the project site and in the general vicinity, where the predominant covertypes average 2-4 feet in height. Large trees are especially important to raptors which utilize them for nesting, cover, and hunting perchs ("look-out" sites). A wide variety of other insects, birds and mammals also utilize the trees for feeding, nesting and cover.

In areas where blasting is necessary to achieve construction specifications (e.g., in areas where bedrock is close to the surface), there is the potential for significant adverse impact to wildlife, particularly raptors. The impacts are related to direct loss of habitat and disturbance from sound and pressure waves generated during blasting. Foraging and possibly breeding activities would be disrupted on a short-term basis during construction, and nesting habitat (i.e., rocky ledges) would be permanently lost.

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[1] "Carrying capacity" is a relative term describing the number of individuals of a given species that a specific area can support depending on the amount of food, water and cover available and the number of competing species.

Indirect Impacts. A variety of indirect impacts to wildlife can be anticipated from the proposed development plan. These can be generally ranked by the relative significance of the impact. The following list includes some of the impacts which may result in urban/wildlife conflicts, or in fauna avoiding certain areas within the development area. This list is organized in order of increasing significance:

- Increased human activity;
- Additional noise and light sources (especially night lighting);
- Introduction of domestic predators (pets which may not be adequately contained within yards);
- Eradication programs for nuisance species (such as mosquitos, ground squirrels, gophers, and rabbits);
- Increased equestrian and ORV use in open space areas;
- Introduction of vehicular traffic within the development area and increased traffic on area streets (most importantly Potrero Road);
- Definition of specific migration corridors as buildings and structures are built; and
- The isolation of ridges and blockage and/or disruption of movement routes within the site and to adjacent open space areas by intervening urban development.

The most significant of these are the last two, and they will be discussed in more detail below.

The primary concern with increased vehicular traffic is the increased probability of injury to both wildlife and humans from surface street crossing conflicts. Serious accidents can result from automobiles striking large mammals such as deer and mountain lion, and accidents may also result from motorists suddenly braking to avoid hitting an animal. This is a potentially significant impact.

Elements of the development plan may result in the isolation of ridges and other open space areas, and disrupt or block movement by mammals between these areas. The major roadways, structures, and fencing can all contribute to decreased access to important wildlife habitat. An additional concern are constraints to animal movement during a panic situation, such as during a

fire, where animals may became trapped in dead-end areas. The significance of these effects increases as additional constraints to movement are developed in neighboring areas, and as the areal extent of valuable habitat becomes increasingly reduced.

B. Beneficial Impacts

The preceding section focused on negative results of project implementation. There are also several beneficial impacts that can result either as a direct result of the development or through the institution of mitigation measures. This subsection will describe the former, while Section III will discuss the latter.

1. Flora

The development plan indicates several areas that are to be preserved as undisturbed (e.g., not maintained or landscaped) open space. These areas will function as population reservoirs of the native plant species occurring here. Of particular significance are those unique botanic resources associated with the outcrops of the Conejo volcanics which are largely contained in the areas designated for open space, and the relict stands of southern oak woodland.

Cattle grazing will be discontinued on the site, thereby eliminating the harmful effects of trampling and soil compaction caused by these animals. Native plant species will respond well to the elimination of this negative activity.

2. Fauna

The clearing of scrub vegetation will provide additional foraging areas, primarily benefiting raptors. This will be a short-term effect, however, lasting only until structures or new vegetation appear in the cleared areas.

The proposed golf course, if implemented, will provide additional open space and movement areas for wildlife, and will provide additional surface water resources via the four proposed lakes. The landscaping involved with this area will provide additional forage and shelter for a variety of wildlife.

Most of the beneficial effects to wildlife are related to opportunities for habitat enhancement which are described in Section III, Mitigation Recommendations.

C. Cumulative Impacts

The importance of neighboring areas of undeveloped open space and the relationship of these areas to the project site have been mentioned throughout the preceding subsections. Therefore, an important consideration in the analysis of potential impacts (as well as in the development of adequate mitigation techniques) is the proximity, extent and type of adjacent proposed and/or approved development which might result in a cumulative impact to the flora and fauna of the Dos Vientos Ranch project site.

In the vicinity of the proposed project, there is only one applicable project. This project, called White Stallion Ranch, is on the south side of Potrero Road in the vicinity of the proposed Dos Vientos Parkway. The development will contain 10 lots of 20 acres each with an emphasis on equestrian activities and custom homes.

The importance of this development in relation to the proposed Dos Vientos Ranch development is the incremental loss of vegetation and wildlife habitat and the cumulative pressures on the area wildlife that will result. The White Stallion Ranch development will contribute to increased vehicular traffic along Potrero Road as well as cause wildlife to retreat into increasingly restricted areas of undisturbed open space habitat.

Due to the small size of the White Stallion Ranch project as compared to surrounding undeveloped acreage, and considering that the area to be developed is primarily vegetated with ruderal grassland, the level of direct impact is considered to be low. In terms of incremental effects and other indirect impacts, the significance of the impact is moderate.

There are additional pending projects in the immediate vicinity of the project site that are in various stages of the planning process. Development of those projects would result in the incremental loss of chaparral and other natural vegetation, and result in the increase of human activity in the area.

## III. MITIGATION RECOMMENDATIONS

### A. Flora

#### 1. Mitigation of Direct Impacts

The direct impact of removal of 55 percent of the site's vegetation can be mitigated to some degree by redesign of specific project elements. The goal of any such redesign should be the preservation of native plant concentration areas (particularly the oak trees) and reduction of the number of mature eucalyptus trees to be removed. (Mitigation techniques regarding the eucalyptus trees are discussed in the following subsection, B. Fauna.)

A trade-off mitigation for the loss of native plants in the development area involves the use of native, locally indigenous plant species in project landscaping. Of particular importance in this effort is the incorporation of a native plant buffer zone between areas landscaped with exotics and the natural open space areas. This would provide a transition zone and retard the invasion of non-native species into natural habitats. Manufactured slopes and those altered by grading will additionally benefit from the use of native plant species with resistance to erosion.

#### 2. Mitigation of Indirect Impacts

Oaks Trees. The potential effect of development on the relict oak woodland areas is significant due to the scarcity of this community in the area. Where construction operations and/or structures are planned in proximity to these trees, care must be taken to avoid disruption within the dripline of the trees. The recommendations contained in the Oak Tree Report (Appendix C) should be followed.

Landscaping. Native plant materials should be incorporated into landscaping plans to the maximum extent feasible. These species can offer tolerance to erosion, drought and fire, and also provide wildlife benefit (discussed in the following subsection). Riparian diversity should be enhanced around the retention basins through the use of native trees and shrubs. All perimeter slopes, highway roadsides and other disturbed areas should be revegetated with appropriate native species.

Equestrian/ORV Impacts. Homeowners should be informed as to the negative effect that these activities can have when established trails are not utilized. Appropriate fencing should be considered to exclude horses and ORVs from sensitive botanic areas (such as Conejo volcanics and relict oak woodlands). Any such physical barriers must not interfere with wildlife movement corridors (described in the following subsection).

Additional Study. Provisions should be made for site-specific surveys for sensitive plant species to be conducted prior to approval of each specific plan.

## B. Fauna

### 1. Mitigation of Direct Impacts

Loss of Habitat. The replacement of lost habitat elsewhere on the site or the enhancement of remaining habitat are two mitigations which do not require project redesign. The large amount of open space planned for retention onsite provides opportunities for both types of mitigations.

The replacement of habitat approach would be appropriate to mitigate the loss of the eucalyptus trees. The primary benefit of these trees is as resting and roosting sites for raptors and other birds, and the planting of fast-growing native trees within the open space areas would replace the habitat and enhance the quality of habitat.

Habitat enhancement would partially offset the adverse impacts associated with the loss of the perennial water sources onsite. Retention Basin C (Figure 2) should be improved such that water would be held year-round. The planting of native riparian plants around its margin would add to the value of the habitat, and help to slow evaporation via shading. The provision of surface waters such as drinking stations within the large open space areas will partially reduce the adverse impacts associated with the loss of the two perennial ponds onsite. The parksite proposed for lot 6A should be designed as a riparian woodland, taking advantage of the natural drainage patterns and the existing retention basin. This will also serve to replace lost riparian habitat.

The plant species indicated in Table 1 are suitable species for enhancement of the water resources of the proposed retention basins on site. Although numerous additional species could be used, the plant species

Table 1. Pond Enhancement Plants

| Scientific Name | Common Name | Attribute[1] | Growth Form |
|---|---|---|---|
| Atriplex lentiformis | Quail bush | E | Shrub |
| Baccharis glutinosa | Mulefat | E | Shrub |
| B. pilularis | Coyote bush | E | Shrub |
| Heteromeles arbutifolia | Toyon | W; S; E | Small-medium tree |
| Platanus racemosa | Western Sycamore | W; E | Tree |
| Populus fremontii | Fremont Cottonwood | E; S | Tree |
| Romneya coulteri | Matilija Poppy | E | Shrub |
| Salix goddingii | Black Willow | E | Shrub |
| S. lasiolepis | Arroyo Willow | E; S | Small tree |
| Sambucus mexicana | Elderberry | W; S | Small-to-medium tree |

[1] S = Screening
E = Erosion Control
W = Wildlife Value

suggested offer a variety of growth forms and beneficial attributes, providing erosion control as well as wildlife value (e.g., food, shelter). In addition, these plants will form visual and sound buffers between human and wildlife users. All species listed are native to California.

Biological enhancement of the proposed retention basins can be facilitated through the use of a contouring/benching technique along the perimeter. As illustrated in Plate 1, the concept involves the creation of "shelves" or "bands" of varying widths and heights to form broad bands of shallows. The resulting grade variation created in this manner would form different microhabitats and encourage the growth of a variety of plant types. The proximity to water is the determining factor in defining which plants that can be used on each bench area, with groupings exhibiting similar characteristics having similar requirements for survival.

Wildlife benefits will be derived from the ecological diversity achieved through variable water depths and grading widths. A variety in the thickness and height of cover as well as a range of feeding areas will result from the benching technique, leading to the enhancement of wildlife habitat. Benefits to the human environment can be achieved through placement of quiet observation areas along the pond embankments in such a way as to avoid encroachment into the natural environment.

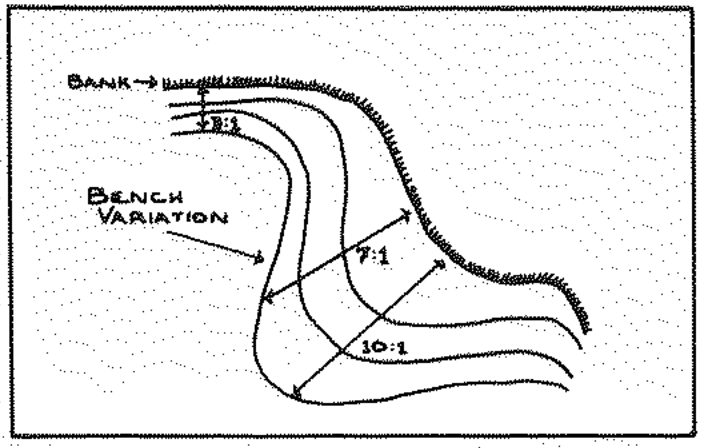
The loss of rocky outcrops due to blasting cannot be avoided except with redesign of specific project elements. However, the significance of the impact can be reduced by scheduling the blasting to occur during the nonbreeding season and by avoiding blasting in areas where raptors, particularly golden eagles, are present.

2. Mitigation of Indirect Impacts

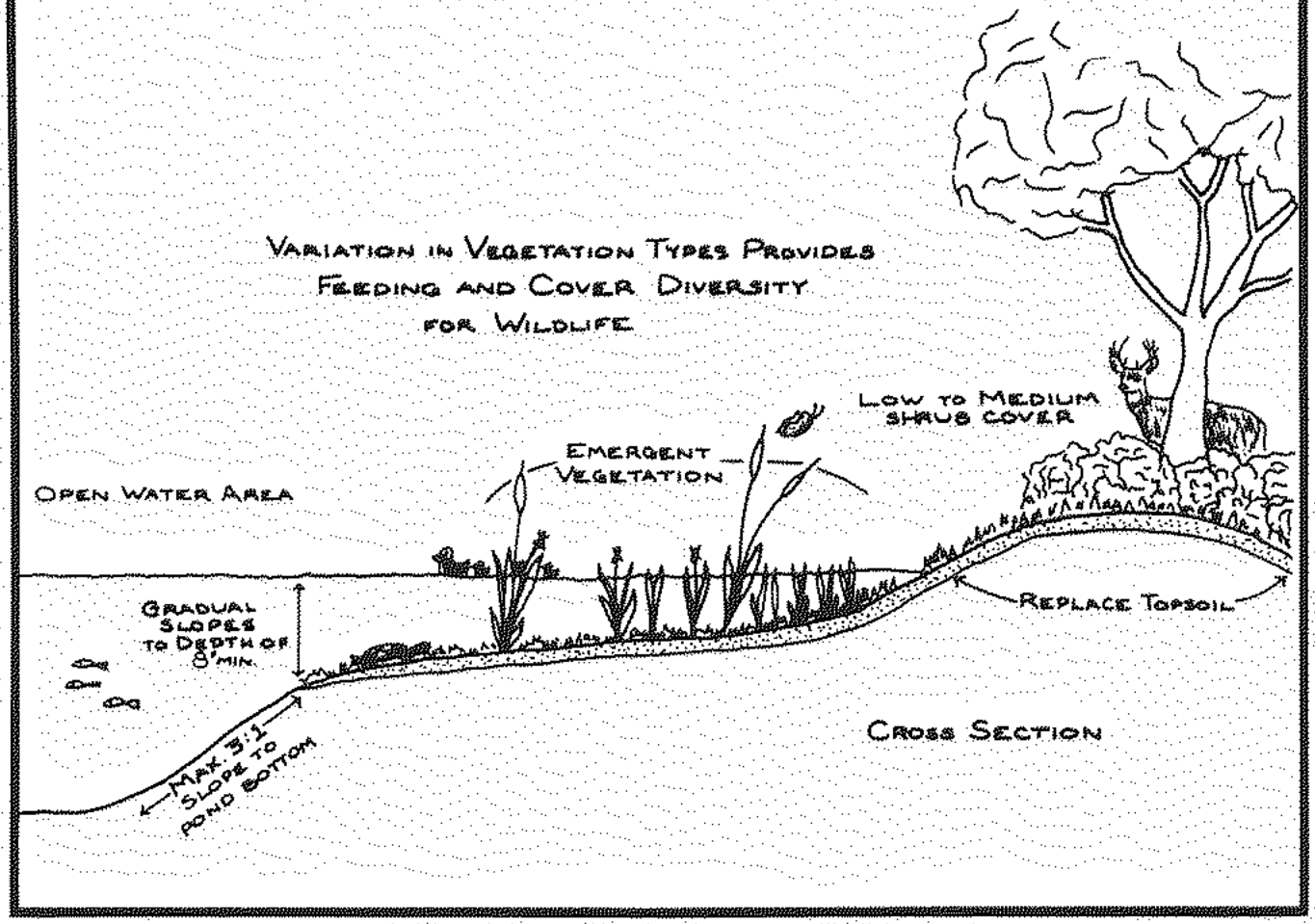
Urban/Wildlife Conflicts. The use of vegetation buffers/barriers will reduce many potential conflicts, such as noise and light encroaching into natural areas, vehicle impacts, and to some extent, encounters between wildlife and domestic pets.

The following Table 2 provides a list of several plant shrub species suitable for creating natural physical barriers between wildlife and domestic animals and between wildlife and human elements. Because of their stiff branches or thorny growth, use of these plants will help to reduce conflicts

# Pond Bank Benching Techniques




Plan View




McCLELLAND ENGINEERS

PLATE 1

Table 2. Barrier Plants

| Scientific Name | Common Name | Attribute[1] | Growth Form |
|---|---|---|---|
| Berberis pinnata | Shinyleaf Barberry | S; W | Thorny; medium-large; round |
| Ceanothus sp. | Frosty Blue | E; D | Medium; upright |
| Elaeagnus elliptica[2] | Thorny Elaeagnus | D; W | Thorny; medium |
| Opuntia X occidentalis[3] | Prickly Pear | D | Thorny; medium; spreading |
| O. parry; | Valley Cholla | D | Thorny; tall |
| Prunus ilicifolia | Holly-Leaf Cherry | S; W; D | Round shrub to small tree |
| Rhus ovata | Sugar Bush | W; E | Small-medium; round |
| Ribes sanguineam | Red-Flowered Current | W | Small-medium; arching |
| R. speciosum | Fushia-flowered Gooseberry | W | Small; arching |
| Rosa californica | Wild Rose | W | Thorny; small |
| Westringia rosmariniformis[2] | Westringia | S; D | Small-medium round |
| Yucca whipplei | Our Lord's Candle | D | Thorny; upright |

[1]S = Screening
E = Erosion Control
W = Wildlife Value
D = Drought Resistant

[2]Non-Native

[3]Hybrid

by limiting encounters. Vegetative barriers form an aesthetically pleasing boundary which complements the natural terrain, and could be easily incorporated into the planned pedestrian green belts along project roadways. Additional benefits to both wildlife and humans can also be derived through the selection of plants that will provide food and/or shelter to wildlife, are drought and fire resistant, or offer erosion control. The suggested plants listed in Table 2 are native to California unless otherwise indicated.

Additional measures to lessen potential conflicts between wildlife and development impacts include:

- The use of directional lighting in public areas designed to shine away from natural areas to reduce interference with nocturnal wildlife activities;
- Orientation of residential lots to abut the backyard with open space area (particularly along the movement corridors);
- Notification of homeowners of their responsibility to prevent domestic pets from harassing wildlife (including warnings of potential dangers of coyotes and the protected status of raptors); and,
- The use of physical barriers to limit accessibility of ORVs and horses into open space areas (while maintaining mammal movement).

Interference with Movement Corridors. Provisions must be made in the development plan for large mammals to pass safely over roadways and maintain access to the open space areas of the site and to offsite areas. Figure 2 indicates locations where such access is needed in order to provide the necessary access and circulation between isolated habitats and to prevent "dead-end" open space units where an animal could become trapped during a panic situation by providing several passage routes.

Integral to this mitigation is the use of underpasses at the major arterials. These underpasses will provide additional safety benefits to both project residents and wildlife by greatly reducing the potential for vehicular conflicts. In addition, these areas could be lined with special reflectors that mimic the eye shine of natural predators. Wildlife, particularly deer, attempting to cross a road just prior to a vehicle passage would be warned away from the road.

The California Department of Fish and Game has developed specific criteria for the construction of underpasses for wildlife movement: width not less than 100 feet; height not less than 6 feet; and floor composed of natural earthen material, such as rock and dirt. Both entrances should be landscaped with native plants, and care must be taken to prevent street lights from shining toward or into these corridors.

These undercrossings can be tied into the project's planned equestrian and pedestrian trails, since most wildlife use will be during dawn, dusk and through the night. Any such joint use of the undercrossings should involve the placement of the trails off to one side of the corridor to reduce potential interference.

## IV. REFERENCES & PERSONS CONTACTED

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Greg Smith, Associate Planner, City of Thousand Oaks

Rich Burgess, Staff Planner, City of Thousand Oaks

The following references were utilized in preparation of the report:


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# APPENDIX A

Flora Survey

# FLORA SURVEY

Date: August 31, 1978 Prepared by: Gregory P. Smith

Location: Ventura County/ Newbury Park Area

Survey Site: Dos Vientos Ranch

Plant Communities Surveyed: Coastal Sage Scrub
Chaparral (Intergrading)
Disturbed Grassland
Riparian
Freshwater Marsh
Agricultural

## SPECIES LIST

| Common Name | Scientific Name |
|---|---|
| Valley Oak | Quercus lobata |
| Coastal Live Oak | Quercus agrifolia |
| Scrub Oak | Quercus dumosa |
| California Walnut | Juglans californica |
| Pacific Willow | Salix lasindra |
| Elderberry | Sambucus mexicana |
| Holleyleaf Redberry | Rhamnus crocea |
| Sugar Bush | Rhus ovata |
| Toyon | Heteromeles arbutifolia |
| Mountain Mahogany | Cercocarpus betuloides |
| Buckbrush | Ceanothus cuneatus |
| Big-pod ceanothus | Ceanothus megacarpus |
| Yucca | Yucca whipplei |
| Chamise | Adenstoma fasciculatum |
| Coyote Bush | Baccharis pilularis ssp. consanguinea |
| Pink Bush Mallow | Malocothamnus fasiculatum |
| Coast Cholla | Opuntia prolifera |
| Prickley-pear Cactus | Opuntia occidentalis |
| Mule Fat | Baccharis viminea |
| Lurel Sumac | Malostoma laurina |
| Poisen Oak | Toxicodendron diversilobum |
| Grey Sage | Salvia leucophylla |
| Black Sage | Salvia mellifera |
| California Sagebrush | Artemisia californica |
| Coast Buckwheat | Eriogonum cinereum |
| Interior Buckwheat | Eriogonum fasciculatum |
| Virgate Buckwheat | Eriogonum roseum ssp. virgatum |

| Common Name | Scientific Name |
|---|---|
| Sawtooth Goldenweed | Haplopappus squarrosus ssp.grindeloide |
| Slender Sunflower | Helianthus gracilentus |
| Snakeheads | Malocothrix saxatilis var. hispida |
| Star Thistle | Centaurea melitensis |
| Bull Thistle | Cirsium vulgare |
| Clematis | Clematis lasiantha |
| Deerweed | Lotus scoparius |
| Green Everlasting | Gnaphalium californicum |
| California Fuchsia | Zauschneria californica |
| Milkweed | Asclepias fascicularis |
| Cudweed Aster | Corethrogyne filaginifolia |
| Poison Hemlock | Conium maculatum |
| Jimson Weed | Datura meteloides |
| Vinegar Weed | Trichostoma lanceolatum |
| Horehound | Marrubium vulgare |
| Yellow Yarrow | Eriophyllum confertiflorum |
| Amsinckia | Amsinckia intermedia |
| Telegraphweed | Heterotheca grandiflora |
| Horseweed | Conyza canadensis |
| Slender Tarweed | Hemizonia ramosissima |
| Mugwort | Artemisia douglasiana |
| Western Ragweed | Ambrosia psilostachya |
| Coast Bindweed | Calystegia macrostegia ssp.cyclostegi |
| Prostrate Amaranth | Amaranthus blitoides |
| Russian Thistle | Salola iberica |
| Turkey Mullin | Eremocarpus setigerus |
| Euphorbia | Euphorbia polycarpa |
| Black Mustard | Brassica nigra |
| Mediterranean Mustard | Brassica genticulata |
| Rough Pigweed | Amaranthus retroflexus |
| Anise | Foeniculum vulgare |
| Manroot | Marah macrocarpus |
| Dodder | Cuscuta californica |
| Curley Dock | Rumex crispus |
| Willow Dock | Rumex salicifolius |
| Cocklebur | Xanthium strumarium var. canadense |
| Willow Smartweed | Polygonium Lapathifolocium |
| Coarse cyperus | Cyperus ferax |
| Spike rush | Eleocharis (sp.) |
| Watercress | Rorippa nasturtium - acqua ticum |
| Wiregrass | Polygonum aviculare |
| Rabbitsfootgrass | Polypogon monspelensis |
| Barnyardgrass | Echinochloa crusgalli |
| Johnsongrass | Sorghum halepense |
| Bermudagrass | Cynodon dactylon |
| Bentgrass (Redtop) | Agrostis alba |
| Goldentop | Lamarckia aurea |

| | |
|---|---|
| Redbrome | Bromus rubens |
| Ripgut Brome | Bromus diandrus |
| Soft Chess | Bromus mollis |
| Mouse Barley | Hordeum glaucum |
| Purple Stipa | Stipa pulchra |
| Giant Wild-rye | Elymus condensatus |
| | |
| Blue Gum | Eucalyptus globulus |
| Black Walnut | Juglans nigra |
| Queen Palm | Arecastrum australe |
| Orange | Citrus sinensis |
| Lemon | Citrus lemon |
| | |
| Slender oat | Avena barbata |
| Wild oat | Avena fatua |
| Cultivated oat | Avena sativa |

# APPENDIX B

Fauna Survey

## WILDLIFE HABITAT SURVEY - DOS VIENTOS

## RANCH - SPECIFIC PLAN 8 and 9

Survey Date: August 21, 22, 31, 1978
Prepared by: Greg Smith

Location: The study area is located within Ventura County between the Ventura Freeway to the north, Potrero Road to the south and extends westward from Newbury Park toward Camarillo.

Total Area within survey: 2345 acres

### VEGETATION TYPES PRESENT WITHIN STUDY AREA

Coastal sage scrub (Dominant)
Disturbed grassland (Sub-dominant)
Chaparral (Intergrading)
Riparian (Limited)
Freshwater marsh (Limited)
Oaks, willows and native walnut (Limited)
Citrus groves, walnut orchards (Abandoned).

### LANDFORMS PRESENT WITHIN STUDY AREA

Rolling foothills and valleys
Gentley sloping plateaus
Mountainous terrain
Rocky outcroppings and steep cliffs
Minor intermittent stream drainages

### PERENNIAL WATER RESOURCES AVAILABLE TO WILDLIFE

Tributary drainage to Arroyo Conejo Creek
Several small reservoir sites - (1/4 acre)
Isolated springs on north-facing slopes.

### CURRENT LEVEL OF DISTURBANCE

Low - Moderate

### PRIMARY SOURCES OF DISTURBANCE

Previous agricultural land use
Cattle grazing

### PRESENT VALUE AS WILDLIFE HABITAT

Essentially the entire ranch serves as primary habitat for a large number of wildlife species. Human disturbances are almost non-existent, while existing plant communities combine with perennial sources of water to provide important habitat resources for these populations.

# FAUNA INVENTORY - DOS VIENTOS RANCH

## SEASONAL STATUS

| | |
|---|---|
| Year-Round Resident | R |
| Winter Migrant | W |
| Summer Visitor | S |
| Undetermined | U |

## OCCURRENCE

| | |
|---|---|
| Observed on the Site | * |
| Physical Evidence Found | # |
| Unobserved, Presence Confirmed | + |
| Unobserved, Suitable Habitat | 0 |

## ABUNDANCE

| | |
|---|---|
| Abundant | 1 |
| Common | 2 |
| Uncommon | 3 |
| Rare | 4 |

## MAMMALS

| COMMON NAME | SCIENTIFIC NAME | MATRIX KEY |
|---|---|---|
| Mule Deer | Odocoileus hemionus californicus | R*3 |
| Coyote | Canis latrans | R#2 |
| Gray Fox | Urocyon cinereoargenteus | R+3 |
| Mountain Lion | Felis concolor californicus | R+4 |
| Bobcat | Lynx rufus | R03 |
| Striped Skunk | Mephitis mephitis | R+2 |
| Raccoon | Procyon lotor | R03 |
| Badger | Taxidea taxus | R#3 |
| Opossom | Didelphis marsupialis | R02 |
| Long-tailed Weasel | Mustela frenata | R03 |
| Black-tailed Hare | Lepus californicus | R*2 |
| Audubon's Cottontail | Sylvilagus auduboni | R*1 |
| Brush Rabbit | Sylvilagus bachmani | R02 |
| Beechey Ground Squirrel | Otospermophilus beecheyi | R*1 |
| Bottae Pocket Gopher | Thomomys bottae | R#1 |
| Pacific Kangaroo Rat | Dipodomys agilis | R03 |
| Dusky-footed Woodrat | Neotoma fiscipes | R#2 |
| Desert Woodrat | Neotoma lepida | R04 |
| Western Harvest Mouse | Reithrodontomys megalotis | R02 |
| Brush Mouse | Peromyscus boylii | R02 |
| Deer Mouse | Peromyscus maniculatus | R01 |
| California Mouse | Peromyscus californicus | R03 |

| COMMON NAME | SCIENTIFIC NAME | MATRIX KEY |
|---|---|---|
| Ornate Shrew | Sorex ornatus | R03 |
| Broad-handed Mole | Scapanus Latimanus | R03 |
| Hoary Bat | Lasiurus cinereus | U03 |
| Red Bat | Lasiurus borealis | U03 |
| Western Mastiff Bat | Eumops perotis | U03 |
| Brazilian Free-tailed Bat | Tadarida brasiliensis | U03 |
| Lump-nosed Bat | Plecotus townsendii | U03 |
| Big Brown Bat | Eptesicus fuscus | U03 |
| Fringed Myotis | Myotis thysandides | U03 |
| California Myotis | Myotis californicus | U03 |
| Long-eared Myotis | Myotis evotis | U03 |
| Yuma Myotis | Myotis yumanensis | U03 |
| Western Pipistrella | Pipistrella hesperus | U03 |

BIRDS

| COMMON NAME | SCIENTIFIC NAME | MATRIX KEY |
|---|---|---|
| Golden Eagle[1] | Aquila chrysaetos | R*3 |
| Red-tailed Hawk | Buteo jamaicensis | R*2 |
| Marsh Hawk[2] | Circus cyaneus | R03 |
| Coopers Hawk | Accipiter cooperii | W03 |
| Sharp-shinned Hawk | Accipiter striatus | W04 |
| Prairie Falcon | Falco mexicanus | R04 |
| Sparrow Hawk | Falco sparverius | R*3 |
| White-tailed Kite[3] | Elanus leucurus | R03 |
| Turkey Vulture | Cathartes aura | R*2 |
| Barn Owl | Tyto alba | R*3 |
| Great Horned Owl | Bubo virginianus | R03 |
| Screech Owl | Otus asio | R03 |
| Raven | Corvus corax | R*2 |
| Crow | Corvus brachynchos | R*2 |
| California Quail | Lophortyx californicus | R*1 |
| Mourning Dove | Zenaidura macoura | R*1 |
| Band-tailed Pegeon | Columba fasciata | R03 |
| Roadrunner | Geococcyx californicus | R*3 |
| Loggerhead Shrike | Lanius ludovicianus | R*3 |
| California Thrasher | Toxustoma redivium | R03 |
| Mockingbird | Mimus polyglottos | R*2 |
| Starling | Sturnes Vulgaris | W02 |
| Robin | Turdus migratorius | W02 |
| Hermit Thrush | Hylocichla guttata | W03 |
| Western Kingbird | Tyrannus verticalis | S02 |
| Cassin's Kingbird | Tyrannus vociferans | S03 |
| Brown Towhee | Pipilo fuscus | R*1 |
| Rufus-sided Towhee | Pipilo erythrophthalmus | R03 |
| Common Flicker | Colaptes auratus | R03 |
| Nuttalls Woodpecker | Dendrocopos nuttallii | R03 |
| Acorn Woodpecker | Melanerpes formicvorus | R03 |

[1]Sited during subsequent field surveys during 1984

[2]Northern Harrier

[3]Black-shouldered Kite

| COMMON NAME | SCIENTIFIC NAME | MATRIX KEY |
|---|---|---|
| Yellow-bellied Sapsucker | Sphyrapicus varius | W03 |
| Phainopepla | Phainopepla nitens | S03 |
| Northern Oriole | Icterus galbura | S03 |
| Scrub Jay | Aphelacoma coerulescens | R*1 |
| Cedar Waxwing | Bombycilla cedrorum | W03 |
| Western Bluebird | Sialia mexicana | R03 |
| Plain Titmouse | Parus inornatus | R*3 |
| Says Phoebe | Sayornis saya | W03 |
| Bushtit | Pstaltriparus minimus | R*2 |
| Black-headed Grossbeak | Pheuticus melanocephalus | S02 |
| Western Tanager | Piranga ludoviciana | S03 |
| Brewer's Blackbird | Euphagus cyanocephalus | R*2 |
| Lawrence's Goldfinch | Spinus lawrencei | R*3 |
| House Finch | Carpodacus mexicanus | R*1 |
| Ruby-crowned Kinglet | Regulus calendula | W03 |
| Ash-throated Flycatcher | Myiarchus borealis | S03 |
| Huttons Vireo | Vireo huttoni | R03 |
| Solitary Vireo | Vireo solitarius | S03 |
| Orange-crowned Warbler | Vermivora celata | S03 |
| Yellow-rumped Warbler | Dendroica coronata | W02 |
| Gray Warbler | Dendroica nigrescens | S03 |
| Townsend's Warbler | Dendroica townsendi | W03 |
| Savannah Sparrow | Passerculus sandwichensis | R*3 |
| Lark Sparrow | Chondestes grammacus | R03 |
| White-crowned Sparrow | Zonotrichia leucophrys | W01 |
| Golden-crowned Sparrow | Zonotrichia atricapilla | W03 |
| Song Sparrow | Melospiza melodia | R03 |
| Lark Sparrow | Chondestes grammacus | R03 |
| Fox Sparrow | Paserella iliaca | W03 |
| Dark-eyed Junco | Junco hyemalis | W01 |
| Bank Swallow | Riparia riparia | S03 |
| Cliff Swallow | Petrochelidon pyrrhonota | S03 |
| Tree Swallow | Iridoprocne bicolor | S*3 |
| Horned Lark | Eremophila alpestris | R03 |
| Western Meadowlark | Sturnella neglecta | R*2 |
| Poor-will | Phalaenoptilus nuttallii | S03 |
| Lesser Nighthawk | Chordeiles acutipennis | S03 |
| Wrentit | Chamaea fasciata | R03 |

## REPTILES AND AMPHIBIANS

| COMMON NAME | SCIENTIFIC NAME | MATRIX KEY |
|---|---|---|
| Western Pond Turtle[1] | Clemmys marmorata | R*3 |
| Pacific Treefrog | Hyla regala | R*1 |
| Bullfrog | Rana catesbeiana | R03 |
| Southwestern Toad | Bufo microscaphus californicus | R*2 |
| Coast Horned Lizard | Phrynosoma coronatum frontate | R02 |
| Western Fence Lizard | Sceloporus occidentalis | R02 |
| Southern Alligator Lizard | GerrHonotus multicarinatus | R03 |
| California Side-Blotched Lizard | Uta stansburiana hesperis | R02 |
| Western Skink | Eumeces skiltonianus skiltonianus | R03 |
| California Newt | Taricha torosa | R03 |
| Striped Racer | Masticophis Lateralis | R03 |
| Common Garter Snake | Thamnophis sirtalis | R03 |
| Gopher Snake | Pituophis melanoleucus | R02 |
| Common Kingsnake | Lampropeltis getulus | R03 |
| Southern Pacific Rattlesnake | Crotalus viridus helleri | R*3 |

## FISH

| COMMON NAME | SCIENTIFIC NAME | MATRIX KEY |
|---|---|---|
| Mosquitofish | Gambusia affinis | I+1 |
| Bluegill | Lepomis macrochirus | I+1 |
| Large mouth bass | Micropterus salmoides | I+3 |
| Brown bullhead | Ictalurus nebulosus | I+2 |

---

* I = Introduced Species

[1]Sited during subsequent field surveys during 1984

# APPENDIX C

Oak Tree Report

# PRELIMINARY OAK TREE REPORT

DOS VIENTOS RANCH

PREPARED FOR:

HAALAND & ASSOCIATES, INC.
One Boardwalk, Suite 200
Thousand Oaks, California, 91360

PREPARED BY:

LEE NEWMAN & ASSOCIATES, INC.
31320 Via Colinas, Suite 108
Westlake Village, CA 91362
(818) 991-5056

DATE: February 19, 1985

JOB: 1100-010

DATE: February 19, 1985

PREPARED FOR: HAALAND & ASSOCIATES, INC.

PREPARED BY: LEE NEWMAN & ASSOCIATES, INC.
31320 Via Colinas, Suite 108
Westlake Village, California 91362

# PRELIMINARY OAK TREE REPORT

## SITE LOCATIONS

The site, Dos Vientos Ranch, is located in an unincorporated area of Ventura County.

## OBJECTIVES

The objectives of this report are to qualify the present condition of the Oak trees.

This is to involve the following:

1. Determine the physiological condition of the trees addressed.
2. Provide guidance to minimize any impacts upon the trees.

## METHODS OF STUDY

1. Qualifications of the Oak trees were accomplished by the use of our standard visual survey and was conducted on the designated trees.

   In the course of field work (February 14, 15, 18, 1985), we performed the following tasks:

   A. The trunk diameters of 4" in diameter and larger, at breast height (DBH) were measured (as measured 4 1/2' above mean natural grade).

   B. The compass bearing for the tending direction of any low branching of 15' and lower was taken.

C. The trees were assessed for plant quality.

1. The health of the trees were visually determined from a macroscopic inspection of signs and symptoms of disease.

   The trees were rated on a scale of "A", "B", "C", "D", & "F", with "F" representing a dead tree. An "A" tree is a near perfect specimen and is reasonably free from signs and symptoms of disease. A tree rating of "D" and lower is in a low state of vigor and naturally a meaningful level of recovery is doubtful.

2. The aesthetic qualilty of the trees were visually determined from an overall inspection of appearance.

   The trees were rated on a scale of "A" to "D". An "A" tree is a visually perfect tree having the ideal form and appearance for the species. A "D" tree has few, if any positive characteristics and may detract from the beauty of the landscape.

2. The Topographical Map, prepared by Haaland & Associates, Inc., was received by this office on February 13, 1985.

OAK SPECIES

The species of Oaks present on the site are *Quercus agrifolia* (Coast Live Oak) and *Quercus lobata* (Valley Oak).

TREE LOCATIONS

Refer to the PRELIMINARY OAK TREE LOCATION MAP included herein for reference locations.

RESULTS OF STUDY

1. Physiological Condition of the Oaks

   The physiological condition of the trees are detailed in the SUMMARY OF FIELD INSPECTION contained within this report.

## RECOMMENDATIONS

As development occurs near these Oak trees, they will become dependent upon the future residents for their care and preservation. Consideration of disease and pest control will play a major role in such a program and for the most part will be long range. The best defense against disease is to build up the tree's natural defenses by proper watering and fertilization and to avoid wounding whenever possible. A maintenance program must encourage vigorous growth within the trees so their systems of compartmentalization can effectively control diseases.

The following list of recommendations, if followed, should insure that these trees will remain as a valuable asset to the community:

1. The trees should be fenced at the dripline with a 6' high chainlink fence before any grading commences. This fence shall remain during all phases of construction and shall not be be moved or removed without final certification by the Oak Tree Consultant.

2. No equipment storage, parking, or debris dumping shall take place within any Oak tree dripline.

3. No grading within the driplines shall be attempted. If said grading is approved by the governing agency, the Oak Tree Consultant shall be present during all initial construction within the driplines.

4. All footings and/or grading within the driplines shall be done by hand. Any roots encountered shall be properly attended to.

5. No planting or irrigation and utility lines shall be designed and/or installed within the dripline of any Oak tree.

6. All deadwooding and/or pruning of the Oak trees shall be done by a qualified Arborist under the direct supervision of the Oak Tree Consultant.

7. Dust accumulation on the trees foliage shall be hosed off periodically during construction (in accordance to the Oak Tree Consultant).

8. "Prime-Coat" or similar material shall not be applied to the soil prior to paving within the dripline of any Oak tree.

9. No chemical herbicides shall be used within one hundred feet (100') of any Oak tree dripline.

10. Tree health should be monitored to identify problems as the arise so that prompt treatment can be given if necessary.

PUBLIC SAFETY CONSIDERATIONS

Oak trees, due to their universal aesthetic appeal, draw people to them to enjoy their shade and comfort. Unbeknown to these people are the dangers which prevail in and around the Oaks.

Oaks, being living things, are subject to the destructive force of nature. Disease, the major force, often works insidiously with an Oak, weakening the internal structure while showing little outward signs of its existence. Occasionally, a tree will react with suddeness and great force to the loss of structural stability; thus, humans in close association with an Oak tree are exposed to a hazard.

It is important to understand, by all involved with Oaks, that a significant risk to human safety exist at every large tree. These risks to public safety should be equated to the aesthetic benefits of preservation of the Oaks.

Respectfully submitted,

LEE NEWMAN & ASSOCIATES, INC.

Richard Ibarra

Richard Ibarra
Horticultural Consultant

RI/sp

# SUMMARY OF FIELD INSPECTION

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc

TRACT: Dos Vientos Ranch

JOB NO: 1100-010

DATE: 2/14/85



| FORM | | | | | | N W E S | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPECIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 1 | X | | | 1 | 18" | | X | | | | | X | | | | | | | | | | | | | | | | | | B | A | Cattle damage to lower foliage; Earhorn Scale; |
| - | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | compaction within drip-line (from cattle); |
| - | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | good vigor |
| 2 | X | | | 2 | 5", 6" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | Good vigor |
| 3 | X | | | 6 | 2x6", 2x8", | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Good vigor; future cabling required |
| - | | | | | 4", 10" | • | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | X | | | 1 | 9" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Excellent vigor |
| 5 | X | | | 3 | 3",6", 8" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Excellent vigor |
| 6 | X | | | 2 | 5", 6" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Good vigor |
| 7 | X | | | 3 | 4",6", 8" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Excellent vigor |
| 8 | X | | | 3 | 2x7", 4" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | B | Excellent vigor |
| 8A | X | | | 1 | 4" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | UNDERSIZED TREE: excellent vigor |
| 9 | X | | | 2 | 4", 6" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | Excellent vigor |
| 10 | X | | | 2 | 2",5" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | Excellent vigor |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.
TRACT: Dos Vientos Ranch
JOB NO: 1100-010
DATE: 2/14/85
2/7

| FORM | | | | | | | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TREE NUMBER | SPECIES: Q. AGRIFOLIA | SPECIES: Q. LOBATA | SPECIES: | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING (N W E S) | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 11 | X | | | 6 | 2x5", 2x6" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | A | Future cabling to be required; good vigor; |
| – | | | | | 2x7" | | | | | | | | | | | | | | | | | | | | | | | | | | | cucumber vine growing into tree; excellent |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | vigor |
| 11A | X | | | MANY | | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | B | Good vigor |
| 12 | X | | | 4 | 1", 4", 2x2" | | X | | | | X | X | | X | | | X | | | | | | X | | X | | | | | B | A | Good vigor |
| 13 | X | | | 2 | 4", 10" | | X | | | | X | X | | X | | | X | | | | | | | | X | | | | | B | A | Good vigor |
| 14 | | X | | 1 | 20" | | | | | | X | | | | | | | | | X | | E'ly | | | X | X | | | | B | A | Cynipid Wasp Galls; tree being used as |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | fence post-4 strands of barbwire are attached |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | to north side of trunk; Scale |
| 15 | | X | | 3 | 12", 14", 16" | | | | X | | X | | | | | | | | | X | | | | | X | X | | Cable X | B | B | Tree being used as fence post-wrapped in |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 strands of barb wire; Scale |
| 16 | | X | | 1 | 24" | | | | | | X | | | | | X | X | | | X | | | | X | | | | | | C- | A | Beehive in basal trunk cavity; tree being used |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | as fence post-4 strands of barb wire attached |
| – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | to nort- side of trunk; Scale |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.

TRACT: Dos Vientos Ranch

JOB NO: 1100-010

DATE: 2/14/85

3/7

| FORM | | | | | | | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPECIES | | | | | N W E S | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 17 | | X | | 1 | 20" | | | | | | | | | | | X | X | | | X | | | | X | | | | | | C- | A | Beehive in basal trunk cavity; Scale |
| 17A | X | | | 1 | 2" | | X | | | | X | | | | | | | | | | | W | | | | | | | | B | C+ | UNDERSIZED; Good vigor |
| 18 | X | | | 1 | 5" | | X | | | | X | X | | X | | | | | | | | S | | | | | | | | C | C+ | |
| 19 | | X | | 2 | 28" | | | | | | | | | | | X | | | | X | | | | X | | | | | | C- | A | Large main crotch cavity with beehive; |
| ↓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | good vigor; scale |
| 20 | X | | | 1 | 18" | | X | | | | | X | X | | | | | | | | | | | | X | | | | | B | A | Good vigor |
| 21 | | X | | 2 | 5", 18" | | | | | | X | | | | X | | | X | | X | | | | | X | | | | | C | B- | 5" trunk is dead;Scale |
| 22 | | X | | 1 | 24" | | | | | | X | | | | X | | | | | X | | | X | | X | | | | | B | B | Scale |
| 23 | | X | | 1 | 20" | | | | | | X | | | | | | | | | X | | | | | X | | | | | B | A | Scale |
| ↓ | | | | | | | | | | | | | | 2/15/85 | | | | | | | | | | | | | | | | | | |
| 24 | | X | | 1 | 36" | | X | | | | X | | X | | | | | | | X | | | | | X | | | | | B | A | Excellent vigor; Scale |
| 25 | | X | | 1 | 10" | | X | | | | X | | | | | | | | | | | | | | | | | | | C | C+ | Within creekbed; moderate burn damage |
| 26 | X | | | 2 | 18" | | X | | | | X | X | X | X | X | | X | | | | | | | | X | | | | | B- | B- | 10'± south of creekbed; good vigor |
| 27 | X | | | 2 | 8", 14" | | X | | | | X | X | X | X | X | | X | | | | | W | X | | X | | | | | B | B | Much basal growth from 8" trunk |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.
TRACT: Dos Vientos Ranch
JOB NO: 1100-010
DATE: 2/15/85
4/7

| FORM | | | | | | | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TREE NUMBER | SPECIES: Q. AGRIFOLIA | SPECIES: Q. LOBATA | SPECIES: | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING (N W E S) | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 28 | X | | | 2 | 18", 24" | | X | | | | X | X | X | X | | | X | | | | | | X | | X | | | | | B | C | Good vigor; 20'± north of existing creekbed |
| 29 | X | | | 2 | 12", 16" | | X | | | | X | X | | | | | | | | | | | | | X | | | | | B | A | Growing out of (large) rock bed; axe damage |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | in upper tree-remnants of treehouse (previously |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | pruned). |
| 30 | X | | | 1 | 40" | | X | | | | X | | X | X | | | X | X | | X | | W'ly | | | X | | X | | | C | A+ | Shading out; bark beetle; foliage at |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | ground; twig galls; trunk cankers |
| 31A | X | | | 1 | 48" | | X | | | | X | | X | X | X | X | X | | | X | | | NE | | X | | X | | | C- | A+ | Heart rot in main trunk; foliage at ground; barb |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | wire in main trunk; Shading out; POSSIBLY |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | OFF-PROPERTY |
| 32 | X | | | 1 | 24" | | X | | | | X | | X | X | | | | | | | | SW'ly | | | X | | | | | B | A | Cabling may by required in the future |
| 32A | | X | | 1 | 28" | ↓ | X | | | | X | | X | | X | | | | | X | | | N | | X | | | | | B | B | Scale; OFF PROPERTY |
| 32B | X | | | 1 | 28" | | X | | | | X | | X | X | X | | | | | X | | W'ly | | | X | | X | | | B | A+ | OFF-PROPERTY; ants; Shading out; foliage |
| – | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | at ground; scale |
| 33 | | X | | 1 | 18" | | X | | | | | | | | | | | | | X | | | | | X | | | | | B | A+ | Earhorn Scale |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.
TRACT: Dos Vientos Ranch
JOB NO: 1100-010
DATE: 2/15/85



| FORM | | | | | | N W E S | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPECIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 34 | | X | | 1 | 24" | | X | | | | | | | | | | | | | | X | | | | X | | | | | B | A+ | Earhorn Scale |
| 35 | X | | | 1 | 18" | | X | | | | | | | | | | | | | | | | | | | | | | | B+ | A | Shading out |
| 36 | X | | | 2 | 6",8" | | X | | | | | | | | | | | | | | | | | | | | | | | B+ | A | |
| 37 | X | | | 3 | 2",4", 7" | | X | | | | | | | | | | | | | | | | | | | | | | | B | A | |
| 38 | X | | | 1 | 6" | | X | | | | | | | | | | | | | | | | | | | | | | | B | A | |
| 39 | X | | | 1 | 4" | | X | | | | | | | | | | | | | | | | | | | | | | | B | C | Being shaded out by #40 |
| 40 | X | | | 1 | 18" | | X | | | | X | X | X | | | | | | | | | | | | X | | | | | B | B | Shading out |
| 41 | X | | | 3 | 12",13' 15" | | X | | | | X | X | X | | X | | | | | X | | | | | | | | | | B- | B | Ants; axe damage-remnants of tree house |
| 42 | X | | | 2 | 6" | | X | | | | | X | | | | | | | | | | | | | | | | | | B | A | |
| 43 | | X | | 1 | 13" | | | | | | X | | | | | | | | | X | | | | | X | | | | | B | A | Cynipid Wasp Galls; good vigor; Scale |
| 44 | X | | | 1 | 4" | | | | | | | | | | | | | | | | | | | | | | | | | B | B | |
| 45 | X | | | 3 | 2"X4" 3" | | X | | | | X | | | | | | | | | | | | | | | | | | | B | B+ | |
| 46 | X | | | 3 | 3",4", 6" | | X | | | | X | | | | | | | | | | | | | | | | | | | B | B+ | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.
TRACT: Dos Vientos Ranch
JOB NO: 1100-010
DATE: 2/18/85
6/7

| FORM | | | | | | | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
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| | SPECIES | | | | | N W E S | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 47 | | X | | 1 | 14" | | | | | | X | | X | | | X | | X | | | | S | | X | | | | | | C | A | Heart rot & water trap in trunk; foliage to ground |
| 48 | | X | | 2 | 12", 14" | | X | | | | X | | X | | | | | | | X | | | | | X | | | | | B | A | Scale |
| 49 | X | | | 3 | 8", 2x10" | | X | | | | | | | | | | | | | | | | | | X | | | | | B | A | |
| 50 | | X | | 1 | 10" | | | | | | X | | | | | | | | | | | | | | X | | | | | B | B | Cynipid Wasp Galls |
| 51 | X | | | 1 | 14" | | X | | | | X | | | | | | | | | | | SE | | | X | | | | | B | A+ | Foliage on ground |
| 52 | | X | | 2 | 8", 10" | | X | | | | | | | | | | | | | | | | | | X | | | | | B | B | |
| 53 | | X | | 1 | 20" | | X | | | | | | | | | | | | | | | E'ly | | | X | | | | | B | A | Good vigor |
| 54 | X | | | 2 | 3",6" | | X | | | | | | | | | | | | | | | E | | | | | | | | B | B | Cucumber vine growing into tree; good vigor |
| 55 | X | | | 1 | 8" | | X | | | | | | | | | | | | | | | E | | | | | | | | B | B | Cucumber vine growing into tree; good vigor |
| 56 | | X | | 1 | 6" | | | | | | | | X | | | | | | | | | E | | | | | | | | C | C | |
| 57 | X | | | 1 | 8" | | X | | | | | | | | | | | | | | | E | | | | | | | | B | A | Good vigor |
| 58 | X | | | 1 | 5" | | X | | | | | | | | | | | | | | | E | | | | | | | | B | B | Good vigor |
| 59 | X | | | 1 | 10" | | X | | | | | | | | | | | | | | | | | | | | | | | B | A | Good vigor |

SUMMARY OF FIELD INSPECTION

CLIENT: Haaland & Assoc.
TRACT: Dos Vientos Ranch
JOB NO: 1100-010
DATE: 2/18/85



| FORM | | | | | | N W E S | PHYSICAL CONDITION | | | | | | | | | | | | | | | | | TREATMENT | | | | | RATING | | |
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| | SPECIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TREE NUMBER | Q. AGRIFOLIA | Q. LOBATA | | NO. OF TRUNKS | DIAMETER TRUNKS @ 42"HIGH (DBH) | DIRECTION OF LOW BRANCHING | TWIG DIEBACK | MINOR ROT | WEAK CROTCHES | EXUDATION | FIRE DAMAGE | THIN FOLIAGE | CAVITIES IN TREE | EXOCORMIC GROWTH | TRUNK DAMAGE | TRUNK CAVITY | EXFOLIATING BARK | MAINSTEM DIEBACK | CHLOROTIC LEAVES | INSECT DAMAGED | DISEASED | LEANING | GROWTH AT BASE | SAFETY HAZARD | REMOVE DEADWOOD | REMOVE WIRE, ETC. | INSECT TREATMENT | DISEASE TREATMENT | CABLE/BRACE | HEALTH | AESTHETICS & CONFORMITY | REMARKS |
| 60 | X | | | 1 | 8" | | X | | | | | X | | | | | | | | | | | X | | | | | | | B | A | Good vigor |
| 61 | | X | | 1 | 10" | | | | | | X | X | | | | | | X | | | | SE | | | | | | | | C+ | B- | |
| 62 | X | | | 1 | 8" | | X | | | | X | | | | | | | | | | | | | | | | | | | B | B | Good vigor |
| 63 | X | | | 1 | 28" | | X | | | | X | X | | | | | | | | | | | | | | | | | | B+ | A+ | Foliage on ground; excellent vigor |
| 64 | X | | | 2 | 3",6" | | X | | | | X | | | | | | | | | | | SE | | | | | | | | B | B | |
| 65 | | X | | 1 | 10" | | | | | | X | | | | | | | | | | | | | | | | | | | B | A | |

# Air Quality Analysis (G)

# AIR QUALITY IMPACTS OF
# PROPOSED DOS VIENTOS RANCH DEVELOPMENT

ERT Document No. P-D560-000
June 1985

Prepared for

THE CITY OF THOUSAND OAKS
Thousand Oaks, California

Prepared by

D. Kringel
L. Coyner

ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.
975 Business Center Circle
Newbury Park, California 91320

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# 1. INTRODUCTION

Environmental Research & Technology, Inc. (ERT) was retained by the City of Thousand Oaks to perform an air quality analysis for the Environmental Impact Report (EIR) being prepared for the Proposed Dos Vientos Ranch Development. The proposed community consists of 3940 single- and multi-family units plus commercial and other services to be located on the western boundary of the City of Thousand Oaks and is expected to be completed by the year 2003.

Section 2 describes the environmental setting of the proposed project. The methods and results of the air quality impact analysis are discussed in Section 3. Section 4 contains a discussion of other considerations which are attributable to the proposed development project.

# 2. ENVIRONMENTAL SETTING

## 2.1 Meteorology and Climate

The local meteorology of the Conejo Valley depends on the interaction of large-scale weather systems with mesoscale coastal sea breezes, all modified by the complexity of local mountains and valleys. When large-scale (synoptic) weather systems provide moderately strong winds (greater than 25 mph) aloft (above 5000 feet), they tend to dominate the wind flow pattern in the area. This is primarily the case in the winter and spring, when frontal systems or Santa Ana winds control the wind flow. Occasionally stagnant high presure systems move in, creating warm, sunny, summer-like weather during winter and spring. These conditions may give rise to relatively high pollutant concentrations, but generally the period from May to October provides the most severe air pollution meteorology.

The summertime weather is dominated by the movement and intensity of the semipermanent subtropical high pressure system that resides several hundred miles west of the state. Called the Pacific High, this system provides clear skies over southern California, due to the descending warm air which sinks clockwise outward from its center. Since the air warms as it sinks, it is warmer than the underlying marine layer that is cooled by the ocean. As a result, a stable atmospheric layer called the subsidence inversion lid traps the upward escape of pollutants emitted near the ground surface, and may redirect the pollutants back down towards the surface, due to the vertical overturning of the lower layers caused by convection from surface heating. Usually the inversion height coincides with the mixing height or the height below which the atmosphere is evenly mixed.

Five distinctly different types of weather occur during the May to October pollution months. These have been described by McCutchan and Schroeder (1973). The causal relationships between these weather types and pollutant levels in Thousand Oaks has been studied (Henry et al. 1977). During the typical smog season, about 80% of the days are characterized by the weather types associated with high ambient pollutant levels. Briefly, these weather types are as follows:

- The Santa Ana day is caused by strong, dry, northerly downslope winds blowing off the desert due to a sharp synoptic ridge of high pressure directly over the California coast. These days are typically clear of pollution due to erosion of the inversion by strong winds. Because the northeast winds blow from the Los Angeles area out over the ocean, westerly winds off the ocean following Santa Anas may transport significant amounts of pollutants into the Thousand Oaks area. These days occur only about 5% of the time between May and October.
- The heat wave day almost always occurs after high pressure has persisted and intensified for several days (see next weather type). Due to intense heating of the Mojave Desert surface to the east, rising air creates a local surface low pressure called a thermal trough. Between higher pressure along the coast and this thermal trough inland, a pressure gradient is established which acts to draw marine air inland and form a sea breeze. In the case of the heat wave day, however, the subsidence from the subtropical high over the area is so intense that it supresses this pulling effect by the thermal low. Thus, only weak westerly winds flow in the afternoon. With stagnation at its maximum and sunlight at its strongest, the highest ozone concentrations occur on these days. Heat waves occur from 10-15% during the May to October period.
- Warm days with moderate sea breeze penetration into the Los Angeles Basin and Thousand Oaks occur about 40% of the time. At the onset, the Pacific High moves due west of southern California. Subsidence from this high pressure system creates moderate inversion intensities (1000-2000 feet) during midday. The thermal low is also well developed, and acts to draw in the marine layer. During the afternoon the resulting sea breeze wind pattern is a consistent 10-15 mph westerly wind. Moderate levels of ambient ozone and sulfate occur locally on these days.
- About 30% of the time from May to October, an upper level trough moves over California and causes the marine layer to expand. This tends to raise the inversion heights and cause

considerable moisture intrusion within the basin. This marine layer, driven by southerly flow associated with the low pressure offshore and drawn inland by the thermal low, is usually 2000-4000 feet deep. Humidities remain above 50%. Some cloudiness is associated with these days. With reduced sunlight and considerable water vapor, average or low ozone and high sulfate concentrations occur. Due to the southerly flow, transport from the Los Angeles Basin may occur on these days.

- When an upper level trough deepens and becomes a synoptic-type low pressure system which dominates the surface as well, the weather in southern California is cool and cloudy. With this condition, the marine layer is expanded from 3000-5000 feet deep and moist air intrudes throughout the basin all day. This situation is more prevalent in spring and fall than during summer months with a total occurrence of about 15% during the smog season.

## 2.2 Topography and Transport

### 2.2.1 Regional

The City of Thousand Oaks is situated in a relatively small, oblong valley at an elevation of about 1000-1400 feet. Due to its proximity to the coast, a sea breeze circulation pattern is dominant. Wind data necessary to analyze the extent of transport into and out of the Conejo Valley are relatively sparse. Figure 2-1 summarizes wind observations taken by the Ventura County Fire Department at 8 A.M., 12 noon and 4 P.M. daily from 1973-1977. The vast majority of winds reported at 8 A.M. are calm or less than the instrument threshold of 2 mph at Fire Station 34. These represent about 32% of the total annual observations. In Figure 2-1, the calms are distributed into the 0 to 3 mph class according to the directional frequency of winds measured in that class. Clearly the dominant daytime transport is from the west at the surface (68%). Using data from the 1975 Community Health Air Monitoring Program (CHAMP) and from Keith and Selik (1977), a general picture of predominant daytime and nighttime surface flow may be constructed. These patterns are

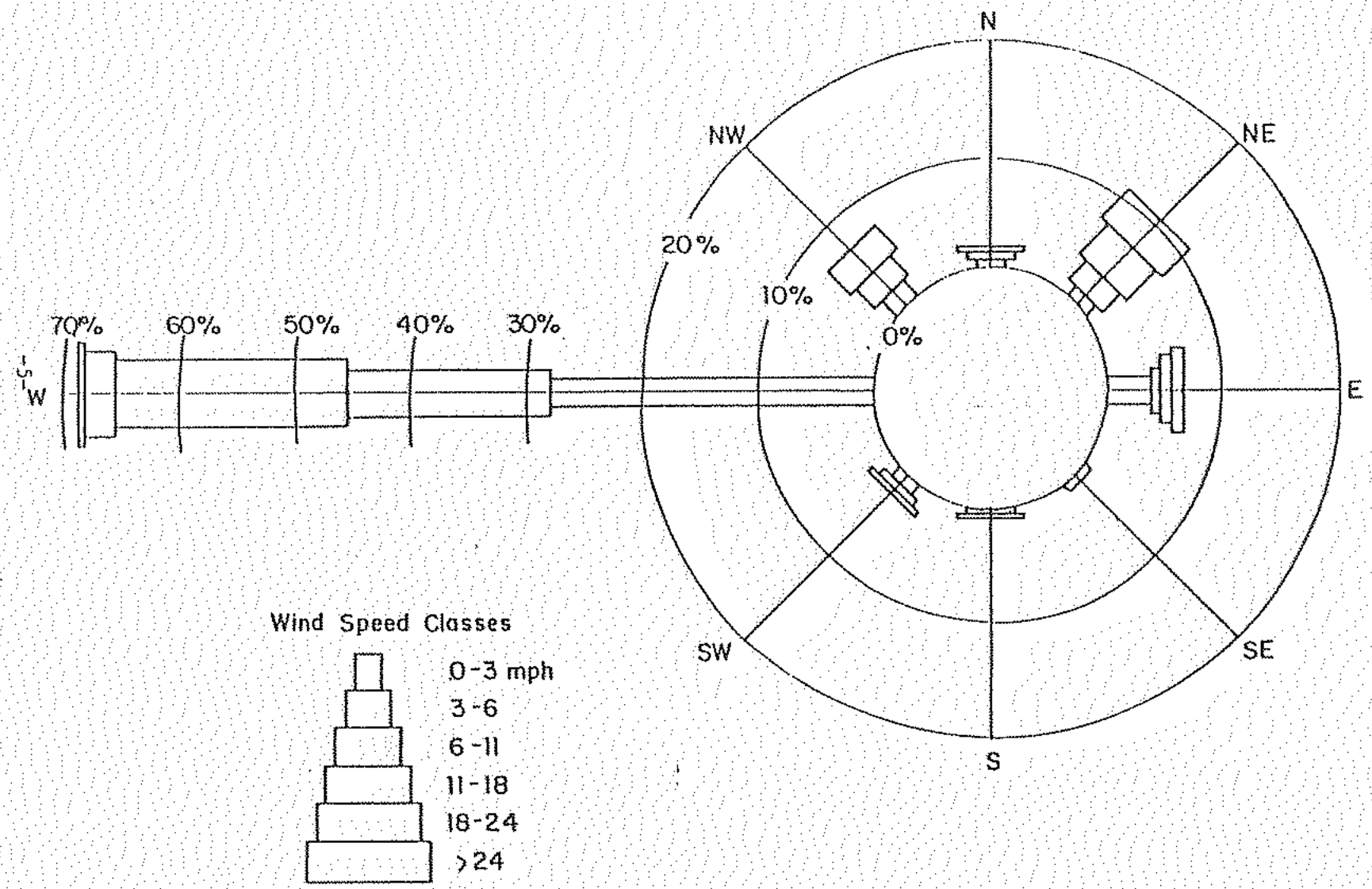



Figure 2-1. 1973-1977 Average Annual Daytime Thousand Oaks Wind Rose. Calms are distributed in the 0-3 mph class.

illustrated in Figures 2-2 and 2-3. During the daytime, westerly sea breeze winds passing over the Oxnard Plain and Conejo Valley converge with the easterly sea breeze which has been directed to the San Fernando Valley. During the summer in the San Fernando Valley, the nighttime flows are consistently light easterlies, which give rise to a probable surface transport toward the Conejo Valley. This is illustrated in Figure 2-3 along with likely drainage flows off the mountains in southern Ventura County. If the drainage flows subsequently turn onshore, residual pollutants may combine with fresh local emissions to yield high pollutant levels on succeeding days in the county; however, other factors such as pollutant dilution rates affect this contribution (Ventura APCD 1982a).

