OCTOBER 2020

VENTURA COUNTY AGRICULTURAL
IRRIGATED LANDS GROUP

2020 Water Quality Management Plan

Submitted to

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

Submitted by

VENTURA COUNTY AGRICULTURAL IRRIGATED LANDS GROUP (VCAILG)

Prepared by

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science | policy | solutions

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GIS shapefiles organized as follows:

- HUC Boundary Shapefile
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Document Overview

The 2016 *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Agricultural Lands within the Los Angeles Region* ("Conditional Waiver", Order No. R4-2016-0143) includes the requirement for discharger groups to develop a water quality management plan (WQMP) to address exceedances of water quality benchmarks. The WQMP is an iterative process which includes plans for additional or upgraded management practices to achieve water quality benchmarks. This is the third WQMP submitted for compliance with the 2016 Conditional Waiver, on behalf of the Ventura County Agricultural Irrigated Lands Group (VCAILG). The first WQMP for compliance with the 2016 Conditional Waiver was submitted in April 2017 and revised to address Regional Board comments in October 2017. The second WQMP for compliance with the 2016 Conditional Waiver was submitted in December 2018 and revised to address Regional Board comments in August 2019. The plan is based on water quality monitoring data from January 2017 through December 2019.

WAIVER REQUIREMENTS FOR THE THIRD 2016 CONDITIONAL WAIVER WQMP

Appendix 3 of the Conditional Waiver details the monitoring and reporting requirements for any Ventura County discharger group, with section 2 outlining WQMP requirements. The major elements are as follows:

- Summary of Existing Conditions (organized by monitoring site) and to include: maps, graphs of constituents that exceed the exceedance threshold for the associated water quality benchmark, a report of the management practices currently implemented, a comparison of the graphs/exceeded constituents to the level of management practice implementation and a pesticide use evaluation.
- Proposal for Additional or Upgraded Management Practices
- Outreach Plan

This is the third WQMP submitted to comply with the 2016 Conditional Waiver. Intertwined with the second and third WQMPs was the planning, implementation, and reporting of the Source Investigation efforts.[1] Per the exceedance findings in the second WQMP, and a statistical analysis of those exceedances to determine increasing trends, Source Investigations were required to discern patterns in discharge quality, evaluate management practice effectiveness, and identify specific crops and practices to be prioritized for outreach and management practice implementation. The ultimate result of the Source Investigation Work Plan implementation and Source Investigation Report was to inform the WQMP Outreach Plan; providing greater detail in how the VCAILG directs its members to address specific water quality constituents. The revised WQMP Outreach Plan was submitted as part of the Source Investigation Report and VCAILG has been working to implement that plan.

An additional requirement of this third WQMP is the inclusion of a summary of progress under the 2016 Waiver. Details related to implementation progress by VCAILG members to address

[1] LWA (2018, 2019) VCAILG Source Investigation Work Plan. Submitted to the Los Angeles Regional Water Quality Control Board, October 2018, revised January 2019.
LWA (2019) VCAILG Source Investigation Report. Submitted to the Los Angeles Regional Water Quality Control Board, September 2019.

water quality benchmark exceedances is provided in the responsibility area (RA) specific tables documenting the results of the Best Management Practice (BMP) survey results within each site drainage area and RA. The Waiver Program Recommendations and Progress section pulls together some of the key information from Annual Monitoring Reports as well as WQMPs to review progress of the VCAILG membership as a whole and provide recommendations for the future of the program.

WQMP STRUCTURE

To meet the requirements of a WQMP, this plan is organized into the following sections:

- Introduction
- Group Membership and Setting
    - Description of VCAILG governance and membership at the time when management practice surveys were completed to produce this WQMP; general overview of agriculture in Ventura County.
- WQMP Development Process
    - Responsibility areas that associate VCAILG monitoring sites with pertinent HUC-12 watersheds were defined in the first WQMP, but the information is included here for reference.
- Summary of Existing Conditions by Responsibility Area
    - General map of each responsibility area associated with a VCAILG monitoring site. More detailed maps with HUC-12 watershed boundaries and showing enrolled and non-enrolled agricultural parcels can be found in Appendix B and C, respectively.
    - Best Management Practice (BMP) survey results from December 2016/January 2017 and May/June 2018 by responsibility area.
    - Exceedance graphs and summary table of constituent exceedances for each responsibility area.
    - Proposal for additional management practices presented as tables that bring together benchmark exceedances, applicable BMPs to address those exceedances, current level of BMP adoption, and designation of whether additional implementation of each BMP is being recommended.
    - Pesticide use evaluation for the three current use pesticides with water quality benchmarks
- Schedule
    - Revised schedule with target adoption rates for applicable BMPs in each responsibility area for this Conditional Waiver term
- Outreach Plan
    - Description of VCAILG's approach to informing its members of the benchmark exceedances within their responsibility area and the applicable BMPs required for implementation.
- Explanation of Compliance List Appendices
    - The Conditional Waiver requires that the compliance status of VCAILG members be reported as part of the WQMP. This includes membership in VCAILG and payment of fees, survey completion, and education credits.
- Waiver Program Progress and Recommendations

- Summary of overall progress during the 2016 Waiver and recommendations for the future program.

Introduction

On April 14, 2016, the Los Angeles Regional Water Quality Control Board adopted the *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands within the Los Angeles Region* ("Conditional Waiver", Order No. R4-2016-0143). The purpose of the Conditional Waiver is to assess the effects of, and control discharges from irrigated agricultural lands in Los Angeles and Ventura Counties, including irrigation return flows, flows from tile drains, and storm water runoff. These discharges can affect water quality by transporting nutrients, pesticides, sediment, salts, and other pollutants from cultivated fields into surface waters, potentially impairing designated beneficial uses. Owners and operators of agricultural lands in Ventura and Los Angeles Counties must comply with provisions contained in the Conditional Waiver or be regulated under other Regional Board programs. The 2016 Order was the third iteration of the Conditional Waiver adopted for the Los Angeles Region.

The Conditional Waiver allows individual landowners and growers to comply with its provisions by working collectively as a Discharger Group, or as an individual. A Discharger Group is defined by the Conditional Waiver as "any group of dischargers and/or organizations that forms to comply with this Order. Discharger Groups can be, but are not limited to, organizations formed on a geographic basis or formed with other factors in common such as commodities." The primary purpose of allowing Discharger Groups is to encourage collaboration on monitoring and reporting and to increase the effectiveness of management practices throughout a watershed to attain water quality benchmarks. Those landowners and growers choosing to comply with the Conditional Waiver as a Discharger Group must signify by submitting a Group Notice of Intent and by developing a Discharger Group monitoring program.

To assist agricultural landowners and growers that farm within the boundaries of Ventura County, various agricultural organizations, water districts and individual farmers joined together in 2006 to form the Ventura County Agricultural Irrigated Lands Group (VCAILG), which is intended to act as one unified "Discharger Group" for those agricultural landowners and growers that wish to participate. A Notice of Intent (NOI) to comply was submitted to the Regional Board by the VCAILG under the two previous Conditional Waivers and on October 14, 2016 an NOI for compliance with the 2016 Conditional Waiver was submitted. The NOI included the VCAILG membership roster, as well as the required Quality Assurance Project Plan (QAPP) and Monitoring and Reporting Program Plan (MRP), which detail the water quality monitoring and reporting procedures being conducted in compliance with the terms of the Conditional Waiver.

Following the completion of each monitoring year, VCAILG submits Annual Monitoring Reports (AMR) that provide a detailed summary of activities conducted by the VCAILG during the past year, including, among other things, a discussion of monitoring results that exceeded water quality benchmarks. The next AMR will be submitted on December 15, 2020 and reports on data collected between July 2019 and June 2020.

The data compilation and identification of benchmark exceedances in the AMRs lends itself to the work of developing a Water Quality Management Plan (WQMP), which serves to evaluate long-term water quality in the context of on-farm management practices, and develop a plan to implement additional and upgraded practices in order to achieve water quality benchmarks, as

well as the approach of VCAILG to inform and provide outreach to its members regarding the outcome and need for additional management practices. This document serves as the third WQMP to meet the requirements of the 2016 Conditional Waiver and is based on exceedances occurring during the three most recent years' available data from January 2017 through December 2019.

Group Membership and Setting

VCAILG oversight is provided by a 16-member Steering Committee and a 5-member Executive Committee (also members of the Steering Committee). Steering Committee membership consists of agricultural organization representatives, agricultural water district representatives, landowners and growers from the three primary watersheds in Ventura County (Calleguas Creek, Santa Clara River, and Ventura River). Steering Committee membership also represents the major commodities grown in Ventura County (strawberries, nursery stock, citrus, vegetables, and avocados). The Steering Committee roster is presented in Table 1.

Because the VCAILG is an unincorporated organization, the Farm Bureau of Ventura County acts as the responsible entity for the collection of funds, contracting with consultants, and other fiscal and/or business matters that require an organization with some form of tax status; the Farm Bureau is a non-profit 501(c)(5) organization.

Table 2 contains a summary of the VCAILG membership statistics, including the number of landowners and parcels enrolled, as well as irrigated acreage enrolled in each watershed. Per the October 2020 membership rolls, VCAILG represents 1,421 Ventura County agricultural landowners and 81,783 irrigated acres. According to the Ventura County Assessor's records, there are an estimated 454 landowners not enrolled in VCAILG. Therefore, VCAILG represents 77 percent of agricultural landowners in Ventura County covering approximately 89 percent of the estimated irrigated acreage. Current membership status by parcel is detailed in Appendix E.

Table 1. VCAILG Steering Committee Membership

Member, Organization [1]	Crop(s) Represented	Watershed(s) Represented
Edgar Terry, Terry Farms, Inc. (Committee Chair)	Strawberries, Vegetables	Calleguas Creek, Santa Clara River
Jared Bouchard, Pleasant Valley Co. Water District*	N/A	N/A
Jonathan Chase, Hailwood, Inc.	Strawberries, Vegetables	Calleguas Creek
Robert Crudup, BrightView Tree Co.	Nursery Stock	Santa Clara River
Paul DeBusschere, DeBusschere Ranch	Strawberries, Avocados	Calleguas Creek
Mike Friel, Laguna Grove Service	Citrus	Calleguas Creek
Jurgen Gramckow, Southland Sod Farms	Sod, Hay, Oats, Vegetables	Calleguas Creek, Santa Clara River, Ventura River
Gus Gunderson, Limoneira Company	Avocado, Citrus	Santa Clara River
Craig Held, Rancho Gemelos/Held Ranches	Orchards	Santa Clara River
John Krist, Farm Bureau of Ventura County*	N/A	N/A
John Mathews, Arnold, Bleuel, LaRochelle, et al.*	N/A	N/A
Doug O'Hara, Somis Pacific Ag Management Company	Avocado, Citrus	Calleguas Creek, Santa Clara River
Kelle Pistone, Assoc. of Water Agencies of Ventura County*	N/A	N/A
Rob Roy, Ventura County Agricultural Association*	N/A	N/A
Mike Sullivan, Essick Farm Management	Orchards	Ventura River
Craig Underwood, Underwood Ranches	Avocado, Citrus, Vegetables	Calleguas Creek, Santa Clara River

N/A = Not Applicable

1. An asterisk denotes Executive Committee membership

Table 2. VCAILG Membership Statistics as of October 2020

Watershed	Landowner Count	Parcel Count	Irrigated Acres
Calleguas Creek	706	1,518	43,950
Santa Clara River	513	1,237	28,978
Ventura River	200	404	4,820
Oxnard Coastal	64	119	4,036
Total	*1,421*	*3,278*	*81,783*

IRRIGATED AGRICULTURE IN VENTURA COUNTY

Ventura County covers 1,843 square miles (approximately 1.2 million acres) with 43 miles of coastline (Figure 1). The Pacific Ocean forms its southwestern boundary, with Los Angeles

County to the southeast, Kern County to the north and Santa Barbara County to the west. The Los Padres National Forest accounts for the northern half of the county, with residential, agricultural and business uses in the southern portion. Of the estimated 293,549 acres of agricultural land in the county, there are approximately 92,000 acres of irrigated cropland. The Calleguas Creek Watershed contains the highest number of irrigated acres (approximately 50,000), followed by the Santa Clara River Watershed (approximately 32,000), the Oxnard Plain and Coastal Watersheds (approximately 5,400), and finally the Ventura River Watershed (approximately 4,800).[2]

Agriculture is a major industry in Ventura County, generating over $1.99 billion in gross sales for 2019, placing the county 10th in a statewide ranking of California's 58 counties.[3] This gross value is a decrease of 5% from 2018.[4] Strawberries were the number one grossing crop type, celery was the second highest grossing crop, and lemons were the third highest grossing crop in Ventura County in 2019. Table 3 lists Ventura County's ten leading crops in gross value for 2019. Characteristics of each of the three main watersheds in Ventura County are discussed in more detail in the following sections.

Table 3. Ventura County's Leading Agricultural Commodities–2019

Commodity	Gross Value ($)
1. Strawberries	508,371,000
2. Celery	243,455,000
3. Lemons	211,104,000
4. Raspberries	203,538,000
5. Nursery Stock	187,467,000
6. Avocados	116,981,000
7. Tomatoes	46,485,000
8. Cut Flowers	46,153,000
9. Peppers	42,880,000
10. Hemp	35,460,000

Source: Ventura County Agricultural Commissioner. *Ventura County's Crop and Livestock Report 2019*. July 28, 2020.

[2] Estimates of irrigated agricultural acreage by watershed are based on the VCAILG membership database and also includes estimated irrigated acreage for parcels not enrolled in VCAILG.

[3] California Department of Food and Agriculture. *California Agricultural Statistics Review 2018-2019.* Agricultural Statistics Overview.

[4] Ventura County Agricultural Commissioner. Ventura County's Crop and Livestock Report 2019. July 28, 2020.

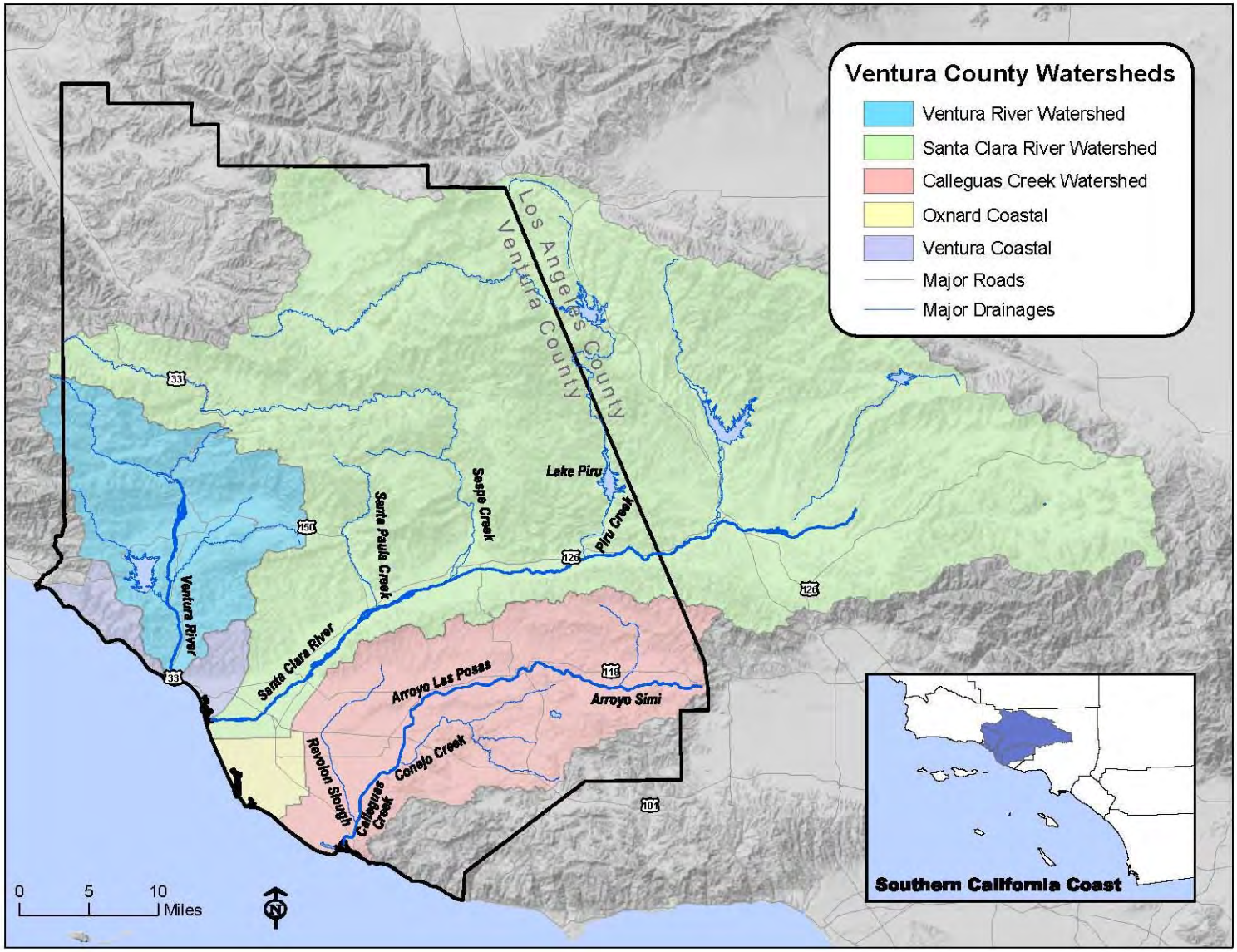


Figure 1. Ventura County Watersheds

Calleguas Creek Watershed

The Calleguas Creek Watershed (Figure 2) is approximately 30 miles long, 14 miles wide, and drains an area of approximately 343 square miles or 219,520 acres. Cities within the watershed include Camarillo, Thousand Oaks, Moorpark, and Simi Valley. The main surface water system drains from the mountains in the northeast part of the watershed toward the southwest, where it flows through the Oxnard Plain before emptying into the Pacific Ocean through Mugu Lagoon. The main waterbodies in the watershed include Calleguas Creek, Revolon Slough, Beardsley Channel, Conejo Creek, Arroyo Santa Rosa, Arroyo Las Posas and Arroyo Simi. All of the previously listed waterbodies appear on the federal 303(d) list of impaired waterbodies, triggering the requirement to develop Total Maximum Daily Loads (TMDLs) for specified pollutants identified as causing impairments. Runoff from irrigated agricultural lands has been identified as one of the sources of these water quality impairments for specified pollutants. To date, TMDLs have been adopted for Nitrogen Compounds, Trash, Organochlorine Pesticides, Polychlorinated Biphenyls (PCBs) and Siltation, Toxicity, Metals and Selenium, and Salts.

At the northwest end of the Oxnard Plain lies a small coastal watershed that drains to McGrath Lake. A TMDL has been adopted to address pesticides and PCBs impairments in the lake. This TMDL applies to the area within the Oxnard Coastal watershed that drains to the Central Ditch at Harbor Boulevard.

Avocados and citrus crops such as lemons and oranges are typically grown in flat or gently sloping foothill areas in the watershed. Agricultural land located on the Oxnard Plain is planted predominately in a wide variety of truck crops, including strawberries, raspberries, peppers, green beans, celery, and onions, as well as sod farms and nurseries. Many farms located in the watershed grow multiple crops during a single calendar year. This multi-cropping technique is most common in the lower parts of the watershed, adjacent to Revolon Slough and Lower Calleguas Creek. Figure 2 shows the distribution of crop types throughout the Calleguas Creek and Oxnard Coastal Watersheds.

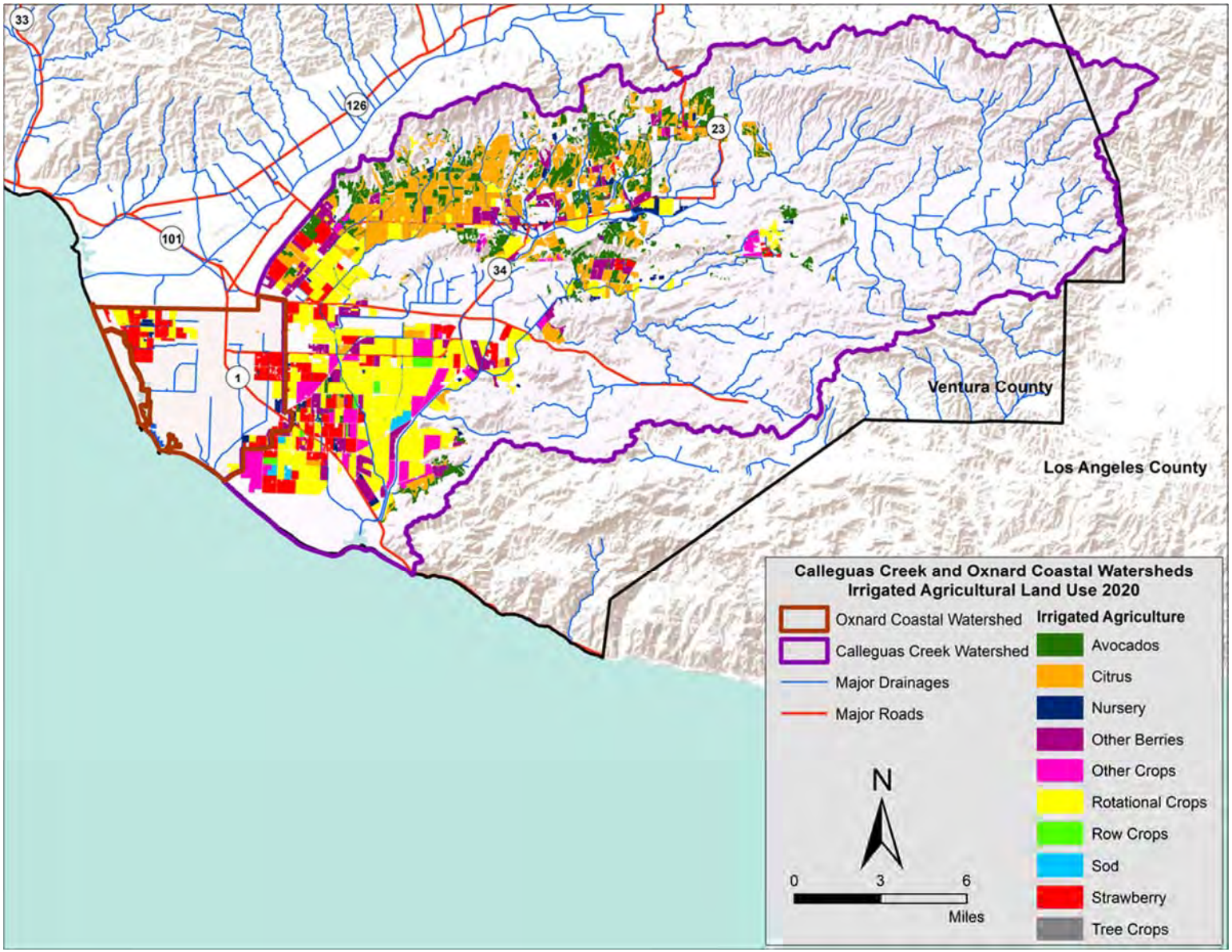


Figure 2. Calleguas Creek and Oxnard Coastal Watersheds Agricultural Land Use

Santa Clara River Watershed

The Santa Clara River is the largest river system in southern California remaining in a relatively natural state. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard. The Santa Clara River and tributary system has a watershed area of about 1,634 square miles (Figure 3). Cities within the watershed include Ventura, Santa Paula, Fillmore, Piru, Santa Clarita, and Newhall. Within Ventura County, major tributaries the Sespe, Piru, and Santa Paula Creeks. Approximately 60 percent of the watershed is located in Ventura County. The most prevalent land use in the 500-year flood plain of the Santa Clara River is agriculture (62 percent), followed by industry (22 percent). Row crops and orchards are planted across the valley floor primarily in Ventura County and extend up adjacent slopes.

Several Santa Clara River reaches and tributaries appear on the federal 303(d) list of impaired waterbodies due to salts, nitrogen compounds, bacteria, and pesticides. TMDLs have been adopted for Nitrogen Compounds (upper and lower Santa Clara River reaches), Chloride (Reach 4B) and Bacteria (Estuary and Reaches 3, 5, 6, and 7). A TMDL for toxaphene in the Santa Clara River Estuary was incorporated in the 2010 Conditional Waiver as a single regulatory action and is also included in the 2016 Conditional Waiver.

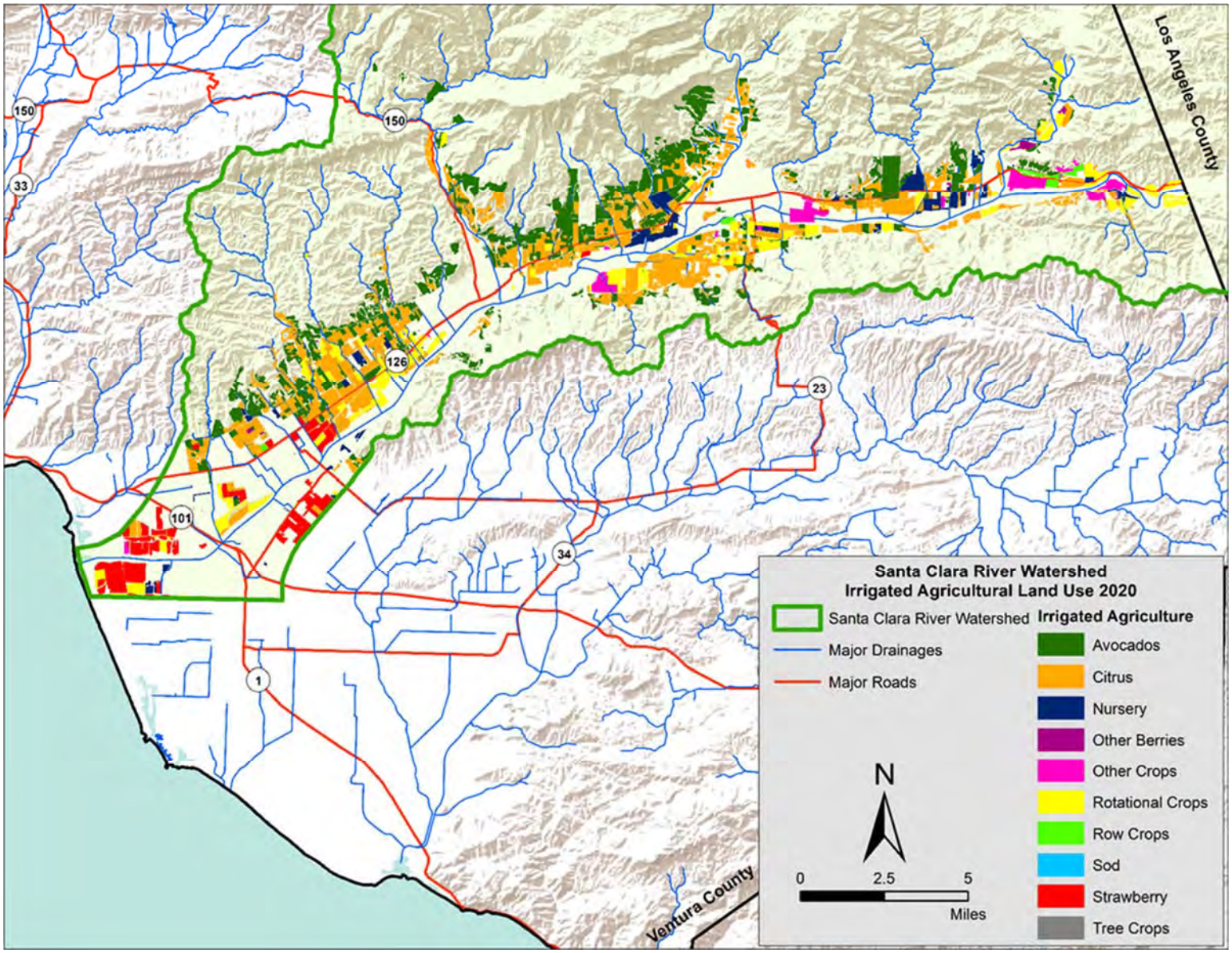


Figure 3. Santa Clara River Watershed Agricultural Land Use

Ventura River Watershed

The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is located within the western Transverse Ranges and is 31 miles long from upper Matilija Canyon to the Pacific Ocean (Figure 4). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River Watershed generally flows in a southerly direction to the estuary, located at the mouth of the Ventura River. Main tributaries in the watershed include Matilija Creek, Coyote Creek and San Antonio Creek. The City of Ojai and communities of Meiners Oaks, Oak View and Casitas Springs are located in the watershed, with surrounding suburban and agricultural areas comprising the Ventura River, Santa Ana, and Upper Ojai Valleys. Portions of the City of San Buenaventura border the lower reaches of the Ventura River. Irrigated agriculture constitutes approximately five percent of land uses in the watershed, with avocado and citrus as the predominant crops grown.

Several Ventura River reaches and tributaries appear on the federal 303(d) list of impaired waterbodies due to Algae/Eutrophic Conditions, Bacteria, Pumping/Water Diversion, and Trash. The Ventura River Estuary Trash TMDL became effective in 2008. A TMDL for algae, eutrophic conditions, and nutrients became effective in July 2013 (Algae TMDL). In its approval notice for the Algae TMDL, the USEPA determined that the Algae TMDL addresses the beneficial use impairments on the 303(d) list identified as being caused by pumping and water diversions. Consequently, a separate TMDL for pumping and water diversions is not expected to be adopted.

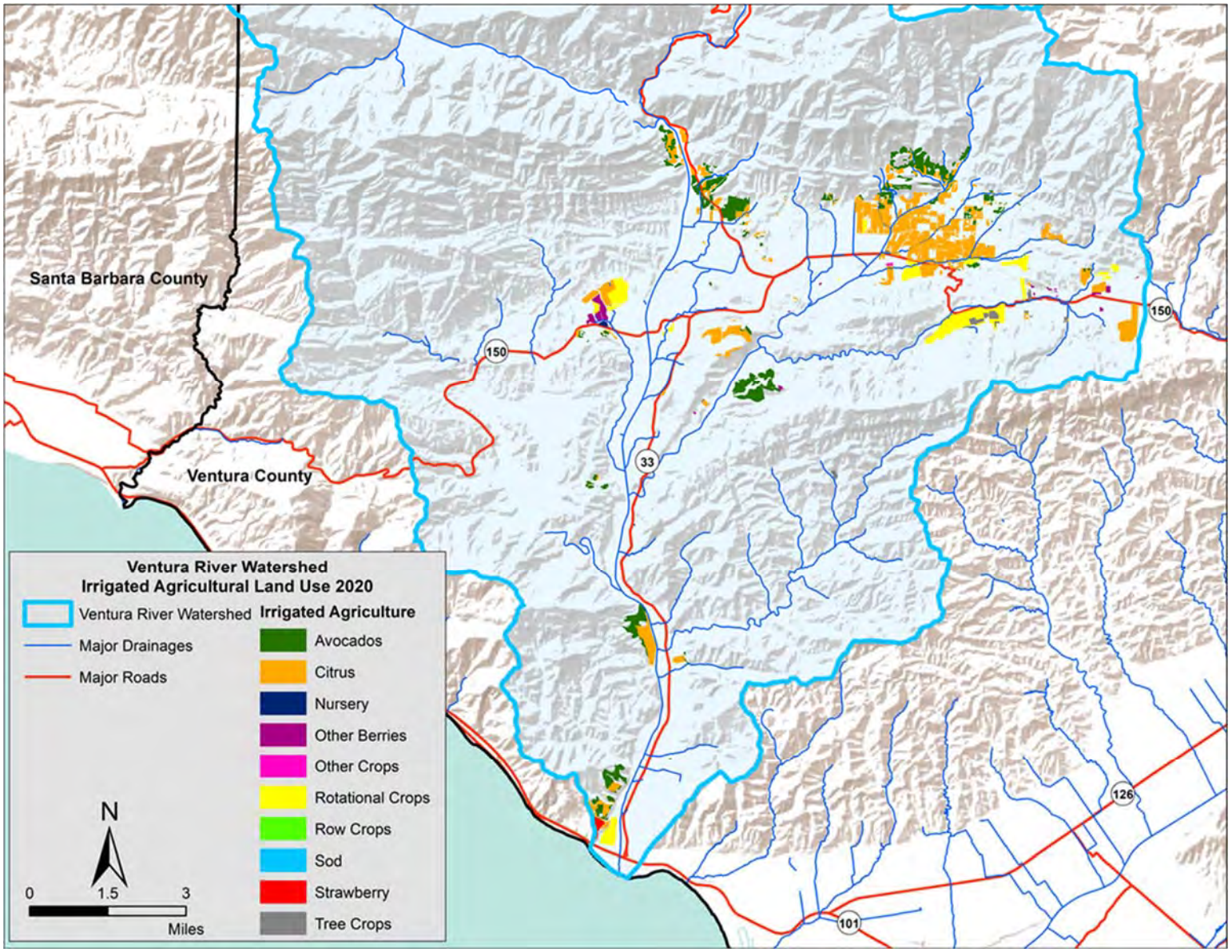


Figure 4. Ventura River Watershed Agricultural Land Use

WQMP Development Process

This WQMP is third to be developed under the 2016 Conditional Waiver. Initial WQMP development involved three distinct processes that joined together to result in area specific best management practice (BMP recommendations) in order to meet water quality benchmarks by their specified compliance dates. As before, this WQMP is an adaptive management plan which has been revised and modified with each iteration as additional survey and monitoring data are available and as additional BMPs are implemented by VCAILG members. The three processes of assigning responsibility areas (completed during the first WQMP), compiling management practice surveys (done for all three WQMPs with this iteration showing side-by-side results), and evaluating benchmark exceedances (revised in this WQMP to include more recent data) are described below.

RESPONSIBILITY AREAS

Appendix 3, Section 2.a.i. of the Conditional Waiver specifies:

> *"The WQMP shall be organized by monitoring site. For each monitoring site provide:*
>
> *i. A map showing the monitoring site, the land area draining to the monitoring site, the HUC-12 watershed in which the monitoring site is located, any adjacent HUC-12 watersheds that do not include a monitoring site[6], and the enrolled and non-enrolled irrigated agricultural parcels with the HUC-12 watersheds.....*
>
> *[6]**Discharger groups shall propose a method for associating adjacent HUC-12 watersheds with monitoring sites in the WQMP.**"* (emphasis added)

HUC-12 watersheds (hereinafter "HUC12s") with monitoring sites were associated with adjacent HUC12s by defining twenty "responsibility areas," covering all of Ventura County, which resulted in associations between HUC12s, VCAILG monitoring sites, TMDL compliance sites and TMDL Ag Land Use Sites (in the CCW), and TMDL assessment sites (for TMDLs outside of the CCW). Responsibility areas consist (with minor variations) of one or more HUC12s, or partial HUC12s - and were designed to be consistent with drainage patterns, regulatory reaches and TMDL responsibilities. In three cases, a HUC12 contained land that drains to different regulatory reaches. This meant that not all of the growers in those HUC12s are responsible for water quality outcomes at the same monitoring sites and the growers might also have different TMDL obligations. In these three cases, ArcGIS was used to divide the HUC12 into partial HUC12s to separate the land areas draining to different regulatory reaches, as follows:

The "Revolon Slough-Calleguas Creek" HUC12 was divided into two partial HUC12s:

- "Revolon Slough-Calleguas Creek (Revolon)" encompassing land draining to Revolon Slough (Reach 4)
- Revolon Slough-Calleguas Creek (Calleguas)" encompassing land draining to Calleguas Creek (Reaches 2 and 3)

The "Mugu Lagoon" HUC12 was divided into two partial HUC12s:

- "Mugu Lagoon-South" encompassing land draining to Mugu Lagoon
- "Mugu Lagoon-North" encompassing land draining to Beardsley Wash

The "Las Posas Arroyo" HUC12 was divided into two partial HUC12s:

- "Las Posas Arroyo-Reach 6" encompassing land draining to Arroyo Las Posas (Reach 6)
- "Las Posas Arroyo-Reach 7" encompassing land draining to Arroyo Simi (Reach 7)

Most responsibility areas include a nested VCAILG monitoring site drainage. In these cases, the VCAILG monitoring site at the base of the drainage was assigned as the Conditional Waiver benchmark "beacon site" for that responsibility area, and exceedances of benchmarks at that VCAILG monitoring site were used, in part, together with monitoring data from TMDL-related monitoring sites and BMP survey results to inform selection of BMPs for increased future implementation. A nested VCAILG monitoring site was not available for some responsibility areas (for example, responsibility areas containing the HUC12s draining to Conejo Creek, Calleguas Creek reaches 2 and 3, the Malibu Creek watershed, and several coastal watersheds). For these responsibility areas, crop percentages were evaluated and used to select the most representative VCAILG monitoring site from a neighboring responsibility area to serve as the Conditional Waiver benchmark beacon site. Despite its location in the Beardsley Wash subwatershed, 05T_HONDO was assigned as a benchmark beacon site for the responsibility area containing the Malibu Creek Watershed because this monitoring site was chosen by Regional Board staff as a proxy VCAILG monitoring site for enrolled parcels in the Malibu Creek watershed.

In the following four cases, a HUC12 (or partial HUC12, see above) contained two nested VCAILG monitoring site drainages:

- San Antonio Creek HUC12 contained drainages for both VRT_THACH and VRT_SANTO monitoring sites
- Adams Canyon-Santa Clara River HUC12 contained drainages for both S02T_TODD and S02T_ELLS monitoring sites
- Revolon Slough - Calleguas Creek (Revolon) partial HUC12 contained drainages for both 04D_ETTG and 04D_LAS monitoring sites
- Timber Canyon-Santa Clara River HUC12 contained drainages for both S03T_TIMB and S03D_BARDS monitoring sites

In these cases, crop percentages were derived for each of the nested monitoring site drainages and the surrounding HUC12 (or partial HUC12). The VCAILG monitoring site drainage whose agricultural land use most closely matched the rest of the HUC12 was retained as part of the associated responsibility area. In the following three cases the less-suited VCAILG monitoring site drainage was defined as a stand-alone responsibility area with no external surrounding land:

- San Antonio Creek (VRT_SANTO) responsibility area
- Ellsworth Barranca (S02T_ELLS) responsibility area
- South Revolon (04D_LAS) responsibility area

In the fourth case, S03T_TIMB was identified as the benchmark beacon site for a responsibility area involving a neighboring HUC12 that is non-contiguous with the drainage area for S03T_TIMB. The responsibility areas and associated HUC12s and Waiver Benchmark beacon sites are listed in Table 4.

ArcGIS was used to permanently assign each irrigated agricultural parcel in the County (known to VCAILG as of November 2018) to one of the twenty responsibility areas and to VCAILG monitoring site drainages (the latter, where pertinent). Parcels were located using a Ventura County Assessor's Parcel map shapefile downloaded in November 2016. For parcels that

straddled the boundary of a responsibility area and/or a VCAILG monitoring site drainage, the parcel was assigned to the area which contained ≥ 50% of its assessed acreage. A very small proportion (<1%) of parcels were not found in the Assessor's shapefile. These parcels were located using available pdf versions of the Assessor's parcel maps and Google Earth to locate the parcels in relation to responsibility area boundaries. The updates are made on an ongoing basis as parcels are split or re-numbered.

A map for each responsibility area illustrating the information in Table 4 *is included in Appendix B. A map illustrating enrolled, un-enrolled, and exempt (not irrigated) parcels for each responsibility area is provided in Appendix C. Maps showing responsibility area and monitoring site drainage area boundaries, and all monitoring sites used for evaluation of water quality (benchmark waiver sites and TMDL-related monitoring sites), are provided later in the document. Summaries of the enrolled, un-enrolled and exempt acreage are tabulated for each responsibility area later in the document.*

Table 4. Responsibility Areas and Associated HUC-12s and VCAILG Monitoring Sites

Responsibility Area	Associated VCAILG Monitoring Site	Included HUC-12s
Mugu Lagoon	01T_ODD3_EDI	• Partial HUC-12 Mugu Lagoon-South
Etting-Wood	04D_ETTG	• Partial HUC-12 Revolon Slough-Calleguas Creek (Revolon) minus the drainage area of monitoring site 04D_LAS
Lower Calleguas Creek	04D_ETTG	• Partial HUC-12 Revolon Slough-Calleguas Creek (Calleguas)
South Revolon	04D_LAS	• none
LaVista Drain	05D_LAVD	• Partial HUC-12 Mugu Lagoon-North
Beardsley Wash	05T_HONDO	• Beardsely Wash HUC-12
Malibu	05T_HONDO	• Potrero Valley Creek HUC-12 • Medea Creek HUC-12 • Las Virgenes Creek HUC-12 • Cold Creek-Malibu Creek HUC-12
Arroyo Conejo	06T_LONG2	• Lower Conejo Arroyo HUC-12 • Upper Conejo Arroyo HUC-12
Las Posas	06T_LONG2	• Partial HUC-12 Las Posas Arroyo-Reach 6
Arroyo Simi	06T_LONG2	• Partial HUC-12 Las Posas Arroyo-Reach 7 • Lower Simi Arroyo HUC-12 • Upper Simi Arroyo HUC-12

Responsibility Area	Associated VCAILG Monitoring Site	Included HUC-12s
McGrath Lake Coastal	OXD_CENTR	• Arundell Barranca-Frontal Pacific Ocean HUC-12 • McGrath Lake-Frontal Pacific Ocean HUC-12 • the portion of Harmon Canyon-Santa Clara River HUC-12 falling within the OXD-CENTR monitoring site drainage area
Todd Barranca	S02T_TODD	• Harmon Canyon-Santa Clara River HUC-12, minus the portion in the OXD_CENTR monitoring site drainage area • Adams Canyon-Santa Clara River HUC-12, minus the drainage area of monitoring site S02T_ELLS
Ellsworth Barranca	S02T_ELLS	• none
Bardsdale	S03D_BARDS	• Timber Canyon-Santa Clara River HUC-12, minus the drainage area of monitoring site S03T_TIMB
Santa Paula Creek	S03T_TIMB	• Santa Paula Creek HUC-12 • plus the drainage area of monitoring site S03T_TIMB in neighboring HUC-12
Boulder Creek	S03T_BOULD	• Boulder Creek-Sespe HUC-12 • Hopper Canyon HUC-12 • Pole Creek-Santa Clara River HUC-12
Tapo Canyon	S04T_TAPO	• Lake Piru-Piru Creek HUC-12 • Hosler Canyon-Piru Creek HUC-12 • Salt Canyon-Sant Clara River HUC12
Ventura River Inland	VRT_THACH	• Matilija Creek HUC-12 • North Fork Matilija Creek HUC-12 • Upper Ventura River HUC-12 • Coyote Creek HUC-12 • Lower Ventura River HUC-12 • San Antonio Creek HUC-12 minus the drainage area for monitoring site VRT_SANTO
Ventura River Coastal	VRT_THACH	• Rincon Creek HUC-12 • Los Sauces Creek-Frontal Pacific Ocean HUC12
San Antonio Creek	VRT_SANTO	• none

MANAGEMENT PRACTICE SURVEY PROCESS

Appendix 3, Section 2.a.iii. of the Conditional Waiver specifies that the WQMP contain a report of existing management practices being implemented. A management practice survey template was due to the Regional Board Executive Officer for review and approval August 12, 2016. The VCAILG received approval of the survey October 10, 2016. In compliance with the requirement to make the survey available to its members within eight months of Conditional Waiver

adoption, the VCAILG sent notification letters to its members and opened the survey website in December 2016.[5] The results of this first survey were provided in the first WQMP. The second survey period took place during May and June 2018; results were provided in the 2018 WQMP (revised in 2019). The third survey took place in June and July 2020. Results of all three surveys are provided in tables below.