Other transport phenomena, generated from Santa Barbara County or from the offshore oil activities (both at the surface and aloft), may occur through Santa Susana Pass; however, the extent of these contributions to air quality in Thousand Oaks is not currently known.

### 2.2.2 Local

On the microscale level, no terrain effects are expected to influence local pollutant dispersal to any significant degree.

## 2.3 Regulatory Setting

Pursuant to the California Environmental Quality Act (CEQA) of 1970, any significant developments in the state are required to present Environmental Impact Reports (EIRs). As part of this process, air quality analysis is required to help inform the public of potential constraints and impacts of the proposed project. In addition, air pollution control is administered on three governmental levels in the State of California: federal, state and local. Both the federal and state control agencies (U.S. Environmental Protection Agency and California Air Resources Board) have established ambient air quality standards, based on consideration of the health and welfare of the general public. As legal limits placed on ambient levels of air pollution during a given period of time, air quality standards

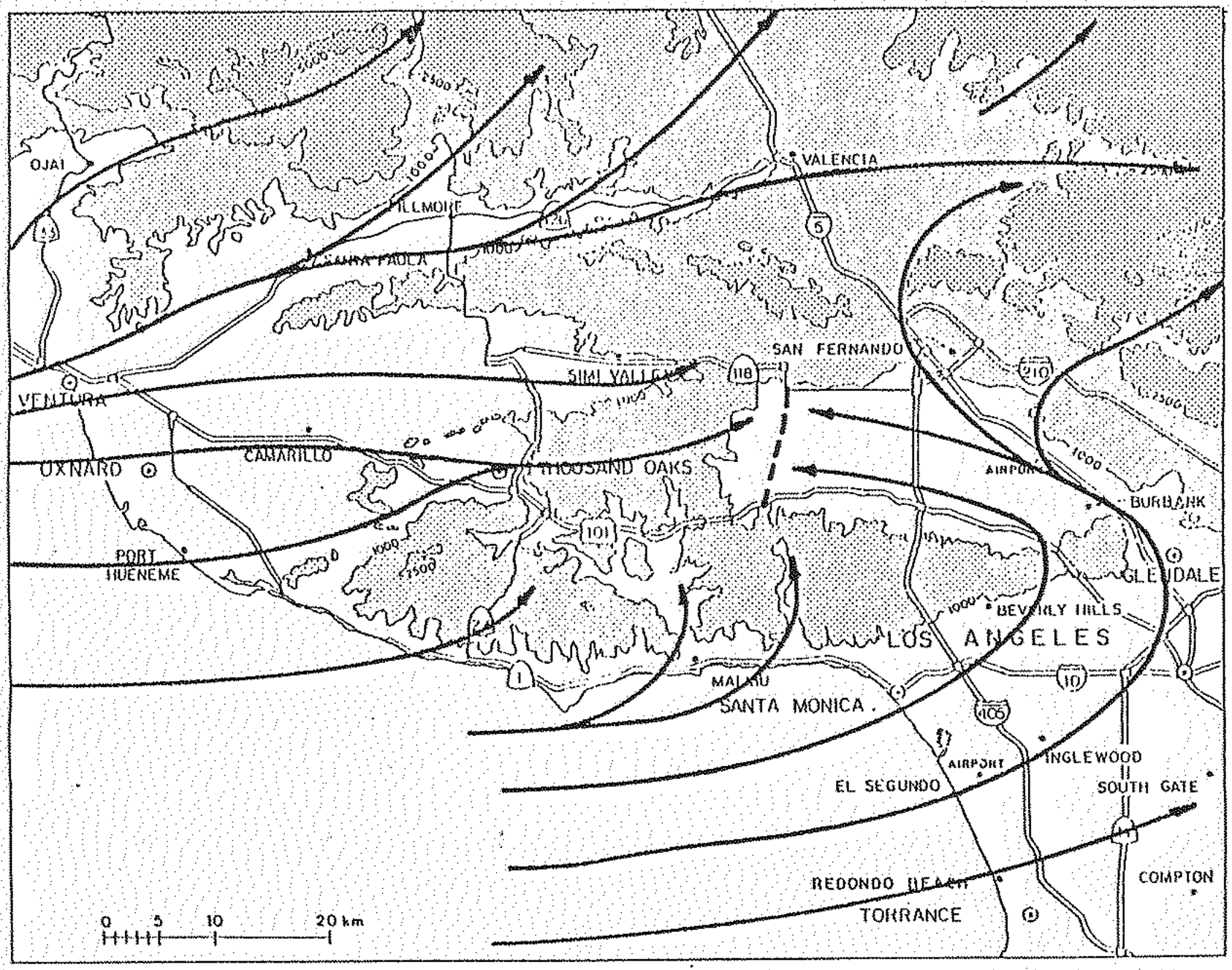



Figure 2-2. Typical Afternoon Sea Breeze Surface Wind Trajectories

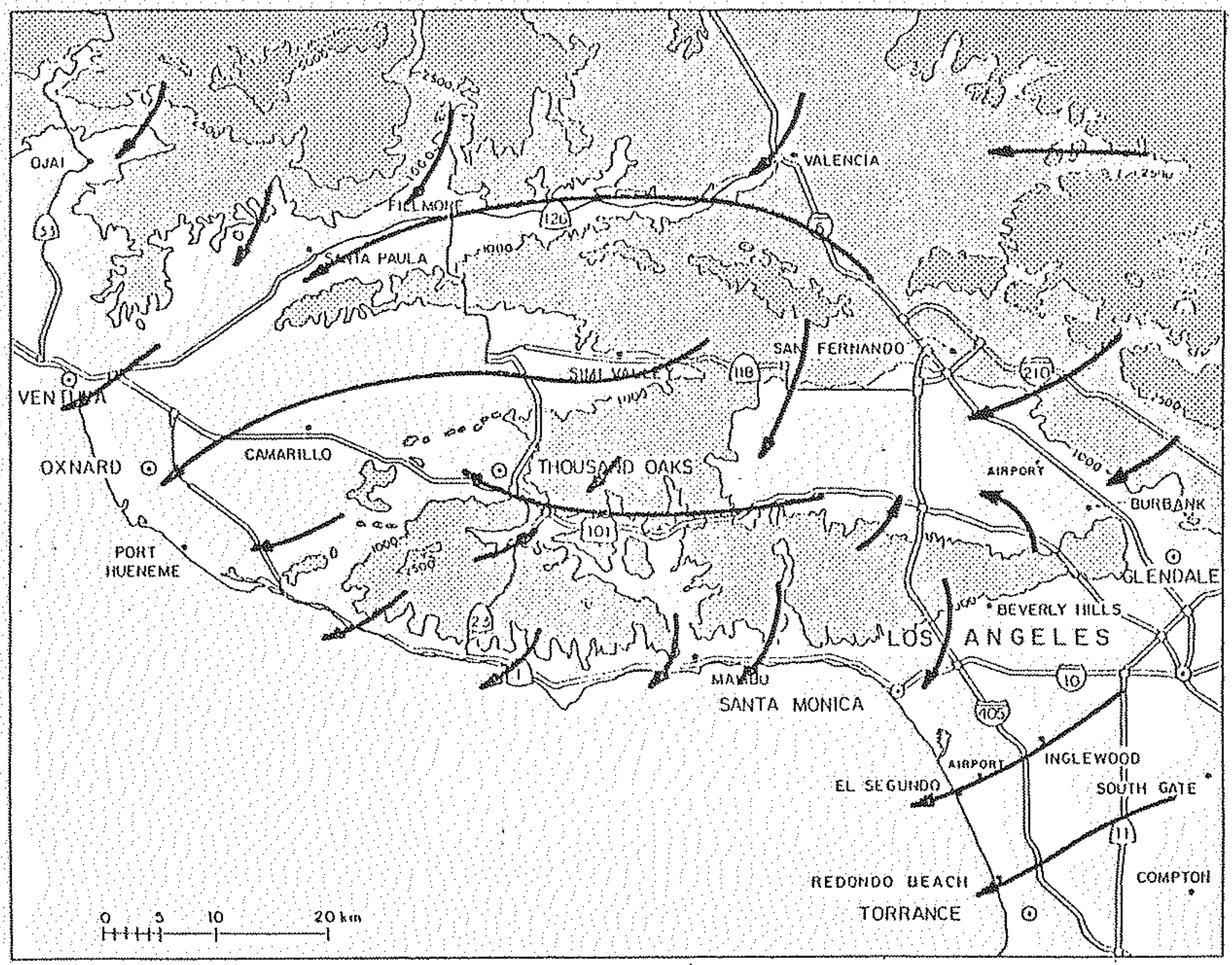



Figure 2-3. Possible Nighttime Summer Surface Wind Trajectories

characterize the allowable levels of a pollutant or a class of pollutants in the atmosphere, and thus, define the amount of exposure deemed safe for the population and/or for ecological systems. These standards are discussed below.

### 2.3.1 Federal

Table 2-1 presents the primary and secondary National Ambient Air Quality Standards (NAAQS) set by the U.S. Environmental Protection Agency (EPA). The primary standards reflect levels of air quality, including an adequate safety margin, necessary to protect public health. The secondary standards reflect the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Those states, such as California, which have not attained the primary standards by 31 December 1982 are subject to federal construction bans and federal sanctions unless certain requirements in the State Implementation Plans (SIPs) are met. These plans include measures such as new source review procedures and motor vehicle maintenance and inspection programs. If the implementation of the plans are ruled satisfactory, the deadline for attainment is extended until 1987. In California, the implementation programs have undergone delay and federal sanctions may eventually be imposed.

Based on recorded exceedances of federal standards, Ventura County is designated "nonattainment" for both total suspended particulate (TSP) and ozone. With this designation, the control agency is required to adopt a series of Reasonably Available Control Measures (RACMs) to attain the ambient standards. In the Oxnard Plain Airshed, where the study area is located, the Ventura County Air Quality Management Plan (AQMP) and its appendices identify measures to approach attainment of standards for TSP and ozone; however, with "reasonable" progress, it is not felt that full attainment can be regionally obtained (Ventura AQMP 1982a).

Dos Vientos Ranch Development may have the potential to cause an increase of TSP (short-term), ozone ($O_3$), carbon monoxide (CO), oxides of nitrogen ($NO_x$), and sulfur dioxide ($SO_2$). The expected extent of this increase and the relationship to the NAAQS (or more stringent state standards, where applicable) is presented in a later section.

TABLE 2-1

## AMBIENT AIR QUALITY STANDARDS

| Pollutant | Averaging Time | California Standards[1] | | National Standards[2] | | |
|---|---|---|---|---|---|---|
| | | Concentration[3] | Method[4] | Primary[3,5] | Secondary[3,6] | Method[7] |
| Oxidant[10] | 1 hour | 0.10 ppm (200 ug/m³) | Ultraviolet Photometry | — | — | — |
| Ozone | 1 hour | — | — | 0.12 ppm (235 ug/m³) | Same as Primary Standard | Ethylene Chemiluminescence |
| Carbon Monoxide | 8 hour | 9.0 ppm (10 mg/m³) | Non-Dispersive Infrared Spectroscopy (NDIR) | 10 mg/m³ (9 ppm) | Same as Primary Standards | Non-Dispersive Infrared Spectroscopy (NDIR) |
| | 1 hour | 20 ppm (23 mg/m³) | | 40 mg/m³ (35 ppm) | | |
| Nitrogen Dioxide | Annual Average | — | Gas Phase Chemiluminescence | 100 ug/m³ (0.05 ppm) | Same as Primary Standard | Gas Phase Chemiluminescence |
| | 1 hour | 0.25 ppm (470 ug/m³) | | — | | |
| Sulfur Dioxide | Annual Average | — | Ultraviolet Fluorescence | 80 ug/m³ (0.03 ppm) | — | Pararosaniline |
| | 24 hour | 0.05 ppm (131 ug/m³)[9] | | 365 ug/m³ (0.14 ppm) | — | |
| | 3 hour | — | | — | 1300 ug/m³ (0.5 ppm) | |
| | 1 hour | 0.25 ppm (655 ug/m³) | | — | — | |
| Suspended Particulate Matter ($PM_{10}$) | Annual Geometric Mean | 30 ug/m³ | $PM_{10}$ | — | — | — |
| | 24 hour | 50 ug/m³ | | — | — | |
| Suspended Particulate Matter | Annual Geometric Mean | — | — | 75 ug/m³ | 60 ug/m³ | High Volume Sampling |
| | 24 hour | — | | 260 ug/m³ | 150 ug/m³ | |
| Sulfates | 24 hour | 25 ug/m³ | Turbidimetric Barium Sulfate | — | — | — |
| Lead | 30 day Average | 1.5 ug/m³ | Atomic Absorption | — | — | — |
| | Calendar Quarter | — | — | 1.5 ug/m³ | Same as Primary Standard | Atomic Absorption |
| Hydrogen Sulfide | 1 hour | 0.03 ppm (42 ug/m³) | Cadmium Hydroxide STRactan | — | — | — |
| Vinyl Chloride (Chloroethene) | 24 hour | 0.010 ppm 26 ug/m³) | Tedlar Bag Collection, Gas Chromatography | — | — | — |
| Visibility Reducing Particles | 1 observation | In sufficient amount to reduce the prevailing visibility[8] to less than 10 miles when the relative humidity is less than 70% | | — | — | — |
| **APPLICABLE ONLY IN THE LAKE TAHOE AIR BASIN:** | | | | | | |
| Carbon Monoxide | 8 hour | 6 ppm (7 mg/m³) | NDIR | — | — | |
| Visibility Reducing Particles | 1 observation | In sufficient amount to reduce the prevailing visibility[8] to less than 30 miles when the relative humidity is less than 70% | | — | — | — |

(FOOTNOTES ON REVERSE SIDE)

### 2.3.2 State and Local

The California ambient air quality standards adopted by the Air Resources Board (ARB) are also shown in Table 2-1. Enforcement of these standards is primarily the responsibility of the local air pollution agency. This agency is typically under the jurisdiction of the corresponding county government, except in those instances where multiple counties in the same air basin coordinate pollution control efforts. The air quality in the Thousand Oaks area is regulated by the Ventura County Air Pollution Control District (APCD). The APCD has developed an Air Quality Management Plan (AQMP) which characterizes current emissions in the county, relates those emissions to recorded pollutant levels, and sets forth plans to reduce emissions as required to achieve or maintain acceptable air quality. Since the ozone standard is not expected to be attained within this century, the County has adopted strict emission limitations on nitrogen oxides ($NO_x$) and reactive organic compounds (ROC) emissions associated with new projects. Any $NO_x$ or ROC emissions (precursors to the formation of ozone) above 13.7 tons per year are considered to have a significant impact on the attainment of the ozone standard. Under this guideline, control measures may be required to mitigate these emissions as determined by the lead agency.

As stated in the previous section, the project under present consideration has the potential to affect the local ambient levels of TSP, $O_3$, CO, $NO_x$, and $SO_2$. Air quality diffusion modeling techniques which are acceptable to the ARB have been used to estimate the potential impacts of the development project for comparison with applicable air quality standards.

## 2.4 Existing Air Quality

National Ambient Air Quality Standards (NAAQS) for ozone and total suspended particulates (TSP) are frequently exceeded in Ventura County. In addition, state standards for sulfates, nitrogen dioxide and lead have been infrequently exceeded. Table 2-1 lists the current air quality standards and maximum recorded ambient concentrations which were obtained in the county from January 1978 to October 1981 (Ventura AQMP

1982a). For those pollutants that exceeded the standard, the "design value" (last column of Table 2-1) is the highest concentration which occurred more than once yearly during the three year period. The historical trends in the concentrations of these pollutants are described in more detail below. For those pollutants which did not exceed the standard, the "design value" is simply the highest recorded ambient concentration.

### 2.4.1 Ozone

In the Thousand Oaks area, ozone and TSP monitoring is conducted on the grounds of Glenwood Elementary School at 1135 Windsor Drive. Table 2-2 presents two tables from the "Annual Reasonable Further Progress Report (RFP) for 1981" (Ventura AQMP 1982b). These tables have been supplemented with data found in the ARB air quality summaries for 1982 and 1983 (ARB 1982, ARB 1983). As shown, the state and federal ozone standards of 0.12 ppm and 0.10 ppm (1-hour average), respectively, have been exceeded in Thousand Oaks. The RFP states that, county-wide, the percentage of days exceeding the NAAQS for ozone has declined with the greatest decreases occurring between 1973 and 1977. For Thousand Oaks, however, a marked decline is not readily apparent. It can be said that the number of ozone exceedances in the Thousand Oaks area has stayed about the same from 1973 to present. The highest measured ozone concentrations occurred in 1977 and 1978. In an absolute sense, the ozone concentrations have been showing a decline since 1978.

### 2.4.2 Total Suspended Particulates (TSP)

The only recorded 24-hour TSP violation during the past several years at the Thousand Oaks-Windsor station occurred on December 11, 1979. On this day, a 24-hour TSP concentration of 340 $\mu g/m^3$ was recorded. This is 80 $\mu g/m^3$ above the primary federal standard of 260 $\mu g/m^3$. Due to the pattern of relatively low 24-hour TSP concentrations in Thousand Oaks and other stations in the county, this peak value may be an anomaly. No data is available at this station after 1980.

TABLE 2-2

AMBIENT OZONE CONCENTRATION TRENDS IN VENTURA COUNTY

Maximum Hourly Concentrations (parts per million)

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ventura | .17 | .16 | .16 | .17 | .25 | -- | -- | .13 | .15 | .16 | .17 | .18 |
| Camarillo/El Rio | .23 | .18 | .18 | .22 | .25 | .24 | .23 | .13 | .16 | .15 | .15 | .14 |
| Thousand Oaks | .19* | .16 | .15 | .19 | .23 | .25* | .18 | .19* | -- | .15 | .19 | .16 |
| Ojai | .23 | .22 | .21 | .17 | .18 | .19* | .18 | .18* | .20* | .19 | .17 | .15* |
| Simi Valley | .29 | .26 | .22 | .20 | .26 | .25 | .19 | .18* | .23 | .23 | .23 | .19 |
| Piru | -- | -- | -- | .20 | .20 | .20* | .22 | .21 | .19* | .15 | .19 | .16 |

*Data are incomplete and statistics do not meet criteria for representativeness.

Percent of Days Exceeding NAAQS (May-October)

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ventura | 2.7 | 1.6 | 0.5 | 2.7 | 1.7 | -- | -- | 1.2 | 1.1 | 1.6 | 6.5 | 7.1 |
| Camarillo/El Rio | 13.0 | 2.7 | 1.1 | 3.9 | 3.8 | -- | 5.2 | 1.1 | 2.9 | 1.2 | 4.4 | 0.0 |
| Thousand Oaks | 14.4 | 8.2 | 6.4 | 16.0 | 17.4 | -- | 8.0 | 13.3 | -- | 10.3 | 14.7 | 1.1 |
| Ojai | 37.7 | 35.4 | 18.1 | 10.3 | 19.0 | -- | 12.6 | 18.5 | 14.1 | 17.7 | 15.6 | 1.1 |
| Piru | | | | | 39.2 | -- | 19.9 | 24.1 | 39.2 | 14.3 | 13.0 | 1.6 |
| Simi | 50.8 | 61.0 | 28.8 | 24.6 | 38.0 | 47.0 | 30.1 | 15.7* | 20.6 | 42.3 | 34.8 | 17.9 |

*In July and August 1980, a series of instrument and sampling train problems resulted in the deletion of 20 days of data. This data would have influenced the percent of days over the standard.

Source: Ventura 1982b, ARB 1982, ARB 1983.

Table 2-3 presents annual geometric mean (AGM) TSP for stations in Ventura County. On an annual basis, there is a downward trend in TSP levels since 1975. In 1981, all stations in Ventura County except El Rio exceeded the annual federal primary standard of 75 $\mu g/m^3$. However, in 1982, only the Ventura and Simi stations exceeded the state annual standard of 60 $\mu g/m^3$, and in 1983, there were no exceedances.

### 2.4.3 Nitrogen Dioxide, Sulfate and Lead

The California State standards for nitrogen dioxide and lead, shown in Table 2-1, have been violated, although infrequently. The one-hour ambient air concentration of $NO_2$ reached the 0.25 ppm standard once in 1978, and a value of 0.30 ppm was recorded in 1979. No exceedances were reported for 1980 and 1981. The 30-day average ambient air standard for lead (1.5 $\mu g/m^3$) was exceeded in 1978 with a value of 2.2 $\mu g/m^3$. No exceedances were reported for 1979 through 1981. The state sulfate standard (25 $\mu g/m^3$) was exceeded once in 1980, with a 24-hour average concentration of 31 $\mu g/m^3$. All of these exceedances were recorded at the Simi Valley monitoring site, the monitoring site for these pollutants which is closest to the project area.

TABLE 2-3

AMBIENT TSP CONCENTRATION TRENDS IN VENTURA COUNTY

Total Suspended Particulates - Annual Geometric Mean (micrograms per cubic meter)

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ventura | 76 | 76 | 67 | 63 | 57 | -- | -- | -- | 83 | 61.3 | 55.2* | 63.5 |
| Camarillo/El Rio | 80 | 76 | 77 | 74 | 77 | -- | -- | 63 | 72 | 53.2 | 45.7* | 65.6 |
| Thousand Oaks | 77 | 70 | 82 | 56 | 60 | -- | 62 | 66* | -- | -- | -- | -- |
| Ojai | 66 | 58 | 74 | 59 | 71 | -- | 67 | 65* | -- | -- | 46.2* | 51.7 |
| Piru | -- | -- | -- | -- | -- | -- | 65 | 66* | 80 | 50.4* | 43.9* | 53.7* |
| Simi | 75 | 70 | 87 | 71 | 74 | 65 | 68 | 73 | 87 | 62.8* | 57.7* | 77.4* |

*Data are incomplete and statistics do not meet criteria for representativeness.

Source: Ventura 1982b, ARB 1982, ARB 1983.

# 3. ESTIMATED IMPACTS FROM TENTATIVE DOS VIENTOS RANCH DEVELOPMENT

## 3.1 Emissions Inventory

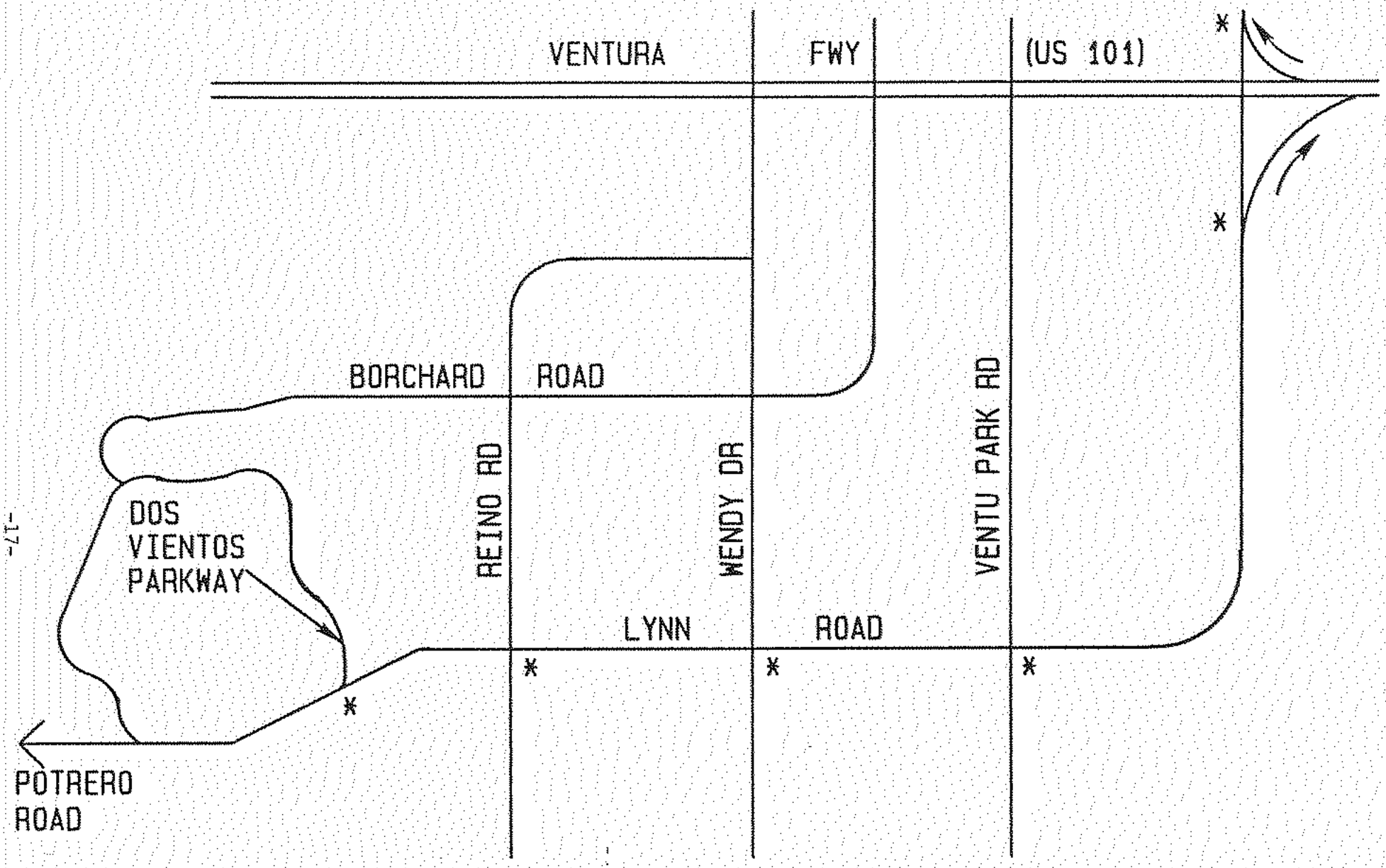
### 3.1.1 Mobile Emissions

The major pollutant emitted from automobiles is carbon monoxide. Based on traffic counts, six intersections in the study area were identified as having the highest potential for increased usage as the result of the proposed development action. These intersections are as follows (see Figure 3-1):

1. Reino Road/Lynn Road
2. Wendy Drive/Lynn Road
3. Ventu Park Road/Lynn Road
4. 101 Freeway eastbound onramp
5. Lynn Road/101 Freeway westbound offramp
6. Dos Vientos Parkway/Lynn Road

The traffic data used in this study were generated from the results of the traffic study developed for the Dos Vientos Ranch (Wallen 1985). Due to the nature of mobile sources, traffic statistics for both the present and future are best available estimates. Where applicable, worst-case assumptions were used to reflect maximum air quality impact. Table 3-1 presents the traffic count on each roadway at each intersection for the present and for the future with the development project.

The carbon monoxide emission factors used in the air quality impact modeling were calculated using the California Air Resources Board (CARB) motor vehicle emissions model called Mobile3. The Mobile3 CO emission factors and the Mobile3 inputs are given in Table 3-2. These are composite emission factors and represent the "average vehicle" on the road. Note that a significant reduction in average vehicle emissions is projected by 2000 due to a gradual replacement of older, uncontrolled units of the vehicle fleet by newer, better-controlled vehicles. As seen below, this expected reduction in emissions is an important consideration in comparing current and future air quality levels in Thousand Oaks.




* Intersections Modeled

Figure 3-1. Location of Intersections Affected by the Proposed Dos Vientos Ranch Development

TABLE 3-1

PRESENT AND FUTURE TRAFFIC COUNTS
FOR THE SELECTED INTERSECTIONS

| Street | Roadway Approach | Present Vehicles Per Hour | Future (2000) Vehicles Per Hour |
|---|---|---|---|
| 1. Reino Road | Northbound | 110 | 110 |
| | Southbound | 240 | 260 |
| Lynn Road | Eastbound | 115 | 1530 |
| | Westbound | 140 | 1515 |
| 2. Wendy Drive | Northbound | 90 | 90 |
| | Southbound | 125 | 382 |
| Lynn Road | Eastbound | 195 | 1315 |
| | Westbound | 100 | 1218 |
| 3. Ventu Park Road | Northbound | 105 | 105 |
| | Southbound | 320 | 665 |
| Lynn Road | Eastbound | 555 | 1628 |
| | Westbound | 435 | 1205 |
| 4. Lynn Road | Northbound | 1050 | 1897 |
| | Southbound | 595 | 1387 |
| 101 Freeway Onramp | Eastbound | 710 | 1495 |
| 5. Lynn Road | Northbound | 945 | 976 |
| | Southbound | 1365 | 1423 |
| 101 Freeway Offramp | Westbound | 735 | 1438 |
| 6. Dos Vientos | Southbound | | 1000 |
| Lynn Road | Westbound | | 1000 |
| | Eastbound | | 400 |

Source: Wallen 1985.

TABLE 3-2

CARBON MONOXIDE MOTOR VEHICLE
EMISSION FACTORS (gm/veh-mile) FROM MOBILE 3

Ambient Temperature: 45°F

| Vehicle Mix: | | |
|---|---|---|
| | Light-duty gas autos | 67.8% |
| | Light-duty trucks | 15.6% |
| | Heavy-duty gas vehicles | 3.4% |
| | Light-duty diesel vehicles | 7.5% |
| | Light-duty diesel trucks | 1.6% |
| | Heavy-duty diesel vehicles | 4.0% |
| | Motorcycles | 0.1% |

For 50% cold starts/10% hot starts/40% hot stabilized starts.*

| Speed (mph) | Year 1985 | 1989 | 1993 | 1997 | 2000 |
|---|---|---|---|---|---|
| 10 | 96.37 | 59.37 | 47.23 | 42.72 | 41.52 |
| 15 | 69.70 | 45.05 | 36.88 | 33.82 | 33.02 |
| 20 | 54.09 | 35.36 | 29.20 | 26.93 | 26.38 |
| 25 | 42.97 | 28.06 | 23.26 | 21.53 | 21.14 |
| 30 | 34.47 | 22.39 | 18.61 | 17.28 | 17.01 |
| 35 | 28.12 | 18.06 | 14.98 | 13.93 | 13.73 |
| 40 | 23.72 | 14.88 | 12.19 | 11.29 | 11.13 |
| 45 | 20.95 | 12.63 | 10.07 | 9.21 | 9.08 |

*This percentage suggested by the CARB.

Source: Ventura 1983.

The assumed ambient design temperature of 45°F is considered to be extreme for the Thousand Oaks area. Temperatures do drop below 45°F during the winter months; however, the local temperature is usually higher during the afternoon peak CO period. Thus, the emission factors used in the modeling analysis are considered to be conservative, i.e., overestimates of typical peak-hour emissions. The vehicle mix that was assumed is also shown in Table 3-2. For surface streets, the factors for 50% cold starts/10% hot starts/40% hot stabilized were used. The cold start mode is defined as the first 505 seconds of vehicle operation following a long engine-off period (one hour or more for catalyst equipped vehicles and four hours or more for other vehicles). If the engine-off period is less than these time periods, the first 505 seconds of operation after the engine-off period is considered to be in the hot start mode. The hot stabilized mode is vehicle operation after the first 505 seconds of vehicle warm-up (CARB 1982). Although the vehicle mixes used in this study are estimates, they represent conservative assumptions and will also tend to overestimate typical peak-hour emissions.

### 3.1.2 Construction Related Emission

During the grading phase of the proposed development emissions of sulfur dioxide ($SO_2$), oxides of nitrogen ($NO_x$), total hydrocarbons (THC), carbon monoxide (CO), and total suspended particulates (TSP) will be emitted into the air by operation of the heavy-duty construction equipment. In addition, fugitive dust emissions from exposed surfaces and vehicle movement during construction will be emitted. However, the emissions from the heavy-duty vehicles are expected to be minimal and are not expected to significantly impact the study area. The fugitive dust emissions are also expected to be minimal at any one location and time due to the phased approach of the Dos Vientos Ranch Development. In addition, watering of exposed surfaces is planned for this project, making the TSP emissions even less.

### 3.1.3 Secondary Emissions

Secondary emissions from home cooking, space heating, electrical generation and motor vehicle emissions were estimated using ARB model URBEMIS1. Emissions from the model are based upon the number and type of dwelling units as well as commercial and industrial structures. A summary of the model inputs is shown in Table 3-3. The results of the URBEMIS1 modeling can be found in Table 3-4.

### 3.1.4 Regional Emissions

Baseline (1979) emissions for the Oxnard Plain Airshed (Ventura APCD 1982a) are shown in Table 3-5. This table presents the total organic carbon (TOC), reactive organic carbon (ROC), total suspended particulate (TSP), sulfur dioxide ($SO_2$), and carbon monoxide (CO) emissions in tons per year. These emissions have been further divided into specific and nonspecific sources.

## 3.2 Air Quality Impacts

### 3.2.1 Carbon Monoxide

To predict CO concentrations at the three selected intersections, the CALTRANS model named CALINE3 was used in a screening mode. Briefly, CALINE3 is a line source air quality model which is based on the Gaussian diffusion equation, and employs a mixing zone concept to characterize pollutant dispersal over the roadway. The purpose of the model is to assess air quality impacts near transportation facilities in the microscale region. Given source strength, meteorology, site geometry, and site characteristics, the model can reliably predict pollutant concentrations for receptors located within 150 meters of the roadway (Benson 1979). To define a point of maximum concentration, a representative receptor network was generated. These receptors were placed at 1.5 meters above ground ("nose height"). A surface roughness length of 100 cm was assumed for all cases. In addition, a generalized

TABLE 3-3

INPUTS INTO URBEMIS1 MODEL ANALYSIS

| Type of Unit | Two-Way Daily Traffic |
|---|---|
| Single-family housing (low density) | 10.0 |
| Planned units (medium density) | 8.0 |
| Condominiums (high density) | 6.6 |
| Shopping center (160,000 square feet) | 6.0/1,000 sq. ft. |
| Elementary school (900 students) | 1.0/student |

TABLE 3-4

EMISSIONS GENERATED BY THE
PROPOSED DOS VIENTOS RANCH DEVELOPMENT

E

PROJECT :DOS VIENTOS RANCH
PREPARED BY :LORI A. COYNER
CLEARING HOUSE NUMBER :560
PROJECTION YEAR :2000
DATE :06/17/85

| TYPE OF UNIT | SIZE |
|---|---|
| SINGLE FAMILY HOUSING | 1481 /UNITS |
| PLANNED UNIT DEVELOPMENT | 1527 /UNITS |
| CONDOMINIUMS | 932 /UNITS |
| SHOPPING CENTER 100-200K | 160000 /SQFT |
| ELEMENTARY SCHOOL | 900 /STUDENTS |

NONHOME BASED

| | TRIPS | VMT |
|---|---|---|
| NONWORK | 1831 | 6554 |
| WORK | 28 | 131 |
| TOTAL | 1859 | 6686 |

HOME BASED

| | TRIPS | VMT |
|---|---|---|
| HOME WORK | 8937 | 46919 |
| HOME-SHOP | 6882 | 23467 |
| HOME-OTHER | 16798 | 71223 |
| TOTAL | 32617 | 141610 |

NONHOME BASED EMISSIONS

CARBON MONOXIDE (T/Y)= 22
HYDROCARBONS (T/Y)= 6
NITROGEN OXIDES (T/Y)= 4

FUEL CONSUMPTION (GAL/YEAR)= 74546

HOME BASED EMISSIONS

CARBON MONOXIDE (T/Y)= 477
HYDROCARBONS (T/Y)= 141
NITROGEN OXIDES (T/Y)= 107

FUEL CONSUMPTION (GAL/YEAR)= 1876698

ASSUMES TEMPERATURE = 35

# TABLE 3-5

EMISSION INVENTORY FOR VENTURA COUNTY - 1979

OXNARD PLAIN AIRSHED

| | EMISSION CATEGORY | | EMISSIONS (TONS PER YEAR) TOC | ROC | NOX | TSP | SOX | CO |
|---|---|---|---|---|---|---|---|---|
| 1. | PETRO. PRODUCTION | - FIXED ROOF | 475 | 445 | 0 | 0 | 0 | 0 |
| 2. | PETRO. PRODUCTION | - SUMPS/PITS | 400 | 224 | 0 | 6 | 0 | 0 |
| 3. | PETRO. PRODUCTION | - OTHER FUGITIVE | 871 | 785 | 0 | 0 | 0 | 0 |
| 4. | PETRO. REFINING | - FIXED ROOF | 28 | 24 | 0 | 0 | 0 | 0 |
| 5. | PETRO. REFINING | - CONTROLLED OPERATIONS | 0 | 0 | 0 | 0 | 0 | 0 |
| 6. | PETRO. REFINING | - VALVES/FLANGES | 0 | 0 | 0 | 0 | 0 | 0 |
| 7. | PETRO. REFINING | - OTHER FUGITIVE | 0 | 0 | 0 | 0 | 0 | 0 |
| 8. | PETRO. MARKETING | - GAS. DISP. FAC. - STAGE I | 56 | 56 | 0 | 0 | 0 | 0 |
| 9. | PETRO. MARKETING | - GAS. DISP. FAC. - STAGE II | 854 | 854 | 0 | 0 | 0 | 0 |
| 10. | PETRO. MARKETING | - GAS. DISP. FAC. - OTHER | 148 | 148 | 0 | 0 | 0 | 0 |
| 11. | PETRO. MARKETING | - U/G BULK TANKS | 5 | 5 | 0 | 0 | 0 | 0 |
| 12. | PETRO. MARKETING | - FIXED ROOF - BULK | 3 | 3 | 0 | 0 | 0 | 0 |
| 13. | PETRO. MARKETING | - FLT. ROOF - GAS. (EXT.) | 0 | 0 | 0 | 0 | 0 | 0 |
| 14. | PETRO. MARKETING | - FIXED ROOF - GASOLINE | 0 | 0 | 0 | 0 | 0 | 0 |
| 15. | PETRO. MARKETING | - FIXED ROOF - OTHER | 193 | 190 | 0 | 0 | 0 | 0 |
| 16. | PETRO. MARKETING | - FLT. ROOF - OTHER | 23 | 22 | 0 | 0 | 0 | 0 |
| 17. | PETRO. MARKETING | - FIXED ROOF - ECE | 18 | 17 | 0 | 0 | 0 | 0 |
| 18. | PETRO. MARKETING | - FLT. ROOF - ECE | 3 | 2 | 0 | 0 | 0 | 0 |
| 19. | PETRO. MARKETING | - TRUCK LOAD - GASOLINE | 30 | 30 | 0 | 0 | 0 | 0 |
| 20. | PETRO. MARKETING | - TRUCK LOAD - OTHER | 83 | 75 | 0 | 0 | 0 | 0 |
| 21. | PETRO. MARKETING | - MARINE LOAD - CRUDE | 84 | 81 | 0 | 0 | 0 | 0 |
| 22. | PETRO. MARKETING | - FUGITIVE | 3 | 3 | 0 | 0 | 0 | 0 |
| 23. | ORGANIC SOLVENTS | - FILM COATING | 3 | 3 | 0 | 0 | 0 | 0 |
| 24. | ORGANIC SOLVENTS | - OTHER SURF. COATING | 217 | 217 | 0 | 0 | 0 | 0 |
| 25. | ORGANIC SOLVENTS | - DEGREASING | 112 | 42 | 0 | 0 | 0 | 0 |
| 26. | ORGANIC SOLVENTS | - DRYCLEANING - SYNTHETIC | 104 | 104 | 0 | 0 | 0 | 0 |
| 27. | ORGANIC SOLVENTS | - DRYCLEANING - NONSYNTHETIC | 37 | 37 | 0 | 0 | 0 | 0 |
| 28. | FOOD & AG. PROCESSING | | 270 | 270 | 0 | 0 | 0 | 0 |
| 29. | CHEMICAL | | 68 | 0 | 0 | 4 | 1 | 0 |
| 30. | METALLURGICAL | | 0 | 0 | 0 | 14 | 3 | 3 |
| 31. | MINERAL | | 0 | 0 | 0 | 168 | 0 | 0 |
| 32. | PAPER | | 39 | 39 | 0 | 36 | 0 | 0 |
| 33. | METAL FABRICATION | | 0 | 0 | 0 | 7 | 0 | 0 |
| 34. | FUEL COMBUSTION | - UTILITY BOILERS | 704 | 622 | 8032 | 827 | 8411 | 797 |
| 35. | FUEL COMBUSTION | - UTILITY TURBINES | 1 | 1 | 17 | 1 | 4 | 3 |
| 36. | FUEL COMBUSTION | - OIL PROD. - STEAM GEN. | 1 | 0 | 32 | 3 | 0 | 3 |
| 37. | FUEL COMBUSTION | - OIL PROD. - INTERNAL | 930 | 222 | 2313 | 9 | 0 | 294 |
| 38. | FUEL COMBUSTION | - OIL PROD. - OTHER | 1 | 0 | 41 | 3 | 0 | 6 |
| 39. | FUEL COMBUSTION | - REFINERY - EXTERNAL | 1 | 0 | 16 | 1 | 2 | 2 |
| 40. | FUEL COMBUSTION | - MARKETING - INTERNAL | 24 | 6 | 62 | 0 | 0 | 9 |
| 41. | FUEL COMBUSTION | - MARKETING - OTHER | 0 | 0 | 1 | 0 | 3 | 0 |
| 42. | FUEL COMBUSTION | - INDUSTRIAL - EXTERNAL | 5 | 3 | 220 | 20 | 48 | 25 |
| 43. | FUEL COMBUSTION | - INDUSTRIAL - INTERNAL | 7 | 8 | 3 | 1 | 4 | 143 |
| 44. | FUEL COMBUSTION | - INDUSTRIAL - PROCESS | 3 | 3 | 122 | 9 | 7 | 14 |
| 45. | FUEL COMBUSTION | - COMM./RESI. - EXTERNAL | 3 | 3 | 102 | 9 | 48 | 17 |
| 46. | INCINERATORS | | 0 | 0 | 1 | 2 | 0 | 1 |
| SUBTOTAL - SPECIFIC SOURCES | | | 5813 | 4468 | 11043 | 1135 | 8332 | 1333 |
| 47. | GASOLINE MARKETING (PERMIT EXEMPT TANKS/TRANSIT) | | 120 | 120 | 0 | 0 | 0 | 0 |
| 48. | ORGANIC SOLVENTS | - SURFACE COAT. - INDUSTRIAL | 417 | 417 | 0 | 0 | 0 | 0 |
| 49. | ORGANIC SOLVENTS | - SURFACE COAT. - AUTO/TRAFFIC | 51 | 51 | 0 | 0 | 0 | 0 |
| 50. | ORGANIC SOLVENTS | - SURFACE COAT. ARCHITECTURAL | 1037 | 1037 | 0 | 0 | 0 | 0 |
| 51. | ORGANIC SOLVENTS | - DEGREASING - SYNTHETIC | 125 | 125 | 0 | 0 | 0 | 0 |
| 52. | ORGANIC SOLVENTS | - DEGREASING - NONSYNTHETIC | 630 | 630 | 0 | 0 | 0 | 0 |
| 53. | ORGANIC SOLVENTS | - MISC. INDUSTRIAL | 112 | 112 | 0 | 0 | 0 | 0 |
| 54. | ORGANIC SOLVENTS | - SYNTHETIC DRYCLEANING | 144 | 144 | 0 | 0 | 0 | 0 |
| 55. | ORGANIC SOLVENTS | - DOMESTIC | 1009 | 895 | 0 | 0 | 0 | 0 |
| 56. | ASPHALT | | 244 | 244 | 0 | 0 | 0 | 0 |
| 57. | PESTICIDES | - SYNTHETIC - AGRICULTURAL | 1299 | 1299 | 0 | 0 | 0 | 0 |
| 58. | PESTICIDES | - SYNTHETIC - GOVERNMENTAL | 49 | 49 | 0 | 0 | 0 | 0 |
| 59. | PESTICIDES | - NONSYNTHETIC - GENERAL | 3117 | 3117 | 0 | 0 | 0 | 0 |
| 60. | PESTICIDES | - NONSYNTHETIC - CREOSOTE | 26 | 26 | 0 | 0 | 0 | 0 |
| 61. | PESTICIDES | - DOMESTIC | 39 | 39 | 0 | 0 | 0 | 0 |
| 62. | PAVED ROADS | | 0 | 0 | 0 | 7080 | 0 | 0 |
| 63. | UNPAVED ROADS | - CITY AND COUNTY | 0 | 0 | 0 | 42 | 0 | 0 |
| 64. | UNPAVED ROADS | - FARM ROADS | 0 | 0 | 0 | 622 | 0 | 0 |
| 65. | UNPAVED ROADS | - OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| 66. | AGRICULTURAL TILLING OPERATIONS | | 0 | 0 | 0 | 5225 | 0 | 0 |
| 67. | CONSTR. OPERATIONS | - RESIDENTIAL | 0 | 0 | 0 | 2481 | 0 | 0 |
| 68. | CONSTR. OPERATIONS | - COMMERCIAL | 0 | 0 | 0 | 1123 | 0 | 0 |
| 69. | CONSTR. OPERATIONS | - INSTITUTIONAL | 0 | 0 | 0 | 861 | 0 | 0 |
| 70. | CONSTR. OPERATIONS | - INDUSTRIAL | 0 | 0 | 0 | 503 | 0 | 0 |
| 71. | CONSTR. OPERATIONS | - ROADS | 0 | 0 | 0 | 2092 | 0 | 0 |
| 72. | WIND EROSION | | 0 | 0 | 0 | 821 | 0 | 0 |
| 73. | N/G COMBUSTION | - INDUSTRIAL | 3 | 1 | 104 | 6 | 1 | 13 |
| 74. | N/G COMBUSTION | - COMMERCIAL | 14 | 4 | 209 | 17 | 1 | 33 |
| 75. | N/G COMBUSTION | - RESIDENTIAL | 36 | 8 | 344 | 40 | 4 | 141 |
| 76. | OTHER FUEL COMB. | - INDUSTRIAL - DISTILLATE | 1 | 1 | 13 | 1 | 41 | 3 |
| 77. | OTHER FUEL COMB. | - COMMERCIAL - DISTILLATE | 3 | 3 | 55 | 5 | 178 | 13 |
| 78. | OTHER FUEL COMB. | - RESIDENTIAL - LPG | 1 | 1 | 5 | 1 | 0 | 1 |
| 79. | AGRICULTURAL BURNING | | 219 | 219 | 0 | 154 | 0 | 1333 |
| 80. | RANGE IMPROVEMENT BURNING | | 27 | 27 | 0 | 27 | 0 | 153 |
| 81. | ACCIDENTAL FIRES | - WILDFIRES | 343 | 892 | 15 | 447 | 0 | 2914 |
| 82. | ACCIDENTAL FIRES | - STRUCTURAL FIRES | 9 | 9 | 3 | 4 | 0 | 100 |
| 83. | ACCIDENTAL FIRES | - AUTO FIRES | 3 | 3 | 6 | 7 | 0 | 19 |
| 84. | BACKYARD BURNING | | 167 | 133 | 0 | 3 | 18 | 2644 |
| 85. | UTILITY EQUIPMENT | | 779 | 795 | 108 | 34 | 24 | 17415 |
| 86. | CHARBROILING | | 41 | 41 | 0 | 123 | 0 | 0 |
| 87. | DRILLING OPERATIONS (ONSHORE) | | 23 | 22 | 264 | 17 | 18 | 58 |
| 88. | TRANSPORT REFRIGERATION UNITS | | 55 | 51 | 53 | 113 | 223 | 818 |
| 89. | OFF-ROAD VEHICLES | - MOTORCYCLES | 113 | 103 | 3 | 2 | 0 | 244 |
| 90. | OFF-ROAD VEHICLES | - FOUR-WHEEL DRIVE VEHICLES | 22 | 20 | 15 | 2 | 1 | 221 |
| 91. | OFF-ROAD VEHICLES | - HEAVY-DUTY CONSTR. EQUIPMENT | 76 | 71 | 547 | 38 | 27 | 317 |
| 92. | OFF-ROAD VEHICLES | - FARM EQUIPMENT | 248 | 244 | 493 | 40 | 43 | 2237 |
| 93. | OFF-ROAD VEHICLES | - INDUSTRIAL VEHICLES | 56 | 53 | 115 | 4 | 4 | 474 |
| 94. | COMMERCIAL/RECREATIONAL BOATS | | 127 | 119 | 163 | 12 | 12 | 426 |
| 95. | SHIPS (IN PORT) | | 10 | 9 | 37 | 17 | 233 | 9 |
| 96. | AIRCRAFT | - COMMERCIAL | 16 | 13 | 35 | 0 | 1 | 40 |
| 97. | AIRCRAFT | - AGRICULTURAL | 10 | 9 | 4 | 1 | 1 | 19 |
| 98. | AIRCRAFT | - MILITARY | 95 | 88 | 111 | 222 | 15 | 318 |
| 99. | AIRCRAFT | - CIVIL | 57 | 53 | 16 | 0 | 1 | 2104 |
| 100. | RAILROADS | | 97 | 93 | 338 | 23 | 52 | 118 |
| 101. | ON-ROAD MOTOR VEH. | - LOCAL POPULATION RELATED | 12143 | 10444 | 7879 | 1072 | 274 | 79994 |
| 102. | ON-ROAD MOTOR VEH. | - COMMERCIAL/INDUSTRIAL | 543 | 477 | 2472 | 300 | 395 | 13074 |
| 103. | ON-ROAD MOTOR VEH. | - FARM COUNTY | 301 | 264 | 929 | 43 | 102 | 3264 |
| SUBTOTAL - NONSPECIFIC SOURCES | | | 34364 | 27438 | 15683 | 23579 | 1475 | 123339 |
| GRAND TOTAL - SPECIFIC AND NONSPECIFIC SOURCES | | | 38179 | 31906 | 26748 | 24734 | 19797 | 124643 |

set of meteorological scenarios was created to simulate worst-case conditions (Table 3-6).

For the simulation of peak hour afternoon traffic periods, neutral stability (Class 4) was assumed to occur with light winds (1.0 m/s). For each intersection a total of 36 wind directions were modeled, to ensure that maximum concentrations downwind of the intersections would be identified. Since the results from CALINE3 represent 1-hour concentrations, the following formulae, which assume that peak traffic occurs for two of the eight hours, were used to estimate 8-hour concentrations. A background CO concentration of 3 ppm was assumed (Macaluso 1981).

1) 1-hr peak - background = x

2) 0.319 (x) = y

3) $\frac{6(y) + 2(x)}{8}$ + background = z

where: x = CO due to traffic
y = 1-hour nonpeak CO
z = 8-hour average CO

As stated earlier, the Caline3 model was used to model the maximum intersections. Emissions generated from Mobile3 (Table 3-2) were used in the CO modeling. Due to the varying configurations of each of the intersections, different traffic speeds were used at each intersection. Table 3-7 displays the assumed speed used in the modeling analysis. Figures 3-2 through 3-10 show the approach angles and the physical road configurations for each intersection for both the existing and future roadways. To assume worst-case scenarios, the roadways were modeled at grade and non-elevation. Table 3-8 indicates peak 1-hour and 8-hour average CO concentrations predicted by the model for present and future (2000 with the proposed Dos Vientos Ranch Development as well as other proposed developments) cases at each selected intersection. As can be seen, no violations of the 1-hour or 8-hour CO standards are predicted to occur at any of the intersections. The maximum 1-hour CO concentrations occurred near the 101 offramp and Lynn road, with a maximum value of

TABLE 3-6

METEOROLOGICAL SCENARIOS USED AS INPUT TO CALINE3

| NO. | WIND SPD (M/SEC) | WIND DIR (DEG) | STAB (CLASS) | MIX HT (M) |
|---|---|---|---|---|
| 1 | 1.0 | 10.0 | 4 | 1000.0 |
| 2 | 1.0 | 20.0 | 4 | 1000.0 |
| 3 | 1.0 | 30.0 | 4 | 1000.0 |
| 4 | 1.0 | 40.0 | 4 | 1000.0 |
| 5 | 1.0 | 50.0 | 4 | 1000.0 |
| 6 | 1.0 | 60.0 | 4 | 1000.0 |
| 7 | 1.0 | 70.0 | 4 | 1000.0 |
| 8 | 1.0 | 80.0 | 4 | 1000.0 |
| 9 | 1.0 | 90.0 | 4 | 1000.0 |
| 10 | 1.0 | 100.0 | 4 | 1000.0 |
| 11 | 1.0 | 110.0 | 4 | 1000.0 |
| 12 | 1.0 | 120.0 | 4 | 1000.0 |
| 13 | 1.0 | 130.0 | 4 | 1000.0 |
| 14 | 1.0 | 140.0 | 4 | 1000.0 |
| 15 | 1.0 | 150.0 | 4 | 1000.0 |
| 16 | 1.0 | 160.0 | 4 | 1000.0 |
| 17 | 1.0 | 170.0 | 4 | 1000.0 |
| 18 | 1.0 | 180.0 | 4 | 1000.0 |
| 19 | 1.0 | 190.0 | 4 | 1000.0 |
| 20 | 1.0 | 200.0 | 4 | 1000.0 |
| 21 | 1.0 | 210.0 | 4 | 1000.0 |
| 22 | 1.0 | 220.0 | 4 | 1000.0 |
| 23 | 1.0 | 230.0 | 4 | 1000.0 |
| 24 | 1.0 | 240.0 | 4 | 1000.0 |
| 25 | 1.0 | 250.0 | 4 | 1000.0 |
| 26 | 1.0 | 260.0 | 4 | 1000.0 |
| 27 | 1.0 | 270.0 | 4 | 1000.0 |
| 28 | 1.0 | 280.0 | 4 | 1000.0 |
| 29 | 1.0 | 290.0 | 4 | 1000.0 |
| 30 | 1.0 | 300.0 | 4 | 1000.0 |
| 31 | 1.0 | 310.0 | 4 | 1000.0 |
| 32 | 1.0 | 320.0 | 4 | 1000.0 |
| 33 | 1.0 | 330.0 | 4 | 1000.0 |
| 34 | 1.0 | 340.0 | 4 | 1000.0 |
| 35 | 1.0 | 350.0 | 4 | 1000.0 |
| 36 | 1.0 | 360.0 | 4 | 1000.0 |

TABLE 3-7

TRAFFIC SPEEDS AND VEHICLE EMISSION RATES USED IN CALINE3 MODELING ANALYSIS

| Intersection | | Average Speed (mph) | Exhaust CO (gm/mile) | Average Speed (mph) | Exhaust CO (gm/mile) |
|---|---|---|---|---|---|
| Wendy and Lynn | Northbound | 10 | 96.4 | 10 | 41.5 |
| | Southbound | 10 | 96.4 | 10 | 41.5 |
| | Westbound | 10 | 96.4 | 15 | 33.0 |
| | Eastbound | 10 | 96.4 | 15 | 33.0 |
| Reino and Lynn | Northbound | 45 | 21.0 | 10 | 41.5 |
| | Southbound | 45 | 21.0 | 10 | 41.5 |
| | Westbound | 10 | 96.4 | 15 | 33.0 |
| | Eastbound | 10 | 96.4 | 15 | 33.0 |
| Ventu Park and Lynn | Northbound | 10 | 96.4 | 10 | 41.5 |
| | Southbound | 10 | 96.4 | 10 | 41.5 |
| | Westbound | 10 | 96.4 | 15 | 33.0 |
| | Eastbound | 10 | 96.4 | 15 | 33.0 |
| 101 E. Onramp and Lynn | Northbound | 45 | 21.0 | 45 | 9.1 |
| | Southbound | 45 | 21.0 | 45 | 9.1 |
| | Eastbound | 45 | 21.0 | 45 | 41.5 |
| 101 Offramp and Lynn | Northbound | 10 | 96.4 | 10 | 41.5 |
| | Southbound | 10 | 96.4 | 10 | 41.5 |
| | Westbound | 10 | 96.4 | 10 | 41.5 |
| Dos Vientos and Lynn | Northbound | -- | -- | 10 | 41.5 |
| | Westbound | -- | -- | 10 | 41.5 |
| | Eastbound | -- | -- | 10 | 41.5 |

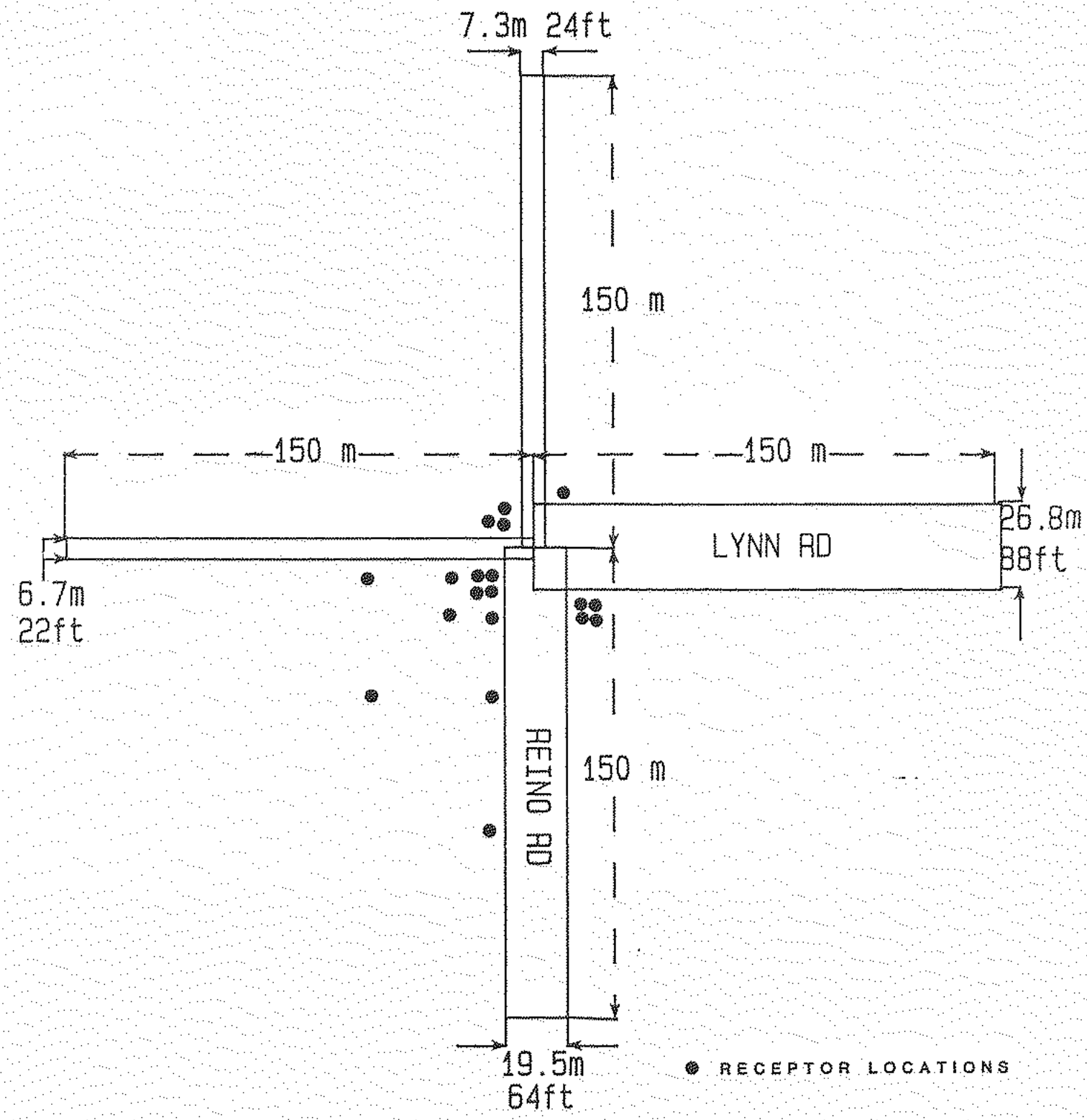



Figure 3-2. Existing Intersection of Reino and Lynn Roads

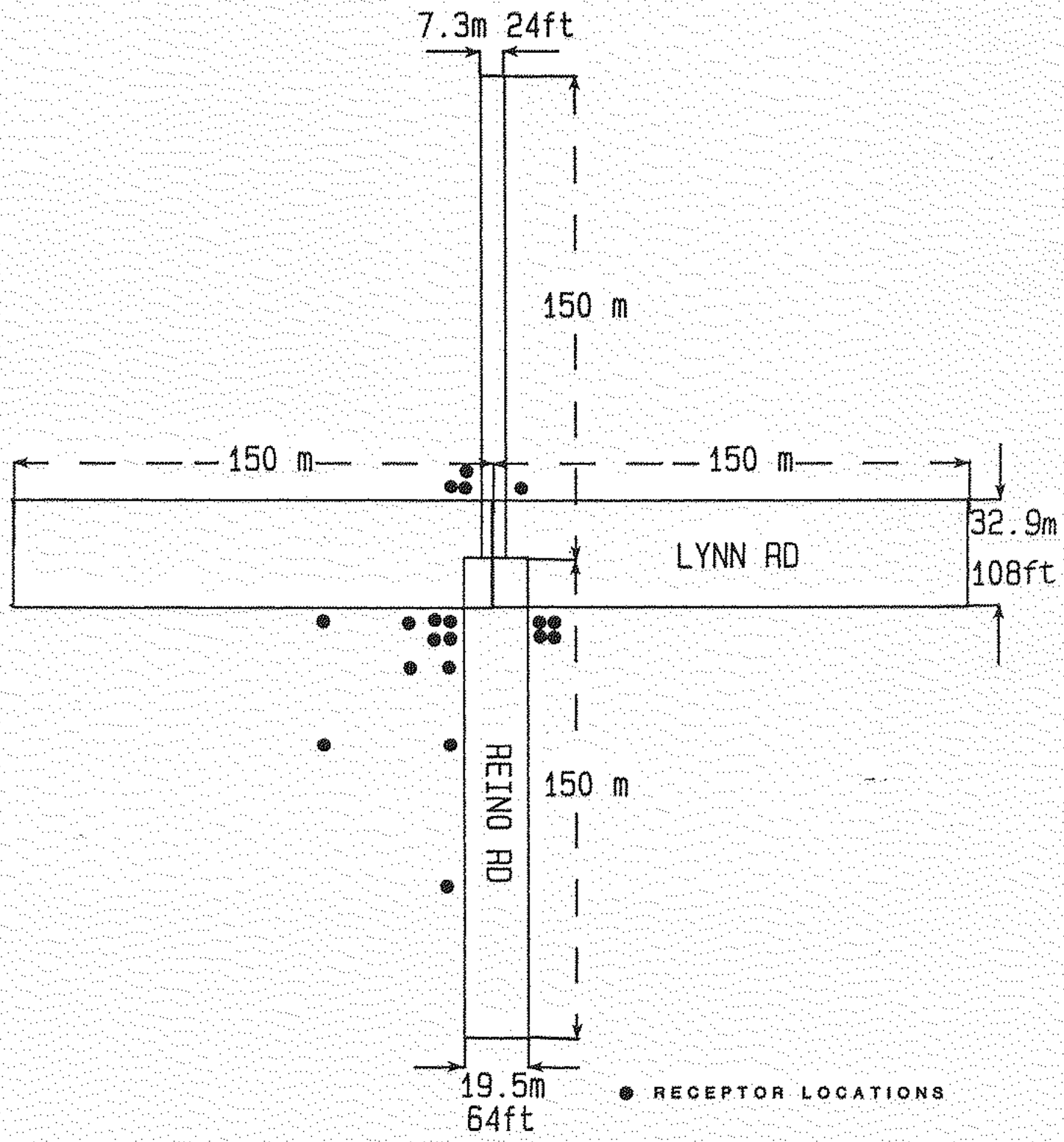



Figure 3-3. Proposed Intersection of Reino and Lynn Roads

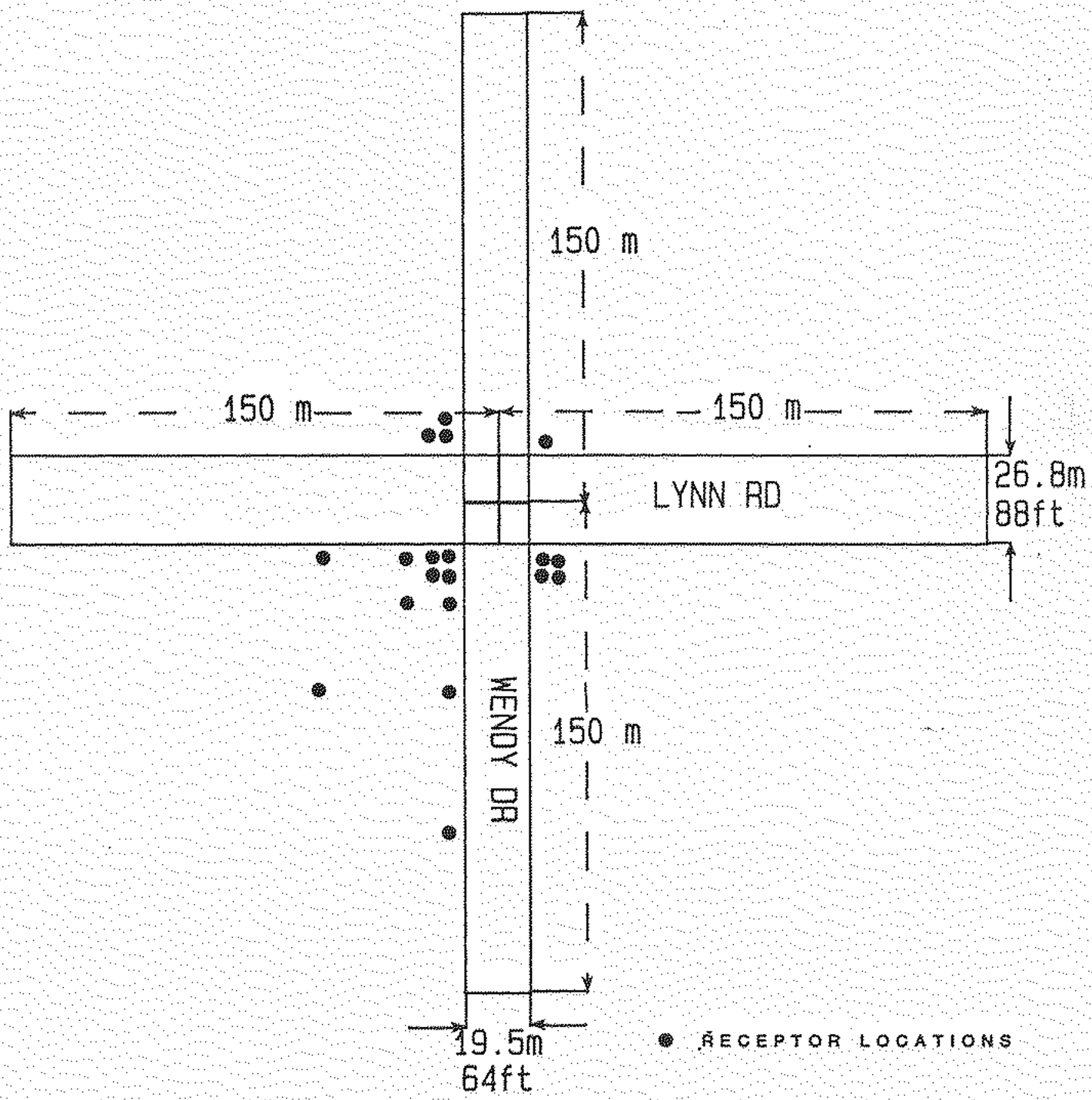



Figure 3-4. Existing Intersection of Wendy Drive and Lynn Road

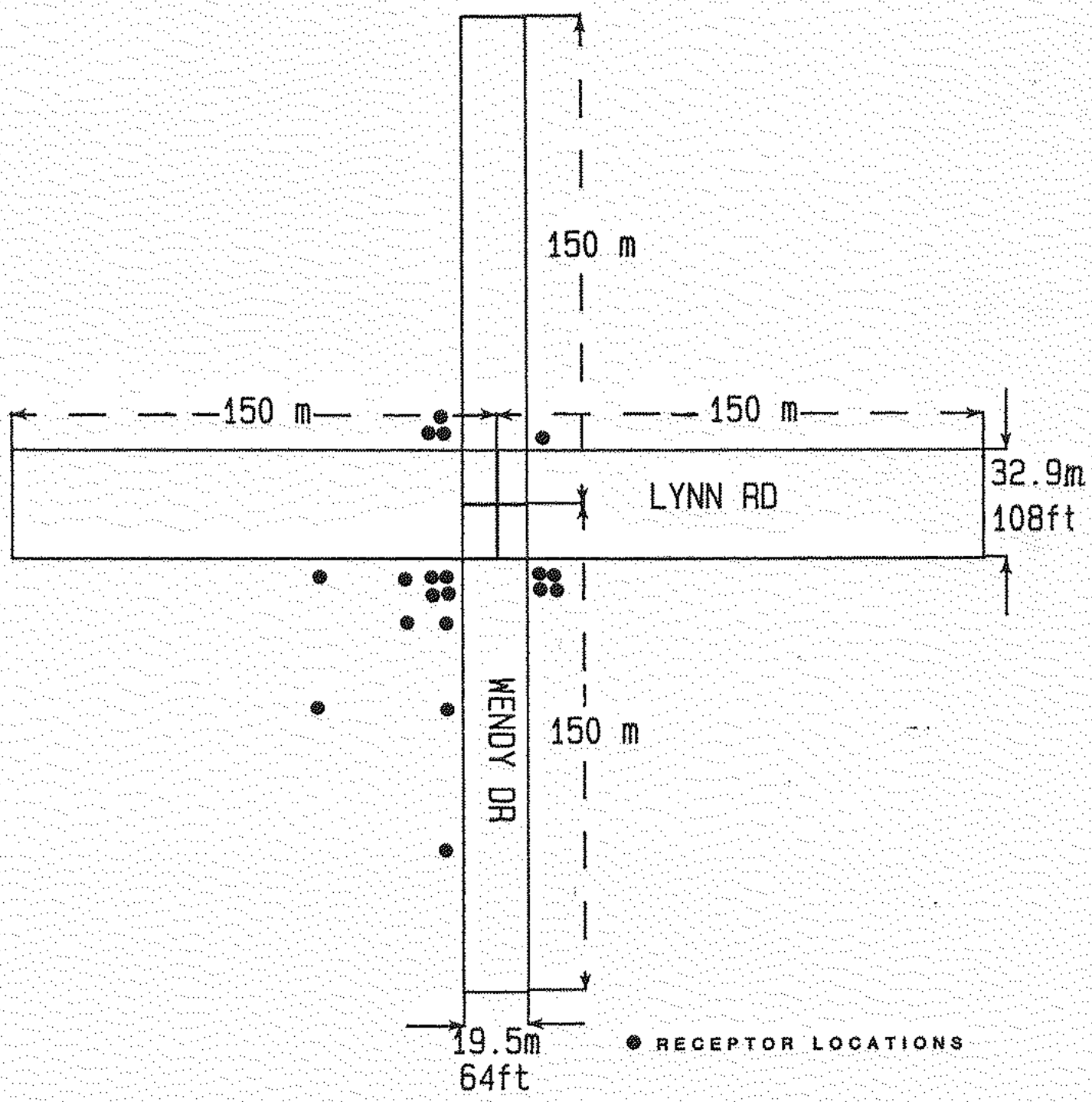



Figure 3-5. Proposed Intersection of Wendy Drive and Lynn Road

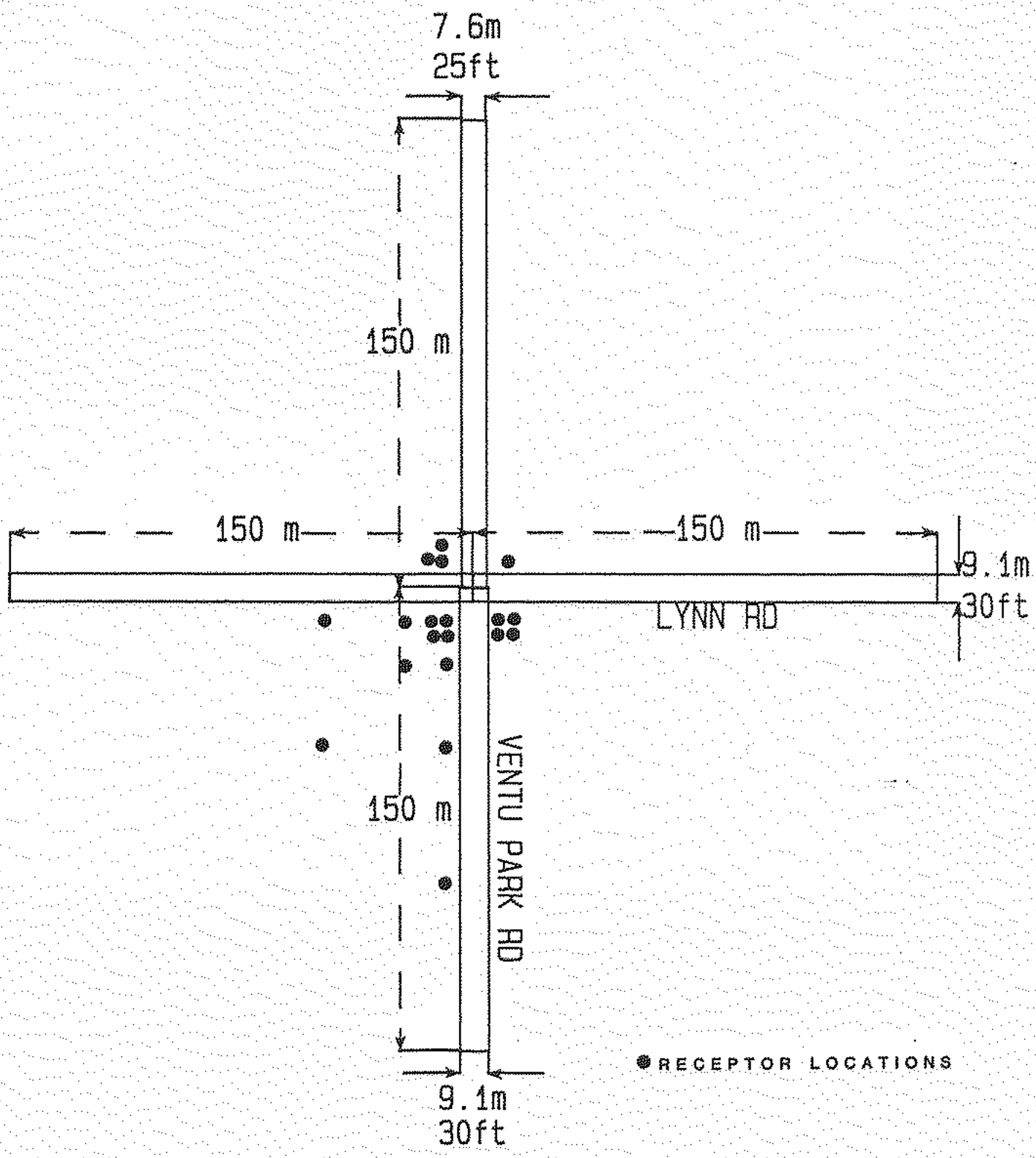



Figure 3-6. Existing Intersection of Ventu Park and Lynn Roads

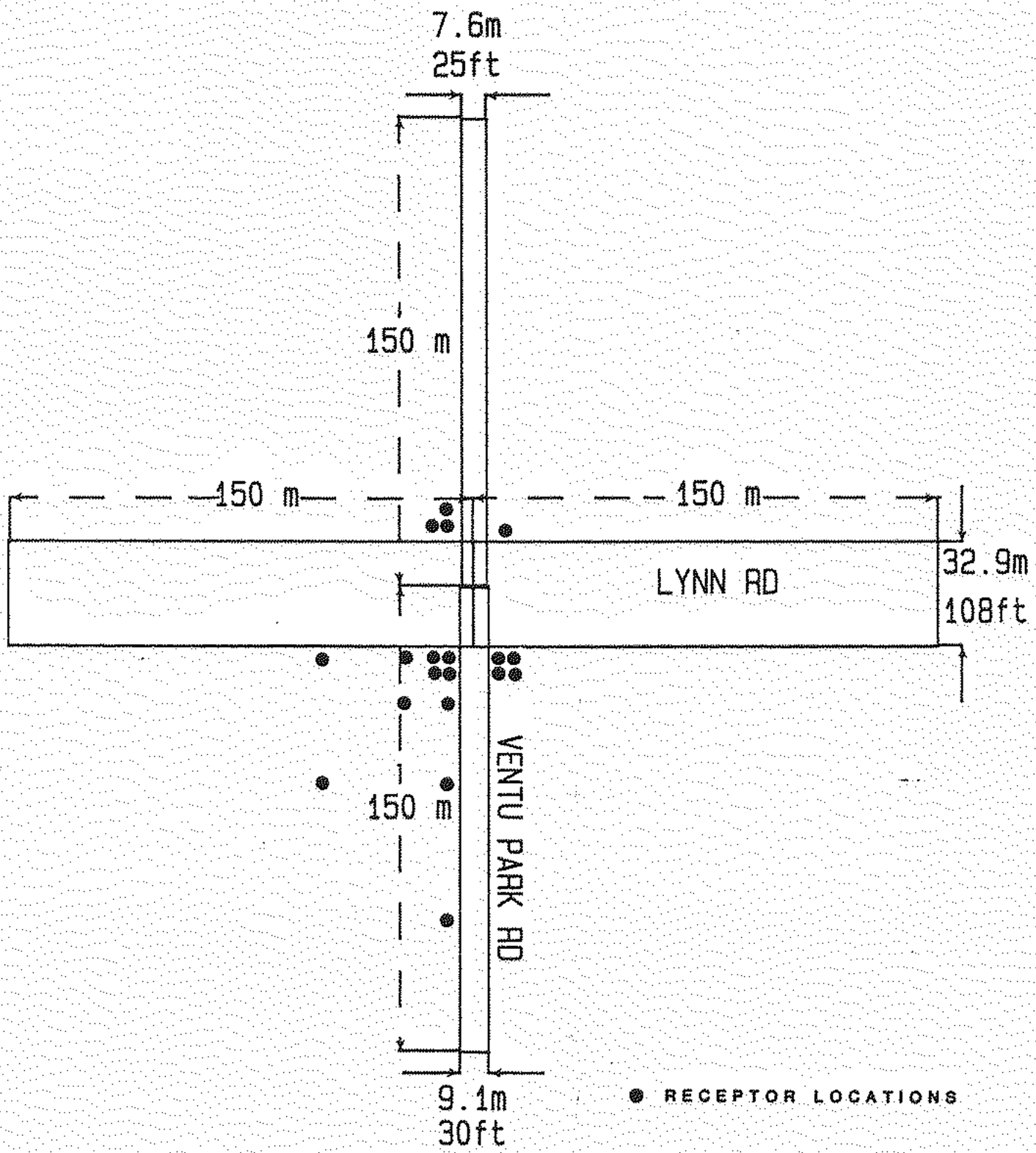



Figure 3-7. Proposed Intersection of Ventu Park and Lynn Roads

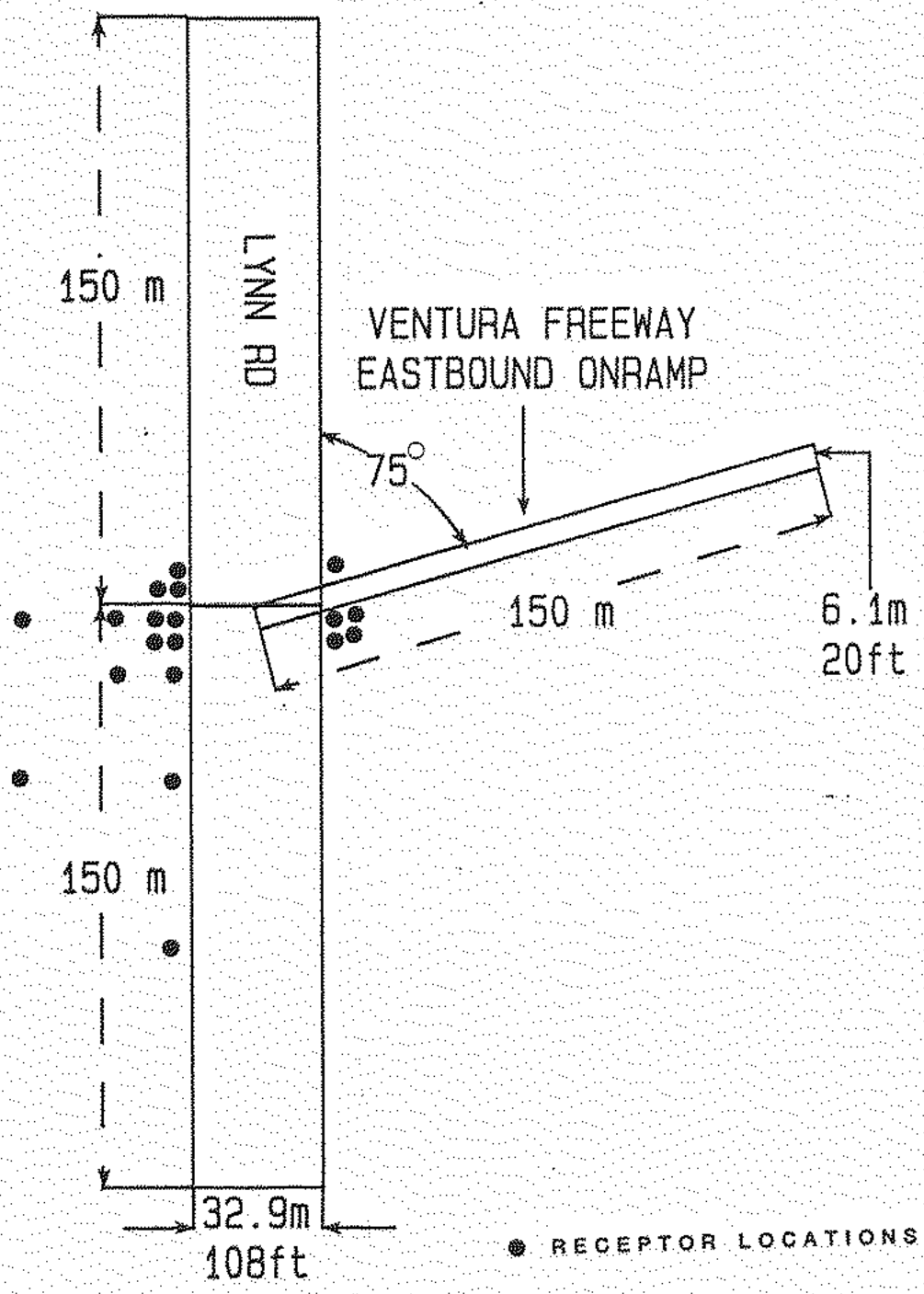



Figure 3-8. Existing and Proposed Intersection of Lynn Road and the Ventura Freeway Eastbound Onramp

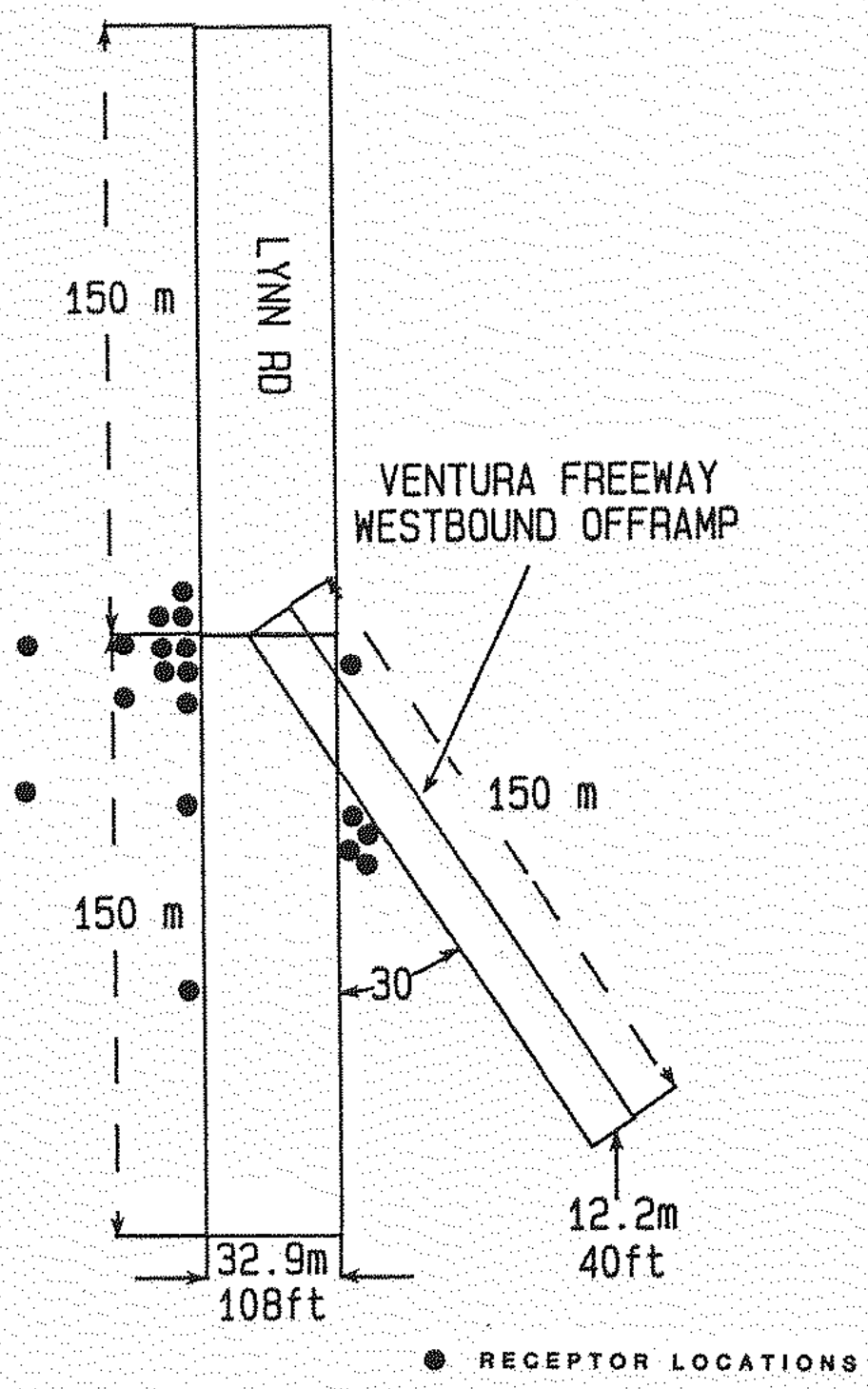



Figure 3-9. Existing and Proposed Intersection of Lynn Road and the Ventura Freeway Westbound Offramp

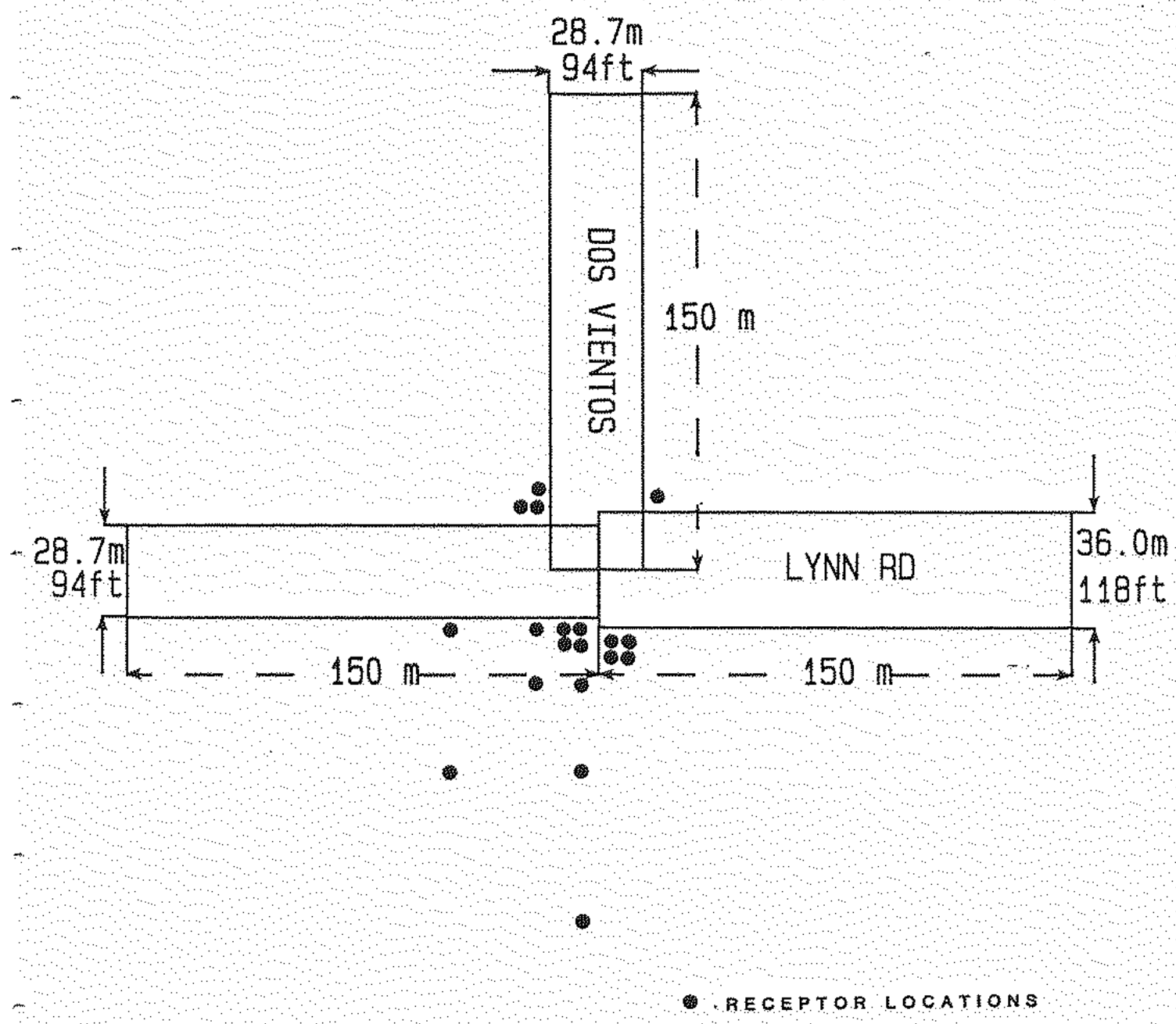



Figure 3-10. Proposed Intersection of Dos Vientos Parkway and Lynn Road

TABLE 3-8

PEAK CARBON MONOXIDE CONCENTRATIONS PREDICTED BY CALINE3*

| Intersection | Base Year 1-hour (ppm) | Base Year 8-hour (ppm) | Future Year 1-hour (ppm) | Future Year 8-hour (ppm) |
|---|---|---|---|---|
| 1. Wendy and Lynn | 3.7 | 3.3 | 4.3 | 3.6 |
| 2. Reino and Lynn | 3.6 | 3.3 | 4.4 | 3.7 |
| 3. Ventu Park and Lynn | 4.9 | 3.9 | 4.6 | 3.8 |
| 4. 101 E. Onramp and Lynn | 3.8 | 3.4 | 3.7 | 3.3 |
| 5. 101 E. Offramp and Lynn | 7.1 | 5.0 | 5.5 | 4.2 |
| 6. Dos Vientos and Lynn | --- | --- | 5.1 | 4.0 |

*California 1-hour and 8-hour CO standards are 23 ppm and 9 ppm, respectively.

7.1 ppm for the existing case and 5.5 ppm for the future case. These are only 35.5 and 27.5 percent, respectively, of the 1-hour California standard of 20 ppm. Correspondingly, the maximum 8-hour CO concentrations were predicted to be 5.0 ppm and 4.2 ppm for the existing and future cases at the same location. These are 55.6 and 46.7 percent, respectively, of the California 8-hour standard of 9 ppm.

### 3.2.2 TSP (Short-Term Impacts)

The 24-hour TSP standard is not expected to be exceeeded due to fugitive emissions from construction activity. These impacts were not analyzed by modeling because of their temporary and localized nature and probable lack of health effects (due to the fact that primarily large, nonrespirable particles will be emitted). Currently, city ordinances for grading and control of nuisance levels exist. With adequate control measures during construction, such as watering of fugitive dust-prone areas, these emissions may be kept to a minimum.

### 3.2.3 Ozone (Area-wide) Air Quality Impacts

Background

The creation of atmospheric ozone involves complex interactions of chemistry and meteorology. Ozone is a secondary pollutant; i.e., it is not emitted directly from an emission source, but is formed in the atmosphere through the chemical reactions of precursor pollutants with sunlight. Ambient levels of ozone are dependent upon locally emitted oxides of nitrogen ($NO_x$) and reactive organic compounds (ROC), local sunlight intensity, and the transport of ozone and its precursors from other areas by prevailing meteorological conditions.

Ozone is formed basically from $NO_x$ through a series of reactions initiated by the irradiation of nitrogen dioxide ($NO_2$) by sunlight. However, the amount of ROC present in the local atmosphere controls the concentration of ozone. An equilibrium is established between ozone, nitric oxide (NO), and nitrogen dioxide ($NO_2$) which keeps the ambient level of ozone low in the absence of substantial amounts of ROC. High

levels of ROC upset this balance toward higher concentrations of ozone. Meteorological conditions can also strongly affect local ozone concentrations. The chemical reaction rates can be influenced by local sunlight intensity and temperature. The effect of transported ozone and precursors into and out of a given area is largely determined by the inversion height and its diurnal variation and by prevailing wind speeds and trajectories.

Impacts

Results from URBEMIS1 (Randall 1983), a modeling technique developed by the CARB to predict emissions of CO, HC, and $NO_x$ as a function of the development type and the geography location are shown in Table 3-4. Under the new guidelines adopted by the APCD in July 1983, any development emitting greater than 13.7 tons/year of reactive organic compounds (ROC) or oxides of nitrogen ($NO_x$) may be considered as having a significant impact on attainment of the ozone standard (Johnson 1983). From Table 3-4, the estimated emissions from the proposed development would be 137 tons/year of ROC and 104 tons/year of $NO_x$. Based upon these criteria, this development will have a significant impact on attainment of the ozone standard. Thus, mitigation measured may be required to reduce the emissions to below 13.7 tons/year for both pollutants. These measures are discussed in Section 4.

# 4. OTHER PROJECT CONSIDERATIONS

## 4.1 Mitigation Measures

### 4.1.1 Local

CO emissions from increased number of vehicles would be the primary local impact from the proposed project. Due to federally required emission controls on future automobiles, the CO concentrations are predicted to decrease by 1987. Therefore, the main mitigation efforts are expected to result from regulations at the federal level. During the construction phase, TSP emissions are expected to have a temporary impact in the area near the project site. Chapter 3, Section 7-3.09b of the City of Thousand Oaks Municipal Code addresses control of fugitive dust as it relates to grading. Dust control is listed as an item for which the applicant/grading contractor is responsible. The City enforces this section of the Code through grading inspectors who regularly visit grading locations throughout the City. Recommendations as to specific dust control measures are made by the inspectors as deemed necessary. In addition, the City is responsive to fugitive dust complaints from neighboring residents.

### 4.1.2 Areawide

An assessment of the project emissions and subsequent air quality impact was made for various pollutants likely to increase as a result of this project. Various mitigation measures can be incorporated in the project design to reduce trip generation and energy consumption. Trip generation can primarily be reduced by providing public access to alternate forms of transportation. These measures would include the incorporation of bike lanes and bus service to and from the development. In addition, funding representatives for Commuter Computer carpooling may also be required. Mitigation measures involving energy consumption conservation involve developing integrated energy systesm in which water and/or space heating may be provided for more than one dwelling unit by a centralized system. Also, when taking building design into account,

energy conservation measures can be significant in reducing emissions. In addition to adherence to the state's residential construction standards, other conservation techniques can be implemented. Examples of these techniques include avoidance of large glass areas, efficient use of shading, placement of high usage rooms (e.g., living room) to avoid summer sun heating and maximize winter sun heating, and proper usage of attic fans or other ventilation devices. In addition, electricity usage can be reduced by measures such as maximization of natural lighting and implementation of solar heating systems. In any case, the mitigation measured presented for residential developments either cannot be quantified or may not be appropriate for the development.

Quantification of the emission reductions due to bike lanes and bike paths are not possible, according to the VCAPCD (1983) due to the lack of data on the modal shift from automobiles to bikes. However, as a part of the proposed development, an extensive bike path and lane system has been developed in order to maximize the use of this system for recreational and safety use (Haaland 1985). Reduction of emissions can be quantified as a result of the funding of Commuter Computer representatives. Based upon the emissions in Section 3, approximately 127.3 tons/year and 93.3 tons/year reductions for ROC and $NO_x$ would be needed to meet the 13.7 tons/year criteria. According to the VCAPCD (1983), 0.0174 tons of ROC and 0.0248 tons of $NO_x$ will be reduced for each carpool funded. Thus, 7316.1 carpools would be needed for the appropriate ROC reduction, and 3762.1 carpools would be needed for the $NO_x$ reductions. It is estimated that each carpool costs $30.74 to fund, and, therefore, the costs for the required emission reductions for this mitigation measure is estimated to be $224,900. This cost was based upon the carpools needed to be funded by the ROC reduction criteria, since the appropriate $NO_x$ emission reduction would automatically be included.

Centralized water heating or space heating is appropriate for residential developments involving high-density apartment or hotel-type structures. However, in the Dos Vientos Development, the highest density will be townhomes. Thus, it would not be efficient to use centralized heating systems in tyis type of configuration.

As with bike paths, emission reductions cannot be quantified for building designs which allow for maximum use of energy conservation

measures. It should be noted, however, that building energy designs will reduce $NO_x$ emissions by reducing the amount of space heating necessary.

Except for ozone and TSP (under current standards), the Ventura County APCD believes that air quality standards will be met in 1987 (Ventura APCD 1982a). The APCD's conclusions are summarized below.

Ozone

Attainment of the ozone NAAQS will not occur in the Oxnard Plain airshed under conditions of current emission controls, plus controls scheduled for adoption, plus reasonably available controls proposed for adoption in the AQMP, although a substantial portion of the required ozone reduction will occur. Attainment would require extremely severe measures that at present are technically, socially and economically intractable and that are expected to remain so indefinitely.

Particulates

Attainment of current TSP standards will not occur countywide, based on the 1979 inventory and rollback assumptions used in this AQMP. Attainment would require extremely severe measures. However, a change to an NAAQS for TSP that excludes a significant portion of particulate that is not health-related is anticipated in 1983 under new revisions to the Clean Air Act which are forthcoming.

Sulfate, Nitrogen Dioxide and Lead

State standards for sulfate, nitrogen dioxide and lead have been or will be attained. Ambient sulfate in the county originates from fuel oil used in the county's two power plants; sulfur content of the fuel combusted at those plants has been reduced 50% over the period from 1977 to 1979. Significant reductions in countywide nitrogen oxide emissions due to combustion control processes are expected to lead to attainment of the nitrogen dioxide standard. Ambient lead particulate in the county originates almost entirely from use of leaded gasoline, which continues to be replaced by unleaded fuel required in newer cars with catalytic

converters. It is expected that the lead standard will be attained as use of leaded gasoline correspondingly decreases.

## 4.2 Cumulative Impacts and Consistency Demonstration

The Dos Vientos Ranch Development was developed within the Thousand Oaks General Plan. Therefore, it is not anticipated that there will be an incremental impact of this project that is not accounted for in the General Plan which was amended and approved. There are no large emission sources within this study area other than those associated with automobiles. Furthermore, development of this project will be regulated by the city's Residential Development Control System (Measure "A") which is a basis for future growth estimates through 1990.

The criteria for determining the project consistency set forth under the AQMP process required that the population increases for the project be consistent with the annual anticipated population increase for the area.

Table 4-1 presents population statistics for Ventura County from the AQMP (Ventura APCD 1982a). The Dos Vientos Development is located in the area entitled "South Half." This area will be within the city's year 1990 and 2000 urban limits and is subject to the Growth Control-Ordinance (Measure "A"). It is assumed that 3008 single-family units having 3.64 persons/unit and 932 multi-family units with 2.1 persons/unit will be added as a result of this proposed development.

The following demonstrates consistency with the growth plan for the South Half:

| | Population |
|---|---|
| Population forecast for January 1, 1985 | 584,489 |
| Existing population as of March 1, 1983 | 520,680 |
| Available population allocation remaining for the South Half | 63,809 |
| Estimated population increase from the proposed project | 12,906 |
| Remaining population allocation for the South Half | 50,503 |

TABLE 4-1

AQMP POPULATION FORECASTS BY SUBAREAS

| Area | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|---|---|---|---|---|---|---|---|
| Ojai Valley | 24684 | 25067 | 25271 | 25754 | 26237 | 26720 | 27202 |
| North Half | 475 | 487 | 487 | 509 | 531 | 553 | 575 |
| South Half | 481044 | 504359 | 525752 | 532939 | 553682 | 569988 | 584489 |
| TOTAL | 506203 | 529913 | 541510 | 559202 | 580450 | 597261 | 612266 |

Source: Ventura AQMP 1982a.

Since the project will not be completed for three years and the total development is consistent with the AQMP Growth Plan for 1985, it follows that consistency will be met for 2000 under the current regulations.

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# Air Quality Summary (G1)

# 1984

# AIR QUALITY

# DATA SUMMARY

(Including 1985 OZONE DATA)

Ventura County Air Pollution Control District
800 South Victoria Avenue
Ventura, CA 93009
654-2668

VENTURA COUNTY
APCD

# 1984 AIR QUALITY DATA

Ventura County is comprised of several inland valleys that open onto the Ventura coastal area and the Oxnard coastal plain. The combination of emissions, topography, and the adjacent ocean produce meteorological conditions conducive to ozone formation. On most days wind flow is dominated by a land/seabreeze regime with the seabreezes of greatest velocity and duration. The majority of ozone precursors (hydrocarbons and oxides of nitrogen) are emitted in the coastal areas. These emissions are transported by the prevailing westerly surface winds (afternoon seabreezes), are compounded with inland emissions, and arrive in inland valleys at peak solar insolation hours. In the inland valleys, ozone, which is produced photochemically, exceeds the National Ambient Air Quality Standard (NAAQS), an hourly average of 0.12 parts per million (ppm) with a greater frequency than in coastal areas. This is a result of the timing of the wind transport into the valleys; the spatial relationship of the emissions; and meteorological factors, such as strong inversions that limit vertical dispersion and minimal cloud cover that enhances atmospheric transparency to solar radiation. Other pollutants are transported in a similar manner, however the maximum concentrations occur during the night and early morning hours when weak winds and strong radiation inversions exist. Oxides of nitrogen react photochemically to produce nitrogen dioxide with the greatest concentrations found during the morning hours as ozone levels begin to climb. Carbon monoxide, sulfur dioxide and nitrogen dioxide have not exceeded their NAAQS in recent years. Particulate, measured as TSP, exceeds its NAAQS. These pollutants are described in greater detail in subsequent sections.

The District's air monitoring network is comprised of six monitoring stations. These stations characterize the ambient air quality and meteorology in the following areas: Ojai Valley; Piru - Upper Santa Clara River Valley; El Rio - Inland Coastal Plain and Lower Santa Clara River Valley; Ventura - Coastal Shore and Lower Ventura River Valley; Simi Valley - Moorpark and Simi Valley; and Thousand Oaks - Conejo Valley.

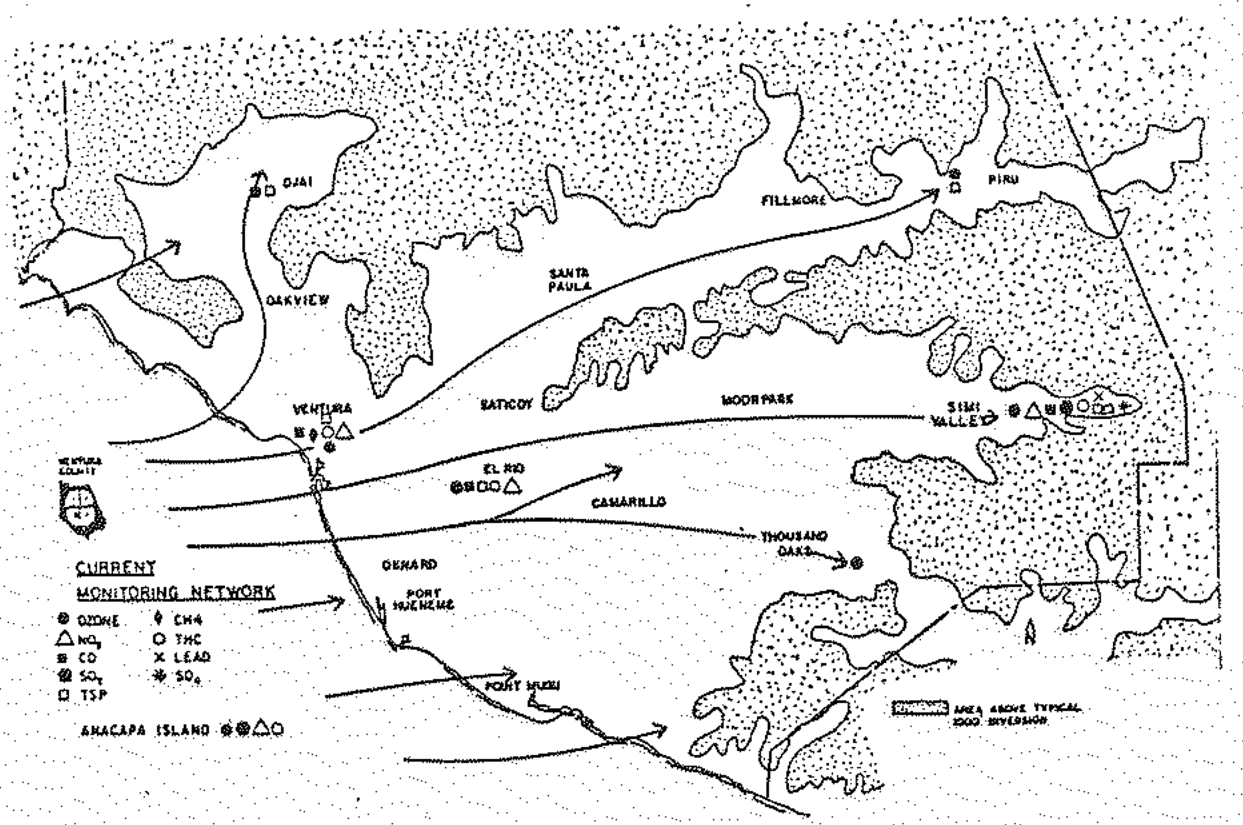
The data collected at these stations are used to monitor the progress of various Federal, State, and local control strategies designed to meet the National Ambient Air Quality Standards; provide base information for analyzing the air quality impact of proposed new projects; and establish the degree of additional emission controls that will be needed in the future to meet the mandated air quality standards.

Although data has been recorded since 1971, this report only includes data measured between 1975 and 1984. This ten year period is considered to be the most reliable and of sufficient duration for statistically valid trend analyses. It should be noted that the 1984 data contained in this report are preliminary and are subject to revision or deletion. Data are not considered final until published by the Air Resources Board in the quarterly California Air Quality Data report.

Criteria developed by the Air Resources Board are used in this report whenever possible to classify data and statistics as representative. Whenever data are available, whether sufficient or not, the statistics are computed and reported; however, an asterisk (*) is printed next to the summary statistic when a criterion for representativeness is not met. Data users should not presume that the presence of an asterisk is conclusive evidence of "non-representativeness." It only means that caution must be exercised in the use of such a statistic because the data set upon which it is based is less than reasonably complete. In general, the statistics are considered representative if 75 percent of the possible values are available and are equally distributed over the entire time period.

Figure 1

CURRENT AIR MONITORING NETWORK
WITH
PREVAILING AFTERNOON SURFACE WIND STREAMLINES



## Ozone

The NAAQS for ozone is exceeded in a given year if the maximum hourly concentration exceeds 0.12 ppm on more than three days in the past three years; a concentration greater than 0.12 ppm is called an adverse level. All stations monitoring ozone in Ventura County have experienced adverse levels annually. Significant health effects have been documented at concentrations above the NAAQS, including changes in lung function, aggravation of chronic respiratory and other disease symptoms, increased asthma attacks and decreased physical performance levels during strenuous activities. These effects are more severe under conditions of long term exposure.

As mentioned previously, ozone levels in Ventura County are generally lowest along the coast and increase along an inland traverse. Historic ozone data have shown that:

1) there is an annual trend showing lowest daily maximum hour concentrations along the coast with concentrations increasing further inland, and

2) there is an annual trend showing the lowest frequency of days exceeding the NAAQS along the coast, and the frequency progressively increases further inland.

Ozone concentrations measured in 1984 follow these trends. Piru, Ojai, and Thousand Oaks each had five or fewer days exceed the NAAQS as compared to an average over the past ten years of 18 to 35 days per year. As usual, Simi Valley had the greatest number of adverse days with 33, however this is still far fewer than Simi Valley's 10 year average of 54 adverse days per year. This is the second lowest number of "exceedences" in Simi Valley during the 10 year period. The lowest occurred in 1980 with 29 days greater than the NAAQS. An instrument problem during August 1980 resulted in the deletion of a large block of data. Conditions conducive to ozone formation existed during this downtime. Analysis of the 1980 period indicates that if the instrument would have been reporting valid data, the number of "exceedences" in Simi Valley in 1980 would have been greater than in 1984. In 1984, all of the inland stations, excluding Simi Valley, recorded the fewest "exceedences" of the NAAQS in ten years. Generally, short term dramatic decreases in ozone levels as seen in 1984 are due to meteorological conditions rather than a decrease in emissions. September and October generally record the worst air quality. This year, strong winds developed on many days and the usual stagnation did not develop. Tropical influences kept the atmosphere mixed and trough systems passing to the north of us provided strong west winds. Additionally, in October, long periods of Santa Ana winds developed providing good dispersion.

Table 1 contains the daily maximum hourly concentrations measured in Ventura County in 1984. It also contains monthly, smog season, and annual summary statistics and the frequency of occurrences at federally required reporting levels.

# Table 1
# Summary of Ozone Statistics
# for 1984

OJAI OZONE 1984
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 03 | 07 | | 06 | 06 | 07 | 09 | 08 | 09 | 05 | 05 | 05 |
| 2 | 03 | 06 | | 06 | 05 | 07 | 10 | 07 | 08 | 07 | 06 | 07 |
| 3 | 03 | 03 | | 08 | 05 | 07 | 11 | 07 | 07 | 06 | 07 | 05 |
| 4 | 03 | 04 | | 05 | 05 | 07 | 09 | 09 | 08 | 07 | 07 | 03 |
| 5 | 03 | 05 | | 05 | 06 | 06 | 09 | 08 | 07 | 07 | 09 | 03 |
| 6 | 04 | 03* | | 04 | 07 | 07 | 12 | 08 | 13 | 08 | 06 | 04 |
| 7 | 03 | | | 06 | 09 | 05 | 15 | 09 | 12 | 09 | 04* | 03* |
| 8 | 04 | | | 06 | 08 | 08 | 09 | 07 | 09 | 08 | 04 | |
| 9 | 04 | | | 06 | 11 | 07 | 09 | 10 | 07 | 07 | 04 | |
| 10 | 03 | 05* | | 04 | 11 | 08 | 08 | 05 | 05 | 08 | 05 | 02* |
| 11 | 04 | 05 | | 08 | 10 | 08 | 10 | 08 | 02 | 06 | 06 | 03 |
| 12 | 03 | 05 | | 06 | 08 | 07 | 10 | 07 | 05 | 05 | 07 | 04 |
| 13 | 04 | 04 | | 07 | 12 | 07 | 11 | 08 | 05* | 06 | 04 | 04 |
| 14 | 04 | 05* | | 13 | 05 | 06 | 11 | 09 | 07* | 06 | 03 | 04 |
| 15 | 04 | 05 | 03* | 09 | 06 | 06 | 09 | 08 | 08 | 04 | 05 | 03 |
| 16 | 03 | 05 | 06 | 07 | 07 | 08 | 08 | 11 | 08 | 05 | 04 | 03 |
| 17 | 03 | 04 | 07 | 05 | 09 | 09 | 10 | 08 | 12 | 04 | 04 | 04 |
| 18 | 04* | 03* | 06 | 07 | 08 | 08 | 07 | 06 | 08* | 05 | 04 | 03 |
| 19 | 05 | | 05 | 04 | 09 | 08* | 07 | 08 | | 04 | 05 | 04 |
| 20 | 03 | | 06 | 04 | 10 | 08 | 05 | 07 | 08* | 05 | 07 | 04* |
| 21 | 04 | 05* | 08 | 05 | 07 | 06* | 07 | 09 | 07 | 05 | 05 | 04 |
| 22 | 04 | 04* | 06 | 05 | 09 | 08 | 03 | 09 | 08 | 04* | 03 | 03 |
| 23 | 04 | 05 | 07 | 08 | 09 | 10 | 04 | 09 | 04 | 05 | 04 | 03 |
| 24 | 02* | 05 | 11 | 08 | 09 | 09 | 05 | 06 | 06 | 04 | 03 | 03 |
| 25 | 06* | 04 | 09 | 05 | 10 | 08 | 07 | 06 | 07 | 04 | 03 | 04 |
| 26 | 06 | 04 | 05 | 05 | 10 | 09 | 09 | 05 | 08 | 03 | 04* | 04 |
| 27 | 06 | 04 | 06 | 06 | 10* | 09 | 10 | 08 | 04* | 03 | 04 | 03 |
| 28 | 06 | 05* | 06 | 04 | 06 | 11 | 09 | 05 | 07* | 03 | 04 | 03 |
| 29 | 06 | | 05 | 06 | 07 | 10 | 07* | 09 | 06 | 04 | 05 | 04 |
| 30 | 05 | | 06 | 07 | 06 | 07 | 08 | 10 | 06 | 05 | 04 | 04 |
| 31 | 11 | | 05 | | 08 | | 08 | 07 | | 05 | | 03 |
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

4.2 4.4 6.3 6.2 8.0 7.7 8.6 7.8 7.3 5.4 4.8 3.7

MAXIMUM HOURLY CONCENTRATIONS

11 7 11 13 12 11 15 11 13 9 9 7

NUMBER OF DAYS EXCEEDING NAAQS

0.0 0.0 0.0 1.0 0.0 0.0 1.0 0.0 1.0 0.0 0.0 0.0

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

0.0 0.0 0.0 3.3 0.0 0.0 3.2 0.0 3.4 0.0 0.0 0.0

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 343.0 | 183.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 6.2 | 7.3 |
| NUMBER OF DAYS EXCEEDING NAAQS | 3.0 | 2.6 |
| % DAYS MEASURED EXCEEDING NAAQS | 0.9 | 1.1 |
| MAXIMUM HOURLY CONCENTRATIONS | 15.0 | 15.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

SIMI VALLEY OZONE 1984
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04 | 05 | 12 | 05 | 06 | 11 | 13 | 10 | 16 | 06 | 06 | 07 |
| 2 | 04 | 06 | 09 | 06 | 06 | 09 | 12 | 11 | 14 | 09 | 06 | 08 |
| 3 | 04 | 03* | 11 | 09 | 07 | 08 | 12 | 13 | 08 | 08 | 07 | 04* |
| 4 | 04 | 05 | 08 | 04 | 06 | 09 | 11 | 14 | 10 | 08 | 09 | 04* |
| 5 | 05 | 06 | 04 | 05 | 07 | 07 | 10 | 12 | 09 | 10 | 11 | 04 |
| 6 | 03 | 03 | 09 | 05 | 07 | 06 | 13* | 11 | 17 | 12 | 07 | 05 |
| 7 | 05 | 10 | 09 | 07 | 08 | 07* | 14 | 12 | 13 | 13 | 05 | 04 |
| 8 | 05 | 04* | 10 | 07 | 09 | 08 | 11 | 10 | 14 | 11 | 04 | 05 |
| 9 | 06 | 07 | 07 | 06 | 14 | 11 | 13 | 19 | 09 | 13 | 04 | 05 |
| 10 | 03 | 04 | 06 | 05 | 13 | 11 | 13 | 10 | 07 | 11 | 07 | 03 |
| 11 | 03 | 04 | 05 | 08 | 11 | 10 | 11 | 09 | 03 | 07 | 09 | 05 |
| 12 | 03 | 05 | 05 | 06 | 11 | 09 | 12 | 12 | 08 | 06 | 10 | 05 |
| 13 | 04 | 05 | 09 | 10 | 14 | 10 | 13 | 11 | 11 | 09 | 04 | 04 |
| 14 | 04 | 04 | 04 | 14 | 08 | 08 | 11 | 12 | 10 | 06 | 03 | 05 |
| 15 | 04 | 05 | 05 | 11 | 07 | 08 | 10 | 12 | 11 | 06 | 06 | 05 |
| 16 | 03 | 04 | 06 | 09 | 09 | 10 | 12 | 14 | 11 | 07 | 03 | |
| 17 | 05 | 04 | 04 | 07 | 10 | 14 | 12 | 08 | 13 | 06 | 05 | |
| 18 | 07 | 02* | 04 | 07 | 09 | 15 | 08* | 08 | 11 | 05 | 04 | |
| 19 | 04 | | 04 | 05 | 10 | 12 | 09* | 11 | 09 | 05 | 05 | |
| 20 | 04 | | 10 | 04 | 12 | 11 | 05* | 09 | 09 | 05 | 07 | |
| 21 | 04 | 06* | 07 | 05 | 09 | 11 | 06 | 11 | 10 | 06 | 03 | |
| 22 | 05 | 04 | 05 | 06 | 14 | 12 | 05 | 13 | 07 | 06 | 04 | |
| 23 | 04 | 07 | 09 | 09 | 12 | 14 | 10 | 09 | 05 | 04 | 04 | |
| 24 | 03 | 06 | 11 | 10 | 12 | 08 | 08 | 11 | 09 | 06 | 02 | |
| 25 | 03 | 04 | 11 | 05 | 13 | 14 | 07 | 10 | 07 | 05 | 04 | |
| 26 | 04 | 04 | 05 | 05 | 12 | 08 | 15 | 07 | 09 | 06 | 04 | |
| 27 | 04 | 04 | 04 | 06 | 15 | 12 | 12 | 10 | 11 | 06 | 05 | |
| 28 | 03 | 05 | 07 | 05 | 11 | 16 | 10 | 08 | 09 | 08 | 04 | |
| 29 | 03 | 08 | 06 | 07 | 09 | 13 | 10 | 07 | 07 | 08 | 04 | |
| 30 | 03* | | 05 | 08 | 10 | 12 | 07 | 12 | 09 | 08 | 05* | |
| 31 | 07 | | 05 | | 11 | | 08 | 07 | | 07 | | |
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

4.1 5.0 7.0 6.9 10.1 10.5 10.4 10.7 9.9 7.5 5.4 4.9

MAXIMUM HOURLY CONCENTRATIONS

7 10 12 14 15 16 15 19 17 13 11 8

NUMBER OF DAYS EXCEEDING NAAQS

0.0 0.0 0.0 1.0 6.0 6.0 7.0 5.0 6.0 2.0 0.0 0.0

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

0.0 0.0 0.0 3.3 19.4 20.0 22.6 16.1 20.0 6.5 0.0 0.0

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 348.0 | 184.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 7.8 | 9.8 |
| NUMBER OF DAYS EXCEEDING NAAQS | 33.0 | 32.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 9.5 | 17.4 |
| MAXIMUM HOURLY CONCENTRATIONS | 19.0 | 19.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS OJAI 1984

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 23 | 7 | 1 | 0 | 0 | 0 | 0 |
| 2 | 10 | 13 | 6 | 0 | 0 | 0 | 0 |
| 3 | 1 | 14 | 2 | 0 | 0 | 0 | 0 |
| 4 | 5 | 23 | 1 | 1 | 0 | 0 | 0 |
| 5 | 0 | 17 | 14 | 0 | 0 | 0 | 0 |
| 6 | 0 | 23 | 7 | 0 | 0 | 0 | 0 |
| 7 | 2 | 11 | 17 | 1 | 0 | 0 | 0 |
| 8 | 0 | 21 | 10 | 0 | 0 | 0 | 0 |
| 9 | 3 | 21 | 4 | 1 | 0 | 0 | 0 |
| 10 | 10 | 20 | 1 | 0 | 0 | 0 | 0 |
| 11 | 16 | 13 | 1 | 0 | 0 | 0 | 0 |
| 12 | 26 | 3 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 96 | 186 | 58 | 3 | 0 | 0 | 0 |

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS SIMI VALLEY 1984

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 23 | 8 | 0 | 0 | 0 | 0 | 0 |
| 2 | 13 | 13 | 1 | 0 | 0 | 0 | 0 |
| 3 | 6 | 14 | 11 | 0 | 0 | 0 | 0 |
| 4 | 2 | 21 | 6 | 1 | 0 | 0 | 0 |
| 5 | 0 | 9 | 16 | 6 | 0 | 0 | 0 |
| 6 | 0 | 9 | 15 | 6 | 0 | 0 | 0 |
| 7 | 0 | 8 | 16 | 7 | 0 | 0 | 0 |
| 8 | 0 | 6 | 20 | 4 | 1 | 0 | 0 |
| 9 | 1 | 7 | 16 | 5 | 1 | 0 | 0 |
| 10 | 1 | 22 | 6 | 2 | 0 | 0 | 0 |
| 11 | 14 | 12 | 4 | 0 | 0 | 0 | 0 |
| 12 | 6 | 9 | 6 | 0 | 0 | 0 | 0 |
| TOTAL | 66 | 138 | 111 | 31 | 2 | 0 | 0 |

# Table 1 (cont.)

THOUSAND OAKS OZONE 1984
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 03 | 04 | 09 | 04 | 05 | 09 | 09 | 07 | 11 | 05 | 06 | 08 |
| 2 | 03 | 04 | 08 | 06 | 04 | 07 | 10 | 09 | 09 | 07* | 06 | 09 |
| 3 | 05 | 03* | 12 | 07 | 06 | 07 | 08 | 09 | 08 | | 05 | 04* |
| 4 | 03 | 06 | 08 | | 05 | 07 | 09 | 12 | 08* | | 08 | 03 |
| 5 | 05 | 05 | 03 | 05* | 06 | 05 | 11 | 07 | 07* | 07* | 10 | 03 |
| 6 | 04 | 05 | 06* | 05 | 07 | 05 | 09 | 08 | 16 | 09 | 05 | 04 |
| 7 | 04 | 11 | 08 | 07 | 10 | 05 | 10 | 10 | 11 | 11 | 04 | 03 |
| 8 | 04 | 09 | 09 | 05 | 11 | 07 | 09 | 07 | 14 | 08 | 04 | 04 |
| 9 | 04 | 07 | 08 | 06 | 15 | 09 | 09 | 10 | 06 | 11 | 04 | 04 |
| 10 | 02 | 04 | 06 | 04 | 11 | 08 | 13 | 08 | 04 | 08 | 05 | 01 |
| 11 | 02 | 03 | 05 | 07 | 09 | 06 | 09 | 05 | 01 | 05 | 08 | 03 |
| 12 | 02 | 05 | 05 | 06 | 09 | 07 | 09 | 07 | 05 | 05 | 05 | 03 |
| 13 | 03 | 05 | 08* | 11 | 10 | 07 | 11 | 06 | 07 | 06 | 03 | 06 |
| 14 | 02 | 06* | 04 | 11 | 06 | 05 | 10 | 07 | 07 | 06 | 03 | 03 |
| 15 | 01 | | 03 | 06 | 05 | 06 | 08 | 12 | 08 | 05 | 05 | 04 |
| 16 | 00 | | 04 | 08* | 07 | 07 | 08 | 11 | 09 | 05 | 02 | 04 |
| 17 | 04* | 04* | 02 | 06 | 08 | 08 | 07 | 07 | 12 | 04 | 04 | 03 |
| 18 | 08 | 03* | 02 | 06 | 08 | 08 | 07 | 07 | 07 | 05 | 02 | 02 |
| 19 | 04 | 05 | 04* | 04 | 07 | 08 | 05 | 06 | 07 | 03 | 04 | 03 |
| 20 | 03 | 05 | 11 | 05 | 09 | 08 | | 06 | 06 | 06 | 05 | 04 |
| 21 | 04 | 06* | 05 | 05 | 07 | 10 | | 07 | 07 | 05 | 03 | 03 |
| 22 | 04 | 04 | 06* | 07 | 09 | 10 | | 08 | 03 | 06* | 03 | 04 |
| 23 | 03 | 03 | 11 | 09 | 09 | 11 | 06 | 07 | 03 | 04* | 04 | 04 |
| 24 | 03 | 05 | 10 | 08 | 08 | 10 | 05 | 08 | 05 | 05 | 02 | 04 |
| 25 | 03 | 05 | 10 | 05 | 10 | 09 | 06 | 07 | 07 | 04 | 03 | 04 |
| 26 | 04 | 05 | 05 | 05 | 09 | 07 | 11 | 05 | 07 | 06 | 04 | 04 |
| 27 | 04 | 05 | 05 | 05 | 10 | 11 | 09 | 07 | 10 | 04 | 03 | 02 |
| 28 | 03 | 05 | 08 | 05 | 08 | 13 | 07 | 05 | 10 | 06 | 03 | 03 |
| 29 | 05 | 06* | 05 | 06 | 07 | 11 | 09 | 07 | 07 | 07 | 04 | 04 |
| 30 | 02 | | 05 | 06 | 07 | 10 | 06 | 11 | 08 | 05 | 05 | 04 |
| 31 | 07 | | 04 | | 09 | | 06 | 06 | | 05 | | 03 |
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

3.5 5.1 6.4 6.2 8.1 8.0 8.4 7.7 7.7 6.0 4.4 3.0

MAXIMUM HOURLY CONCENTRATIONS

8 11 12 11 15 13 13 12 16 11 10 9

NUMBER OF DAYS EXCEEDING NAAQS

0.0 0.0 0.0 0.0 1.0 1.0 1.0 0.0 2.0 0.0 0.0 0.0

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

0.0 0.0 0.0 0.0 3.2 3.3 3.6 0.0 6.7 0.0 0.0 0.0

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 358.0 | 179.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 6.3 | 7.7 |
| NUMBER OF DAYS EXCEEDING NAAQS | 5.0 | 5.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 1.4 | 2.8 |
| MAXIMUM HOURLY CONCENTRATIONS | 16.0 | 16.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