Because separate surveys were submitted for individual parcels, and because each surveyed member parcel was unambiguously assigned to a responsibility area (and a VCAILG monitoring site drainage, where pertinent), it was a straightforward procedure to tally up the acres, or linear feet, upon which practices or BMPs were indicated to be in use for individual responsibility areas and VCAILG monitoring site drainages. In addition, it was straightforward to tally the total irrigated acreage that applied to each survey question. Aggregate survey results were reported in two ways:

- Surveyed units (acres or linear feet) meeting criterion
- Percent of total applicable surveyed units meeting criterion (can be considered an estimated adoption rate)

Survey results were tabulated separately for VCAILG monitoring site drainages and the overall responsibility area acreage. In 2020, VCAILG members completed surveys covering 65,924 irrigated acres. This represents 79% of the irrigated acres enrolled in VCAILG.

WATER QUALITY BENCHMARK EXCEEDANCE EVALUATION PROCESS

Water Quality Benchmarks

This section presents the water quality benchmarks as specified in the 2016 Conditional Waiver, used to evaluate the VCAILG monitoring data. Additional standard water quality benchmarks (Conditional Waiver Appendix 4) were added in 2016 for bifenthrin and *E. coli*. Bifenthrin data is available as it is included in the pyrethroid pesticides analysis suite and an exceedance analysis is included in this WQMP. *E. coli* testing was not required until the approval of the 2016 MRP and QAPP and began in January 2017.[6] An exceedance analysis is included in this iteration of the WQMP. The standard water quality benchmarks are presented below, followed by water quality benchmarks based upon total maximum daily load (TMDL) load allocations (LAs) for agricultural discharges (Conditional Waiver Appendix 5). Due to the complexity of appropriately comparing TMDL LAs to the proper location, site type, sample media, and sampling condition, these benchmarks are described separately. However, when presenting the benchmark exceedance graphs for each responsibility area, all applicable benchmarks are considered and shown together.

Standard Water Quality Benchmarks (Conditional Waiver Appendix 4)

"Standard water quality benchmarks" in the Conditional Waiver include numeric and narrative water quality objectives contained in Appendix 4, and includes several narrative and numeric Basin Plan objectives and water quality standards from the California Toxics Rule (CTR). In cases where the Conditional Waiver, in Appendix 4, references the Basin Plan or CTR, without

[5] Hard copy versions of the survey were available upon request. The survey is included herein as Appendix A.

[6] Conditional approval of the VCAILG MRP and QAPP was received December 16, 2016.

specifying a benchmark number, the lowest applicable number was selected for each watershed. The Conditional Waiver specifies the goal for attaining these benchmarks as ten years from WQMP submittal.

Several of the narrative water quality objectives contained in the Basin Plan specify that discharges of wastes to receiving waters cannot alter "natural" or "ambient" conditions above or below a stated level. Many of the VCAILG monitoring sites are located on agricultural drains that discharge to receiving waters. Because "natural" and "ambient" conditions have not been established in receiving waters or are non-existent on agricultural drains and ephemeral streams, monitoring data from sites located on agricultural drains are evaluated based on the assumption that if benchmarks are not exceeded in the agricultural drain, it is unlikely that the discharge from that drain will cause benchmark exceedances in the receiving water.

Table 5. Conditional Waiver Appendix 4 Standard Water Quality Benchmarks Derived From Narrative Objectives

Constituent	Watershed [1]	Narrative Objective [2]	Applicable Benchmark
pH	CC, OXD, SCR, VR	The pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed by more than 0.5 pH units from natural conditions as a result of waste discharges.	$6.5 \leq pH \leq 8.5$ Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
Temperature	CC, OXD, SCR, VR	For waters designated WARM, water temperature shall not be altered by more than 5°F above the natural temperature. At no time shall WARM-designated waters be raised above 80°F as a result of waste discharges.	WARM: $\leq 80^{o}F$ Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
	SCR, VR	For waters designated COLD, water temperature shall not be altered by more than 5°F above the natural temperature.	COLD: No numeric benchmark. Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
Dissolved Oxygen	OXD	No single dissolved oxygen determination shall be less than 5 mg/L, except when natural conditions cause lesser concentrations.	$\geq$ 5 mg/L
	CC, SCR, VR	The dissolved oxygen content of all surface waters designated as WARM shall not be depressed below 5 mg/L as a result of waste discharges.	WARM: $\geq$ 5 mg/L
	SCR, VR	The dissolved oxygen content of all surface waters designated as COLD and SPWN shall not be depressed below 7 mg/L as a result of waste discharges.	COLD, SPWN: $\geq$ 7 mg/L
Turbidity	CC, OXD, SCR, VR	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors shall not exceed the following limits: ▪ Where natural turbidity is between 0 and 50 NTU, increases shall not exceed 20%; ▪ Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%.	No numeric benchmarks. Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
Total Suspended Solids (TSS)	CC, OXD, SCR, VR	Wastes shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.	No numeric benchmarks.
Toxicity	CC, OXD, SCR, VR	All waters shall be free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal or aquatic life. There shall be no chronic toxicity in ambient waters outside mixing zones.	$\leq$ 1.0 TUc [3] Benchmarks for specific potentially toxic constituents are listed in Tables 16 through 20.

1. CC = Calleguas Creek Watershed OXD = Oxnard Coastal Watershed SCR = Santa Clara River Watershed VR = Ventura River Watershed
2. Source: Water Quality Control Plan, Los Angeles Region (Basin Plan), 1994.
3. Source: "*Conditional Waiver* of Waste Discharge Requirements for Discharges from Irrigated Lands," Order No. R4-2016-0143, Los Angeles Regional Water Quality Control Board, adopted April 14, 2016.

Table 6. Conditional Waiver Appendix 4 Standard Water Quality Benchmarks for Salts and Nutrients (Basin Plan Table 3-8 Numeric Water Quality Objectives)

Watershed / Reach	Reach Description	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Nitrogen (mg/L)	Ammonia [1] (mg/L)	Phosphate (mg/L)
CC below Potrero Rd.	-----	-----	-----	-----	10 [2]	pH, temperature dependent	-----
CC above Potrero Rd.	-----	150	250	850	10 [3]	pH, temperature dependent	-----
OXD	-----	-----	-----	-----	10 [2]	pH, temperature dependent	-----
SCR Reach 1	Tidally-influenced mouth of Santa Clara River upstream to 101 Bridge	-----	-----	-----	10 [2]	pH, temperature dependent	-----
SCR Reach 2	Upstream of Hwy 101 Bridge to Freeman Diversion	150	600	1200	10 [2]	pH, temperature dependent	-----
SCR Reach 3	Upstream of Freeman Diversion to A Street Bridge in Fillmore	100 [4]	650	1300	5 [3]	pH, temperature dependent	-----
SCR Reach 4	Upstream of A Street Bridge in Fillmore to Blue Cut Gaging Station	100	600	1300	5 [3]	pH, temperature dependent	-----
VR Reach 4	Between Camino Cielo Rd. and Casitas Vista Rd.	60	300	800	5 [3]	pH, temperature dependent	-----

Watersheds: CC = Calleguas Creek OXD = Oxnard Coastal SCR = Santa Clara River VR = Ventura River

1. Ammonia benchmarks are based on 1) freshwater ammonia objectives as calculated according to LARWQCB Resolutions 2002-011 and 2005-014, and 2) saltwater ammonia objectives as calculated according to LARWQCB Resolution 2004-022. Ammonia objectives are calculated based on the pH and temperature of the receiving water measured at the time of sample collection for ammonia analysis. Ammonia objectives used as benchmarks are chronic, 30-day averages.
2. There is no site-specific nitrogen objective in the Basin Plan (Table 3-8) applicable to this reach. The Basin Plan objective of 10 mg/L Nitrate-N was used for comparison with VCAILG data collected at monitoring sites in this reach.
3. The Nitrogen benchmark listed is as Nitrate-N plus Nitrite-N.
4. The 100 mg/L benchmark for chloride is the revised water quality objective adopted by the Regional Board in Resolution 2003-015.

Table 7. Conditional Waiver Appendix 4 Standard Water Quality Benchmarks for Copper

Constituent	Freshwater [1, 2]		Brackish or Saltwater [1]	
	Benchmark (µg/L)	Benchmark Source	Benchmark (µg/L)	Benchmark Source
Copper	$= \mathbf{0.96}e^{[\mathbf{0.8545}(\ln hardness)+(-\mathbf{1.702})]}$	CTR CCC [3]	3.1	CTR CCC [3]

1. Freshwater benchmark applies to discharges to waters with salinities <1 ppt at least 95% of the time. Saltwater benchmark applies when salinities are ≥10 ppt at least 95% of the time. For discharges between these categories, or tidally influenced freshwater that supports EST beneficial uses, the lower criteria of the two shall be used; which is the saltwater benchmark.
2. As per footnote "m" to the Table in Paragraph (b)(1) of the CTR; "The freshwater criteria for metals are expressed in terms of the dissolved fraction of the metal in the water column." In instances where the measured hardness is >400 mg/L as $CaCO_3$, a hardness of 400 is used to calculate the benchmark. This was done in accordance with CTR §31692, f. Hardness.
3. CTR = California Toxics Rule (USEPA, May 18, 2000).
   CCC = Criteria Continuous Concentration

Table 8. Conditional Waiver Appendix 4 Standard Water Quality Benchmarks for Current Use Pesticides (Organophosphorus and Pyrethroid Pesticides)

Constituent	CC, OXD, SCR, VR Watersheds
	Benchmark (µg/L)
Chlorpyrifos	0.025
Diazinon	0.10
Bifenthrin	0.0006

Watersheds: CC = Calleguas Creek OXD = Oxnard Coastal SCR = Santa Clara River VR = Ventura River

Table 9. *Conditional Waiver* Water Quality Benchmark for *E. coli*

Constituent	CC, OXD, SCR, VR Watersheds	
	Unit	Benchmark
E. coli	MPN/100mL	235

Watersheds: CC = Calleguas Creek OXD = Oxnard Coastal SCR = Santa Clara River VR = Ventura River

Table 10. Conditional Waiver Appendix 4 Water Quality Benchmarks for Legacy Pesticides (Organochlorine Pesticides)

Constituent	CC, OXD, SCR, VR Watersheds	
	Benchmark (µg/L)	Benchmark Source [1]
Chlordane, sum	0.00059	CTR HHO
4,4'-DDD	0.00084	CTR HHO
4,4'-DDE	0.00059	CTR HHO
4,4'-DDT	0.00059	CTR HHO
Dieldrin	0.00014	CTR HHO
Toxaphene	0.00075	CTR HHO

Watersheds: CC = Calleguas Creek OXD = Oxnard Coastal SCR = Santa Clara River VR = Ventura River

1. CTR = California Toxics Rule (USEPA, May 18, 2000).
   HHO = Human Health for Consumption of Organisms Only (30-day average)
   HHWO = Human Health for Consumption of Water and Organisms (MUN-designation) (30-day average)

Water Quality Benchmarks Based Upon TMDL LAs (Conditional Waiver Appendix 5)

Effective TMDL monitoring requirements were incorporated into both the 2010 and 2016 Conditional Waivers (Order No. R4-2010-0186 and R4-2016-0143, respectively). VCAILG coordinates with established TMDL monitoring programs or conducts additional monitoring where necessary in order to meet TMDL requirements. Several TMDLs became effective during the 2010 waiver period and were later added to the 2016 Conditional Waiver. Monitoring approaches to meet the requirements of all effective TMDLs were included in the 2016 VCAILG MRP and QAPP. Summaries of each TMDL including the LA benchmarks and sites used to evaluate benchmark attainment are provided below. Along with the specific benchmarks, the Conditional Waiver also includes deadlines for achieving them as listed in Table 11.

Table 11. TMDL Water Quality Benchmarks Compliance Dates

TMDLs	Compliance Date
Calleguas Creek Watershed and Mugu Lagoon Siltation TMDL [1]	March 24, 2015
Revolon Slough and Beardsley Wash Trash TMDL	October 14, 2020
Calleguas Creek Watershed and Mugu Lagoon Toxicity, Chlopyrifos, and Diazinon TMDL	March 24, 2022
Calleguas Creek Watershed and Mugu Lagoon Metals and Selenium TMDL	March 26, 2022
Calleguas Creek Watershed Boron, Chloride, Sulfate and TDS (Salts) TMDL	December 23, 2023
Calleguas Creek Nitrogen Compounds and Related Effects TMDL	October 14, 2025
Calleguas Creek Watershed and Mugu Lagoon OC Pesticides and PCBs TMDL	March 24, 2026
Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity TMDL	April 14, 2026
Upper Santa Clara River Chloride TMDL	October 14, 2020
Santa Clara River Nitrogen Compounds TMDL	October 14, 2022
Santa Clara River Estuary Toxaphene TMDL	October 7, 2025
Santa Clara River Bacteria TMDL	March 21, 2023 / 2029 [2]
Ventura River Algae TMDL	June 28, 2019
Ventura River Estuary Trash TMDL	October 14, 2020
McGrath Lake OC Pesticides and PCBs TMDL	June 30, 2021
Malibu Creek Watershed Sedimentation and Nutrients TMDL	June 2, 2021
Malibu Creek Watershed Nutrients TMDL	October 14, 2022

1. Additional time may be added to this TMDL deadline should a TMDL reconsideration revise the implementation schedule based on the results of special studies.
2. March 21, 2023 for dry weather and March 21, 2029 for wet weather.

Calleguas Creek Watershed and Mugu Lagoon OC Pesticides and PCBs TMDL

Interim sediment LAs are currently in effect for this TMDL with final LAs to be achieved by March 24, 2026. A conservative analysis was performed by comparing monitoring data to the final LAs rather than only the interim LAs since sediment sampling is performed on an annual basis as compared to quarterly dry weather water quality monitoring. Compliance with these LAs is measured at the base of the subwatershed in the receiving water. The receiving water compliance sites associated with at least one responsibility area are: 01_BPT_14, 01_BPT_15, 04_WOOD, 06_SOMIS/UPLAND, 07_HITCH, and 9B_ADOLF.

Table 12. CCW OC Pesticides and PCBs Sediment Allocations

Interim Sediment LAs							
		Subwatershed					
Constituent	Units [1]	Mugu Lagoon [2]	Calleguas Creek	Revolon Slough	Arroyo Las Posas	Arroyo Simi	Conejo Creek
Chlordane	ng/g	25	17	48	3.3	3.3	3.4
4,4'-DDD	ng/g	69	66	400	290	14	5.3
4,4'-DDE	ng/g	300	470	1,600	950	170	20
4,4'-DDT	ng/g	39	110	690	670	25	2
Dieldrin	ng/g	19	3	5.7	1.1	1.1	3
PCBs	ng/g	180	3,800	7,600	25,700	25,700	3,800
Toxaphene	ng/g	22,900	260	790	230	230	260
Final Sediment LAs							
Chlordane	ng/g	3.3	3.3	0.9	3.3	3.3	3.3
4,4'-DDD	ng/g	2.0	2.0	2.0	2.0	2.0	2.0
4,4'-DDE	ng/g	2.2	1.4	1.4	1.4	1.4	1.4
4,4'-DDT	ng/g	0.3	0.3	0.3	0.3	0.3	0.3
Dieldrin	ng/g	4.3	0.2	0.1	0.2	0.2	0.2
PCBs	ng/g	180.0	120.0	130.0	120.0	120.0	120.0
Toxaphene	ng/g	360.0	0.6	1.0	0.6	0.6	0.6

1. ng/g = nanograms/ gram
2. The Mugu Lagoon subwatershed includes Duck Pond/Agricultural Drain/Mugu/Oxnard Drain #2.

Calleguas Creek Watershed and Mugu Lagoon Toxicity, Chlorpyrifos, and Diazinon TMDL

Interim LAs are currently in effect for this TMDL with final LAs to be achieved by March 24, 2022. A conservative analysis for benchmark compliance was performed applying the allowable exceedance rate to the final LAs to ensure proactive BMP implementation. Compliance with these LAs is measured at the base of each subwatershed. The Toxicity TMDL receiving water compliance monitoring sites associated with at least one responsibility area include: 01_RR_BR, 04_WOOD, 03_UNIV, 9B_ADOLF, 07_HITCH, 06_SOMIS/UPLAND. CCW TMDL Monitoring Program agricultural land use site data within the same subwatershed was then used to verify exceedances were the result of ag discharges. This evaluation of receiving water and agricultural land use site data is included in each CCW TMDLs Annual Monitoring Report.

Table 13. CCW Toxicity, Chlorpyrifos, and Diazinon Load Allocations

	Interim LA [1]		Final LA[1]
Constituent	Acute (1 hour) (µg/L) [2]	Chronic (4 day) (µg/L) [3]	Acute and Chronic (µg/L) [2]
Chlorpyrifos	2.57	0.81	0.014 / 0.0133[4]
Diazinon	0.278	0.138	0.1
Toxicity	1 TU_c	1 TU_c	1 TU_c

1. These TMDL LAs apply to the receiving water at the base of each subwatershed.
2. Acute LAs are used for assessing wet-weather data.
3. Chronic LAs are used for assessing dry-weather data.
4. Final chlorpyrifos LA of 0.014 applies to the Arroyo Simi, Arroyo Las Posas, Conejo, and Mugu Lagoon subwatersheds; 0.0133 applies to Calleguas and Revolon subwatersheds.

Calleguas Creek Watershed Boron, Chloride, Sulfate, and TDS (Salts) TMDL

Interim dry weather LAs are measured as in-stream monthly averages at the base of each subwatershed, except for chloride which is measured as an instantaneous maximum. Dry weather LAs apply when flow rates are below the 86th percentile and there was no measurable precipitation in the previous 24 hour period. Final LAs are to be achieved by December 23, 2023. The Salts TMDL receiving water compliance monitoring sites associated with at least one responsibility area include: 04_WOOD, 03_UNIV, 9B_BARON, and 07_TIERRA. CCW TMDL Monitoring Program agricultural land use site data within the same subwatershed was then used to verify exceedances were the result of ag discharges; this evaluation is included in each CCW TMDLs Annual Monitoring Report.

Table 14. CCW Salts TMDL Dry Weather Load Allocations

Constituent	Interim Dry Weather LA (mg/L)
Boron Total	1.8
Chloride Total	230
Sulfate Total	1,962
TDS Total	3,995

Calleguas Creek Watershed and Mugu Lagoon Metals and Selenium (Metals) TMDL

Interim LAs are currently in effect for this TMDL with final LAs to be achieved by March 26, 2022. Dry weather LAs apply to days when flows in the stream are less than the 86th percentile flow rate for the subwatershed. Wet weather LAs apply to days when flows in the stream exceed the 86th percentile flow rate for the subwatershed. The LAs for total recoverable metals and selenium are applied in the receiving water at the compliance points (04_WOOD for Revolon Slough and 03_UNIV for Calleguas Creek). CCW TMDL Monitoring Program agricultural land use data was used to verify exceedances were the result of ag discharges.

Table 15. CCW Metals TMDL Load Allocations for Total Recoverable Metals and Selenium

	Calleguas and Conejo Creeks			Revolon Slough		
Constituent	Dry Daily Max (µg/L)	Dry Monthly Avg. (µg/L)	Wet Daily Max (µg/L)	Dry Daily Max (µg/L)	Dry Monthly Avg. (µg/L)	Wet Daily Max (µg/L)
Copper	24	19	1,390	24	19	1,390
Nickel	43	42	---	43	42	---
Selenium	---	---	---	6.7 [1]	6 [1]	---

1. Attainment of interim LAs will be evaluated in consideration of background loading data, if available.

Interim LAs for mercury are evaluated based on suspended sediment measured in-stream at the base of Revolon Slough and Calleguas Creek.

Table 16. CCW Metals TMDL Load Allocations for Mercury in Suspended Sediment

Flow Range (Million gallons/year)	Calleguas Creek (lbs/yr)	Revolon Slough (lbs/yr)
0-15,000	3.9	2
15,000-25,000	12.6	4.8
>25,000	77.5	12.2

Calleguas Creek Watershed Nitrogen TMDL

LAs for the CCW Nitrogen TMDL are to be achieved by October 14, 2025. The CCW TMDL Monitoring Program measures compliance in the receiving water and the contribution of agriculture is evaluated at the ag land use sites within the same reach as the receiving water site.

Table 17. CCW Nitrogen TMDL Load Allocations

Constituent	Load Allocation (mg/L)
Nitrate-N + Nitrite-N	9

Revolon Slough and Beardsley Wash Trash TMDL

The LA for this TMDL is zero trash. Dischargers may achieve compliance with the LAs by implementing a minimum frequency of assessment and collection/best management practice (MFAC/BMP) program. The final compliance date specified in the Conditional Waiver is October 14, 2020. VCAILG members are complying with the Trash TMDL requirements through a MFAC/BMP Program. The MFAC program includes regular collection and assessment of trash. VCAILG members are in compliance with the TMDL requirement to ensure zero trash immediately after each MFAC event. Additionally, VCAILG has implemented additional BMPs to control trash and reduce the accumulation of trash between collection events. The importance of collecting and properly disposing of trash has also been a reoccurring topic at multiple VCAILG education classes. No further evaluation has been performed for this TMDL.

Santa Clara River Nitrogen Compounds TMDL

The LA for the SCR Nitrogen Compounds TMDL is to be achieved by October 14, 2022. Monitoring data collected at the VCAILG monitoring program sites located within the SCR watershed is compared to the LA.

Table 18. Santa Clara River Nitrogen TMDL Load Allocation

Constituent	Load Allocation (mg/L) [1]
Ammonia-N + Nitrate-N + Nitrite-N	10

1. The specified LA applies to all Santa Clara River reaches within Ventura County.

Upper Santa Clara River Chloride TMDL

The chloride LA applies to reaches 4B, 5, and 6 of the SCR and there is one VCAILG monitoring site that drains to reach 4B (S04T_TAPO). The Conditional Waiver compliance date for this TMDL is October 14, 2020.

Table 19. Upper Santa Clara River Chloride TMDL Load Allocation

Constituent	Load Allocation (mg/L) [1]
Chloride	100

1. Allocation applies as a 3-month rolling average.

Santa Clara River Estuary Toxaphene TMDL

The SCR Estuary Toxaphene TMDL applies to reaches 1 and 2 of the SCR. LAs were established for toxaphene measured in fish tissue collected in the estuary and suspended sediment discharges. Suspended sediment is measured at two TMDL assessment sites, one in reach 1 (S01D_MONAR) and another in reach 2 (S02T_ELLS). The Conditional Waiver compliance date for this TMDL is October 7, 2025.

Table 20. Santa Clara River Estuary Toxaphene TMDL Load Allocations

Reach	Toxaphene in Fish Tissue (µg/kg)	Toxaphene in Suspended Sediment (µg/kg)
Santa Clara River Estuary	6.1	0.1

Santa Clara River Bacteria TMDL

The SCR Bacteria TMDL was incorporated in the 2016 Conditional Waiver and the monitoring strategy was approved as part of the VCAILG MRP and QAPP. In accordance with the approved MRP, the monitoring requirements for agriculture for the Santa Clara River Bacteria TMDL were addressed through baseline monitoring during the 2016-2017 and 2017-2018 monitoring years. A compliance evaluation can be found in the 2018 VCAILG Annual Monitoring Report. Both sites monitored for this TMDL met the interim allowable exceedance days. Monitoring for this TMDL was not required during the 2018-2019 or 2019-2020

monitoring years. Final compliance dates for this TMDL are March 21, 2023 for dry weather and March 21, 2029 for wet weather.

Ventura River Estuary Trash TMDL

The LA for this TMDL is zero trash. Dischargers may achieve compliance with the LAs by implementing a minimum frequency of assessment and collection/best management practice (MFAC/BMP) program. The final compliance date specified in the Conditional Waiver is October 14, 2020. VCAILG members are complying with the Trash TMDL requirements through a MFAC/BMP Program. The MFAC program includes regular collection and assessment of trash. VCAILG members are in compliance with the TMDL requirement to ensure zero trash immediately after each MFAC event. Additionally, VCAILG has implemented additional BMPs to control trash and reduce the accumulation of trash between collection events. The importance of collecting and properly disposing of trash has also been a reoccurring topic at VCAILG education classes. No further evaluation has been performed for this TMDL.

Ventura River Algae TMDL

The VR Algae TMDL LAs were incorporated into the 2016 Conditional Waiver as benchmarks. Monitoring for this TMDL began following the approval of the VCAILG MRP and QAPP. The final compliance date for this TMDL was June 28, 2019.

Table 21. Dry Weather Load Allocations for the Ventura River Algae TMDL

Constituent	Load Allocation (lbs/day)[1]
Total Nitrogen	16
Total Phosphorus	0.12

1. Dry weather load allocations are the same for all reaches

Table 22. Wet Weather Load Allocations for the Ventura River Algae TMDL

Site	Constituent	Load Allocation (mg/L)
VRT_THACH[1]	Nitrate-N + Nitrite-N	5
VRT_SANTO[1]	Nitrate-N + Nitrite-N	5
V02D_SPM[2]	Nitrate-N + Nitrite-N	10

1. Sampling site drains to Reach 4
2. Sampling site drains to Reach 2

McGrath Lake PCBs, Pesticides, and Sediment Toxicity TMDL

Compliance with the McGrath Lake TMDL is evaluated through monitoring of the Central Ditch at VCAILG monitoring site OXD_CENTR, which eventually discharges to McGrath Lake. The Conditional Waiver compliance date is June 30, 2021 and LAs are included for water column and suspended sediment concentrations. For this WQMP OC pesticides water column concentrations have been evaluated for exceedances since past data is available through normal Conditional Waiver required sampling. Suspended sediment and PCBs monitoring began when the 2016 MRP and QAPP went into effect; therefore, wet weather samples of suspended sediment are available and were evaluated for exceedances.

Table 23. McGrath Lake PCBs, Pesticides, and Sediment Toxicity TMDL Load Allocations

Constituent	Water Column Load Allocation (µg/L)	Suspended Sediment Load Allocation (µg/dry kg)
Chlordane	0.00059	0.5
Dieldrin	0.00014	0.02
4,4'-DDD	0.00084	2
4,4'-DDE	0.00059	2.2
4,4'-DDT	0.00059	1
Total DDT	---	1.58
Total PCBs	0.00017	22.7

Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity TMDL

The Oxnard Drain #3 Pesticides TMDL was incorporated into the 2016 Conditional Waiver and additional monitoring to evaluate attainment of TMDL LA benchmarks was included in the MRP and QAPP. Monitoring for this TMDL is performed at site 01T_ODD3_EDI. A previously existing VCAILG monitoring site, 01T_ODD3_ARN, is located within the TMDL drainage area and monitoring data was available for comparison to all water column LAs, with the exception of total PCBs. An exceedance evaluation was performed, and graphs of exceedances are included in this WQMP as necessary. Sediment data as well as PCBs concentrations for water and sediment are included in the AMR. The following table lists all LA benchmarks for this TMDL. The final compliance date for the Oxnard Drain #3 Pesticides TMDL is April 14, 2026.

Table 24. Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity TMDL Load Allocations

Constituent	Water Allocations (chronic) (µg/L)	Sediment Allocations[1,2] (µg/dry kg)	Alternate Sediment Allocations[1,3] (µg/dry kg)
Bifenthrin[4]	0.0006	--	--
Chlordane, total	0.00059	0.5	3.3
Chlorpyrifos[4]	0.0056	--	--
4,4'-DDT	0.00059	1.0	0.3
4,4'-DDE	0.00059	2.2	2.2
4,4'-DDD	0.00084	2.0	2.0
Dieldrin	0.00014	0.02	4.3
PCBs, total	0.00017	22.7	180
Sediment Toxicity	--	No significant chronic sediment toxicity	--
Toxaphene	0.0002	0.1	360

1. Sediment concentrations associated with suspended sediment and Oxnard Drain #3 bottom sediment.
2. Sediment allocations apply if there are fish tissue or sediment toxicity exceedances. All sediment allocations are ERLs, except toxaphene. Toxaphene does not have n ERL, so the TEL concentration was selected.
3. The alternate sediment allocation applies when the fish tissue target and the sediment toxicity allocation are achieved in Oxnard Drain #3. The alternate sediment allocation concentrations match the Mugu Lagoon TMDL allocations.
4. Bifenthrin and chlorpyrifos allocations included to address the sediment toxicity impairment.

There is minimal agricultural acreage within the small portion of the Malibu Creek watershed that is also within Ventura County. A proxy site (05T_HONDO) was selected based on similar crop types in the adjacent Calleguas Creek watershed to evaluate TMDL LA benchmark compliance with the two Malibu Creek TMDLs. These TMDLs were newly incorporated into the 2016 Conditional Waiver and an exceedance evaluation was performed in this iteration of the WQMP. Compliance dates for these TMDLs are July 2, 2021 for the Sedimentation and Nutrients TMDL and October 14, 2022 for the Nutrients TMDL. The following two tables list all LA benchmarks for the two Malibu Creek TMDLs.

Table 25. Malibu Creek and Lagoon TMDLs for Sedimentation and Nutrients Load Allocations

Constituent	Season	Load Allocation (mg/L)
Total Nitrogen	Summer	0.65
	Winter	1.00
Total Phosphorus	Summer	0.10
	Winter	0.10

Table 26. Malibu Creek Watershed Nutrients TMDL Load Allocations

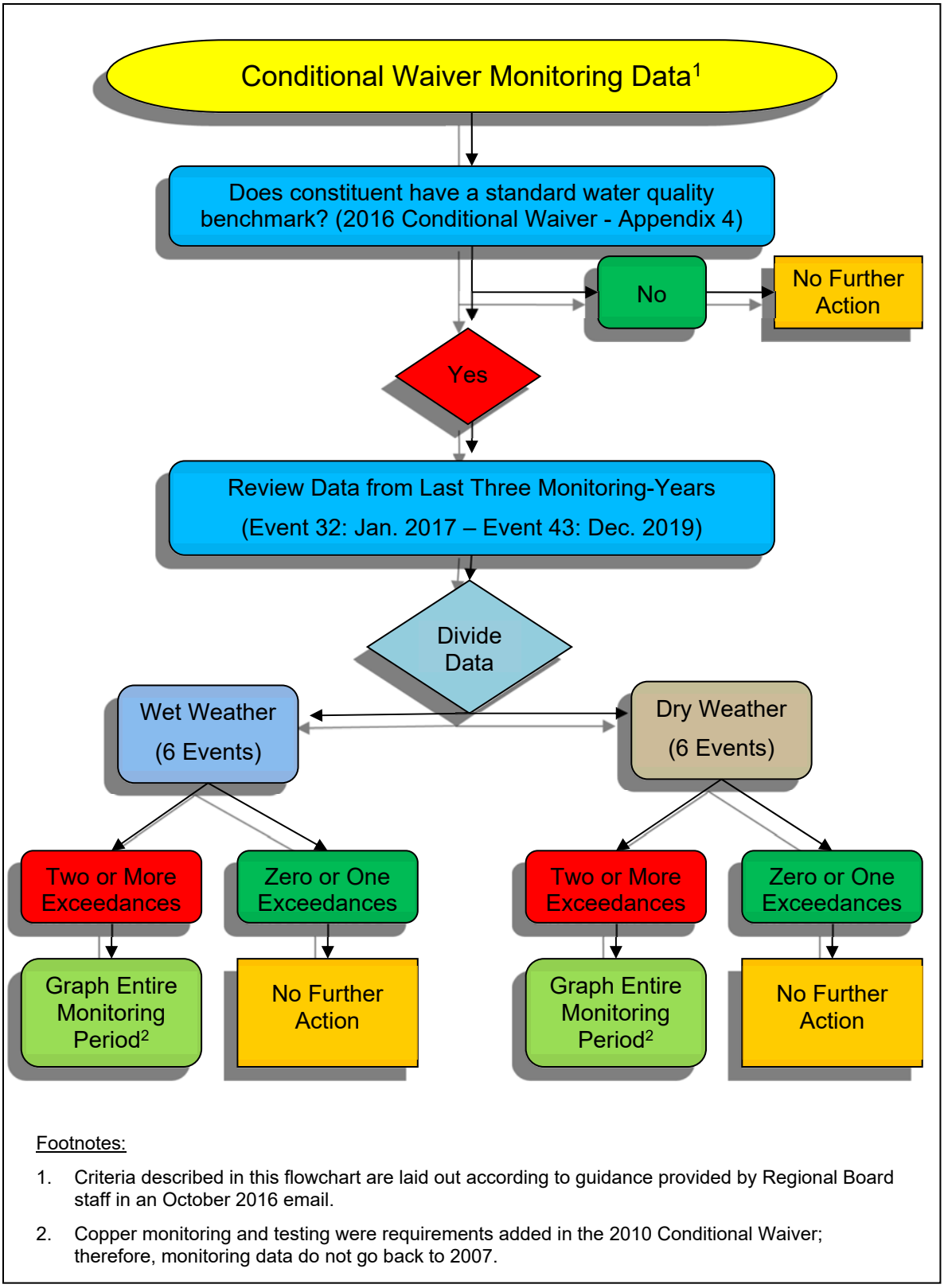
Constituent	Season	Load Allocation	Units
Total Nitrogen	Summer	3	lbs/day
Total Phosphorus		0.2	lbs/day
Nitrogen (nitrate-N + nitrite-N)	Winter	8	mg/L

Benchmark Exceedance Evaluation Process

Monitoring data must be evaluated in comparison to the standard water quality benchmarks and TMDL LA benchmarks specified in the 2016 Conditional Waiver. Appendix 3, Section 2.a.ii specifies that, "for each constituent that has exceeded a Water Quality Benchmark (considering applicable averaging periods), a graph showing the concentrations of the constituent over time since 2007. The VCAILG received directions from Regional Board staff regarding the averaging period and exceedance threshold for generating a graph in the WQMP on October 28 and November 2, 2016. Directions for data and exceedance evaluation were as follows:

- Separate monitoring data by wet and dry weather samples.
- Consider the most recent three years of monitoring.
- The recurrence frequency to trigger a graph should be more than one exceedance of a benchmark in a three-year period.

The following flow chart outlines the process used to evaluate monitoring data compared to the standard water quality benchmarks.

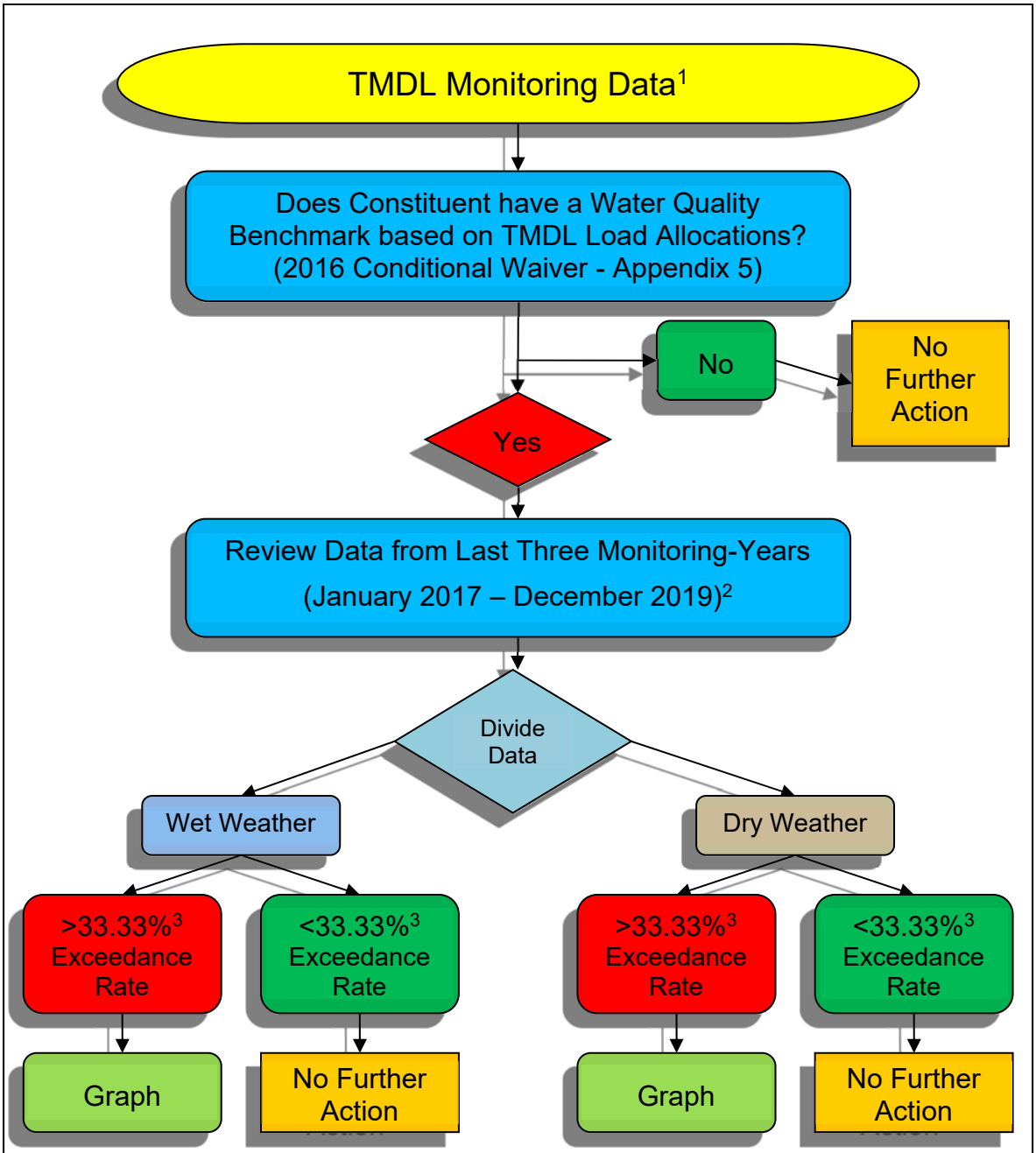


Footnotes:

1. Criteria described in this flowchart are laid out according to guidance provided by Regional Board staff in an October 2016 email.
2. Copper monitoring and testing were requirements added in the 2010 Conditional Waiver; therefore, monitoring data do not go back to 2007.