PIRU OZONE 1984
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04 | 04 | | 04 | 06 | 09* | 09 | 08 | 11 | 05 | 04 | 05 |
| 2 | 04 | 04* | 04* | 05 | 06 | 08 | 10 | 09 | 10 | 06* | 05 | 06 |
| 3 | 04 | 04 | 12 | 07 | 05 | 07 | 09* | 09 | 14 | 06 | 07 | 03 |
| 4 | 03 | 04 | 11 | 03 | 05 | 07 | 09 | 10 | 08 | 07 | 07 | 03 |
| 5 | 03 | 05 | 06 | 05 | 06 | 06* | 09 | 08 | 06* | 07 | 10 | 03 |
| 6 | 03 | 04 | 06 | 05* | 06 | 05 | 10 | 10 | 16 | 09 | 06 | 03 |
| 7 | 03 | 08 | 10 | 06 | 07 | 04 | 11 | 09 | 15* | 09 | 03 | 03 |
| 8 | 04 | 01* | 10 | 06 | 08 | 06 | 08 | 08 | 09 | 07 | 03 | 02 |
| 9 | 05 | | 07 | 05 | 13 | 07 | 09 | 07* | 07 | 10 | 04 | 03 |
| 10 | 03 | 03* | 05 | 05* | 11 | 09 | 10 | 08 | 05 | 09 | 04 | 01 |
| 11 | 04 | 04 | 04 | 07 | 09 | 07 | 07 | 07 | 01 | 05 | 06 | 02 |
| 12 | 03 | 03 | 04 | 05 | 08 | 07 | 09 | 08 | 04 | 04* | 06 | 03 |
| 13 | 04 | 04 | 09 | 08 | 12 | 07 | 11* | 07 | 09 | 06 | 03 | 04 |
| 14 | 03 | 03* | 03 | 14 | 06 | 06 | 13 | 08* | 08 | 04 | 02 | 03 |
| 15 | 03 | 04 | 03 | 09 | 06 | 06 | 07 | 09 | 07 | 05 | 05 | 03 |
| 16 | 02 | 03 | 05* | 07 | 06 | 08 | 08 | 12 | 08* | 05* | 03 | 02 |
| 17 | 04 | 03 | 03 | 06 | 07* | 10 | 08 | 08 | 10 | 03 | 04 | 03 |
| 18 | 05* | 05 | | 06 | 07 | 11 | 08 | 07 | 10 | 04 | 03 | 02 |
| 19 | 06 | 05 | 03* | 04 | 08 | 09 | 06* | 09 | 09 | 02* | 04 | 02 |
| 20 | 04 | 05 | 07 | 04 | 09 | 09 | 04 | 07 | 07 | 05 | 05 | 03 |
| 21 | 03 | 04 | 07 | 04 | 06 | 10 | 04 | 09 | 07 | 04 | 04 | 03 |
| 22 | 04 | 04 | 04 | 05 | 10 | 09 | 03 | 09 | 04 | 04* | 04 | 03 |
| 23 | 04 | 05* | 06 | 07 | 09* | 12 | 07 | 09 | 03 | 04 | 04 | 03 |
| 24 | 03 | 06 | 09 | 08 | 09 | 08 | 06 | 07 | 06* | 04 | 02 | 03 |
| 25 | 03 | 05 | 09 | 05 | 10 | 08 | 07 | 07 | 05 | 03 | 03 | 02 |
| 26 | 04* | 05 | 04 | 04 | 09 | 07 | 11* | 06 | 07 | 05 | 04 | 03 |
| 27 | 04 | 04* | 04 | 04 | 09 | 10 | 09 | 08 | 09 | 05 | 03 | 03* |
| 28 | 03 | | 06 | 05 | 08 | 11* | 10 | 06 | 07 | 06 | 02 | 03 |
| 29 | 03 | | 05 | 06 | 07 | 09 | 08 | 08 | 07 | 07 | 04 | 03 |
| 30 | 03 | | 03 | 07 | 08 | 08 | 06 | 10 | 07 | 06 | 03 | 02 |
| 31 | 05 | | 04 | | 10 | | 07 | 06* | | 04* | | 03 |
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

3.6 4.2 6.0 5.9 7.9 8.0 8.2 8.2 7.7 5.5 4.3 2.9

MAXIMUM HOURLY CONCENTRATIONS

5 8 12 14 13 12 13 12 16 10 10 6

NUMBER OF DAYS EXCEEDING NAAQS

0.0 0.0 0.0 1.0 1.0 0.0 1.0 0.0 2.0 0.0 0.0 0.0

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

0.0 0.0 0.0 3.3 3.2 0.0 3.2 0.0 6.7 0.0 0.0 0.0

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 361.0 | 184.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 6.0 | 7.6 |
| NUMBER OF DAYS EXCEEDING NAAQS | 5.0 | 4.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 1.4 | 2.2 |
| MAXIMUM HOURLY CONCENTRATIONS | 16.0 | 16.0 |

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* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS THOUSAND OAKS 1984

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 26 | 5 | 0 | 0 | 0 | 0 | 0 |
| 2 | 9 | 16 | 2 | 0 | 0 | 0 | 0 |
| 3 | 8 | 16 | 7 | 0 | 0 | 0 | 0 |
| 4 | 3 | 23 | 3 | 0 | 0 | 0 | 0 |
| 5 | 3 | 16 | 13 | 1 | 0 | 0 | 0 |
| 6 | 0 | 19 | 10 | 1 | 0 | 0 | 0 |
| 7 | 0 | 12 | 15 | 1 | 0 | 0 | 0 |
| 8 | 0 | 23 | 8 | 0 | 0 | 0 | 0 |
| 9 | 4 | 17 | 7 | 2 | 0 | 0 | 0 |
| 10 | 5 | 21 | 3 | 0 | 0 | 0 | 0 |
| 11 | 18 | 11 | 1 | 0 | 0 | 0 | 0 |
| 12 | 28 | 2 | 1 | 0 | 0 | 0 | 0 |
| TOTAL | 102 | 181 | 70 | 5 | 0 | 0 | 0 |

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS PIRU 1984

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 28 | 3 | 0 | 0 | 0 | 0 | 0 |
| 2 | 17 | 9 | 0 | 0 | 0 | 0 | 0 |
| 3 | 12 | 10 | 7 | 0 | 0 | 0 | 0 |
| 4 | 7 | 21 | 1 | 1 | 0 | 0 | 0 |
| 5 | 0 | 19 | 11 | 1 | 0 | 0 | 0 |
| 6 | 1 | 17 | 12 | 0 | 0 | 0 | 0 |
| 7 | 3 | 13 | 14 | 1 | 0 | 0 | 0 |
| 8 | 0 | 19 | 12 | 0 | 0 | 0 | 0 |
| 9 | 4 | 15 | 9 | 2 | 0 | 0 | 0 |
| 10 | 11 | 16 | 4 | 0 | 0 | 0 | 0 |
| 11 | 21 | 8 | 1 | 0 | 0 | 0 | 0 |
| 12 | 29 | 2 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 133 | 152 | 71 | 5 | 0 | 0 | 0 |

# Table 1 (cont.)

VENTURA OZONE 1984
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 09 | 05 | 05 | 05* | 05 | 06 | 10 | 07 | 08 | 04 |
| 2 | | | 10 | 08 | 05 | | 07 | 05 | 08 | 09 | 05 | 11 |
| 3 | | | 12 | 07 | 04 | | 06 | 06 | 09 | 06 | 06 | 05 |
| 4 | | | 12 | 06 | 06 | | 03 | 08 | 05* | 08 | 09 | 04 |
| 5 | | | 05 | 06 | 06 | | 04 | 07 | | 08 | 08 | 03 |
| 6 | | | 06 | 05 | 07 | | 05 | 07 | | 08 | 07* | 04 |
| 7 | | | 08 | 07 | 12 | 04* | 08 | 09 | | 07 | 04 | 03 |
| 8 | | | 06 | 06 | 13 | 06 | 08 | 06 | | 07 | 04 | 05 |
| 9 | | | 08 | 07 | 06 | | 07 | 06 | | 09 | 05 | 05 |
| 10 | | | 07 | 05 | 06 | 07 | 07 | 05 | 04* | 07 | 05 | 01 |
| 11 | | | 05 | 04 | 09 | 08 | 08 | 06 | 02 | 06 | 05 | 03 |
| 12 | | | 06 | 06 | 07 | 06 | 06 | 06 | 03* | 06 | 05 | 04 |
| 13 | | | 07 | 06 | 05 | 07* | 06* | 06 | 04 | 06 | 05 | 03 |
| 14 | | | 04 | 12 | 05 | 09 | 05 | 05 | 06 | 06 | 04 | 03 |
| 15 | | | 04 | 06 | 06 | 07 | 05 | 08 | 06 | 06 | 06 | 04 |
| 16 | | | 06 | 06 | 08 | 07 | 06 | 07 | 07 | 06 | 05 | 04 |
| 17 | | | 06 | 06 | 06* | 08 | 04 | 05 | 10 | 05 | 05 | 04 |
| 18 | | | 05 | 05 | 09 | 08 | 05 | 04 | 06 | 05 | 03 | 02* |
| 19 | | | 05 | 06 | 07 | 06 | 04 | 05 | 07 | 04 | 06 | 02* |
| 20 | | | 08 | 05 | 09 | 06 | 06 | 05 | 05 | 05 | 05 | 03* |
| 21 | | | 05 | 06 | 06 | 08 | 04 | 06 | 06 | 06 | 04* | 04 |
| 22 | | | 06 | 06 | 09 | 08 | 03 | 07 | 03* | 06 | 03 | 04 |
| 23 | | | 10 | 07 | 08 | 07 | 04 | 07* | | 05 | 04 | 04 |
| 24 | | | | 05 | 09* | 07 | 04 | 07* | | 06 | 03 | 04 |
| 25 | | | | 07 | 10 | 06 | 05 | 05 | 07* | 05 | 04 | 04 |
| 26 | | | 06 | 06 | 09 | 05 | 06 | 04 | 06 | 06 | 04 | 06 |
| 27 | | | 05 | 07 | 04* | 06 | 06 | 05 | 07 | 04 | 03 | 02 |
| 28 | | | 08 | 06 | 03* | 09 | 07 | 05 | 17 | 07 | 04 | 04 |
| 29 | | | 06 | 08 | 07* | 07 | 07 | 09 | 19 | 08 | 04 | 05 |
| 30 | | | 06 | 08 | 05 | 05 | 05 | 05 | 05 | 04 | 04 | 05 |
| 31 | | | 06 | | 06* | | 05 | 06 | | 06 | | 04 |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 6.7 | 6.4 | 7.0 | 6.8 | 5.6 | 6.1 | 7.0 | 6.3 | 4.9 | 4.0 |

MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 12 | 12 | 13 | 9 | 8 | 9 | 19 | 9 | 9 | 11 |

NUMBER OF DAYS EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 |

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 3.2 | 0.0 | 0.0 | 0.0 | 6.7 | 0.0 | 0.0 | 0.0 |

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 291.0 | 171.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 6.0 | 6.4 |
| NUMBER OF DAYS EXCEEDING NAAQS | 3.0 | 3.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 1.0 | 1.8 |
| MAXIMUM HOURLY CONCENTRATIONS | 19.0 | 19.0 |

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* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

EL RIO OZONE 1984
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04 | 06 | 10 | 04 | 04 | 07 | 05 | 05* | 08 | 05 | 06 | 05 |
| 2 | 04 | 05 | 08 | 07 | 05 | 07 | 06 | 06 | 06 | 07 | 05 | 08 |
| 3 | 04 | 04 | 14 | 06* | 05 | 06 | 05 | 06 | 06 | 05 | 04 | 04 |
| 4 | 04* | 06 | 11 | 04 | 05 | 06 | 04 | 09 | 06 | | 06 | 03 |
| 5 | 03 | 08 | 05 | 05 | 05 | 05 | 07 | 06 | 04 | 05 | 07 | 03 |
| 6 | 05 | 05 | 06 | 04 | 06 | 05* | 04 | 06 | 06* | 07 | 05 | 03 |
| 7 | 04 | 07 | 07 | 07 | 09 | 05 | 02 | 06* | 07 | 06 | 03 | 03 |
| 8 | 04 | 09 | 07 | 05 | 09 | 06 | 02 | 05 | 12 | 06 | 03 | 04 |
| 9 | 04 | 07* | 08 | 05* | 11 | 07 | 07 | 06 | 07 | 07 | 03 | 04 |
| 10 | 03* | 05 | 06 | 04 | 09 | 08 | 06* | 04 | 04 | 06 | 03 | 01 |
| 11 | 04 | 05 | 06 | 05* | 07 | 07 | 07 | 05 | 02 | 05 | 05 | 05 |
| 12 | 04 | 05 | 05 | 06 | 07 | 06* | 05 | 05 | 02 | 04 | 07 | 03 |
| 13 | 05 | 05 | 06 | 05 | 04* | 05 | 05 | 05* | 05 | 06 | 03 | 05 |
| 14 | 04 | 04 | 04 | 11* | | 05 | 07 | 04 | 05 | | 03 | 03 |
| 15 | 04 | 03 | 04 | 08 | 06* | 06 | 04 | 08 | 06 | 03 | 05 | 04 |
| 16 | 02 | 04 | 06 | 06 | 06* | 07 | 04 | 07 | 08 | 05 | 04 | 04 |
| 17 | 05 | 03 | 06 | 05 | 06 | 08 | 05 | 06 | 10 | 03 | 05 | 04 |
| 18 | 04* | 04 | 06 | 07 | 07 | 10* | 04* | 05 | 05 | 04 | 03 | 03 |
| 19 | 05 | 04 | 05 | 04 | 06 | 08 | 03 | 01* | 04 | 03 | 04 | 03* |
| 20 | 04 | 05 | 09 | 05 | 09 | 08 | 03 | 03* | 03 | 05 | 04 | 03 |
| 21 | 03* | 04 | 05 | 05 | 06 | 07 | 04 | 05 | 05 | 05 | 04 | 03 |
| 22 | 05 | 04 | 05 | 06 | 08 | 06 | 03 | 06 | 04 | 05 | 03 | 03 |
| 23 | 04* | 05 | 11 | 11 | 08 | 07 | 02* | 06 | 03 | 03 | 04 | 03 |
| 24 | 03 | 06 | 08 | 05 | 08 | 07 | 04 | 04 | 04 | 05 | 02 | 03 |
| 25 | 04* | 05 | 06 | 06* | 09 | 05 | 05 | 04 | 07 | 04 | 03 | 05 |
| 26 | 05 | 04 | 06 | 05 | 07 | 05 | 07 | 03 | 05 | 05 | 03 | 03 |
| 27 | 04 | 05 | 05 | 06 | 08 | 08 | 08 | 05 | 08 | 04 | 03 | 03 |
| 28 | 04 | 05 | 06 | 05 | 08 | 08 | 07 | 04* | 12 | 06 | 03* | 04 |
| 29 | 05 | 06 | 05 | 07 | 05 | 06 | 06 | 05* | 11 | 05 | 03 | 03 |
| 30 | 04 | | 04 | 06* | 05 | 07 | 04 | 05 | 05 | 04 | 03 | 04 |
| 31 | 07 | | 05 | | 08 | | 03 | 05 | | 04 | | 03 |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.1 | 5.2 | 6.7 | 5.8 | 6.9 | 6.6 | 4.8 | 5.2 | 6.0 | 6.9 | 4.0 | 3.6 |

MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 9 | 14 | 11 | 11 | 10 | 8 | 9 | 12 | 7 | 7 | 8 |

NUMBER OF DAYS EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 3.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 363.0 | 181.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 5.3 | 5.7 |
| NUMBER OF DAYS EXCEEDING NAAQS | 1.0 | 0.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 0.3 | 0.0 |
| MAXIMUM HOURLY CONCENTRATIONS | 14.0 | 12.0 |

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* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS VENTURA 1984

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 3 | 21 | 5 | 0 | 0 | 0 | 0 |
| 4 | 0 | 29 | 1 | 0 | 0 | 0 | 0 |
| 5 | 3 | 19 | 8 | 1 | 0 | 0 | 0 |
| 6 | 1 | 21 | 2 | 0 | 0 | 0 | 0 |
| 7 | 7 | 24 | 0 | 0 | 0 | 0 | 0 |
| 8 | 2 | 27 | 2 | 0 | 0 | 0 | 0 |
| 9 | 5 | 13 | 3 | 0 | 2 | 0 | 0 |
| 10 | 3 | 26 | 2 | 0 | 0 | 0 | 0 |
| 11 | 14 | 15 | 1 | 0 | 0 | 0 | 0 |
| 12 | 23 | 7 | 1 | 0 | 0 | 0 | 0 |
| TOTAL | 61 | 202 | 25 | 1 | 2 | 0 | 0 |

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS EL RIO 1984

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 23 | 8 | 0 | 0 | 0 | 0 | 0 |
| 2 | 10 | 17 | 2 | 0 | 0 | 0 | 0 |
| 3 | 3 | 23 | 4 | 1 | 0 | 0 | 0 |
| 4 | 5 | 23 | 2 | 0 | 0 | 0 | 0 |
| 5 | 2 | 22 | 6 | 0 | 0 | 0 | 0 |
| 6 | 0 | 29 | 1 | 0 | 0 | 0 | 0 |
| 7 | 15 | 16 | 6 | 0 | 0 | 0 | 0 |
| 8 | 8 | 22 | 1 | 0 | 0 | 0 | 0 |
| 9 | 9 | 17 | 4 | 0 | 0 | 0 | 0 |
| 10 | 10 | 19 | 0 | 0 | 0 | 0 | 0 |
| 11 | 21 | 9 | 0 | 0 | 0 | 0 | 0 |
| 12 | 26 | 5 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 132 | 210 | 20 | 1 | 0 | 0 | 0 |

The annual mean of daily maximum hourly concentrations help to determine the overall air quality for the year. For comparison with past years, the graph below (Figure 2) shows these means followed by Table 2 containing the maximum hourly concentrations obtained at each station for 1984 and past years. Figure 3 is a graphic summary of ozone data depicting the monthly maximum hourly concentration and the monthly mean of daily maximum hourly concentrations for 1975 - 1984.

FIGURE 2

MEAN OF DAILY MAXIMUM OZONE CONCENTRATIONS

(ALL YEAR)

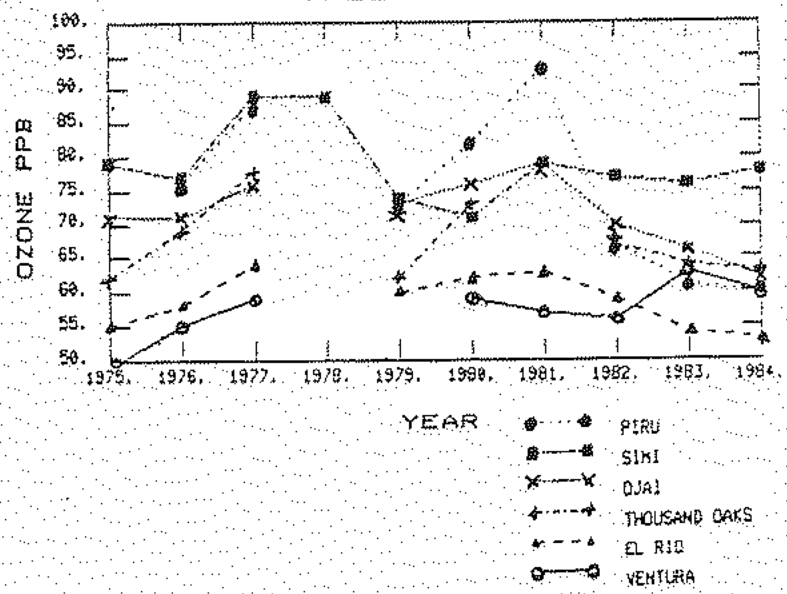



Table 2

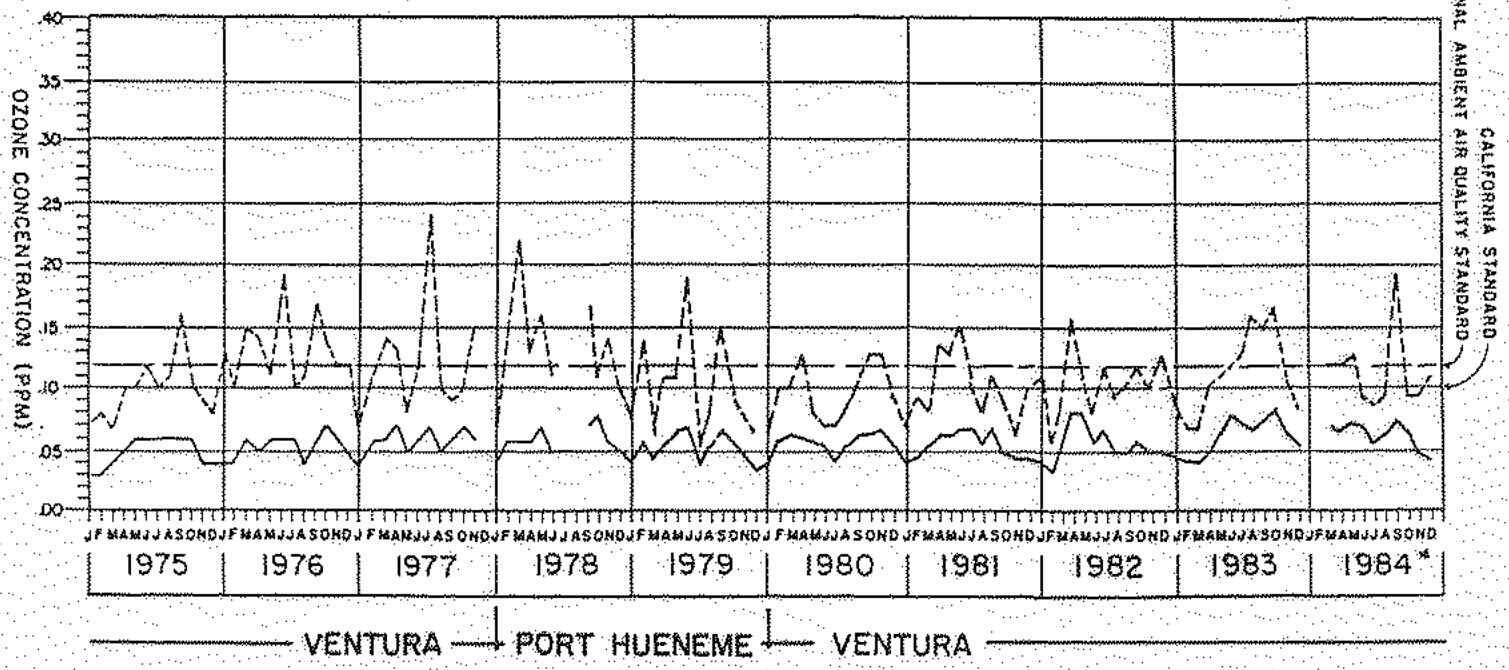
Maximum Hourly Concentrations, ppm

| | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984* | Maximum 1975-1984 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ventura | .16 | .17 | .25 | --- | --- | .13 | .15 | .16 | .17 | .19 | .25 |
| Cam/El Rio | .18 | .22 | .25 | .24 | .23 | .13 | .16 | .15 | .15 | .12 | .25 |
| Thous Oaks | .15 | .19 | .23 | .25 | .18 | .19 | --- | .15 | .19 | .15 | .25 |
| Ojai | .21 | .17 | .18 | .19 | .18 | .18 | .20 | .19 | .17 | .15 | .21 |
| Piru | --- | .20 | .20 | .20 | .22 | .21 | .19 | .15 | .19 | .16 | .22 |
| Simi | .22 | .20 | .26 | .25 | .19 | .18 | .23 | .23 | .23 | .19 | .26 |
| County Maximum | .22 | .22 | .26 | .25 | .23 | .21 | .23 | .23 | .23 | .19 | .26 |

Figure 3

# COASTAL AREAS
## OZONE

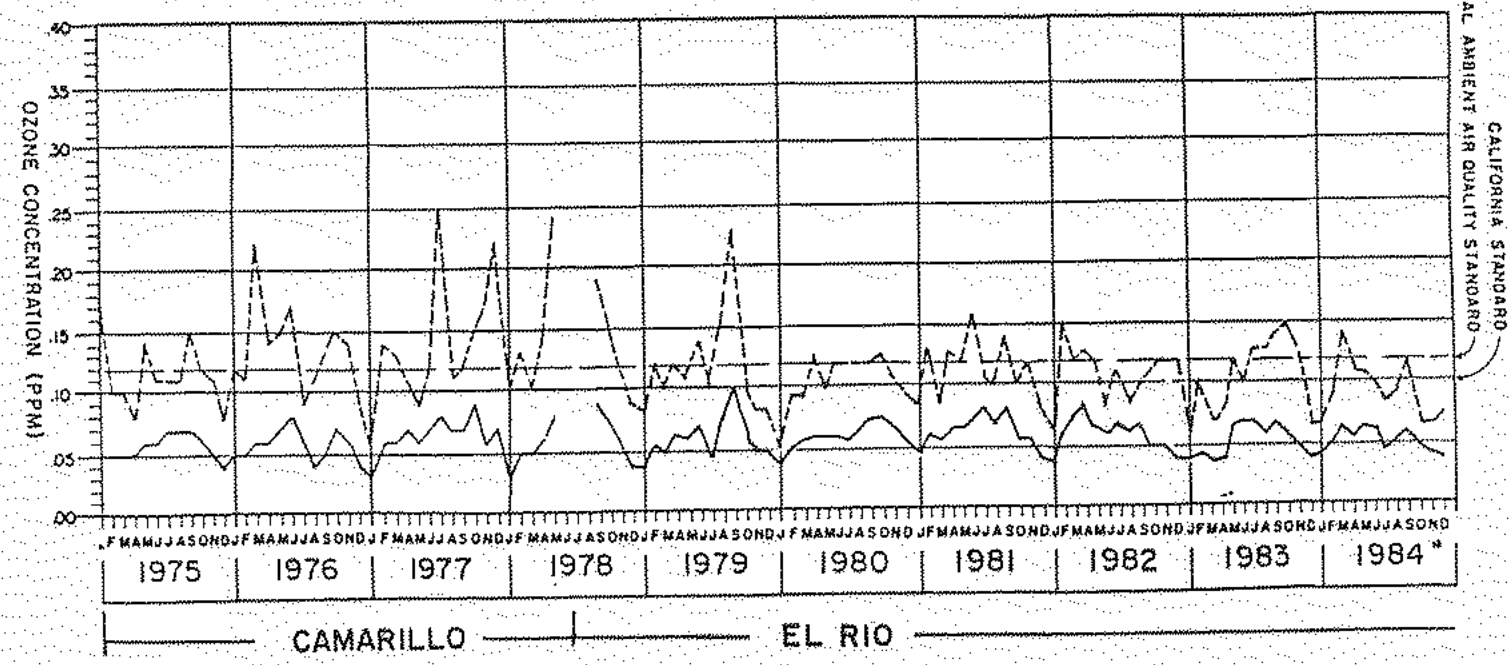
LEGEND
—— MONTHLY MEANS OF DAILY MAXIMUM HOURLY CONCENTRATIONS
---- MONTHLY MAXIMUM HOURLY CONCENTRATIONS




*PRELIMINARY DATA SUBJECT TO REVISION

# INLAND COASTAL PLAIN
## OZONE

LEGEND
—— MONTHLY MEANS OF DAILY MAXIMUM HOURLY CONCENTRATIONS
---- MONTHLY MAXIMUM HOURLY CONCENTRATIONS



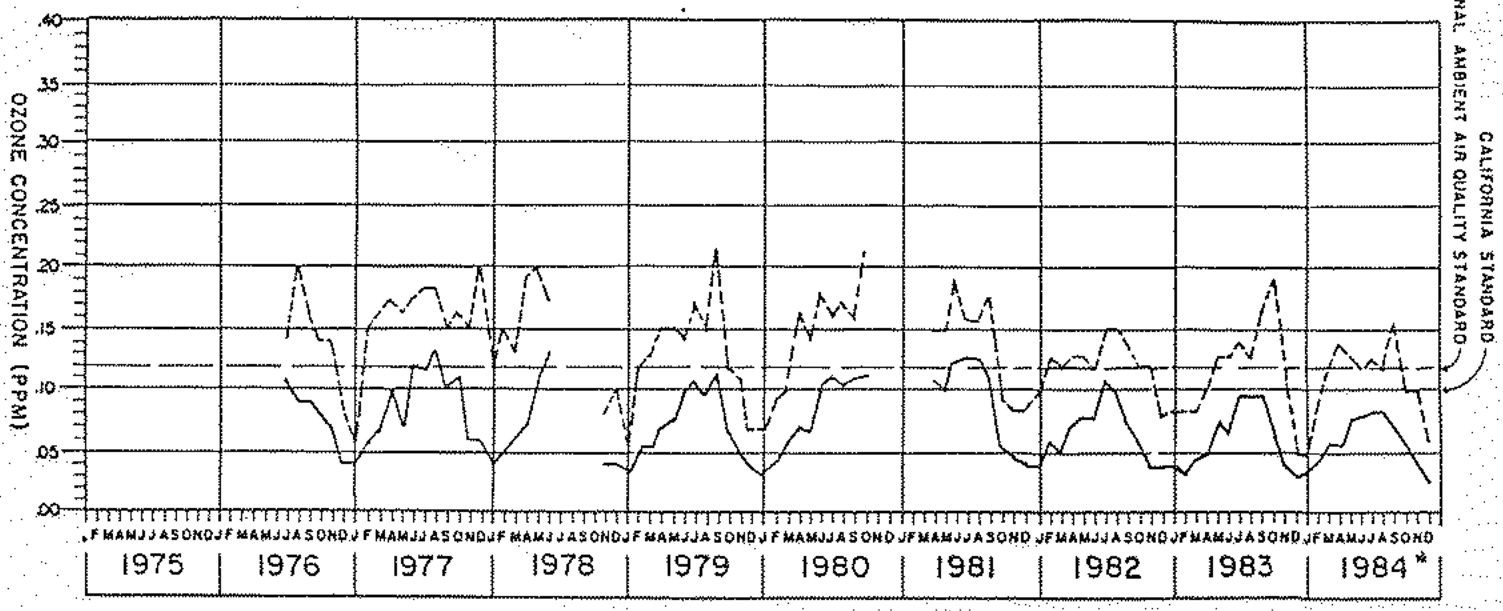

*PRELIMINARY DATA SUBJECT TO REVISION

VENTURA COUNTY

## PIRU OZONE

Figure 3 (cont.)

LEGEND
—— MONTHLY MEANS OF DAILY MAXIMUM HOURLY CONCENTRATIONS
---- MONTHLY MAXIMUM HOURLY CONCENTRATIONS

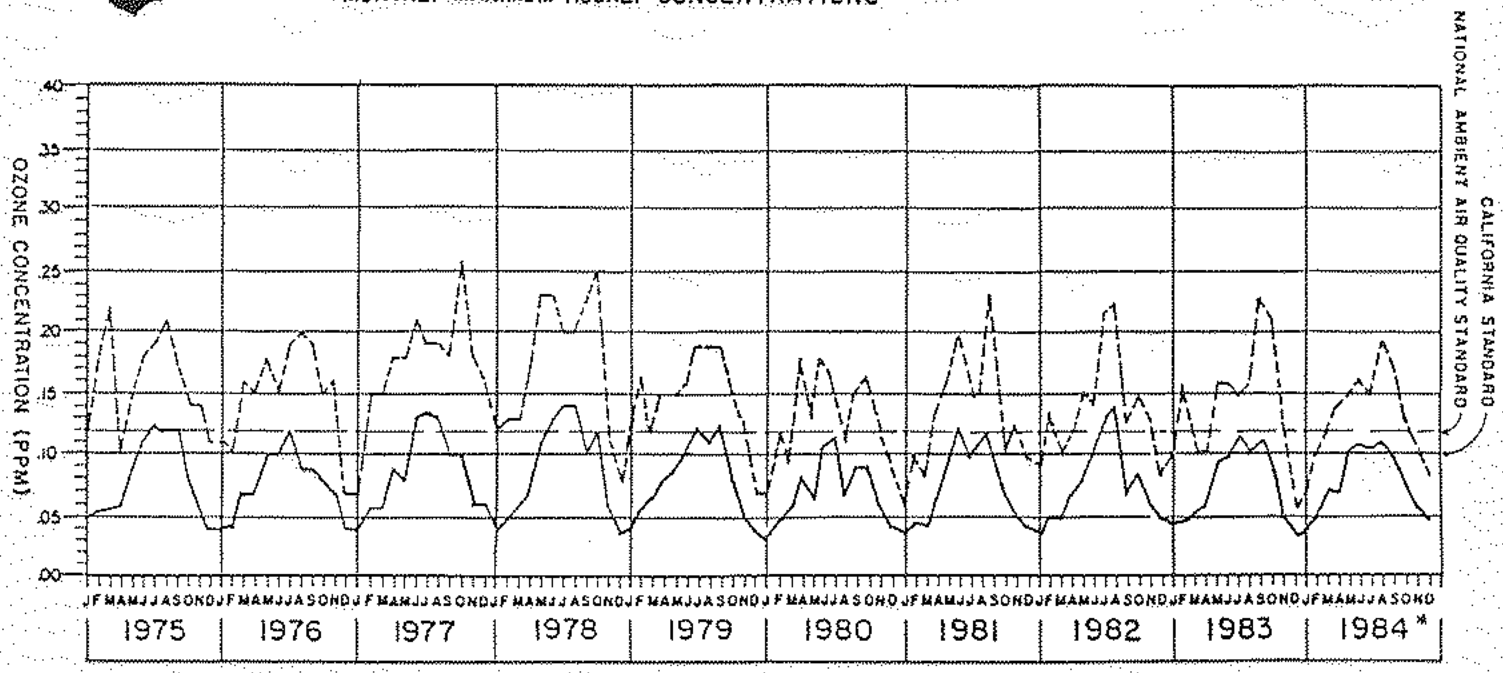



*PRELIMINARY DATA SUBJECT TO REVISION

VENTURA COUNTY

## SIMI VALLEY OZONE

LEGEND
—— MONTHLY MEANS OF DAILY MAXIMUM HOURLY CONCENTRATIONS
---- MONTHLY MAXIMUM HOURLY CONCENTRATIONS




*PRELIMINARY DATA SUBJECT TO REVISION

VENTURA COUNTY

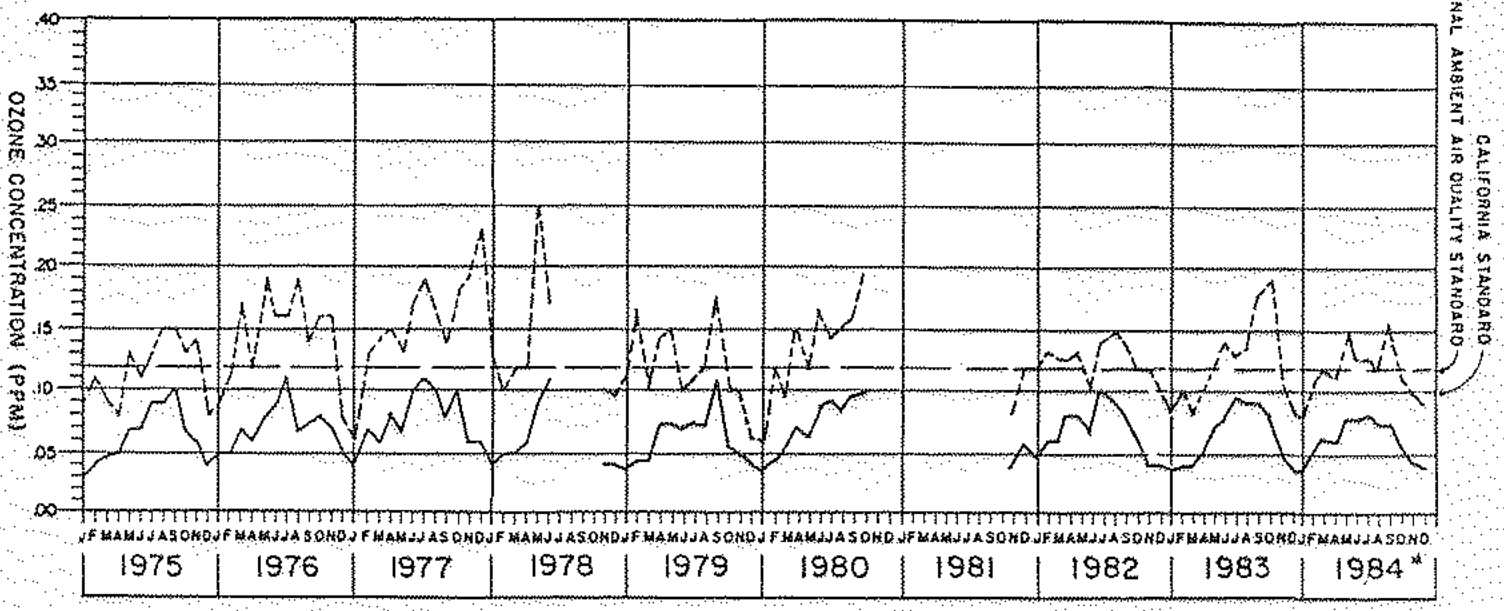
## THOUSAND OAKS OZONE

Figure 3 (cont.)

LEGEND

—— MONTHLY MEANS OF DAILY MAXIMUM HOURLY CONCENTRATIONS

---- MONTHLY MAXIMUM HOURLY CONCENTRATIONS




*PRELIMINARY DATA SUBJECT TO REVISION

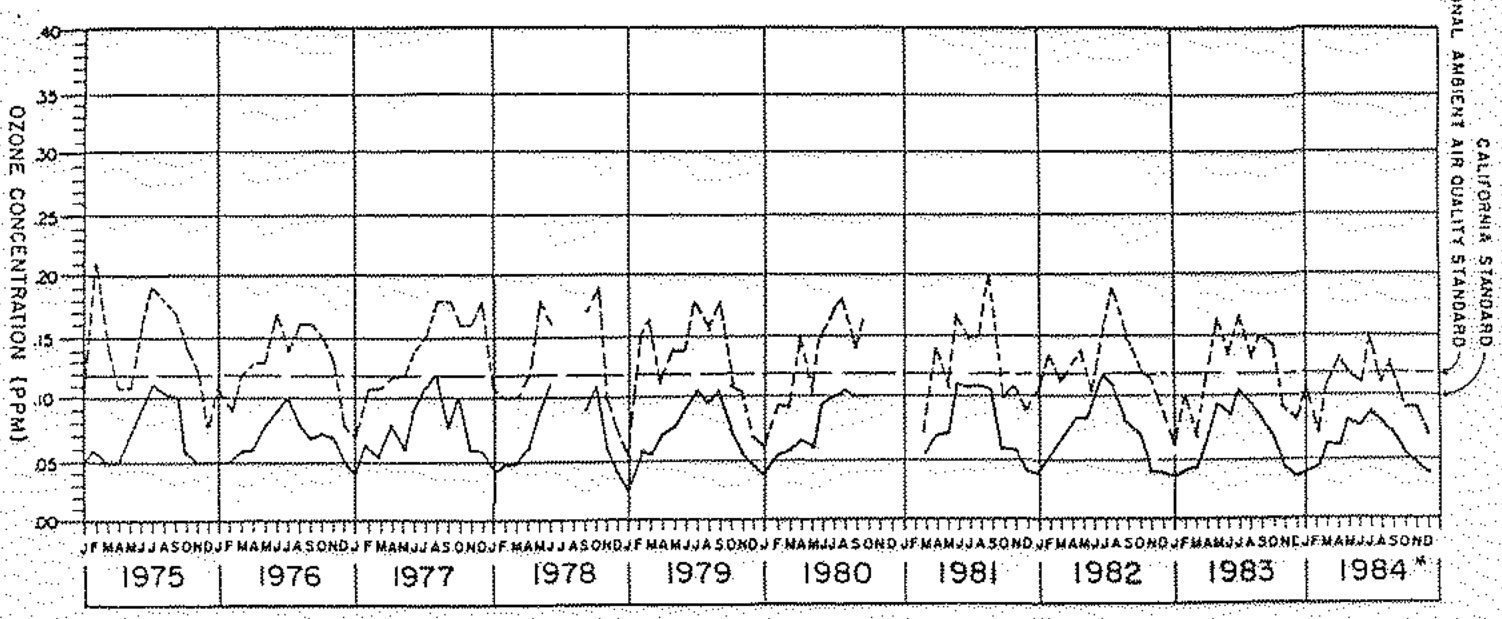
VENTURA COUNTY

## OJAI OZONE

LEGEND

—— MONTHLY MEANS OF DAILY MAXIMUM HOURLY CONCENTRATIONS

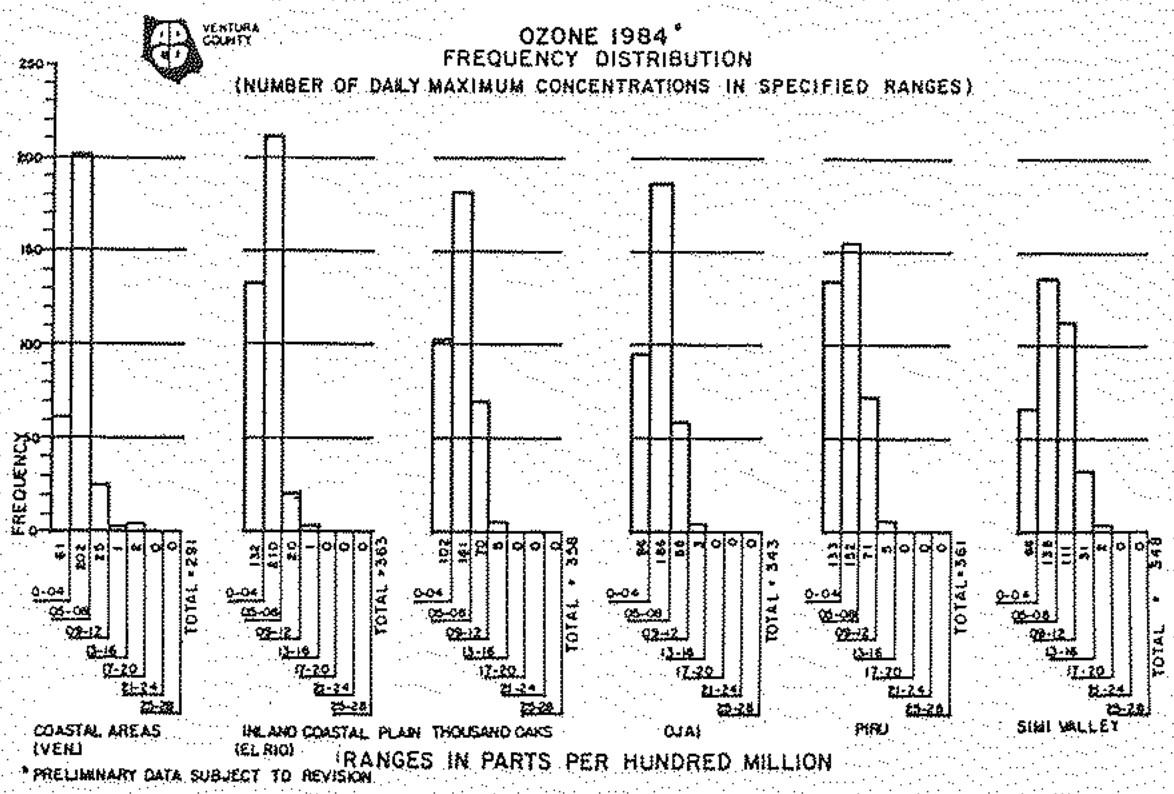
---- MONTHLY MAXIMUM HOURLY CONCENTRATIONS




*PRELIMINARY DATA SUBJECT TO REVISION

Frequency distributions or histograms graphically illustrate the number of occurences where a specific range of concentrations were reached. Figure 4 contains histograms for each station measuring ozone in 1984. In general the histograms for inland valleys have more occurences of ozone concentrations in higher ranges than do coastal areas.

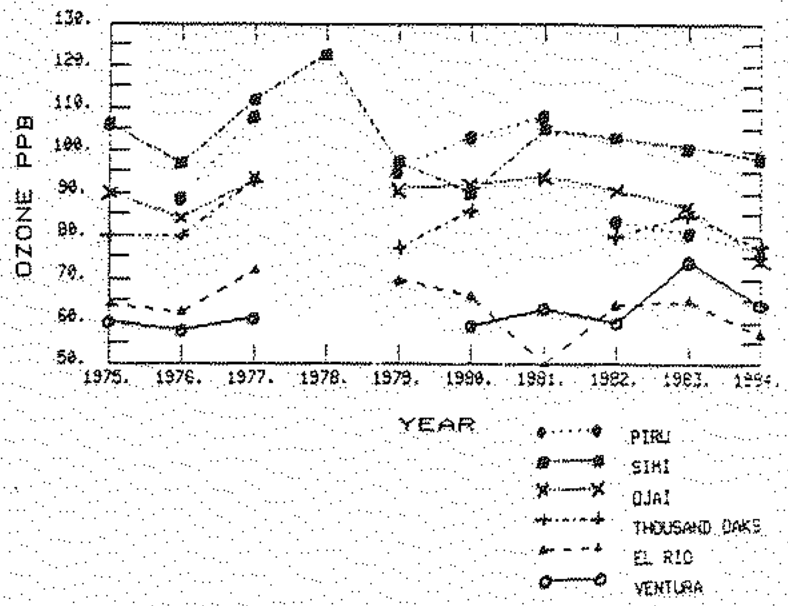
Figure 4




Traditionally thought of as May through October, "Smog Season" is the time of year when stable atmospheric conditions and high temperatures are conducive to the formation and accumulation of ozone. Figure 5 displays the means of daily maximum hourly concentrations for May through October of 1984 and past years.

FIGURE 5

MEAN OF DAILY MAXIMUM OZONE CONCENTRATIONS DURING SMOG SEASON (MAY-OCTOBER)




The California Stage 1 alert level for ozone is an hourly average of 0.20 ppm. At this level state law requires a public alert declaration. When the APCD measures or predicts a Stage 1 Health Advisory or smog alert, radio stations, schools, hospitals, convalescent homes and other institutions are notified so that people may take precautionary measures. As previously discussed, the NAAQS for ozone was exceeded less frequently in 1984 than in previous years and for the first time, there were no Stage 1 smog alerts. The maximum concentrations reached in the county were 0.19 ppm on August 9 in Simi Valley and on September 29 in Ventura. The Ventura concentration was the highest on the coast since 1977. It was due to a rare meteorological anomaly that included several days of offshore wind flow followed by an onshore flow along the same trajectory. The meteorological conditions during the Simi Valley reading were similar to conditions present during recent Stage 1 alert days. Since 1980 there have been seven Stage 1 alerts. Of these, six were in Simi Valley and appear to be influenced by transport of ozone and ozone precursors from east of the county. Southeast wind flows aloft and on the ground near Simi Valley have been evidenced on alert days. This may have resulted in pollution following a path through the Santa Susana Pass and down into Simi Valley, while the rest of the county is still affected by sea breezes. More than 90 percent of the ozone episodes measured in Ventura County since 1975 have occurred during "Smog Season". Table 3 contains the annual distribution of ozone episodes by station and Figure 6 graphically illustrates county-wide "alert days". When episode levels were reached at more than one station in the same day, they are counted as one "alert day".

Table 3
NUMBER OF OZONE ALERTS

| | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984* |
|---|---|---|---|---|---|---|---|---|---|---|
| Port Huen | 0 | 1 | 0 | 1 | 0 | 0 | 0 | - | - | - |
| Ventura | 0 | 0 | 1 | - | - | 0 | 0 | 0 | - | - |
| Cam/El Rio | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| S. Paula | 0 | 1 | 1 | 1 | - | - | - | - | - | - |
| Thous Oaks | 0 | 0 | 1 | 1 | 0 | 0 | - | 0 | 0 | 0 |
| Ojai | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Piru | - | - | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Simi | 2 | 1 | 2 | 8 | 0 | 0 | 2 | 2 | 2 | 0 |
| TOTAL COUNTY-WIDE "ALERT DAYS" | 3 | 3 | 4 | 8 | 2 | 1 | 2 | 2 | 2 | 0 = 28 |

Figure 6

VENTURA COUNTY

MONTHLY DISTRIBUTION OF
COUNTY-WIDE OZONE "ALERT DAYS"
(1975 - 1984)

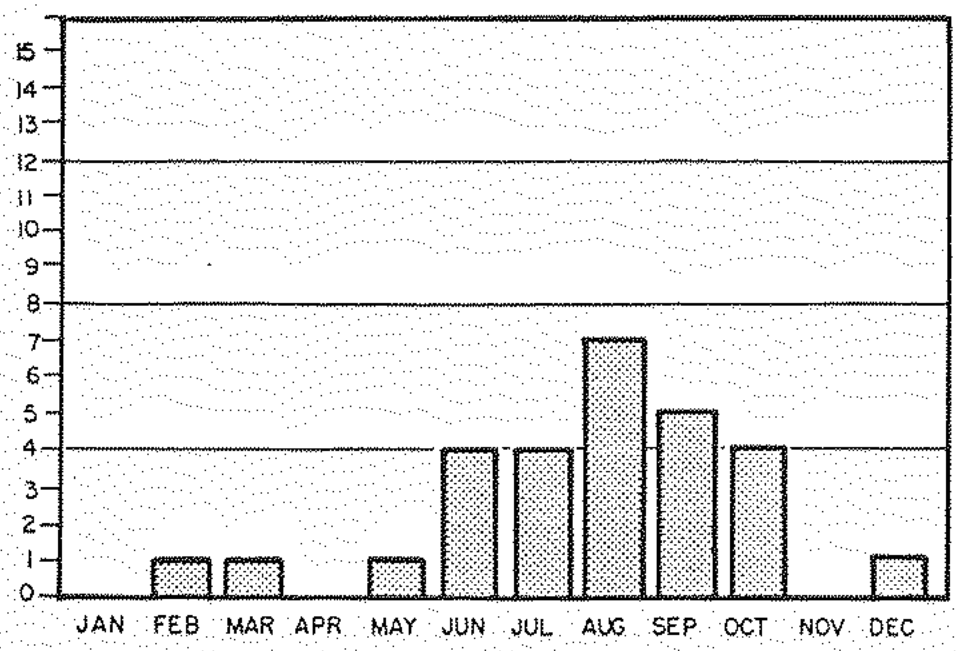


Table 4
TOTAL SUSPENDED PARTICULATE
CONCENTRATIONS
MICROGRAMS PER CUBIC METER

| STATION | YEAR | ANNUAL STATISTICS HIGH | 2ND HIGH | LOW | GEO MEAN | GEO STAND DEV | # OF SAMPLES >OR= 100 | > 150 | > 260 | > 375 | # OF OBS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EL RIO | *1979 | 274 | 135 | 27 | 79.3 | 1.3 | 12 | 1 | 1 | 0 | 29 |
| | *1980 | 216 | 193 | 4 | 63.0 | 2.1 | 13 | 2 | 0 | 0 | 57 |
| | 1981 | 165 | 144 | 9 | 70.2 | 1.3 | 13 | 0 | 0 | 0 | 57 |
| | *1982 | 123 | 120 | 3 | 47.2 | 1.6 | 3 | 0 | 0 | 0 | 56 |
| | *1983 | 115 | 100 | 9 | 45.7 | 1.5 | 2 | 0 | 0 | 0 | 58 |
| | 1984 | 121 | 115 | 14 | 65.6 | N/A | 7 | 0 | 0 | 0 | 59 |
| PIRU | *1978 | 125 | 114 | 62 | 94.2 | 1.1 | 3 | 0 | 0 | 0 | 10 |
| | 1979 | 246 | 139 | 12 | 65.3 | 1.4 | 13 | 1 | 0 | 0 | 56 |
| | *1980 | 156 | 144 | 9 | 65.9 | 2.0 | 13 | 1 | 0 | 0 | 47 |
| | *1981 | 255 | 245 | 63 | 125.7 | 1.3 | 16 | 7 | 0 | 0 | 22 |
| PIRU-2SW | *1981 | 126 | 117 | 15 | 52.0 | 1.7 | 2 | 0 | 0 | 0 | 16 |
| | *1982 | 214 | 113 | 11 | 50.4 | 1.6 | 7 | 1 | 0 | 0 | 49 |
| | *1983 | 125 | 113 | 10 | 43.9 | 1.4 | 2 | 0 | 0 | 0 | 57 |
| | *1984 | 145 | 120 | 8 | 55.3 | N/A | 2 | 0 | 0 | 0 | 55 |
| SIMI VALLEY | 1975 | 162 | 139 | 15 | 86.5 | 1.6 | 30 | 1 | 0 | 0 | 57 |
| | 1976 | 173 | 142 | 19 | 71.3 | 1.7 | 18 | 2 | 0 | 0 | 56 |
| | 1977 | 293 | 163 | 12 | 75.0 | 1.8 | 23 | 4 | 1 | 0 | 58 |
| | 1978 | 143 | 139 | 18 | 65.7 | 1.5 | 18 | 0 | 0 | 0 | 58 |
| | 1979 | 163 | 148 | 12 | 69.2 | 1.5 | 21 | 1 | 0 | 0 | 59 |
| | *1980 | 182 | 168 | 15 | 72.9 | 1.8 | 17 | 4 | 0 | 0 | 51 |
| | 1981 | 364 | 237 | 25 | 90.0 | 1.4 | 28 | 4 | 1 | 0 | 56 |
| | *1982 | 206 | 197 | 10 | 62.9 | 1.7 | 13 | 2 | 0 | 0 | 49 |
| | *1983 | 135 | 126 | 9 | 57.7 | 1.4 | 9 | 0 | 0 | 0 | 53 |
| | *1984 | 146 | 140 | 23 | 77.9 | N/A | 23 | 0 | 0 | 0 | 57 |
| VENTURA | 1975 | 146 | 123 | 16 | 67.0 | 1.5 | 7 | 0 | 0 | 0 | 57 |
| | *1976 | 125 | 123 | 23 | 63.1 | 1.5 | 7 | 0 | 0 | 0 | 55 |
| | 1977 | 106 | 102 | 21 | 56.0 | 1.4 | 2 | 0 | 0 | 0 | 57 |
| | *1981 | 157 | 147 | 33 | 83.5 | 1.3 | 18 | 1 | 0 | 0 | 56 |
| | *1982 | 139 | 117 | 12 | 58.3 | 1.5 | 4 | 0 | 0 | 0 | 56 |
| | *1983 | 116 | 109 | 18 | 55.2 | 1.3 | 2 | 0 | 0 | 0 | 41 |
| | 1984 | 114 | 111 | 21 | 63.9 | N/A | 3 | 0 | 0 | 0 | 59 |
| OJAI | 1975 | 123 | 121 | 21 | 74.0 | 1.4 | 5 | 0 | 0 | 0 | 47 |
| | 1976 | 144 | 124 | 15 | 58.6 | 1.6 | 3 | 0 | 0 | 0 | 56 |
| | 1977 | 133 | 123 | 23 | 69.5 | 1.5 | 13 | 0 | 0 | 0 | 59 |
| | *1978 | 137 | 133 | 12 | 58.4 | 1.6 | 6 | 0 | 0 | 0 | 41 |
| | *1979 | 131 | 131 | 16 | 66.9 | 1.3 | 11 | 0 | 0 | 0 | 58 |
| | *1980 | 154 | 121 | 20 | 64.9 | 1.7 | 9 | 1 | 0 | 0 | 48 |
| | *1983 | 120 | 108 | 15 | 46.2 | 1.4 | 2 | 0 | 0 | 0 | 54 |
| | 1984 | 99 | 95 | 5 | 49.7 | N/A | 0 | 0 | 0 | 0 | 60 |

* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

## Particulate Matter

Total Suspended Particulate (TSP) samples are taken every six days over a 24-hour period coincident to a national schedule. This allows a better comparison of data and sampling on different days of the week. TSP concentrations are reported in micrograms per cubic meter ($ug/m^3$). Table 4 contains the highest and second highest 24-hour concentrations and the number of samples exceeding specified ambient air quality levels, i.e. occurrences of 24-hour concentrations $\geq$ 100 $ug/m^3$ (old California Standard), > 150 $ug/m^3$ (secondary NAAQS), > 260 $ug/m^3$ (primary NAAQS), and $\geq$ 375 $ug/m^3$ (EPA Stage 1 episode criterion). The annual geometric mean (AGM) is provided for comparison with the California AGM standard of 60 $ug/m^3$ and the primary AGM NAAQS of 75 $ug/m^3$. A new particulate standard and collection method has been proposed by EPA and ARB. Called $PM^{10}$, this standard is based on particles sized at less than 10 micrometers in diameter. These particulates are small enough to be inhaled. The new California standard is 30 $ug/m^3$ for an AGM and 50 $ug/m^3$ for 24 hour average. In January, 1985, the District installed a size selective $PM^{10}$ sampler at the Simi Valley air monitoring station.

TSP filters collected in Simi Valley are analyzed by the California Air and Industrial Hygiene Laboratory in Berkeley for lead and sulfates. The California standard for lead is 1.5 $ug/m^3$ - 30 day mean, the NAAQS is 1.5 $ug/m^3$ - 90 day mean. Only the first quarter of 1984 data is availiable through the Air Resources Board. This data shows no "exceedances" of standards. A summary report for 1983 and 1984 lead and sulfate data will be included in a future APCD Monthly Report.

## Other Pollutants

The nitrogen dioxide ($NO_2$) NAAQS (annual average of all hours of 0.05 ppm) has not been exceeded in Ventura County in the past. The highest 1984 $NO_2$ AGM was .026 ppm at Simi Valley. The highest hourly $NO_2$ concentration, again at Simi Valley, was 0.20 ppm. This may be compared to the California hourly standard of 0.25 ppm.

The NAAQS for sulfur dioxide ($SO_2$) is an annual average of 0.03 ppm. This standard has not been exceeded in Ventura County in the past. Simi Valley's 1984 annual average was 0.001 ppm. The California hourly standard is 0.50 ppm. The maximum hourly concentration in Ventura County in 1984 was 0.03 ppm also Simi Valley.

The 1-hour NAAQS and California standards for carbon monoxide (CO) are 35 ppm and 20 ppm, respectively. The maximum hourly concentrations measured in Ventura County in 1984 was 12 ppm in Simi Valley. The 8-hour NAAQS and California standard is 9 ppm. The maximum 8-hour average in 1984 was 4.4 ppm in Simi Valley. Table 5 summarizes these pollutants historically measured in the county.

Table 5
Annual Statistics for CO, $SO^2$, & $NO^2$
(1975-1984)

| | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO ppm** | | | | | | | | | | |
| Max 1 hr | | | | | | | | | | |
| Cam. | 14 | 9 | 12 | -- | -- | -- | -- | -- | -- | -- |
| Vent. | -- | 18 | 13 | -- | -- | -- | -- | 7+ | 6+ | 4+ |
| Simi | -- | -- | 16 | 13+ | 18+ | 28+ | -- | 13 | 15+ | 12 |
| El Rio | -- | -- | -- | -- | 10+ | -- | -- | -- | 4+ | 3 |
| Max 8 hr avg | | | | | | | | | | |
| Cam. | * | 3.9 | 4.6 | -- | -- | -- | -- | -- | -- | -- |
| Vent. | -- | 7.6 | 5.6 | -- | -- | -- | -- | 4.9+ | 2.6+ | 1.9 |
| Simi | -- | -- | 7.9 | 7.8+ | 6.8+ | 7.1+ | -- | 6.0 | 6.0+ | 4.4 |
| El Rio | -- | -- | -- | -- | 8.6+ | -- | -- | -- | 2.6+ | 2.7 |
| **$SO_2$ pphm** | | | | | | | | | | |
| Max 1 hr | | | | | | | | | | |
| Cam. | 4 | 1 | 0 | -- | -- | -- | -- | -- | -- | -- |
| Ojai | -- | -- | 6 | 9+ | -- | -- | -- | -- | -- | -- |
| Simi | -- | -- | 3 | 5+ | 6 | 8+ | -- | 4+ | 3 | 3 |
| El Rio | -- | -- | -- | -- | 4 | -- | -- | -- | -- | -- |
| Annual Avg | | | | | | | | | | |
| All Hours | | | | | | | | | | |
| Cam. | 0.0 | 0.0 | 0.0+ | -- | -- | -- | -- | -- | -- | -- |
| Ojai | -- | -- | 0.8+ | 0.7+ | -- | -- | -- | -- | -- | -- |
| Simi | -- | -- | 0.6+ | 0.4+ | 0.3 | 0.2+ | -- | 0.3+ | 0.2 | 0.1 |
| El Rio | -- | -- | -- | -- | 0.4 | -- | -- | -- | -- | -- |
| **$NO_2$ pphm** | | | | | | | | | | |
| Max 1 hr | | | | | | | | | | |
| Cam. | 15 | 17 | 23 | 17+ | -- | -- | -- | -- | -- | -- |
| Pt. Mugu | 8 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pt. Huen | -- | 17 | 20 | -- | -- | -- | -- | -- | -- | -- |
| Simi | -- | -- | 30 | 25 | 30+ | 15+ | 12+ | 14 | 16+ | 20 |
| Vent. | -- | -- | -- | -- | -- | 10+ | -- | 18+ | 14+ | 7+ |
| El Rio | -- | -- | -- | -- | -- | -- | -- | 7+ | 8+ | 11 |
| Annual Avg | | | | | | | | | | |
| All Hours | | | | | | | | | | |
| Cam. | 1.8 | 2.5 | -- | 3.1+ | -- | -- | -- | -- | -- | -- |
| Pt. Mugu | 0.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pt. Huen | -- | 2.4 | 2.2+ | -- | -- | -- | -- | -- | -- | -- |
| Simi | -- | -- | 3.9+ | 3.5 | 3.2+ | 2.6+ | 2.9+ | 2.3 | 2.4+ | 2.6 |
| Vent. | -- | -- | -- | -- | -- | 0.8+ | -- | 1.9+ | 1.8+ | 1.4 |
| El Rio | -- | -- | -- | -- | -- | -- | -- | 1.3+ | 1.6+ | 1.5 |

+ Does not meet criteria for representativeness
* Not calculated by ARB
-- Not measured at site
During years with station relocations, the station with the most complete data was reported.

For more information contact Herm Ragsdale or Evan Shipp at (805) 654-2668.

AMBIENT AIR QUALITY STANDARDS

| Pollutant | Averaging Time | California Standards[1] | | National Standards[2] | | |
|---|---|---|---|---|---|---|
| | | Concentration[3] | Method[4] | Primary[3,5] | Secondary[3,6] | Method[7] |
| Oxidant[10] | 1 hour | 0.10 ppm (200 ug/m$^3$) | Ultraviolet Photometry | -- | -- | -- |
| Ozone | 1 hour | -- | -- | 0.12 ppm (235 ug/m$^3$) | Same as Primary Standard | Ethylene Chemiluminescence |
| Carbon Monoxide | 8 hour | 9.0 ppm (10 mg/m$^3$) | Non-Dispersive Infrared Spectroscopy (NDIR) | 10 mg/m$^3$ (9 ppm) | Same as Primary Standards | Non-Dispersive Infrared Spectroscopy (NDIR) |
| | 1 hour | 20 ppm (23 mg/m$^3$) | | 40 mg/m$^3$ (35 ppm) | | |
| Nitrogen Dioxide | Annual Average | -- | Gas Phase Chemiluminescence | 100 ug/m$^3$ (0.05 ppm) | Same as Primary Standard | Gas Phase Chemiluminescence |
| | 1 hour | 0.25 ppm (470 ug/m$^3$) | | -- | | |
| Sulfur Dioxide | Annual Average | -- | Ultraviolet Fluorescence | 80 ug/m$^3$ (0.03 ppm) | -- | Pararosaniline |
| | 24 hour | 0.05 ppm (131 ug/m$^3$)[9] in combination with .10 ppm Ox or 100 ug/m$^3$ TSP | | 365 ug/m$^3$ (0.14 ppm) | -- | |
| | 3 hour | -- | | -- | 1300 ug/m$^3$ (0.5 ppm) | |
| | 1 hour | 0.5 ppm (1310 ug/m$^3$) | | -- | -- | |
| Suspended Particulate Matter | Annual Geometric Mean | -- | -- | 75 ug/m$^3$ | 60 ug/m$^3$ | High Volume Sampling |
| | 24 hour | -- | | 260 ug/m$^3$ | 150 ug/m$^3$ | |
| $PM_{10}$[11] | Annual Geometric Mean | 30 ug/m$^3$ | Not Determined | -- | -- | -- |
| | 24 hour | 50 ug/m$^3$ | | | | |
| Sulfates | 24 hour | 25 ug/m$^3$ | Turbidimetric Barium Sulfate | -- | -- | -- |
| Lead | 30 Day Average | 1.5 ug/m$^3$ | Atomic Absorption | -- | -- | -- |
| | Calendar Quarter | -- | -- | 1.5 ug/m$^3$ | Same as Primary Standard | Atomic Absorption |
| Hydrogen Sulfide | 1 hour | 0.03 ppm (42 ug/m$^3$) | Cadmium Hydroxide STRactan | -- | -- | -- |
| Vinyl Chloride (Chloroethene) | 24 hour | 0.010 ppm (26 ug/m$^3$) | Tedlar Bag Collection, Gas Chromatography | -- | | |
| Visibility Reducing Particles | 1 observation | Insufficient amount to reduce the prevailing visibility[8] to less than 10 miles when the relative humidity is less than 70% | | -- | -- | -- |

FOOTNOTES:

1. California standards, other than carbon monoxide, are values that are not to be equaled or exceeded. The carbon monoxide standards are not to be exceeded.

2. National standards, other than ozone and those based on annual averages or annual geometric means, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days a calendar year with a maximum hourly average concentration above the standard is equal to or less than one.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of Hg (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the Environmental Protection Agency (EPA).

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the implementation plan is approved by the EPA.

7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

8. Prevailing visibility is defined as the greatest visibility which is attained or surpassed around at least half of the horizon circle, but not necessarily in continuous sectors.

9. At locations where the state standards for oxidant and/or suspended particulate matter are violated. National standards apply elsewhere.

10. Photochemical oxidants measured as ozone.

11. Suspended particulate matter 10 microns or less in size.

ppm - parts per million
$mg/m^3$ - milligrams per cubic meter
$ug/m^3$ - micrograms per cubic meter

CTTBLE/lw

EL RIO OZONE 1985 09-APR-86 10:12:51
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04 | 03* | 06 | 05 | 09 | 06 | 07 | 10 | 09 | 07 | 06 | 04 |
| 2 | 04 | 04 | 04 | 09 | 07* | 06 | 05 | 10 | 05 | 11 | 01 | 03 |
| 3 | 03 | 05 | 05 | 06 | 08 | 05 | 05 | 09 | 04 | 11 | 11 | 03 |
| 4 | 03 | 04 | 07 | 07 | 09 | 08* | 06 | 07 | 04 | 07* | 07 | 05 |
| 5 | 03 | 04 | 04 | 06 | 06 | 08 | 07 | 05* | 04 | 06 | 07 | 04 |
| 6 | 03 | 06 | 04 | 06 | 06 | 10* | 05 | | 03 | 07 | 08 | 04 |
| 7 | 01* | 07 | 04 | 06 | 05 | 06* | 04 | 05* | 04 | 03* | 08 | 03 |
| 8 | 03 | 03 | 05 | 05 | 05 | 03 | 10* | 08 | 03 | 04 | 05 | 04 |
| 9 | 04 | 04 | 06 | 07 | 05 | 06 | 12 | 10 | 04 | 04 | 05 | 03 |
| 10 | 03 | 05 | 05 | 07 | 05 | 10* | 09 | 07 | 05 | 05 | 03 | 04 |
| 11 | 03 | 04 | 05 | 06 | 06 | 06 | 07 | 06 | 04 | 07 | 05 | 04 |
| 12 | 03 | 04 | 05* | 10 | 06 | 09 | 05 | 06 | 05 | 07 | 04 | 04 |
| 13 | 04 | 04 | 05 | 15 | 08 | 08 | 04 | 03 | 13 | 08 | 04 | 03 |
| 14 | 03 | 04 | 06 | 12 | 01 | 10 | 09 | 07* | 07 | 05 | 04 | 04 |
| 15 | 03 | 05 | 06 | 07 | 08 | 11 | 08 | 08 | 06 | 04 | 04 | 04 |
| 16 | 05 | 07 | 07 | 04 | 05 | 09 | 07 | 05 | 07 | 07 | 04 | 05 |
| 17 | 05 | 09 | 07 | 04 | 06 | 06 | 06 | 05 | 05 | 08 | 04 | 04 |
| 18 | 05 | 10 | 04 | 04* | 07 | 06 | 05 | 07 | 04 | 06 | 03 | 03* |
| 19 | 07 | 07 | 04 | | 08 | 07 | 05 | 06 | 05 | 07 | 03 | 04 |
| 20 | 06 | 05 | 07 | | 08 | 05 | 06 | 06 | 09 | 06 | 05 | 03 |
| 21 | 03 | 05 | 07 | | 08 | 05 | 05 | 12 | 06 | 03 | 05 | 06 |
| 22 | 03 | 06 | 05 | | 10 | 08 | 06 | 09 | 08 | 03 | 03 | 05 |
| 23 | 04 | 10 | 07 | 07* | 06 | 06 | 05 | 06 | 09 | 05 | 05 | 02 |
| 24 | 03 | 09 | 07 | 06* | 08 | 05 | 07 | 10 | 14 | 04 | 04 | 04 |
| 25 | 03 | 08 | 05 | 05 | 06 | 06 | 08 | 06 | 07 | 05 | 04 | 09 |
| 26 | 04 | 09 | 05 | 06 | 06 | 07 | 09 | 12 | 09 | 07 | 07 | 09 |
| 27 | 03 | 08 | 04 | 05 | 06 | 09 | 07 | 09 | 02 | 11 | 04 | 07 |
| 28 | 02 | 06 | 04 | 07 | 05 | 07 | 05 | 06 | 04 | 07 | 04 | 08 |
| 29 | 03 | | 05 | 06* | 05 | 07 | 06 | 06 | 04 | 07 | 04 | 05 |
| 30 | 03 | | 05 | 03 | 07 | 09 | 05 | 11 | 06 | 07 | 04 | 07 |
| 31 | 03 | | 08 | | 06 | | 06 | 11 | | 07 | | 08 |
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.5 | 5.9 | 5.4 | 6.8 | 6.5 | 7.2 | 6.5 | 7.7 | 6.0 | 6.3 | 4.8 | 4.7 |

MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 10 | 8 | 15 | 10 | 11 | 12 | 12 | 14 | 11 | 11 | 9 |

NUMBER OF DAYS EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 |

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 6.7 | 0.0 | 0.0 | 0.0 |

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 360.0 | 183.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 5.9 | 6.7 |
| NUMBER OF DAYS EXCEEDING NAAQS | 3.0 | 2.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 0.8 | 1.1 |
| MAXIMUM HOURLY CONCENTRATIONS | 15.0 | 14.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

FIRU OZONE 1985 09-APR-86 10:23:59
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 03 | 03 | | 04 | 10 | 05 | 05 | 08 | 11 | | 03 | 03 |
| 2 | 03* | 03 | | 07 | 09 | 05 | 07 | 08 | 08 | | 07 | 03 |
| 3 | 03 | 03 | | 11 | 09 | 04 | 09 | 09 | 03 | | 11 | 03 |
| 4 | 03 | 03 | | 12 | 09 | 03 | 10 | 06 | 06 | | 07 | 04 |
| 5 | 02 | 04 | | 09 | 06 | 09 | 10 | 06 | 03 | | 08 | 04* |
| 6 | 03 | 05 | | 05 | 05 | 08 | 07 | 07 | 05 | | 07 | 03 |
| 7 | 01 | 07 | | 05 | 05 | 08 | 10 | 06 | 03 | | 08 | 02 |
| 8 | 02* | 02 | 04* | 07* | 06 | 10 | 14 | 07 | 02 | | 06* | 03 |
| 9 | 04 | 03 | 08 | 10 | 06 | 09 | 09 | 12 | 02 | | 04 | 04 |
| 10 | 04 | 04 | 06 | 10 | 04 | 10 | 09 | 09 | 04 | | 03 | 02 |
| 11 | 03 | 03 | 04 | 07 | 05 | 10* | 09 | 07 | 04* | | 03 | 04 |
| 12 | 03 | 03 | 04 | 09 | 06 | 09 | 08 | 06 | 05* | | 03 | 04 |
| 13 | 03 | 03 | 04 | 10 | 08 | 10 | 08 | 06 | 13 | | 03 | 04 |
| 14 | 03 | 03 | 05 | 16 | 09 | 10 | 11 | 06 | 10 | | 04 | 04 |
| 15 | 02 | 03 | 06 | 09 | 10 | 12 | 05* | 09 | 09 | | 03 | 03 |
| 16 | 03 | 08 | 07 | 03* | 05 | 10 | 09 | 08 | 09* | | 04 | 04 |
| 17 | 03 | 08 | 09 | 03 | 05 | 09 | 08 | 05 | 08 | | 05 | 04* |
| 18 | 03 | 06 | 04 | 04 | 07 | 07 | 05 | 07 | 04 | | 04* | 04 |
| 19 | 07 | 05 | 05 | 04 | 07 | 09 | 05 | 07 | 05 | | 04 | 04 |
| 20 | 06 | 04 | 09 | 04 | 08 | 10 | 08 | 08 | 08 | | 04 | 03 |
| 21 | 02 | 04 | 05 | 04 | 08 | 07 | 07 | 12 | 07 | | 05 | 05 |
| 22 | 03 | 03 | 05 | 04 | 10 | 09 | 08 | 08 | 11 | | 07 | 04 |
| 23 | 02 | 05 | 08 | 06 | 09 | 08 | 09 | 08 | 07 | | 04 | 05 |
| 24 | 03 | 06 | 09 | 05 | 09 | 05 | 12 | 12 | 12 | | 03 | 04 |
| 25 | 02* | 06 | 06 | 05 | 07 | 07 | 09 | 10 | 12 | | 02 | 03 |
| 26 | 05 | 05 | 06 | 05 | 05 | 10 | 09 | 15 | 05 | | 03 | 06 |
| 27 | 03 | 01* | 04 | 06 | 05 | 12 | 08 | 10 | 08 | | 04 | 07 |
| 28 | 02* | | 04 | 07 | 05 | 10 | 07 | 10 | 06 | | 03 | 09 |
| 29 | 03 | | 04 | 07 | 05 | 08 | 05 | 08 | 03 | 07* | 03 | 03 |
| 30 | 03 | | 04 | 08 | 07 | 08 | 07* | 13 | 03 | 09 | 03 | 04* |
| 31 | 03 | | 05 | | 05 | | 07 | 15 | | 04 | | 05 |
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.1 | 4.2 | 5.6 | 6.7 | 5.9 | 8.5 | 8.2 | 8.2 | 6.0 | 4.7 | 4.6 | 4.1 |

MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 8 | 9 | 16 | 10 | 12 | 14 | 15 | 13 | 9 | 11 | 9 |

NUMBER OF DAYS EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 3.0 | 1.0 | 0.0 | 0.0 | 0.0 |

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 3.3 | 0.0 | 0.0 | 3.2 | 9.7 | 6.7 | 0.0 | 0.0 | 0.0 |

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 329.0 | 155.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 6.2 | 7.8 |
| NUMBER OF DAYS EXCEEDING NAAQS | 7.0 | 6.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 2.1 | 3.8 |
| MAXIMUM HOURLY CONCENTRATIONS | 16.0 | 15.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS EL RIO 1985

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 26 | 5 | 0 | 0 | 0 | 0 | 0 |
| 2 | 10 | 13 | 5 | 0 | 0 | 0 | 0 |
| 3 | 8 | 23 | 0 | 0 | 0 | 0 | 0 |
| 4 | 3 | 18 | 4 | 1 | 0 | 0 | 0 |
| 5 | 1 | 22 | 3 | 0 | 0 | 0 | 0 |
| 6 | 0 | 22 | 8 | 0 | 0 | 0 | 0 |
| 7 | 2 | 24 | 5 | 0 | 0 | 0 | 0 |
| 8 | 1 | 18 | 11 | 0 | 0 | 0 | 0 |
| 9 | 12 | 12 | 4 | 2 | 0 | 0 | 0 |
| 10 | 7 | 21 | 3 | 0 | 0 | 0 | 0 |
| 11 | 17 | 12 | 1 | 0 | 0 | 0 | 0 |
| 12 | 20 | 9 | 2 | 0 | 0 | 0 | 0 |
| TOTAL | 107 | 204 | 46 | 3 | 0 | 0 | 0 |

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS FIRU 1985

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 28 | 3 | 0 | 0 | 0 | 0 | 0 |
| 2 | 17 | 10 | 0 | 0 | 0 | 0 | 0 |
| 3 | 9 | 12 | 3 | 0 | 0 | 0 | 0 |
| 4 | 8 | 11 | 8 | 1 | 0 | 0 | 0 |
| 5 | 1 | 21 | 9 | 0 | 0 | 0 | 0 |
| 6 | 1 | 12 | 17 | 0 | 0 | 0 | 0 |
| 7 | 0 | 17 | 13 | 1 | 0 | 0 | 0 |
| 8 | 0 | 18 | 10 | 3 | 0 | 0 | 0 |
| 9 | 10 | 11 | 7 | 2 | 0 | 0 | 0 |
| 10 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| 11 | 20 | 9 | 1 | 0 | 0 | 0 | 0 |
| 12 | 24 | 6 | 1 | 0 | 0 | 0 | 0 |
| TOTAL | 119 | 133 | 70 | 7 | 0 | 0 | 0 |

OJAI OZONE 1985 09-APR-86 10:15:17
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04 | 04 | 06 | 05 | 10* | 07 | | | 12 | 08 | 06 | 04 |
| 2 | 04 | 04 | 04 | 07 | 09 | 05 | | | 07 | 07 | 03 | 03 |
| 3 | 04 | 04 | 05 | 13 | 08 | 06 | | | 04 | 07 | 09 | 04 |
| 4 | 04 | 04 | 05 | 10 | 07 | 09 | | | 04 | 07 | 09 | 03 |
| 5 | 03 | 04 | 04 | 07 | 08 | 07 | | | 03 | 09 | 09 | 04 |
| 6 | 03 | 05 | 05 | 06 | 06 | 10 | | | 04 | 08 | 07 | 04 |
| 7 | 03 | 06 | 04 | 08 | 05 | 08 | | | 04 | 04 | 08 | 03 |
| 8 | 03 | 03 | 05 | 09 | 06 | 08 | | | 03 | 04* | 08 | 04 |
| 9 | 03 | 04 | 03 | 10 | 06 | 09 | | | 04 | 05 | 05 | 04 |
| 10 | 04 | 04 | 05 | 05 | 05 | 10 | | | 05 | 06 | 04 | 04 |
| 11 | 03 | 04 | 05 | 09 | 06 | 08 | | | 04 | 08 | 04 | 04 |
| 12 | 03 | 04 | 05 | 09 | 05 | 08 | | | 06 | 09 | 04 | 04 |
| 13 | 03 | 03* | 05 | 11 | 08 | 08 | | | 14 | 08 | 05 | 04 |
| 14 | 03 | 04 | 05 | 15 | 10 | 10 | | | 11 | 04 | 05 | 04 |
| 15 | 04 | 05 | 06 | 11 | 03 | 10 | | | 08 | 06 | 04 | 04 |
| 16 | 05 | 11 | 07 | 06 | 05 | 10 | | | 08 | 07 | 05 | 04 |
| 17 | 05 | 07 | 08 | 05 | 06 | 09 | | | 08 | 09 | 04 | 04 |
| 18 | 06 | 07 | 04 | 07 | 06 | 07 | | | 04 | 08 | 04 | 04 |
| 19 | 07 | 06 | 05 | 07 | 07 | 07 | | | 06 | 09 | 04 | 04 |
| 20 | 07 | 04 | 07 | 05 | 07 | 07 | | | 09 | 07 | 04 | 04 |
| 21 | 04 | 05 | 06 | 06 | 08 | 07 | | 11* | 07 | 05 | 05 | 04 |
| 22 | 04 | 04 | 06 | 05 | 09 | 08 | | 09 | 13 | 05 | 06 | 03 |
| 23 | 05 | 07 | 08 | 07 | 09 | 07 | | 10 | 11 | 06 | 06 | 03 |
| 24 | 04 | 06 | 08 | 07 | 07 | 05 | | 09 | 19 | 06 | 04 | 03 |
| 25 | 04 | 05 | 05 | 06 | 07 | 07 | | 11 | 09 | 08 | 03 | 04 |
| 26 | 04 | 07 | 07 | 06 | 06 | 10 | | 18 | 10 | 08 | 04 | 05 |
| 27 | 04 | 07 | 05 | 07 | 05 | 08* | | 16* | 09 | 12 | 04 | 07 |
| 28 | 03 | 05 | 06 | 09 | 07 | | | 10 | 06 | 08 | 03 | 07 |
| 29 | 04 | | 06 | 10 | 07 | | | 10* | 05 | 11 | 04 | 02 |
| 30 | 04 | | 06 | 09 | 07 | | | 11 | 07 | 11 | 04 | 08 |
| 31 | 04 | | 06 | | 07 | | | 11 | | 09 | | 04 |

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MEANS OF MAXIMUM HOURLY CONCENTRATIONS | | | | | | | | | | | |
| 4.0 | 5.1 | 5.7 | 8.1 | 7.2 | 8.1 | 0.0 | 10.9 | 7.5 | 7.5 | 5.3 | 4.1 |
| MAXIMUM HOURLY CONCENTRATIONS | | | | | | | | | | | |
| 7 | 11 | 9 | 15 | 10 | 10 | 0 | 18 | 19 | 12 | 9 | 8 |
| NUMBER OF DAYS EXCEEDING NAAQS | | | | | | | | | | | |
| 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 1.0 | 3.0 | 0.0 | 0.0 | 0.0 |
| PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS | | | | | | | | | | | |
| 0.0 | 0.0 | 0.0 | 6.7 | 0.0 | 0.0 | 0.0 | 9.1 | 10.0 | 0.0 | 0.0 | 0.0 |

| | YEAR | SACO SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 361.0 | 130.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 6.4 | 7.8 |
| NUMBER OF DAYS EXCEEDING NAAQS | 6.0 | 4.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 1.9 | 3.1 |
| MAXIMUM HOURLY CONCENTRATIONS | 19.0 | 19.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

SIMI VALLEY OZONE 1985 09-APR-86 10:07:50
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 05 | 05 | 08 | 06 | 12 | 07 | 07 | 11 | 13 | 10 | 05 | 04 |
| 2 | 05* | 04 | 04 | 09 | 12 | 06 | 08 | 12 | 10 | 11 | 09 | 02 |
| 3 | 05 | 05 | 05 | 13 | 11 | 05 | 10 | 12 | 04 | 06* | 12 | 06 |
| 4 | 04 | 04 | 07 | 15 | 11 | 10 | 16 | 12 | 05 | 08* | 08 | 04 |
| 5 | 04 | 04 | 05 | 13 | 08 | 11 | 12 | 09 | 05 | 10 | 09 | 05 |
| 6 | 03 | 06 | 05 | 07 | 07 | 13 | 12 | 10 | 07 | 08 | 05 | 04 |
| 7 | 02 | 09 | 05 | 09 | 06 | 12 | 12 | 11 | 07 | 04 | 05 | 04 |
| 8 | 04 | 03 | 05 | 10 | 09 | 12 | 14 | 14 | 06 | 05 | 04 | 04 |
| 9 | 04 | 04 | 08 | 12 | 08 | 12 | 12 | 13 | 04 | 06 | 05 | 04 |
| 10 | 04 | 04 | 08 | 13 | 06 | 13 | 12 | 12 | 05 | 06 | 05 | 04 |
| 11 | 04 | 04 | 05 | 10 | 07 | 15 | 11 | 09 | 05 | 08 | 04 | 04 |
| 12 | 04* | 04 | 05 | 11 | 08 | 12 | 10 | 10 | 09 | 10 | 05 | 04 |
| 13 | 04 | 04 | 06 | 16 | 11 | 11 | 10 | 08* | 16 | 11 | 06 | 04 |
| 14 | 04 | 04 | 07 | 19 | 10 | 15 | 13 | 11 | 11 | 07 | 05 | 04 |
| 15 | 04 | 04 | 07 | 11 | 10 | 14 | 18 | 14 | 11 | 06 | 04 | 03 |
| 16 | 04 | 12 | 09 | 06 | 08 | 15 | 12 | 12 | 10 | 06 | 05 | 04 |
| 17 | 06 | 12 | 10 | 05 | 07 | 12 | 12 | 08 | 09 | 09 | 05 | 04 |
| 18 | 07 | 09 | 04 | 05 | 11 | 09 | 09* | 09 | 06 | 10 | 05 | 04 |
| 19 | 08 | 08* | 06 | 06 | 09 | 15 | 07 | 11 | 07 | 12 | 04 | 04 |
| 20 | 08 | 05 | 10 | 06 | 10 | 12 | 12 | 11 | 09 | 12 | 04 | 03 |
| 21 | 03 | 05 | 06 | 05 | 10 | 10 | 10 | 14 | 08 | 03 | 06 | 04 |
| 22 | 05* | 06 | 05 | 06 | 12 | 14 | 09 | 12 | 13 | 05 | 06* | 04 |
| 23 | 04 | 06 | 09 | 08 | 11 | 10 | 11 | 10 | 13 | 05 | 05 | 03 |
| 24 | 04 | 07 | 10 | 08 | 14 | 06 | 15 | 14 | 18 | 07 | 03 | 04 |
| 25 | 04 | 08 | 07 | 06 | 08 | 08 | 13 | 13 | 11 | 10 | 03 | 04 |
| 26 | 06 | 08 | 07 | 06 | 07 | 12 | 13 | 12 | 03 | 10 | 04 | 08 |
| 27 | 05 | 09 | 04 | 07 | 07 | 15 | 09 | 11 | 05 | 01* | 05 | 08 |
| 28 | 03 | 07 | 04 | 09 | 07 | 10 | 09 | 09 | 07 | 10* | 04 | 09 |
| 29 | 04 | | 04 | 08 | 08 | 09 | 07 | 08 | 07 | 10 | 04 | 05 |
| 30 | 04 | | 05 | 09 | 09 | 06 | 07 | 12 | 08 | 11 | 04 | 08 |
| 31 | 04 | | 07 | | 07 | | 09 | 15 | | 05 | | 05 |

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MEANS OF MAXIMUM HOURLY CONCENTRATIONS | | | | | | | | | | | |
| 4.5 | 6.1 | 6.4 | 9.1 | 9.1 | 11.0 | 11.0 | 11.3 | 8.4 | 7.8 | 5.2 | 4.5 |
| MAXIMUM HOURLY CONCENTRATIONS | | | | | | | | | | | |
| 8 | 12 | 10 | 19 | 14 | 15 | 18 | 15 | 18 | 12 | 12 | 9 |
| NUMBER OF DAYS EXCEEDING NAAQS | | | | | | | | | | | |
| 0.0 | 0.0 | 0.0 | 6.0 | 1.0 | 9.0 | 7.0 | 7.0 | 5.0 | 0.0 | 0.0 | 0.0 |
| PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS | | | | | | | | | | | |
| 0.0 | 0.0 | 0.0 | 20.0 | 3.2 | 30.0 | 22.6 | 22.6 | 16.7 | 0.0 | 0.0 | 0.0 |

| | YEAR | SACO SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 335.0 | 184.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 7.9 | 9.8 |
| NUMBER OF DAYS EXCEEDING NAAQS | 35.0 | 29.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 9.6 | 15.8 |
| MAXIMUM HOURLY CONCENTRATIONS | 19.0 | 18.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS OJAI 1985

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-29 |
| 1 | 25 | 6 | 0 | 0 | 0 | 0 | 0 |
| 2 | 14 | 13 | 1 | 0 | 0 | 0 | 0 |
| 3 | 4 | 26 | 1 | 0 | 0 | 0 | 0 |
| 4 | 0 | 17 | 11 | 2 | 0 | 0 | 0 |
| 5 | 0 | 25 | 6 | 0 | 0 | 0 | 0 |
| 6 | 0 | 14 | 11 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 10 | 0 | 1 | 0 | 0 |
| 9 | 9 | 11 | 7 | 2 | 1 | 0 | 0 |
| 10 | 3 | 18 | 10 | 0 | 0 | 0 | 0 |
| 11 | 15 | 12 | 3 | 0 | 0 | 0 | 0 |
| 12 | 27 | 4 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 97 | 148 | 60 | 4 | 2 | 0 | 0 |

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS SIMI VALLEY 1985

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25- |
| 1 | 21 | 10 | 0 | 0 | 0 | 0 | |
| 2 | 11 | 12 | 5 | 0 | 0 | 0 | |
| 3 | 5 | 21 | 5 | 0 | 0 | 0 | |
| 4 | 0 | 15 | 9 | 5 | 1 | 0 | |
| 5 | 0 | 15 | 15 | 1 | 0 | 0 | |
| 6 | 0 | 6 | 15 | 9 | 0 | 0 | |
| 7 | 0 | 5 | 19 | 6 | 1 | 0 | |
| 8 | 0 | 3 | 21 | 7 | 0 | 0 | |
| 9 | 3 | 14 | 8 | 4 | 1 | 0 | |
| 10 | 3 | 14 | 14 | 0 | 0 | 0 | |
| 11 | 12 | 15 | 3 | 0 | 0 | 0 | |
| 12 | 24 | 6 | 1 | 0 | 0 | 0 | |
| TOTAL | 79 | 136 | 115 | 32 | 3 | 0 | |

THOUSAND OAKS OZONE 1985 09-APR-86 10:40:17
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .04 | .04 | .05 | .06 | .11 | .07 | .09 | .11 | .11 | .08 | .05 | .02 |
| 2 | .04 | .03 | .03 | .06 | .07 | .05 | .07 | .10 | .06 | .10 | .08 | .02 |
| 3 | .04 | .03 | .04 | .10 | .09 | .05 | .07 | .12 | .04 | .07 | .10 | .02 |
| 4 | .04 | .03 | .06 | .11 | .08 | .08 | .11 | .07 | .04 | .03 | .07 | .02 |
| 5 | .04 | .04 | .03 | .08 | .06 | .09 | .10 | .09 | .05 | .10 | .06 | .03 |
| 6 | .04 | .05* | .04 | .05 | .02 | .10 | .07 | .08 | .04 | .07 | .06 | .03 |
| 7 | .02 | .02* | .05 | .06 | .04 | .09 | .11 | .08 | .03 | .04 | .07 | .02 |
| 8 | .04 | .02 | .05 | .08 | .05 | .10 | .13 | .11 | .03 | .06 | .05 | .03 |
| 9 | .04 | .03 | .08 | .09 | .05 | .10 | .11 | .10 | .04 | .03* | .04 | .03 |
| 10 | .03 | .03 | .04 | .09 | .04 | .09 | .10 | .06 | .05 | .04* | .04 | .03 |
| 11 | .03 | .03 | .04 | .08 | .06 | .09 | .08 | .07 | .04 | .07 | .03 | .03 |
| 12 | .03 | .03 | .04 | .09 | .05 | .08 | .07 | .07 | .07 | .08 | .04 | .03 |
| 13 | .03 | .03 | .04 | .16 | .07 | .08 | .06 | .06 | .15 | .08 | .04 | .03 |
| 14 | .03 | .03 | .06 | .15 | .02 | .09 | .10 | .06 | .09 | .04 | .03 | .03 |
| 15 | .04 | .04 | .05 | .02 | .05* | .10 | .10 | .08 | .07 | .04 | .03 | .03 |
| 16 | .03 | .11 | .07 | .04 | .06 | .11 | .09 | .07 | .08 | .05 | .04 | .03 |
| 17 | .05 | .10 | .08 | .03 | .06 | .08 | .09 | .05 | .06 | .07 | .04 | .03 |
| 18 | .06 | .06 | .04 | .05 | .02 | .06 | .07 | .03 | .04 | .06 | .03 | .03 |
| 19 | .05 | .05 | .05 | .05 | .03 | .08 | .07 | .07 | .04 | .08 | .03 | .03 |
| 20 | .06 | .04 | .09 | .06 | .08 | .06 | .07 | .08 | .09 | .03* | .03 | .03 |
| 21 | | .04 | .04* | .04 | .09 | .06 | .07 | .11 | .08 | | .05 | .05 |
| 22 | .04* | .05 | .05* | .05 | .12 | .07 | .07 | .10 | .11 | .04* | .04 | .04 |
| 23 | .04 | .06 | .08 | .06 | .10 | .07 | .08 | .09 | .10 | .05* | .02 | .02 |
| 24 | .03 | .07 | .08 | .06 | .07 | .05 | .13* | .12 | .15 | .05 | .03 | .03 |
| 25 | .04 | .07 | .05 | .05 | .02 | .07 | .08 | .12 | .09 | .09 | .02 | .04 |
| 26 | .05 | .07 | .05 | .05 | .06 | .10 | .11 | .15 | .03 | .08 | .03 | .07 |
| 27 | .03 | .09 | .03 | .06 | .07 | .14 | .08 | .09 | .04 | .11 | .03 | .06 |
| 28 | .01 | .06 | .04 | .06 | .07 | .09 | .06 | .10 | .05 | .07 | .03 | .06 |
| 29 | .03 | | .03 | .06 | .07 | .08 | .06 | .09 | .05 | .08 | .06 | .03 |
| 30 | .03 | | .04 | .08 | .07 | .06 | .07 | .13 | .06 | .08 | .03 | .06 |
| 31 | .03 | | .05 | | .07 | | .07 | .14 | | .05 | | .03 |
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.8 | 5.8 | 5.1 | 7.2 | 7.3 | 8.2 | 8.5 | 9.3 | 6.6 | 6.5 | 4.3 | 3.5 |

MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 11 | 9 | 16 | 12 | 14 | 13 | 15 | 15 | 11 | 10 | 7 |

NUMBER OF DAYS EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 1.0 | 2.0 | 3.0 | 2.0 | 0.0 | 0.0 | 0.0 |

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 6.7 | 0.0 | 3.3 | 6.5 | 9.7 | 6.7 | 0.0 | 0.0 | 0.0 |

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 363.0 | 183.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 6.3 | 7.2 |
| NUMBER OF DAYS EXCEEDING NAAQS | 10.0 | 5.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 2.8 | 4.4 |
| MAXIMUM HOURLY CONCENTRATIONS | 16.0 | 15.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

VENTURA OZONE 1985 09-APR-86 10:18:21
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .04 | .06 | .06 | .07 | .08 | .05 | .09 | .03* | .04 | .06 | .07* | .02 |
| 2 | .04 | .04 | .05 | .07 | .06 | .05 | .07 | .07 | .04 | .09 | .16 | .02 |
| 3 | .04 | .04 | .05 | .06 | .08 | .05 | .05* | .08 | .03 | .17 | .11 | .04 |
| 4 | .04 | .04 | .06 | .09 | .09 | .07 | .06 | .06 | .04 | .12 | .08 | .03 |
| 5 | .03 | .04 | .04 | .06 | .06 | .07 | .06 | .06 | .03 | .06 | .08 | .02 |
| 6 | .04 | .06 | .05 | .06 | .06 | .06 | .07 | .05 | .04 | .09 | .03 | .04 |
| 7 | .02 | .07 | .05 | .06 | .06 | .04 | .07 | .05* | .04 | .04 | .09 | .05 |
| 8 | .04 | .04 | .05 | .05 | .05 | .06 | .08 | .09 | .03 | .04 | .06 | .05 |
| 9 | .05 | .04 | .06 | .07 | .05 | .06 | .08 | .08 | .04* | .04* | .06 | .05 |
| 10 | .05 | .04 | .06 | .07 | .05 | .09 | .10 | .06 | .05 | .06 | .04 | .04 |
| 11 | .03 | .05 | .05 | .06 | .05 | .06 | .04 | .05 | .05 | .08 | .04 | .04 |
| 12 | .04 | .05 | .05 | .05 | .07 | .08 | .05 | .05 | .06 | .07 | .04 | .04 |
| 13 | .04 | .05 | .05* | .13 | .07 | .08 | .04 | .04 | .06 | .06 | .05 | .04 |
| 14 | .04 | .05 | .06 | .07 | .09 | .08 | .07 | .06 | .07 | .06 | .06 | .04 |
| 15 | .06 | .04 | .06 | .08 | .07 | .01 | .07 | .06 | .05 | .05 | .06 | .04 |
| 16 | .07 | .05 | .06 | .05 | .05 | .08 | .08 | .05 | .05 | .05 | .04 | .05 |
| 17 | .06 | .08 | .07 | .05 | .07 | .08 | .06 | .04 | .04 | .08 | .04 | .05 |
| 18 | .07 | .10 | .05 | .05 | .07 | .06 | .05 | .05 | .04 | .07 | .04 | .04 |
| 19 | .07 | .06 | .05 | .07 | .06 | .06* | .05 | .06 | .04 | .08 | .04 | .05 |
| 20 | .07 | .04 | .05 | .05 | .08 | .07* | .06 | .04 | .06 | .07 | .04 | .04 |
| 21 | .03 | .07 | .06 | .05 | .09* | .06 | .04 | .09 | .05 | .03 | .05 | .06 |
| 22 | .05 | .06 | .06 | .05 | .08 | .05 | .06 | .07 | .07 | .05 | .06 | .06 |
| 23 | .05 | .09 | .07 | .07 | .07 | .06 | .08 | .07 | .07 | .06 | .04 | .04 |
| 24 | .04 | .07 | .05 | .08 | .05 | .05 | .06* | .05 | .10 | .05 | .02 | .04 |
| 25 | .05 | .07 | .05 | .06 | .05 | .07 | .07 | .05* | .07 | .07 | .02 | .11 |
| 26 | .05 | .08 | .04 | .07 | .05 | .07 | .08 | .05* | .04 | .08 | .03 | .09 |
| 27 | .04 | .07 | .04 | .05 | .05 | .08 | .06 | .08 | .04 | .09 | .04 | .08 |
| 28 | .04 | .06 | .05 | .07 | .05 | .06 | .05 | .04 | .05 | .09 | .03 | .07 |
| 29 | .04 | | .05 | .06 | .05 | .06 | .05 | .05 | .04 | .06 | .04 | .04 |
| 30 | .04 | | .05 | .07 | .06 | .07 | .04 | .06 | .06 | .07 | .03 | .08 |
| 31 | .04 | | .08 | | .08 | | .03 | .05 | | .08 | | .05* |
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.5 | 5.8 | 5.4 | 6.5 | 6.4 | 6.3 | 6.2 | 5.8 | 5.0 | 7.0 | 5.5 | 5.1 |

MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 10 | 8 | 13 | 9 | 9 | 10 | 9 | 10 | 17 | 16 | 11 |

NUMBER OF DAYS EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 |

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 3.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.2 | 3.3 | 0.0 |

| | YEAR | SMOG SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 365.0 | 184.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 5.8 | 6.1 |
| NUMBER OF DAYS EXCEEDING NAAQS | 3.0 | 1.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 0.8 | 0.5 |
| MAXIMUM HOURLY CONCENTRATIONS | 17.0 | 17.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS THOUSAND OAKS 1985

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 25 | 5 | 0 | 0 | 0 | 0 | 0 |
| 2 | 15 | 10 | 3 | 0 | 0 | 0 | 0 |
| 3 | 14 | 16 | 1 | 0 | 0 | 0 | 0 |
| 4 | 3 | 21 | 4 | 2 | 0 | 0 | 0 |
| 5 | 2 | 22 | 7 | 0 | 0 | 0 | 0 |
| 6 | 0 | 17 | 12 | 1 | 0 | 0 | 0 |
| 7 | 0 | 18 | 11 | 2 | 0 | 0 | 0 |
| 8 | 0 | 14 | 14 | 3 | 0 | 0 | 0 |
| 9 | 11 | 11 | 6 | 2 | 0 | 0 | 0 |
| 10 | 7 | 19 | 4 | 0 | 0 | 0 | 0 |
| 11 | 20 | 9 | 1 | 0 | 0 | 0 | 0 |
| 12 | 25 | 6 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 122 | 168 | 63 | 10 | 0 | 0 | 0 |

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS VENTURA 1985

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25 |
| 1 | 19 | 12 | 0 | 0 | 0 | 0 | |
| 2 | 9 | 17 | 2 | 0 | 0 | 0 | |
| 3 | 3 | 28 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 28 | 1 | 1 | 0 | 0 | |
| 5 | 0 | 29 | 2 | 0 | 0 | 0 | |
| 6 | 2 | 27 | 1 | 0 | 0 | 0 | |
| 7 | 5 | 24 | 2 | 0 | 0 | 0 | |
| 8 | 5 | 24 | 2 | 0 | 0 | 0 | |
| 9 | 15 | 14 | 1 | 0 | 0 | 0 | |
| 10 | 4 | 22 | 4 | 0 | 1 | 0 | |
| 11 | 16 | 11 | 2 | 1 | 0 | 0 | |
| 12 | 15 | 14 | 2 | 0 | 0 | 0 | |
| TOTAL | 93 | 250 | 19 | 2 | 1 | 0 | |

ANACAPA OZONE 1985 09-APR-86 10:32:22
DAILY MAXIMUM HOURLY CONCENTRATIONS
PARTS PER HUNDRED MILLION

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | .07 | .05 | .09 | .03 | .04* | .07 | .11* | |
| 2 | | .01* | | | .05* | .04 | .07 | .04* | | .10 | .11 | |
| 3 | | .02 | | | .08* | .05 | .07 | .06 | | .20 | .12 | |
| 4 | | .02 | | | | .06 | .04 | .04 | .04* | .12 | .08 | |
| 5 | | | | | | .05 | .07 | .05 | .02* | .02 | .06 | .04* |
| 6 | | | | | | .08* | .06 | .02 | .03 | .07 | .08 | .04 |
| 7 | | | | | | .04 | .06 | .03 | .05 | .04 | .06 | .04 |
| 8 | | * | | | | .06* | .07 | .05* | .03* | .03 | .05* | .04 |
| 9 | | | | | .05* | .05 | .10 | .05 | | .04 | .04 | .04 |
| 10 | | | | | .05 | .07 | .07* | .04 | | .06* | .04 | .04 |
| 11 | | | | | .05 | | .04 | .03 | | .03 | .04 | .04 |
| 12 | | | | | .06 | | .04 | | | .05 | .04 | .04* |
| 13 | | | | | .07 | .03* | .04 | | .07* | .08 | .05 | .04* |
| 14 | | | | | .06 | .08 | .04 | .03* | .06* | .05 | .05* | .04 |
| 15 | | .06* | | | .06 | .07 | .02 | .02* | .03* | .06 | .05 | .04 |
| 16 | | .06 | | | .05* | .07 | .06 | | | .06 | .04 | .02 |
| 17 | | .07 | | | .06 | .05 | .05 | | | .06* | .04 | .02 |
| 18 | | .08 | | | .07 | | .05 | | | .06 | .05 | .02 |
| 19 | | .07 | | | .09 | | .03 | | .05* | .06 | .04 | .01 |
| 20 | | .05 | | | .07 | .05* | | | .06 | .06 | .05 | .02 |
| 21 | | | | | .07 | .04* | | | .07 | .03 | .06 | .01 |
| 22 | | | | | .08 | .04 | | .07* | .07 | .05 | .08 | .04 |
| 23 | | | | | .07 | .05 | | .06 | .06 | .06 | .05 | .02 |
| 24 | | | | | .05 | .04 | | .07 | .09 | .05 | .05 | .01* |
| 25 | | | | | .05 | .04 | | .05* | .07 | .07 | | |
| 26 | | | | | .05 | .06 | | .06* | .04* | .08 | | |
| 27 | | | | | .05 | .08 | | .05* | .04 | .09 | | |
| 28 | | | | | .05 | .05 | | .05 | .05 | .07 | | |
| 29 | | | | | .05 | .03 | | .05 | .05 | .06 | | |
| 30 | | | | | .06* | .02 | | .06 | .06 | .05 | | |
| 31 | | | | | .05 | | | .06 | | .06* | | |

MEANS OF MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 4.9 | 0.0 | 0.0 | 6.0 | 5.3 | 5.6 | 4.7 | 5.2 | 4.7 | 6.0 | 3.1 |

MAXIMUM HOURLY CONCENTRATIONS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8 | 0 | 0 | 9 | 8 | 10 | 8 | 9 | 20 | 12 | 4 |

NUMBER OF DAYS EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |

PERCENTAGE OF DAYS MEASURED EXCEEDING NAAQS

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.2 | 0.0 | 0.0 |

| | YEAR | OZONE SEASON (MAY-OCT.) |
|---|---|---|
| NUMBER OF DAYS MEASURED | 199.0 | 145.0 |
| MEAN OF MAXIMUM HOURLY CONC. | 5.4 | 5.7 |
| NUMBER OF DAYS EXCEEDING NAAQS | 1.0 | 1.0 |
| % DAYS MEASURED EXCEEDING NAAQS | 0.5 | 0.7 |
| MAXIMUM HOURLY CONCENTRATIONS | 20.0 | 20.0 |

NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARD - 12 PPHM
* STATISTIC DOES NOT MEET CRITERIA FOR REPRESENTATIVENESS

FREQUENCY DISTRIBUTION FOR DAILY MAX OZONE READINGS ANACAPA 1985

| | RANGES | | | | | | |
|---|---|---|---|---|---|---|---|
| MONTH | 00-04 | 05-08 | 09-12 | 13-16 | 17-20 | 21-24 | 25-28 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 3 | 6 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 25 | 1 | 0 | 0 | 0 | 0 |
| 6 | 8 | 18 | 0 | 0 | 0 | 0 | 0 |
| 7 | 7 | 10 | 2 | 0 | 0 | 0 | 0 |
| 8 | 9 | 14 | 0 | 0 | 0 | 0 | 0 |
| 9 | 8 | 12 | 1 | 0 | 0 | 0 | 0 |
| 10 | 4 | 23 | 3 | 0 | 1 | 0 | 0 |
| 11 | 7 | 14 | 3 | 0 | 0 | 0 | 0 |
| 12 | 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 66 | 122 | 10 | 0 | 1 | 0 | 0 |

# Traffic & Circulation Study (H)

# TRAFFIC IMPACT REPORT

# DOS VIENTOS RANCH

September 28, 1984

Revised February 1, 1985

Revised June 14, 1985

WALLEN ASSOCIATES

5820 Wilshire Boulevard, Suite 304

Los Angeles, California 90036

WALLEN ASSOCIATES/Transportation Consultants
5820 Wilshire Blvd., Suite 304
Los Angeles, CA 90036, (213) 937-2768

June 14, 1985

Mr. Robert Haaland
Haaland and Associates Inc.
One Boardwalk, Suite 200
Thousand Oaks, California 91360

Subject: Dos Vientos Ranch - Traffic Impact Report

Dear Mr. Haaland:

The attached report presents the results of extensive traffic analysis of the proposed community of 3,940 dwelling units plus local commercial and public use service facilities. This analysis reflects the most current information regarding characteristics of Thousand Oaks traffic, future local development and regional growth patterns which may impact Dos Vientos and Thousand Oaks traffic.

An initial report was submitted on September 28, 1984. The report of February 1, 1985 was revised to include changes in the housing program, and an expanded investigation of internal Dos Vientos traffic.

This revision expands the text of the previous reports to provide elaboration and clarification of the relationship between traffic generated by the Dos Vientos Ranch and other possible local development. Available freeway interchanges and local arterials provide the assurance that alternative future development can be adequately served. The method of analysis, basic street systems, and total number of dwelling units remains the same as in the prior traffic reports.

The proposed internal street system will serve community needs in accordance with the values of the City of Thousand Oaks. An improved Lynn Road will absorb most of the traffic generated by the Dos Vientos Ranch. Additional intersection improvements, freeway ramp widenings, traffic signal installations and modifications, will insure a high level of future traffic service. Fees charged against the developer will finance most, if not all, proposed off-site improvements.

Sincerely,

Martin Wallen

Martin Wallen, P.E.

MW:kn
Enclosure

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# CHAPTER 1

## INTRODUCTION

The Dos Vientos Ranch consists of 3,481 acres in Ventura County contiguous to the present western boundary of the City of Thousand Oaks. It is proposed that 2,331 of these acres be annexed into the City and developed as a residential community.

The purpose of the traffic analysis is twofold:

1. To describe the impact of traffic generated by the proposed Dos Vientos Ranch on the existing and future Thousand Oaks primary street system and on the U.S. 101, Ventura Freeway.
2. To determine the geometric design standards for the roadways within the Dos Vientos Ranch needed to accommodate traffic demand and safely provide for the movement of people and vehicles.

The method of analysis is briefly summarized as follows:

1. <u>Traffic Impact Analysis</u>
   a. Computation of traffic generated by full development of Dos Vientos Ranch.
   b. Distribution of Dos Vientos traffic to internal and external destinations. External destinations were broken down into those within and those beyond the Thousand Oaks planning area. Trip distribution includes consideration of future Thousand Oaks development including Rancho Conejo at uses and densities designated in the General Plan.
   c. Inventory of Thousand Oaks street system and committed street improvements.
   d. Inventory of existing peak hour traffic.
   e. Assignment of traffic to/from Dos Vientos to regional street system.
   f. Discussion of Dos Vientos traffic impact.

2. Internal Street System

a. Assignment of traffic to all major streets based on residential and other land uses.

b. Selection of appropriate City of Thousand Oaks Standard Street Section.

c. Location of traffic signals for pedestrian crossing of streets and control of vehicular traffic.

d. Identification of any special features for pedestrian movement or other purposes.

All findings are based on the present low rates of vehicle occupancy. The possibility of greater vehicle occupancy and increases in the future use of carpools and vanpools for home to work movement was not considered in the analysis.

The absence of through traffic within Rancho Dos Vientos means that the function of the local street system is to provide access to housing and community services plus collect and distribute traffic to/from the arterials which provide access to the development. Traffic capacity is not an important factor. The critical factors controlling street design within Rancho Dos Vientos are safety and convenience to vehicles and pedestrians.

The analysis found that the combination of roadway improvements (Lynn Road) and traffic generation will not create traffic conditions on local streets and intersections below those levels of capacity and convenience established by the City of Thousand Oaks. The freeway interchanges will be able to accommodate the anticipated additional peak hour traffic.

## CHAPTER 2

## LAND USE AND TRAFFIC GENERATION

### Land Use

The developed Dos Vientos Ranch will be a residential community with some services in support of the residential development. The non-residential services that will attract internal Ranch trips include:

- Community commercial - supermarket and related retail services
- Public schools - an elementary school and probably an intermediate (grades 7 and 8) school

In addition, the community will have services which will not attract trips during peak traffic periods, and therefore are not included in the traffic analysis. These include:

- Recreation areas - parks, equestrian center, pedestrian greenbelts and open space
- Churches.

TABLE 1 presents the total proposed development of the Dos Vientos Ranch. This table shows the proposed plan of development as of January 31, 1985. Some changes in the mix of residential units were made since the planning of the summer of 1984. The residential distribution shown in TABLE 1 is the best projection based on current market analysis and development costs. The actual number of dwelling units proposed for construction by the owners of Dos Vientos Ranch is 3,719. Land has been set aside for possible construction of 221 units of senior citizen housing. This traffic is based on a total possible housing stock of 3,940.

The past few years have seen significant changes in household characteristics. During the 10 to 15 year buildout of the Dos Ranch it is possible that changes in family size and composition

TABLE 1

DOS VIENTOS RANCH PROPOSED DEVELOPMENT

| Land Use | Gross Acres | Density Range (DU/AC) | Projected Development |
|---|---|---|---|
| Residential - Very Low | 363 | 0.5 - 2.0 | 174 DU |
| Residential - Low | 362.6 | 3.5 - 5.0 | 1,307 DU |
| Medium | 263.0 | 5.0 - 7.5 | 1,527 DU |
| High | 73.3 | 10.0 - 18.0 | 932 DU |
| Residential Subtotal | 1,061.9 | - | 3,940 DU |
| Commercial | 16.4 | - | 160,000 square feet |
| Public Schools | 28.5 | elementary school | 600 pupils |
| | | intermediate | 300 pupils |
| Churches | 2.5 | - | (N.T.)* |
| Recreation & Open Space | 1,144.7 | - | (N.T.)* |
| Major Roads | 77.0 | - | (N.T.)* |
| Project Total | 2,331.0 | | |

*(N.T.) - No weekday peak hour trip generation.

Revised to January 31, 1985.

will be reflected in future changes in housing requirements. It is likewise possible that the change in family composition and purchasing power will see a demand for more medium density units without the requirements for yard care. The possible construction of a child care center within Dos Vientos is also a possibility.

The effect of possible future changes in housing stock on traffic generation is difficult to project. More dwelling units at higher densities could mean greater total traffic. However, the lower trip generation of the smaller units tends to compensate for the replacement of large single family houses with smaller, more efficient units. Also, fewer dwelling units, which is the Thousand Oaks experience between approved specific plans and actual buildout, could mean reduced total traffic.

FIGURE 1, CIRCULATION, DOS VIENTOS RANCH, shows the internal street system and the location of the residential and service areas within its community. This figure also shows the location of proposed traffic signals and street standards discussed in Chapter 6.

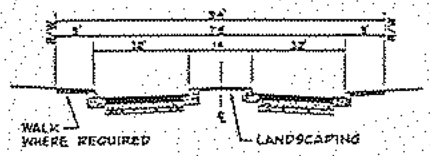
## Trip Generation

The residential land uses will generate different amounts of traffic related to size and density of dwelling units. Household characteristics influence automobile ownership and trip characteristics which in turn is expressed as different values for residential trip generation. Studies throughout the country have shown that single family detached housing has both the highest daily and peak hour traffic. The higher daily traffic of the single family detached home reflects travel associated with children and the greater peak hour traffic reflects the possibility of two or more employed persons.

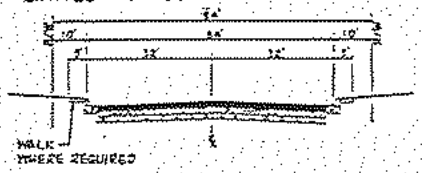
TABLE 2 shows the trip generation rates used in this analysis. The rates for low and high density residential plus commercial and public schools are from the most recent 1983 Trip Generation report of the Institute of Transportation Engineers.

## KEY

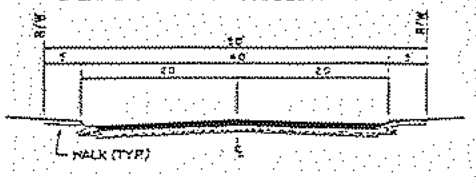
B-2 SECTION:
4-LANE STANDARD SECONDARY ROAD; CONTROLLED ACCESS




B-3 SECTION:
4-LANE STANDARD SECONDARY ROAD; LIMITED ACCESS




B-5 SECTION:
2-LANE STANDARD COLLECTOR ROAD




## LAND USE DATA

LAND USE DEVELOPMENT PLAN

NOTE: ALL B-5 STREETS WITHIN INDIVIDUAL PLANNING UNITS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY; FINAL ALIGNMENTS ARE SUBJECT TO CHANGE.

NOTES:
1. CITY OF THOUSAND OAKS SIGHT DISTANCE CRITERIA AND REQUIREMENTS TO BE MET AT INTERSECTIONS
2. FOR INTERSECTIONS ALONG B-2 STREETS, FINAL TRAFFIC CONTROL TO BE DETERMINED AT TENTATIVE MAP STAGE

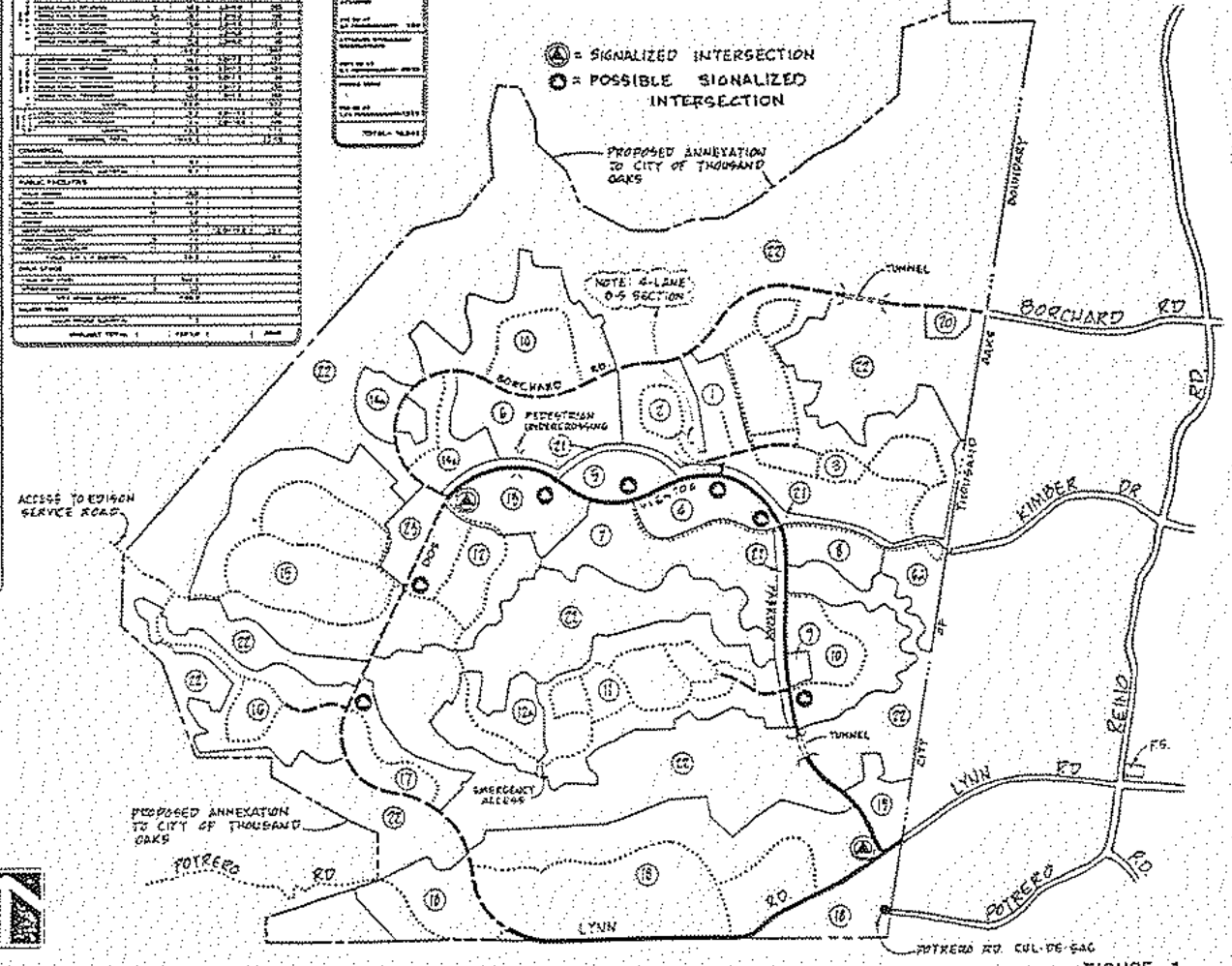



FIGURE 1

# CIRCULATION

# Dos Vientos Ranch

HAALAND AND ASSOCIATES INC

0 600 1200 1800
1" = ± 1600'

TABLE 2

TRAFFIC GENERATION: RATES

| Land Use | A.M. Peak Hour | | | P.M. Peak Hour | | | 2-Way Daily Traffic |
|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | |
| Residential/DU - Low | 0.21 | 0.55 | 0.76 | 0.63 | 0.37 | 1.00 | 10.0[a] |
| Residential/DU - Medium | 0.13 | 0.45 | 0.58 | 0.54 | 0.30 | 0.84 | 8.0[b] |
| Residential/DU - High | 0.10 | 0.40 | 0.50 | 0.40 | 0.20 | 0.60 | 6.6[c] |
| Commercial/1,000 sq ft | 0.9 | 0.8 | 1.7 | 2.9 | 3.1 | 6.0 | 67.0[d] |
| Elementary School/Student | 0.10 | 0.05 | 0.15 | 0.01 | 0.02 | 0.03 | 1.0[e] |

Sources:
[a] ITE Code 210
[b] City of Thousand Oaks
[c] ITE Code 221
[d] ITE Code 822
[e] ITE Code 520

That for medium density was from data compiled by the traffic engineer for the City of Thousand Oaks. The ITE data for medium density residential was not considered representative of Thousand Oaks conditions. In this case, trip generation data compiled by the City of Thousand Oaks was deemed most appropriate.

The development of public-private sponsored ridesharing programs are likely to result in lower trip generation rates than shown in TABLE 2. Just as housing demand may change during the period of Dos Vientos development, the same is possible with trip generation. The energy crises of 1973 and 1979 created an interest in the greater use of ridesharing and transit. The cost of providing free employee parking is causing some employers to consider employee vanpool subsidies to discourage employee travel by themselves to work. Projected growth in Southern California and experience with traffic management during the 1984 Olympics has caused employers to consider alternatives to present patterns of travel to work. A ridesharing example is the vanpool that originates in Thousand Oaks and picks up in Malibu for work in Hawthorne.

The major impact on traffic volume of future ridesharing will be on the major highways and freeways. The vanpool must access the local neighborhood to pick up and discharge passengers. In fact, some two-way traffic increase may be noted on minor streets. The possible decrease in peak hour, peak direction traffic on major highways and on the U.S. 101 Freeway could be very significant.

It is important to note that the present projections of trip generation result in the highest possible peak hour traffic. Full development of the Dos Vientos Ranch will likely produce traffic volumes less than shown in TABLE 3.

The traffic that will be generated by full development of the Dos Vientos Ranch is shown in TABLE 3. This table shows the traffic that will be generated by the residential units, the trips within the basically residential community, and the external trips to Thousand Oaks and other destinations. The extent to

TABLE 3

TRAFFIC GENERATION: ONE-WAY TRIPS

| Land Use | Quantity | A.M. Peak Hour In | A.M. Peak Hour Out | A.M. Peak Hour Total | P.M. Peak Hour In | P.M. Peak Hour Out | P.M. Peak Hour Total | 2-Way Daily Traffic |
|---|---|---|---|---|---|---|---|---|
| Residential - Low | 1,481 DU | 311 | 815 | 1,126 | 933 | 548 | 1,481 | 14,810 |
| Residential - Medium | 1,527 DU | 199 | 687 | 886 | 825 | 458 | 1,283 | 12,216 |
| Residential - High | 932 DU | 93 | 373 | 466 | 373 | 186 | 559 | 6,151 |
| Total Residential | 3,940 DU | 603 | 1,875 | 2,478 | 2,131 | 1,192 | 3,323 | 33,177 |
| Commercial | 160,000 sq. ft. | 144 | 128 | 272 | 464 | 496 | 960 | 9,600 |
| Elementary Schools | 600 Primary | 60 | 30 | 90 | 6 | 12 | 18 | 600 |
| | 300 Intermediate | 30 | 15 | 45 | 3 | 6 | 9 | 300 |
| Total Non-Residential | | 234 | 173 | 407 | 473 | 514 | 987 | 10,500 |
| EXTERNAL TRAFFIC* | | | | | | | | |
| Total Residential | 3,940 DU | 603 | 1,875 | 2,478 | 2,131 | 1,192 | 3,323 | 33,177 |
| Total Non-Residential | Commercial & Schools | (173) | (234) | (407) | (514) | (473) | (987) | 10,500 |
| | | 430 | 1,641 | 2,071 | 1,617 | 719 | 2,336 | 22,677 |

Sources: Land Use, TABLE 1; Trip Generation, TABLE 2.

*External Traffic. Total Residential trips less those to/from destinations within Dos Vientos Ranch. "Out" of non-residential equals "in" to residential. Therefore "out" of non-residential is subtracted from "on" in residential.

which trip purposes can be satisfied within the Dos Vientos Ranch reduces the traffic on Thousand Oaks streets. The a.m. peak hour peak direction traffic will be reduced approximately 10 percent and the p.m. peak movement 25 percent by the provision of non-residential services within the Dos Vientos Ranch. The provision of a child care facility and other services would further reduce traffic movement outside the proposed residential community.

## CHAPTER 3

## TRIP DESTINATIONS

The geographic destination of trips from and to Dos Vientos is the critical element in the assignment of development traffic to the adjacent street systems. The 1978 study of Dos Vientos traffic calculated trip distribution based on employment in Ventura and Los Angeles Counties, the number of Thousand Oaks residents who worked in Thousand Oaks and those who commuted to outside destinations. This information was updated to 1984 projections based on the most recent information available to the Planning Department of the City of Thousand Oaks. TABLE 4 shows the peak period trip distribution calculated in 1978 and that proposed for use in the current traffic analysis. The most notable change in traffic distribution is the increase in traffic projected westerly toward Ventura County employment centers. This change accounts for the actual and projected increase in Ventura County employment activity. The other significant modification was a 5 percent increase in the percentage of persons that would be employed within the Thousand Oaks planning area. This condition reflects the increased attractiveness of Thousand Oaks as a place to work and the efforts to provide jobs for local residents.

TABLE 5 shows the peak hour, peak direction, trips between Dos Vientos and regional and Thousand Oaks destinations. Morning inbound trips to Dos Vientos and evening outbound trips from Dos Vientos are not employment related. This traffic is essentially locally oriented for social, service, or other personal activity. This traffic is analyzed separately in TABLE 6.

Consistent with the 1978 analysis, this study assigns 70 percent of the non-peak directional traffic to the Thousand Oaks planning area and 30 percent to external locations. Because of

TABLE 4

TRIP DISTRIBUTION DESTINATIONS: PEAK DIRECTION

| | 1978 Projections | 1984 Projections |
|---|---|---|
| Trips External to Thousand Oaks | | |
| To East (U.S. 101) | 41 % | 35% |
| To West (U.S. 101) | 10 | 15 |
| To West (Potrero Road) | 3 | 2 |
| To North (U.S. 101 & S.R. 23) | 9 | 8 |
| Total External | 63 % | 60% |
| Trips to Thousand Oaks | | |
| To East (East of Lynn Road via U.S. 101) | 12.1% | 12% |
| To East (Borchard Road & Lynn Road - Ventu Park Road to Hillcrest Drive) | - | 5 |
| To North (Borchard Road & Lynn Road to Ventu Park Road) | 21.5 | 20 |
| To South of U.S. 101 & West of Lynn Road at U.S. 101 | 3.4 | 3 |
| Total Internal to Thousand Oaks | 37.0% | 40% |

TABLE 5

DISTRIBUTION OF PEAK HOUR PEAK DIRECTION TRIPS
(A.M. - Outbound, P.M. - Inbound)

| | Percent Distribution | A.M. Outbound | P.M. Inbound |
|---|---|---|---|
| A. External/Internal Thousand Oaks Planning Area | | | |
| External | 60% | 985 | 970 |
| Internal | 40 | 656 | 647 |
| Total Trips | 100% | 1,641 | 1,617 |
| B. External Trips | | | |
| To/From East (U.S. 101) | 35% | 575 | 566 |
| To/From West (U.S. 101) | 15 | 246 | 243 |
| To/From West (Potrero Road) | 2 | 33 | 32 |
| To/From North (U.S. 101 & S.R. 23) | 8 | 131 | 129 |
| | 60% | 985 | 970 |
| C. Trips To/From Thousand Oaks Planning Area | | | |
| To/From East (East of Lynn Road via U.S. 101) | 12% | 197 | 194 |
| To/From East (via Borchard & Ventu to Hillcrest Drive) | 5 | 82 | 81 |
| To/From North (Borchard, Ventu & Lynn) | 20 | 328 | 323 |
| To/From South of U.S. 101 | 3 | 49 | 49 |
| | 40% | 656 | 647 |

Sources: Trip Generation, TABLE 3; Trip Destinations, TABLE 4.