Figure 5. Process for Comparing VCAILG Monitoring Data to Standard Water Quality Benchmarks and Triggering Concentration Graphs

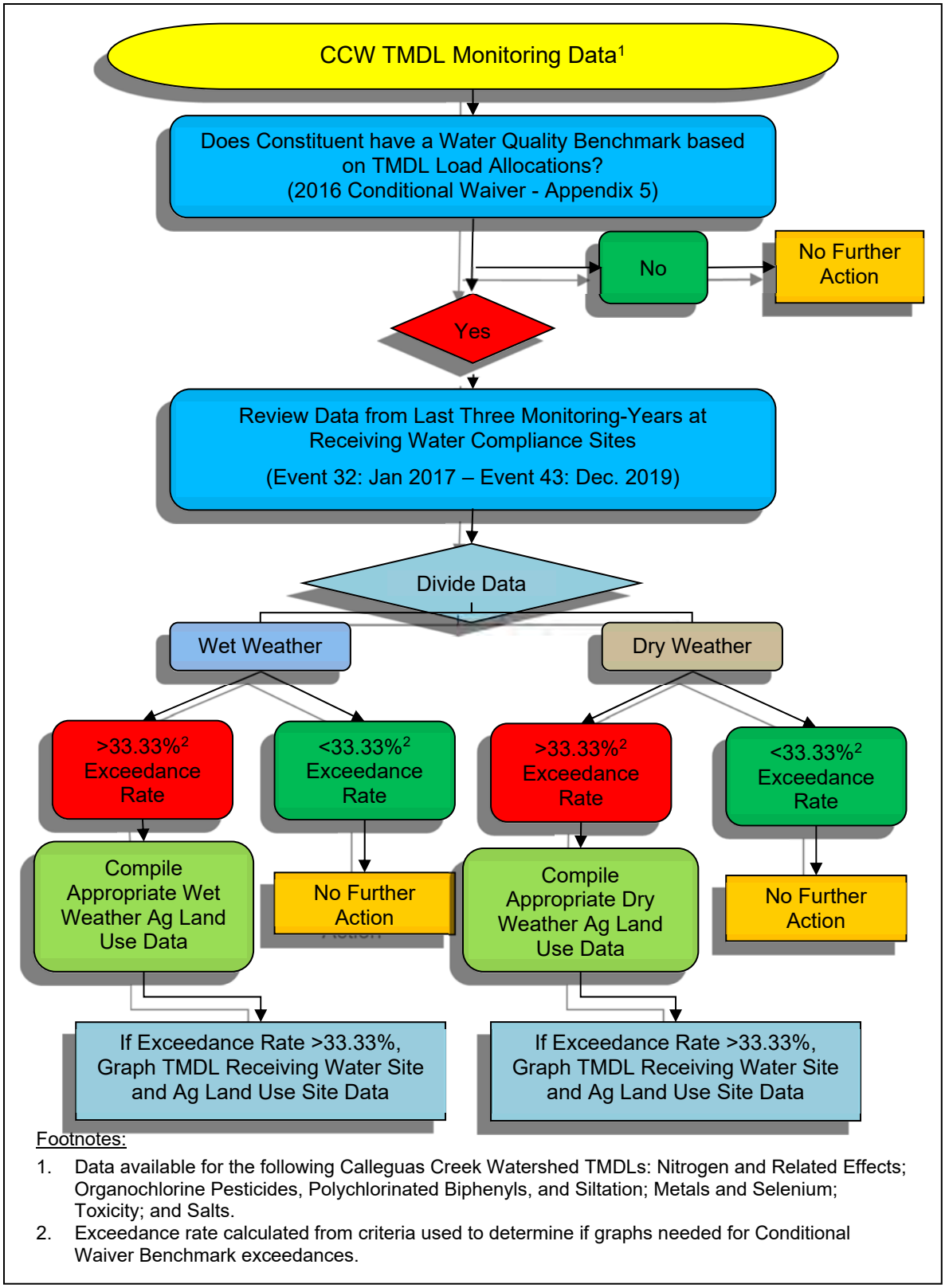
The two following flowcharts detail the data evaluation process used for data compared to TMDL LAs. Figure 6 demonstrates the handling of monitoring data collected by the VCAILG. The evaluation of monitoring data collected under the CCW TMDL Monitoring program is provided in Figure 7. Since the number of monitoring events varies for certain TMDLs, the exceedance rate of 33%, calculated from the criteria specified by the Regional Board was applied. For constituents without an extensive monitoring history and the TMDL was incorporated into the 2016 Conditional Waiver, available data was considered and if two or more exceedances occurred, the data is graphed and BMP requirements are included in this WQMP.



Footnotes:

1. Data available for the following TMDLs: Upper Santa Clara River Chloride; Santa Clara River Nitrogen; Santa Clara River Estuary Toxaphene; McGrath Lake Pesticides and Sediment Toxicity (water column); Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity (water column - except PCBs); and Ventura River Algae (wet weather, upper reach sites).
2. Considered most recent three years of monitoring data, or what was available since monitoring per the 2016 QAPP.
3. Exceedance rate calculated from criteria used to determine if graphs needed for Conditional Waiver Benchmark exceedances.

Figure 6. Process for Comparing TMDL Monitoring Data Collected by VCAILG to TMDL LA Benchmarks and Triggering Concentration Graphs



Footnotes:

1. Data available for the following Calleguas Creek Watershed TMDLs: Nitrogen and Related Effects; Organochlorine Pesticides, Polychlorinated Biphenyls, and Siltation; Metals and Selenium; Toxicity; and Salts.
2. Exceedance rate calculated from criteria used to determine if graphs needed for Conditional Waiver Benchmark exceedances.

Figure 7. Process for Comparing Monitoring Data Collected by the CCW TMDL Monitoring Program to CCW TMDL LA Benchmarks and Triggering Concentration Graphs

Thomas Fire Effect on the Benchmark Exceedance Evaluation Process

Beginning on December 4, 2017, the Thomas fire began burning north of the City of Santa Paula in the Santa Clara River Watershed. It continued to burn east to Fillmore, west into Ventura, north through Ojai and the Ventura River Watershed and all the way up into Santa Barbara County. Until recently it was the largest California wildfire on record having burned 281,893 acres. Six VCAILG monitoring sites, two in the Ventura River Watershed and four in the Santa Clara River Watershed, had significant portions of their site drainages burned (Figure 8).

In the 2018 Annual Monitoring Report, the VCAILG documents additional fire impacts and unsafe conditions that prevented sampling at the two Ventura River Watershed sites near Ojai during the March 22, 2018 storm event. Water quality data collected during the March 11, 2018 and March 22, 2018 storms at the potentially impacted sites shown in Figure 8 was not considered in the benchmark exceedance evaluation process due to the inability of VCAILG to relate the results to on-farm management and activities and avoid requiring costly BMP implementation of its members due to fire effects. However, if the previous three years of wet weather data triggered graphs and BMP implementation, those results and requirements for further action were retained.

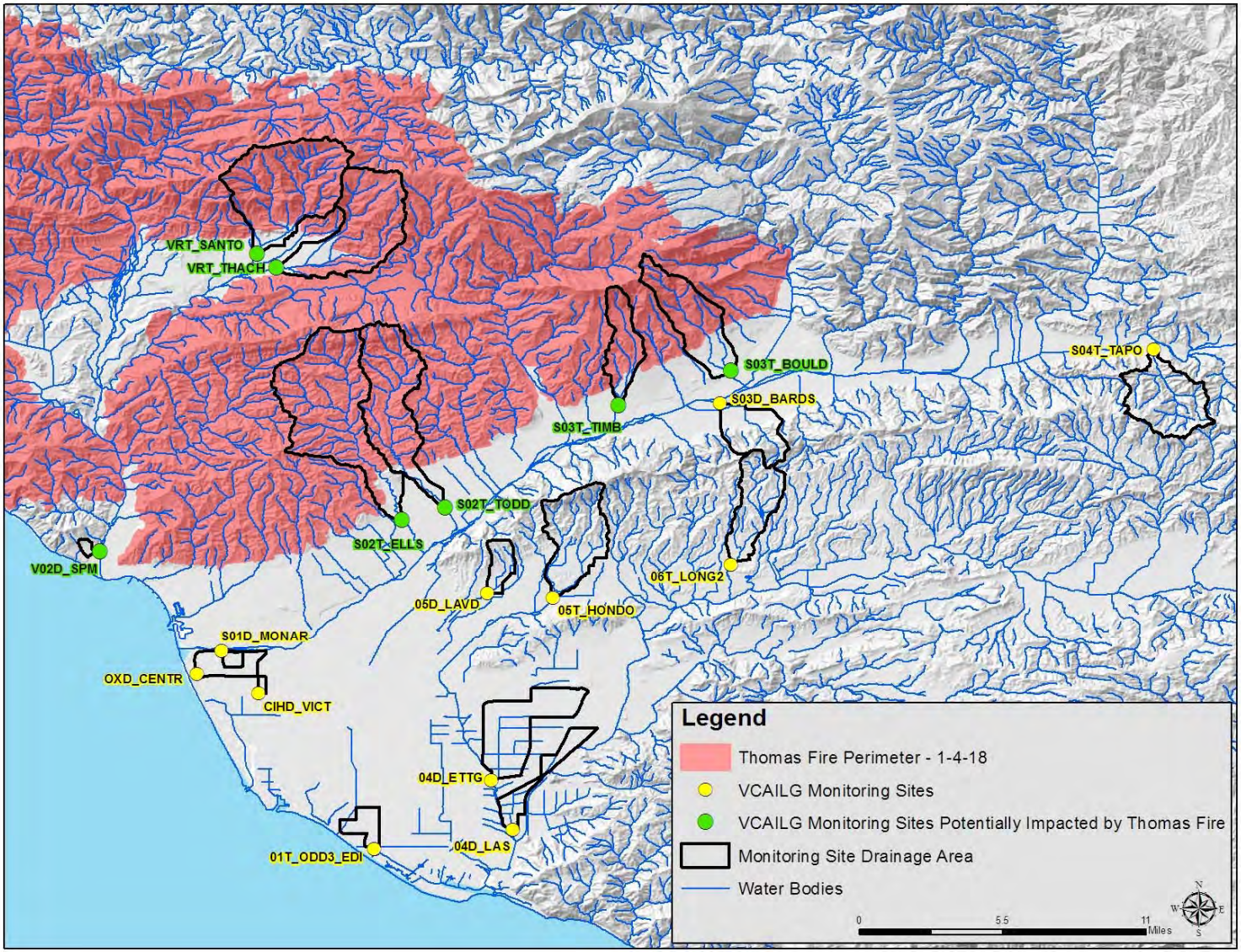


Figure 8. Thomas Fire Burn Area in Relation to VCAILG Monitoring Sites and Drainage Areas

Summary of Existing Conditions by Responsibility Area

This section presents the requisite WQMP content described in Conditional Waiver Appendix 3, Sections 2.a and b. All information is presented according to responsibility area. Each responsibility area (RA) is named for a notable waterbody or subwatershed descriptor within the RA. Every RA has a VCAILG monitoring site that serves as its benchmark beacon site. In some cases, data from the VCAILG monitoring site is also used to evaluate attainment of TMDL LAs. Any additional monitoring sites referred to in maps or text are for TMDL assessment purposes. The HUC12s and VCAILG monitoring sites belonging to the responsibility areas were listed above in Table 4. As previously described, maps showing the component HUC12s for each responsibility area are provided in Appendix B, and maps identifying the enrolled, un-enrolled, and exempt parcels for each responsibility area are provided in Appendix C. Enrollment information was current as of October 6, 2020.

For each responsibility area, the following information is presented below:

- General map of the responsibility area and applicable monitoring sites for evaluating benchmark exceedances.
- Management practice survey results
- Graphs triggered by benchmark exceedances
- Table summarizing the benchmark exceedance evaluation
- Table combining the benchmark exceedance evaluation, applicable BMPs, and current BMP adoption rates to identify where additional implementation of specific BMPs is warranted. Per communications with Regional Board staff, a BMP is considered fully adopted at a 98% adoption rate. TMDL-specific BMPs specified in the Conditional Waiver are also identified.

The pesticide use evaluation assessment concludes this section of the WQMP.

Mugu Lagoon Responsibility Area

Figure 9. Mugu Lagoon Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Mugu Lagoon responsibility area are illustrated in Figure 9. TMDL monitoring sites and their designations for evaluating attainment of various TMDL LA benchmarks are as follows:

- 01T_ODD3_EDI is an Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity TMDL Assessment Site.[7]
- 04_WOOD is a CCW Salts TMDL Receiving Water Compliance Site
- 04D_WOOD is a CCW Salts TMDL Ag Land Use Site
- 01_BPT_14 is a CCW OC Pesticides and PCBs TMDL Receiving Water Compliance Site
- 01_RR_BR is a CCW Nitrogen, Toxicity, and Metals TMDL Receiving Water Compliance Site
- 01T_ODD2_DCH is a CCW Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

[7] In January 2016, the beacon site for this RA was moved from 01T_ODD3_ARN to a site upstream near Edison Drive (01T_ODD3_EDI) for the following reasons: (1) during storm events, the road to the ARN site floods periodically and becomes inaccessible; (2) sediment sampling, required for the Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity TMDL compliance, is extremely challenging due to the need for specialized equipment and limited access for deploying a boat in the channel; (3) sampling at the ARN site must be scheduled during low tide to minimize the tidal influence; and (4) flow cannot be measured.

Table 27. Mugu Lagoon Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site 01T_ODD3_EDI
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	10,167	711
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	0	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	9,986	711
Assessed Acres from Agricultural Parcel List belonging to Non Members	182	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	8,157	634
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.82	0.89
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	149	0
Total Estimated Irrigated Acres (Member plus Non Member)	8,306	634
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	98%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	6,221	634
Percent of Total Estimated Irrigated Acres that were Surveyed	75%	100%
Percent of VCAILG Member Irrigated Acres that were Surveyed	76%	100%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 28. Mugu Lagoon Responsibility Area Crop Types and General Production Practices

Crop or Practice	01T_ODD3_ARN (2018, 2018) 01T_ODD3_EDI (2020) Site Drainage Only						Mugu Lagoon Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	2,073	2,525	1,784	40%	34%	29%
Blueberries	-*	-	-	-*	-	-	289*	33	21	6%*	0.4%	0.3%
Raspberries		-	-		-	-		534	677		7%	11%
Row Crop	-	81	81	-	13%	13%	1,425	2,519	1,993	27%	34%	32%
Orchard	-	-	-	-	-	-	429	452	565	8%	6%	9%
Nursery	-	-	-	-	-	-	18	18	15	0.3%	0.2%	0.2%
Flowers	-	-	-	-	-	-	49	219	73	1%	3%	1%
Sod	553	553	553	100%	87%	87%	902	1,013	1,083	17%	14%	17%
Other	-	-	-	-	-	-	65	12	16	1%	0.2%	0.3%
Overhead Cover in Production Areas												
Hoop House	2	-	-	0.4%	-	-	1,229	631	787	23%	9%	13%
No Cover	708	81	81	128%	13%	13%	5,800	5,136	3,737	111%	70%	60%
Greenhouse	-	-	-	-	-	-	145	73	43	3%	1%	0.7%
Shade	-	-	-	-	-	-	54	8	12	1%	0.1%	0.2%
Other	-	-	-	-	-	-	2	11	-	-	0.2%	-
Surface Treatments in Production Areas												
Bare Soil	-	81	81	-	13%	13%	2,135	3,704	2,976	41%	51%	48%
Cover Crop	-	-	-	-	-	-	267	20	53	5%	0.3%	0.8%
Plastic	-	-	-	-	-	-	2,090	2,432	1,567	40%	33%	25%
Weed Cloth	-	-	-	-	-	-	75	33	16	1%	0.5%	0.3%
Mulch	-	-	-	-	-	-	290	252	563	6%	3%	9.0%
Gravel	-	-	-	-	-	-	-	-	2	-	-	0.03%
Other	-	553	553	-	87%	87%	86	976	1,202	2%	13%	19%
Irrigation Systems in Production Areas												
Drip Only	-	-	-	-	-	-	1,444	2,475	2,000	28%	34%	32%
Microsprinkler/Drip	-	-	-	-	-	-	859	1,253	889	16%	17%	14%
Microsprinkler	-	-	-	-	-	-	295	302	353	6%	4%	6%
Overhead Sprinkler	553	553	553	100%	87%	87%	935	1,114	1,154	18%	15%	19%
Overhead/Drip	-	81	81	-	13%	13%	1,980	2,130	1,737	38%	29%	28%

Crop or Practice	01T_ODD3_ARN (2018, 2018) 01T_ODD3_EDI (2020) Site Drainage Only						Mugu Lagoon Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Furrow Flood	-	-	-	-	-	-	52	41	93	1%	1%	1%
Hand Watering	-	-	-	-	-	-	9	9	1	0.2%	0.1%	0.02%
Other	-	-	-	-	-	-	-	-	-	-	-	-

* Value for 2017 is for Raspberries & Blueberries combined

Table 29. Mugu Lagoon Responsibility Area Grower BMPs

Survey Question	Units	01T_ODD3_ARN (2017-2018) or 01T_ODD3_EDI (2020) Site Drainage Only						Mugu Lagoon Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	553	634	634	100%	100%	100%	4,665	6,323	5,222	89%	88%	87%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	553	634	634	100%	100%	100%	3,795	5,364	4,549	72%	73%	73%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	553	553	553	100%	87%	87%	3,395	4,387	3,877	65%	63%	67%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	-	-	-	-	-	0%	2,016	3,558	2,879	38%	49%	46%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	-	-	-	-	-	0%	1,296	1,992	2,423	25%	27%	39%
Q5a: Are soil residual nitrate tests done?	Acres	553	634	634	100%	100%	100%	4,311	6,171	5,094	82%	84%	82%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	553	634	634	100%	100%	100%	4,311	6,171	5,094	82%	84%	82%
Q6: Are leaf/petiole tests conducted?	Acres	553	634	634	100%	100%	100%	4,497	6,022	4,900	86%	89%	87%
Q7a: Is nitrate measured in fertigation water?	Acres	553	574	574	100%	91%	91%	3,777	4,916	4,257	72%	78%	68%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	553	574	574	100%	91%	91%	3,777	4,916	4,257	72%	67%	68%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	-	-	-	N/A	N/A	N/A	2,077	2,920	2,007	70%	62%	68%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	-	-	-	N/A	N/A	N/A	298	530	319	6%	7%	5%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	-	-	-	N/A	N/A	N/A	343	570	319	100% [a]	100% [a]	100%
Q11. How much non-cropped area is bare soil?	Acres	27	77	77	5%	100%	100%	251	530	426	5%	46%	41%
Q12a: How many feet of ditches exist?	Feet	26,200	28,700	28,700	N/A	N/A	N/A	256,145	620,916	347,675	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	-	1,800	1,800	-	6%	6%	31,596	104,276	100,127	12%	17%	29%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	-	0%	212	523	299	4%	7%	5%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	0%	212	283	71	4%	4%	1%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	-	-	-	0%	300	326	154	6%	5%	2%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	553	634	634	100%	100%	100%	5,250	7,182	6,115	100%	98%	98%
Q16: Is an IPM Plan being implemented?	Acres	553	553	553	100%	87%	87%	5,116	7,136	5,924	97%	97%	95%
Q17a: How many acres are organically farmed?	Acres	-	-	-	-	-	0%	486	412	559	9%	6%	9%
Q17b: How many acres are conventionally farmed?	Acres	553	634	634	100%	100%	100%	4,764	5,978	5,668	91%	82%	91%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	553	553	553	100%	87%	87%	2,086	2,575	2,660	40%	35%	43%
Q19: Runoff from how many acres is treated or detained?	Acres	114	114	114	21%	18%	18%	831	961	681	16%	13%	11%

[a] Respondents aggregated answers to Q9 and Q10 lead to an illogical adoption rate >100%. 100% is reported in the table as a reasonable interpretation

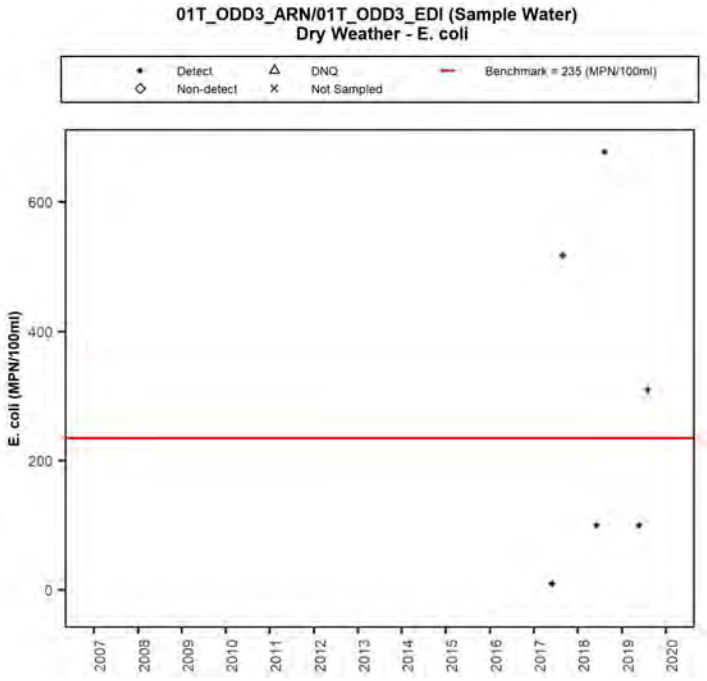


Figure 10. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

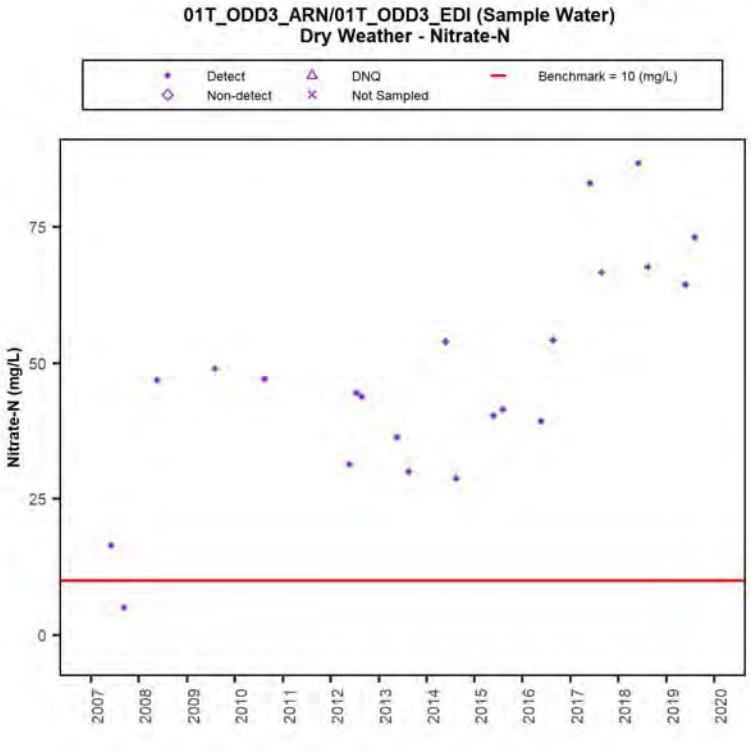


Figure 11. Dry Weather Nitrate Concentrations at Waiver Benchmark Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

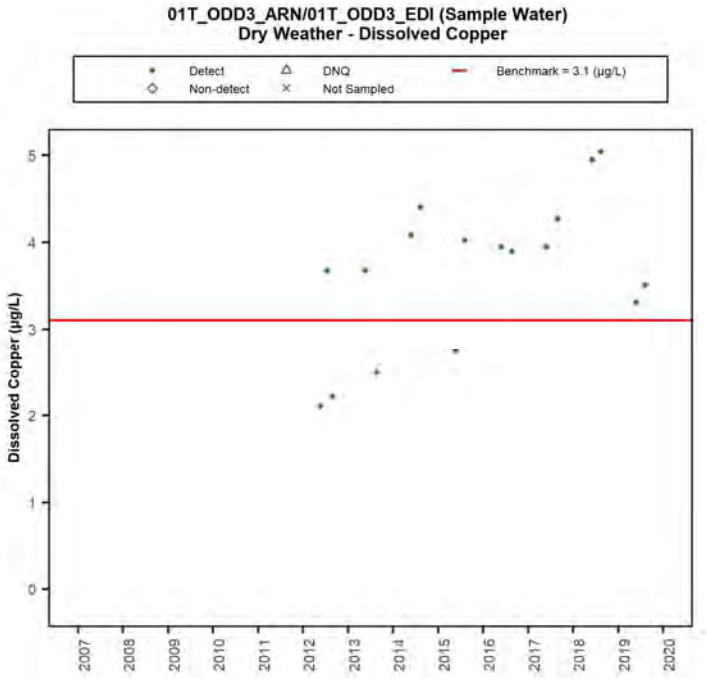


Figure 12. Dry Weather Dissolved Copper Concentrations at Waiver Benchmark Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

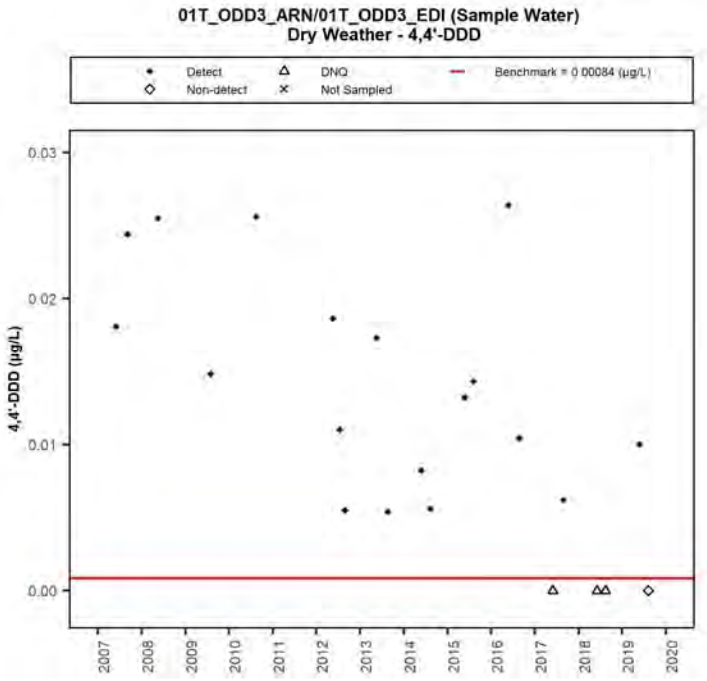


Figure 13. Dry Weather DDD Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

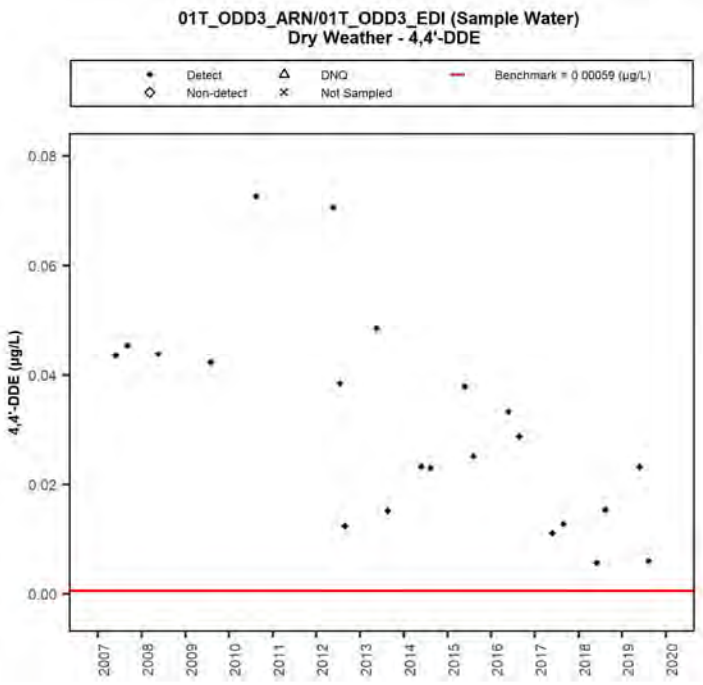


Figure 14. Dry Weather DDE Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

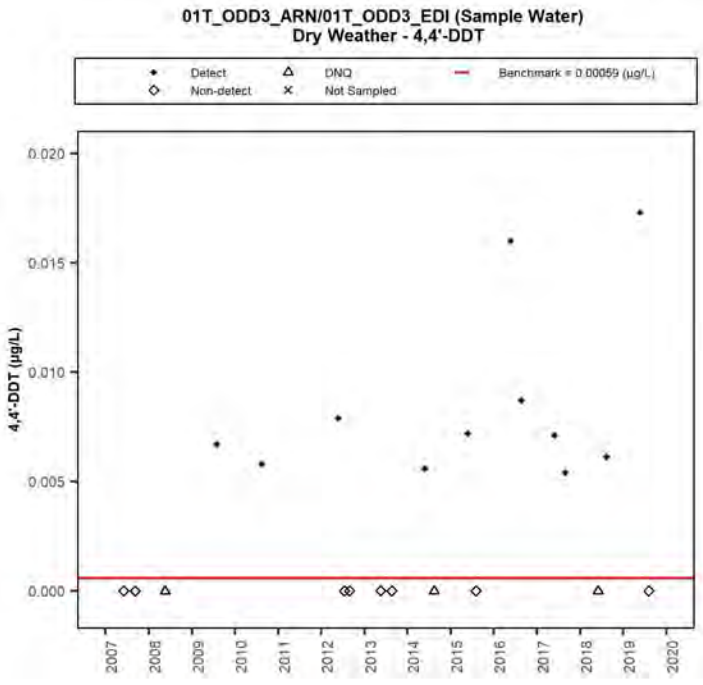


Figure 15. Dry Weather DDT Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

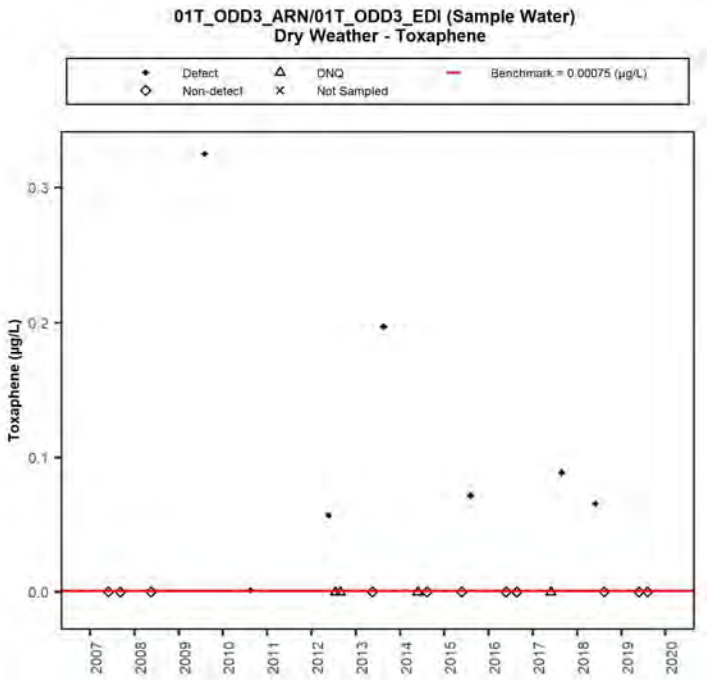


Figure 16. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

Table 30. Dry Weather Survival Toxicity Results during 2016 Waiver Period at Waiver Benchmark Site 01T_ODD3_EDI

Dry Weather Survival Toxicity - 01T_ODD3_EDI	
# of Events with Significant Mortality	1
# of Events with No Significant Mortality	2

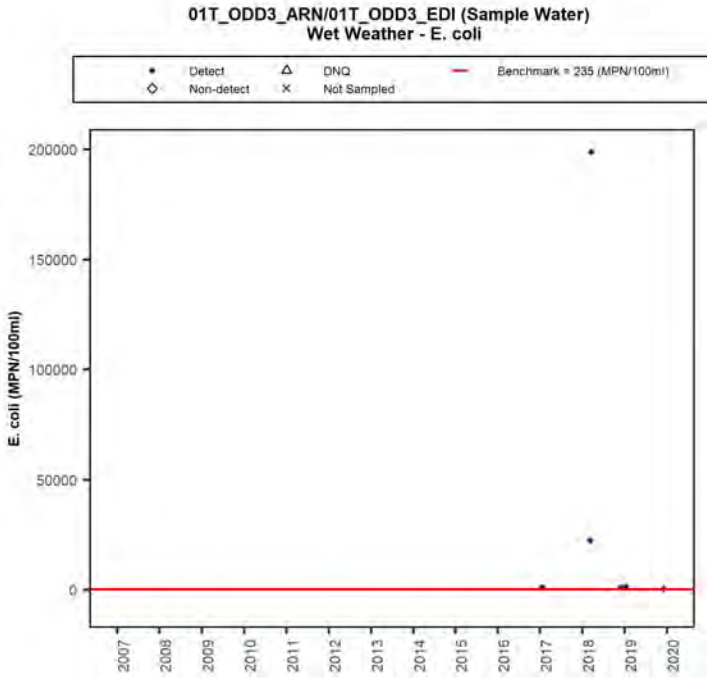


Figure 17. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

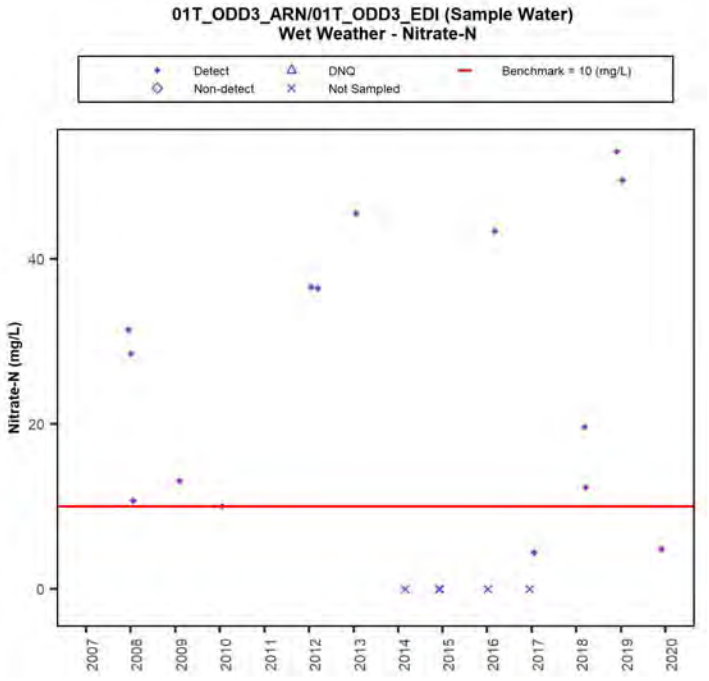


Figure 18. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

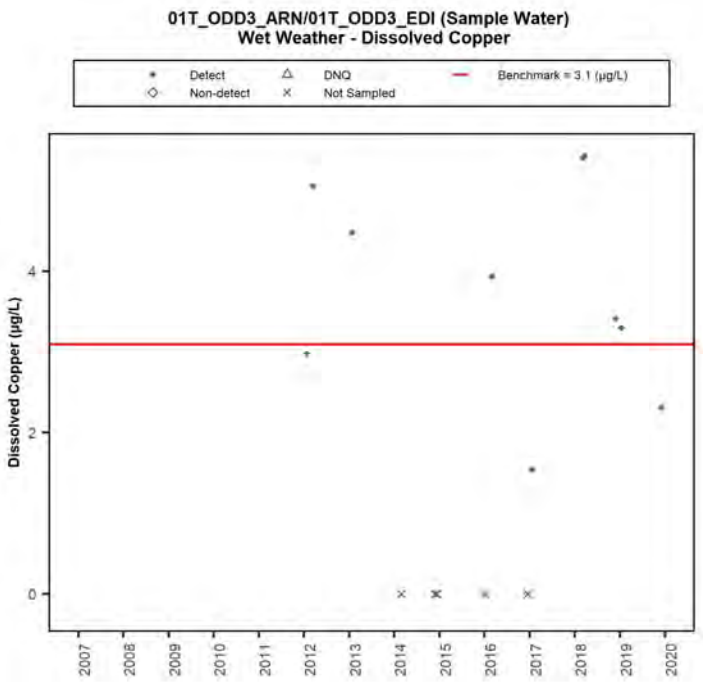


Figure 19. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

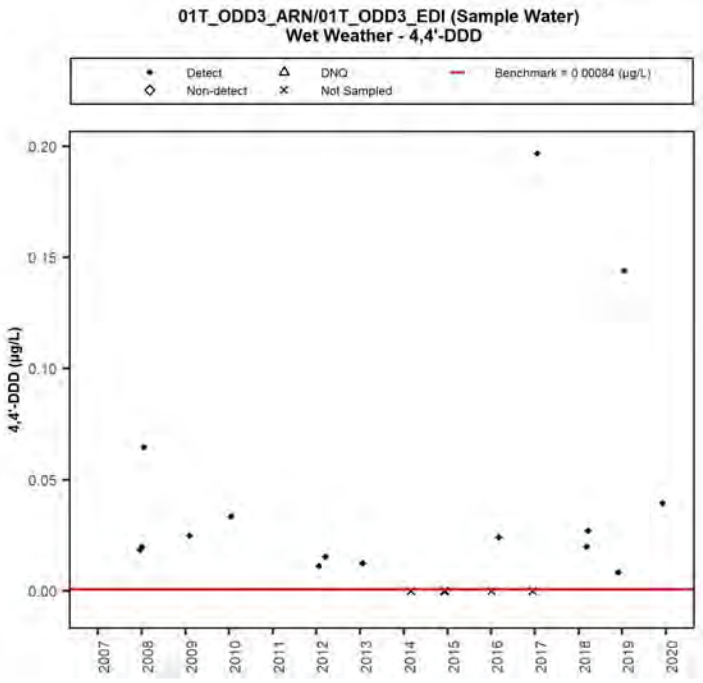


Figure 20. Wet Weather DDD Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

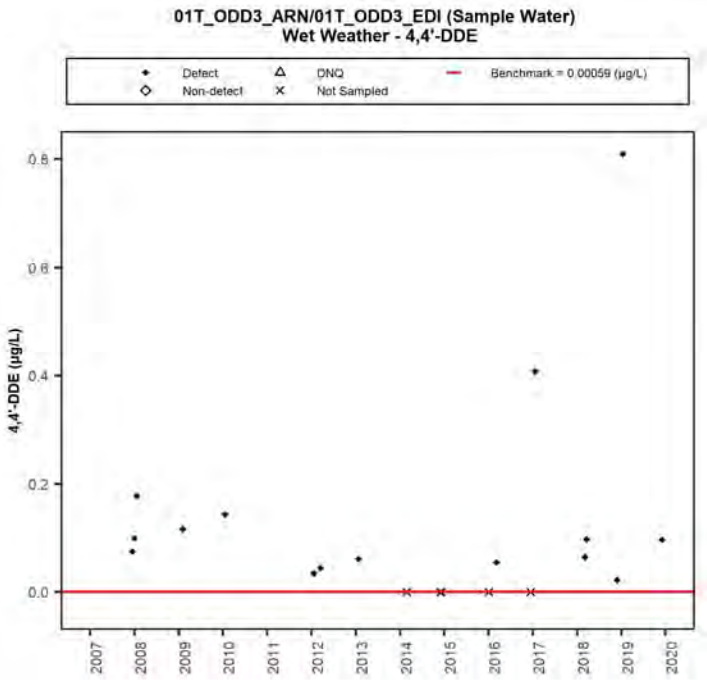


Figure 21. Wet Weather DDE Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

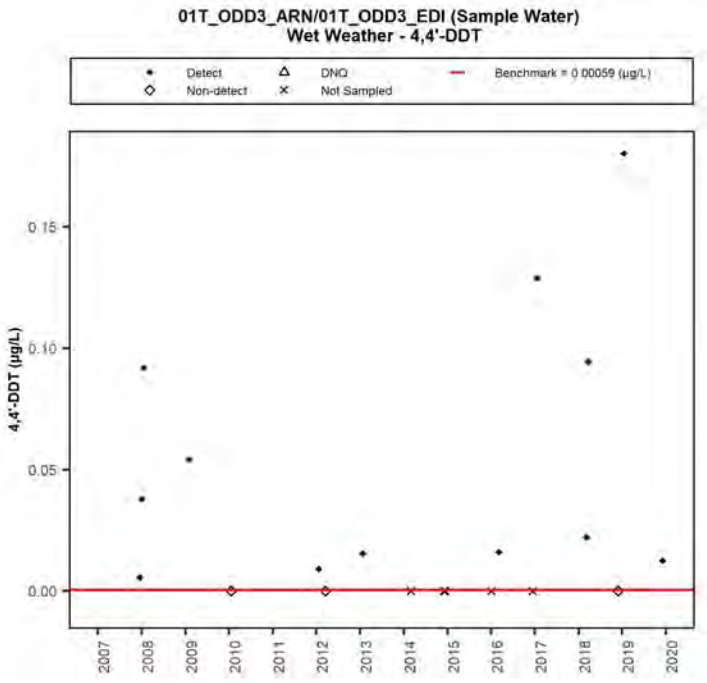


Figure 22. Wet Weather DDT Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

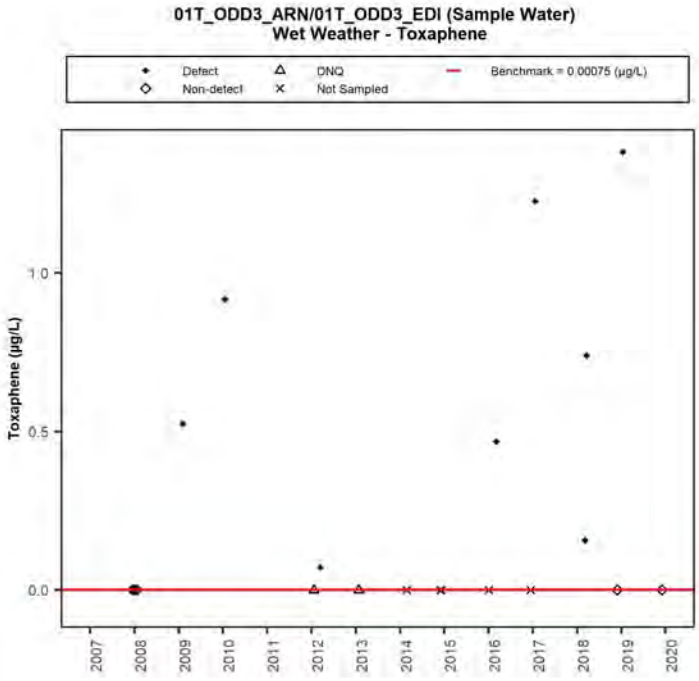


Figure 23. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

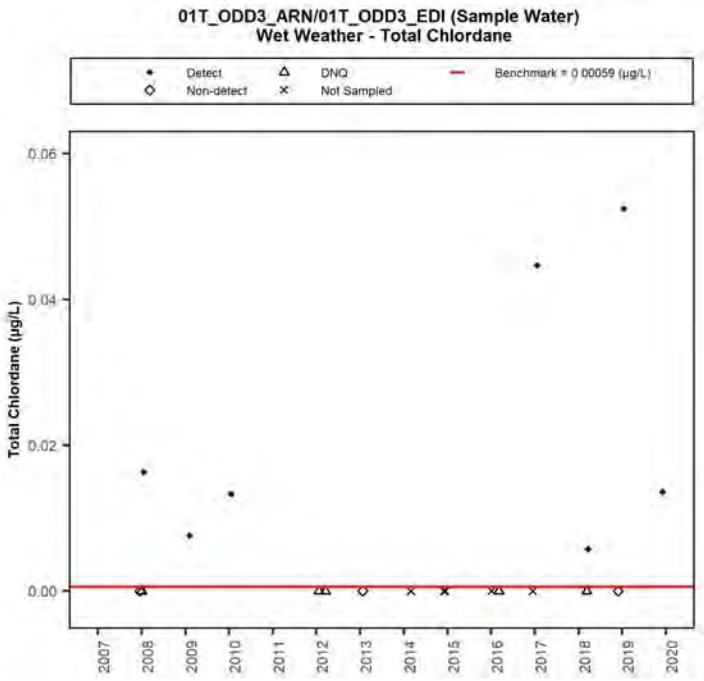


Figure 24. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

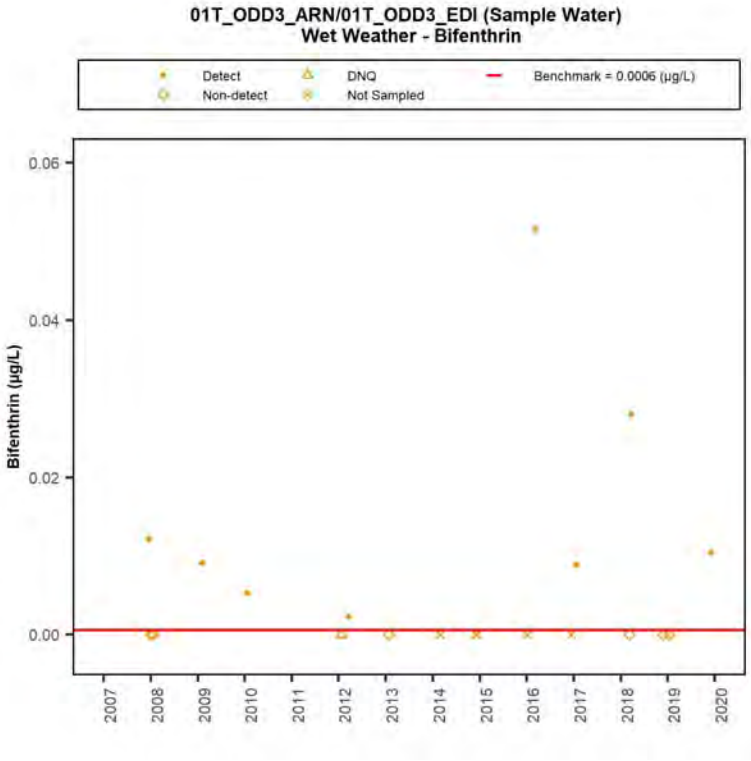


Figure 25. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

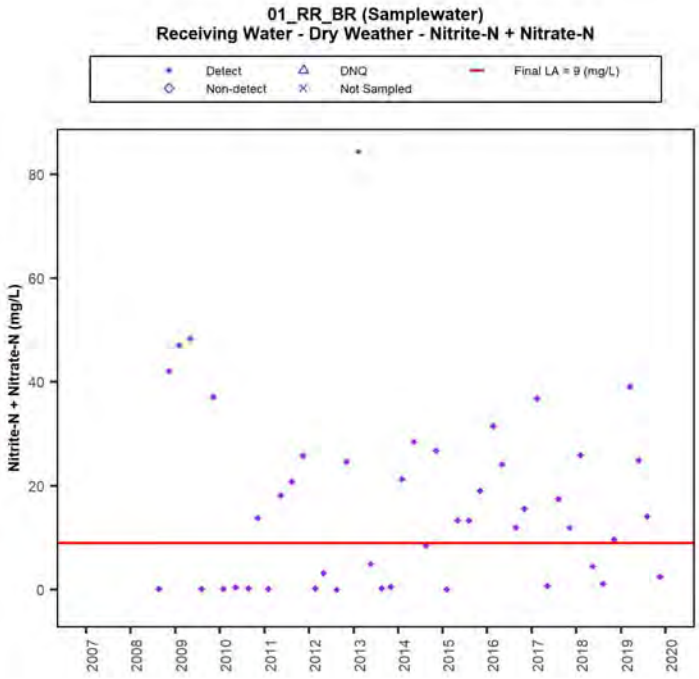


Figure 26. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 01_RR_BR

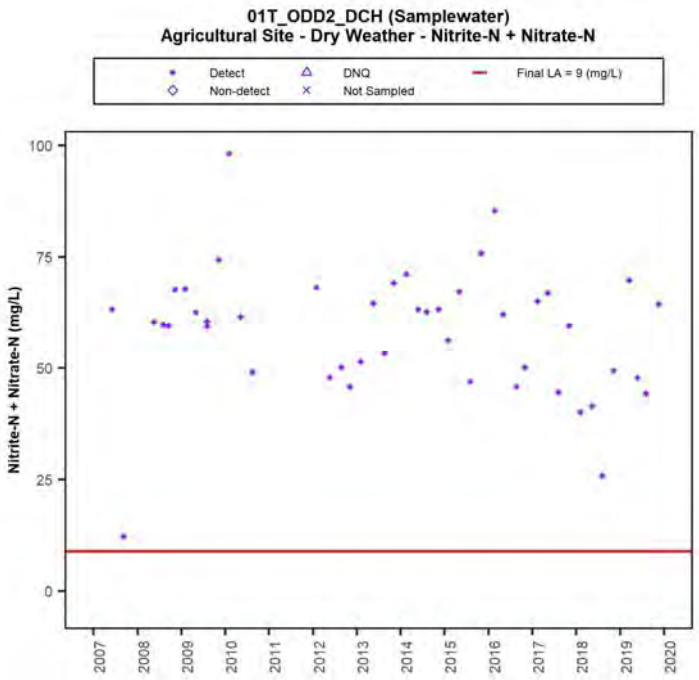


Figure 27. Dry Weather Nitrate-N + Nitrate-N Concentrations at TMDL Ag Land Use Site 01T_ODD2_DCH