TABLE 6

DISTRIBUTION OF PEAK HOUR NON-PEAK DIRECTION TRAFFIC
(A.M. - Inbound, P.M. - Outbound)

A. Major Destination

| | Percent Distribution | A.M. Volume[a] | P.M. Volume[a] |
|---|---|---|---|
| To Thousand Oaks Area | 70% | 301 | 503 |
| To External | 30% | 129 | 216 |
| Total Trips | 100% | 430 | 719 |

B. External Origins and Destinations

| | Percent Distribution | | A.M. (Inbound) | P.M. (Outbound) |
|---|---|---|---|---|
| U.S. 101 East | 20% | 67% | 86 | 144 |
| U.S. 101 West | 9% | 30% | 39 | 65 |
| Potrero Road West | 1% | 3% | 4 | 7 |
| Total Trips | 30% | 100% | 129 | 216 |

C. Thousand Oaks Destinations

| Destinations and Origins[b] | Percent Distribution | | A.M. In | P.M. Out |
|---|---|---|---|---|
| South of U.S. 101 | 28% | 40% | 121 | 202 |
| North of U.S. 101 | - | - | | |
| Freeway East | 10.5% | 15% | 45 | 75 |
| Local Streets | 10.5% | 15%[c] | 45 | 75 |
| East by U.S. 101 | 21% | 30% | 60 | 151 |
| Total Thousand Oaks | 70% | 100% | 301 | 503 |

[a]From TABLE 3, Trip Generation.

[b]Based on assumed 1995 population distribution within Thousand Oaks and Westlake Village areas.

[c]Sixty percent Hillcrest east and 40 percent to Rancho Conejo.

the growth of service and residential areas in Ventura County, the external distribution in TABLE 6 has been changed from the 1978 analysis to 10 percent from 5 percent Ventura County and 20 percent from 25 percent Los Angeles County. The distribution of traffic to/from destinations within the Thousand Oaks planning area was based on the most recent available information on distribution of population and service centers.

The destination of all Dos Vientos traffic has been summarized in TABLE 7. The preponderance of traffic destined to the Ventura Freeway is a characteristic typical of development in Thousand Oaks. The capacity of the interchanges at Lynn Road, Ventu Park Road, Borchard Road or Rancho Conejo Boulevard and Wendy Drive are important aspects of the traffic analysis.

Dos Vientos Ranch has been designed so that traffic to and from this development is oriented to Lynn Road. Planning units 14, 14A and 14B comprising 357 single family lots, or 9 percent of the total residential development, is the only area directly oriented to Borchard Road. Part of unit 12 might find Borchard Road equally attractive to that of Lynn Road. Persons traveling from the remainder of the development would find it more convenient and timely to use Lynn Road rather than Borchard Road to access the Ventura Freeway (U.S. 101) or other destinations. An attempt was made to split traffic between Lynn and Borchard Roads based on east/west freeway traffic or to different destinations in the Thousand Oaks planning area. Planning unit 15 comprising 91 large lots is the major swing area which is not significant in terms of the total 3,940 dwelling unit development. The reasonable expression of desired Dos Vientos Ranch traffic is 88 percent Lynn Road and 12 percent Borchard Road. TABLE 8 shows the desired distribution between Borchard and Lynn Roads.

TABLE 7

SUMMARY OF PEAK HOUR TRAFFIC DISTRIBUTION

| Destination | A.M. Peak Hour In | A.M. Peak Hour Out | P.M. Peak Hour In | P.M. Peak Hour Out |
|---|---|---|---|---|
| To East U.S. 101 | 221 | 903 | 889 | 370 |
| To West U.S. 101 | 39 | 246 | 243 | 65 |
| To West Potrero Road | 4 | 33 | 32 | 7 |
| To North Local | 18 | 328 | 323 | 30 |
| To East via Hillcrest Drive | 27 | 82 | 81 | 45 |
| To South of U.S. 101 | 121 | 49 | 49 | 202 |
| Total Trips | 430 | 1,641 | 1,617 | 719 |

Sources: TABLE 5, Distribution A.M. Outbound, P.M. Inbound; TABLE 6, Distribution A.M. Inbound, P.M. Outbound.

TABLE 8

DISTRIBUTION OF TRAFFIC BETWEEN LYNN ROAD AND BORCHARD ROAD

Primary Distribution

| | |
|---|---|
| Lynn Road | 88% |
| Borchard Road | 12% |

| Arterial | A.M. In | A.M. Out | P.M. In | P.M. Out |
|---|---|---|---|---|
| Lynn Road | 375 | 1,415 | 1,395 | 627 |
| Borchard Road | 51 | 193 | 190 | 85 |
| SUBTOTAL | 426 | 1,608 | 1,585 | 712 |
| Potrero Road | 4 | 33 | 32 | 7 |
| TOTAL TRIPS | 430 | 1,641 | 1,617 | 719 |

## CHAPTER 4

## STREET SYSTEM AND EXISTING TRAFFIC CONDITIONS

Two streets provide access to the Dos Vientos Ranch, Borchard Road and Lynn Road. These streets also provide direct connections to the Ventura Freeway, the areas north of the freeway and the adjacent Newbury Park community of the City of Thousand Oaks. The relationship between the Dos Vientos Ranch and the adjacent street system is shown in FIGURE 2.

### Lynn Road

Lynn Road extends from the easterly boundary of the Dos Vientos Ranch through the Newbury Park community, across the Ventura Freeway and then northerly through the City of Thousand Oaks across the Route 23 or Thousand Oaks Freeway. Lynn Road becomes Olsen Road as it traverses the northerly reaches of the City of Thousand Oaks.

Between the Dos Vientos Ranch and the Ventura Freeway the ultimate development of Lynn Road will be as a limited access, 6-lane, divided highway with left turn lanes at intersections. Between Reino Road and the Ventura Freeway, Lynn Road has been designated as a primary controlled access highway. This calls for the following design requirements:

| | |
|---|---|
| Right of way | - 108 feet |
| Roadways | - Two at 37 feet each |
| Median | - 14 feet raised |
| Planting and sidewalk | - Two at 10 feet each |
| Parking | - Prohibited |
| Access between intersections | - None |

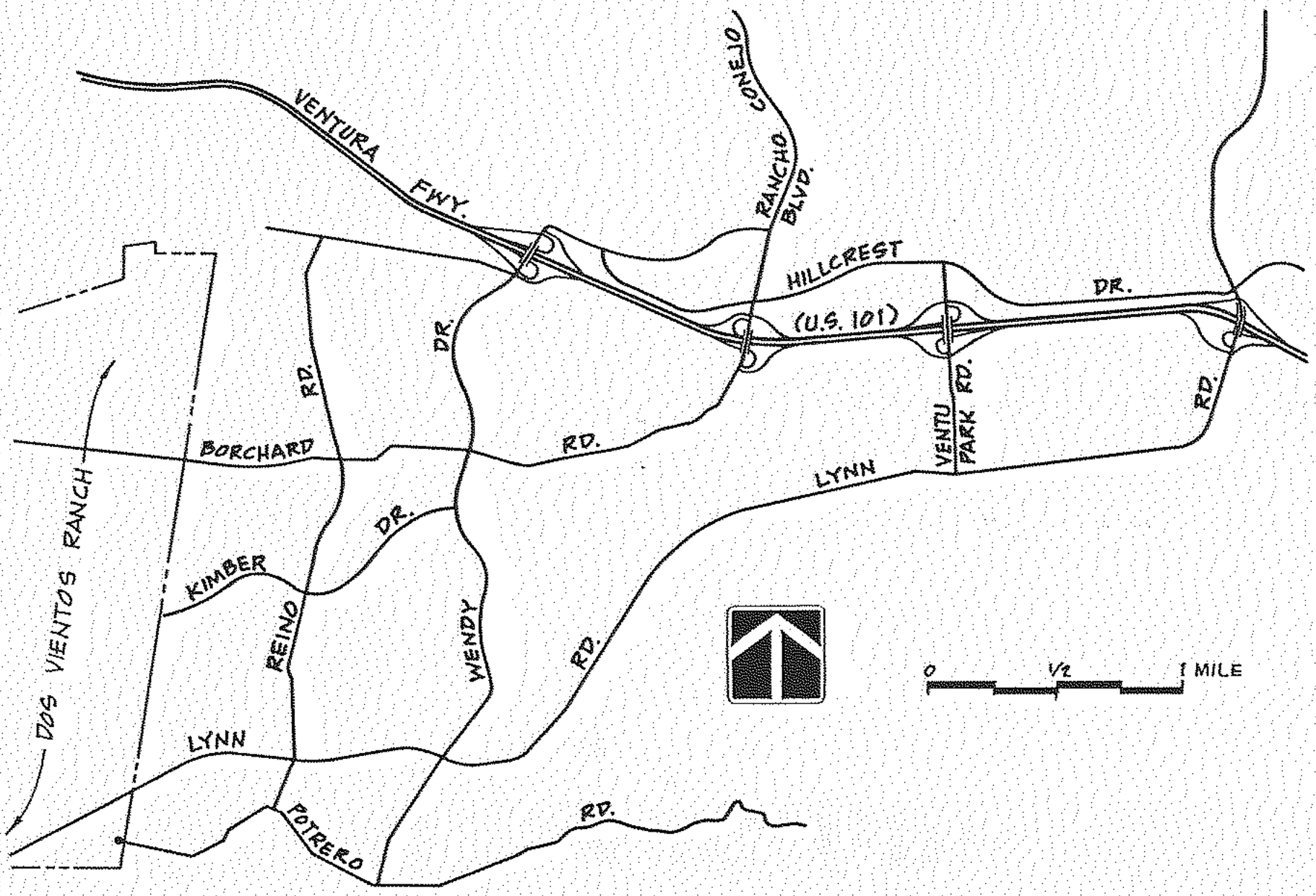



FIGURE 2

ADJACENT STREET SYSTEM

Lynn Road west of Reino Road has been developed to 94 foot right of way with two 32 foot sections, a 14 foot median and 8 foot pedestrian areas. This section has been modified for 800 feet westerly of Reino Road so as to provide 3 east-west through lanes and a left turn lane on Lynn Road through the intersection with Reino Road.

The present status of Lynn Road consists of a variable 2 to 6 lane roadway between Reino Road and the Ventura Freeway. Improvement to the ultimate 6 lane section will take place in accordance with the development of adjacent lands and the requirements of the Dos Vientos Ranch, which will contribute to the Newbury Park Road Improvement Fund.

For the purpose of analyzing the traffic impact of the Dos Vientos Ranch the completion of Lynn Road to its ultimate section is assumed.

Borchard Road

Borchard Road extends from the northeasterly boundary of the Dos Vientos Ranch across the Ventura Freeway into the proposed Rancho Conejo community. This roadway is known as Rancho Conejo Boulevard north of the Ventura Freeway.

Between Reino Road and the Ventura Freeway Borchard Road has been fully improved as a secondary controlled access highway. This means the following:

| | |
|---|---|
| Right of way | - 84 feet |
| Roadways | - 64 feet between curbs, 2 through lanes in each direction |
| Median | - Variable with left turn lanes at intersections |
| Planting and sidewalk | - Two at 10 feet each |
| Parking | - Permitted, except where prohibited in order to accommodate left turn lanes |
| Access between intersections | - Permitted |

Westerly from its present terminus, Borchard Road will be extended as a 4 lane limited access highway to Rancho Dos Vientos. Borchard Road will continue as a 4 lane limited access highway through Rancho Dos Vientos to the Dos Vientos Parkway.

## Present Traffic Volumes

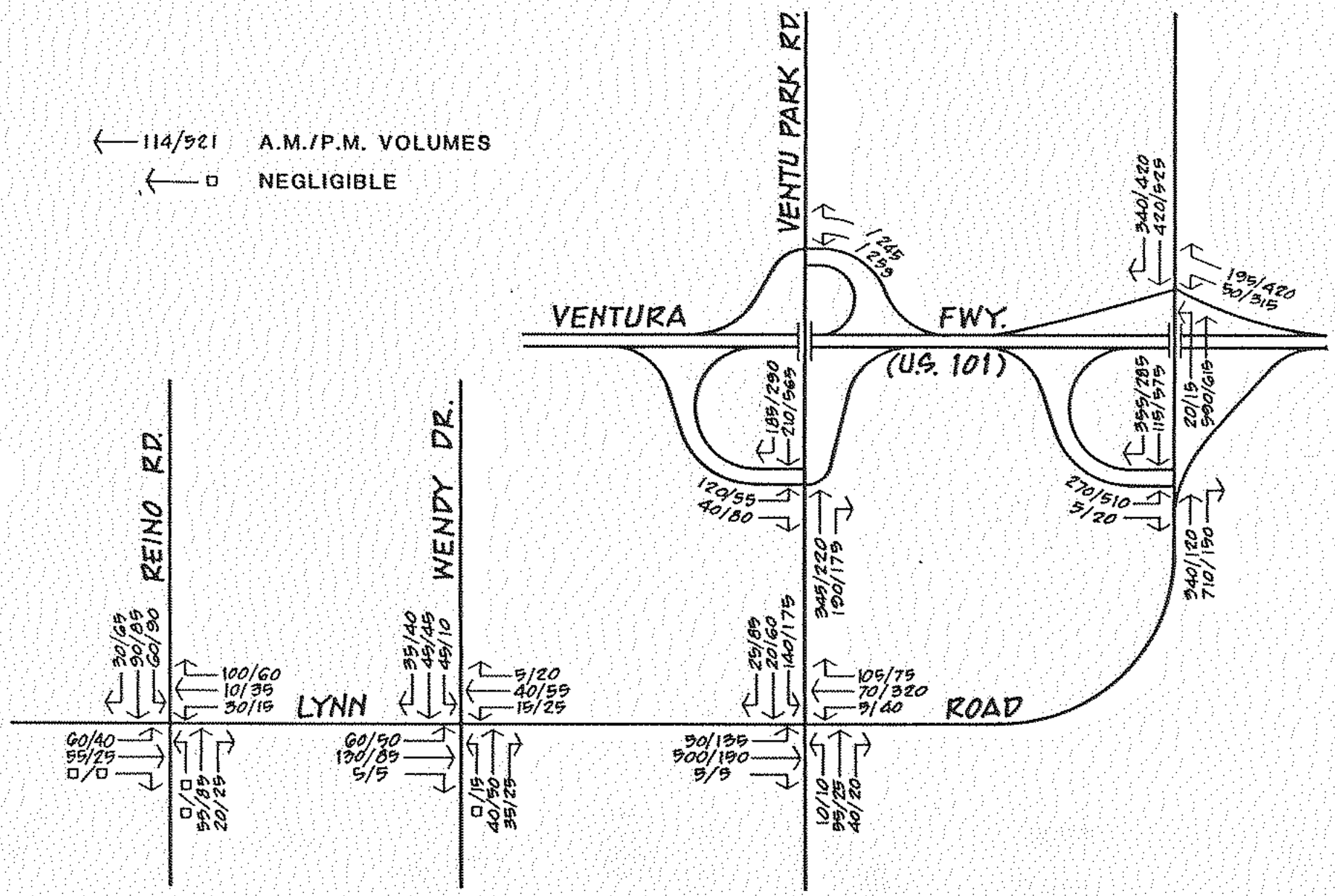
FIGURES 3 and 4 show the existing peak hour traffic volumes along Lynn and Borchard Roads and the Ventura Freeway interchanges of Wendy Drive, Borchard Road, Ventu Park Road and Lynn Road. The purpose of these exhibits is to present existing conditions as a base for the analysis of the impact of future traffic.

The maximum traffic volumes along Lynn Road are at the interchange with the Ventura Freeway. The 710 a.m. eastbound on-ramp and 735 p.m. westbound off-ramp volumes are the limiting factors for this route. All other locations will have extensive unused capacity when Lynn Road is improved as planned. Existing Lynn Road adequately accommodates existing traffic volumes.

The freeway interchange is also the limiting factor along Borchard Road. In this case the only possible restraint is during the p.m. peak hour for westbound traffic to the Dos Vientos Ranch. This traffic will have to share the 2 lane southbound roadway with the existing southbound traffic plus possible future traffic from the proposed Rancho Conejo development. There are no restraints to morning eastbound traffic.

## Ventura Freeway

The Ventura Freeway has been reconstructed westerly of Moorpark Road to 3 through lanes in each direction plus a separate weaving lane between interchanges for traffic leaving and entering the freeway. East of Moorpark Road, the freeway had been previously reconstructed to 4 through lanes plus a weaving lane in each direction. TABLE 9 based on data assembled by the City of Thousand Oaks shows existing traffic volumes on




**LYNN ROAD**

**1984 TRAFFIC PEAK-HOUR CRITICAL LOCATIONS**

Sources: Wallen Associates and City of Thousand Oaks

FIGURE 3

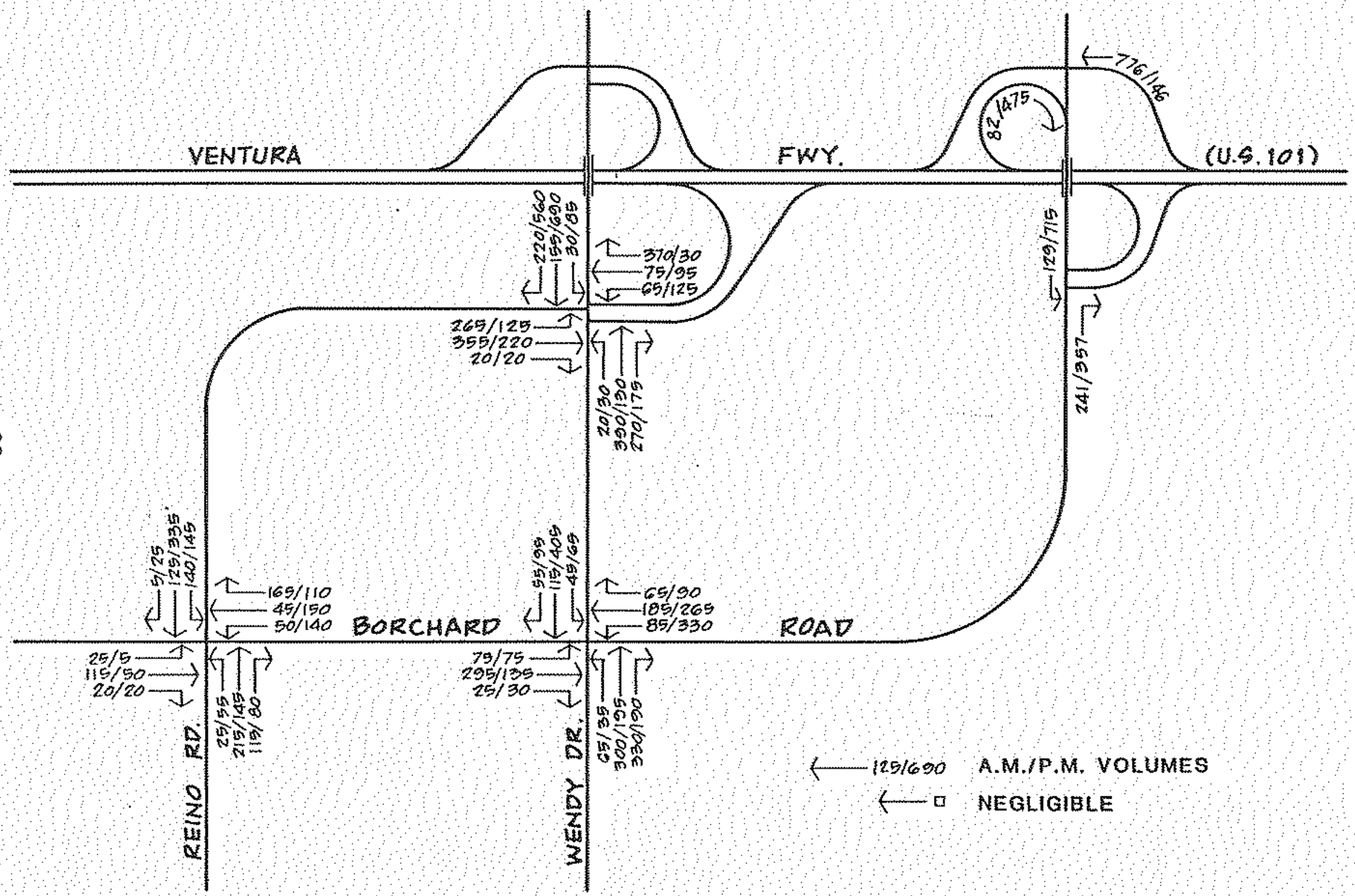



FIGURE 4

**BORCHARD ROAD**

**1984 TRAFFIC PEAK HOUR CRITICAL LOCATIONS**

TABLE 9

VENTURA FREEWAY TRAFFIC

| Segment | Daily 2-Way | A.M. Peak Hour 2-Way | P.M. Peak Hour 2-Way | P.M. Peak Hour Level of Service[a] |
|---|---|---|---|---|
| East of Lynn Road | 110,000 | N.A. | 10,100 | B |
| Lynn Road to Ventu Park Road | 120,000 | N.A. | 11,100 | C |
| Ventu Park Road to Borchard Road | 101,000 | N.A. | 9,300 | B |
| Borchard Road to Wendy Drive | 95,000 | N.A. | 8,800 | B |
| West of Wendy Drive | 78,000 | N.A. | 7,300 | B |

Source: 1983 Caltrans

[a]Based on existing conditions of 8 lanes between interchanges and 1965 Highway Capacity Manual.

that section of the Ventura Freeway that will receive Dos Vientos Ranch traffic.

The Ventura Freeway has the capacity to accommodate additional peak hour and daily traffic. Additional traffic will reduce the level of service which signifies some reduction of speed and continuity of travel. Future traffic volumes on the Ventura Freeway will reflect total regional development of which Dos Vientos is one element.

## CHAPTER 5

## FUTURE TRAFFIC

The area south of the Ventura Freeway consists of three geographic entities. To the south of the urban area and extending to the Pacific Ocean is the Santa Monica Mountain Park. To the southeast is Hidden Valley, a beautiful area devoted to ranches and large estates. Newbury Park, of which the Dos Vientos Ranch would be the western boundary, comprises the urban area south of the Ventura Freeway. According to 1985 information, there were approximately 8,700 dwelling units in the City of Thousand Oaks and County urbanized area south of the Ventura Freeway and west of Lynn Road. Approximately 85% or 7,400 are single family detached and 15% or 1,300 are multi-family dwelling units.

The Dos Vientos Ranch will add, at most, 3,940 dwelling units to the total housing in the Newbury Park area. Some other additional housing will be constructed upon the infill areas of the existing urban development. The amount of acreage available for infill housing and the potential number of dwelling units is being calculated and this information will be available for the final Environmental Impact Report.

The Dos Vientos Ranch development will impact Borchard and Lynn Roads and the Ventura Freeway. A review of existing traffic flows, FIGURES 3 and 4, and existing street capacities suggested that Lynn Road be developed as the major artery serving the Dos Vientos Ranch. Accordingly, the Dos Vientos development was designed so that approximately 88 percent of the residents will find use of Lynn Road more convenient and timely than Borchard Road to access the greater Thousand Oaks community or the Ventura Freeway.

The critical traffic locations will be the four interchanges of the Ventura Freeway providing access to Newbury Park plus developed and undeveloped land to the north of the freeway.

The analysis of Dos Vientos traffic included consideration of future total interchange traffic and possible alternative routes to gain access to Lynn Road. The analysis included consideration of the possible diversion of some traffic to Borchard Road due to interchange traffic delay.

Proposed Rancho Conejo Development

The proposed Rancho Conejo development, formerly known as the MGM Ranch, is located north of the Ventura Freeway. This 1,862 acre area will be served by three freeway interchanges which will also serve the Dos Vientos Ranch. They are Ventu Park Road, Borchard Road-Rancho Conejo Boulevard, and Wendy Drive. To effectively analyze the Dos Vientos linkage with the Ventura Freeway it is necessary to understand the potential usage of those interchanges common to both proposed large-scale developments.

The 1983 Draft Supplemental Environmental Impact Report for the Rancho Conejo Specific Plan provided the basis for the analysis of the Rancho Conejo traffic impact on the Ventura Freeway. This plan represents a change to greater industrial and office/commercial development and less dwelling units than had been considered in the past. It is understood that further changes are contemplated which would substantially increase office/commercial activity and reduce further the number of dwelling units proposed for Rancho Conejo.

The jobs provided by Rancho Conejo will attract workers living in Dos Vientos. TABLE 7 shows morning peak hour travel to the industrial areas north of the Ventura Freeway of 328 and a return evening movement of 323. Some of these trips will be to existing industrial development but most will be to new developments such as Rancho Conejo. In any analysis of future traffic on local arterials it is essential that trips generated by new residential development and by new business or industrial development not be double counted. A Dos Vientos work trip to

north of the Ventura Freeway should be subtracted from the Rancho Conejo trips originating south of the Ventura Freeway.

TABLE 10 shows the Rancho Conejo traffic that will utilize freeway ramps that could also be used by Dos Vientos traffic.

TABLE 11 was prepared to show the Rancho Conejo and Dos Vientos Ranch traffic at the a.m. and p.m. peak hour periods at the critical ramps of the Ventu Park Road and Wendy Drive interchanges. An increase in Rancho Conejo work trips would result in a greater number of morning inbound trips and reduction in outbound traffic.

TABLE 11 shows that the major freeway inbound a.m. movement to Rancho Conejo would be at the Ventu Park Road off-ramp for traffic from the east. There would be no Dos Vientos movement at this location during the morning peak hour. During the p.m. peak hour both Rancho Conejo and Dos Vientos Ranch traffic would use the Ventu Park Road off-ramp. At Ventu Park Road the Rancho Conejo traffic would turn right and the Dos Vientos Ranch traffic would turn left. As noted in TABLE 11, the right turn move to Rancho Conejo is the critical movement. Any increase in business development and decrease in residential construction would decrease the inbound p.m. work to home movement and increase the outbound traffic from Rancho Conejo. Fortunately, the Ventu Park Road overcrossing has been constructed with 4 through lanes and the outbound movement to the east enters the freeway by means of a right turn loop ramp. This design minimizes conflict between the through Dos Vientos traffic and Rancho Conejo traffic destined eastbound on the Ventura Freeway.

Traffic to and from the west, Ventura County, from both developments, will utilize the Wendy Drive interchange. All of the Dos Vientos Ranch westbound trips have been assigned to the Wendy Drive interchange. The same was done for Rancho Conejo in TABLES 10 and 11. However, some Rancho Conejo traffic might find it as, or more, convenient to use the Borchard-Rancho Conejo Boulevard or Ventu Park Road interchange depending on the location of final destinations with the development.

TABLE 10

RANCHO CONEJO DEVELOPMENT

FREEWAY TRAFFIC

(overlap With Dos Vientos Ranch)

| | A.M. | | P.M. | |
|---|---|---|---|---|
| | In | Out | In | Out |
| Rancho Conejo Trip Generation | | | | |
| Residential | 361 | 960 | 932 | 531 |
| Non-residential | 2,057 | 476 | 564 | 1,997 |
| Ventu Park Road Interchange | | | | |
| (Eastbound - 42%) | | | | |
| Residential | [ 152] | 403 | (391) | 223 |
| Non-residential | [ 864] | 200 | (237) | 839 |
| TOTAL EASTBOUND | [1,016] | 603 | (628) | 1,062 |
| (Westbound - 1%) | | | | |
| Residential | 4 | 10 | 9 | 5 |
| Non-residential | 21 | 5 | 6 | 20 |
| TOTAL WESTBOUND | 25 | 15 | 15 | 25 |
| Borchard Road Interchange | | | | |
| 0% East | | | | |
| 2% West - No ramp overlap with Dos Vientos | | | | |
| Wendy Drive Interchange | | | | |
| (Westbound - 7%) | | | | |
| Residential | [ 25] | 67 | ( 65) | 37 |
| Non-residential | [ 144] | 33 | ( 39) | 140 |
| TOTAL WESTBOUND | [ 169] | 100 | (104) | 177 |

[-] Overlap - Peak hour, minor direction

(-) Overlap - Peak hour, peak direction

Source: DEIR, Rancho Conejo Specific Plan, City of Thousand Oaks, 1983. Subject to change.

TABLE 11

FREEWAY INTERCHANGE TRAFFIC OVERLAP

RANCHO CONEJO AND DOS VIENTOS RANCH

| | Ventu Park Road | | Wendy Drive | |
|---|---|---|---|---|
| | From East In | To East Out | From West In | To West Out |
| Rancho Conejo A.M. | 1,016 | 603 | 169 | 100 |
| Dos Vientos Ranch A.M. | 0 | 10 | 37 | 246 |
| Rancho Conejo P.M. | 628 | 1,062 | 104 | 177 |
| Dos Vientos Ranch P.M. | 80 | 0 | 243 | 65 |

SOURCES: Rancho Conejo traffic from TABLE 10, Dos Vientos traffic from FIGURES 5 and 6, which are based on TABLE 12.

At the Wendy Drive interchange the Rancho Conejo and Dos Vientos Ranch movements generally complement each other. The directional peak Rancho Conejo trips coincide with the directional off-peak Dos Vientos Ranch trips. The major Dos Vientos traffic to and from the west is in the freeway off-peak direction.

The comparative analysis of the Rancho Conejo and Dos Vientos Ranch traffic impact on the Ventura Freeway lead to four basic conclusions:

1. The two developments are freeway compatible. This is due to many factors including being on opposite sides of the freeway, having basically different land uses and not sharing the same primary interchange.
2. Increasing the level of Rancho Conejo business development will be mutually advantageous and also beneficial to all users of the Ventura Freeway. More local or Rancho Conejo jobs will mean less Dos Vientos Freeway trips. A substantial reduction, or effective elimination, of Rancho Conejo residential development would mean the diversion of a significant volume of westbound p.m. peak hour Dos Vientos traffic from the Lynn Road to Ventu Park Road off-ramp. Similarly the same would apply to a.m. use of the Ventu Park Road eastbound on-ramp.
3. Future Ventura Freeway traffic will be a function of regional development and future freeway construction. Both developments will contribute significant freeway traffic volumes resulting in short-term measurable impacts. Long-term--10 to 20 years--freeway traffic volumes will reflect the cumulative effect of economic and demographic conditions of Ventura and Los Angeles Counties.
4. Both developments will have long-term major impacts on specific freeway interchanges. There is no indication, that the freeway interchanges serving the two developments, cannot accommodate known anticipated traffic.

## Dos Vientos Ranch: Traffic Assignment

The morning and evening peak hour traffic for Borchard and Lynn Roads is shown on TABLE 12. This table also shows the destination of traffic using the two arterials which provide access to the Dos Vientos Ranch.

The Assignment of traffic to particular freeway interchanges and Thousand Oaks destinations required consideration of existing traffic volumes shown in FIGURES 3 and 4, possible Rancho Conejo traffic, and other local development that could impact future traffic conditions. The results of the traffic assignment process are shown in FIGURES 5 and 6.

### Borchard Road

The maximum peak hour, peak direction Dos Vientos traffic is 193 a.m. outbound and 190 p.m. inbound. The corresponding freeway ramp movements are 108 eastbound onto the freeway and 106 returning in the p.m. peak hour. All the eastbound Dos Vientos freeway traffic was assigned to the Borchard Road-Rancho Conejo Boulevard interchange. The 108 outbound trips would be added to the total 370 on-ramp movement of which 241 are from the south of the freeway and 129 from the north. Even assuming a year 2,000 base traffic of 500 per hour entering the freeway a Dos Vientos increment of 100 to 150 would yield a total well below the comfortable limit of 1,000 to 1,200 vehicles per hour.

The p.m. return traffic would also be added to the existing minor movement shown on FIGURE 4. The major p.m. traffic movement at the Borchard interchange is the existing 715 from the north entering the freeway eastbound from the industrial area to the north. The peak Dos Vientos traffic will be added to the 475 utilizing the loop leading to the signalized intersection south of the freeway. Borchard Road has two lanes southbound over the Ventura Freeway with the curb lane for through movement and the center lane striped for through and left turn traffic. The p.m. limiting factor at this interchange

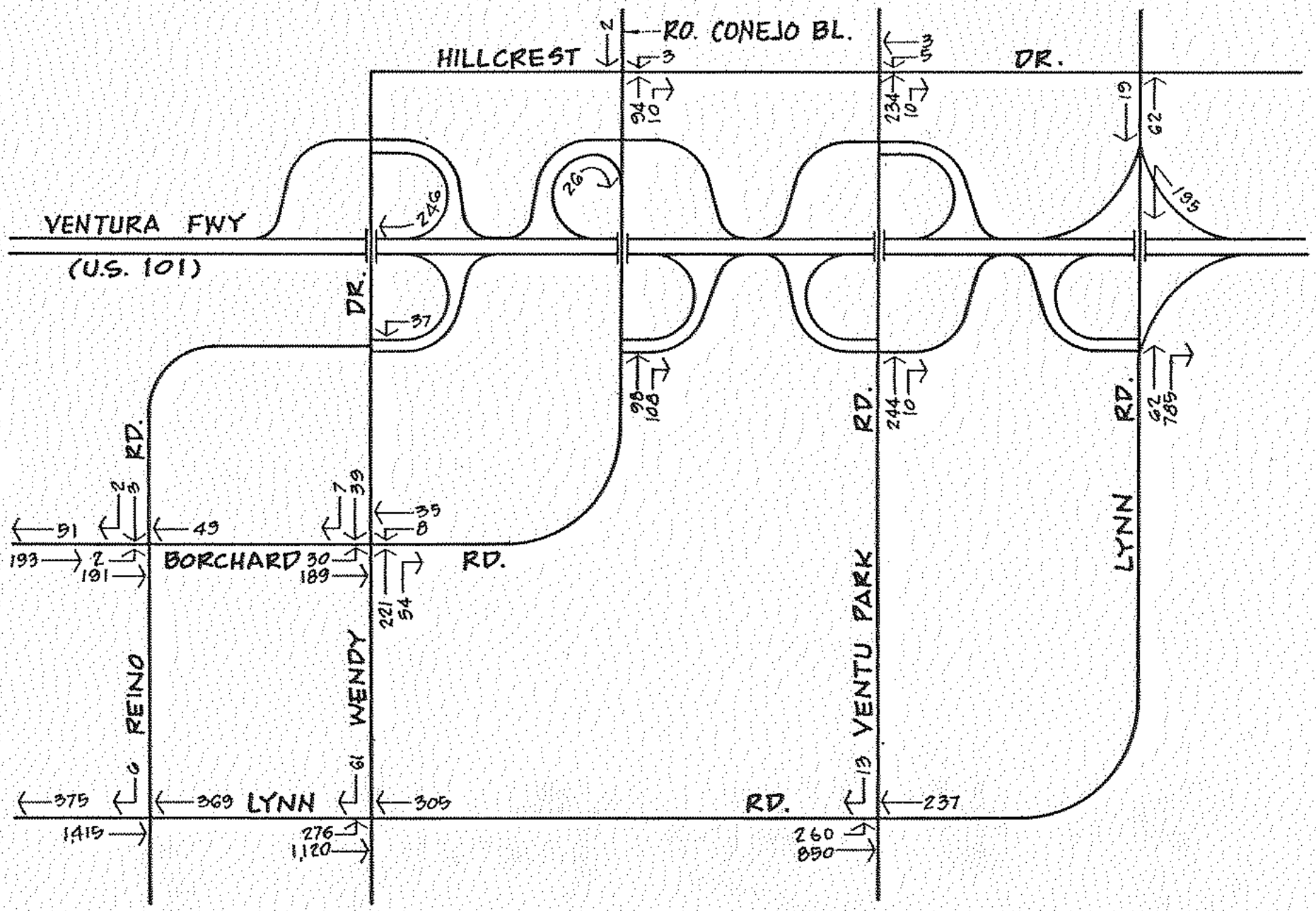
TABLE 12

LYNN ROAD AND BORCHARD ROAD TRIP ASSIGNMENT

| A.M. Peak Hour | | | | |
|---|---|---|---|---|
| | Lynn Road | | Borchard Road | |
| Destination | In | Out | In | Out |
| To/From East - Freeway | 195 | 795 | 26 | 108 |
| To/From West - Freeway | 34 | 216 | 5 | 30 |
| To/From North - Local | 16 | 289 | 2 | 39 |
| To/From Northeast - Local | 24 | 72 | 3 | 10 |
| To/From South of Freeway | 106 | 43 | 15 | 6 |
| | 375 | 1,415 | 51 | 193 |

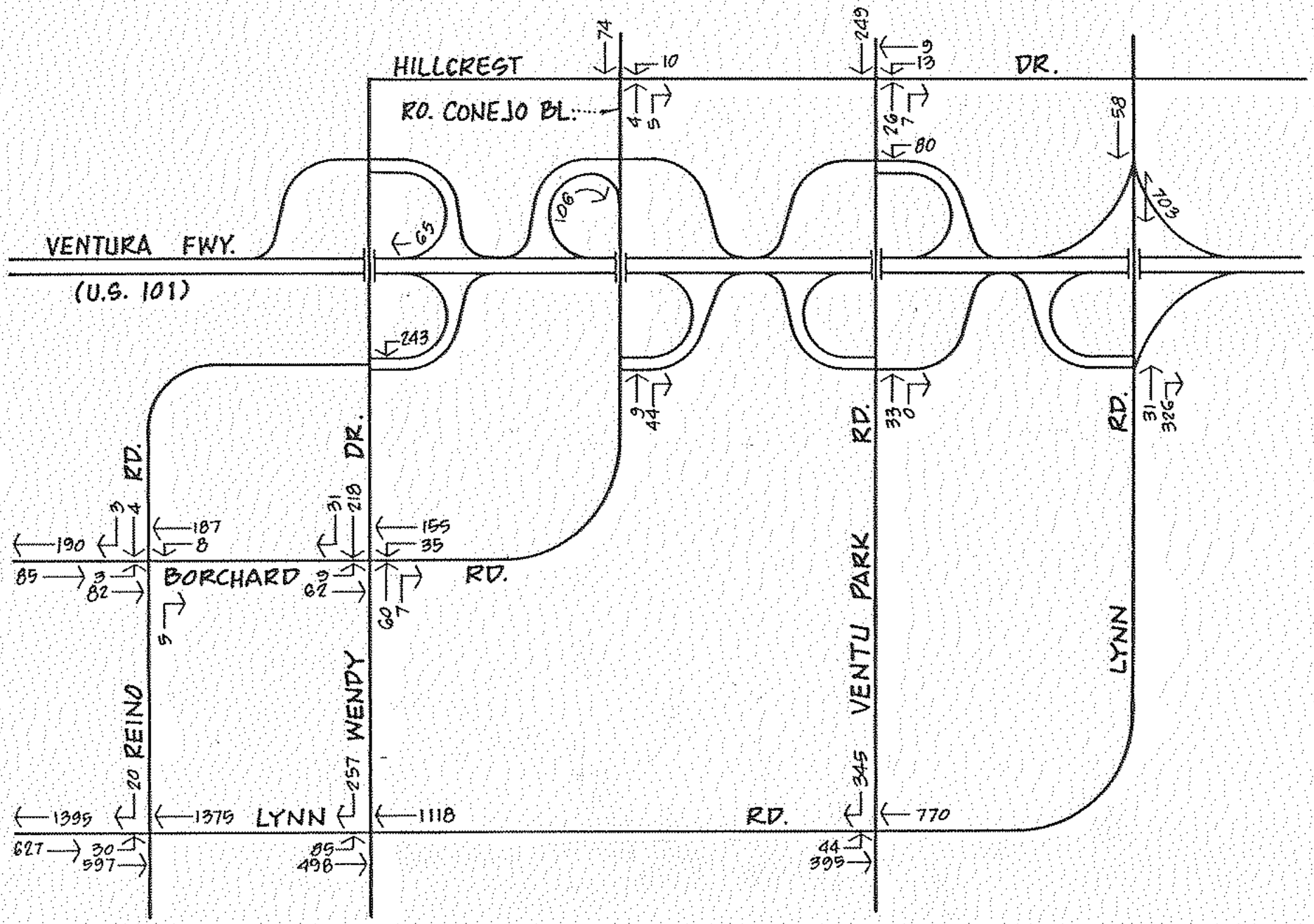
| P.M. Peak Hour | | | | |
|---|---|---|---|---|
| | Lynn Road | | Borchard Road | |
| Destination | In | Out | In | Out |
| To/From East - Freeway | 783 | 326 | 106 | 44 |
| To/From West - Freeway | 214 | 57 | 29 | 8 |
| To/From North - Local | 284 | 26 | 39 | 4 |
| To/From Northeast - Local | 71 | 40 | 10 | 5 |
| To/From South of Freeway | 43 | 178 | 6 | 24 |
| | 1,395 | 627 | 190 | 85 |

Sources: TABLE 7 and TABLE 8.




**DOS VIENTOS RANCH**
**A.M. PEAK HOUR TRAFFIC**

FIGURE 5




**DOS VIENTOS RANCH**
P.M. PEAK HOUR TRAFFIC

FIGURE 6

is the left turn on-ramp to the freeway eastbound not the southbound Dos Vientos traffic. The construction of a double left turn lane would improve total intersection performance.

Borchard Road at Wendy Drive is the most heavily traveled intersection between Dos Vientos and the Ventura Freeway. The additional Dos Vientos through traffic will result in future peak hour volumes of about 400 eastbound and 500 westbound. The resultant lane volumes of 200 and 250 per hour will not be the critical future movements at this intersection.

FIGURE 6 shows a p.m. left turn movement from westbound Borchard Road to southbound on Wendy Drive. This movement represents local work trips between Dos Vientos and north of the Ventura Freeway from Lynn Road. The future westbound lane turn may be at capacity. This movement could be made at Reino Road or through continuation along Borchard Road and use of the Dos Vientos Parkway to arrive at the final destination.

The significance of this discussion is that the Dos Vientos Ranch traffic will have little adverse impact on Borchard Road. Future traffic at the Lynn Road and Ventu Park Road freeway interchanges may encourage some drivers to use Borchard Road as an alternative. Borchard Road can accommodate through traffic in addition to that shown in this analysis.

## Lynn Road

By design Lynn Road will be the principal access route to Dos Vientos. The maximum peak hour traffic volumes are west of Reino Road and estimated at approximately 1,400 per hour. Based on 3 lanes through the intersection the lane volumes will be less than 500 per lane per hour which is low for an intersection such as Reino Road with total north-south movements of less than 300 per hour.

The significant elements of future Lynn Road traffic are freeway access, intersection capacity at Wendy Drive and Ventu Park Road and turning movements onto and off of Lynn Road.

The morning eastbound peak hour traffic destined to the Ventura Freeway numbers 795 as shown on TABLE 12. The direct route to the freeway, is along Lynn Road, to the free right turn on-ramp to the freeway. The combination of Dos Vientos traffic and other traffic will total about 1,500 vehicles per hour. The freeway at this location has three through lanes and a fourth auxiliary lane between Lynn and Moorpark Roads a distance of approximately 4,500 feet. The projected on-ramp traffic is the maximum for this condition. The actual ability of the freeway to absorb these volumes will be influenced by the eastbound off movement at Moorpark Road and total eastbound freeway volumes.

It is possible that some eastbound traffic may select the option of a left turn at Ventu Park Road and access to the freeway from the Ventu Park Road interchange. The existing combined eastbound on-ramp movement is shown as 375 in FIGURE 3, for the southbound loop and northbound direct connection. Rancho Conejo could add another 600 to the southbound loop for a total eastbound on movement of approximately 1,000. The northbound on-ramp could accommodate a couple hundred additional vehicles if such traffic found it advantageous to make the left turn from Lynn Road to northbound Ventu Park Road.

FIGURE 5 shows the introduction of a morning left turn of 260 from Lynn Road to Ventu Park Road. Most of these trips have local destinations in Thousand Oaks north of the Ventura Freeway. The 10 trips shown on FIGURE 5 using the eastbound on-ramp are representative of the possibility of this movement and not a projected movement. A change in Rancho Conejo development from residential to commercial would result in a substantial diversion of Dos Vientos traffic from Lynn Road to the Ventu Park Road eastbound on-ramp.

On Lynn Road at Ventu Park Road a through morning eastbound movement of 1,500 per hour would be about 500 per hour per lane. A projected total left turn of 300 to 350 could be accommodated with a single left turn lane given an opposing westbound through movement of less than 400 per hour on three lanes. At the time

that the final plans for the improvements at this intersection are being proposed, consideration should be given to a double left turn lane for eastbound traffic. This action would address the latest information on Rancho Conejo development and the total capability of the Ventu Park and Lynn Road interchanges to accommodate eastbound traffic.

The addition of Dos Vientos traffic at the intersection of Lynn Road and Wendy Drive will pose no significant impact. The improved Lynn Road with three through lanes in each direction plus left turn lanes will result in conditions comparable or better than currently exist. The eastbound morning peak hour movement turning north onto Wendy Drive to proceed west on the Ventura Freeway will be protected with a separate left turn phase in addition to left turn lane. The opposing westbound traffic will be less than 200 to 300 vehicles per hour which is very light in terms of intersection level of service.

Total evening peak hour traffic is usually greater than morning traffic. This is due to the fact that evening traffic includes shopper, service, and personal trips, while morning traffic is largely home to work. The total westbound movement returning to Dos Vientos is shown as 783 on TABLE 12. The assignment to the Lynn Road off-ramp shown in FIGURE 6 was 703 with 80 to the Ventu Park Road off-ramp.

The existing Lynn Road westbound freeway off-ramp movement is 315 turning south and 420 turning north for a total of 735. An additional 700 Dos Vientos trips turning south would raise the total left turn movement to between 1,000 to 1,200. The existing off-ramp has three lanes with the center lane being optional left or right turn. The intersection of the freeway off-ramp and Lynn Road has the capacity to turn 1,100 to 1,200 vehicles per hour. The limiting future factor could be the total Lynn Road movement due to business and residential development in the areas tributary to this interchange.

The assignment of 80 vehicles to the Ventu Park Road off-ramp is based on the belief that some traffic will find use

of this ramp more convenient than the Lynn Road freeway exit. The City of Thousand Oaks plans to signalize the intersection of westbound off-ramp with Ventu Park Road. The expansion of the off-ramp to 3 lanes with a left turn only lane plus left turn optional lane should provide a capacity of between 1,000 to 1,200 vehicles per hour similar to the existing condition at Lynn Road.

The total existing p.m. peak hour westbound movement from the Ventura Freeway to Ventu Park Road is approximately 500 per hour of which about half turn left. Without the Rancho Conejo development the Ventu Park Road off-ramp could attract about half the Dos Vientos movement of 783 per hour. TABLE 11 shows a Rancho Conejo demand of 628 per hour which is the competing factor for Dos Vientos traffic using this off-ramp. Any reduction in Rancho Conejo residential development will reduce the westbound work to home movement accordingly. An increase in Rancho Conejo outbound work to home traffic could be accommodated either south on Ventu Park Road or east on Hillcrest Drive to the Lynn Road eastbound on-ramp.

Weighing all factors it is possible that the Ventu Park Road interchange will divert about two to three hundred westbound Dos Vientos trips from Lynn Road. A southbound double lane right turn can be constructed on Ventu Park Road at Lynn Road so as to encourage the diversion of traffic from the Lynn Road interchange.

Consideration was given to installation of a loop off-ramp for westbound freeway traffic to south on Ventu Park Road. If feasible such a facility would attract a majority of the Dos Vientos traffic destined to Lynn Road. The high volume of Rancho Conejo traffic projected for the Ventu Park Road eastbound loop on-ramp appears to preclude construction of a new westbound loop off-ramp.

## Wendy Drive

The Wendy Drive interchange will attract the Dos Vientos traffic destined westerly to Ventura County. Local traffic between Dos Vientos and Rancho Conejo and the Thousand Oaks urban area should find Borchard Road, Ventu Park Road and Lynn Road more attractive than Wendy Drive.

The total two-way additional traffic on Wendy Drive will be 280 in the morning hour and 710 in the evening peak hour. These volumes could be noticed by residents along the street but would not be of the magnitude to create significant impact at major intersections.

## Dos Vientos Ranch: Evaluation of Future Traffic

The construction of 3,940 dwelling units plus limited commercial and public facilities will add substantial traffic volume to existing Thousand Oaks highways, freeway interchanges and the Ventura Freeway. Off-site street improvements such as the widening of Lynn Road, from Reino Road to the Ventura Freeway, to a 6 lane limited access thoroughfare will be required to accommodate Dos Vientos and other future traffic in the Newbury Park area of Thousand Oaks. Policies of the City of Thousand Oaks require a developer to contribute toward the funding of off-site road improvements and traffic signal construction and operation. The roadway improvements responsive to new development are beneficial to the entire community.

The optimum traffic program is when home and work plus other destinations are close together. The development of a new residential community south of the Ventura Freeway and jobs north of the freeway provide the City of Thousand Oaks with an opportunity to minimize home to work vehicular movement and implement efficient transportation services that maximize travel by high occupancy vehicles.

Based on current rates of traffic generation, assuming low vehicle occupancy, the existing and proposed arterial system and

freeway interchanges can accommodate the traffic resulting from the construction of Dos Vientos. The two streets that will be impacted most are Borchard and Lynn Roads. With allowance for infill development in the Newbury Park area the resultant traffic movement along these arterials will be comparable with conditions prevailing in Thousand Oaks. Pertinent comments about the traffic analysis are in order:

1. The limited commercial and school construction within the Dos Vientos Ranch serve to reduce traffic on the external street system. If additional commercial development, child care, and educational facilities were economically justified and constructed it is probable that the net traffic impact would be a further reduction of Dos Vientos traffic on the Newbury Park arterials.
2. The Rancho Conejo industrial development will employ residents from the Dos Vientos Ranch. Any change in Rancho Conejo development to increased commercial development and less residential activity would lesson Dos Vientos-Rancho Conejo competition for freeway ramp capacity and induce greater Dos Vientos local traffic to local employment.
3. The balance between traffic that will use the four interchanges of the Ventura Freeway will be influenced by the nature of development north of the freeway, plus economically feasible ramp lane improvements, signalization, and adjacent intersection modification. The total system can effectively accommodate the Dos Vientos Ranch traffic and other known development.

Potrero Road: Proposed Change in Alignment

The present alignment of Potrero Road would result in an intersection with Lynn Road west of the proposed Dos Vientos Parkway. FIGURE 7 shows a proposed change in the alignment of

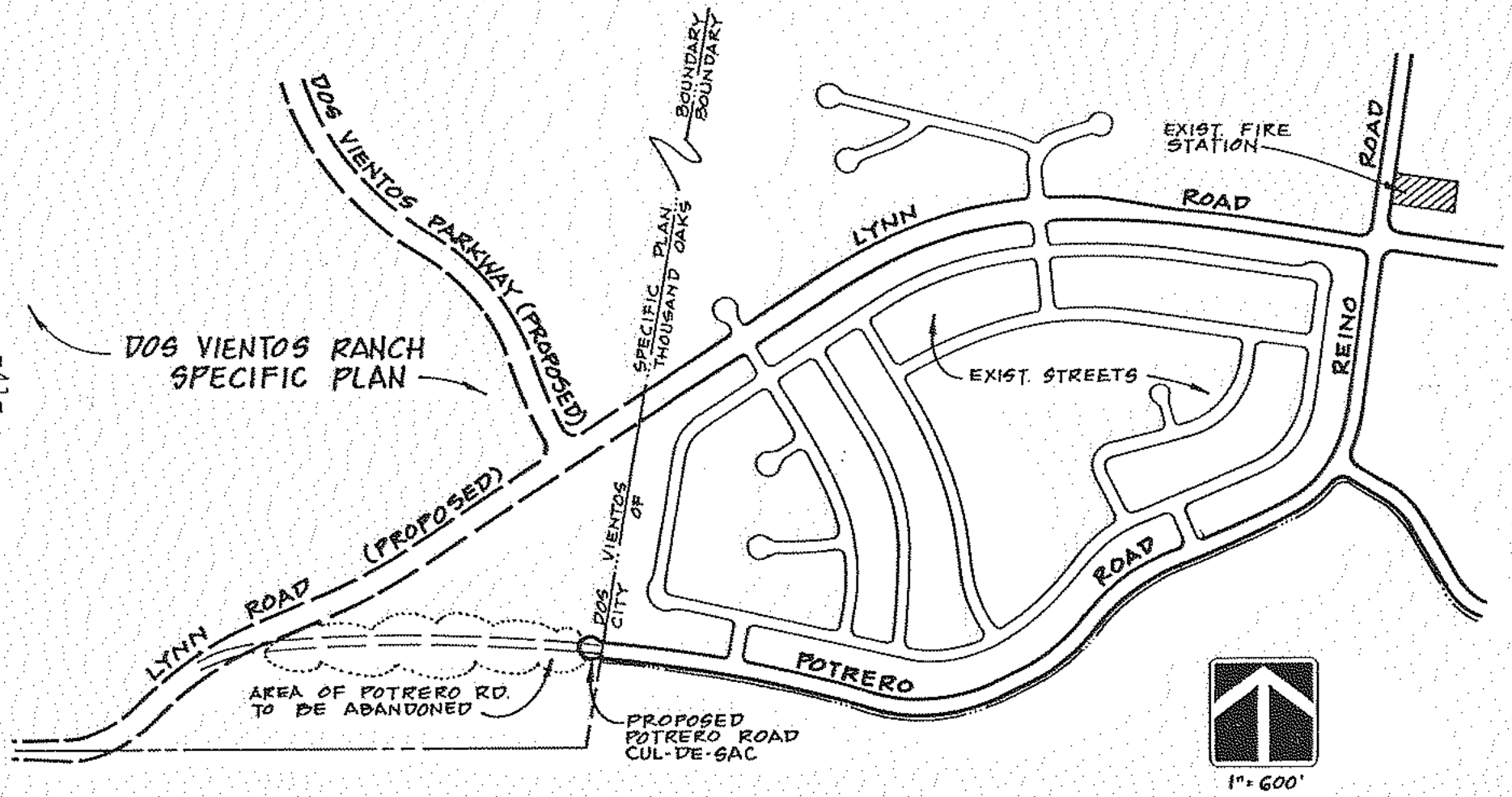



FIGURE 7

**DETAIL OF LYNN RD., REINO RD., AND POTRERO RD. AREA**

Potrero Road. The objective of the realignment would be to connect Potrero Road to Lynn Road at the existing intersection with Reino Road. FIGURE 3 shows that the existing movement between the west leg of Lynn Road and the south leg of Reino Road is almost non-existent. The addition of one to two hundred vehicles per hour to these roadway links would not impact the level of service because other greater traffic volumes control the signal timing at this intersection.

This proposed realignment would minimize the intrusion of through traffic into the existing residential neighborhood south of Lynn Road and west of Reino Road.

## CHAPTER 6

## INTERNAL STREET SYSTEM

The Dos Vientos Ranch development comprises a series of neighborhoods or sub-communities with direct access to a major thoroughfare. Dos Vientos Parkway in the form of an inverted "U" or horseshoe is the primary thoroughfare providing direct access to 14 of the 18 residential units plus the commercial and public school site. The Lynn Road extension through Dos Vientos Ranch provides access to part of the very low density development in Unit 18 and Borchard Road provides access to the low density housing of Units 14, 14A and 14B. FIGURE 1 shows the internal street system, 18 residential neighborhoods, service and community areas and the location of recreational facilities.

TABLE 13 identifies the major and collector streets within the Dos Vientos Ranch development. This table also shows the service provided by the street segment, range of daily traffic and suggested street section. Other than residential minor roads, residential loops and cul-de-sacs, three City of Thousand Oaks street classifications are appropriate for the Dos Vientos Ranch. These are the Standard Secondary Road, Controlled Access (4 lanes); Standard Secondary Road, Limited Access (4 lanes); and Standard Collector Road (2 lanes). These street sections are shown in FIGURE 1 and are identified as B-2, B-3 and B-5 by the City of Thousand Oaks. The data sheets for these roadway classifications are contained in Appendix A, plus that of B-1, Standard Primary Road Controlled Access (6 lanes) which will apply to Lynn Road east of Reino Road.

The traffic volumes shown in TABLE 13 are based on a range of residential traffic generation of 6.6 per day for the high density townhouses and condominiums (10 to 18 Du/Ac) to 10 trips per day for single family detached housing. On most of the street segments the traffic volume will vary extensively. This is similar to stream characteristics with the low volume at the

TABLE 13

DOS VIENTOS RANCH: INTERNAL STREET SYSTEM

| Street and Segment[a] | Approximate Dwelling Units Served[b] | Approximate Daily Traffic[c] | Parking Required | Number of Traffic Lanes | Suggested Street Classification[d] | Comments[e] |
|---|---|---|---|---|---|---|
| Dos Vientos Parkway, | | | | | | |
| Lynn Road to Borchard Road | 2,759 | 5,000-17,000 | No | 4 | B-2 | - |
| Borchard Road to Potrero Road | 750 | 5,000- 7,000 | No | 4 | B-3 | - |
| Unit 10, Loop | 259 | 300- 1,500 | Yes | 2 | B-5 | |
| Unit 11, | | | | | | |
| First 1,000 feet | 450-530 | 3,000- 4,500 | No | 4 | B-3 | - |
| Other through streets | 50-250 | 400- 1,500 | Yes | 2 | B-5 | - |
| Unit 8 and access to Unit 3 | 200 | 1,000- 1,800 | No | 2 | B-5 | Driveway access to cluster housing. Special conditions applicable. |
| Unit 3, Connection to Unit 8 | 100-150 | 800- 1,400 | Yes | 2 | B-5 | - |
| Entrance to Units 1, 2 and 3 | 900 | 9,000 | No | 4 | B-2 | - |
| Access to Units 1 and 3, 200 feet | 550 | 5,000 | No | 4 | B-3 | - |
| Unit 3, first 900 feet | 450 | 4,000 | No | 4 | B-3 | - |
| Unit 3 north legs | 80-100 | 200- 1,000 | Some | 2 | B-5 | - |



WALLEN ASSOCIATES

TABLE 13 (Continued)

| Street and Segment[a] | Approximate Dwelling Units Served[b] | Approximate Daily Traffic[c] | Parking Required | Number of Traffic Lanes | Suggested Street Classification[d] | Comments[e] |
|---|---|---|---|---|---|---|
| Unit 1, Entrance leg | 130 | 1,100 | No | 2 | B-5 | Driveway access to cluster housing. Special conditions applicable. |
| Unit 2, Entrance leg | 365 | 2,600 | No | 4 | B-5 | B-5 more applicable than B-3 for speed control for 600 feet of roadway. |
| Unit 2, Loop | 50-250 | 400-1,800 | No | 2 | B-5 | Driveway access to cluster housing. Special conditions applicable. |
| Unit 4, Loop | 150-200 | 400-1,800 | No | 2 | B-5 | Driveway access to cluster housing. Special conditions applicable. |
| Borchard Road | | | | | | |
| From existing development to beginning of Dos Vientos, 1 mile | 470 | 3,000 | No | 4 | B-3 | Modifications to B-3 may be applicable. |
| To Dos Vientos Parkway | 120-470 | 2,000-4,000 | No | 4 | B-3 | - |
| Lynn Road | | | | | | |
| East to West leg of Dos Vientos Parkway | 752-830 | 5,000-6,000 | No | 4 | B-3 | - |
| From Dos Vientos Parkway 400 feet easterly to city boundary | 3,500 | 20,000 | No | 4 | B-2 | - |

TABLE 13 (Continued)

| Street and Segment[a] | Approximate Dwelling Units Served[b] | Approximate Daily Traffic[c] | Parking Required | Number of Traffic Lanes | Suggested Street Classification[d] | Comments[e] |
|---|---|---|---|---|---|---|
| Unit 14, Loop access to Borchard Road | 150-250 | 1,200-2,200 | Partial | 2 | B-5 | - |
| Unit 12, Loop access to Dos Vientos Parkway | 100-250 | 800-2,200 | Partial | 2 | B-5 | - |
| Unit 16 | | | | | | |
| 800-foot entrance leg | 200-257 | 1,600-2,300 | No | 4 | B-3 | Section desired to identify unit. |
| Continuation to end of unit | | | Yes | 2 | B-5 | - |
| Unit 17, Loop | 40- 70 | Less than 1,000 | Yes | 2 | B-5 | - |
| Unit 18, Loop Dos Vientos to Lynn Road | 30- 60 | Less than 1,000 | Yes | 2 | B-5 | - |

[a]Minor streets and cul-de-sacs excluded.

[b]Total or range of dwelling units served by this street segment.

[c]Range of traffic along the particular street segment. Volume may vary between minimum and maximum dwelling units served by street segment.

[d]Refers to plate numbers, street standards, City of Thousand Oaks per resolution 76-391: B-2 Standard Secondary Road, Controlled Access; B-3 Standard Secondary Road, Limited Access; and B-5 Standard Collector Road.

[e]Some variation from standard street section may be appropriate.



WALLEN ASSOCIATES

head of the stream and the maximum volume where one road joins another.

Dos Vientos Parkway between Lynn Road and Borchard Road is the major thoroughfare in this community. This street should be constructed as a divided highway such as the Standard Secondary Road, Controlled Access. The back side or westerly segment of Dos Vientos Parkway serves less development so that a Secondary Road, Limited Access would be appropriate. It is recommended that all intersections along Dos Vientos Parkway be designed with pockets for left turn traffic.

TABLE 13 also identifies short segments of residential roadways as 4 lane limited access streets. This was in keeping with the criteria of limiting 2 lane collector streets to approximately 2,500 vehicles per day. An attempt was also made to have no parking along all 4 lane limited access roads.

The Dos Vientos Ranch is located in a rural area adjacent to the Point Mugu State Park and containing equestrian trails, pedestrian paths and hiking areas. The compatibility of pedestrian and equestrian requirements with vehicular traffic will be addressed in the final design details; some modification of standard plans may result.

Intersection of Dos Vientos Parkway and Lynn Road

This will be the most heavily traveled intersection in the proposed development. FIGURE 8 shows the morning and afternoon peak hour traffic volumes and proposed design of this intersection. An additional 50 vehicles per hour, east and west on Lynn Road, is included in the projected traffic volumes to account for Potrero Road traffic diverted to Lynn Road.

The principal feature of the intersection design is the double lane southbound left turn to accommodate morning peak hour traffic and the double lane returning right turn movement from Lynn Road to Dos Vientos Parkway. The intersection will be signalized for both vehicular and pedestrian traffic.

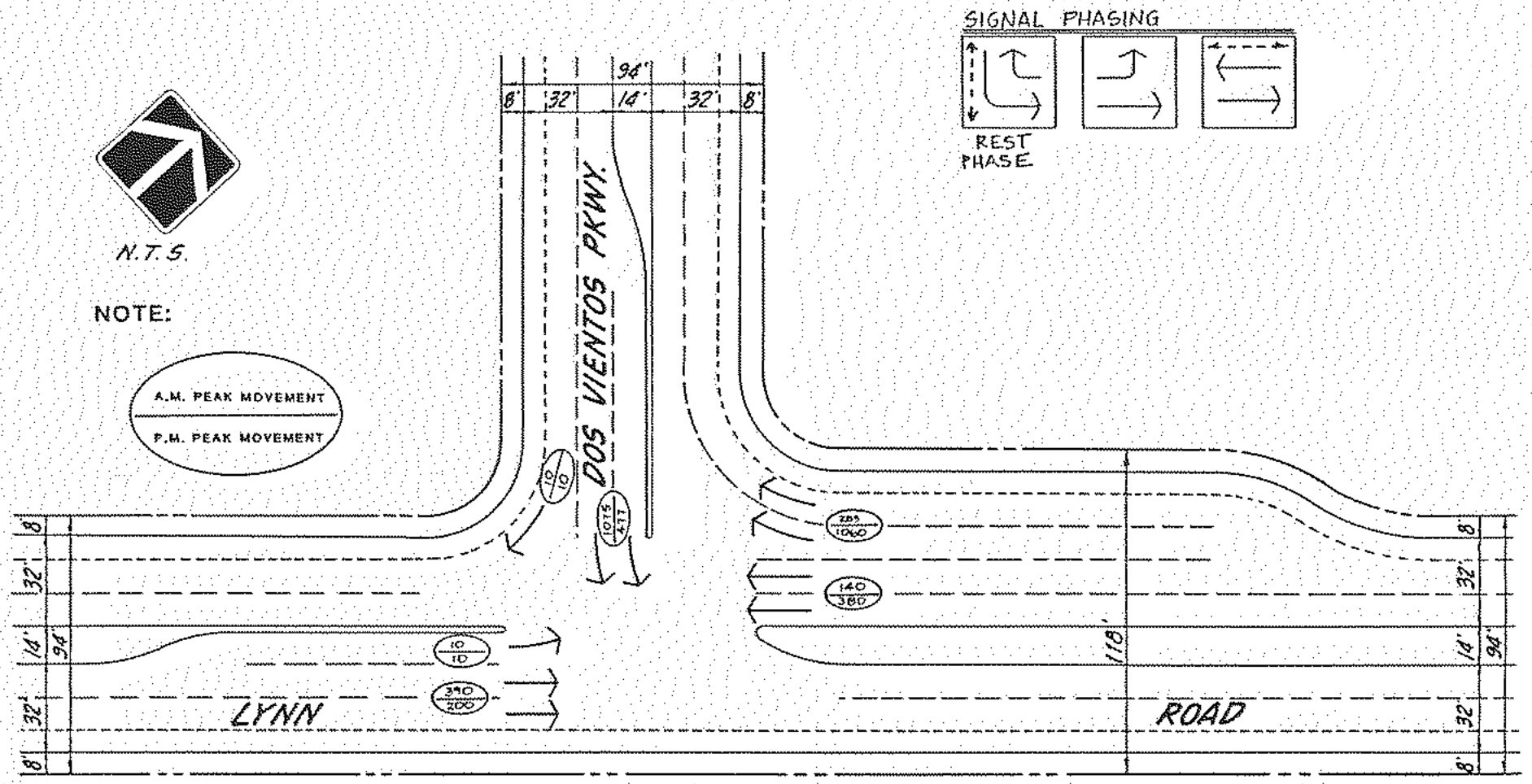



FIGURE 8

**PROPOSED SIGNALIZED INTERSECTION**
DOS VIENTOS RANCH

Traffic Signal Installations

It was originally proposed that traffic signals be installed at nine locations along Dos Vientos Parkway as shown in FIGURE 1. The reasoning behind this recommendation was that traffic signals would be needed for pedestrian crossing and speed control at frequent intervals. As a minimum traffic signals should be installed at all 4-way intersections with Dos Vientos Parkway.

Further investigation with the traffic engineer for the City of Thousand Oaks raised questions regarding the actual number of pedestrians, particularly school children, plus vehicles that would be at each of locations proposed for traffic signal installation. The question was also raised as to the total annual operating expense to the City of Thousand Oaks. Was it possible to effectively control traffic with fewer traffic signal installations?

The issue of pedestrian crossing, particularly school children, relates to the number and location of schoolage children plus the pedestrian and bicycle path system. It was agreed that for the purpose of the Draft Environmental Impact Report it would be most appropriate to identify the location of possible traffic signal installations and make a definitive answer in conjunction with preparation of the final EIR. Upon agreement on housing types and locations, population characteristics, and all circulation elements, it will be possible to best identify locations which will warrant future traffic signal installation. This decision resulted in the modification of FIGURE 1 to show the installation of traffic signals at Dos Vientos Parkway with Lynn Road and Borchard Road and seven possible installations along Dos Vientos Parkway with local streets serving residential and commercial areas.

It is the customary practice of the City of Thousand Oaks to require a developer to deposit funds with the City for future traffic signal installations. Due to the long buildout period

it would not be appropriate to have approximately one million dollars on deposit while the community is being incrementally developed. It is recommended that an alternative process be derived whereby the developer agrees to fund required traffic signal installations immediately prior to the actual need for the traffic control devices.

Quality of Traffic Movement

The internal street system comprising the Dos Vientos Ranch has been designed to hierarchically comply with traffic requirements.

The major traffic volumes are concentrated on a single road designed to conveniently handle the projected traffic. The provision of facilities for turning movements and pedestrian crossings are an integral part of the street design. The individual development areas are sized so as to require a minimum length of 4-lane roadway.

The overall plan provides for a maximum separation of pedestrian and equestrian uses from vehicular travel. Housing is set back from Dos Vientos Parkway. The development plans maximize the compatibility of vehicular and people requirements.

The planning process emphasized safe pedestrian movement and minimized the negative aspects of vehicular traffic within the residential community. As an example, FIGURE 1 shows a proposed pedestrian grade separation of Dos Vientos Parkway to gain access to the school site(s) along the south side of the roadway. One concept would be to elevate the roadway over the pedestrian path. Final design will consider the comparative advantages of a pedestrian movement under or over the roadway. The installation of additional pedestrian grade separations will be investigated in conjunction with final improvement plans.

FIGURE 9 shows proposed vehicular and pedestrian access from Dos Vientos to the existing public school at the westerly terminus of Kimber Drive. This figure shows that through traffic

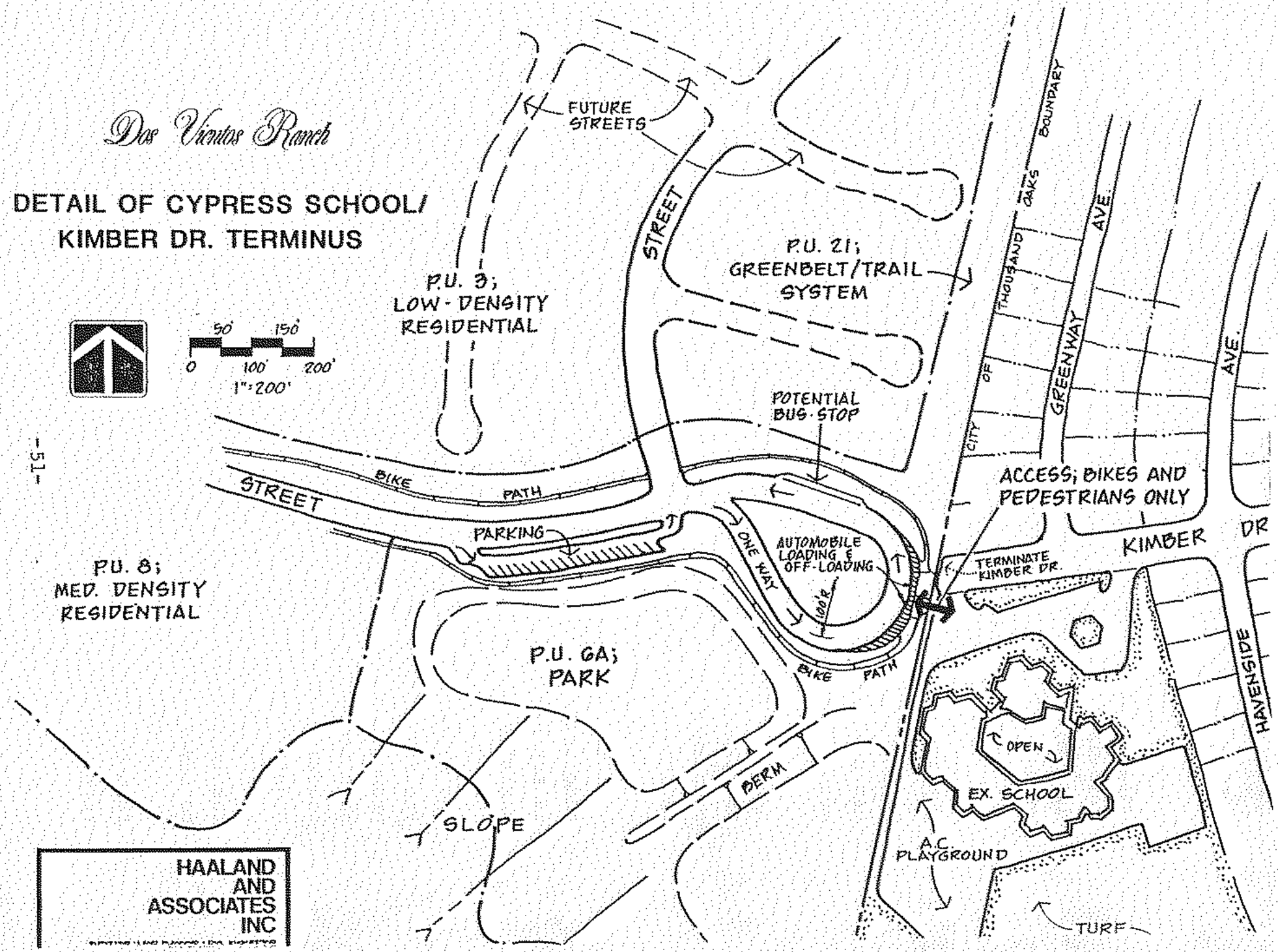

Dos Vientos Ranch
DETAIL OF CYPRESS SCHOOL/
KIMBER DR. TERMINUS
50' 150'
0 100' 200'
1"=200'
FUTURE STREETS
P.U. 9;
LOW-DENSITY
RESIDENTIAL
STREET
P.U. 21;
GREENBELT/TRAIL
SYSTEM
POTENTIAL
BUS STOP
BIKE PATH
STREET
PARKING
P.U. 8;
MED. DENSITY
RESIDENTIAL
ONE WAY
AUTOMOBILE
LOADING &
OFF-LOADING
100'R
BIKE PATH
P.U. 6A;
PARK
BERM
SLOPE
ACCESS; BIKES AND
PEDESTRIANS ONLY
TERMINATE
KIMBER DR.
KIMBER DR
CITY OF THOUSAND OAKS BOUNDARY
GREENWAY
AVE
AVE.
HAVENSIDE
OPEN
EX. SCHOOL
A.C.
PLAYGROUND
TURF
HAALAND
AND
ASSOCIATES
INC

FIGURE 9

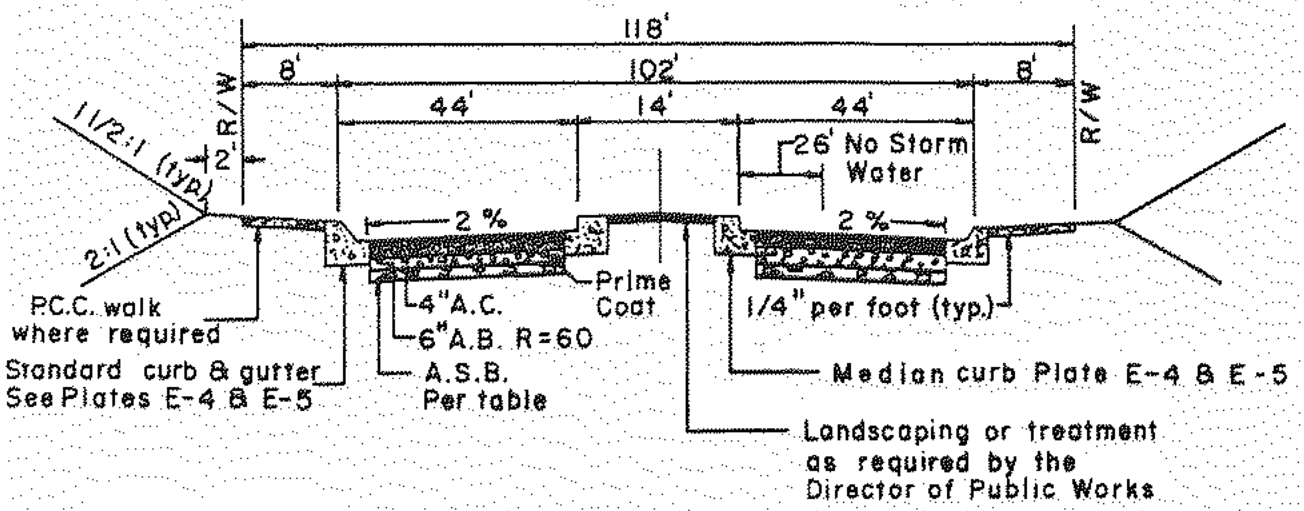
along Kimber Drive will not be allowed. Dos Vientos Ranch traffic is separated from the existing Kimber Drive neighborhood. Dos Vientos autos will park and load children on Dos Vientos land west of the school site and north of a proposed neighborhood park. The pedestrian and bike path facilities would avoid any conflict with vehicular traffic from Dos Vientos.

# APPENDIX A

## CITY OF THOUSAND OAKS

## STANDARD STREET SECTIONS

REVISION _____
DATE




DESIGN CRITERIA

| | |
|---|---|
| DESIGN SPEED | 55 M.P.H MIN. |
| CURVE RADIUS | 1160' MIN. (WITH MAX. SUPERELEVATION) |
| GRADIENT | 0.4 - 5.0% OR AS DETERMINED BY THE DIRECTOR OF PUBLIC WORKS |
| STOPPING SIGHT DISTANCE | 440' MIN. |
| SUPERELEVATION | 0.04 MAX. |
| CURB RETURN RADIUS | 35' MIN. |
| CURVE LENGTH | 500' MIN., 0.5 MILE MAX. |
| TRAFFIC INDEX | 8 |

DRAINAGE:

SEE "A" SERIES PLATES

NOTES:

1 Emergency parking only.
2 Pavement width measured from top inside face of opposing curbs.
3 When expansion ≥ 30 place A.S.B. under curbs & walks per Plate E-4.
4 Additional easements may be required for utilities where necessary.
5 Street trees shall be required.
6 Length of vertical curve: See Plates D-2, D-3.
7 For curves > 1200': Superelevation per Plate D-4.

| BASEMENT SOIL 'R' VALUE | ≥59 | 52-58 | 46-51 | 39-45 | 32-38 | 26-31 | 20-25 | 13-19 | 7-12 | <7 |
|---|---|---|---|---|---|---|---|---|---|---|
| A.S.B. CLASS II R=60 | 0" | 2" | 4" | 6" | 8" | 10" | 12" | 14" | 16" | 18" |

SUBMITTED A. C. Johnson 12-20-76
DATE

APPROVED J. Ronald Johnson 12-21-76
DIRECTOR OF PUBLIC WORKS DATE

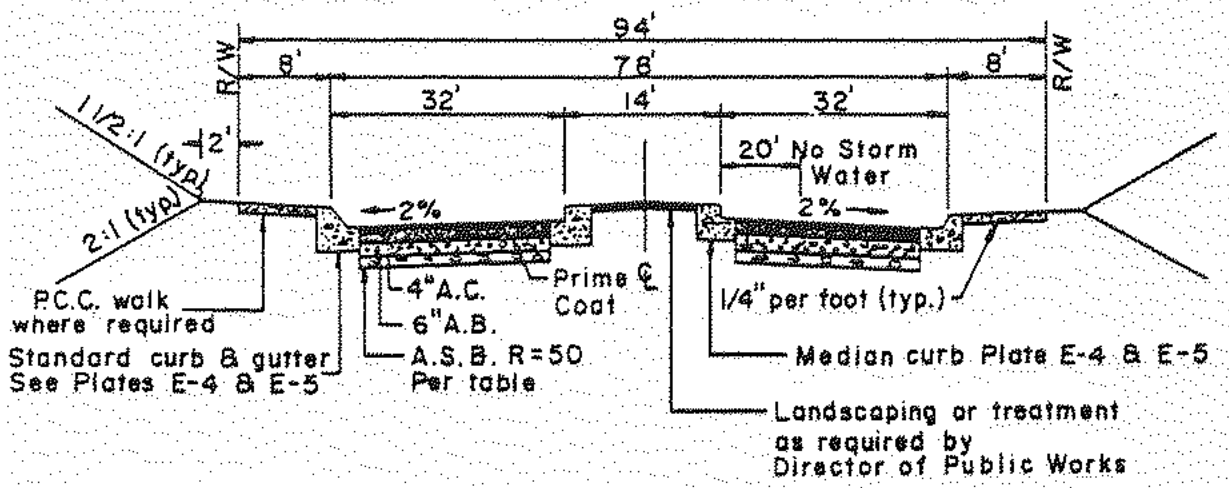
ADOPTED BY CITY COUNCIL 12-21-76
BY RESOLUTION NO. 76-391

CITY OF THOUSAND OAKS
DEPARTMENT OF PUBLIC WORKS

STANDARD
PRIMARY ROAD
CONTROLLED ACCESS

PLATE B-2

REVISION _____ DATE




DESIGN CRITERIA

| | |
|---|---|
| DESIGN SPEED | 55 M.P.H. MIN. |
| CURVE RADIUS | 1160' MIN. (WITH MAX. SUPERELEVATION) |
| GRADIENT | 0.4 - 6.0% OR AS DETERMINED BY THE DIRECTOR OF PUBLIC WORKS |
| STOPPING SIGHT DISTANCE | 440' MIN. |
| SUPERELEVATION | 0.04 MAX. |
| CURB RETURN RADIUS | 35' MIN. |
| CURVE LENGTH | 500' MIN., 0.5 MILE MAX. |
| TRAFFIC INDEX | 7 |

DRAINAGE:

SEE "A" SERIES PLATES

NOTES:

1. Emergency parking only.
2. Pavement width measured from top inside face of opposing curbs.
3. When expansion ≥ 30 place A.S.B. under curbs & walks per Plate E-4.
4. Additional easements may be required for utilities where necessary.
5. Street trees shall be required.
6. Length of vertical curve: See Plates D-2, D-3.
7. For curves > 1200': Superelevation per Plate D-4.

| BASEMENT SOIL 'R' VALUE | ≥50 | 43-49 | 36-42 | 29-35 | 22-28 | 14-21 | 7-13 | <7 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| A.S.B. CLASS II R=50 | 0" | 2" | 4" | 6" | 8" | 10" | 12" | 14" | | |

SUBMITTED A. E. Johnson 12-20-76 DATE

APPROVED S. Louis Schurr 12-21-76 DIRECTOR OF PUBLIC WORKS DATE

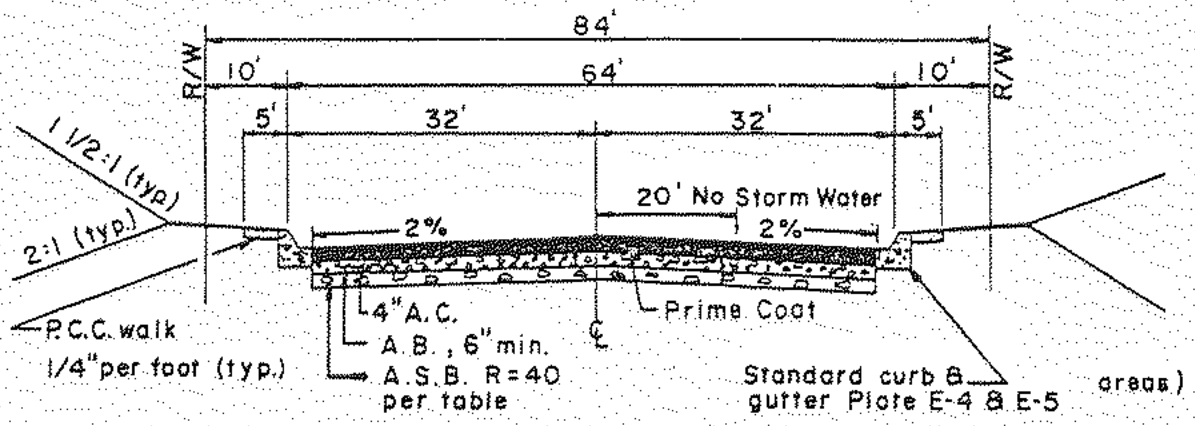
ADOPTED BY CITY COUNCIL 12-21-76
BY RESOLUTION NO. 76-391

CITY OF THOUSAND OAKS
DEPARTMENT OF PUBLIC WORKS

STANDARD
SECONDARY ROAD
CONTROLLED ACCESS

PLATE B-3

REVISION _____ DATE




DESIGN CRITERIA:

| | |
|---|---|
| DESIGN SPEED | 40 M.P.H. |
| CURVE RADIUS | 825' MIN. |
| GRADIENT | 0.4 MIN. — 5.0 MAX. OR AS DETERMINED BY THE DIRECTOR OF PUBLIC WORKS |
| STOPPING SIGHT DISTANCE | 275' MIN. |
| SUPERELEVATION | NONE |
| CURB RETURN RADIUS | 35' MIN. |
| CURVE LENGTH | 300' MIN. - 0.5 MILE MAX. |
| TRAFFIC INDEX | 7 |

DRAINAGE:

SEE "A" SERIES PLATES

NOTES:

1. Planning Commission may require sidewalks and widening of R/W in industrial or commerial areas.
2. Pavement width measured from top inside face of opposing curb.
3. When expansion ≥ 30 place A.S.B. under curbs & walks per Plate E-4.
4. Street trees shall be required.
5. Length of vertical curve: See Plates D-2, D-3.

| BASEMENT SOIL 'R' VALUE | ≥50 | 43-49 | 36-42 | 29-35 | 22-28 | 14-21 | 7-13 | <7 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| A.S.B. CLASS III R=40 | 0" | 2" | 4" | 6" | 8" | 10" | 12" | 14" | | |

SUBMITTED [signature] 12-20-76 DATE

APPROVED [signature] 12-21-76 DIRECTOR OF PUBLIC WORKS DATE

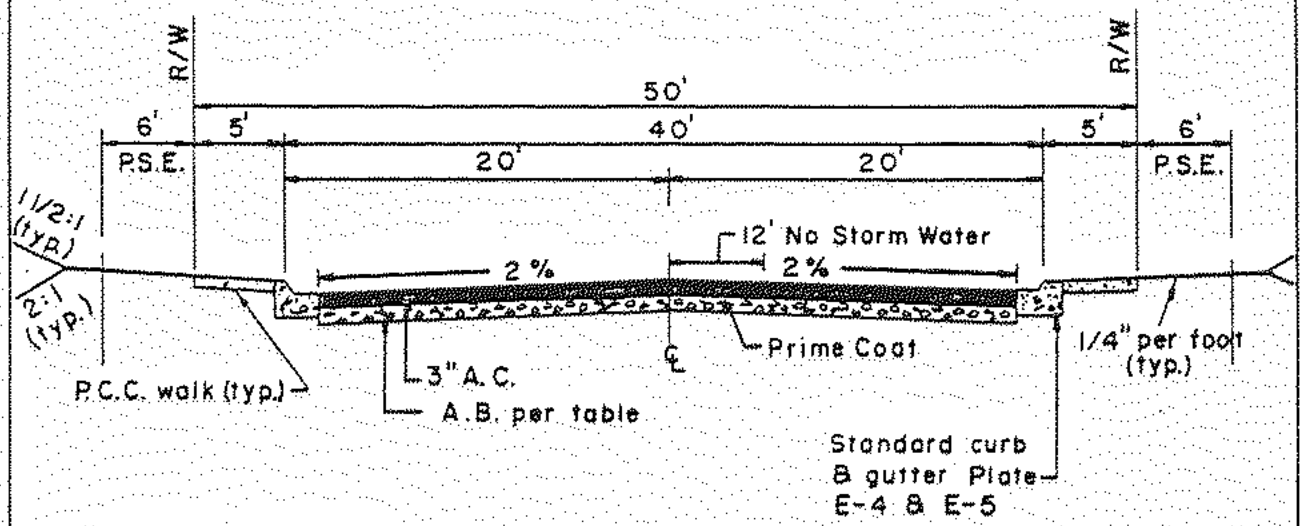
ADOPTED BY CITY COUNCIL 12-21-76
BY RESOLUTION NO. 76-391

CITY OF THOUSAND OAKS
DEPARTMENT OF PUBLIC WORKS

STANDARD
SECONDARY ROAD
LIMITED ACCESS

PLATE B-5

REVISION _____
DATE




DESIGN CRITERIA:

| | |
|---|---|
| DESIGN SPEED | 30 M.P.H. |
| CURVE RADIUS | 380' MIN. |
| GRADIENT | 0.4% MIN - 12% MAX OR AS DETERMINED BY THE DIRECTOR OF PUBLIC WORKS |
| STOPPING SIGHT DISTANCE | 200' MIN. |
| SUPERELEVATION | NONE |
| CURB RETURN RADIUS | 25' MIN., 35' AT INT. W/PRI. & SEC. ROADS |
| TRAFFIC INDEX | 6 OR AS DETERMINED BY THE DIRECTOR OF PUBLIC WORKS |
| DRAINAGE | SEE "A" SERIES PLATE |

NOTES:

1. Pavement width measured from top inside face of opposing curbs.
2. Street trees shall be required.
3. Collector road providing access to 250 dwelling units or less.
4. Length of vertical curve: See Plates D-2, D-3.

| C.B.R. | ELASTICITY % | EXPANSION | A.B. | ALTERNATE SECTION A.B. + A.S.B. R=40 | REMARKS |
|---|---|---|---|---|---|
| ≥ 30 | NOT REQ. | NOT REQ. | 6" | | SEE PLATE E-4 |
| 12-29 | NOT REQ. | NOT REQ. | 6" | 4" + 4" | |
| <12 | ≤ 2.5 | < 30 | 8" | 4" + 6" | |
| <12 | 1.8-2.5 | ≥ 30 | 8" | 4" + 6" | |
| <12 | < 1.8 | ≥ 30 | 10" | 4" + 8" | |
| <12 | > 2.5 | NOT REQ. | 10" | 4" + 8" | |

SUBMITTED [signature] 12-20-76
DATE

APPROVED [signature] 12-21-76
DIRECTOR OF PUBLIC WORKS DATE

ADOPTED BY CITY COUNCIL 12-21-76
BY RESOLUTION NO. 76-391

CITY OF THOUSAND OAKS
DEPARTMENT OF PUBLIC WORKS

STANDARD
COLLECTOR ROAD

Noise Report (1)

LOS ANGELES OFFICE
21120 Vanowen Street
Post Office Box 633
Canoga Park, CA 91304-0633
Telephone (818) 347-8360
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**BBN LABORATORIES**
Consultants in Acoustics and Vibration

20 February 1985

Mr. Robert Talmadge
Haaland and Associates Inc.
One Boardwalk, Suite 200
Thousand Oaks, CA 91360

Subject: Noise Impact Analysis for Dos Vientos Ranch in Thousand Oaks (BBN Project 165300)

Dear Rob:

At your request, we have conducted an analysis of the traffic noise impact associated with the proposed Dos Vientos Ranch in Thousand Oaks. We have examined the impact of Dos Vientos Ranch traffic on both existing residences in adjoining areas and residences within the proposed development. This letter reports the results of our study.

In the following sections, we first discuss traffic noise criteria for residential areas, then document our noise measurements. We then present existing and future noise level projections and discuss impact. In the final section, we describe mitigation measures.

## 1. NOISE DESCRIPTORS AND CRITERIA

In community noise analysis, the unit of noise level or noise exposure is the decibel, or dB (just as the unit of temperature is the degree or the unit of length is the inch or foot). The maximum noise level of a passing vehicle may thus be expressed as so many dB, with different types of vehicles generating different levels of noise and, therefore, different decibel values. In the remainder of this report all noise levels that will be discussed will be "A-weighted" noise levels (that is, in the measurement of such levels, the A-weighting frequency response is applied to the noise level. Since the human ear responds with different sensitivity to sounds of different frequency, such a frequency weighting is necessary to provide noise level values which scale with subjective response.)

Thus, as vehicles traveling on a road pass an observer, the maximum noise level during the passby of each vehicle would produce so many dB. Since some vehicles are noisier than others at the same distance from the observer, the noisier vehicles would produce a higher noise level, in dB, than the quieter vehicles. However, decibels are not linear units, as are degrees or inches. For example, if there are two identical vehicles passing an observer, the maximum noise level is not twice that of the single vehicle but 3 dB higher than that of a single vehicle. The decibel scale is logarithmic, and it is specifically designed this way because the ear responds in this manner. Furthermore, it is important to understand that while two identical vehicles generate noise levels together that are 3 dB higher than a single vehicle, a sound 3 dB higher than another is not judged by people to be twice as loud or annoying. Typically, a difference of 10 decibels (corresponding to 10 times as many vehicles, for example) between two noise levels is necessary to evoke the response that the louder sound is twice as loud as the softer sound. Most people would be able to perceive a differnce of 3 dB, while a difference of 1 to 2 dB cannot usually be distinguished.

Up to now we have been discussing the maximum noise level during a specific vehicle passby. In establishing criteria for noise exposure in an area, it is traditional to look at the long-term average noise environment. Thus, the hourly average sound level (the average of all the sounds occurring during an hour) is one measure sometimes used in describing community noise exposure, particularly for the hour that corresponds to the peak traffic flow. Another useful measure is based upon a daily average of sound levels. This is called the day-night average sound level (DNL), and it is the average of all the sounds occurring during a 24-hour period, except that sounds occurring during nighttime hours (10 p.m. to 7 a.m.) are given a weighting of 10 dB to account for the greater sensitivity of people to noise intrusions that occur during these nighttime hours. One final measure of interest is the community noise equivalent level (CNEL),which is quite similar to the day-night average sound level except that an additional weighting of 5 dB is added to noises that occur during the evening hours (7 p.m. to 10 p.m.). For traffic noise, the CNEL is usually within 1 dB of the DNL.

We are not aware of any specific regulation that sets specific noise level limits for traffic noise exposure in residential areas in Thousand Oaks. However, there are Federal and State guidelines that we will discuss that can provide some insight into the noise exposure in the area under study.

The Department of Housing and Urban Development (HUD) has set noise exposure guidelines applicable to residential structures for which Federal loan guarantees are sought.[1*] These guidelines indicate that a day-night average sound level in excess of 65 dB represents an unacceptable noise environment for residential land uses. Noise exposures below 65 dB are acceptable.

A day-night sound level of 65 dB has been selected by a number of other federal agencies as a general dividing line between an unacceptable and an acceptable noise environment[2] based upon several considerations including the potential for disturbance of various activities that normally are conducted at home.

For other land uses, the level of acceptability of the noise environment is dependent upon the activity that is conducted and the type of building construction (for indoor activities). Figure 1 provides noise exposure compatibility guidelines for a variety of land uses.[3] The figure shows that for many "noise sensitive" land uses such as schools, churches, hospitals, etc., a DNL of 65 dB is also selected as the dividing line between an unacceptable and an acceptable noise environment.

California noise insulation standards set a CNEL limit of 60 dB for exterior exposure for multi-family dwellings above which an interior analysis must be performed to ensure that interior noise levels do not exceed a CNEL value of 45 dB.[4]

Because of the close correspondence between the DNL and CNEL measures, and because CNEL is used by the State, noise exposure estimates in Section 3 will be expressed in terms of the CNEL.

*References are listed at the end of this letter.

## 2. NOISE MEASUREMENTS

Noise measurements were obtained at five locations during either a.m. or p.m. peak traffic hours on 7 to 8 February 1985. The primary purpose of the measurements was to verify noise prediction procedures to be used in the impact analysis; a secondary purpose was to document existing noise levels at selected locations where the noise environment might undergo a change.

Noise levels were monitored for a period of 20 minutes at each location using a portable monitoring system (Digital Acoustics Model 607), located nominally 50 feet from the road centerline. The five locations were chosen in the vicinity of major roadway intersections of interest.

Table 1 lists the average sound level measured at each location during the twenty minute period. Also listed in Table 1 are our estimates of the average sound level expected during the peak traffic hour. To generate these estimates, we utilized the noise prediction procedures in Reference 5, and the appropriate a.m. or p.m. peak traffic volumes reported in Reference 6. A speed of 40 mph was assumed for the projections.

Except at Location 3, the agreement between measured and estimated average sound levels is excellent (1 dB is well within the expected accuracy of prediction). At Location 3, vehicles were observed to accelerate up a moderately steep grade, causing higher maximum levels (and resulting in higher average levels) than would be estimated using the at-grade, constant-speed prediction procedures of Reference 5.

## 3. NOISE LEVEL PROJECTIONS

This section presents CNEL estimates for existing traffic on the roads adjacent to the Dos Vientos Ranch, and for future traffic on these same roads and on the roads through the Dos Vientos Ranch project. The future traffic volume includes the traffic generated by Dos Vientos Ranch under full build-out conditions. Vehicular volumes on the roads of interest for existing and future periods were obtained in Reference 6.

The CNEL estimates were developed using the prediction procedures of Reference 5, which were shown to produce accurate noise level projections under constant speed, flat grade conditions. To make the noise level projections, we have assumed these conditions throughout, and have also assumed a speed of 40 mph and negligible heavy truck volumes. Finally, we have assumed that the afternoon peak traffic hour represents approximately ten percent of the average daily traffic, and that fifteen percent of the average daily traffic occurs during nighttime hours (10 p.m. to 7 a.m.).

Two types of noise level projections have been prepared. The first is an estimate of the Community Noise Equivalent Level at 50 feet from the roadway centerline. In most cases, this distance may not be an appropriate one for assessing impact on an adjoining land use. However, by using this close-in distance the effects of propagation are virtually eliminated, so that accurate comparisons of changes in noise levels with changes in traffic volumes can be made, as can comparisons of the noise levels among different roads at the same distance.

The second type of projection is a listing of the distances from the roadway centerline at which different Community Noise Equivalent Levels are expected to occur, such as the distance to the 60 dB level, the distance to the 65 dB level, etc. In preparing these estimates we have made many simplifying assumptions. We have used a drop-off rate of 3 dB per doubling of distance, and we have not taken into account any shielding that may occur (such as may result from a property line wall, multiple rows of hours, etc). Finally, we have not taken into account the change in noise level (which is typically fairly small) that occurs in the vicinity of intersections. Thus, these contour distances are appropriate for a screening level impact assessment, but are not appropriate for site-specific assessment of impact.

Table 2 lists the existing and future noise level projections for major roads adjacent to the Dos Vientos Ranch project. The CNEL projections (both estimates at 50 feet and the distance estimates for various CNEL values) are provided on a section by section basis for each of the major roadways listed.

Similiarly, Table 3 provides CNEL projections for future traffic on the major roads through Dos Vientos Ranch. For reference purposes, the average daily traffic on each roadway section is also listed.

For both Tables 2 and 3 the distance estimates are provided for CNEL values of 60, 65, and 70 dB, where these values occur outside of the right-of-way of the particular roadway.

## 4. IMPACT ASSESSMENT

Comparison of the CNEL estimates at 50 feet for existing and future periods in Table 2 shows significant increases in noise exposure along Lynn Road. These increases range from 11.5 dB at the western end of Lynn Road to 4 dB at the eastern end near the Ventura Freeway. On all the other road sections, the change in noise exposure is insignificant (3 dB or less), except for a 4 dB change on Wendy Drive, north of Lynn Road.

Along Lynn Road, the addition of Dos Vientos Ranch traffic to the relatively light traffic flow, particularly at the western end of Lynn Road, results in CNEL values of approximately 70 dB at 50 feet. The Table also shows the distances to the 65 and 60 dB contours, for unshielded conditions. Residences along Lynn Road which have a property line wall will receive at least a 5 dB reduction in level (assuming that the wall breaks the line-of-sight to the roadway), resulting in levels below 65 dB. For any residences along Lynn Road closer than the distance listed under the 65 dB column which do not have a property line wall, the future noise environment will be unacceptable.

For all residences along Lynn Road, whether or not there is a property line wall, the increase in noise level indicated in Table 2 will still occur. This increase represents an adverse impact, particularly for the sections from east of Wendy Drive to west of Reino Road where the increase is 9 dB and above.

Within Dos Vientos Ranch, all residential areas will include property line walls along Lynn Road and Dos Vientos Parkway. This will result in noise levels at single family dwellings below 65 dB in all cases. Noise levels may exceed 60 dB at some locations for some of the multi-family units. When the exact location of these buildings is determined, the outdoor noise level should be more accurately projected. If the level exceeds 60 dB, then the building structure should be designed to provide an interior CNEL of less than 45 dB, in accordance with the California Noise Insulation Standards (reference 4).

In summary, adverse impact will occur along Lynn Road due to the increase in noise levels from Dos Vientos Road traffic. No impact is expected within the Dos Vientos Ranch itself.

## 5. MITIGATION MEASURES

A common measure for reducing residential noise impact due to traffic is a noise barrier wall. The usual concrete masonary block wall used as a property line wall is an adequate noise barrier, if the height of the wall is sufficient to block line-of-sight between the eye-level of people in their back yards and the roadway surface and the wall is solid and continuous between the back yard and the roadway.

Construction of such a wall may be desirable for those homes which back onto Lynn Road and do not now have a property line wall, and are located closer to Lynn Road than the distances listed in Table 2 under the column labeled 65 dB. One area where this does occur is Tract 2667, located north of Lynn Road between Reino Road and the Dos Vientos Ranch property line.

For homes along Lynn Road which already have a property line wall which serves as a noise barrier, no additional mitigation measures are feasible to further reduce traffic noise impact.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

This completes our analysis. Please do not hesitate to contact us if you have any questions concerning the information in this report or if we can provide additional details.

Very truly yours,

BBN Laboratories Inc.

Myles A. Simpson
Supervisory Consultant

MAS/hs

## REFERENCES

1. HUD Guidelines: Title 24 CFR Part 51.

2. "Guidelines for Considering Noise in Land Use Planning and Control," Federal Interagency Committee on Urban Noise, June, 1980.

3. American National Standards Institute (ANSI) Standard S3.23-1980.

4. California Noise Insulation Standards: Title 25, Chapter 1, Subchapter 1, Article 4, Section 1092, California Administrative Code.

5. "Calculation of Day-Night Levels (Ldn) Resulting from Highway Traffic," BBN Report 4207, prepared for EPA, August 1982.

6. "Traffic Impact Report - Dos Vientos Ranch", prepared by Wallen Associates, 1 February 1985, and personal communication with M. Wallen, 19 February 1985.

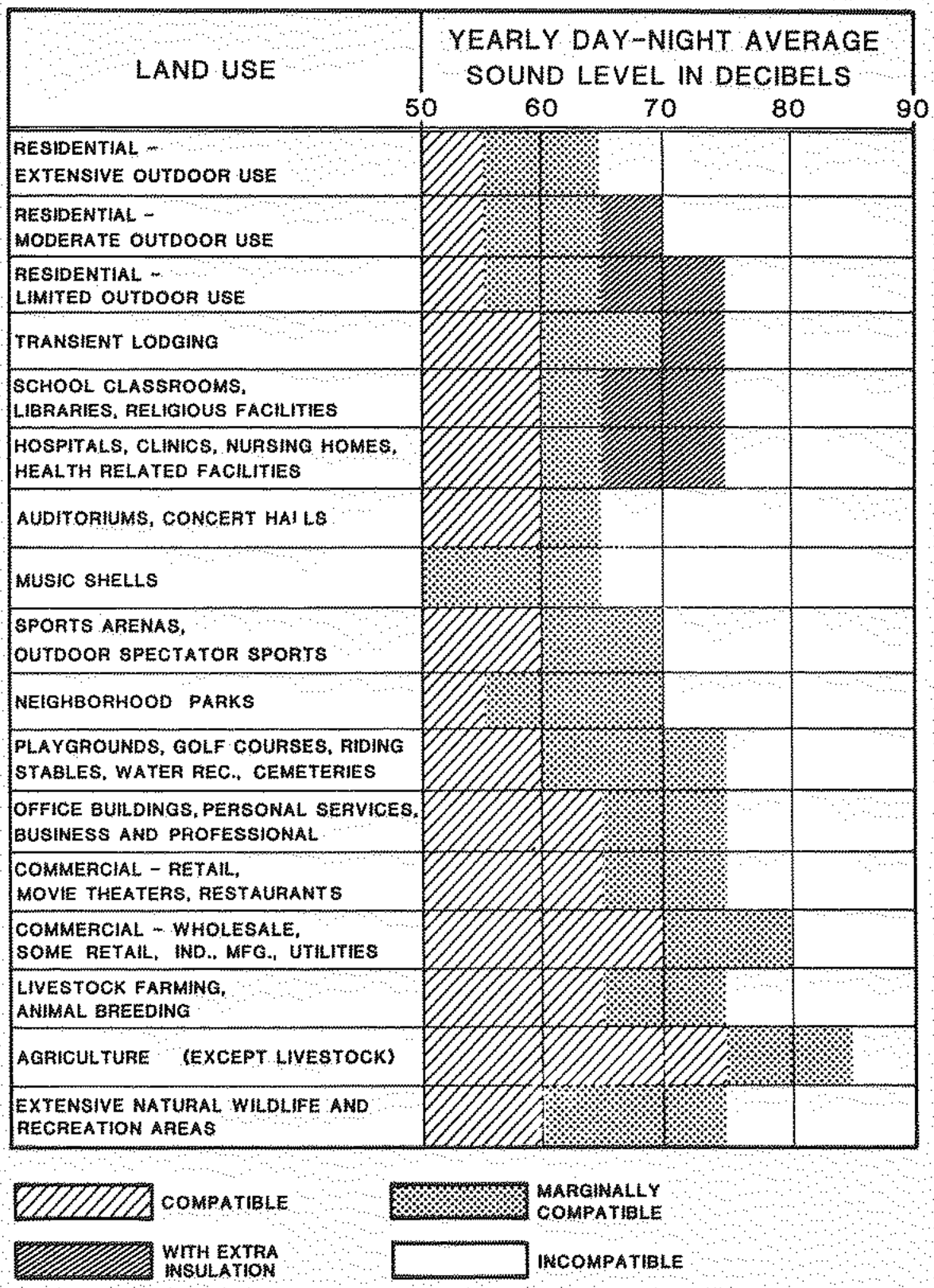


FIGURE 1. LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVEL AT A SITE FOR BUILDINGS AS COMMONLY CONSTRUCTED (AFTER ANSI STD S 3.23 - 1980)

TABLE 1. MEASURED AND PREDICTED NOISE LEVELS

| Location | Description | Average Sound Level, dB | | |
|---|---|---|---|---|
| | | Measured | Predicted | Difference |
| 1 | Lynn Rd. West of Reino Road | 59.5 | 59.5 | 0 |
| 2 | Lynn Rd. West of Wendy Drive | 60.5 | 60.5 | 0 |
| 3 | Lynn Rd. East of Wendy Drive | 66.5 | 61.0 | 5.5 |
| 4 | Wendy Drive North of Lynn Road | 62.0 | 61.0 | 1 |
| 5 | Borchard Road West of Reino Road | 62.0 | 61.0 | 1 |

TABLE 2. EXISTING AND FUTURE NOISE LEVEL PROJECTIONS FOR ADJACENT ROADS

| ROAD | SECTION | TIME PERIOD | CNEL AT 50 FT., dB | DISTANCE TO LISTED CNEL, FT. 70dB | 65dB | 60 dB |
|---|---|---|---|---|---|---|
| Lynn Road | West of Reino Rd. | Existing | 59.0 | — | — | — |
| | | Future | 70.5 | 55 | 180 | 560 |
| | West of Wendy Dr. | Existing | 61.0 | — | — | 65 |
| | | Future | 70.0 | 50 | 160 | 500 |
| | East of Wendy Dr. | Existing | 60.5 | — | — | 55 |
| | | Future | 69.5 | — | 140 | 445 |
| | West of Ventu Park Rd. | Existing | 65.5 | — | 55 | 180 |
| | | Future | 70.5 | 55 | 180 | 560 |
| | East of Ventu Park Rd. | Existing | 66.0 | — | 65 | 200 |
| | | Future | 70.0 | 50 | 160 | 500 |
| Borchard Rd. | West of Reino Rd. | Existing | 62.0 | — | — | 80 |
| | | Future | 64.5 | — | — | 140 |
| | West of Wendy Dr. | Existing | 65.5 | — | 55 | 180 |
| | | Future | 67.0 | — | 80 | 250 |
| | East of Wendy Dr. | Existing | 67.5 | — | 90 | 280 |
| | | Future | 68.0 | — | 100 | 315 |
| Reino Rd. | North of Borchard Rd. | Existing | 66.0 | — | 65 | 200 |
| | | Future | 66.0 | — | 65 | 200 |
| | South of Borchard Rd. | Existing | 66.0 | — | 65 | 200 |
| | | Future | 66.0 | — | 65 | 200 |
| | North of Lynn Rd. | Existing | 63.5 | — | — | 115 |
| | | Future | 64.0 | — | — | 125 |
| Wendy Dr. | North of Borchard Rd. | Existing | 66.5 | — | 70 | 225 |
| | | Future | 68.0 | — | 100 | 315 |
| | South of Borchard Rd. | Existing | 67.0 | — | 80 | 250 |
| | | Future | 68.0 | — | 100 | 315 |
| | North of Lynn Rd. | Existing | 60.5 | — | — | 55 |
| | | Future | 64.5 | — | — | 140 |
| Ventu Park Rd. | North of Lynn Rd. | Existing | 64.5 | — | — | 140 |
| | | Future | 66.5 | — | 70 | 225 |

TABLE 3. FUTURE NOISE LEVEL PROJECTIONS FOR ROADS WITHIN DOS VIENTOS RANCH

| ROAD | SECTION | ADT | CNEL AT 50 FT., dB | DISTANCE TO LISTED CNEL, FT. 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|
| Dos Vientos Parkway | Lynn Rd to Unit 11 Access Road | 15,000 | 69.0 | — | 125 | 400 |
| | Unit 11 Access Rd. to Kimber Dr. | 17,000 | 69.5 | — | 140 | 445 |
| | Kimber Dr. to Unit 1 Access Road | 13,000 | 68.0 | — | 100 | 315 |
| | Unit 1 Access Rd. to Unit 5 Signal | 9,000 | 66.5 | — | 70 | 220 |
| | Unit 5 Signal to Borchard Road | 7,000 | 65.5 | — | 60 | 180 |
| | Borchard Rd. to Unit 15 Access Road | 5,000 | 64.0 | — | — | 125 |
| | Unit 15 Access Rd. to Potrero Rd. | 7,000 | 65.5 | — | 55 | 180 |
| Lynn Road | Reino Rd. to Dos Vientos Parkway | 20,000 | 70.0 | 50 | 160 | 500 |
| | Dos Vientos Parkway to Potrero Road | 6,000 | 65.0 | — | 50 | 160 |
| Borchard Rd. | Reino Rd. to Property Line | 3,000 | 62.0 | — | — | 80 |
| | Property Line to Dos Vientos Parkway | 4,000 | 63.0 | — | — | 100 |

# Supplemental Noise Impact Assessment (11)

Report No. 6336R2
Project No. 192064

# NOISE IMPACT ASSESSMENT FOR DOS VIENTOS RANCH: LYNN AND BORCHARD ROAD ACCESS ROUTES

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December 1986

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## SUMMARY

This report presents an analysis of the potential noise impacts of the Dos Vientos Ranch project on existing residential areas along Lynn and Borchard Roads in Thousand Oaks, California. This study examines site-specific impacts which are dependent upon existing field conditions such as house pad elevation with respect to the roadway, and existing wall heights and locations.

The results of the noise measurement survey and roadway noise contour development indicate that certain off-site residential areas will be impacted adversely by Dos Vientos project traffic. The criterion used to assess impact is the 65 dB CNEL resulting from Dos Vientos project traffic at ultimate build-out levels.

Noise mitigation measures in the form of a 6-foot solid block wall are recommended for the south side of Lynn Road between La Grande and Knollwood, and the north side of Lynn Road from Reino Road to the project boundary. Also, where 2-story homes exist adjacent to Lynn Rd. west of Kelly Rd., mitigation of interior noise levels in upper floor bedrooms facing Lynn Rd. by use of double-glazed windows is recommended.

With the incorporation of these mitigation measures, project implementation will not adversely impact the noise environment in existing residential areas.

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## 1.0 INTRODUCTION

This report examines the potential noise impacts of the Dos Vientos Ranch Development project on existing residential areas along Lynn and Borchard Roads in Thousand Oaks, California. Projections of noise contour levels are made in terms of CNEL and a.m. and p.m. peak hour Leq.

These impacts were previously evaluated as a part of the environmental impact report for the project. However, this study examines site specific impacts with special attention to be paid to existing field conditions.

## 2.0 FIELD MEASUREMENT PROGRAM

A noise measurement survey was conducted along Lynn and Borchard Roads in Thousand Oaks, California in November 1986 to determine the roadway noise levels in the adjacent residential areas under a variety of roadway, house, lot, and property line wall elevation conditions (see Figure 1). There are six such general categories which can be used to represent the conditions along Lynn and Borchard Roads as shown in Figure 2. These are:

<u>Roadway Level with House Pad</u>

1. The roadway and the residential lot elevation are approximately level. There is an open wood fence, or a chain-link fence (ineffective as a noise barrier) or no fence at all between the roadway and the property.

2. The residential property and the roadway are approximately level. A solid block wall (5-6 feet in height) is located at the residential property line. under these conditions, the wall provides shielding to ground-level locations in the residential property, however, second-story windows overlook the wall and are exposed to the roadway traffic source in question.

<u>House Pad Above Roadway</u>

3. The residential property overlooks the roadway noise source, by anywhere from 10-25 feet*. This condition includes a 5-6 foot concrete block wall located at the residential yard

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*There may or may not be a concrete block or other retaining wall located near the roadway. Such a wall is not effective as a noise barrier since the line-of-sight from the source to receiver is uninterrupted.

level. In this case, the exterior noise at ground floor level is reduced by the block wall, while the second floor windows are exposed to the roadway noise source.

4. This type is basically the same as 3 except that there is either no wall, a wood slat (open design) fence, or a wrought iron fence on the residential property. These are ineffective as noise barriers, since line-of-sight between the residence pad level and the roadway noise source is not interrupted by the barrier.

House Pad Below Roadway

5. This situation applies to conditions where the residential property is located below roadway level (6 feet or more below). Condition 5 applies to the case where there is a 6-foot block wall located on the residential property line acting as a barrier to all ground level locations. In this case, the second floor windows would overlook the property line wall.

6. This is essentially the same as 5 except that there is no block wall, providing no shielding.

The intent of the current measurement program is to calibrate the noise model in terms of the effects described above. During the survey, 10-minute Leq values were gathered at each location while a traffic count was maintained. Table 1 shows the measurement locations, results, and calculations using the EPA traffic noise model. The locations used for measurements are displayed in Figure 1. Also included were the noise measurements obtained for the EIR study in order to provide further calibration points for use in this study.

Based on these results, residential locations at ground level behind a block wall (Conditions 2, 3, and 5) will result in a reduction of 5 dB in roadway noise levels. In those areas where the residential homes are located below roadway level by 12 feet or more, a 10 dB noise reduction is achieved based on the results obtained at measurement location H.

## 3.0 NOISE CONTOUR DEVELOPMENT

This section of the report presents illustrations of the 65 dB noise contour in terms of CNEL. Tabulations of the distances to various CNEL, a.m., and p.m. hour Leq contours are also given. The residential areas along Lynn and Borchard Roads were separated into the categories described in the previous section, and modelled accordingly. Noise contours were generated for two levels of traffic on each road, as follows:

1. Cumulative future traffic on planned roads, which includes Dos Vientos traffic plus all other future traffic.

2. Dos Vientos traffic only at ultimate build-out levels.

The assumptions regarding traffic flow were provided by the project traffic consultant, Mr. Martin Wallen, after consultation with the City of Thousand Oaks Traffic Engineer (November 18, 1986 letter). The major difference in the assumptions used to generate noise levels in the current study (as opposed to the noise study for the EIR) is the addition of heavy trucks (3 or more axles) and medium trucks (delivery vans, buses, etc.) to the model. The conservative value of 0.15% heavy trucks on Lynn Rd. and 1% on Borchard east of Reino Rd. were used (see Appendix A). Medium truck traffic was assumed to be 1.84% of all traffic for Lynn and Borchard Roads.

The results of the CNEL analysis are displayed in Tables 2, 3, and 4, which show the roadway segments, and the distance to the various contour noise levels for each of the two conditions named above. Note that in many cases, the contour level in question is located within the roadway width (less than 50 feet), indicating that no areas outside of the roadway are exposed to these levels.

The results of the CNEL analysis (presented in Tables 2 through 4) are displayed graphically in Figure 2, where the 65 dB CNEL contour is displayed for each of the two future conditions.

The results show that the contribution to the environmental levels of Dos Vientos-related traffic is small along the eastern portions of Lynn Road. Along the western portion of Lynn Road, however (beyond Kelly Road), the Dos Vientos future traffic is the major contributor to the future 65 dB contour level location. In these areas, Dos Vientos traffic-generated noise levels will increase some residential noise levels to beyond the 65 dB criterion level. Noise mitigation is recommended for these areas.

The CNEL contour distances were developed for a receiver located at ground floor level at each particular residential location. As described in Section 2, existing wall types 2, 3, and 5 reduce the traffic noise levels for ground floor receivers. As shown in Table 2 through 4, and in Figure 3, the CNEL contours are moved inwards in areas where these walls exist.

At two-story residences adjacent to Lynn Rd., however, no noise reduction is realized at the second floor level by a 6-foot wall placed at house pad (ground floor) level. The 65 dB CNEL contour due to Dos Vientos traffic only includes upper floor of the first row of twostory homes (where they exist) adjacent to Lynn Rd. west of Kelly Rd. only. Mitigation of interior noise levels due to Dos Vientos traffic in upper floor bedrooms in these areas in the form of double-glazed windows is recommended.

Also of interest, are the distances to the equivalent sound level (Leq) contours resulting from morning and afternoon peak traffic hours. The $L_{eq}$ value is the average A-weighted sound level over a specified period of time, usually 1 hour. These results are given in Tables 5 through 10 in a format similar to Table 2,

3, and 4. In general, the distances to the Leq contours are smaller than for the CNEL contours. This is due to the fact that the CNEL values include a factor for weighting of evening and nighttime events. It was assumed in this study that thirteen percent of all traffic occurred between 7 p.m. and 10 p.m. and sixteen percent occurred between 10 p.m. and 7 a.m. Since the CNEL applies a weighting to events occurring during these time periods, the numerical value is higher than for the peak-hour Leq number.

## 4.0 MITIGATION

Mitigation of project-induced traffic noise levels is recommended in areas where future exterior CNEL values will exceed 65 dB and/or where future interior CNEL values will exceed 45 dB due to the presence of the Dos Vientos project. The off-site areas identified for noise mitigation in this study are as follows:

EXTERIOR NOISE - Construct noise barrier wall.

1. The south side of Lynn Rd. between La Grange and Knollwood Road.

2. The north side of Lynn Rd. between Reino Rd. to the project boundary.

In these cases, the residences overlook Lynn Rd. so that the wall should be placed at the house pad level (i.e., on residential property), rather than at the roadway to ensure that line-of-sight between the roadway and the residential location is interrupted. Recommended wall height is 6 feet above house pad level.

INTERIOR NOISE - 2-story houses immediately adjacent to Lynn Road only; double-glazed windows on upper floor for rooms facing Lynn Road.

1. Both sides of Lynn Road west of Kelly Road to project boundary.

The incorporation of the double-glazed windows at the locations recommended will ensure that interior noise levels in all habitable rooms will not exceed 45 dB CNEL due to Dos Vientos project traffic.

The areas identified for noise mitigation are the only areas where exterior and/or interior CNEL values will exceed criteria levels due to the presence of Dos Vientos traffic only. The detailed analysis of the effects of existing walls and elevation conditions described in previous sections of this report showed that other residential areas along Lynn Rd. receive a benefit or reduction in roadway noise levels due to these walls, such that Dos Vientos traffic noise levels will be reduced below 65 dB CNEL at adjacent residences.

The selection of the 65 dB CNEL exterior noise standard as the criterion for mitigation of project noise levels in existing residential areas is consistent with the provisions of the Draft Noise Element of the Thousand Oaks General Plan* and with State and Federal Standards. The noise study prepared for the Draft EIR describes 60 dB CNEL as the exterior noise level which should require an acoustical analysis showing compliance with the 45 dB CNEL interior limit for new residential construction within Dos Vientos Ranch. This is also consistent with local and state standards for new construction. Existing residences along Lynn and Borchard Roads are currently exposed to exterior noise levels greater than 60 dB CNEL.

It should be noted that no areas along Borchard Rd. are recommended for treatment because of the presence of existing walls, and because future traffic levels are not strongly dependent upon Dos Vientos traffic. Recall that the assumption of project traffic distribution is approximately twenty percent for Borchard Rd. and eighty percent for Lynn Rd.

The preceding recommendations were developed based upon large scale (1" = 100' aerial photographs), which show existing wall locations. In addition, the current grading and landscape plans for Tracts 2808, 4266, and 4136, which show residential pad and wall locations, were used in the contour development.

*Part 6.1, Section A, 2nd program (page 47).

TABLE 1

NOISE MEASUREMENT LOCATIONS AND RESULTS

FOR LYNN AND BORCHARD ROADS

| Location | Description | Distance to Roadway | Wall Type* | Field Measured Leq, dB | Predicted** Leq, dB |
|---|---|---|---|---|---|
| A | Lynn Rd west of Reino | 50 ft | 2(meas. as 1) | 59.5 | 59.5 |
| B | Lynn Rd at Fowler | 60 ft | 5(meas. as 6) | 60.5 | 60.5 |
| C | Lynn Rd east of Wendy | 50 ft | 4 | 66.5 | 61.0 |
| E | Borchard Rd west of Reino | 40 ft | 2(meas. as 1) | 62.0 | 61.0 |
| F | Lynn Rd, 937 Ponso | 125 ft | 4 | 56.6 | 56.4 |
| G | Lynn Rd, 3979 Blackwood | 30 ft | 2(meas. as 1) | 65.7 | 65.6 |
| H | Lynn Rd, 902 Rawhide | 100 ft | 5 | 49.3 | 59.4 |
| I | Lynn Rd east of Ventu Park | 50 ft | 4 | 66.2 | 65.7 |
| J | Lynn Rd east of Greanmeadow | 125 ft | 4 | 66.0 | 66.2 |
| K | Borchard Rd east of Wendy | 100 ft | 5 | 49.5 | 55.2 |

* Refers to conditions described on pages 2-3.