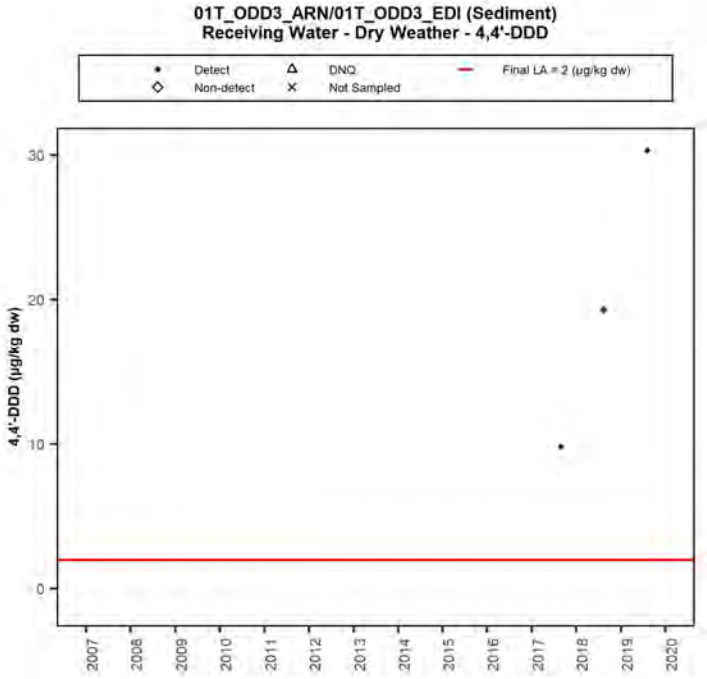


Figure 28. Dry Weather DDD Concentrations at TMDL LA Site 01T_ODD3_EDI

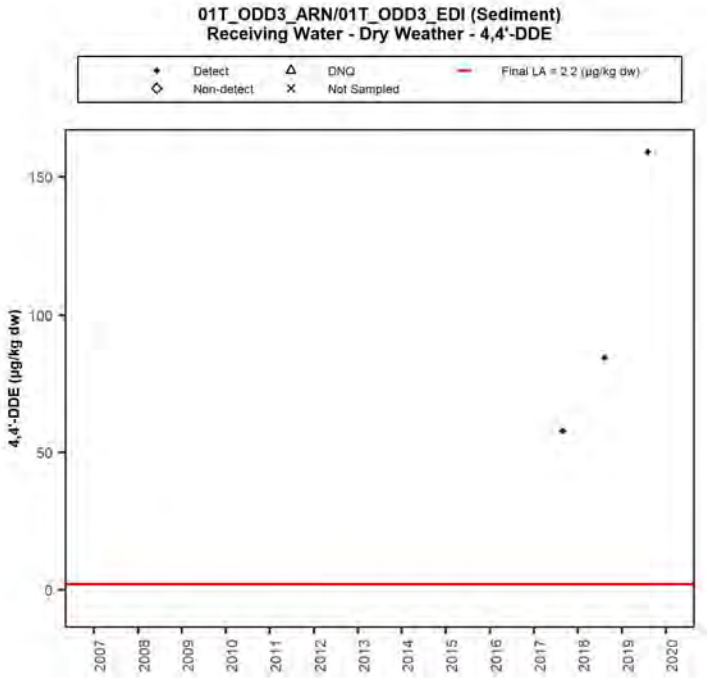


Figure 29. Dry Weather DDE Concentrations at TMDL LA Site 01T_ODD3_EDI

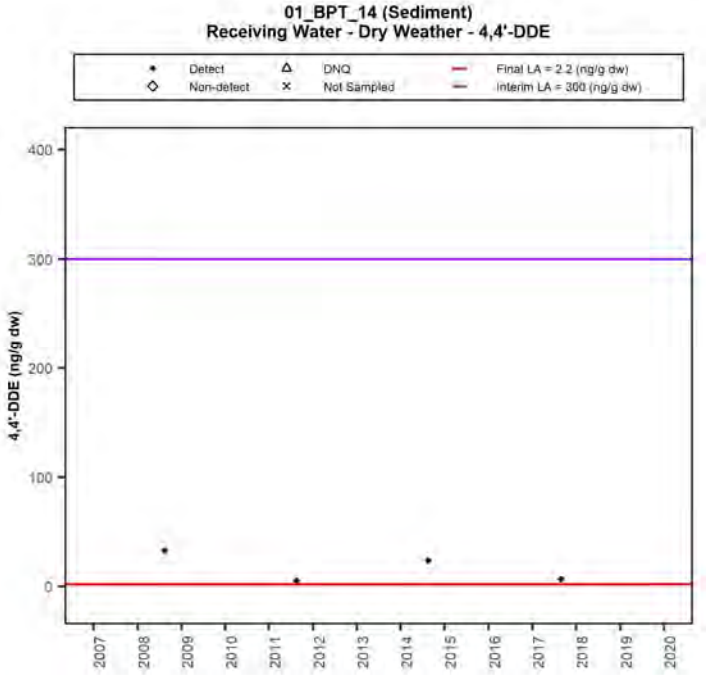


Figure 30. Dry Weather DDE Concentrations at TMDL LA Site 01_BPT_14

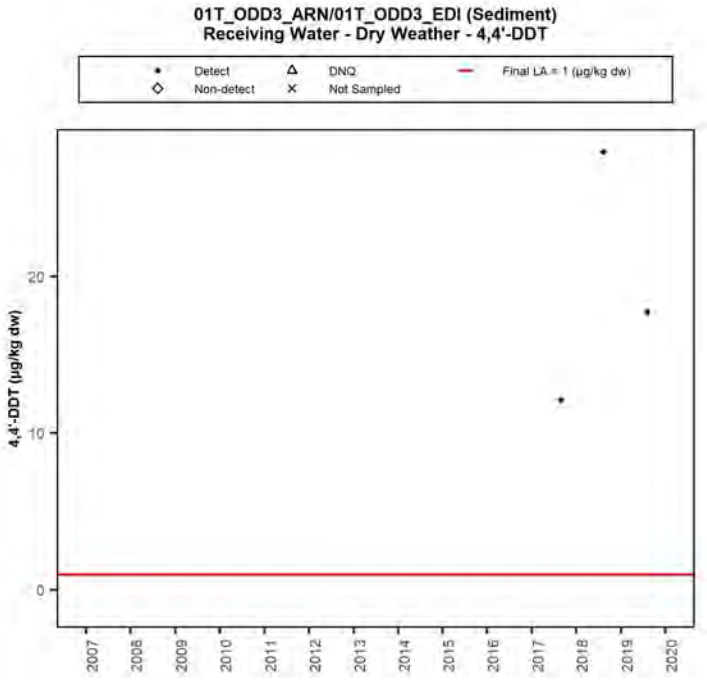


Figure 31. Dry Weather DDT Concentrations at TMDL LA Site 01T_ODD3_EDI

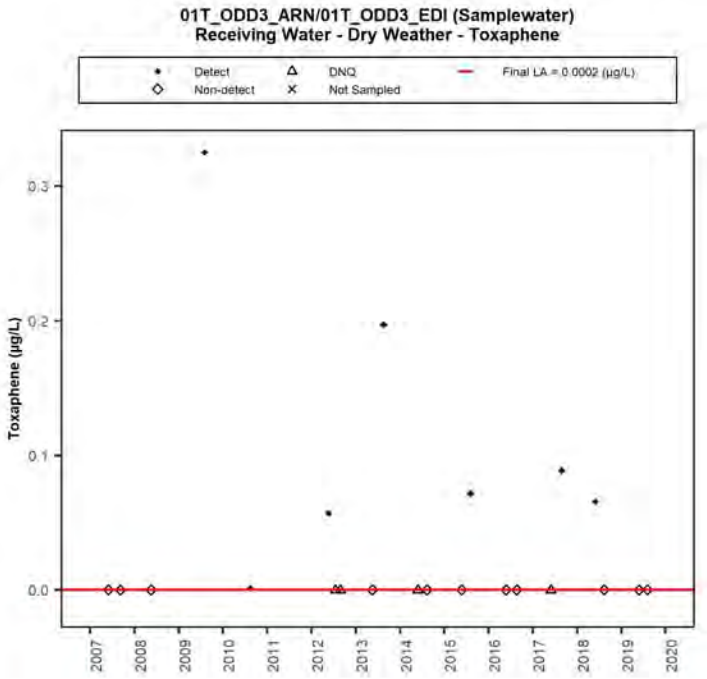


Figure 32. Dry Weather Toxaphene Concentrations at TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

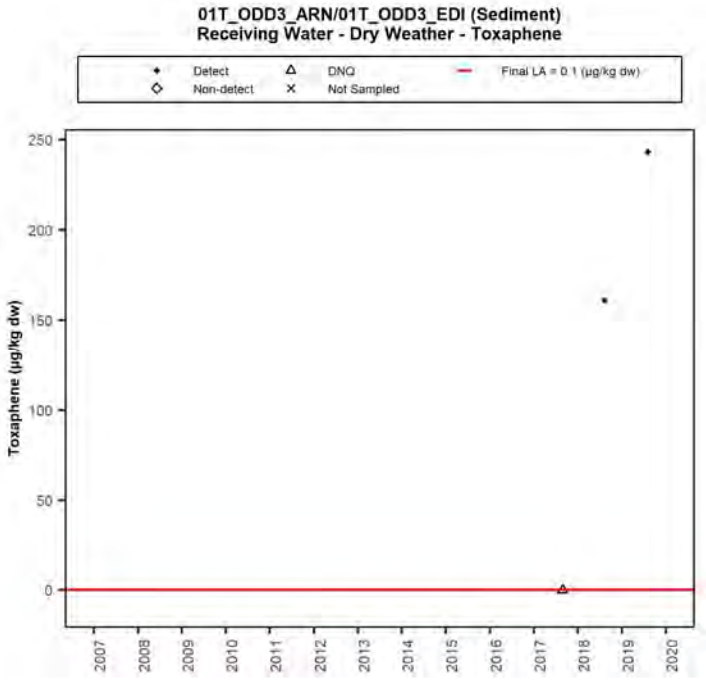


Figure 33. Dry Weather Toxaphene Concentrations at TMDL LA Site 01T_ODD3_EDI

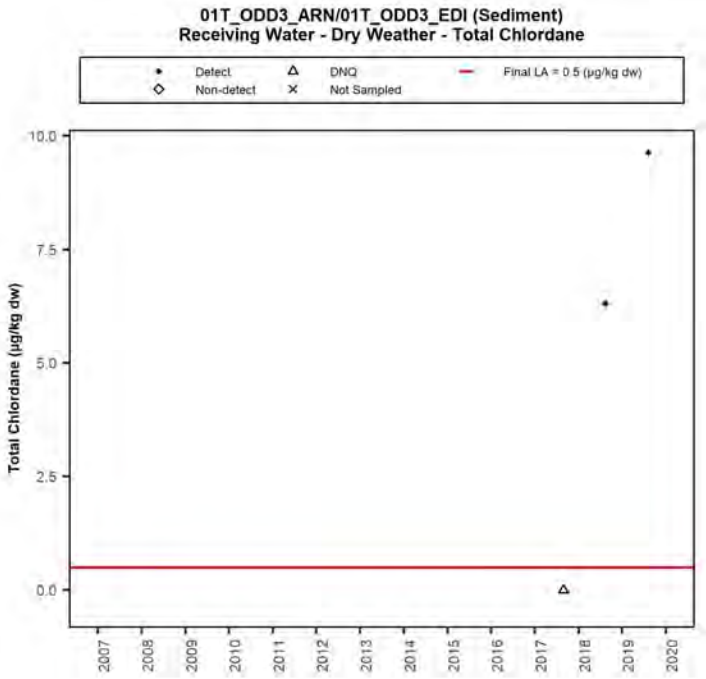


Figure 34. Dry Weather Total Chlordane Concentrations at TMDL LA Site 01T_ODD3_EDI

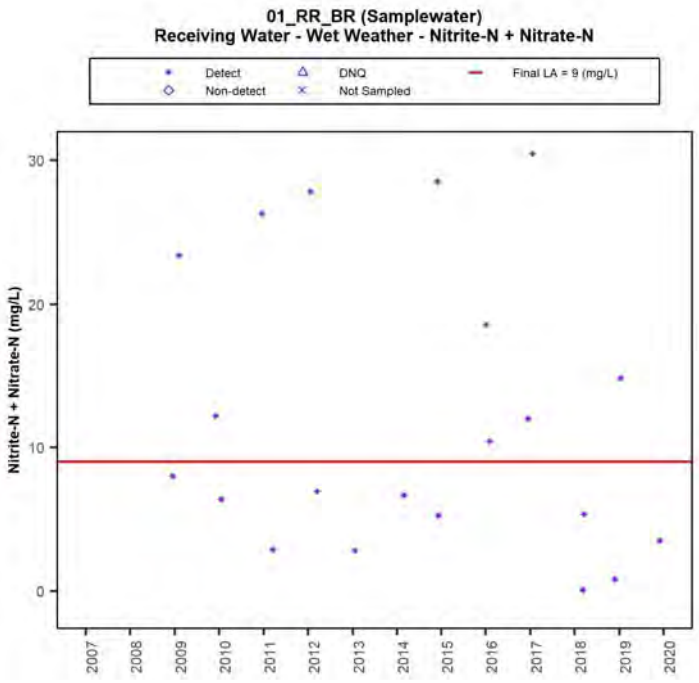


Figure 35. Wet Weather Nitrate-N + Nitrate-N Concentrations at TMDL LA Site 01_RR_BR

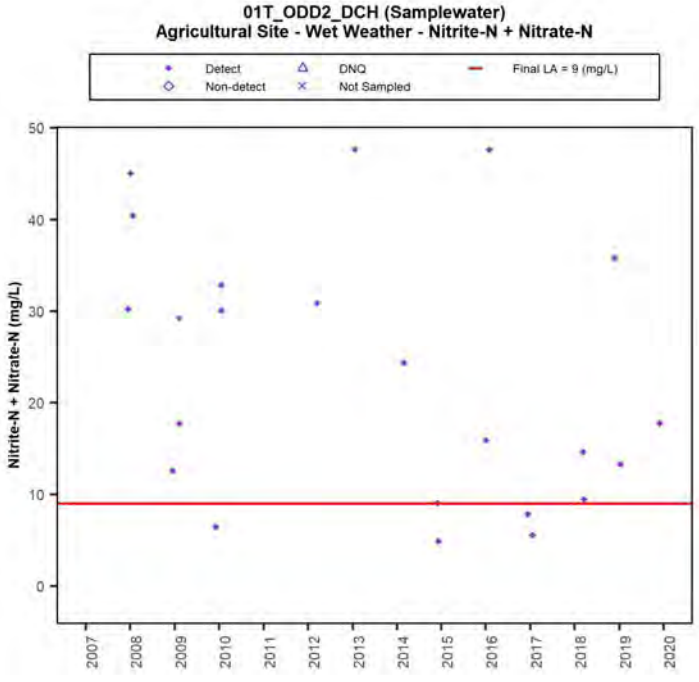


Figure 36. Wet Weather Nitrate-N + Nitrate-N Concentrations at TMDL Ag Land Use Site 01T_ODD2_DCH

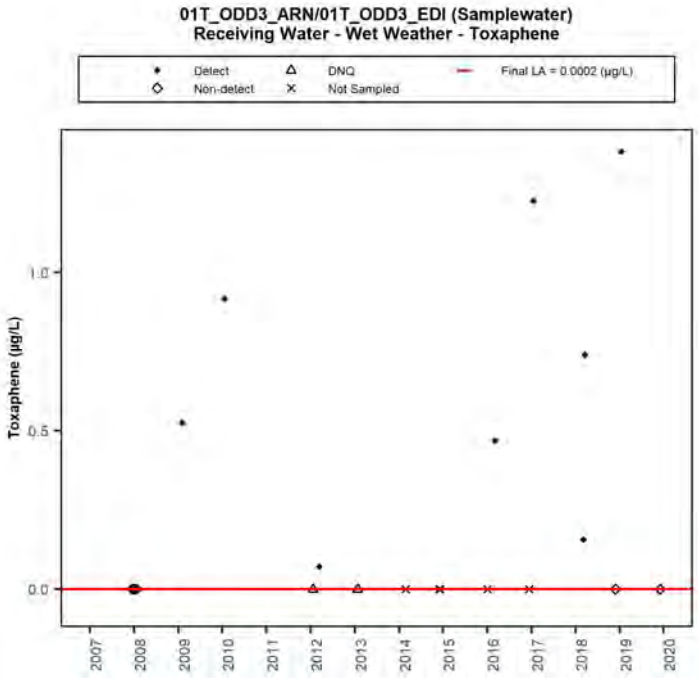


Figure 37. Wet Weather Toxaphene Concentrations at TMDL LA Site 01T_ODD3_ARN (through 2015) and 01T_ODD3_EDI (2016 onward)

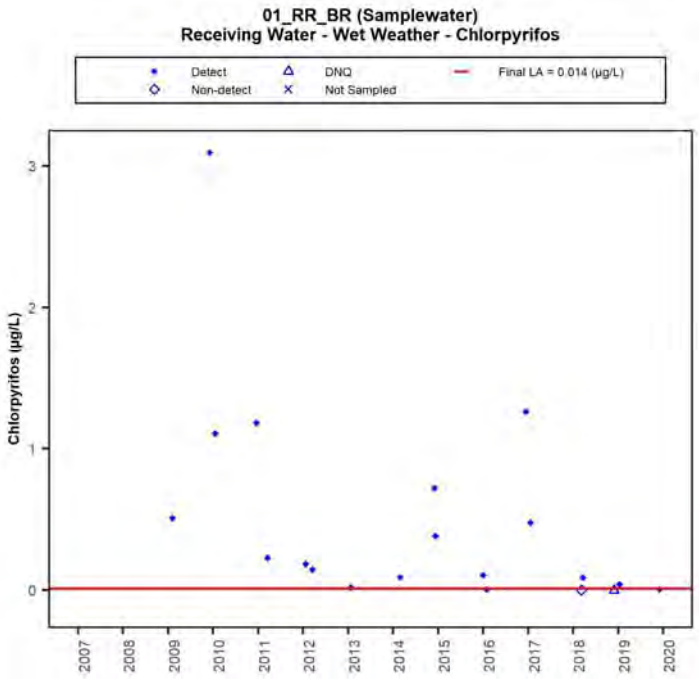


Figure 38. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 01_RR_BR

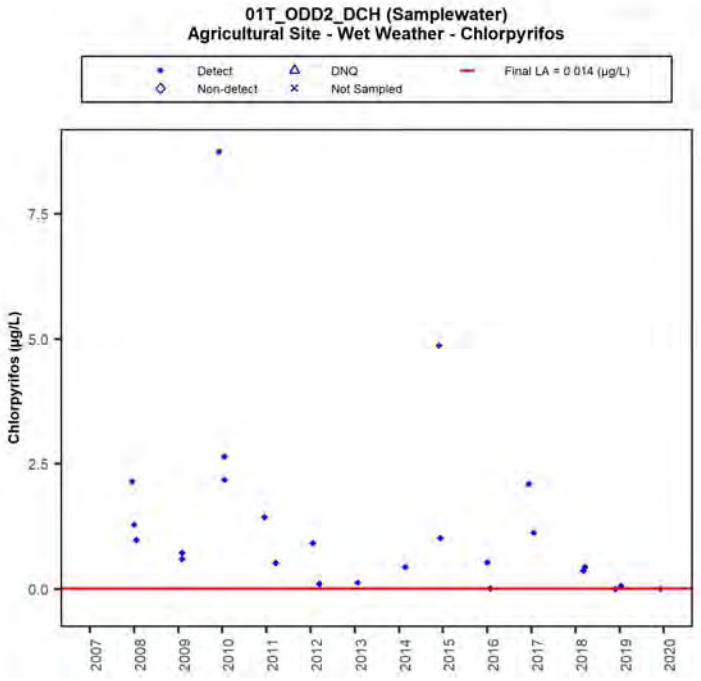


Figure 39. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 01T_ODD2_DCH

Table 31. Summary of Benchmark Exceedance Evaluation for Mugu Lagoon Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances[1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances[1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
E. coli	●			☑	●			☑
Salts								
Boron		● [2]		[3]				
Nutrients								
Nitrate-N	●			☑	●			☑
Nitrate-N + Nitrite-N		● [4]	● [5]	☑		● [4]	● [5]	☑
Metals and Selenium								
Dissolved Copper	●			☑	●			☑
OC Pesticides (Legacy)								
DDD	●	● [6, 7]		☑	●	● [6]		☑
DDE	●	● [6, 7, 8]		☑	●	● [6]		☑
DDT	●	● [6, 7]		☑	●	● [6]		☑
Toxaphene	●	● [6. 7]		☑	●	● [6]		☑
Chlordane		● [6, 9]		☑	●	● [6]		☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos						● [4]	● [5]	☑
Bifenthrin					●	● [6]		☑
Chronic Toxicity								
Survival Toxicity	● [10]			☑				

1. VCAILG monitoring site for Waiver benchmark exceedances is 01T_ODD3_EDI.
2. CCW Salts TMDL receiving water site is 04_WOOD
3. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
4. CCW Nitrogen, Toxicity, and Metals TMDL receiving water site is 01_RR_BR.
5. Agricultural land use site for the Nitrogen, Toxicity, and Metals TMDLs is 01T_ODD2_DCH.
6. Oxnard Drain #3 TMDL LAs were compared to data from 01T_ODD3_EDI. LAs for Bifenthrin, DDD, DDE, and DDT are equivalent to the Waiver benchmarks. The LAs for toxaphene and chlorpyrifos are lower than the Waiver benchmarks.
7. Exceedances of Oxnard Drain #3 TMDL LAs were observed for sediment and water.
8. CCW OC Pesticides TMDL receiving water site is 01_BPT_14. TMDL compliance is measured in sediment in receiving water and this location is downstream of the responsibility area discharges. Though sediment is collected during dry weather, the results are applied to both wet and dry weather to ensure management practices minimize sediment transport year-round.
9. Exceedances of Oxnard Drain #3 TMDL LAs were only observed in sediment.
10. Single species exceedances for *Hyalella azteca*.

Table 32. BMPs for Additional Implementation in the Mugu Lagoon Responsibility Area

Exceedance Condition												% of Total Applicable Surveyed Units		
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Pesticides	Toxicity			01T_ODD3_EDI Site Drainage Only	Mugu Lagoon Responsibility Area	Additional Implementation of Pertinent BMP Needed?
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet	Dry	Survey Responses				
		x	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	87%	55%	Yes
x		x		x		x			x	Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	0%	53%	Yes
		x		x		x			x	1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	100%	87%	Yes
		x		x					x	2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	100%	73%	Yes
		x							x	3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	87%	67%	Yes
		x	x						x	4b	Certified nutrient management plan has been prepared for the property	0%	39%	Yes
		x	x						x	5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	100%	82%	Yes
		x	x						x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	87%	Yes
		x	x						x	7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	91%	68%	Yes
		x	x						x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	N/A	68%	Yes
		x	x	x	x	x	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	N/A [a]	100%	No
			x		x		x	x		11	How much non-cropped area is bare soil?	100%	41%	Yes
x	x	x	x	x	x	x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	6%	29%	Yes
x	x	x	x	x	x	x	x	x	x	13a	Grassed waterways are used	0%	5%	Yes
x	x	x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	0%	2%	Yes
								x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	98%	No
								x	x	16	An integrated pest management plan is implemented	87%	95%	Yes
x		x		x		x			x	18	How many acres produce irrigation runoff?	87%	43%	Yes
x	x	x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	18%	11%	Yes

[a] Zero acres reported as sloped within the surveyed site drainage.

Table 33. Proposed Best Management Practices for the Mugu Lagoon Responsibility Area

Water Quality Issues											
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	BMPs	
										Source Control BMPs	
		x	x	x	x	x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.	
x		x		x		x			x	Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)	
		x		x		x			x	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	
		x		x					x	Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration	
		x							x	Use soil solution electrical conductivity measurements to determine when salt leaching is necessary	
		x	x						x	Prepare a certified nutrient management plan for the property	
		x	x						x	Conduct soil residual nitrate tests and use results to adjust fertilizer application	
		x	x						x	Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer	
		x	x						x	Analyze irrigation water nitrate and use results	

Water Quality Issues											
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	BMPs	
										to adjust fertilizer application	
		x	x						x	Adjust fertilizer application to account for nutrients provided by cover crops	
		x	x	x	x	x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	
			x		x		x	x		Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel	
								x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions	
								x	x	Implement an integrated pest management plan	
x		x		x		x			x	Avoid/prevent irrigation runoff	
										Non-Structural Treatment BMPs	
x	x	x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	
x	x	x	x	x	x	x	x	x	x	Use grassed waterways	
x	x	x	x	x	x	x	x	x	x	Use vegetated filter strips	
										Optional Treatment BMPs	
x	x	x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	

Etting-Wood Responsibility Area

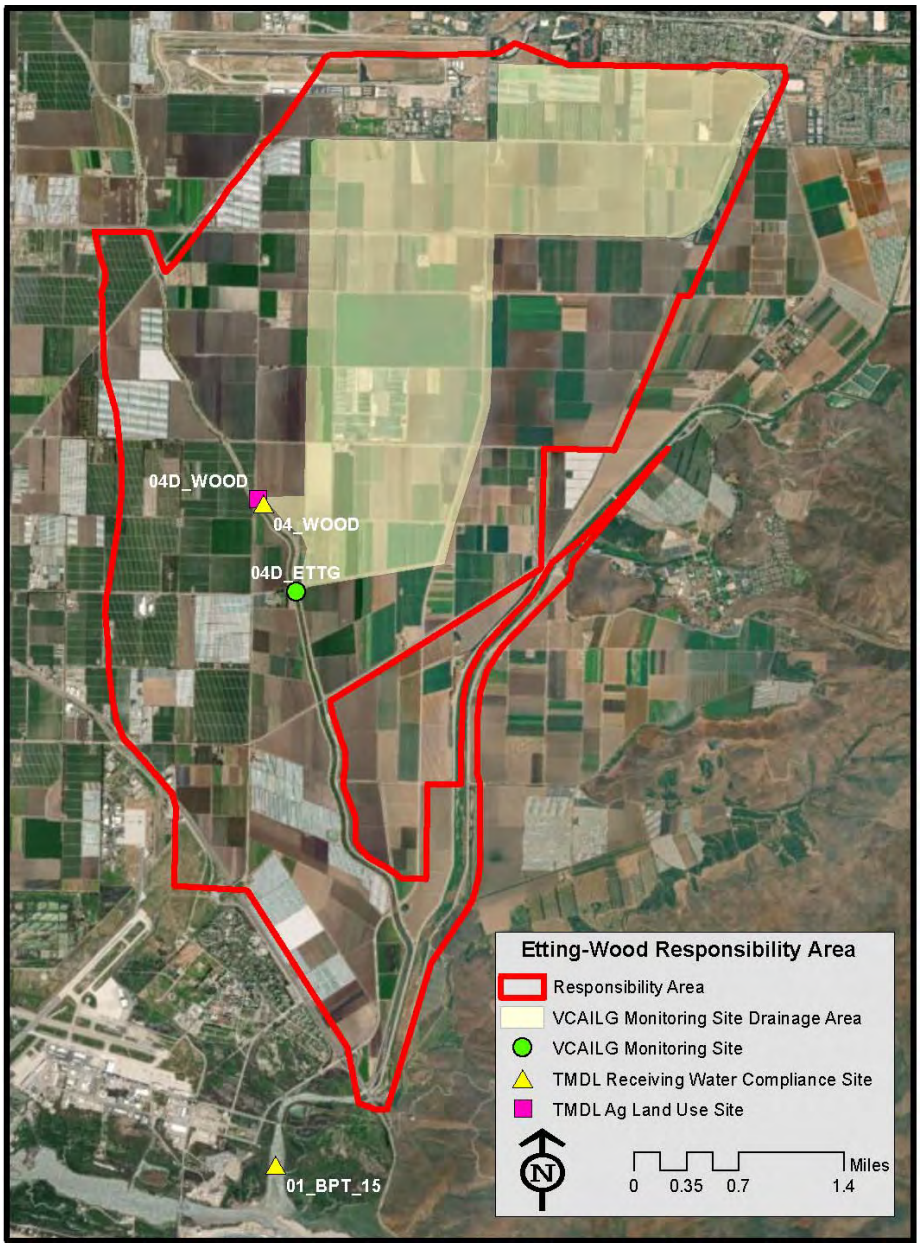


Figure 40. Etting-Wood Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Etting-Wood responsibility area are illustrated in Figure 40. The monitoring sites that serve to evaluate TMDL LA benchmark attainment are as follows:

- 01_BPT_15 is a CCW OC Pesticides and PCBs TMDL Receiving Water Compliance Site
- 04_WOOD is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Receiving Water Compliance Site

- 04D_WOOD is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 34. Etting-Wood Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site 04D_ETTG
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	9,095	3,250
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	1.8	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	8,994	3,249
Assessed Acres from Agricultural Parcel List belonging to Non Members	101	1
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	8,228	3,035
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.91	0.93
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	92	1
Total Estimated Irrigated Acres (Member plus Non Member)	8,320	3,036
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	99%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	7,180	2,674
Percent of Total Estimated Irrigated Acres that were Surveyed	86%	88%
Percent of VCAILG Member Irrigated Acres that were Surveyed	87%	88%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 35. Etting-Wood Responsibility Area Crop Types and General Production Practices

Crop or Practice	04D_ETTG Site Drainage Only						Etting-Wood Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	251		100	13%	-	4%	515	782	790	11%	12.1%	11%
Blueberries	-*		-	-*	-	-	275*	-	-	6%*	-	-
Raspberries		126	363		5%	14%		819	1,095		12.7%	15%
Row Crop	1,353	1,980	1,963	72%	81%	73%	3,600	4,415	4,841	75%	68.2%	67%
Orchard	144	192	237	8%	8%	9%	213	267	399	5%	4.1%	6%
Nursery	132	142	10	7.0%	6%	-	140	152	20	3%	2.3%	0.3
Flower	-	-	-	-	-	-	35	35	35	1%	0.5%	0.5
Sod	-	-	-	-	-	-	-	-	-	-	-	-
Other	2	2	1	0.1%	0.1%	0.04%	2	2	1	-	0.02%	0.01%
Overhead Cover in Production Areas												
Hoop House	-	126	363	-	5%	14%	15	851	1,127	0.3%	13.2%	15.7%
No Cover	219	1,938	2,022	12%	79%	76%	337	5,156	5,591	7%	79.7%	77.9%
Greenhouse	-	143	11	-	6%	0.4%	-	152	20	-	2.4%	0.3%
Shade	-	-	-	-	-	-	-	2	2	-	0.03%	0.03%
Other	-	41	41	-	2%	2%	-	41	41	-	0.6%	0.6%
Surface Treatments in Production Areas												
Bare Soil	1,106	2,308	2,281	59%	95%	85.3%	3,738	5,506	5,912	78%	85.1%	82.3%
Cover Crop	351	50	-	19%	2%	-	352	50	62	7%	0.8%	0.9%
Plastic	262	132	1	14%	5%	0.03%	595	805	582	13%	12.4%	8.1%
Weed Cloth	-	-	-	-	-	-	-	-	-	-	-	-
Mulch	-	-	100	-	-	3.7%	40	91	154	1%	1.4%	2.1%
Gravel	-	-	-	-	-	-	-	-	-	-	-	-
Other	295	-	292	16%	-	10.9%	296	67	472	6	1.0%	6.6%
Irrigation Systems in Production Areas												
Drip Only	1,221	1,385	1,803	65%	57%	67.4%	2,581	2,760	3,527	54%	42.7%	49.1%
Microsprinkler/Drip	198	-	100	11%	-	3.7%	307	74	157	6%	1.1%	2.2%
Microsprinkler	114	155	155	6%	6%	5.8%	184	230	243	4%	3.6%	3.4%
Overhead Sprinkler	122	5	33	6%	0.2%	1.2%	302	202	230	6%	3.1%	3.2%
Overhead/Drip	279	895	582	15%	37%	21.8%	1,560	3,196	2,936	33%	49.4%	40.9%

Crop or Practice	04D_ETTG Site Drainage Only						Etting-Wood Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Furrow Flood	-	-	-	-	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	7	-	87	0.1%	-	1.2%

* Value for 2017 is for Raspberries & Blueberries combined

Table 38. Etting-Wood Responsibility Area Grower BMPs

Survey Question	Units	04D_ETTG Site Drainage Only						Etting-Wood Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	1,396	1,642	1,820	74%	68%	69%	3,525	5,092	5,766	76%	81%	82%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	1,212	1,814	2,083	64%	74%	78%	2,687	4,381	5,518	56%	68%	77%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	460	418	1,043	26%	19%	40%	1,471	1,783	2,501	32%	28%	36%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	688	651	587	37%	27%	22%	1,880	2,664	3,476	39%	41%	48%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	661	132	144	35%	5%	5%	1,819	1,889	2,392	38%	29%	33%
Q5a: Are soil residual nitrate tests done?	Acres	991	2,253	2,485	53%	92%	93%	3,214	4,872	6,205	67%	75%	86%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	963	2,225	2,485	51%	91%	93%	3,187	4,845	6,205	67%	75%	86%
Q6: Are leaf/petiole tests conducted?	Acres	1,243	1,908	2,365	66%	83%	93%	3,399	4,881	5,876	71%	81%	88%
Q7a: Is nitrate measured in fertigation water?	Acres	617	1,453	1,654	33%	60%	62%	1,487	3,572	4,468	31%	55%	62%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	617	1,453	1,654	33%	60%	62%	1,380	3,347	4,243	29%	52%	59%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	581	1,019	1,056	46%	67%	72%	1,369	2,131	2,085	51%	63%	66%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	-	83	83	-	3%	3%	-	123	83	-	2%	1%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	71	83	83	-	100%	100%	230	502	83	[a]	100% [b]	100%
Q11. How much non-cropped area is bare soil?	Acres	84	101	98	4%	65%	57%	232	409	384	5%	68%	65%
Q12a: How many feet of ditches exist?	Feet	61,342	82,927	86,177	N/A	N/A	N/A	180,985	226,298	250,965	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	1,850	41,935	40,285	3%	51%	47%	40,804	106,248	104,698	23%	47%	42%
Q13a: Are grassed waterways present?	Acres	132	132	-	7%	5%	-	132	227	95	3%	4%	1%
Q13b: How many acres drain to grassed waterways?	Acres	5	5	-	0.3%	0.2%	-	5	100	95	0.1%	2%	1%
Q14: How many acres are treated by vegetated filter strips?	Acres	2	3	1	0.1%	0.1%	0.04%	2	3	1	-	0.04%	-
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	1,881	2,442	2,674	100%	100%	100%	4,779	6,470	7,124	100%	100%	99%
Q16: Is an IPM Plan being implemented?	Acres	1,881	2,242	2,524	100%	94%	94%	4,744	6,080	6,734	99%	94%	94%

Survey Question	Units	04D_ETTG Site Drainage Only						Etting-Wood Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q17a: How many acres are organically farmed?	Acres	42	374	293	2%	15%	11%	175	660	626	4%	10%	9%
Q17b: How many acres are conventionally farmed?	Acres	1,840	2,052	2,381	98%	84%	89%	4,604	5,556	6,555	96%	86%	91%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	525	705	520	28%	29%	19%	1,400	2,434	2,170	29%	38%	30%
Q19: Runoff from how many acres is treated or detained?	Acres	493	422	262	26%	18%	10%	572	501	342	12%	8%	5%

[a] Percent not available because respondents reported no sloped acreage, creating a denominator of zero.
[b] Respondents answers to Q9 and Q10 lead to an illogical adoption rate >100%. 100% is reported in the table as a reasonable interpretation.