**Prediction based on number of vehicles and average speeds observed during field measurements.

TABLE 2

CNEL CONTOUR DISTANCES FOR DOS VIENTOS ACCESS ROUTES

CUMULATIVE FUTURE TRAFFIC ON PLANNED ROADS

| ROADWAY | SEGMENT START | SEGMENT FINISH | SIDE OF RD | WALL TYPE | DISTANCE FROM ROADWAY CENTERLINE TO CNEL CONTOUR, FT 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|---|
| LYNN RD | ROUTE 101 | GREEN MDW | WEST | 2,5 | 23 | 74 | 235 |
| | ROUTE 101 | GREEN MDW | EAST | 4 | 74 | 235 | 745 |
| | GREEN MDW | CAPITAN | SOUTH | 3,4 | 69 | 218 | 692 |
| | GREEN MDW | CAPITAN | NORTH | 2,5 | 22 | 69 | 218 |
| | CAPITAN | VENTU PARK | SOUTH | 2 | 22 | 69 | 218 |
| | CAPITAN | VENTU PARK | NORTH | 4 | 69 | 218 | 692 |
| | VENTU PARK | KELLY | SOUTH | 1 | 74 | 235 | 745 |
| | VENTU PARK | KELLY | NORTH | 5 | 23 | 74 | 235 |
| | JUST WEST OF KELLY | | SOUTH | 4 | 58 | 184 | 585 |
| | JUST WEST OF KELLY | | NORTH | 5 | 18 | 58 | 184 |
| | FELTON | WENDY | SOUTH | 1 | 58 | 184 | 585 |
| | FELTON | WENDY | NORTH | 2,5 | 18 | 58 | 184 |
| | WENDY | LA GRANDE | SOUTH | 5 | 6 | 20 | 63 |
| | WENDY | LA GRANDE | NORTH | 2 | 20 | 63 | 200 |
| | LA GRANDE | REINO | SOUTH | 4 | 63 | 200 | 636 |
| | LA GRANDE | REINO | NORTH | 2,3 | 20 | 63 | 200 |
| | REINO | GREENDALE | SOUTH | 2,3 | 20 | 64 | 205 |
| | REINO | GREENDALE | NORTH | 1 | 64 | 205 | 650 |
| | GREENDALE | FERNHILL | SOUTH | 5 | 20 | 64 | 205 |
| | GREENDALE | FERNHILL | NORTH | 4 | 64 | 205 | 650 |
| BORCHARD | MICHAEL | REDFIELD | SOUTH | 3 | 31 | 97 | 308 |
| | MICHAEL | REDFIELD | NORTH | 1 | 97 | 308 | 979 |
| | REDFIELD | THERESA | SOUTH | 1 | 97 | 308 | 979 |
| | REDFIELD | THERESA | NORTH | 2 | 31 | 97 | 308 |
| | THERESA | SILAS | SOUTH | 1 | 97 | 308 | 979 |
| | THERESA | SILAS | NORTH | 1 | 97 | 308 | 979 |
| | SILAS | WENDY | SOUTH | 3,4 | 12 | 37 | 117 |
| | SILAS | WENDY | NORTH | 5,6 | 12 | 37 | 117 |
| | WENDY | DICKENSON | SOUTH | 4 | 31 | 98 | 312 |
| | WENDY | DICKENSON | NORTH | 6 | 31 | 98 | 312 |
| | DICKENSON | REINO | SOUTH | 4 | 31 | 98 | 312 |
| | DICKENSON | REINO | NORTH | 6 | 31 | 98 | 312 |
| | REINO | CABRILLO | SOUTH | 1 | 9 | 30 | 96 |
| | REINO | CABRILLO | NORTH | 1 | 9 | 30 | 96 |
| | CABRILLO | SAN ANTONIO | SOUTH | 4 | 9 | 30 | 96 |
| | CABRILLO | SAN ANTONIO | NORTH | 5 | 3 | 9 | 30 |
| | SAN ANTONIO | DVR | SOUTH | 4 | 9 | 30 | 96 |
| | SAN ANTONIO | DVR | NORTH | 5 | 3 | 9 | 30 |

TABLE 3

CNEL CONTOUR DISTANCES FOR DOS VIENTOS ACCESS ROUTES

DOS VIENTOS TRAFFIC ONLY-ULTIMATE DEVELOPMENT

| ROADWAY | SEGMENT START | SEGMENT FINISH | SIDE OF RD | WALL TYPE | DISTANCE FROM ROADWAY CENTERLINE TO CNEL CONTOUR, FT 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|---|
| LYNN RD | ROUTE 101 | GREEN MDW | WEST | 2,5 | 8 | 25 | 80 |
| | ROUTE 101 | GREEN MDW | EAST | 4 | 25 | 80 | 253 |
| | GREEN MDW | CAPITAN | SOUTH | 3,4 | 27 | 85 | 270 |
| | GREEN MDW | CAPITAN | NORTH | 2,5 | 8 | 27 | 85 |
| | CAPITAN | VENTU PARK | SOUTH | 2 | 8 | 27 | 85 |
| | CAPITAN | VENTU PARK | NORTH | 4 | 27 | 85 | 270 |
| | VENTU PARK | KELLY | SOUTH | 1 | 36 | 113 | 360 |
| | VENTU PARK | KELLY | NORTH | 5 | 11 | 36 | 113 |
| | JUST WEST OF KELLY | | SOUTH | 4 | 37 | 118 | 374 |
| | JUST WEST OF KELLY | | NORTH | 5 | 12 | 37 | 118 |
| | FELTON | WENDY | SOUTH | 1 | 37 | 118 | 374 |
| | FELTON | WENDY | NORTH | 2,5 | 12 | 37 | 118 |
| | WENDY | LA GRANDE | SOUTH | 5 | 4 | 14 | 45 |
| | WENDY | LA GRANDE | NORTH | 2 | 14 | 45 | 144 |
| | LA GRANDE | REINO | SOUTH | 4 | 45 | 144 | 457 |
| | LA GRANDE | REINO | NORTH | 2,3 | 14 | 45 | 144 |
| | REINO | GREENDALE | SOUTH | 2,3 | 15 | 47 | 148 |
| | REINO | GREENDALE | NORTH | 1 | 47 | 148 | 469 |
| | GREENDALE | FERNHILL | SOUTH | 5 | 15 | 47 | 148 |
| | GREENDALE | FERNHILL | NORTH | 4 | 47 | 148 | 469 |
| BORCHARD | MICHAEL | REDFIELD | SOUTH | 3 | 1 | 5 | 15 |
| | MICHAEL | REDFIELD | NORTH | 1 | 5 | 15 | 47 |
| | REDFIELD | THERESA | SOUTH | 1 | 5 | 15 | 47 |
| | REDFIELD | THERESA | NORTH | 2 | 1 | 5 | 15 |
| | THERESA | SILAS | SOUTH | 1 | 5 | 15 | 47 |
| | THERESA | SILAS | NORTH | 1 | 5 | 15 | 47 |
| | SILAS | WENDY | SOUTH | 3,4 | 2 | 8 | 24 |
| | SILAS | WENDY | NORTH | 5,6 | 2 | 8 | 24 |
| | WENDY | DICKENSON | SOUTH | 4 | 8 | 27 | 84 |
| | WENDY | DICKENSON | NORTH | 6 | 8 | 27 | 84 |
| | DICKENSON | REINO | SOUTH | 4 | 8 | 27 | 84 |
| | DICKENSON | REINO | NORTH | 6 | 8 | 27 | 84 |
| | REINO | CABRILLO | SOUTH | 1 | 5 | 14 | 46 |
| | REINO | CABRILLO | NORTH | 1 | 5 | 14 | 46 |
| | CABRILLO | SAN ANTONIO | SOUTH | 4 | 5 | 14 | 46 |
| | CABRILLO | SAN ANTONIO | NORTH | 5 | 1 | 5 | 14 |
| | SAN ANTONIO | DVR | SOUTH | 4 | 5 | 14 | 46 |
| | SAN ANTONIO | DVR | NORTH | 5 | 1 | 5 | 14 |

TABLE 4
CNEL CONTOUR DISTANCES FOR DOS VIENTOS ACCESS ROUTES
OTHER FUTURE TRAFFIC ONLY-NO DOS VIENTOS

| ROADWAY | SEGMENT START | SEGMENT FINISH | SIDE OF RD | WALL TYPE | DISTANCE FROM ROADWAY CENTERLINE TO CNEL CONTOUR, FT 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|---|
| LYNN RD | ROUTE 101 | GREEN MDW | WEST | 2,5 | 15 | 48 | 153 |
| | ROUTE 101 | GREEN MDW | EAST | 4 | 48 | 153 | 485 |
| | GREEN MDW | CAPITAN | SOUTH | 3,4 | 42 | 132 | 421 |
| | GREEN MDW | CAPITAN | NORTH | 2,5 | 13 | 42 | 132 |
| | CAPITAN | VENTU PARK | SOUTH | 2 | 13 | 42 | 132 |
| | CAPITAN | VENTU PARK | NORTH | 4 | 42 | 132 | 421 |
| | VENTU PARK | KELLY | SOUTH | 1 | 38 | 121 | 384 |
| | VENTU PARK | KELLY | NORTH | 5 | 12 | 38 | 121 |
| | JUST WEST OF KELLY | | SOUTH | 4 | 21 | 66 | 209 |
| | JUST WEST OF KELLY | | NORTH | 5 | 7 | 21 | 66 |
| | FELTON | WENDY | SOUTH | 1 | 21 | 66 | 209 |
| | FELTON | WENDY | NORTH | 2,5 | 7 | 21 | 66 |
| | WENDY | LA GRANDE | SOUTH | 5 | 2 | 6 | 18 |
| | WENDY | LA GRANDE | NORTH | 2 | 6 | 18 | 56 |
| | LA GRANDE | REINO | SOUTH | 4 | 18 | 56 | 177 |
| | LA GRANDE | REINO | NORTH | 2,3 | 6 | 18 | 56 |
| | REINO | GREENDALE | SOUTH | 2,3 | 6 | 18 | 57 |
| | REINO | GREENDALE | NORTH | 1 | 18 | 57 | 180 |
| | GREENDALE | FERNHILL | SOUTH | 5 | 6 | 18 | 57 |
| | GREENDALE | FERNHILL | NORTH | 4 | 18 | 57 | 180 |
| BORCHARD | MICHAEL | REDFIELD | SOUTH | 3 | 29 | 92 | 293 |
| | MICHAEL | REDFIELD | NORTH | 1 | 92 | 293 | 931 |
| | REDFIELD | THERESA | SOUTH | 1 | 92 | 293 | 931 |
| | REDFIELD | THERESA | NORTH | 2 | 29 | 92 | 293 |
| | THERESA | SILAS | SOUTH | 1 | 92 | 293 | 931 |
| | THERESA | SILAS | NORTH | 1 | 92 | 293 | 931 |
| | SILAS | WENDY | SOUTH | 3,4 | 9 | 29 | 93 |
| | SILAS | WENDY | NORTH | 5,6 | 9 | 29 | 93 |
| | WENDY | DICKENSON | SOUTH | 4 | 23 | 72 | 227 |
| | WENDY | DICKENSON | NORTH | 6 | 23 | 72 | 227 |
| | DICKENSON | REINO | SOUTH | 4 | 23 | 72 | 227 |
| | DICKENSON | REINO | NORTH | 6 | 23 | 72 | 227 |
| | REINO | CABRILLO | SOUTH | 1 | 5 | 16 | 49 |
| | REINO | CABRILLO | NORTH | 1 | 5 | 16 | 49 |
| | CABRILLO | SAN ANTONIO | SOUTH | 4 | 5 | 16 | 49 |
| | CABRILLO | SAN ANTONIO | NORTH | 5 | 2 | 5 | 16 |
| | SAN ANTONIO | DVR | SOUTH | 4 | 5 | 16 | 49 |
| | SAN ANTONIO | DVR | NORTH | 5 | 2 | 5 | 16 |

TABLE 5

A.M. PEAK HOUR Leq CONTOUR DISTANCES FOR DOS VIENTOS RANCH ACCESS
CUMULATIVE FUTURE TRAFFIC ON PLANNED ROADS

| ROADWAY | SEGMENT START | SEGMENT FINISH | SIDE OF RD | WALL TYPE | DISTANCE FROM ROADWAY CENTERLINE TO Leq CONTOUR, FT 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|---|
| LYNN RD | ROUTE 101 | GREEN MDW | WEST | 2,5 | 19 | 60 | 190 |
| | ROUTE 101 | GREEN MDW | EAST | 4 | 60 | 190 | 602 |
| | GREEN MDW | CAPITAN | SOUTH | 3,4 | 55 | 176 | 558 |
| | GREEN MDW | CAPITAN | NORTH | 2,5 | 17 | 55 | 176 |
| | CAPITAN | VENTU PARK | SOUTH | 2 | 55 | 176 | 558 |
| | CAPITAN | VENTU PARK | NORTH | 4 | 55 | 176 | 558 |
| | VENTU PARK | KELLY | SOUTH | 1 | 60 | 190 | 602 |
| | VENTU PARK | KELLY | NORTH | 5 | 19 | 60 | 190 |
| | JUST WEST OF KELLY | | SOUTH | 4 | 47 | 149 | 472 |
| | JUST WEST OF KELLY | | NORTH | 5 | 15 | 47 | 149 |
| | FELTON | WENDY | SOUTH | 1 | 47 | 149 | 472 |
| | FELTON | WENDY | NORTH | 2,5 | 15 | 47 | 149 |
| | WENDY | LA GRANDE | SOUTH | 5 | 5 | 16 | 51 |
| | WENDY | LA GRANDE | NORTH | 2 | 16 | 51 | 162 |
| | LA GRANDE | REINO | SOUTH | 4 | 51 | 162 | 513 |
| | LA GRANDE | REINO | NORTH | 2,3 | 51 | 162 | 513 |
| | REINO | GREENDALE | SOUTH | 2,3 | 16 | 52 | 165 |
| | REINO | GREENDALE | NORTH | 1 | 52 | 165 | 525 |
| | GREENDALE | FERNHILL | SOUTH | 5 | 16 | 52 | 165 |
| | GREENDALE | FERNHILL | NORTH | 4 | 52 | 165 | 525 |
| BORCHARD | MICHAEL | REDFIELD | SOUTH | 3 | 25 | 78 | 249 |
| | MICHAEL | REDFIELD | NORTH | 1 | 78 | 249 | 790 |
| | REDFIELD | THERESA | SOUTH | 1 | 78 | 249 | 790 |
| | REDFIELD | THERESA | NORTH | 2 | 25 | 78 | 249 |
| | THERESA | SILAS | SOUTH | 1 | 78 | 249 | 790 |
| | THERESA | SILAS | NORTH | 1 | 78 | 249 | 790 |
| | SILAS | WENDY | SOUTH | 3,4 | 9 | 30 | 95 |
| | SILAS | WENDY | NORTH | 5,6 | 9 | 30 | 95 |
| | WENDY | DICKENSON | SOUTH | 4 | 25 | 79 | 252 |
| | WENDY | DICKENSON | NORTH | 6 | 25 | 79 | 252 |
| | DICKENSON | REINO | SOUTH | 4 | 25 | 79 | 252 |
| | DICKENSON | REINO | NORTH | 6 | 25 | 79 | 252 |
| | REINO | CABRILLO | SOUTH | 1 | 8 | 24 | 77 |
| | REINO | CABRILLO | NORTH | 1 | 8 | 24 | 77 |
| | CABRILLO | SAN ANTONIO | SOUTH | 4 | 8 | 24 | 77 |
| | CABRILLO | SAN ANTONIO | NORTH | 5 | 2 | 8 | 24 |
| | SAN ANTONIO | DVR | SOUTH | 4 | 8 | 24 | 77 |
| | SAN ANTONIO | DVR | NORTH | 5 | 2 | 8 | 24 |

TABLE 6

A.M. PEAK HOUR Leq CONTOUR DISTANCES FOR DOS VIENTOS RANCH ACCESS
DOS VIENTOS TRAFFIC ONLY-ULTIMATE DEVELOPMENT

| ROADWAY | SEGMENT START | SEGMENT FINISH | SIDE OF RD | WALL TYPE | DISTANCE FROM ROADWAY CENTERLINE TO Leq CONTOUR, FT 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|---|
| LYNN RD | ROUTE 101 | GREEN MDW | WEST | 2,5 | 7 | 21 | 66 |
| | ROUTE 101 | GREEN MDW | EAST | 4 | 21 | 66 | 209 |
| | GREEN MDW | CAPITAN | SOUTH | 3,4 | 22 | 69 | 218 |
| | GREEN MDW | CAPITAN | NORTH | 2,5 | 7 | 22 | 69 |
| | CAPITAN | VENTU PARK | SOUTH | 2 | 22 | 69 | 218 |
| | CAPITAN | VENTU PARK | NORTH | 4 | 22 | 69 | 218 |
| | VENTU PARK | KELLY | SOUTH | 1 | 29 | 92 | 291 |
| | VENTU PARK | KELLY | NORTH | 5 | 9 | 29 | 92 |
| | JUST WEST OF KELLY | | SOUTH | 4 | 30 | 95 | 302 |
| | JUST WEST OF KELLY | | NORTH | 5 | 9 | 30 | 95 |
| | FELTON | WENDY | SOUTH | 1 | 30 | 95 | 302 |
| | FELTON | WENDY | NORTH | 2,5 | 9 | 30 | 95 |
| | WENDY | LA GRANDE | SOUTH | 5 | 4 | 12 | 37 |
| | WENDY | LA GRANDE | NORTH | 2 | 12 | 37 | 116 |
| | LA GRANDE | REINO | SOUTH | 4 | 37 | 116 | 369 |
| | LA GRANDE | REINO | NORTH | 2,3 | 37 | 116 | 369 |
| | REINO | GREENDALE | SOUTH | 2,3 | 12 | 38 | 119 |
| | REINO | GREENDALE | NORTH | 1 | 38 | 119 | 378 |
| | GREENDALE | FERNHILL | SOUTH | 5 | 12 | 38 | 119 |
| | GREENDALE | FERNHILL | NORTH | 4 | 38 | 119 | 378 |
| BORCHARD | MICHAEL | REDFIELD | SOUTH | 3 | 1 | 4 | 12 |
| | MICHAEL | REDFIELD | NORTH | 1 | 4 | 12 | 38 |
| | REDFIELD | THERESA | SOUTH | 1 | 4 | 12 | 38 |
| | REDFIELD | THERESA | NORTH | 2 | 1 | 4 | 12 |
| | THERESA | SILAS | SOUTH | 1 | 4 | 12 | 38 |
| | THERESA | SILAS | NORTH | 1 | 4 | 12 | 38 |
| | SILAS | WENDY | SOUTH | 3,4 | 2 | 6 | 20 |
| | SILAS | WENDY | NORTH | 5,6 | 2 | 6 | 20 |
| | WENDY | DICKENSON | SOUTH | 4 | 7 | 21 | 68 |
| | WENDY | DICKENSON | NORTH | 6 | 7 | 21 | 68 |
| | DICKENSON | REINO | SOUTH | 4 | 7 | 21 | 68 |
| | DICKENSON | REINO | NORTH | 6 | 7 | 21 | 68 |
| | REINO | CABRILLO | SOUTH | 1 | 4 | 12 | 37 |
| | REINO | CABRILLO | NORTH | 1 | 4 | 12 | 37 |
| | CABRILLO | SAN ANTONIO | SOUTH | 4 | 4 | 12 | 37 |
| | CABRILLO | SAN ANTONIO | NORTH | 5 | 1 | 4 | 12 |
| | SAN ANTONIO | DVR | SOUTH | 4 | 4 | 12 | 37 |
| | SAN ANTONIO | DVR | NORTH | 5 | 1 | 4 | 12 |

TABLE 7

A.M. PEAK HOUR Leq CONTOUR DISTANCES FOR DOS VIENTOS RANCH ACCESS
OTHER FUTURE TRAFFIC ONLY-NO DOS VIENTOS

| ROADWAY | SEGMENT START | SEGMENT FINISH | SIDE OF RD | WALL TYPE | DISTANCE FROM ROADWAY CENTERLINE TO Leq CONTOUR, FT 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|---|
| LYNN RD | ROUTE 101 | GREEN MDW | WEST | 2,5 | 12 | 39 | 123 |
| | ROUTE 101 | GREEN MDW | EAST | 4 | 39 | 123 | 392 |
| | GREEN MDW | CAPITAN | SOUTH | 3,4 | 34 | 107 | 340 |
| | GREEN MDW | CAPITAN | NORTH | 2,5 | 11 | 34 | 107 |
| | CAPITAN | VENTU PARK | SOUTH | 2 | 34 | 107 | 340 |
| | CAPITAN | VENTU PARK | NORTH | 4 | 34 | 107 | 340 |
| | VENTU PARK | KELLY | SOUTH | 1 | 31 | 98 | 310 |
| | VENTU PARK | KELLY | NORTH | 5 | 10 | 31 | 98 |
| | JUST WEST OF KELLY | | SOUTH | 4 | 17 | 53 | 169 |
| | JUST WEST OF KELLY | | NORTH | 5 | 5 | 17 | 53 |
| | FELTON | WENDY | SOUTH | 1 | 17 | 53 | 169 |
| | FELTON | WENDY | NORTH | 2,5 | 5 | 17 | 53 |
| | WENDY | LA GRANDE | SOUTH | 5 | 1 | 4 | 14 |
| | WENDY | LA GRANDE | NORTH | 2 | 4 | 14 | 45 |
| | LA GRANDE | REINO | SOUTH | 4 | 14 | 45 | 143 |
| | LA GRANDE | REINO | NORTH | 2,3 | 14 | 45 | 143 |
| | REINO | GREENDALE | SOUTH | 2,3 | 5 | 14 | 46 |
| | REINO | GREENDALE | NORTH | 1 | 14 | 46 | 145 |
| | GREENDALE | FERNHILL | SOUTH | 5 | 5 | 14 | 46 |
| | GREENDALE | FERNHILL | NORTH | 4 | 14 | 46 | 145 |
| BORCHARD | MICHAEL | REDFIELD | SOUTH | 3 | 1 | 4 | 12 |
| | MICHAEL | REDFIELD | NORTH | 1 | 4 | 12 | 38 |
| | REDFIELD | THERESA | SOUTH | 1 | 4 | 12 | 38 |
| | REDFIELD | THERESA | NORTH | 2 | 1 | 4 | 12 |
| | THERESA | SILAS | SOUTH | 1 | 4 | 12 | 38 |
| | THERESA | SILAS | NORTH | 1 | 4 | 12 | 38 |
| | SILAS | WENDY | SOUTH | 3,4 | 2 | 6 | 20 |
| | SILAS | WENDY | NORTH | 5,6 | 2 | 6 | 20 |
| | WENDY | DICKENSON | SOUTH | 4 | 7 | 21 | 68 |
| | WENDY | DICKENSON | NORTH | 6 | 7 | 21 | 68 |
| | DICKENSON | REINO | SOUTH | 4 | 7 | 21 | 68 |
| | DICKENSON | REINO | NORTH | 6 | 7 | 21 | 68 |
| | REINO | CABRILLO | SOUTH | 1 | 4 | 12 | 37 |
| | REINO | CABRILLO | NORTH | 1 | 4 | 12 | 37 |
| | CABRILLO | SAN ANTONIO | SOUTH | 4 | 4 | 12 | 37 |
| | CABRILLO | SAN ANTONIO | NORTH | 5 | 1 | 4 | 12 |
| | SAN ANTONIO | DVR | SOUTH | 4 | 4 | 12 | 37 |
| | SAN ANTONIO | DVR | NORTH | 5 | 1 | 4 | 12 |

TABLE 8

P.M. PEAK HOUR Leq CONTOUR DISTANCES FOR DOS VIENTOS RANCH ACCESS
CUMULATIVE FUTURE TRAFFIC ON PLANNED ROADS

| ROADWAY | SEGMENT START | SEGMENT FINISH | SIDE OF RD | WALL TYPE | DISTANCE FROM ROADWAY CENTERLINE TO Leq CONTOUR, FT 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|---|
| LYNN RD | ROUTE 101 | GREEN MDW | WEST | 2,5 | 20 | 62 | 198 |
| | ROUTE 101 | GREEN MDW | EAST | 4 | 62 | 198 | 629 |
| | GREEN MDW | CAPITAN | SOUTH | 3,4 | 58 | 184 | 584 |
| | GREEN MDW | CAPITAN | NORTH | 2,5 | 18 | 58 | 184 |
| | CAPITAN | VENTU PARK | SOUTH | 2 | 58 | 184 | 584 |
| | CAPITAN | VENTU PARK | NORTH | 4 | 58 | 184 | 584 |
| | VENTU PARK | KELLY | SOUTH | 1 | 62 | 198 | 629 |
| | VENTU PARK | KELLY | NORTH | 5 | 20 | 62 | 198 |
| | JUST WEST OF KELLY | | SOUTH | 4 | 49 | 155 | 493 |
| | JUST WEST OF KELLY | | NORTH | 5 | 15 | 49 | 155 |
| | FELTON | WENDY | SOUTH | 1 | 49 | 155 | 493 |
| | FELTON | WENDY | NORTH | 2,5 | 15 | 49 | 155 |
| | WENDY | LA GRANDE | SOUTH | 5 | 5 | 17 | 53 |
| | WENDY | LA GRANDE | NORTH | 2 | 17 | 53 | 169 |
| | LA GRANDE | REINO | SOUTH | 4 | 53 | 169 | 536 |
| | LA GRANDE | REINO | NORTH | 2,3 | 53 | 169 | 536 |
| | REINO | GREENDALE | SOUTH | 2,3 | 17 | 54 | 173 |
| | REINO | GREENDALE | NORTH | 1 | 54 | 173 | 548 |
| | GREENDALE | FERNHILL | SOUTH | 5 | 17 | 54 | 173 |
| | GREENDALE | FERNHILL | NORTH | 4 | 54 | 173 | 548 |
| BORCHARD | MICHAEL | REDFIELD | SOUTH | 3 | 26 | 82 | 260 |
| | MICHAEL | REDFIELD | NORTH | 1 | 82 | 260 | 826 |
| | REDFIELD | THERESA | SOUTH | 1 | 82 | 260 | 826 |
| | REDFIELD | THERESA | NORTH | 2 | 26 | 82 | 260 |
| | THERESA | SILAS | SOUTH | 1 | 31 | 99 | 314 |
| | THERESA | SILAS | NORTH | 1 | 31 | 99 | 314 |
| | SILAS | WENDY | SOUTH | 3,4 | 10 | 31 | 99 |
| | SILAS | WENDY | NORTH | 5,6 | 10 | 31 | 99 |
| | WENDY | DICKENSON | SOUTH | 4 | 26 | 83 | 263 |
| | WENDY | DICKENSON | NORTH | 6 | 26 | 83 | 263 |
| | DICKENSON | REINO | SOUTH | 4 | 26 | 83 | 263 |
| | DICKENSON | REINO | NORTH | 6 | 26 | 83 | 263 |
| | REINO | CABRILLO | SOUTH | 1 | 8 | 25 | 81 |
| | REINO | CABRILLO | NORTH | 1 | 8 | 25 | 81 |
| | CABRILLO | SAN ANTONIO | SOUTH | 4 | 8 | 25 | 81 |
| | CABRILLO | SAN ANTONIO | NORTH | 5 | 3 | 8 | 25 |
| | SAN ANTONIO | DVR | SOUTH | 4 | 8 | 25 | 81 |
| | SAN ANTONIO | DVR | NORTH | 5 | 3 | 8 | 25 |

TABLE 9

P.M. PEAK HOUR Leq CONTOUR DISTANCES FOR DOS VIENTOS RANCH ACCESS
DOS VIENTOS TRAFFIC ONLY-ULTIMATE DEVELOPMENT

| ROADWAY | SEGMENT START | SEGMENT FINISH | SIDE OF RD | WALL TYPE | DISTANCE FROM ROADWAY CENTERLINE TO Leq CONTOUR, FT 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|---|
| LYNN RD | ROUTE 101 | GREEN MDW | WEST | 2,5 | 7 | 22 | 69 |
| | ROUTE 101 | GREEN MDW | EAST | 4 | 22 | 69 | 218 |
| | GREEN MDW | CAPITAN | SOUTH | 3,4 | 23 | 72 | 227 |
| | GREEN MDW | CAPITAN | NORTH | 2,5 | 7 | 23 | 72 |
| | CAPITAN | VENTU PARK | SOUTH | 2 | 23 | 72 | 227 |
| | CAPITAN | VENTU PARK | NORTH | 4 | 23 | 72 | 227 |
| | VENTU PARK | KELLY | SOUTH | 1 | 30 | 96 | 304 |
| | VENTU PARK | KELLY | NORTH | 5 | 9 | 30 | 96 |
| | JUST WEST OF KELLY | | SOUTH | 4 | 31 | 99 | 316 |
| | JUST WEST OF KELLY | | NORTH | 5 | 10 | 31 | 99 |
| | FELTON | WENDY | SOUTH | 1 | 31 | 99 | 316 |
| | FELTON | WENDY | NORTH | 2,5 | 10 | 31 | 99 |
| | WENDY | LA GRANDE | SOUTH | 5 | 4 | 12 | 38 |
| | WENDY | LA GRANDE | NORTH | 2 | 12 | 38 | 121 |
| | LA GRANDE | REINO | SOUTH | 4 | 38 | 121 | 386 |
| | LA GRANDE | REINO | NORTH | 2,3 | 38 | 121 | 386 |
| | REINO | GREENDALE | SOUTH | 2,3 | 12 | 39 | 125 |
| | REINO | GREENDALE | NORTH | 1 | 39 | 125 | 395 |
| | GREENDALE | FERNHILL | SOUTH | 5 | 12 | 39 | 125 |
| | GREENDALE | FERNHILL | NORTH | 4 | 39 | 125 | 395 |
| BORCHARD | MICHAEL | REDFIELD | SOUTH | 3 | 1 | 4 | 13 |
| | MICHAEL | REDFIELD | NORTH | 1 | 4 | 13 | 40 |
| | REDFIELD | THERESA | SOUTH | 1 | 4 | 13 | 40 |
| | REDFIELD | THERESA | NORTH | 2 | 1 | 4 | 13 |
| | THERESA | SILAS | SOUTH | 1 | 6 | 21 | 65 |
| | THERESA | SILAS | NORTH | 1 | 6 | 21 | 65 |
| | SILAS | WENDY | SOUTH | 3,4 | 2 | 6 | 21 |
| | SILAS | WENDY | NORTH | 5,6 | 2 | 6 | 21 |
| | WENDY | DICKENSON | SOUTH | 4 | 7 | 22 | 71 |
| | WENDY | DICKENSON | NORTH | 6 | 7 | 22 | 71 |
| | DICKENSON | REINO | SOUTH | 4 | 7 | 22 | 71 |
| | DICKENSON | REINO | NORTH | 6 | 7 | 22 | 71 |
| | REINO | CABRILLO | SOUTH | 1 | 4 | 12 | 39 |
| | REINO | CABRILLO | NORTH | 1 | 4 | 12 | 39 |
| | CABRILLO | SAN ANTONIO | SOUTH | 4 | 4 | 12 | 39 |
| | CABRILLO | SAN ANTONIO | NORTH | 5 | 1 | 4 | 12 |
| | SAN ANTONIO | DVR | SOUTH | 4 | 4 | 12 | 39 |
| | SAN ANTONIO | DVR | NORTH | 5 | 1 | 4 | 12 |

TABLE 10

P.M. PEAK HOUR Leq CONTOUR DISTANCES FOR DOS VIENTOS RANCH ACCESS
OTHER FUTURE TRAFFIC-NO DOS VIENTOS

| ROADWAY | SEGMENT START | SEGMENT FINISH | SIDE OF RD | WALL TYPE | DISTANCE FROM ROADWAY CENTERLINE TO Leq CONTOUR, FT 70 dB | 65 dB | 60 dB |
|---|---|---|---|---|---|---|---|
| LYNN RD | ROUTE 101 | GREEN MDW | WEST | 2,5 | 13 | 41 | 129 |
| | ROUTE 101 | GREEN MDW | EAST | 4 | 41 | 129 | 409 |
| | GREEN MDW | CAPITAN | SOUTH | 3,4 | 35 | 112 | 355 |
| | GREEN MDW | CAPITAN | NORTH | 2,5 | 11 | 35 | 112 |
| | CAPITAN | VENTU PARK | SOUTH | 2 | 35 | 112 | 355 |
| | CAPITAN | VENTU PARK | NORTH | 4 | 35 | 112 | 355 |
| | VENTU PARK | KELLY | SOUTH | 1 | 32 | 102 | 324 |
| | VENTU PARK | KELLY | NORTH | 5 | 10 | 32 | 102 |
| | JUST WEST OF KELLY | | SOUTH | 4 | 17 | 56 | 176 |
| | JUST WEST OF KELLY | | NORTH | 5 | 6 | 17 | 56 |
| | FELTON | WENDY | SOUTH | 1 | 17 | 56 | 176 |
| | FELTON | WENDY | NORTH | 2,5 | 6 | 17 | 56 |
| | WENDY | LA GRANDE | SOUTH | 5 | 1 | 5 | 15 |
| | WENDY | LA GRANDE | NORTH | 2 | 5 | 15 | 47 |
| | LA GRANDE | REINO | SOUTH | 4 | 15 | 47 | 150 |
| | LA GRANDE | REINO | NORTH | 2,3 | 15 | 47 | 150 |
| | REINO | GREENDALE | SOUTH | 2,3 | 5 | 15 | 48 |
| | REINO | GREENDALE | NORTH | 1 | 15 | 48 | 152 |
| | GREENDALE | FERNHILL | SOUTH | 5 | 5 | 15 | 48 |
| | GREENDALE | FERNHILL | NORTH | 4 | 15 | 48 | 152 |
| BORCHARD | MICHAEL | REDFIELD | SOUTH | 3 | 25 | 78 | 247 |
| | MICHAEL | REDFIELD | NORTH | 1 | 78 | 247 | 785 |
| | REDFIELD | THERESA | SOUTH | 1 | 78 | 247 | 785 |
| | REDFIELD | THERESA | NORTH | 2 | 25 | 78 | 247 |
| | THERESA | SILAS | SOUTH | 1 | 25 | 78 | 248 |
| | THERESA | SILAS | NORTH | 1 | 25 | 78 | 248 |
| | SILAS | WENDY | SOUTH | 3,4 | 8 | 25 | 78 |
| | SILAS | WENDY | NORTH | 5,6 | 8 | 25 | 78 |
| | WENDY | DICKENSON | SOUTH | 4 | 19 | 60 | 192 |
| | WENDY | DICKENSON | NORTH | 6 | 19 | 60 | 192 |
| | DICKENSON | REINO | SOUTH | 4 | 19 | 60 | 192 |
| | DICKENSON | REINO | NORTH | 6 | 19 | 60 | 192 |
| | REINO | CABRILLO | SOUTH | 1 | 4 | 13 | 42 |
| | REINO | CABRILLO | NORTH | 1 | 4 | 13 | 42 |
| | CABRILLO | SAN ANTONIO | SOUTH | 4 | 4 | 13 | 42 |
| | CABRILLO | SAN ANTONIO | NORTH | 5 | 1 | 4 | 13 |
| | SAN ANTONIO | DVR | SOUTH | 4 | 4 | 13 | 42 |
| | SAN ANTONIO | DVR | NORTH | 5 | 1 | 4 | 13 |

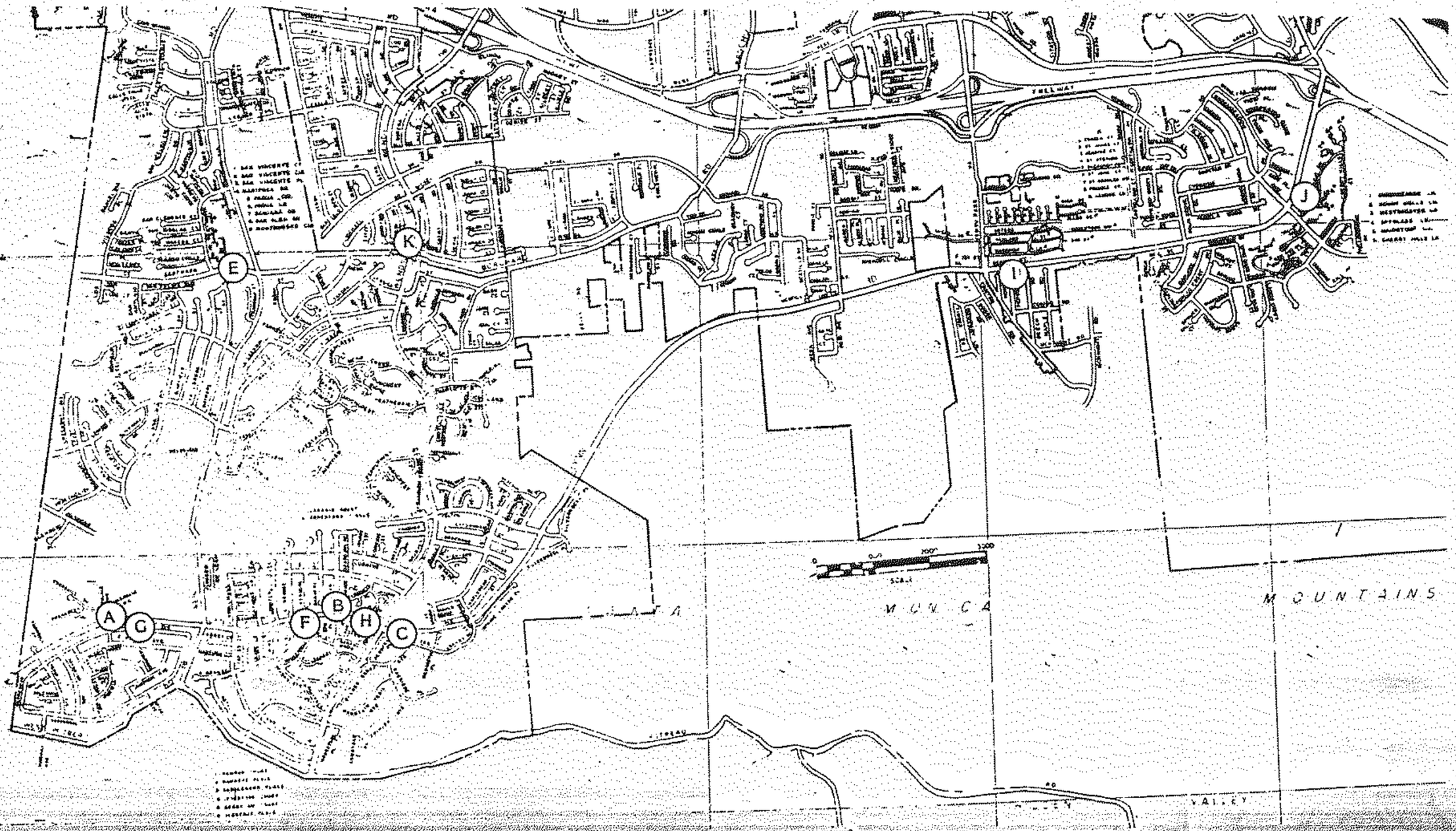
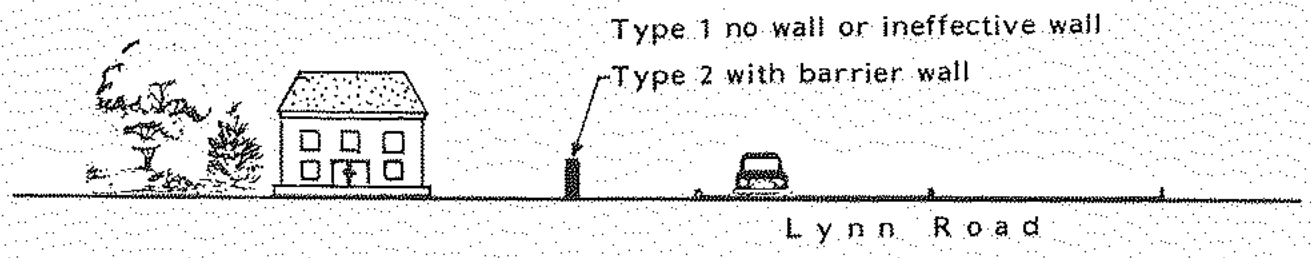
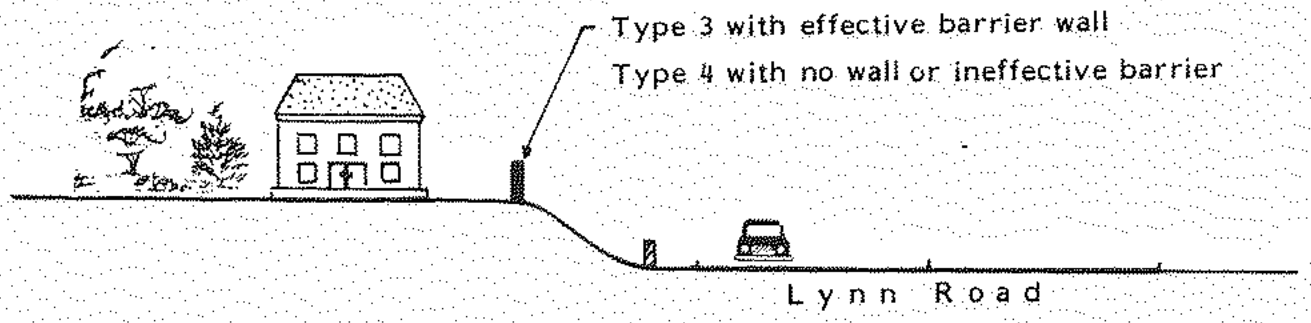



FIGURE 1. ROADWAY NOISE MEASUREMENT LOCATIONS

WALL TYPE 1 AND 2 - House pad level with street




WALL TYPE 3 AND 4 - House pad above street level




WALL TYPE 5 AND 6 - House pad below street level

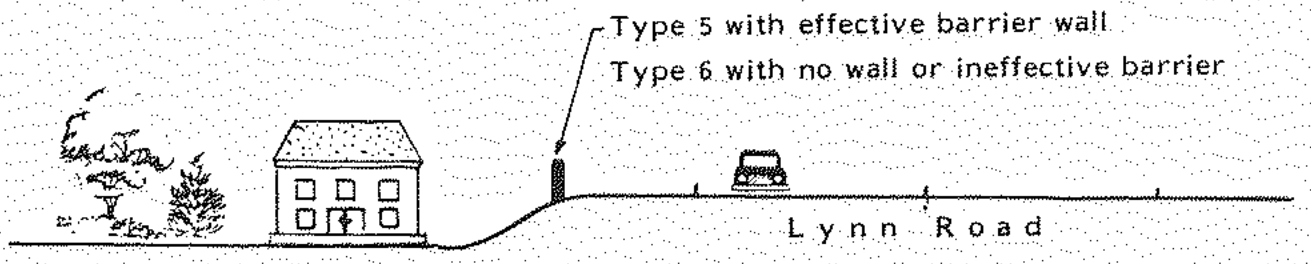



FIGURE 2. BARRIER WALL TYPES USED IN NOISE CONTOUR DEVELOPMENT

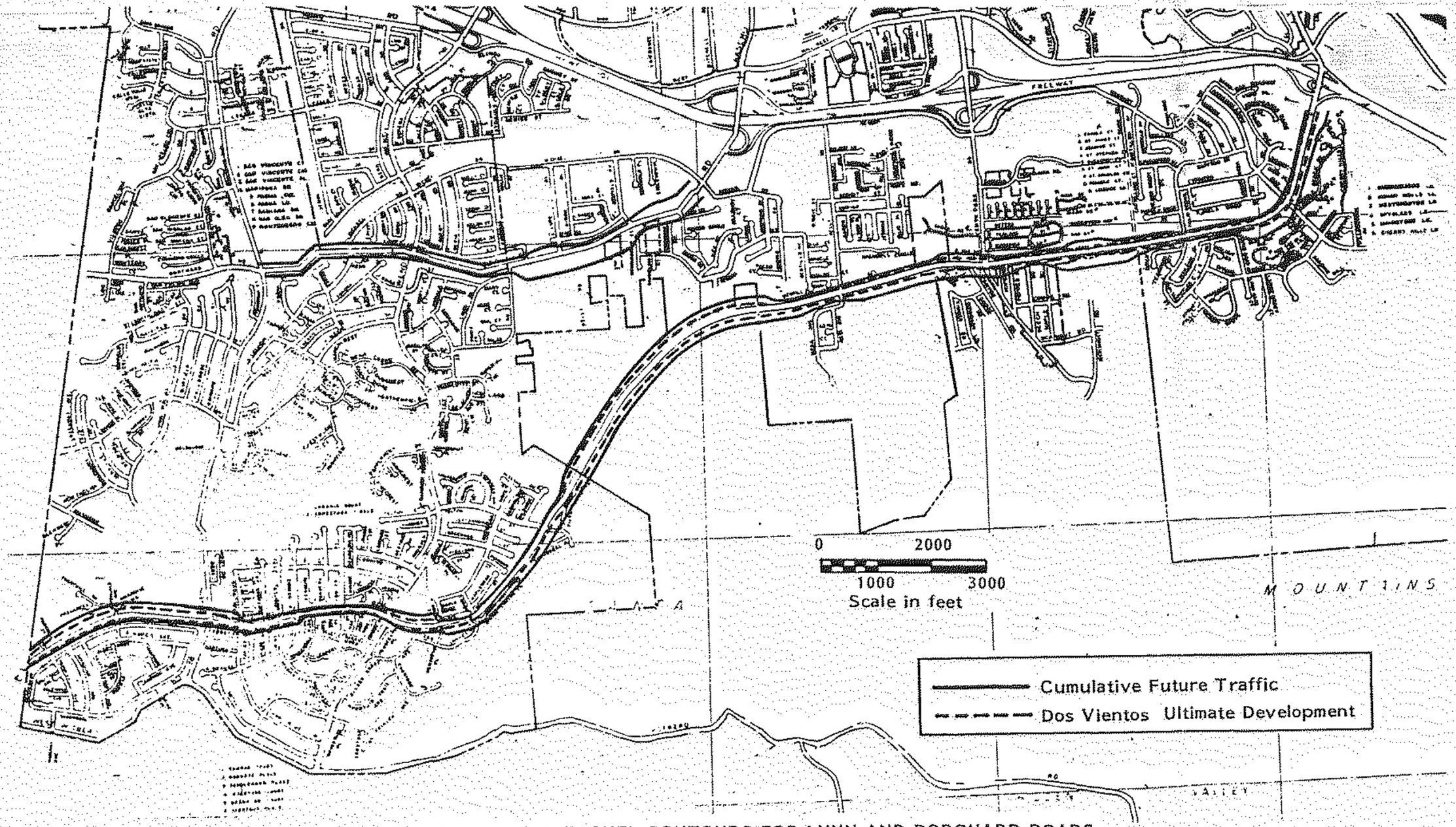



FIGURE 3. 65 dB CNEL CONTOURS FOR LYNN AND BORCHARD ROADS

# APPENDIX A

21120 Vanowen Street, Post Office Box
Canoga Park, CA 91304
Telephone (818) 887-5840

**BBN Laboratories Incorporated**

5 December 1986

Mr. Martin Wallen
Wallen and Associates
5820 Wilshire Blve., Suite 304
Los Angeles, CA 90036

Subject: Truck Traffic Distribution on Lynn and Borchard Roads
BBN Project 192046

Dear Marty:

Based on our telephone conversation yesterday, and your previous letters to me (November 18 and 24, 1986), I intend to use the following numbers of heavy truck traffic to develop noise contours along Lynn and Borchard Roads. These numbers are conservative and probably over-predict the actual heavy truck movements.

LYNN ROAD

Dos Vientos Heavy Trucks (tractor-trailer rigs, 3 or more axles)

Ultimate Development:

- Residential Moving Trucks . 4000 units, assume 20% annual turnover . 800/yr x 2 directions = 1600/yr. Use 5/day
- Commerical Deliveries . 10-15/day use 15/day
- Garbage Trucks . 5/week x 2 2/day

Construction:

- Cement Trucks . 5/day x 2 directions 10/day (1250/year)

Total Dos Vientos 32/day use 35/day

Future ADT Lynn Rd. - 23,000 . Heavy Trucks = 0.15%

BORCHARD ROAD

Dos Vientos Heavy Trucks Very limited due to 4-6% grade west of Reino . Assume 1/3 of Lynn Rd. Heavy Trucks = .05%

Other Heavy Trucks . Commercial areas along Borchard Rd. east of project . Possible future expansion . Assume worst-case heavy trucks = 1%

According to Tom Fitzwater of the Foresite Group, the noise contours prepared for the City Noise Element included the following assumptions for traffic along arterials (including Lynn and Borcahrd Rds.)

| | |
|---|---|
| Autos | 97.42% |
| Medium Trucks (Delivery Vans, School Buses, etc.) | 1.84% |
| Heavy Trucks (3 or more axles) | 0.74% |

These percentages are based upon a study conducted by the County of Orange on many Orange County streets. They likely overpredict the actual levels along Lynn and Borchard Roads. Based on our conversation, I will use the 0.15% figure for Dos Vientos heavy trucks along Lynn Road and .05% along Borchard. The medium truck value of 1.84% of total traffic will be used for this category.

Please call with your questions or comments.

Sincerely,

BBN LABORATORIES INCORPORATED

Michael P. Bucka
Senior Consultant

MPB:lap

cc: John Clement, City of Thousand Oaks, Public Works
Rob Talmadge, Haaland and Associates

WALLEN ASSOCIATES/Transportation Consultants
5820 Wilshire Blvd. Suite 304
Los Angeles, CA 90036, (213) 937-2768

FILE COPY

November 18, 1986

TO: Michael P. Bucha

cc: J. Clement
R. Talmadge

FR: Martin Wallen

SUBJ: Dos Vientos Ranch - Traffic Data For Noise Analysis

Per your request of November 3, 1986 the following is submitted:

A. ADT for Lynn Foad and Borchard Road between major street intersection.

A.1. Cumulative traffic, Dos Vientos plus Newbury Park fully developed.

Figure 5a of the DEIR (enclosed), marked A.1. is the p.m. peak hour for these streets for the condition mentioned. To convert to ADT multiply by 10.6. This is based on a p.m. peak of about 9.4% of ADT. Ten percent is the widespread standard but in Thousand Oaks Figures 1 and 2 of Volume 3 of the DEIR suggest that the p.m. peak hour is running less than 10 percent of ADT. I would have expected a higher value of about 11 to 12 percent or multiplier of 9 or 8.5 for a suburban community such as Thousand Oaks. The higher figure gives a worst case, which may be desireable in this case.

A.2. Future ADT Nuwbury Park only.

Figure 3 of the DEIR marked A.2. gives Dos Vientos only. Subtract these values from A.1. and you have Newbury Park only.

B. Average vehicular speeds over same sections. As fully developed highways I would assume an average of 40 MPH on Lynn Road and 35 MPH on Borchard. These apply easterly from Reino Road to the Ventura Freeway. I am suggesting that the average speed will be approximately 5 MPH less than the posted speed limits. (Rob, check this with City Hall).

Clement O'Ked

C.1. Percent ot traffic 7 p.m. to 10 p.m.

From the ITE Handbook, last two editions Figure 10.13, labled "C".

| | | | |
|---|---|---|---|
| Hour ending | 8 p.m. | - 5.7 | percent |
| " " | 9 p.m. | - 4.2 | " |
| " " | 10 p.m. | - 3.1 | " |
| 7 to 10 p.m. | | 13.0 | Percent |

This source is based on a peak hour of 10 percent. I suggest that the difference is largely in the midday figures. Also in a more urban environment the evening traffic is higher in the evening hours than on residential streets in a suburban environment such as Thousand Oaks. Again, this gives us a worst cast situation.

C.2. Percent of traffic 10 p.m. to 7 a.m.

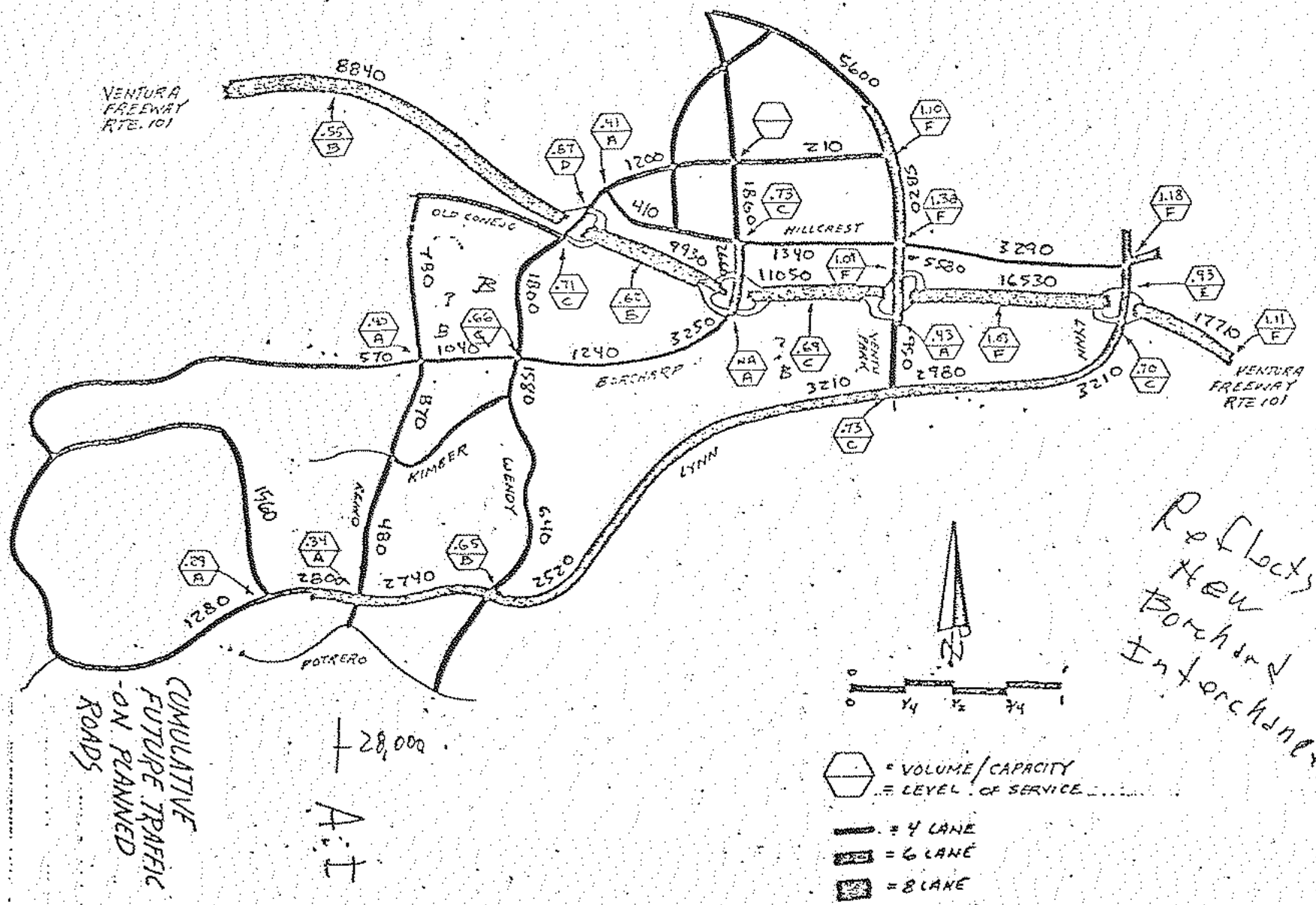
| | | | |
|---|---|---|---|
| Hour ending | 11 p.m. | - 2.4 | percent |
| " " | 12 M. | - 1.5 | " |
| " " | 1 a.m. | - 0.5 | " |
| " " | 2 a.m. | - 0.3 | " |
| " " | 3 a.m. | - 0.2 | " |
| " " | 4 a.m. | - 0.1 | " |
| " " | 5 a.m. | - 0.5 | " |
| " " | 6 a.m. | - 2.8 | " |
| " " | 7 a.m. | - 7.5 | " |
| 10 p.m. to 7 a.m. | | 15.8 | Percent, Use 16 percent. |

D. Confirm "0" percent heavy trucks.

I have not had the chance to discuss this with John Clement as he is out of town until next Monday. As I stated before, I see no measureable number of multi-axle trucks using Lynn Road and Borchard Road, if all of this street south of the Ventura Freeway is residential, AFTER completion of the build out. There will be some multi-axle movements due to the housing construction.

I do not believe deliverly vehicles count as heavy trucks. There could be 5 to 10 multi-axle trucks delivering merchandise to the supper market and gas station in Dos Vientos. But this means you are getting down to tenths or hundreds of a percent. Again, if there is commercial development along Borchard Road, throw in one percent to make people happy.

:mw Revised 12/3/86 - See BBN of 5th

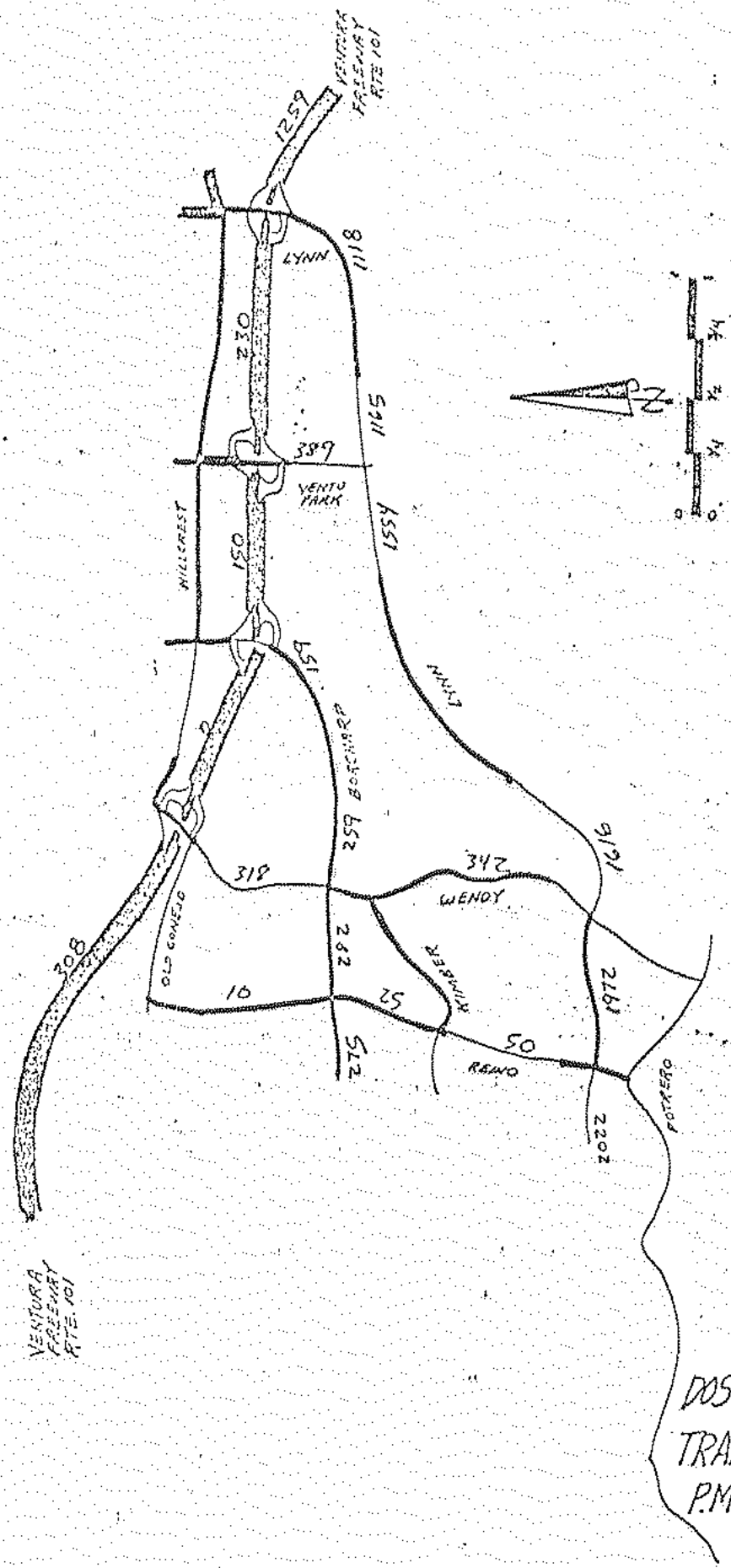



Reflects New Borchard Interchange

A-4

CUMULATIVE FUTURE TRAFFIC -ON PLANNED ROADS

FIGURE 5A




A.2

DOS VIENTOS RANCH
TRAFFIC DISTRIBUTION
P.M. PEAK HOUR

FIGURE 3

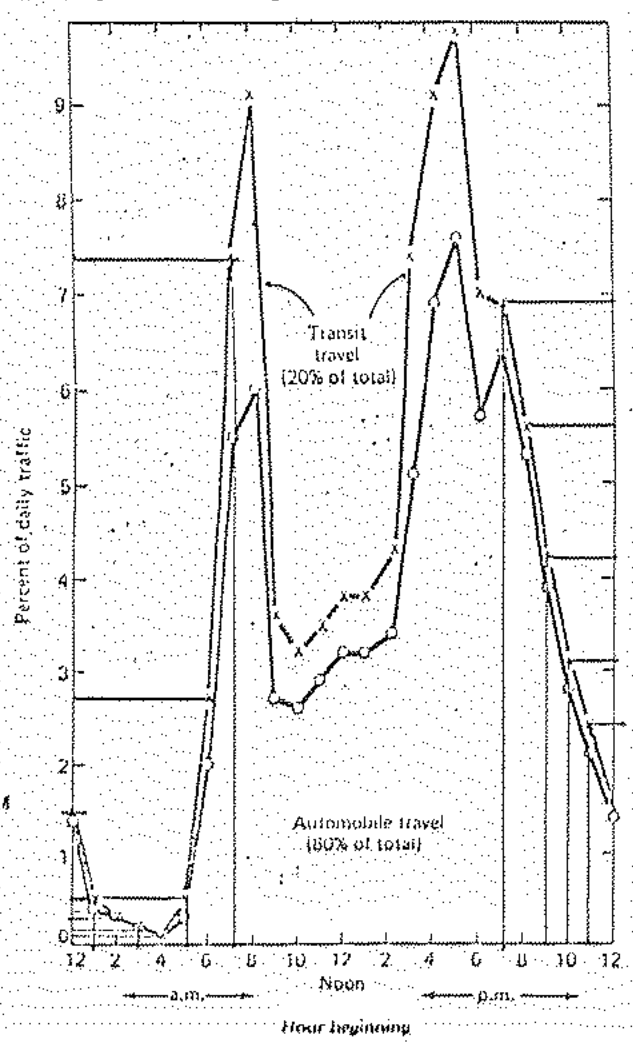
TABLE 10-33
Characteristics of Demand-Responsive Transit Riders

| | Date of Survey | Percentage of Users from Households with No Auto | Percentage of Users from Households with One Auto | Nondrivers (% of Users) | Youth (% of Users under 16) | Elderly (% of Users over 64) | Handicapped (% of Users)* |
|---|---|---|---|---|---|---|---|
| Ann Arbor, MI | 2/75 | 20 | 35 | 45 | 20 | 4 | 0.6 |
| Benton Harbor–St. Joseph, MI | 11/74 | 41 | 38 | 64 | 9 | 17 | Unknown |
| Beverly–Fairfax, CA | 2/76 | Unknown | Unknown | Unknown | Unknown | 89 | 2.0 |
| Columbus, OH | 8/72 | 69 | 15 | 82 | 15 | 22 | Unknown |
| El Cajon, CA | Unknown | Unknown | Unknown | Unknown | Unkown | 33 | 0.6 |
| La Habra, CA | 10/75 | Unknown | Unknown | Unknown | Unknown | 19 | 0.4 |
| Ludington, MI | 9/74 | 54 | 27 | 68 | 7 | 41 | 2.9 |
| Merced, CA | Unknown | Unknown | Unknown | Unknown | Unknown | Unknown | Unknown |
| Midland, MI | 10/74 | 22 | 37 | 50 | 18 | 9 | 0.8 |
| Niles, MI | 5/75 | 58 | 28 | Unknown | 13† | 30 | 1.7 |
| Oneonta, NY | 11/74 | Unknown | Unknown | Unknown | 13 | 21 | Unknown |
| Rochester, NY | 6/75 | 23 | 41 | 57 | 11 | 7 | 0.7 |
| Santa Clara Co., CA | 2/75 | Unknown | Unknown | Unknown | 55‡ | 3 | Unknown |
| Xenia, OH | 7/73 | Unknown | Unknown | 63 | 33‡ | 3 | Unknown |

*Figures refer to the nonambulatory handicapped.
†No attempt was made to compensate for "no response."
‡Figures were obtained through interpolation.

SOURCE: REID EWING AND NIGEL WILSON, *Innovation in Demand-Responsive Transit*, MIT Center for Transportation Studies, Cambridge, Mass., Oct. 1976, Table 10, pp. 28–29.

Figure 10.13. Hourly variation of travel by mode. SOURCE: Compiled from data on five North American cities, Chicago, Detroit, Pittsburgh, Toronto, Washington.




(7:00 to 8:00 P.M.) more trips in autos are made than during the morning peak hour, largely because of higher car occupancies. Approximately 80% of all person-trips are made by automobile.

Peaking characteristics of urban trips by mode are further detailed in Tables 10-34 and 10-35 and Figure 10.14.

1. Table 10-34 gives ratios of peak to 24-h travel for pedestrian, bus, taxi, car, rapid transit, and commuter rail trips in New York, Chicago, and three Connecticut cities.

TABLE 10-34
Peaking Characteristics in New York, Chicago, and Three Connecticut Cities

| Location | Mode | Hour | Percent of 24-h Traffic in Peak Hour (Two Directions) |
|---|---|---|---|
| Manhattan cordon | Commuter rail | A.M. | 23.7 |
| | Subway | A.M. | 16.7 |
| | Bus | A.M. | 10.0 |
| Manhattan (midtown) | Pedestrian trips | Noon | 11.9 |
| Manhattan (excluding midtown) | Pedestrian trips | | |
| | Department store | Noon | 23.8 |
| | Other buildings | P.M. | 17.6 |
| | Restaurant | Noon | 19.0 |
| | Apartment | P.M. | 10.7 |
| New York suburban area | Auto trips | P.M. | 8.8 |
| | Taxi trips | A.M. | 8.2 |
| Chicago, IL | Rapid transit | P.M. | 13.9 |
| | Bus | A.M. | 11.8 |
| Hartford, CT | Bus | P.M. | 15.4 |
| New Haven, CT | Bus | P.M. | 12.0 |
| Stamford, CT | Bus | P.M. | 12.6 |

SOURCE: B. PUSHKAREV AND J. ZUPAN, *Urban Space for Pedestrians, A Report of the Regional Plan Association*, MIT Press, Cambridge, Mass., 1975; B. PUSHKAREV AND J. ZUPAN, *Public Transportation and Land Use Policy*, Indiana University Press, Bloomington, Ind., 1977, *Chicago Transit Authority, 1970 survey*.

WALLEN ASSOCIATES/Transportation Consultants
5820 Wilshire Blvd., Suite 304
Los Angeles, CA 90036, (213) 937-2768

DATE: November 24, 1986

TO: Rob Talmadge

cc: M. Bucka
C. Cohen

FROM: Martin Wallen

SUBJECT: Dos Vientos Noise Study - Traffic

This morning I checked the heavy truck and speed assumptions with John Clement. He approved the 35/40 and one percent trucks.

MW:kn