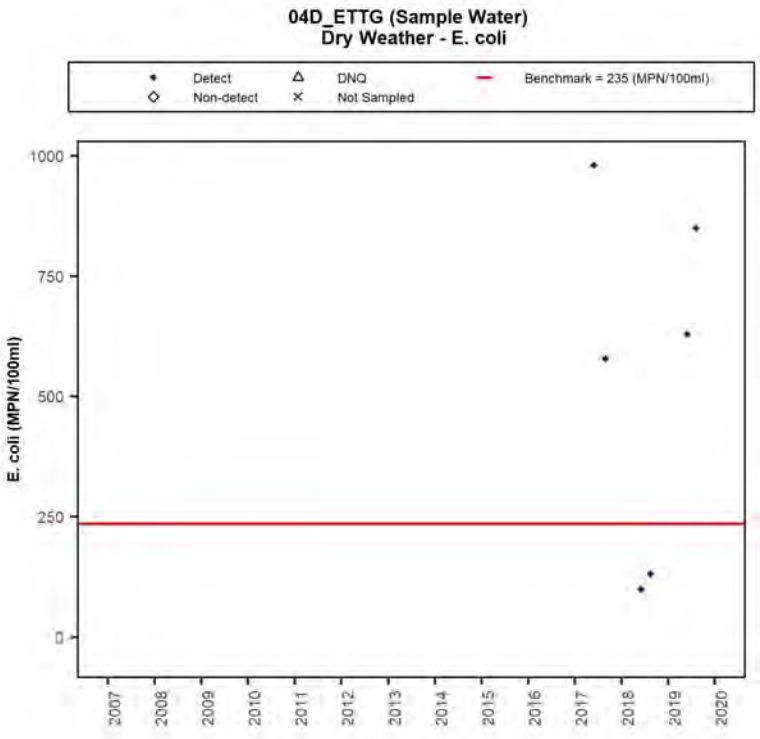


Figure 41. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_ETTG

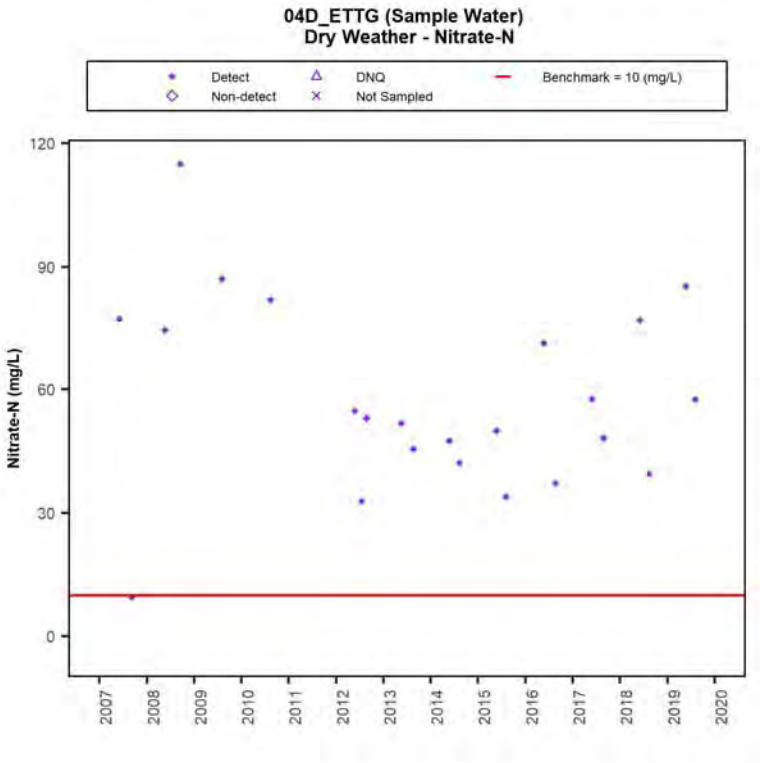


Figure 42. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_ETTG

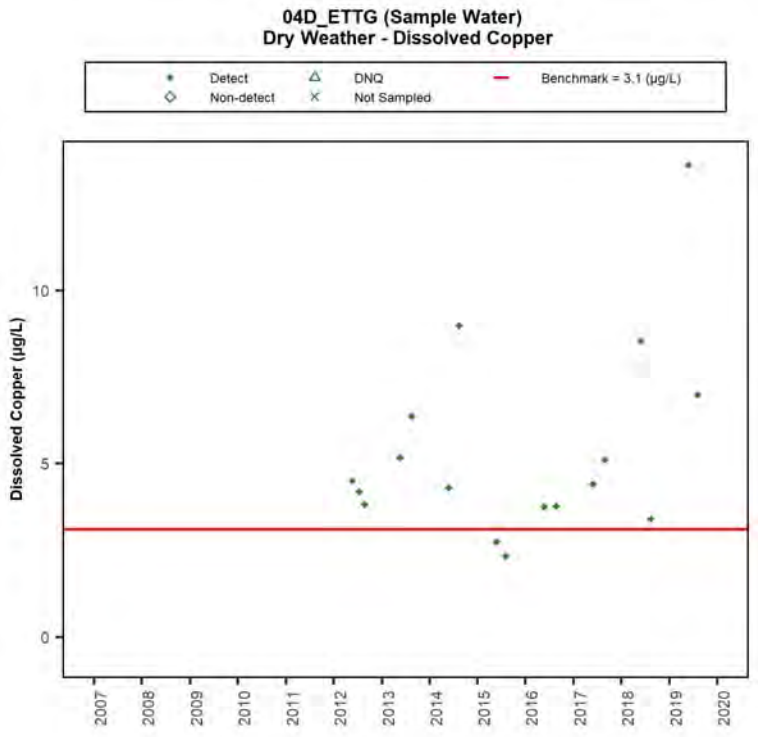


Figure 43. Dry Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_ETTG

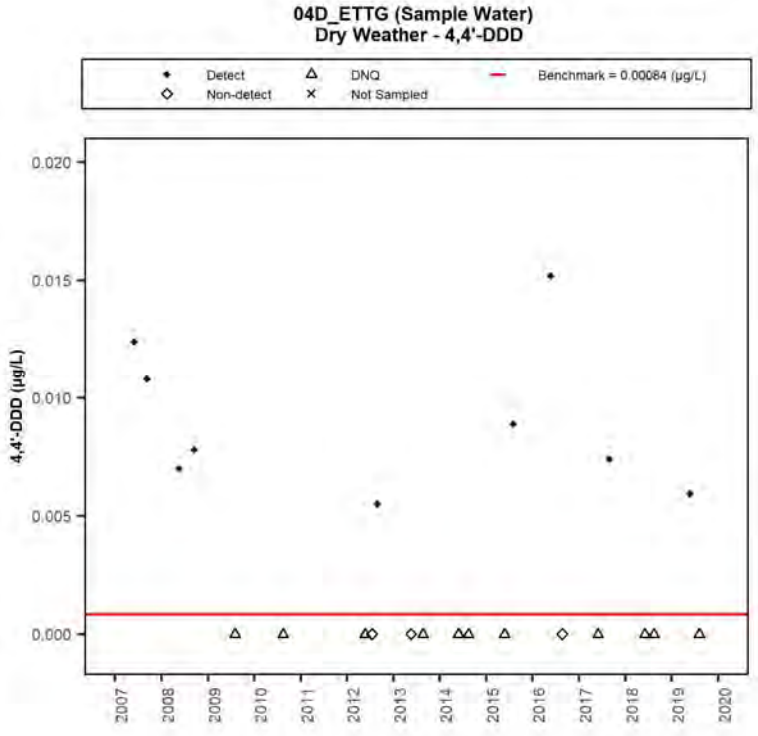


Figure 44. Dry Weather DDD Concentrations at Waiver Benchmark Site 04D_ETTG

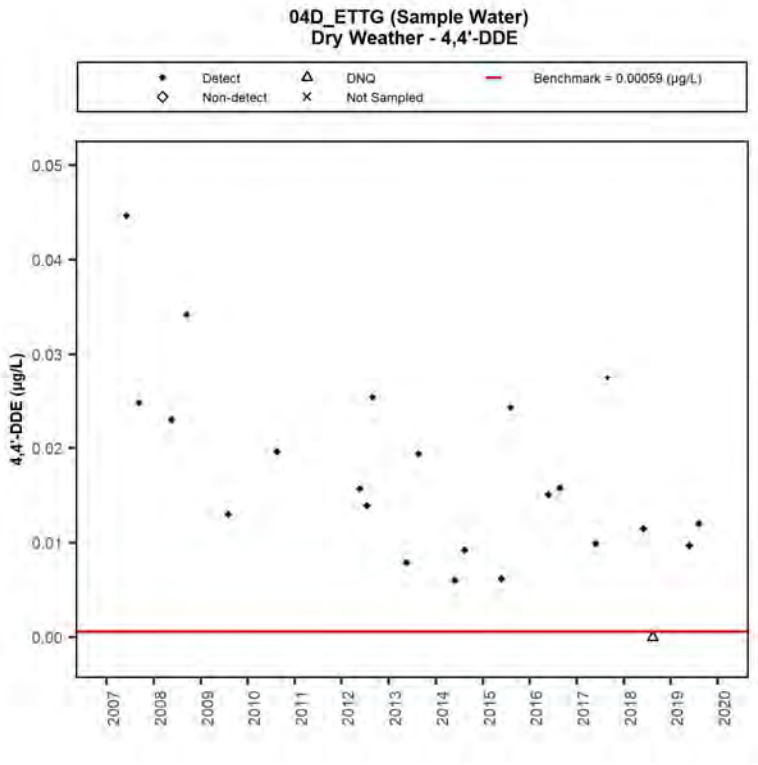


Figure 45. Dry Weather DDE Concentrations at Waiver Benchmark Site 04D_ETTG

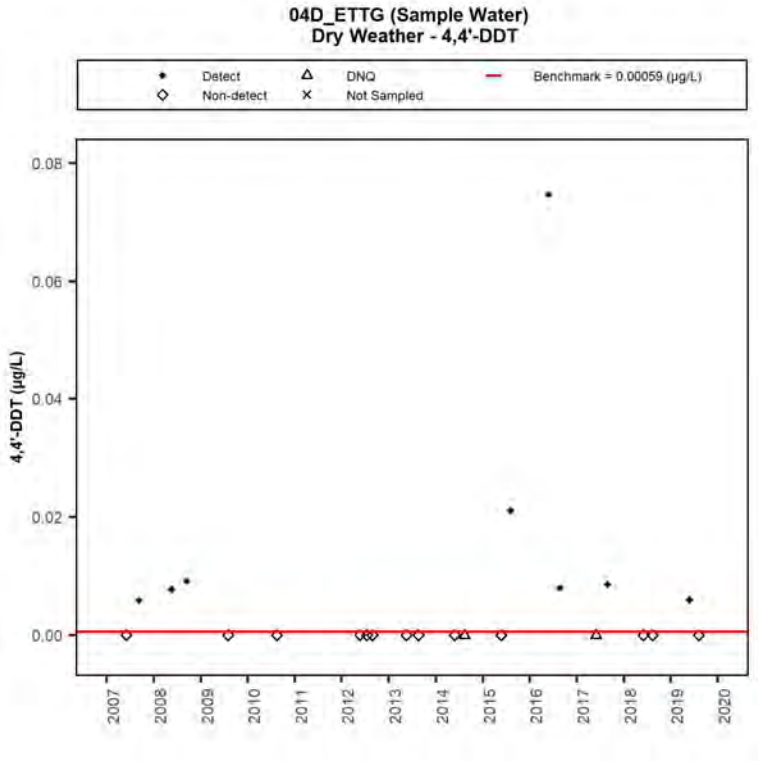


Figure 46. Dry Weather DDT Concentrations at Waiver Benchmark Site 04D_ETTG

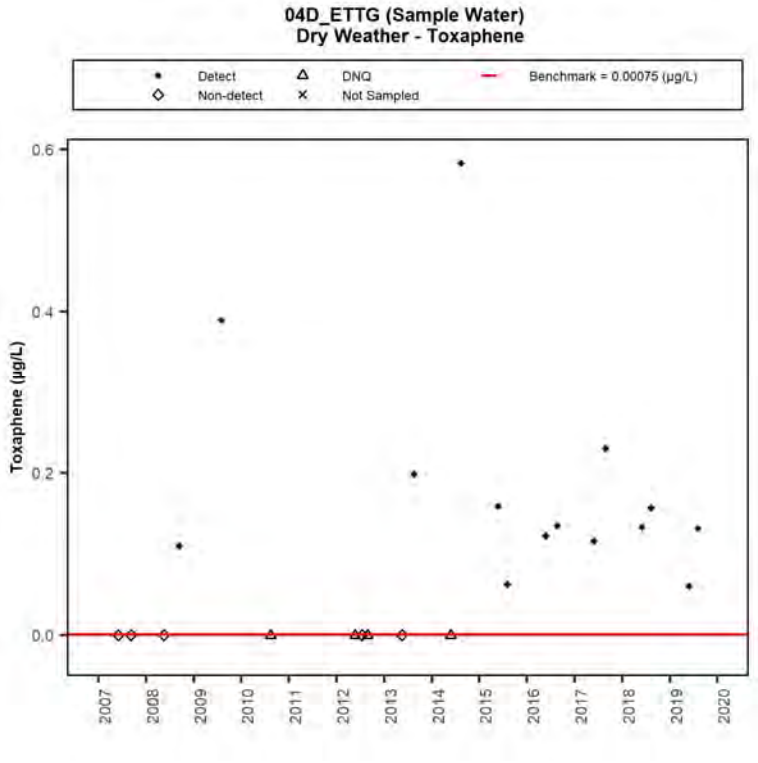


Figure 47. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_ETTG

Table 36. Dry Weather Survival Toxicity during 2016 Waiver Period at Waiver Benchmark Site 04D_ETTG

Dry Weather Survival Toxicity - 04D_ETTG	
# of Events with Significant Mortality	2
# of Events with No Significant Mortality	1

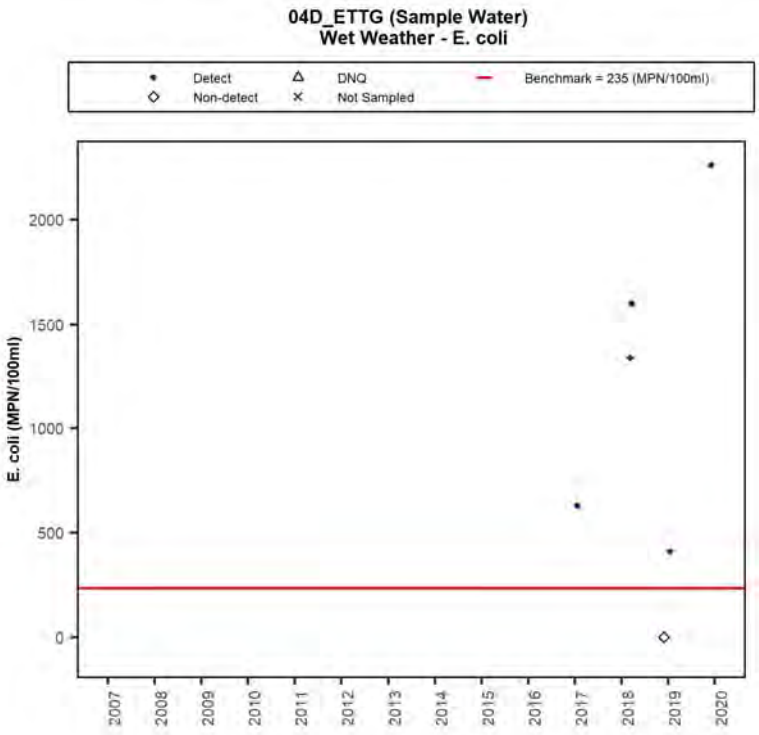


Figure 48. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_ETTG

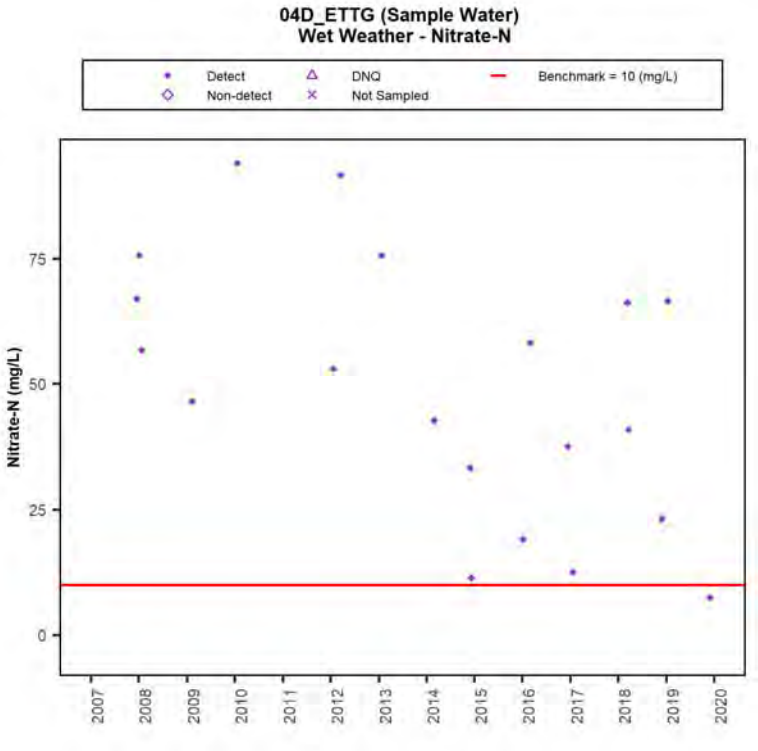


Figure 49. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_ETTG

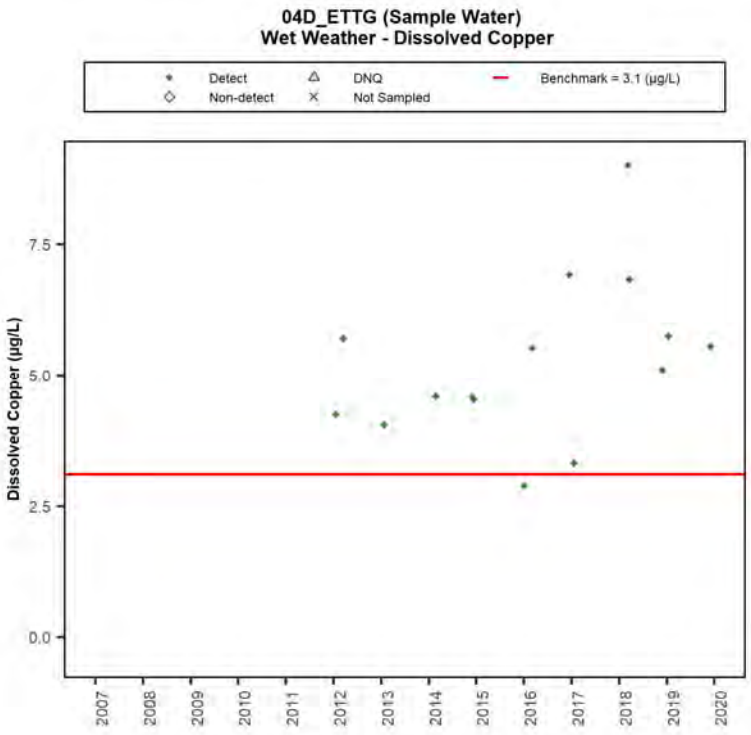


Figure 50. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_ETTG

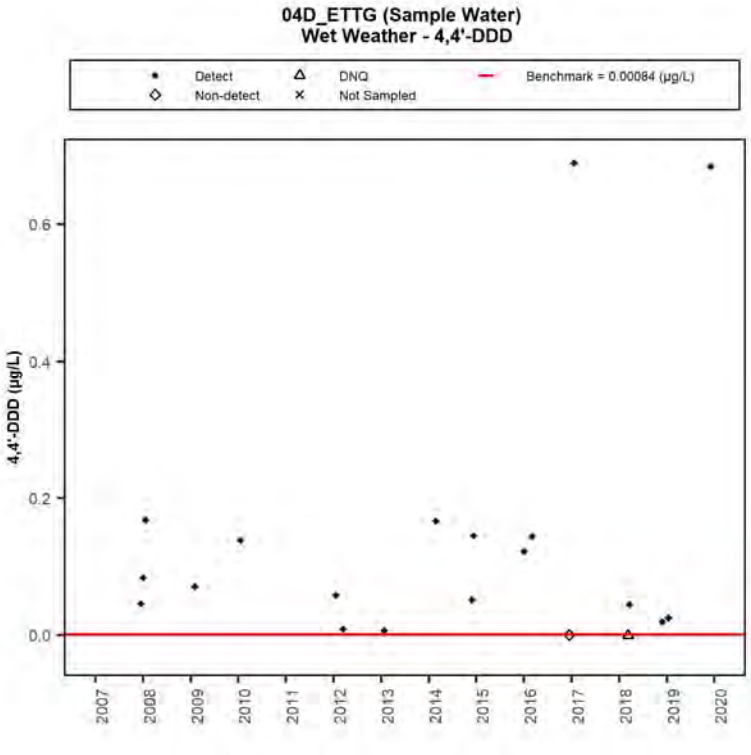


Figure 51. Wet Weather DDD Concentrations at Waiver Benchmark Site 04D_ETTG

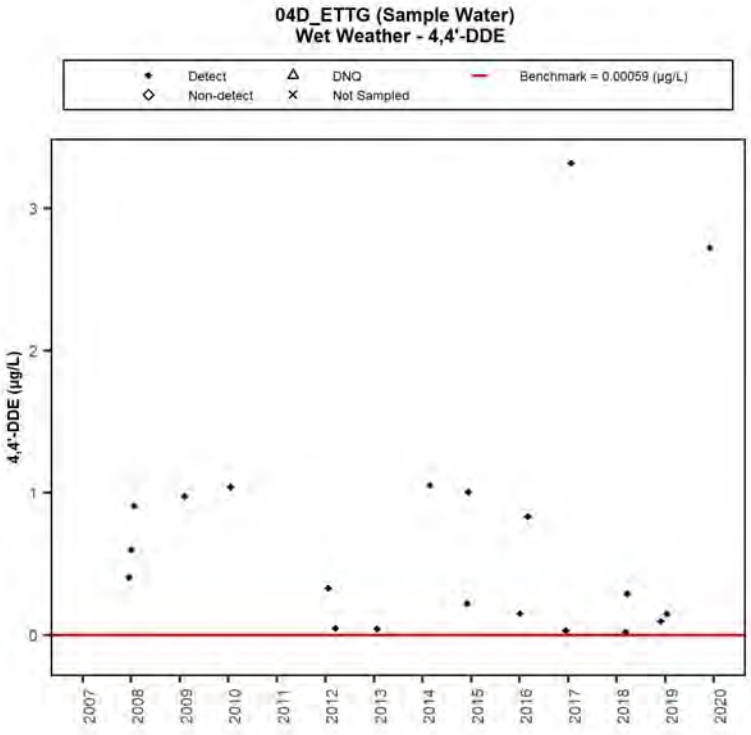


Figure 52. Wet Weather DDE Concentrations at Waiver Benchmark Site 04D_ETTG

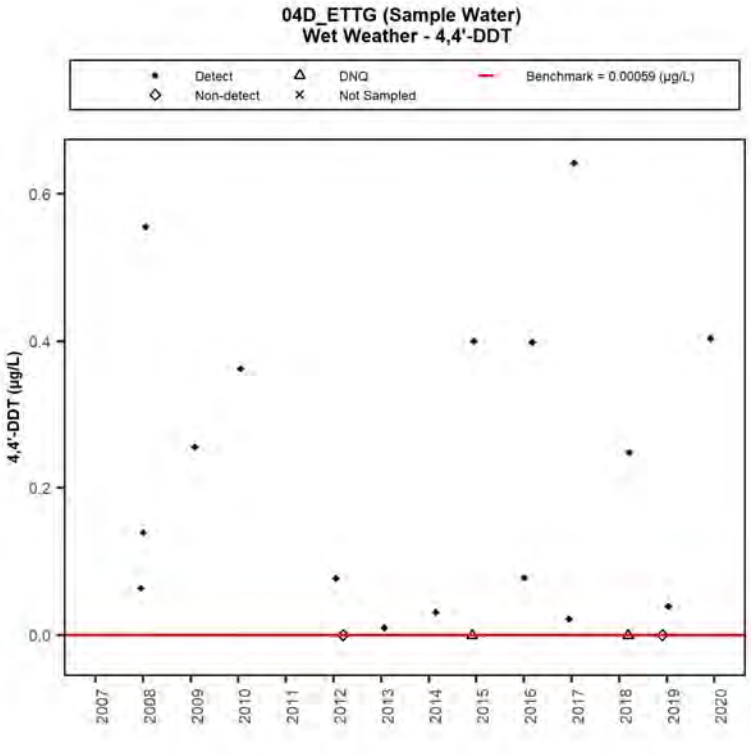


Figure 53. Wet Weather DDT Concentrations at Waiver Benchmark Site 04D_ETTG

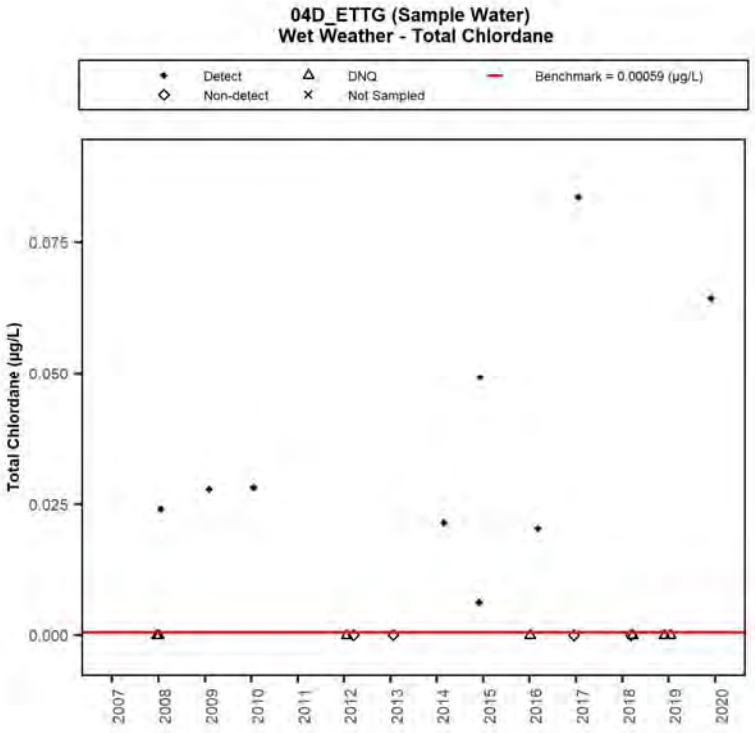


Figure 54. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 04D_ETTG

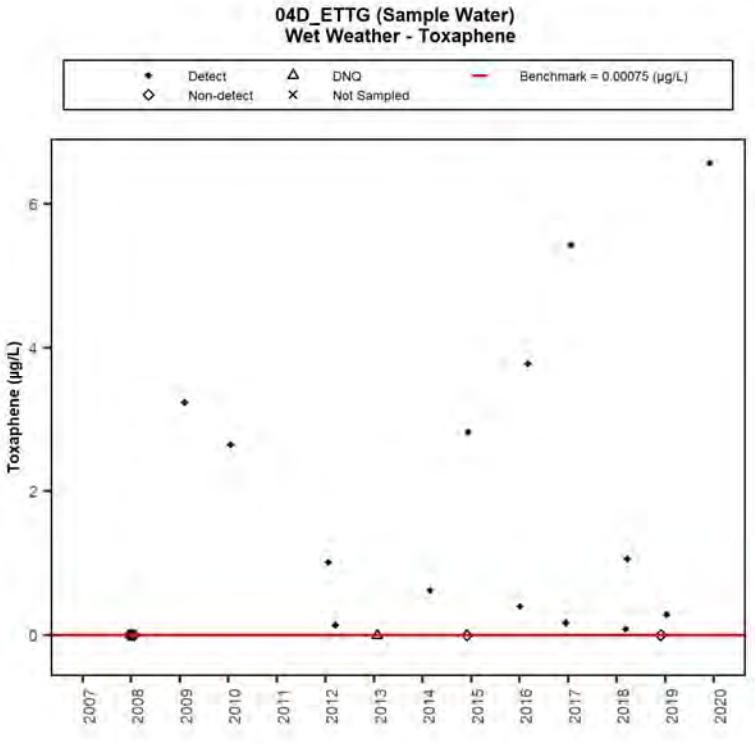


Figure 55. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_ETTG

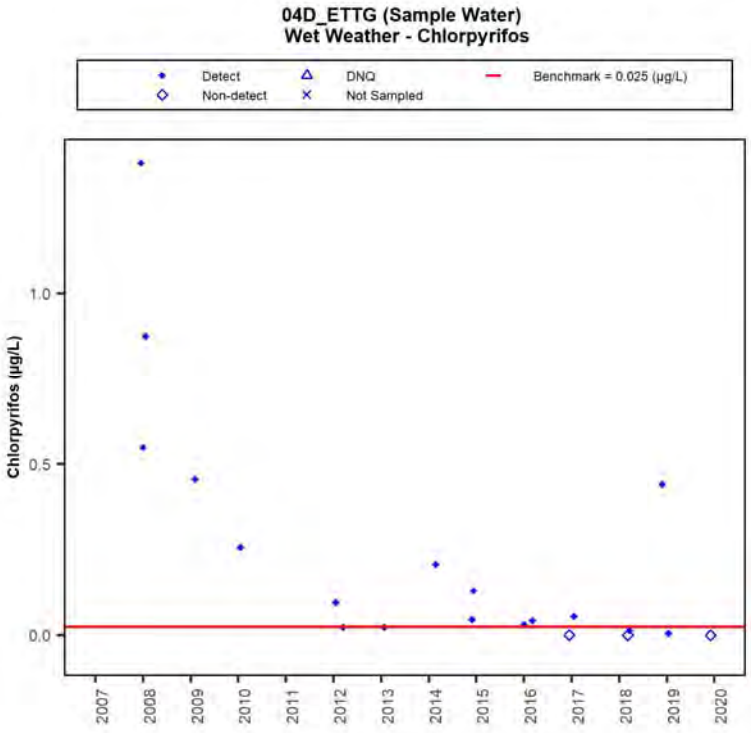


Figure 56. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 04D_ETTG

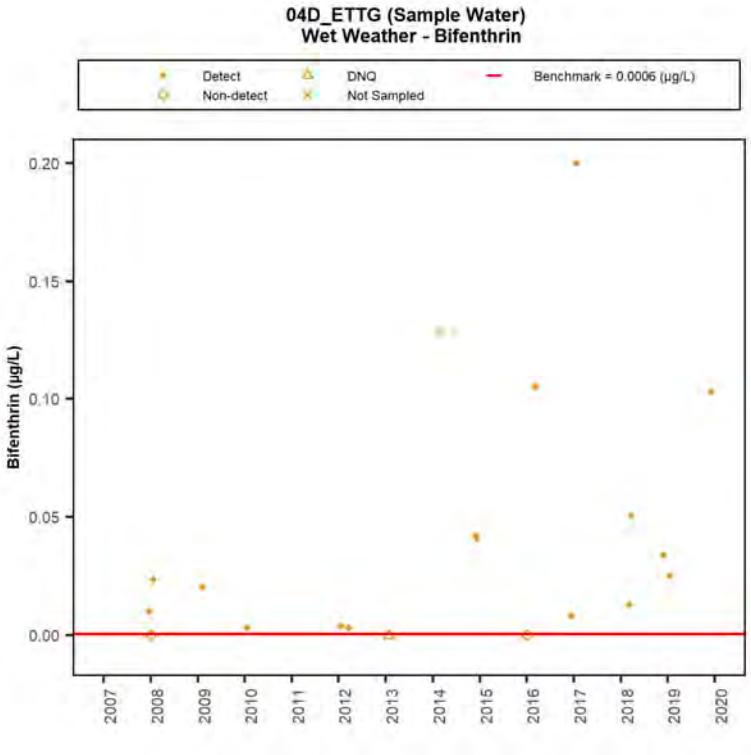


Figure 57. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 04D_ETTG

Table 37. Wet Weather Survival Toxicity during 2016 Waiver Period at Waiver Benchmark Site 04D_ETTG

Wet Weather Survival Toxicity - 04D_ETTG	
# of Events with Significant Mortality	3
# of Events with No Significant Mortality	0

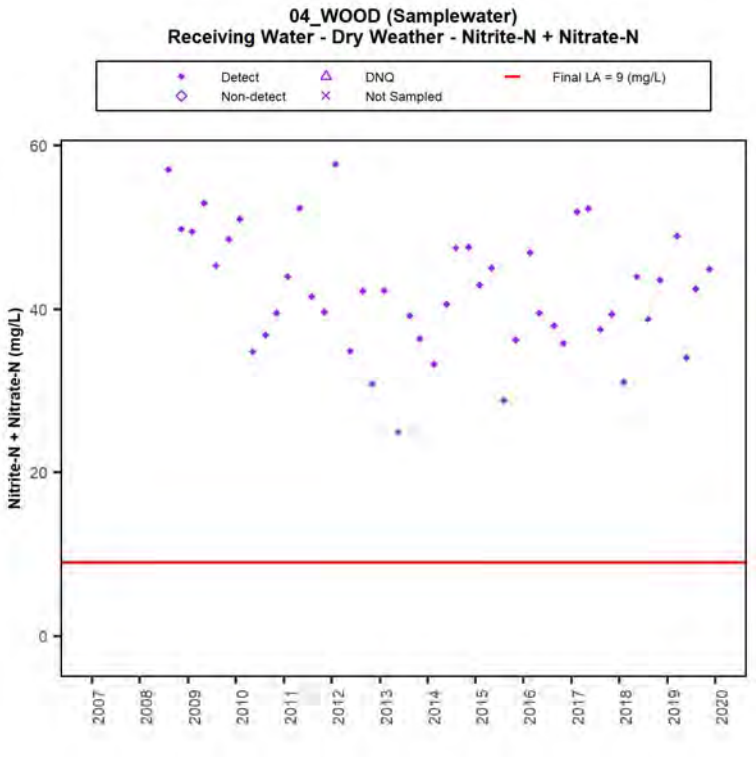


Figure 58. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 04_WOOD

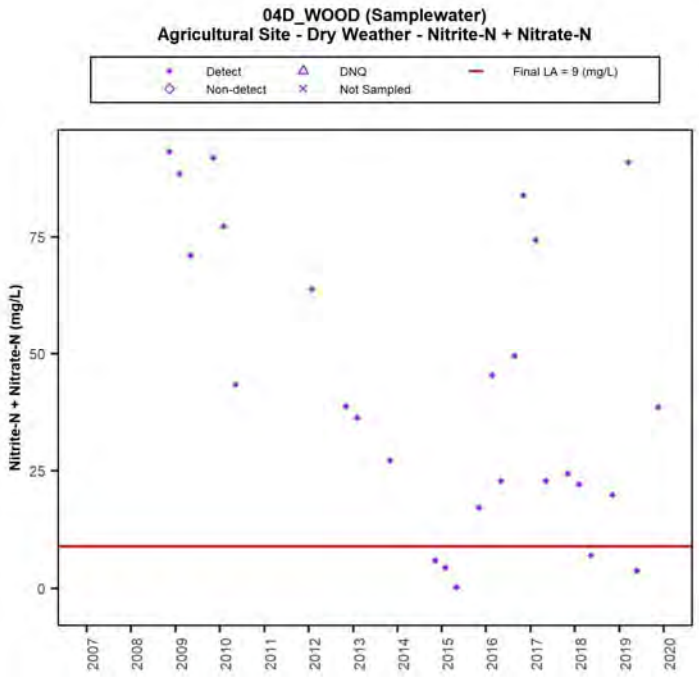


Figure 59. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 04D_WOOD

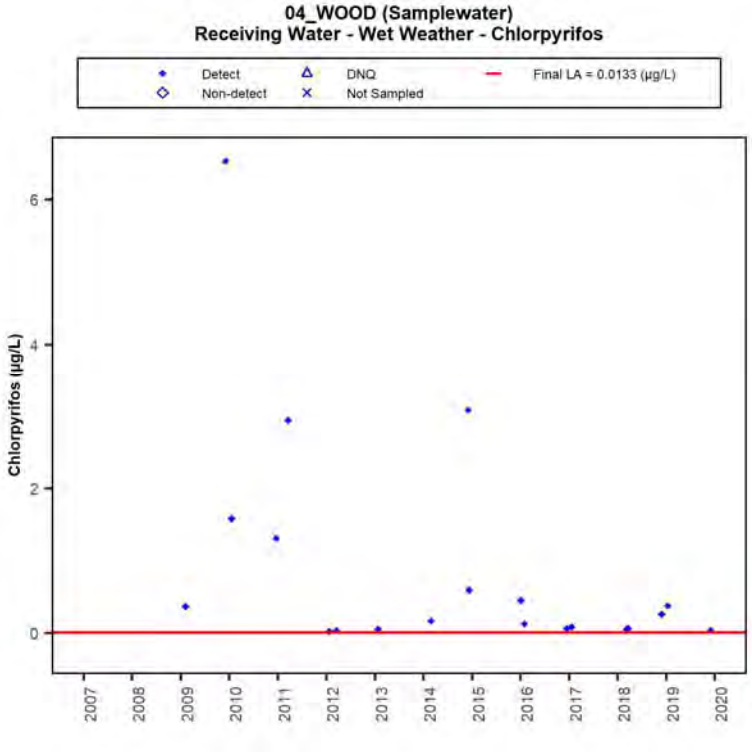


Figure 60. Wet Weather Chlopyrifos Concentrations at TMDL LA Site 04_WOOD

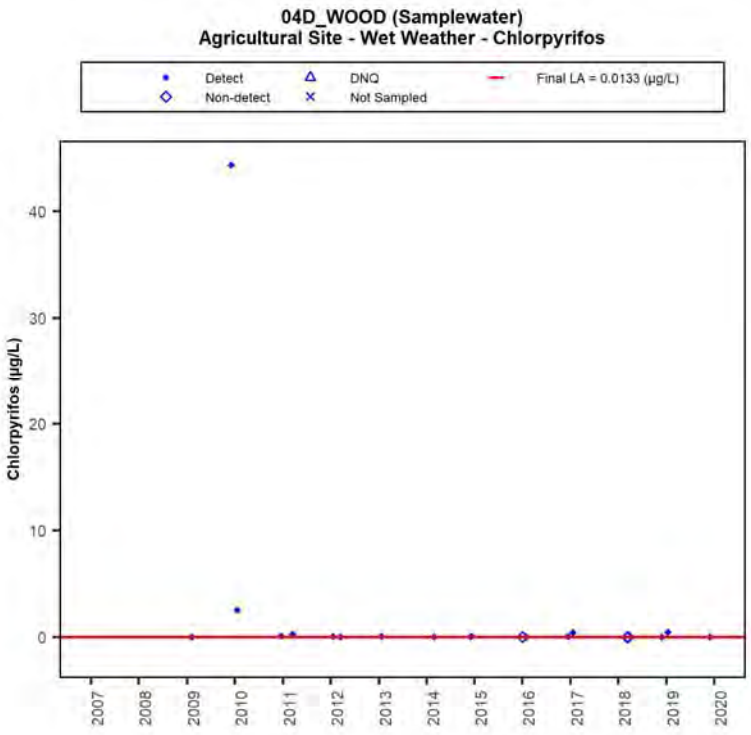


Figure 61. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 04D_WOOD

Table 38. Summary of Benchmark Exceedance Evaluation for Etting-Wood Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
E. coli	●			☑	●			☑
Salts								
Boron		● [2]	[3]	[4]				
Nutrients								
Nitrate-N	●			☑	●			☑
Nitrate-N + Nitrite-N		● [2]	● [3]	☑				
Metals and Selenium								
Dissolved Copper	●			☑	●			☑
Total Selenium		● [2]	[3]	[4]				
OC Pesticides (Legacy)								
DDD	●			☑	●			☑
DDE	●			☑	●			☑
DDT	●			☑	●			☑
Chlordane					●			☑
Toxaphene	●			☑	●			☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● [2]	● [3]	☑
Bifenthrin					●			☑
Chronic Toxicity								
Survival Toxicity	● [5]			☑	● [6]			☑

1. VCAILG monitoring site for Waiver benchmark exceedances is 04D_ETTG.
2. TMDL receiving water site for the CCW Salts, Nitrogen, Metals, and Toxicity TMDLs is 04_WOOD.
3. Agricultural land use site for the CCW Salts, Nitrogen, Metals, and Toxicity TMDLs is 04D_WOOD.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. Single species exceedances for *Hyalella azteca*.
6. Multiple species exceedances for *Hyalella azteca* and *Ceriodaphnia dubia*.

Table 39. BMPs for Additional Implementation in the Etting-Wood Responsibility Area

Exceedance Condition														
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Pesticides	Toxicity				% of Total Applicable Surveyed Units		Additional Implementation of Pertinent BMP Needed?
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet	Dry	Wet		Survey Responses	04D_ETTG Site Drainage Only	Etting-Wood Responsibility Area	
		x	x	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	15%	18%	Yes
x		x		x		x			x		Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	77%	55%	Yes
		x		x		x			x		1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	69%	82%	Yes
		x		x					x		2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	78%	77%	Yes
		x							x		3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	40%	36%	Yes
		x	x						x	x	4b	Certified nutrient management plan has been prepared for the property	5%	33%	Yes
		x	x						x	x	5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	93%	86%	Yes
		x	x						x	x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	93%	88%	Yes
		x	x						x	x	7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	62%	59%	Yes
		x	x						x	x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	72%	66%	Yes
		x	x	x	x	x	x	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	100%	No
			x		x		x	x		x	11	How much non-cropped area is bare soil?	57%	65%	Yes
x	x	x	x	x	x	x	x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	47%	42%	Yes
x	x	x	x	x	x	x	x	x	x	x	13a	Grassed waterways are used	0%	1%	Yes
x	x	x	x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	<0.1%	< 0.1%	Yes
								x	x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	99%	No
								x	x	x	16	An integrated pest management plan is implemented	94%	94%	Yes
x		x		x		x			x		18	How many acres produce irrigation runoff?	19%	30%	Yes
x	x	x	x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	10%	5%	Yes

Table 40. Proposed Best Management Practices for the Etting-Wood Responsibility Area

Water Quality Issues											
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	Wet Weather	BMPs
											Source Control BMPs
		x	x	x	x	x	x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x		x		x		x			x		Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
		x		x		x			x		Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
		x		x					x		Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
		x							x		Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
		x	x						x	x	Prepare a certified nutrient management plan for the property
		x	x						x	x	Conduct soil residual nitrate tests and use results to adjust fertilizer application
		x	x						x	x	Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
		x	x						x	x	Analyze irrigation water nitrate and use results to adjust fertilizer application
		x	x						x	x	Adjust fertilizer application to account for nutrients provided by cover crops

Water Quality Issues											BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	Wet Weather	
		x	x	x	x	x	x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
			x		x		x	x		x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
								x	x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
								x	x	x	Implement an integrated pest management plan
x		x		x		x			x		Avoid/prevent irrigation runoff
											Structural Non-Treatment BMPs
x	x	x	x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	x	x	x	Use vegetated filter strips
											Optional Treatment BMPs
x	x	x	x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Lower Calleguas Creek Responsibility Area

Figure 62. Lower Calleguas Creek Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Lower Calleguas Creek responsibility area are illustrated in Figure 62. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 01_BPT_15 is a CCW OC Pesticides and PCBs TMDL Receiving Water Compliance Site
- 03_UNIV is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Receiving Water Compliance Site
- 9BD_GERRY is a CCW Salts TMDL Ag Land Use Site

- 02D_BROOM is a CCW Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 41. Lower Calleguas Creek Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area [a]	Drainage Area of Monitoring Site 04D_ETTG [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	6,062	3,250
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [b]	177	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	5,659	3,249
Assessed Acres from Agricultural Parcel List belonging to Non Members	403	1
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	3,291	3,035
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.58	0.93
Estimated Irrigated Acres in Non Member Agricultural Parcels [c]	234	1
Total Estimated Irrigated Acres (Member plus Non Member)	3,525	3,036
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	93%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	3,023	2,674
Percent of Total Estimated Irrigated Acres that were Surveyed	86%	88%
Percent of VCAILG Member Irrigated Acres that were Surveyed	92%	88%

[a] Responsibility area does not include the beacon monitoring site drainage area
[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 42. Lower Calleguas Creek Responsibility Area Crop Types and General Production Practices

Crop or Practice	04D_ETTG Site Drainage Only						Lower Calleguas Creek Responsibility Area [a]					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	251	-	100	13%	-	4%	-	-	-	-	-	-
Blueberries	-*	-	-	-*	-	-	257*	238	193	10%*	8%	6.4%
Raspberries		126	363		5%	14%		226	186		8%	6.1%
Row Crop	1,353	1,980	1,963	72%	81%	73%	1,490	1,842	1,932	57%	62%	63.9%
Orchard	144	192	237	8%	8%	9%	523	686	711	20%	23%	23.5%
Nursery	132	142	10	7%	6%	0.4%	-	-	2	-	-	0.1%
Flower	-	-	-	-	-	-	75	-	-	3%	-	-
Sod	-	-	-	-	-	-	-	-	-	-	-	-
Other	2	2	1	0.1%	0.1%	0.04%	252	-	-	10%	-	-
Overhead Cover in Production Areas												
Hoop House	-	126	363	-	5%	14%	132	414	379	5%	14%	12.5%
No Cover	219	1,938	2,022	12%	79%	76%	1,795	1,842	1,934	69%	62%	64.0%
Greenhouse	-	143	11	-	6%	0.4%	3	-	-	0.1%	-	-
Shade	-	-	-	-	-	-	-	50	-	-	2%	-
Other	-	41	41	-	2%	2%	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	1,106	2,308	2,281	59%	195%	85.3%	2,195	2,515	2,589	85%	84%	85.6%
Cover Crop	351	50	-	19%	2%	-	-	29	29	-	1%	1.0%
Plastic	262	132	1	14%	5%	0.03%	71	-	-	3%	-	-
Weed Cloth	-	-	-	-	-	-	221	221	178	9%	7%	5.9%
Mulch	-	-	100	-	-	3.7%	234	227	227	9%	8%	7.5%
Gravel	-	-	-	-	-	-	-	-	2	-	-	0.05%
Other	295	-	292	16%	-	10.9%	18	-	-	0.7%	-	-
Irrigation Systems in Production Areas												
Drip Only	1,221	1,385	1,803	65%	57%	67.4%	1,089	1,139	1,298	42%	38%	42.9%
Microsprinkler/Drip	198	-	100	11%	-	3.7%	-	-	-	-	-	-
Microsprinkler	114	155	155	6%	6%	5.8%	221	220	200	9%	7%	6.6%
Overhead Sprinkler	122	5	33	6%	0.2%	1.2%	116	58	58	4%	2%	1.9%
Overhead/Drip	279	895	582	15%	37%	21.8%	1,260	1,420	1,465	48%	47%	48.5%

Crop or Practice	04D_ETTG Site Drainage Only						Lower Calleguas Creek Responsibility Area [a]					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Furrow Flood	-	-	-	-	-	-	-	155	-	-	5%	-
Hand Watering	-	-	-	-	-	-	-	-	2	-	-	0.05%
Other	-	-	-	-	-	-	-	-	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area

Table 43. Lower Calleguas Creek Responsibility Area Grower BMPs

Survey Question	Units	04D_ETTG Site Drainage Only						Lower Calleguas Creek Responsibility Area [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	1,396	1,642	1,820	74%	68%	69%	2,492	2,948	2,978	96%	99%	99%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	1,212	1,814	2,083	64%	74%	78%	1,165	1,521	1,712	45%	51%	57%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	460	418	1,043	26%	19%	40%	2,331	2,385	2,433	90%	90%	91%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	688	651	587	37%	27%	22%	1,285	1,781	1,837	49%	60%	61%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	661	132	144	35%	5%	5%	497	464	1,118	19%	16%	37%
Q5a: Are soil residual nitrate tests done?	Acres	991	2,253	2,485	53%	92%	93%	1,611	2,023	2,064	62%	68%	68%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	963	2,225	2,485	51%	91%	93%	1,611	2,023	2,064	62%	68%	68%
Q6: Are leaf/petiole tests conducted?	Acres	1,243	1,908	2,365	66%	83%	93%	2,597	2,855	3,022	100%	100%	100%
Q7a: Is nitrate measured in fertigation water?	Acres	617	1,453	1,654	33%	60%	62%	1,219	1,593	1,732	47%	53%	57%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	617	1,453	1,654	33%	60%	62%	755	1,129	1,732	29%	38%	57%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	581	1,019	1,056	46%	67%	72%	1,412	1,611	1,593	100%	100%	100%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	-	83	83	-	3%	3%	413	756	756	16%	25%	25%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	71	83	83	0%	100%	100%	616	759	753	1%	100%	100%
Q11. How much non-cropped area is bare soil?	Acres	84	101	98	4%	65%	57%	491	596	632	19%	40%	41%
Q12a: How many feet of ditches exist?	Feet	61,342	82,927	86,177	N/A	N/A	N/A	139,998	177,098	166,524	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	1,850	41,935	40,285	3%	51%	47%	61,882	90,982	85,498	44%	51%	51%
Q13a: Are grassed waterways present?	Acres	132	132	-	7%	5%	-	175	165	165	7%	6%	5%
Q13b: How many acres drain to grassed waterways?	Acres	5	5	-	0.3%	0.2%	-	156	156	156	6%	5%	5%
Q14: How many acres are treated by vegetated filter strips?	Acres	2	3	1	0.1%	0.1%	0.04%	6	332	334	0.2%	11%	11%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	1,881	2,442	2,674	100%	100%	100%	2,597	2,992	3,023	100%	100%	100%
Q16: Is an IPM Plan being implemented?	Acres	1,881	2,291	2,524	100%	94%	94%	2,597	2,992	3,023	100%	100%	100%
Q17a: How many acres are organically farmed?	Acres	42	374	293	2%	15%	11%	269	326	320	10%	11%	11%
Q17b: How many acres are conventionally farmed?	Acres	1,840	2,052	2,381	98%	84%	89%	2,328	2,414	2,703	90%	81%	89%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	525	705	520	28%	29%	19%	106	102	357	4%	3%	12%

Survey Question	Units	04D_ETTG Site Drainage Only						Lower Calleguas Creek Responsibility Area [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q19: Runoff from how many acres is treated or detained?	Acres	493	422	262	26%	17%	10%	830	825	826	32%	28%	27%

[a] Responsibility area does not include the beacon monitoring site drainage area

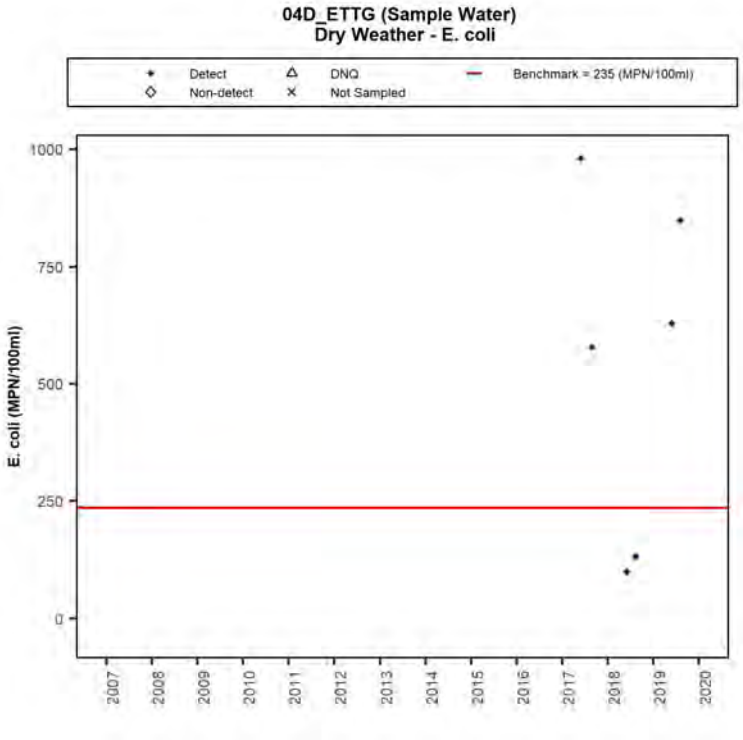


Figure 63. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_ETTG

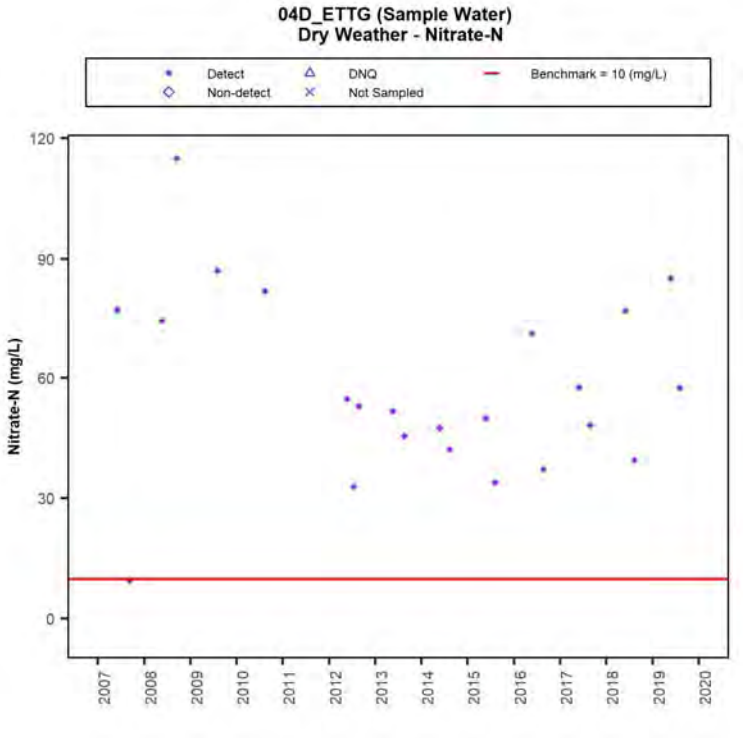


Figure 64. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_ETTG

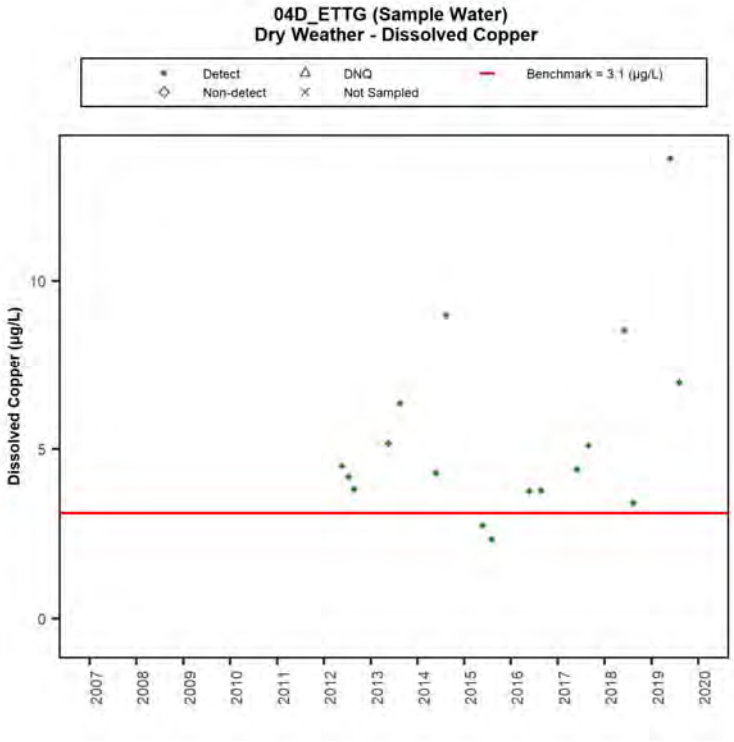


Figure 65. Dry Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_ETTG

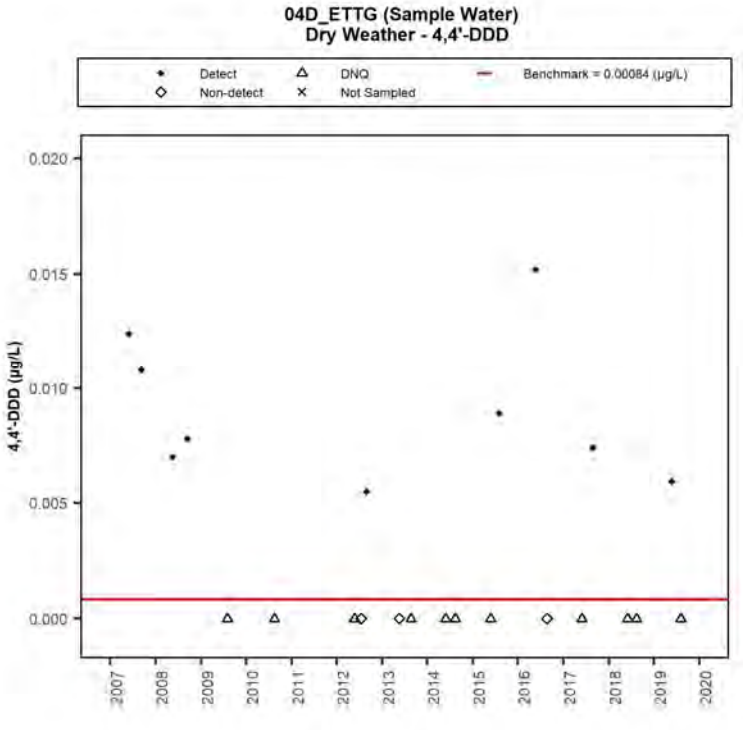


Figure 66. Dry Weather DDD Concentrations at Waiver Benchmark Site 04D_ETTG

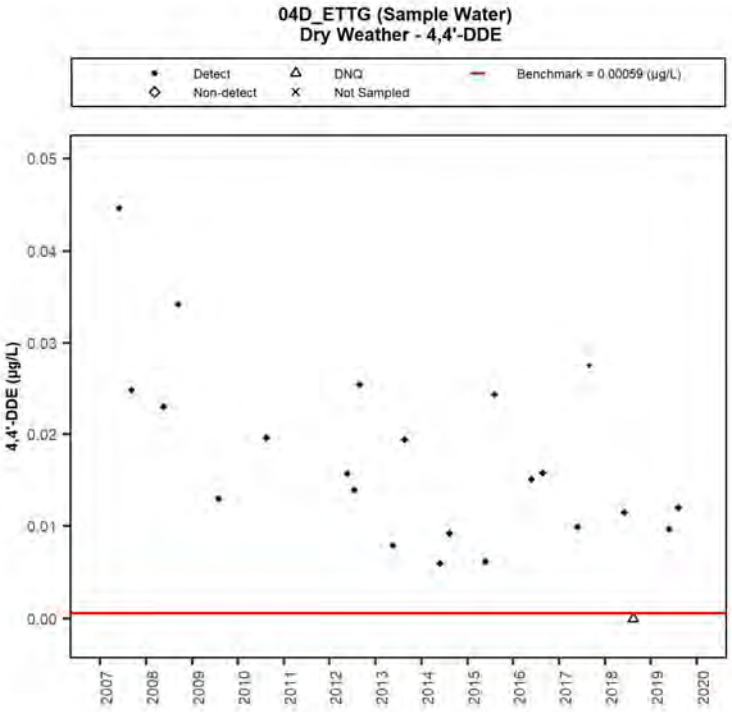


Figure 67. Dry Weather DDE Concentrations at Waiver Benchmark Site 04D_ETTG

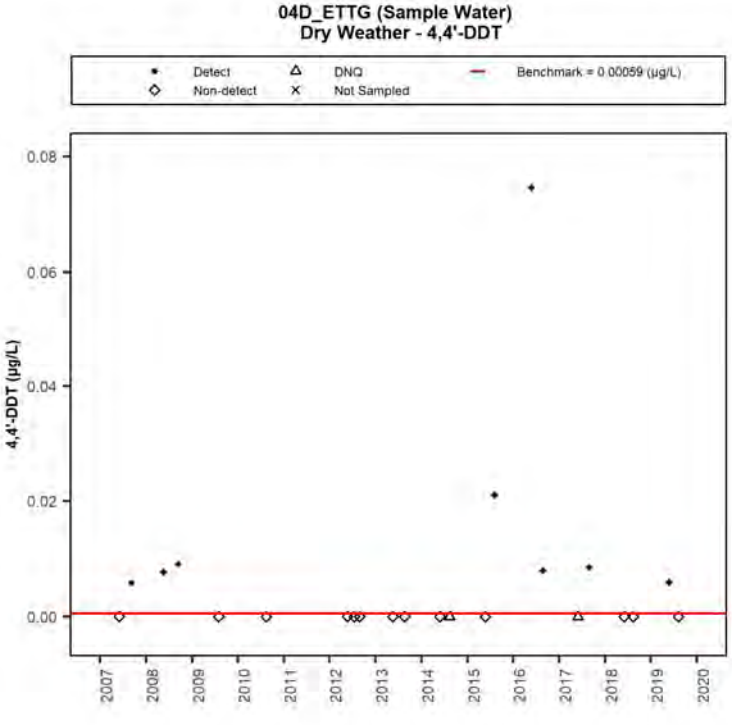


Figure 68. Dry Weather DDT Concentrations at Waiver Benchmark Site 04D_ETTG

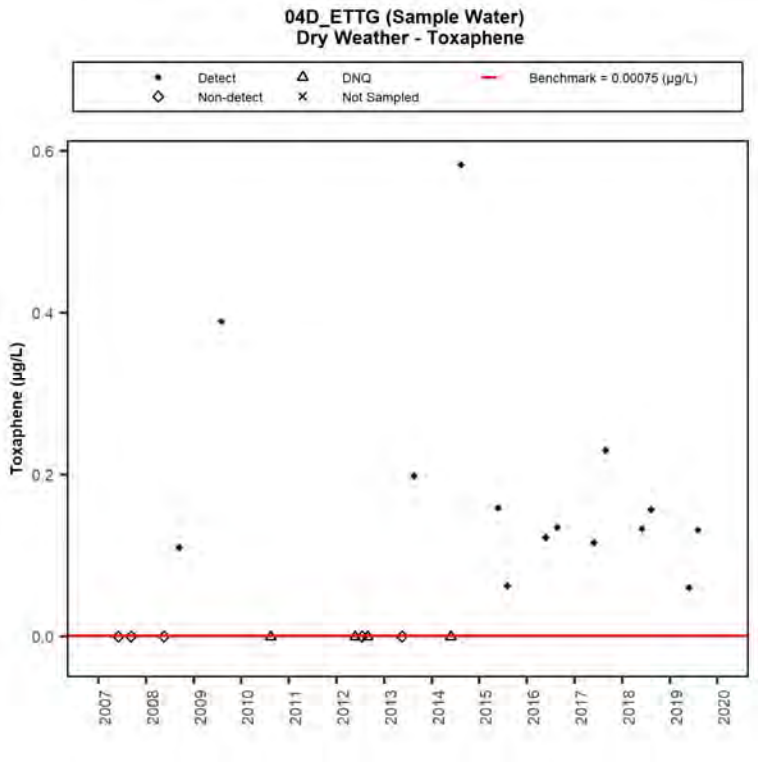


Figure 69. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_ETTG

Table 44. Dry Weather Survival Toxicity during the 2016 Waiver Period at Waiver Benchmark Site 04D_ETTG

Dry Weather Survival Toxicity - 04D_ETTG	
# of Events with Significant Mortality	2
# of Events with No Significant Mortality	1

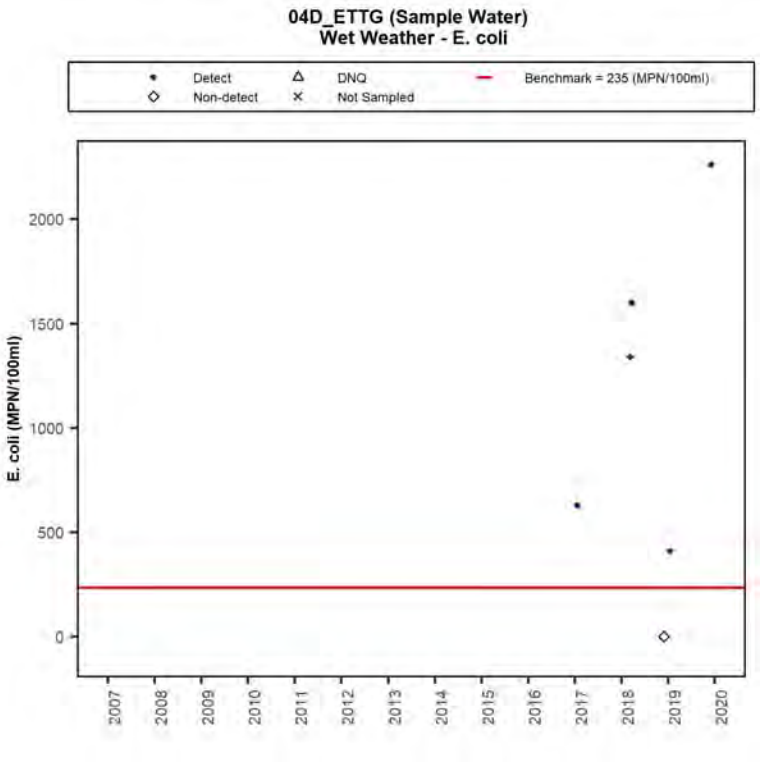


Figure 70. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_ETTG

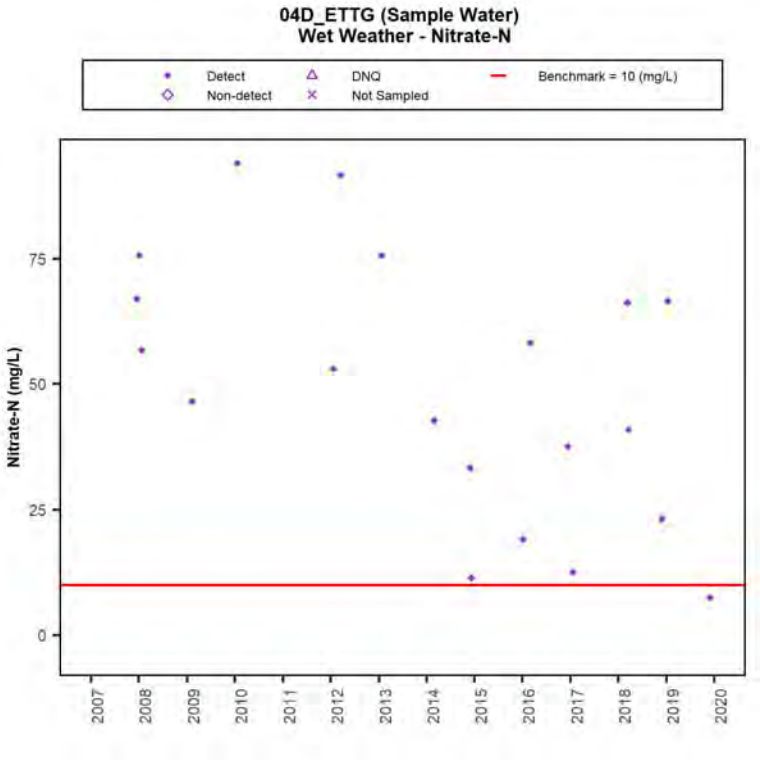


Figure 71. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_ETTG

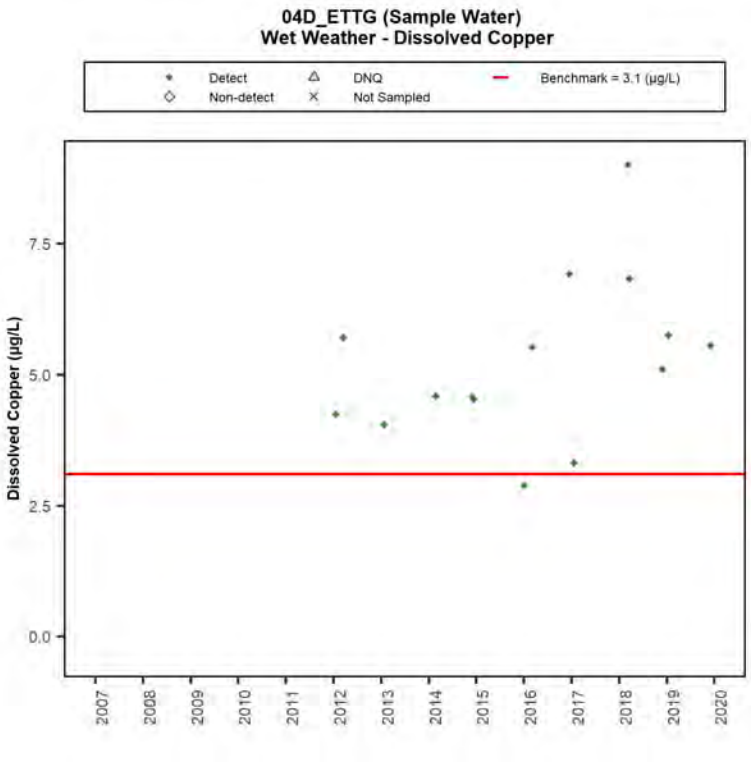


Figure 72. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_ETTG

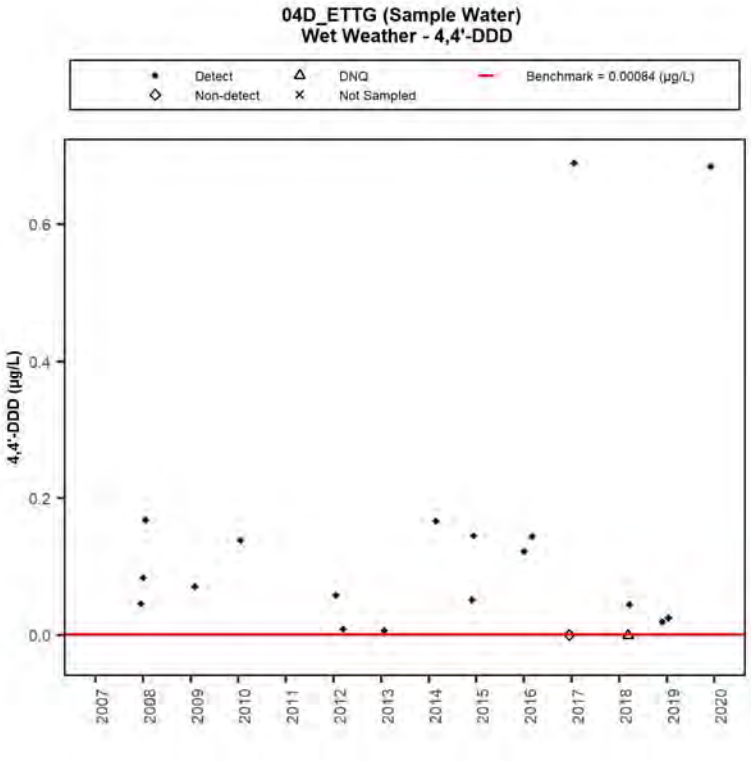


Figure 73. Wet Weather DDD Concentrations at Waiver Benchmark Site 04D_ETTG

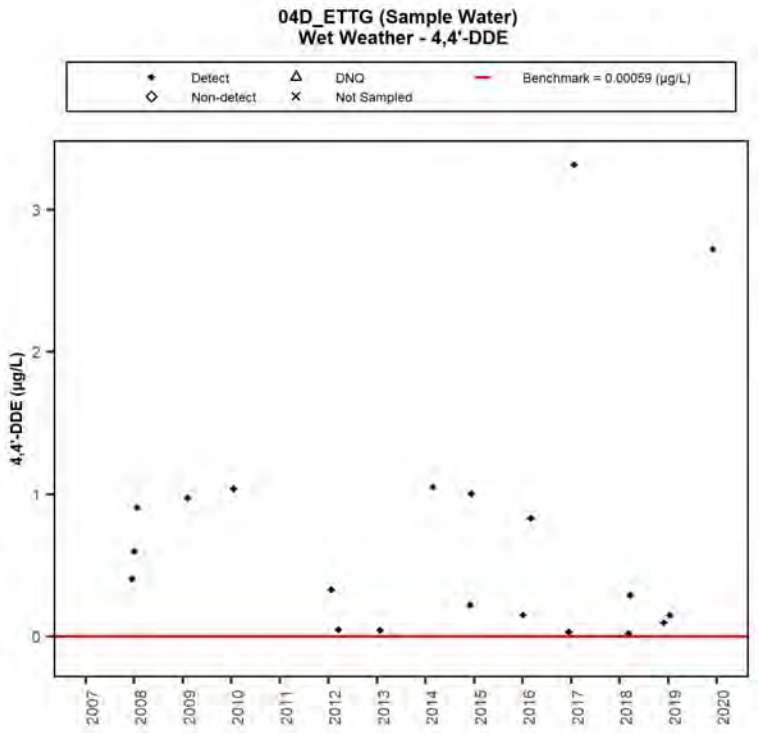


Figure 74. Wet Weather DDE Concentrations at Waiver Benchmark Site 04D_ETTG

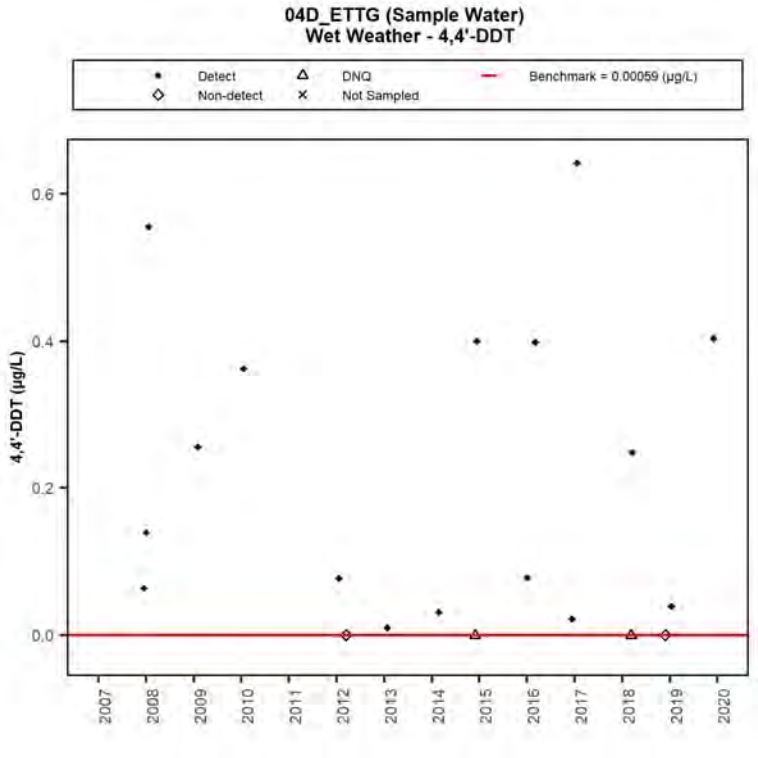


Figure 75. Wet Weather DDT Concentrations at Waiver Benchmark Site 04D_ETTG

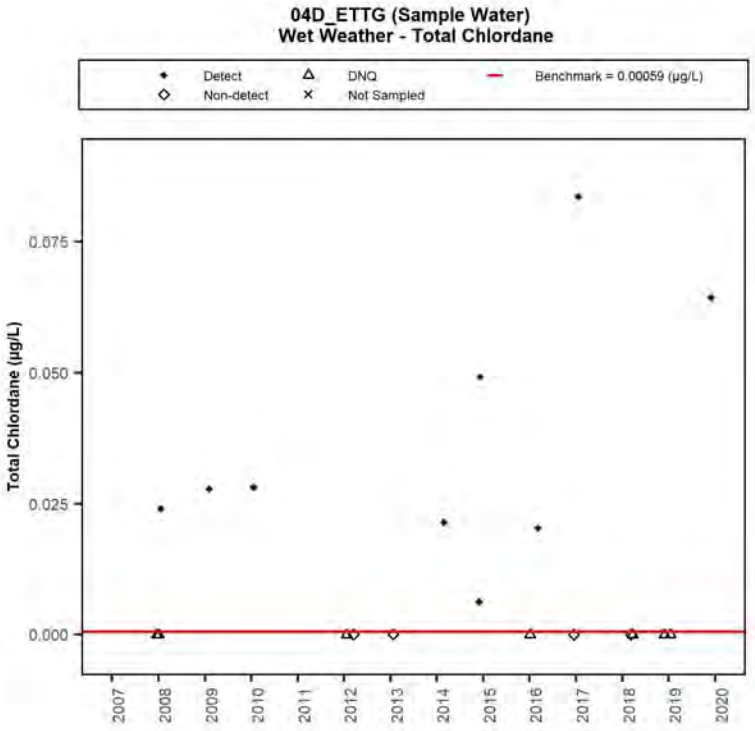


Figure 76. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 04D_ETTG

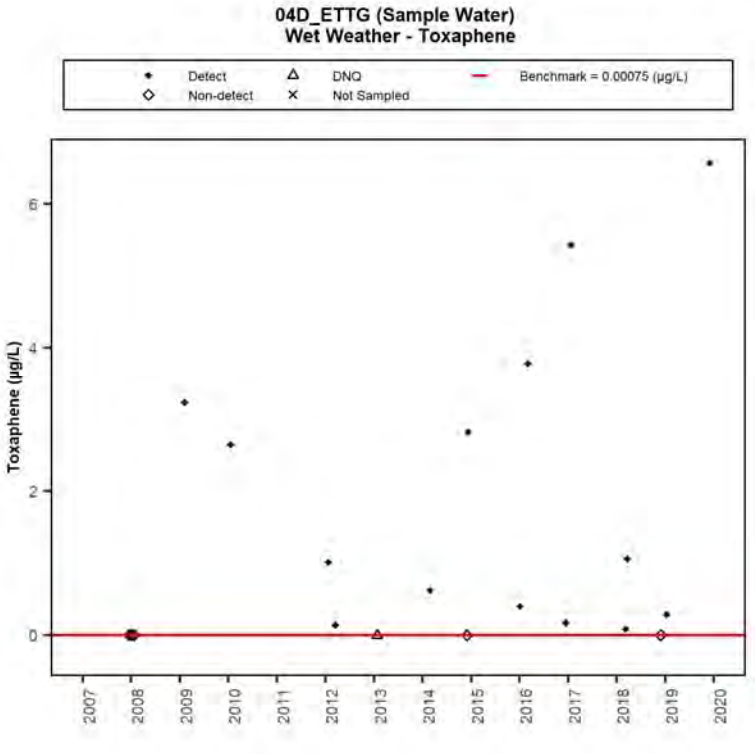


Figure 77. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_ETTG

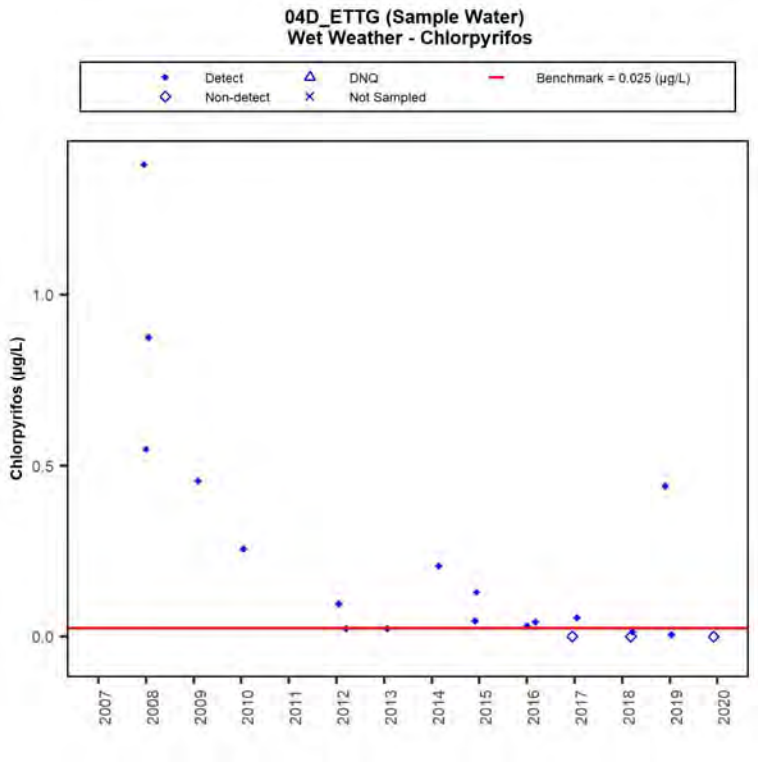


Figure 78. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 04D_ETTG

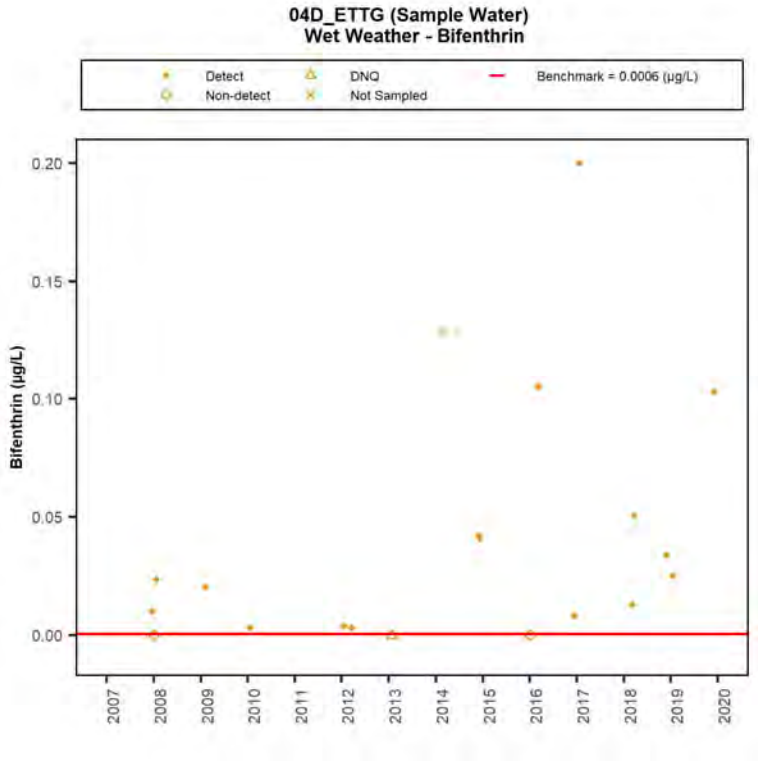


Figure 79. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 04D_ETTG

Table 45. Wet Weather Survival Toxicity during 2016 Waiver Period at Waiver Benchmark Site 04D_ETTG

Wet Weather Survival Toxicity - 04D_ETTG	
# of Events with Significant Mortality	3
# of Events with No Significant Mortality	0

Table 46. Summary of Graphed Benchmark Exceedances for Lower Calleguas Creek Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
E. coli	●			☑	●			☑
Salts								
Chloride		● [2]	[3]	[4]				
Nutrients								
Nitrate-N	●			☑	●			☑
Nitrate-N + Nitrite-N		● [2]	[5]	[4]				
Metals and Selenium								
Dissolved Copper	●			☑	●			☑
OC Pesticides (Legacy)								
DDD	●			☑	●			☑
DDE	●			☑	●			☑
DDT	●			☑	●			☑
Chlordane					●			☑
Toxaphene	●			☑	●			☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● [2]	[5]	☑
Bifenthrin					●			☑
Chronic Toxicity								
Survival Toxicity	● [6]			☑	● [7]			☑

1. VCAILG monitoring site for Waiver benchmarks is 04D_ETTG
2. Receiving water site for CCW Salts, Nitrogen, and Toxicity TMDLs is 03_UNIV.
3. Agricultural land use site for the CCW Salts TMDLs is 9BD_GERRY.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. Agricultural land use site for the CCW Toxicity and Nitrogen TMDL is 02D_BROOM.
6. Single species exceedances for *Hyalella azteca*.
7. Multiple species exceedances for *Hyalella azteca* and *Ceriodaphnia dubia*.

Table 47. BMPs for Additional Implementation in the Lower Calleguas Creek Responsibility Area

Exceedance Condition														
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Pesticides	Toxicity				% of Total Applicable Surveyed Units	
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet	Dry	Wet		Survey Responses	04D_ETTG Site Drainage [a]	Lower Calleguas Creek Responsibility Area [a]	Additional Implementation of Pertinent BMP Needed? [b]
		x	x	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	15%	14%	Yes
x		x		x		x			x		Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	77%	50%	Yes
		x		x		x			x		1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	69%	99%	Yes
		x		x					x		2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	78%	57%	Yes
		x							x		3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	40%	91%	Yes
		x	x						x	x	4b	Certified nutrient management plan has been prepared for the property	5%	37%	Yes
		x	x						x	x	5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	93%	68%	Yes
		x	x						x	x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	93%	100%	Yes
		x	x						x	x	7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	62%	57%	Yes
		x	x						x	x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	72%	100%	Yes
		x	x	x	x	x	x	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	100%	No
			x		x		x	x		x	11	How much non-cropped area is bare soil?	57%	41%	Yes
x	x	x	x	x	x	x	x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	47%	51%	Yes
x	x	x	x	x	x	x	x	x	x	x	13a	Grassed waterways are used	0%	5%	Yes
x	x	x	x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	<0.1%	11%	Yes
								x	x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	100%	No
								x	x	x	16	An integrated pest management plan is implemented	94%	100%	Yes
x		x		x		x			x		18	How many acres produce irrigation runoff?	19%	12%	Yes
x	x	x	x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	10%	27%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area
[c] Zero acres reported as sloped within the surveyed site drainage and responsibility area.

Table 48. Proposed Best Management Practices for the Lower Calleguas Creek Responsibility Area

Water Quality Issues												
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity			
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	Wet Weather		BMPs
												Source Control BMPs
		x	x	x	x	x	x	x	x	x		Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x		x		x		x			x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
		x		x		x			x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
		x		x					x			Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
		x							x			Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
		x	x						x	x		Prepare a certified nutrient management plan for the property
		x	x						x	x		Conduct soil residual nitrate tests and use results to adjust fertilizer application
		x	x						x	x		Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
		x	x						x	x		Analyze irrigation water nitrate and use results to adjust fertilizer application
		x	x						x	x		Adjust fertilizer application to account for nutrients provided by cover crops
		x	x	x	x	x	x	x	x	x		Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with

Water Quality Issues											BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	Wet Weather	
											erosion control/total sloped acres)
			x		x		x	x		x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
								x	x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
								x	x	x	Implement an integrated pest management plan
x		x		x		x			x		Avoid/prevent irrigation runoff
											Structural Non-Treatment BMPs
x	x	x	x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	x	x	x	Use vegetated filter strips
											Optional Structural BMPs
x	x	x	x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

South Revolon Responsibility Area

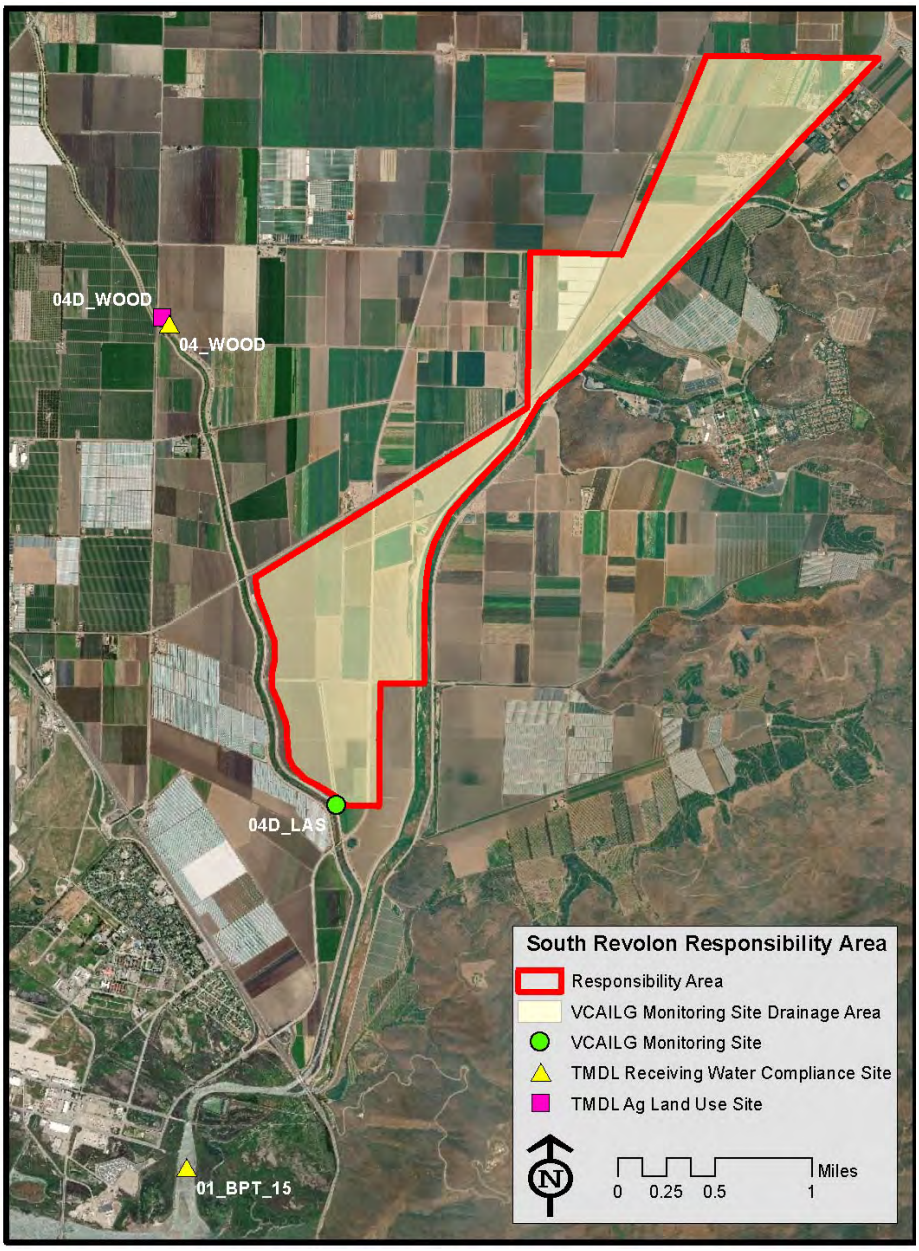


Figure 80. South Revolon Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the South Revolon responsibility area are illustrated in Figure 80. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 01_BPT_15 is a CCW OC Pesticides and PCBs TMDL Receiving Water Compliance Site
- 04_WOOD is a CCW Salts, Nitrogen, Toxicity, and Metals Receiving Water Compliance Site
- 04D_WOOD is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 49. South Revolon Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Drainage Area of Monitoring Site 04D_LAS
Assessed Acreage Information	
Total Assessed Acres from Agricultural Parcel List	1,322
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	1,317
Assessed Acres from Agricultural Parcel List belonging to Non Members	5
Irrigated Acreage Information	
VCAILG Member Acreage Reported as Irrigated	1,101
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.84
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	4
Total Estimated Irrigated Acres (Member plus Non Member)	1,105
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	100%
Survey Response Information	
Sum Surveyed Irrigated Acres	1,065
Percent of Total Estimated Irrigated Acres that were Surveyed	96%
Percent of VCAILG Member Irrigated Acres that were Surveyed	87%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 50. South Revolon Responsibility Area Crop Types and General Production Practices

Crop or Practice	04D_LAS Site Drainage Only [a]					
	Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020
Crop Type						
Strawberries	-	-	-	-	-	-
Blueberries	-*	-	-	-*	-	-
Raspberries		-	111		-	10%
Row Crop	398	809	954	100%	91%	90%
Orchard	-	75	-	-	8%	-
Nursery	-	-	-	-	-	-
Flower	-	1	-	-	-	-
Sod	-	-	-	-	-	-
Other	-	-	-	-	-	-
Overhead Cover in Production Areas						
Hoop House	-	-	111	-	-	10.4%
No Cover	-	810	954	-	92%	89.6%
Greenhouse	-	-	-	-	-	-
Shade	-	-	-	-	-	-
Other	-	-	-	-	-	-
Surface Treatments in Production Areas						
Bare Soil	398	882	1,001	100%	100%	94%
Cover Crop	-	-	64	-	-	6%
Plastic	-	-	-	-	-	-
Weed Cloth	-	3	-	-	0.3%	-
Mulch	-	-	-	-	-	-
Gravel	-	-	-	-	-	-
Other	-	-	-	-	-	-
Irrigation Systems in Production Areas						
Drip Only	63	194	234	16%	22%	22%
Microsprinkler/Drip	-	-		-	-	-
Microsprinkler	-	-		-	-	-
Overhead Sprinkler	-	-		-	-	-
Overhead/Drip	335	691	831	84%	78%	78%
Furrow Flood	-	-		-	-	-
Hand Watering	-	-		-	-	-
Other	-	-		-	-	-

[a] Monitoring site drainage area serves as a complete Responsibility Area

Table 51. South Revolon Responsibility Area Grower BMPs

Survey Question	Units	04D_LAS Site Drainage [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management							
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	335	862	1,047	84%	100%	100%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	227	709	895	57%	80%	84%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	335	473	658	84%	70%	77%
Nutrient Management							
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	164	511	868	41%	58%	81%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	164	164	658	41%	19%	62%
Q5a: Are soil residual nitrate tests done?	Acres	164	707	1,064	41%	80%	100%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	164	707	1,064	41%	80%	100%
Q6: Are leaf/petiole tests conducted?	Acres	335	881	1,065	84%	100%	100%
Q7a: Is nitrate measured in fertigation water?	Acres	-	526	1,047	-	59%	98%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	-	526	1,047	-	59%	98%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	335	683	868	100%	100%	100%
Sediment Management							
Q9: How many cropped acres have a slope greater than 2%?	Acres	63	273	273	16%	31%	26%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	-	210	210	-	77%	77%
Q11. How much non-cropped area is bare soil?	Acres	21	103	111	5%	73%	70%
Q12a: How many feet of ditches exist?	Feet	15,870	30,844	30,754	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	-	13,000	13,000	-	42%	42%
Q13a: Are grassed waterways present?	Acres	-	-	32	-	-	3%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-
Q14: How many acres are treated by vegetated filter strips?	Acres	-	2	29	-	0.2%	3%
Pest Management							
Q15: Are PCAs used for pesticide management decisions?	Acres	398	881	1,065	100%	100%	100%
Q16: Is an IPM Plan being implemented?	Acres	398	798	983	100%	90%	92%
Q17a: How many acres are organically farmed?	Acres	-	-	-	-	-	-
Q17b: How many acres are conventionally farmed?	Acres	398	884	1,065	100%	100%	100%
Runoff Management/Treatment							
Q18: How many acres produce irrigation runoff?	Acres	227	407	471	57%	46%	44%
Q19: Runoff from how many acres is treated or detained?	Acres	-	-	12	-	-	1%

[a] Monitoring site drainage area serves as a complete Responsibility Area

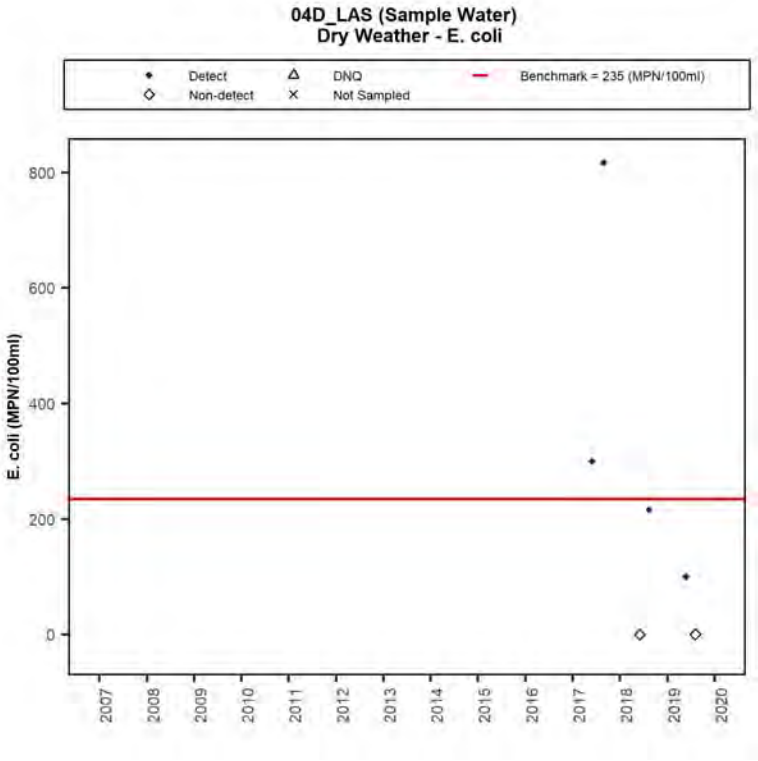


Figure 81. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_LAS

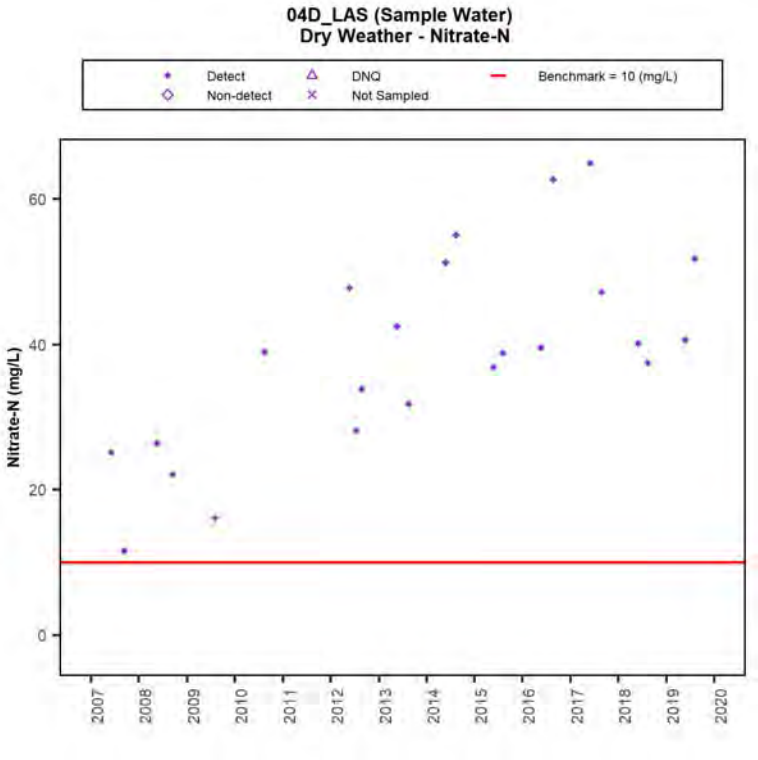


Figure 82. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_LAS

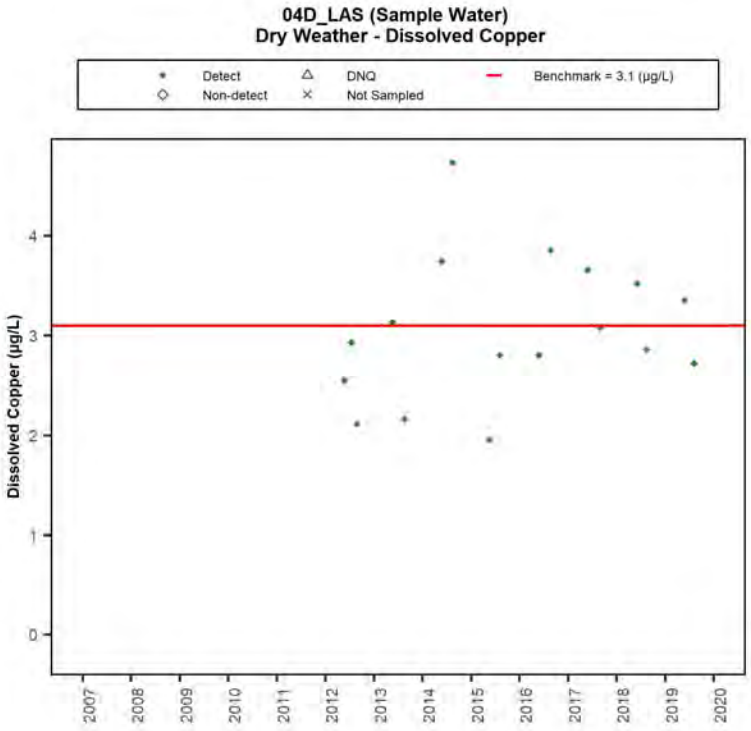


Figure 83. Dry Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_LAS

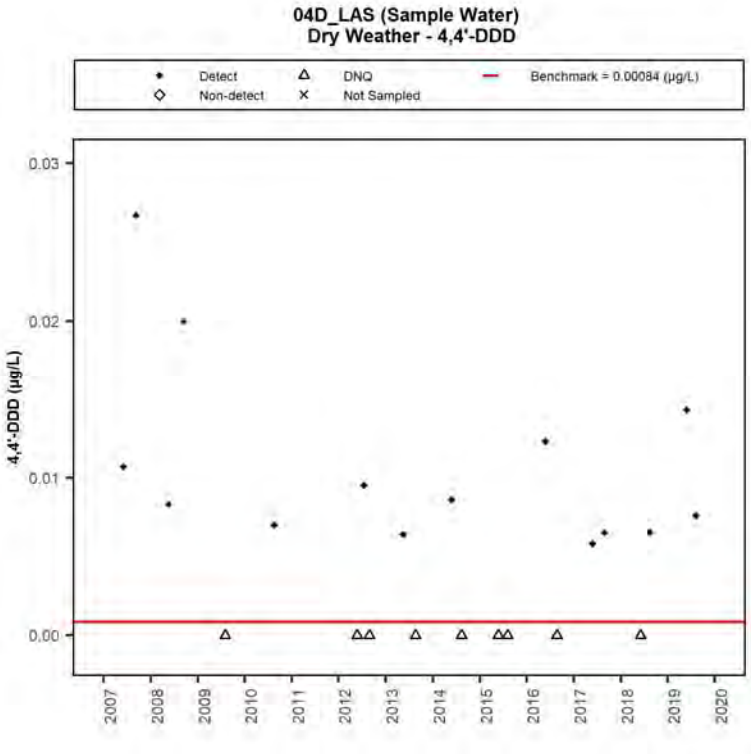


Figure 84. Dry Weather DDD Concentrations at Waiver Benchmark Site 04D_LAS

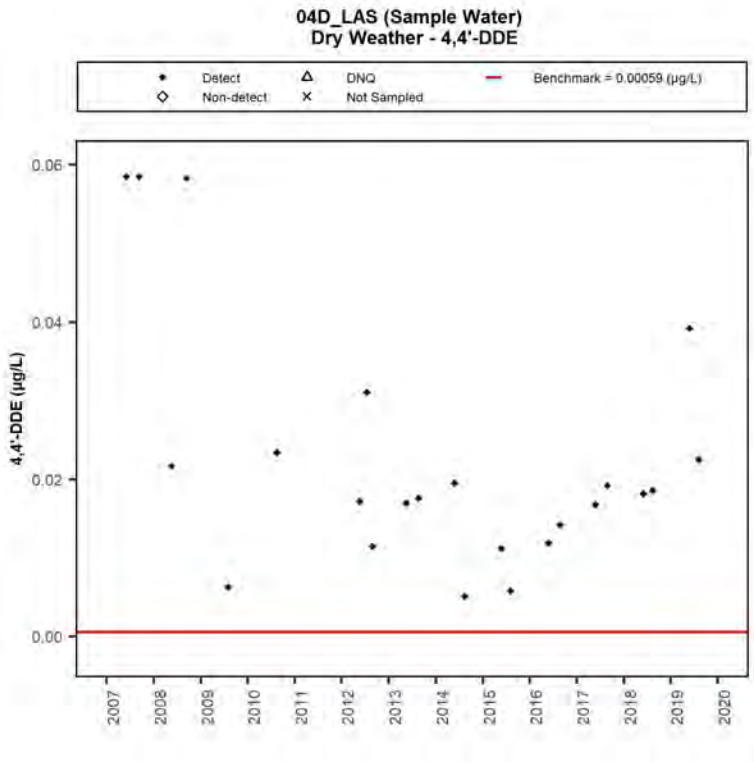


Figure 85. Dry Weather DDE Concentrations at Waiver Benchmark Site 04D_LAS

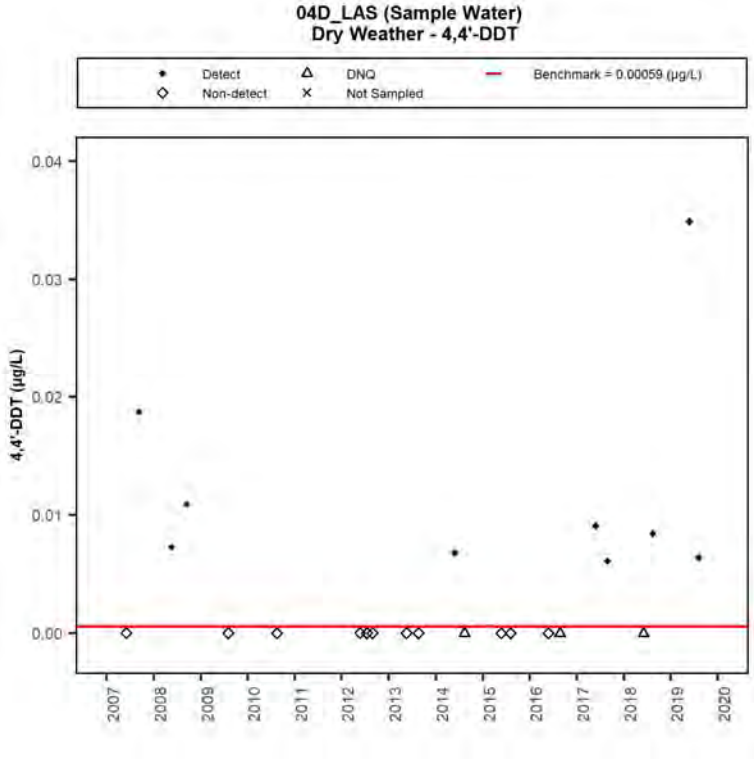


Figure 86. Dry Weather DDT Concentrations at Waiver Benchmark Site 04D_LAS

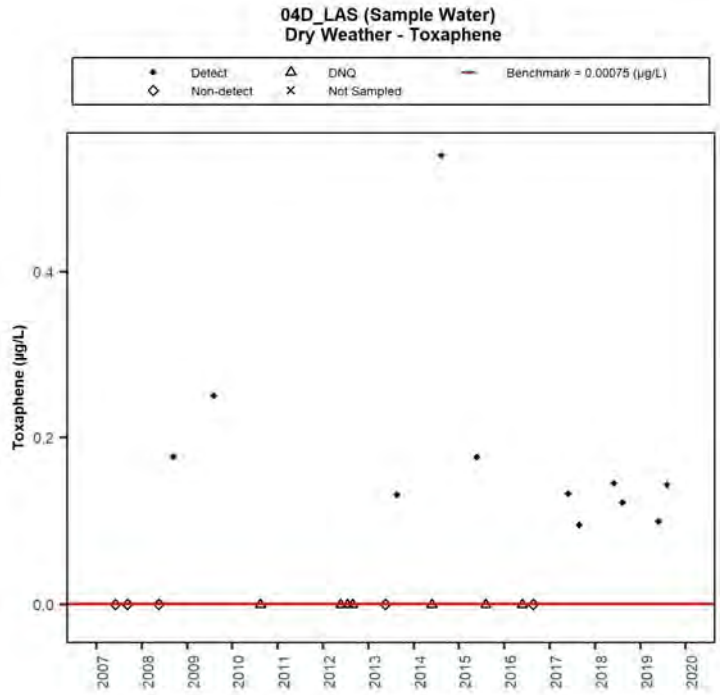


Figure 87. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_LAS

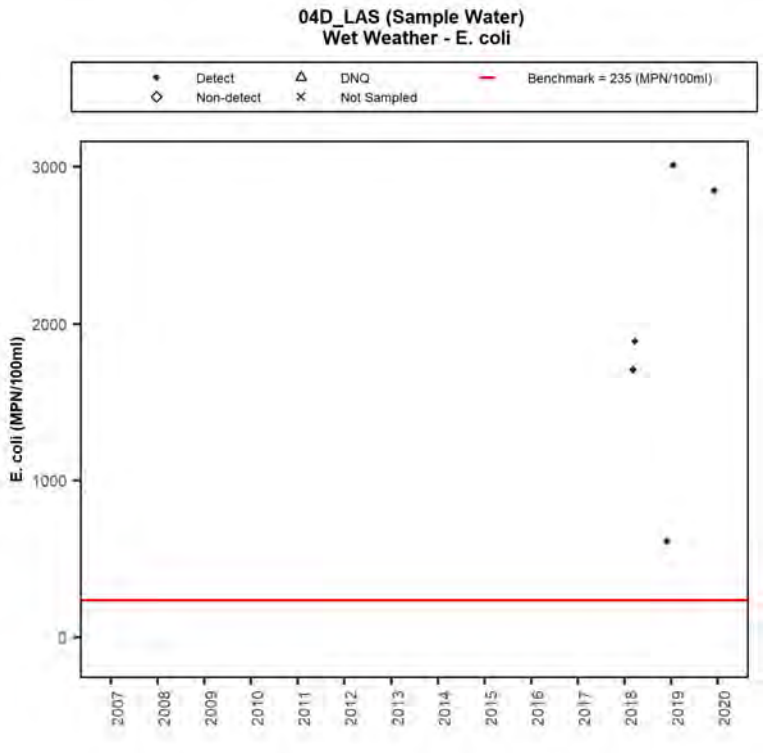


Figure 88. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_LAS

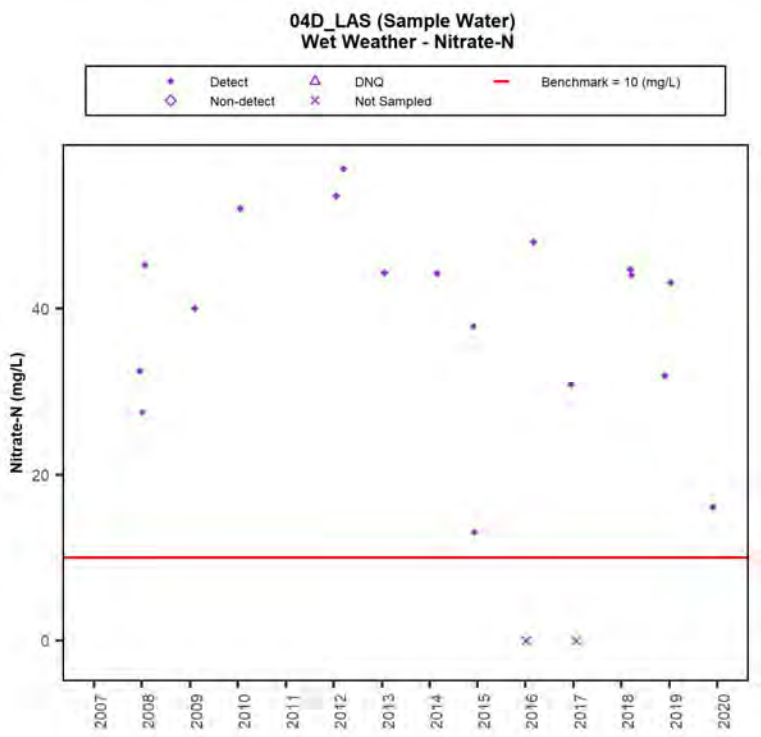


Figure 89. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_LAS

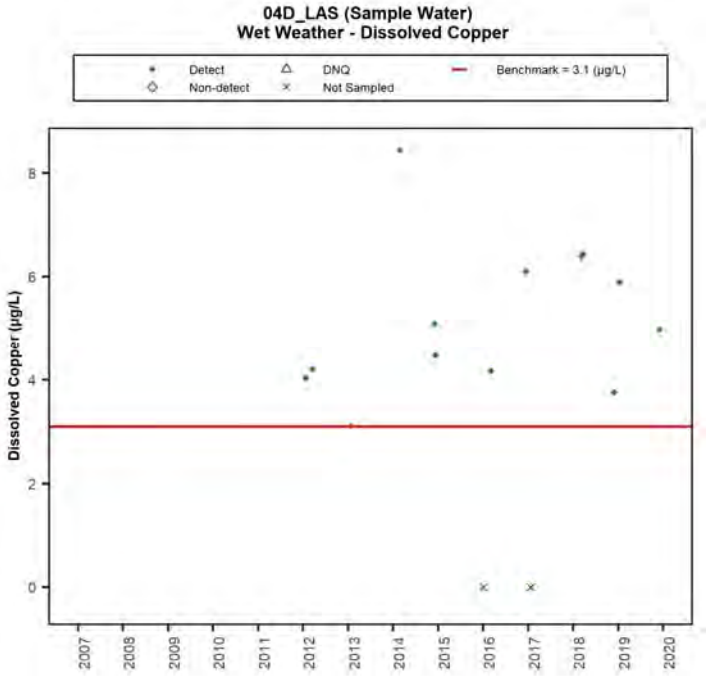


Figure 90. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_LAS

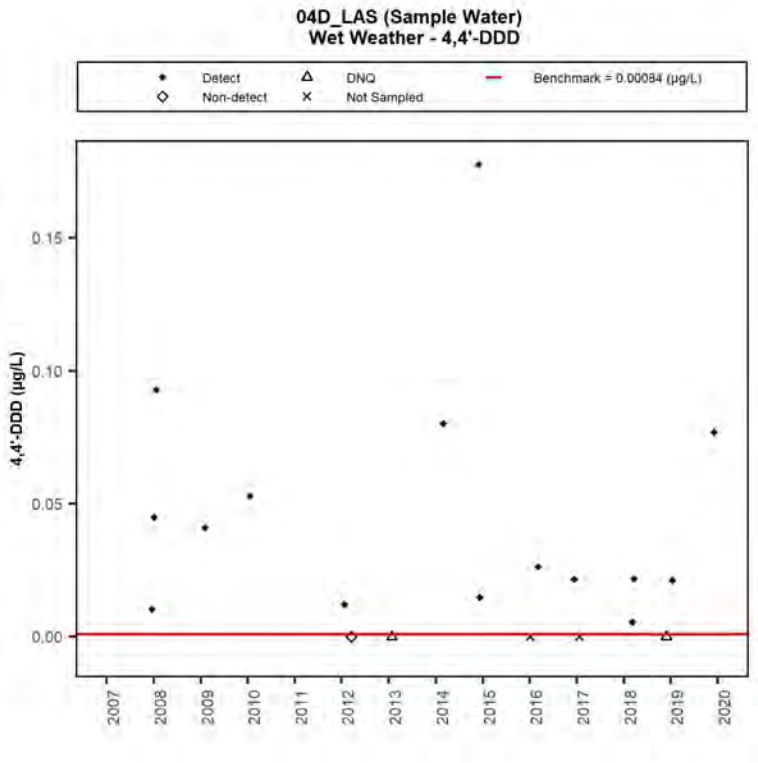


Figure 91. Wet Weather DDD Concentrations at Waiver Benchmark Site 04D_LAS

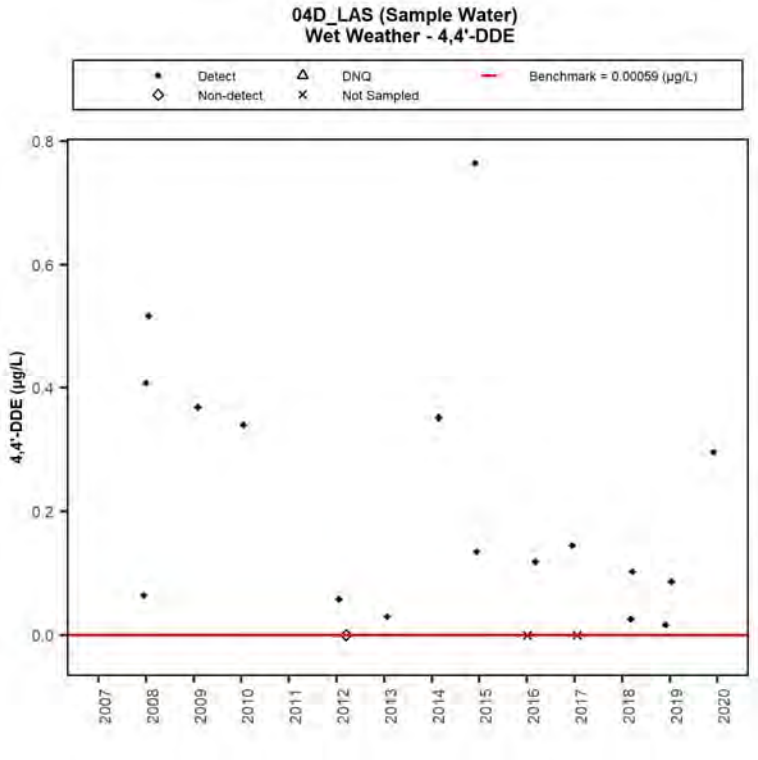


Figure 92. Wet Weather DDE Concentrations at Waiver Benchmark Site 04D_LAS

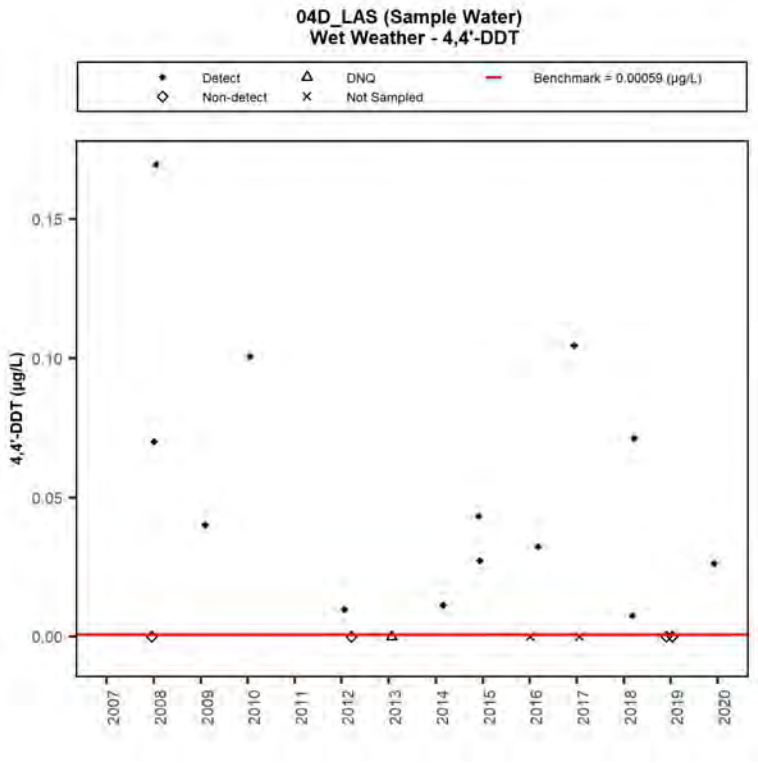


Figure 93. Wet Weather DDT Concentrations at Waiver Benchmark Site 04D_LAS

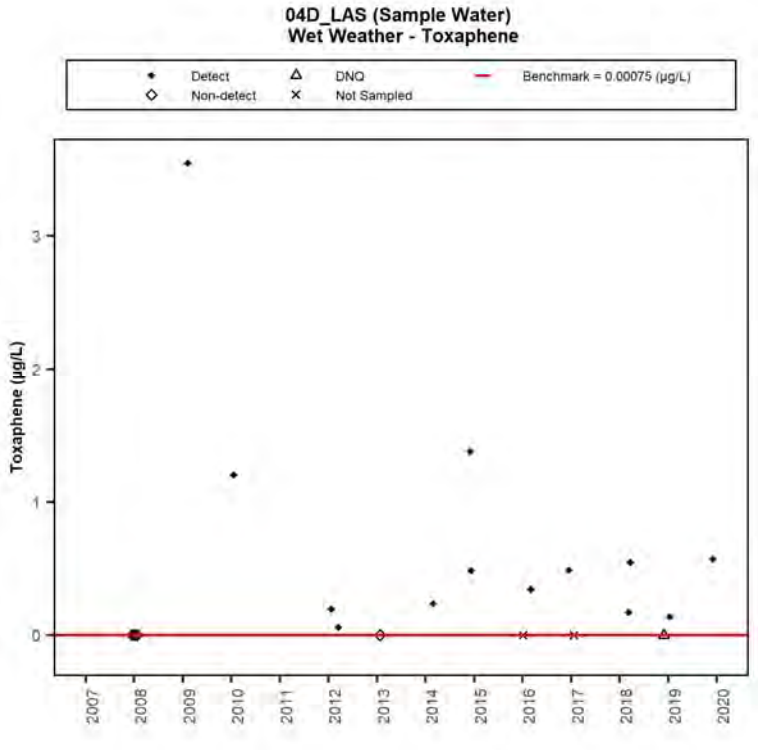


Figure 94. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_LAS

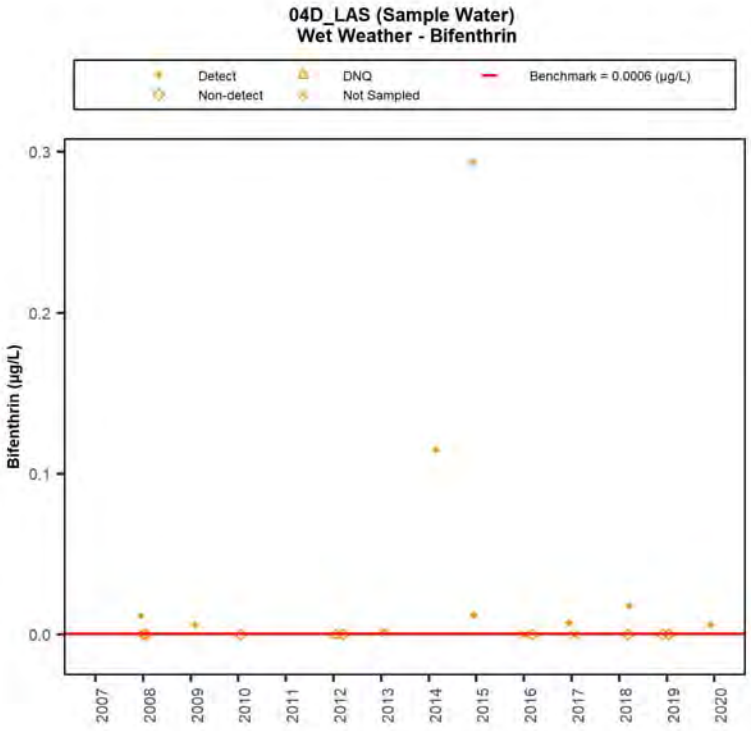


Figure 95. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 04D_LAS

Table 52. Wet Weather Survival Toxicity during the 2016 Waiver Period at Waiver Benchmark Site 04D_LAS

Wet Weather Survival Toxicity - 04D_LAS	
# of Events with Significant Mortality	1
# of Events with No Significant Mortality	2

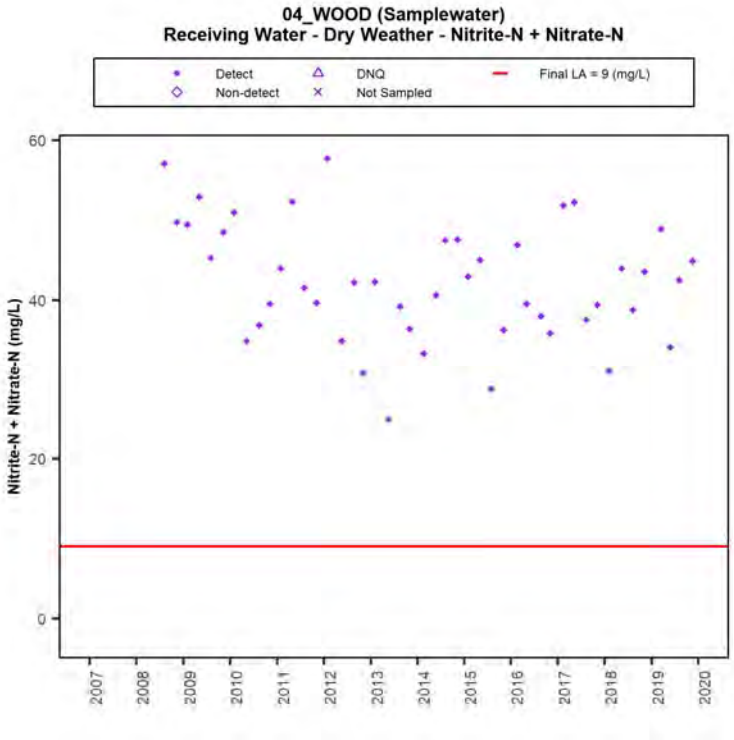


Figure 96. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 04_WOOD

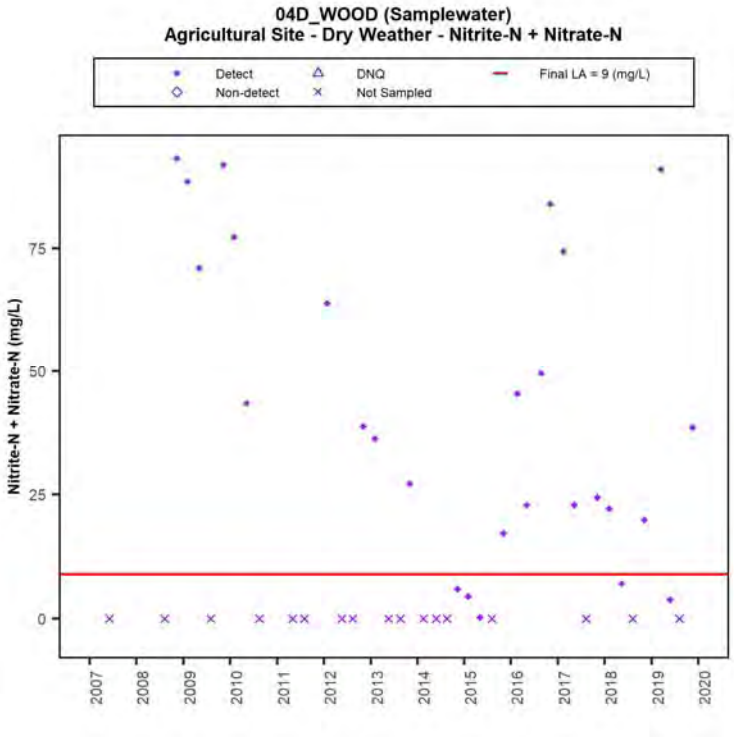


Figure 97. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 04D_WOOD

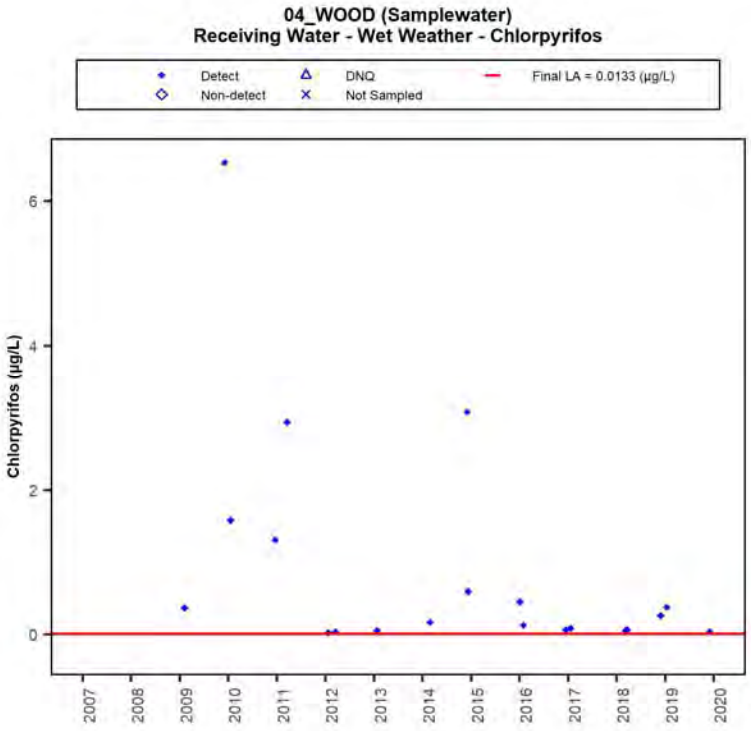


Figure 98. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 04_WOOD

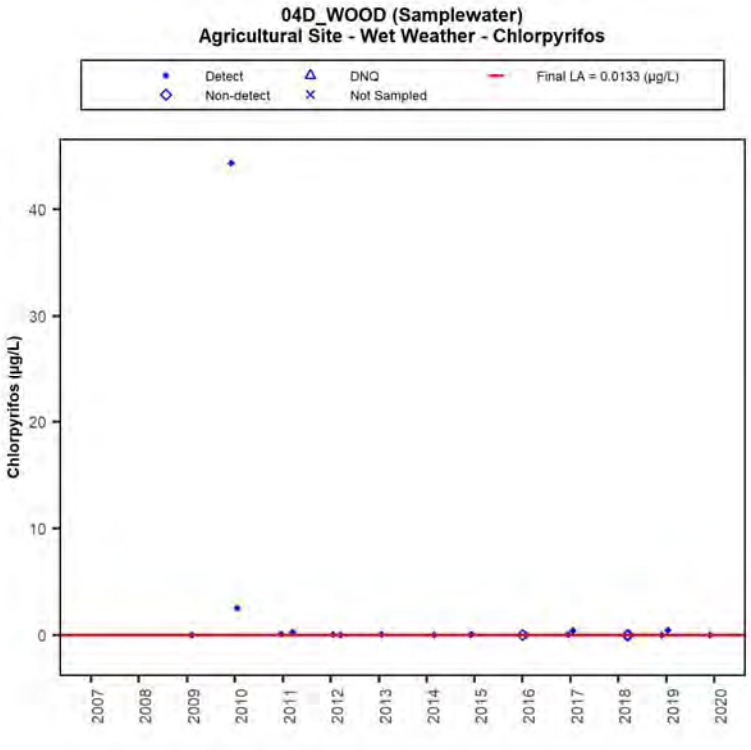


Figure 99. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 04D_WOOD

Table 53. Summary of Benchmark Exceedance Evaluation for South Revolon Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
E. coli	●			☑	●			☑
Salts								
Boron		● [2]	[3]	[4]				
Nutrients								
Nitrate-N	●			☑	●			☑
Nitrate-N + Nitrite-N		● [2]	● [3]	☑				
Metals and Selenium								
Dissolved Copper	●			☑	●			☑
Total Selenium		● [2]	[3]	[4]				
OC Pesticides (Legacy)								
DDD	●			☑	●			☑
DDE	●			☑	●			☑
DDT	●			☑	●			☑
Toxaphene	●			☑	●			☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos						● [2]	● [3]	☑
Bifenthrin					●			☑
Chronic Toxicity								
Survival Toxicity					● [5]			☑

1. VCAILG monitoring site for Waiver benchmarks is 04D_LAS.
2. CCW Salts TMDL receiving water site is 04_WOOD and actions only apply to Salts TMDL area. TMDL receiving water site for the CCW Nitrogen, Metals, and Toxicity TMDLs is also 04_WOOD.
3. Agricultural land use site for the Salts, Nitrogen, Metals, and Toxicity TMDL is 04D_WOOD.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. Single species exceedances for *Hyalella azteca*.

Table 54. BMPs for Additional Implementation in the South Revolon Responsibility Area

Exceedance Condition												% of Total Applicable Surveyed Units	
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Pesticides	Toxicity				
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet	Wet		Survey Responses	04D_LAS Site Drainage	Additional Implementation of Pertinent BMP Needed?
		x	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	6%	Yes
x		x		x		x				Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	22%	Yes
		x		x		x				1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	100%	No
		x		x						2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	84%	Yes
		x								3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	77%	Yes
		x	x						x	4b	Certified nutrient management plan has been prepared for the property	62%	Yes
		x	x						x	5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	100%	No
		x	x						x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	No
		x	x						x	7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	98%	No
		x	x						x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	100%	No
		x	x	x	x	x	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	77%	Yes
			x		x		x	x	x	11	How much non-cropped area is bare soil?	70%	Yes
x	x	x	x	x	x	x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	42%	Yes
x	x	x	x	x	x	x	x	x	x	13a	Grassed waterways are used	3%	Yes
x	x	x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	3%	Yes
								x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	No
								x	x	16	An integrated pest management plan is implemented	92%	Yes
x		x		x		x				18	How many acres produce irrigation runoff?	44%	Yes
x	x	x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	1%	Yes

Table 55. Proposed Best Management Practices for the South Revolon Responsibility Area

Water Quality Issues										BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity	
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Wet Weather	
										Source Control BMPs
		x	x	x	x	x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x		x		x		x				Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
		x		x		x				Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
		x		x						Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
		x								Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
		x	x						x	Prepare a certified nutrient management plan for the property
		x	x						x	Conduct soil residual nitrate tests and use results to adjust fertilizer application
		x	x						x	Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
		x	x						x	Analyze irrigation water nitrate and use results to adjust fertilizer application
		x	x						x	Adjust fertilizer application to account for nutrients provided by cover crops
		x	x	x	x	x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)

Water Quality Issues										BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity	
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Wet Weather	
			x		x		x	x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
								x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
								x	x	Implement an integrated pest management plan
x		x		x		x				Avoid/prevent irrigation runoff
										Structural Non-Treatment BMPs
x	x	x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	x	x	Use vegetated filter strips
										Optional Structural BMPs
x	x	x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

LaVista Drain Responsibility Area

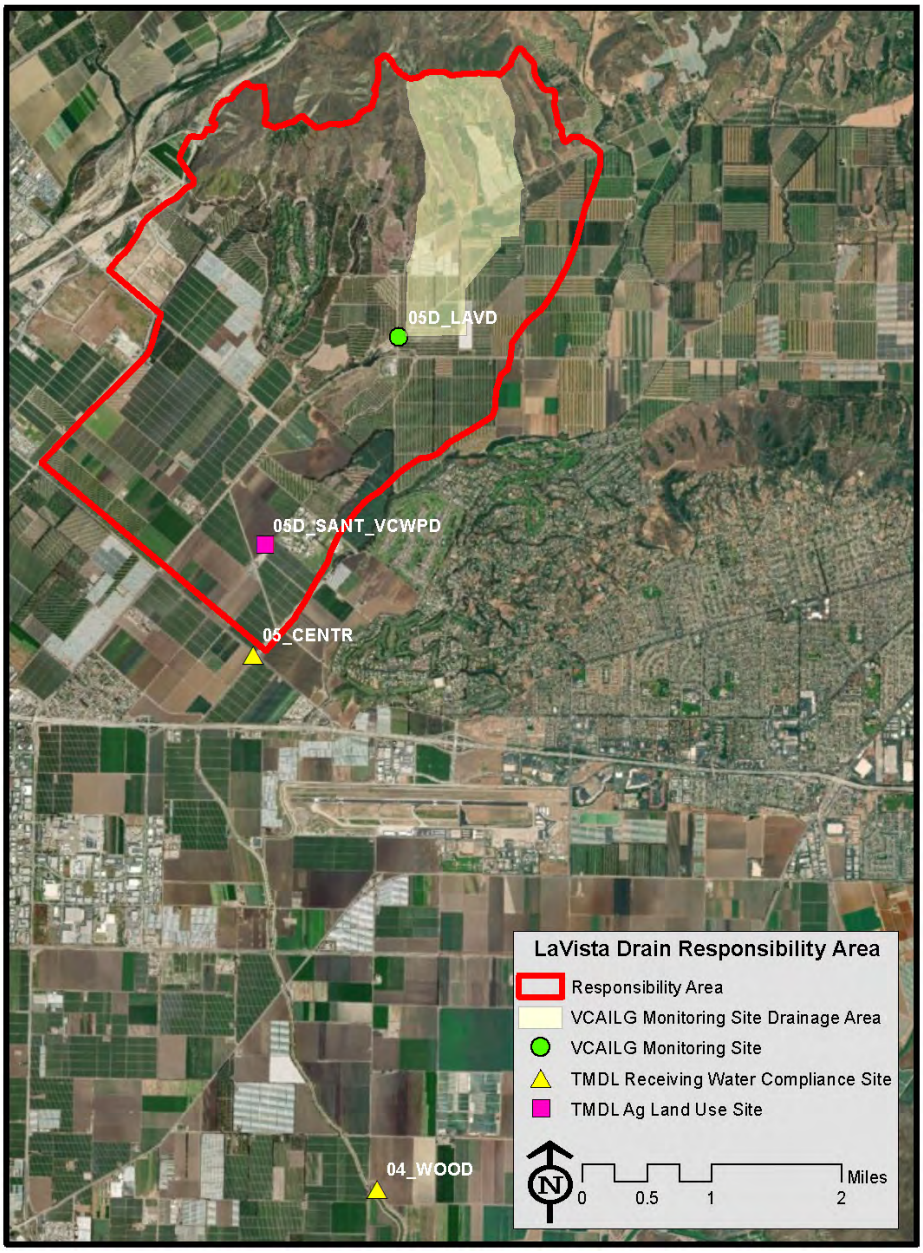


Figure 100. LaVista Drain Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the LaVista Drain responsibility area are illustrated in Figure 100. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 04_WOOD is a CCW Salts, OC Pesticides and PCBs, Toxicity, and Metals TMDL Receiving Water Compliance Site
- 05_CENTR is a CCW Nitrogen TMDL Receiving Water Compliance Site
- 05D_SANT_VCWPD is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 56. LaVista Drain Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site 05D_LAVD
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	6,087	766
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	0	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	5,513	766
Assessed Acres from Agricultural Parcel List belonging to Non Members	574	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	4,339	620
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.79	0.81
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	452	0
Total Estimated Irrigated Acres (Member plus Non Member)	4,791	620
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	91%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	3,839	503
Percent of Total Estimated Irrigated Acres that were Surveyed	80%	81%
Percent of VCAILG Member Irrigated Acres that were Surveyed	88%	81%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 57. LaVista Drain Responsibility Area Crop Types and General Production Practices

Crop or Practice	05D_LAVD Site Drainage Only						LaVista Drain Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-		585	544	422	18%	14%	11%
Blueberries	101*	16	16	18%*	3%	3%	123*	37	77	4%*	1%	2%
Raspberries		81	22		14%	4%		286	364		7%	9%
Row Crop	50	20	20	9%	3%	4%	328	246	403	10%	6%	10%
Orchard	392	467	445	70%	80%	88%	2,197	2,698	2,542	68%	70%	66%
Nursery	-	-	-	-	-		-	9	9	-	0.2%	0.2%
Flower	-	-	-	-	-		-	18	18	-	0.5%	0.5%
Sod	-	-	-	-	-		-	3	3	-	0.1%	0.1%
Other	20	-	-	4%	-		-	-	-	-		-
Overhead Cover in Production Areas												
Hoop House	-	97	38	-	17%	7.5%	-	332	441	-	8%	11.49%
No Cover	-	20	20	-	3%	4.0%	256	813	848	8%	21%	22.08%
Greenhouse	-	-	-	-	-		-	3	3	-	0.1%	0.07%
Shade	-	-	-	-	-		-	3	3	-	0.1%	0.07%
Other	-	-	-	-	-		-	-	-	-		-
Surface Treatments in Production Areas												
Bare Soil	276	245	206	49%	42%	40.9%	724	1,040	1,666	22%	27%	43.4%
Cover Crop	90	79	20	16%	14%	4.0%	169	158	51	5%	4%	1.3%
Plastic	-	20	20	-	3%	4.0%	585	564	482	18%	15%	12.5%
Weed Cloth	-	-	-	-	-	0.0%	-	9	9	0%	0.2%	0.2%
Mulch	135	204	221	24%	35%	44.0%	1,632	1,900	1,496	50%	49%	39.0%
Gravel	-	-	-	-	-	-	-	-	-	-	-	-
Other	63	63	63	11%	11%	12.5%	181	221	181	6%	6%	4.7%
Irrigation Systems in Production Areas												
Drip Only	188	189	150	33%	32%	29.8%	1,288	1,516	1,699	40%	39%	44.3%
Microsprinkler/Drip	-	-	-	-	-	-	426	362	22	13%	9%	0.6%
Microsprinkler	326	375	333	58%	64%	66.2%	1,169	1,626	1,502	36%	42%	39.1%

Crop or Practice	05D_LAVD Site Drainage Only						LaVista Drain Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead Sprinkler	-	-	-	-	-	-	-	5	125	-	0.1%	3.2%
Overhead/Drip	50	20	20	9%	3%	4.0%	389	333	491	12%	9%	12.8%
Furrow Flood	-	-	-	-	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	42	-	-	1.1%

Table 58. LaVista Drain Responsibility Area Grower BMPs

Survey Question	Units	05D_LAVD Site Drainage Only						LaVista Drain Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	375	584	503	67%	100%	100%	2,925	3,789	3,661	91%	99%	96%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	534	564	483	95%	97%	96%	2,789	3,574	3,426	86%	93%	89%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	239	340	340	45%	65%	73%	1,011	2,067	1,851	32%	55%	49%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	375	503	503	67%	86%	100%	2,558	2,546	2,756	79%	66%	72%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	275	403	403	49%	69%	80%	2,225	2,172	2,528	68%	57%	66%
Q5a: Are soil residual nitrate tests done?	Acres	563	584	503	100%	100%	100%	2,982	3,504	3,666	92%	91%	96%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	563	584	503	100%	100%	100%	2,982	3,504	3,626	92%	91%	94%
Q6: Are leaf/petiole tests conducted?	Acres	375	503	503	67%	100%	100%	2,973	3,708	3,621	91%	99%	95%
Q7a: Is nitrate measured in fertigation water?	Acres	476	546	465	84%	94%	92%	2,617	3,217	3,130	80%	84%	82%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	476	465	465	84%	80%	92%	2,617	3,136	3,130	80%	82%	82%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	261	331	250	54%	64%	57%	1,067	984	948	57%	41%	40%
Sediment Management													
Q9: How many cropped acres are sloped?	Acres	158	211	241	28%	36%	48%	558	724	714	17%	19%	19%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	294	358	241	186%	170%	100%	8217	942	651	100% [a]	100% [a]	91%
Q11. How much non-cropped area is bare soil?	Acres	59	44	9	11%	31%	19%	223	361	337	7%	45%	46%
Q12a: How many feet of ditches exist?	Feet	20,640	32,772	21,540	N/A	N/A	N/A	88,321	108,969	120,614	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	15,140	21,872	14,640	73%	67%	68%	60,834	77,151	81,558	69%	71%	68%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	-	-	251	73	164	8%	2%	4%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	67	39	52	2%	1%	1%
Q14: How many acres are treated by vegetated filter strips?	Acres	100	100	100	18%	17%	20%	222	328	329	7%	9%	9%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	564	584	503	100%	100%	100%	3,253	3,829	3,826	100%	100%	100%
Q16: Is an IPM Plan being implemented?	Acres	564	584	503	100%	100%	100%	3,253	3,803	3,800	100%	99%	99%
Q17a: How many acres are organically farmed?	Acres	104	108	136	19%	18%	27%	167	171	199	5%	4%	5%

Survey Question	Units	05D_LAVD Site Drainage Only						LaVista Drain Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q17b: How many acres are conventionally farmed?	Acres	459	456	367	81%	78%	73%	3,086	3,268	3,640	95%	85%	95%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	161	114	114	29%	20%	23%	718	752	838	22%	20%	22%
Q19: Runoff from how many acres is treated or detained?	Acres	172	136	136	31%	23%	27%	796	739	739	24%	19%	19%

[a] Respondents answers to Q9 and Q10 lead to an illogical adoption rate >100%. 100% is reported in the table as a reasonable interpretation.

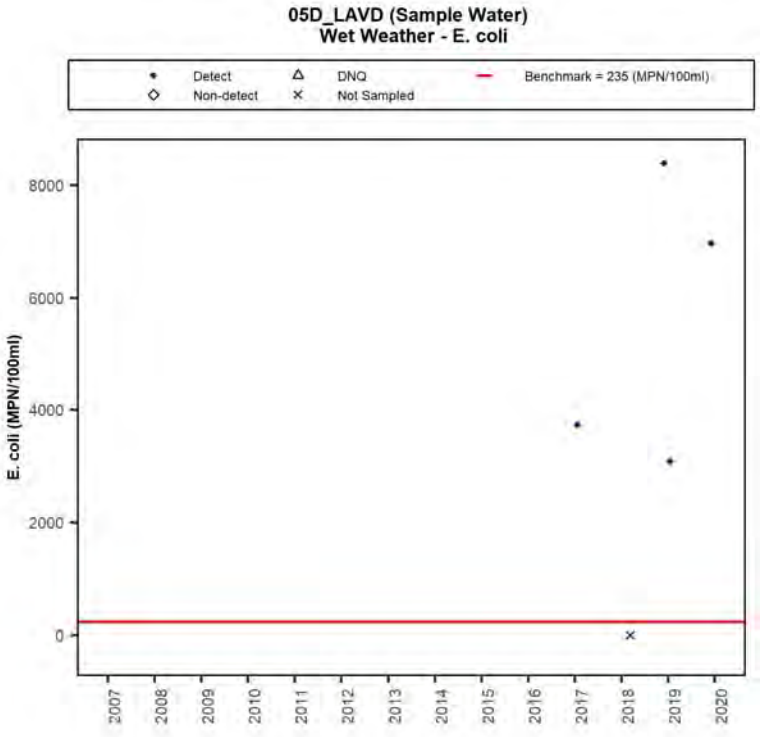


Figure 101. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 05D_LAVD

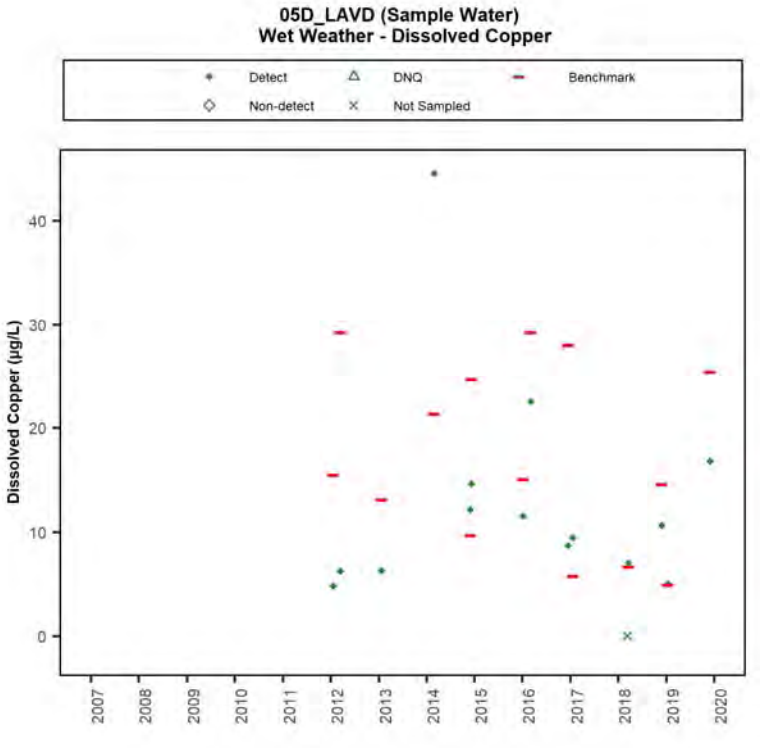


Figure 102. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 05D_LAVD

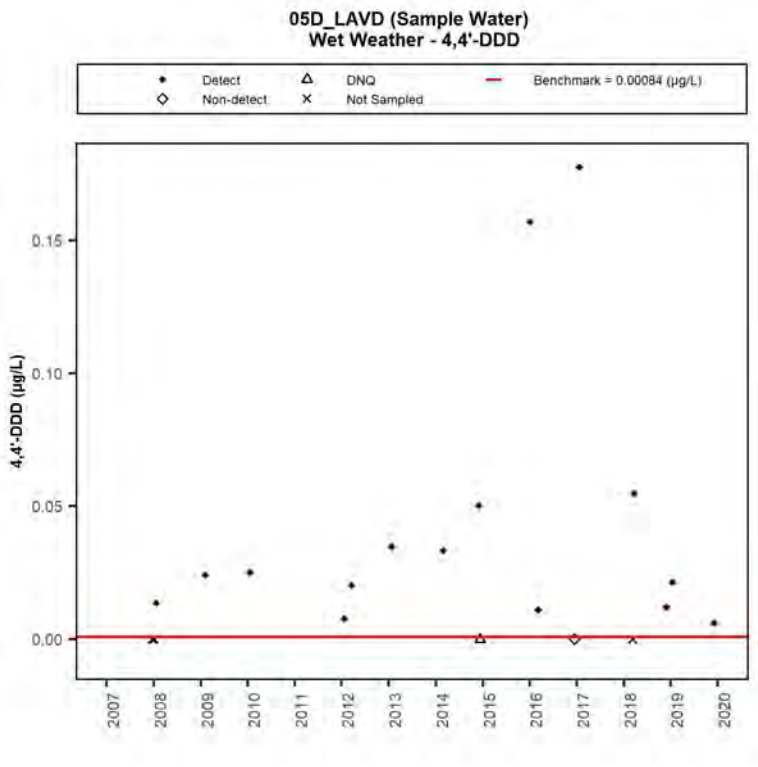


Figure 103. Wet Weather DDD Concentrations at Waiver Benchmark Site 05D_LAVD

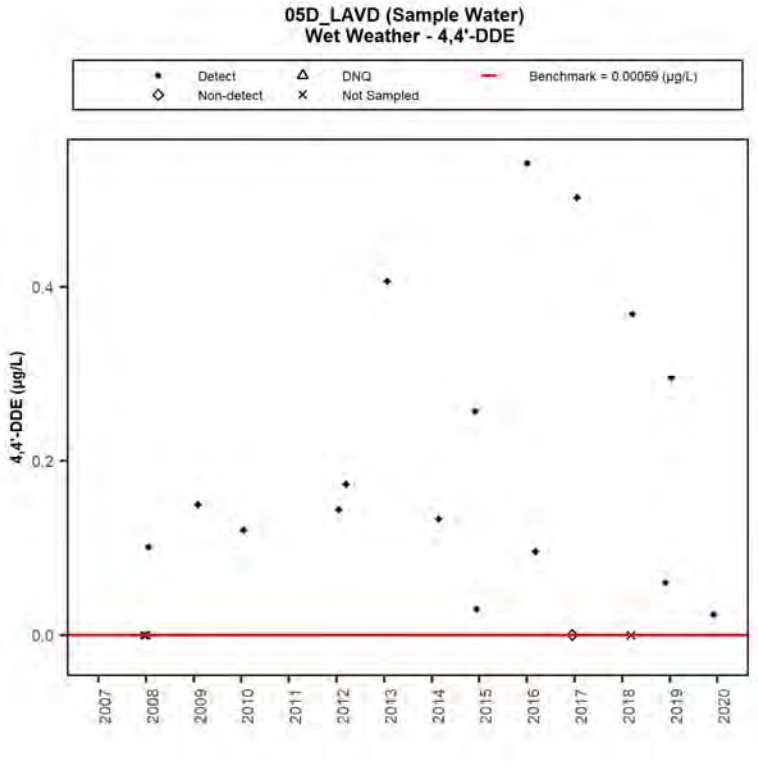


Figure 104. Wet Weather DDE Concentrations at Waiver Benchmark Site 05D_LAVD

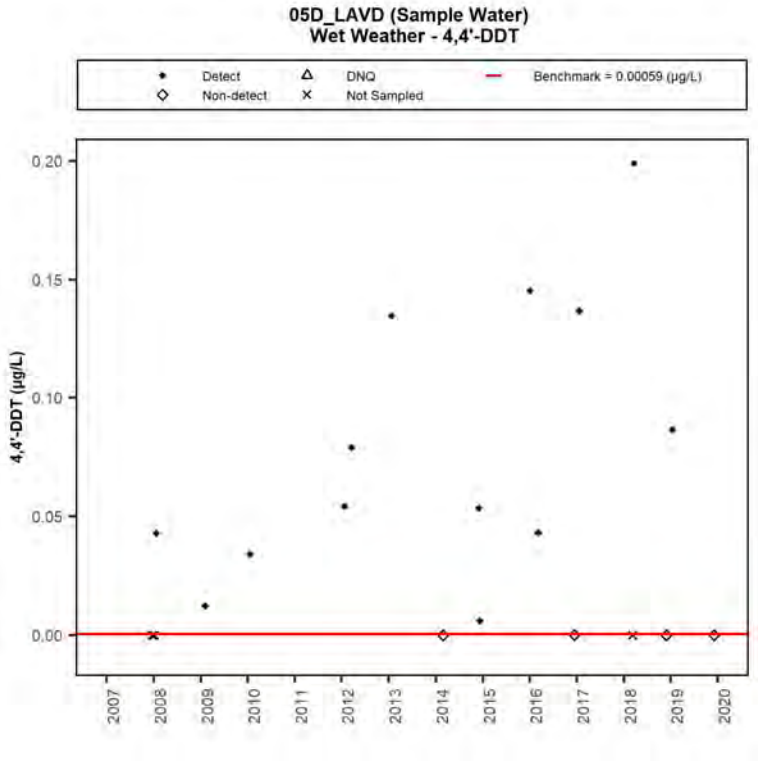


Figure 105. Wet Weather DDT Concentrations at Waiver Benchmark Site 05D_LAVD

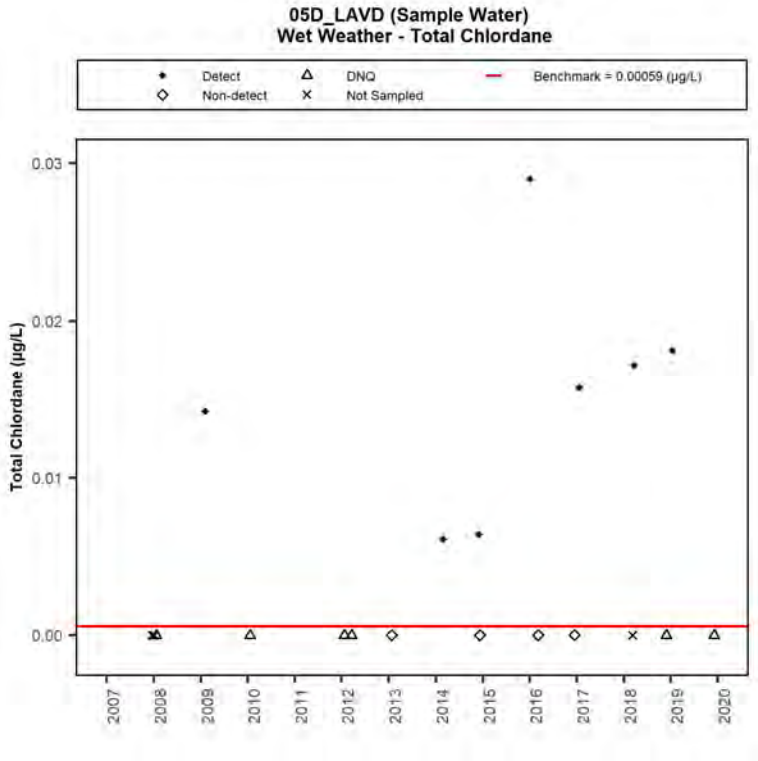


Figure 106. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 05D_LAVD

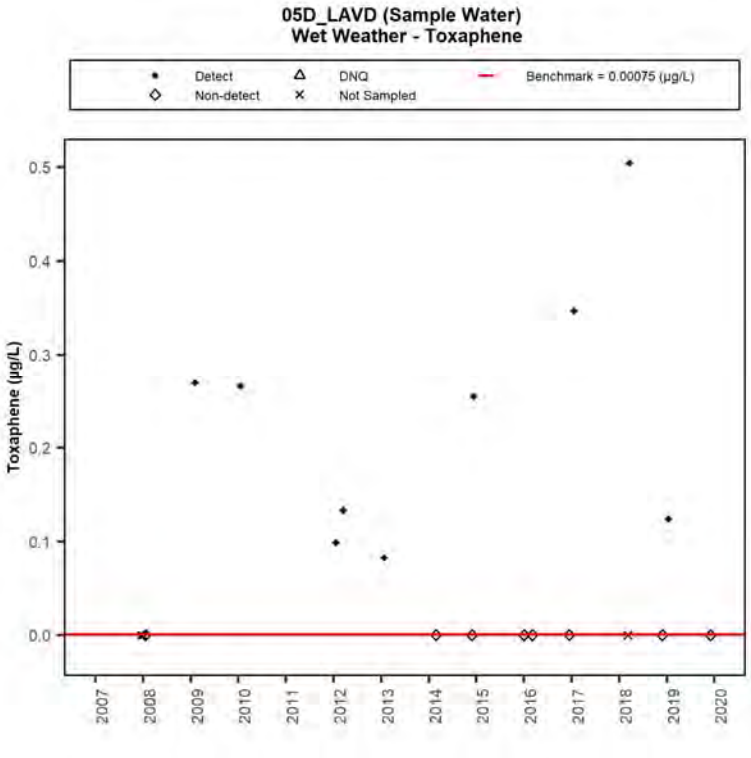


Figure 107. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 05D_LAVD

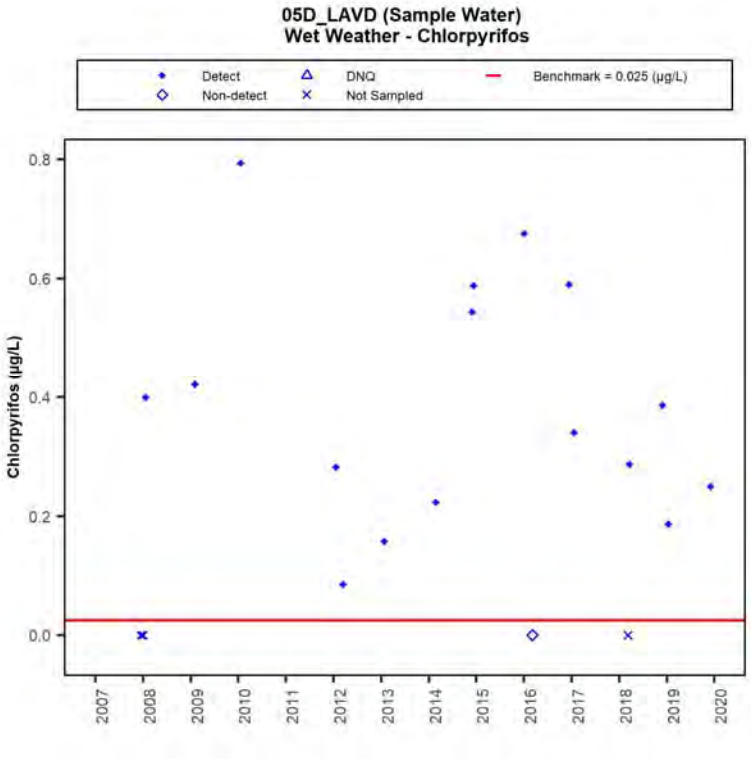


Figure 108. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 05D_LAVD

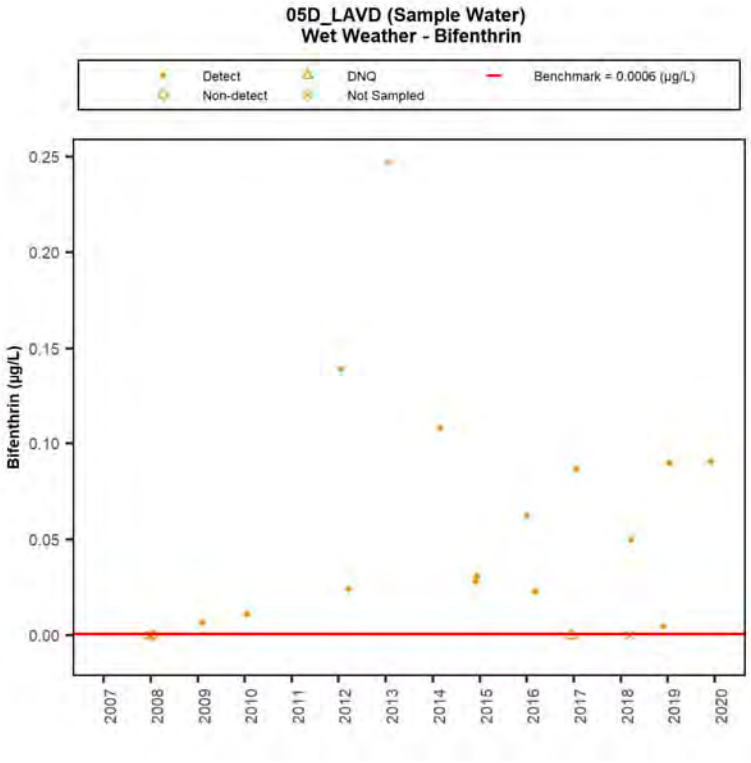


Figure 109. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 05D_LAVD

Table 59. Wet Weather Survival Toxicity during the 2016 Waiver Period at Waiver Benchmark Site 05D_LAVD

Wet Weather Survival Toxicity - 05D_LAVD	
# of Events with Significant Mortality	1
# of Events with No Significant Mortality	2

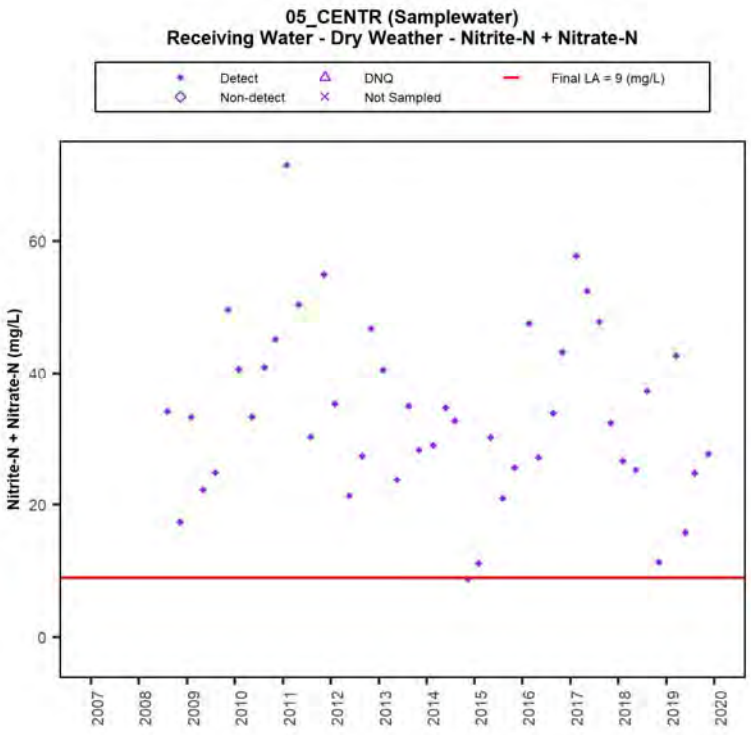


Figure 110. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 05_CENTR

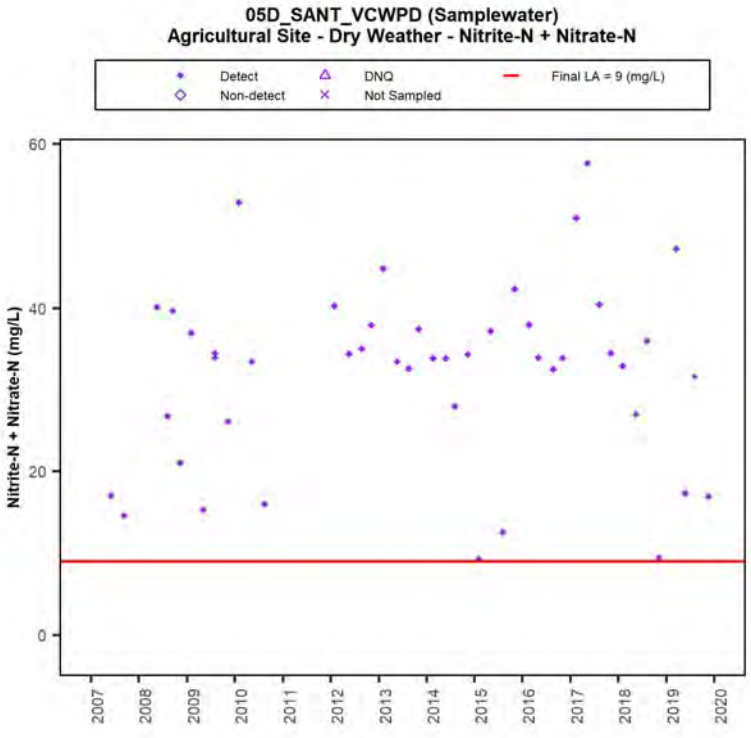


Figure 111. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

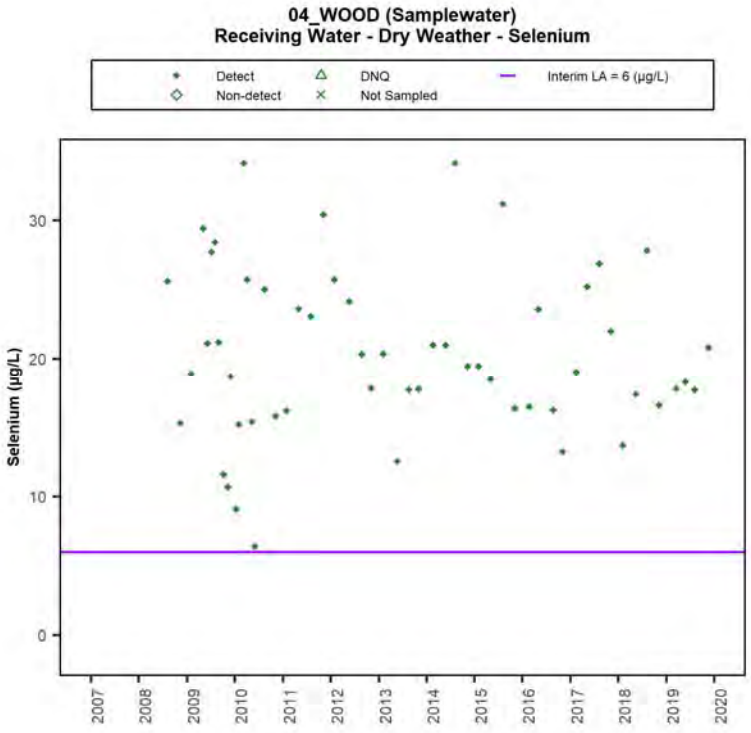


Figure 112. Dry Weather Total Selenium Concentrations at TMDL LA Site 04_WOOD

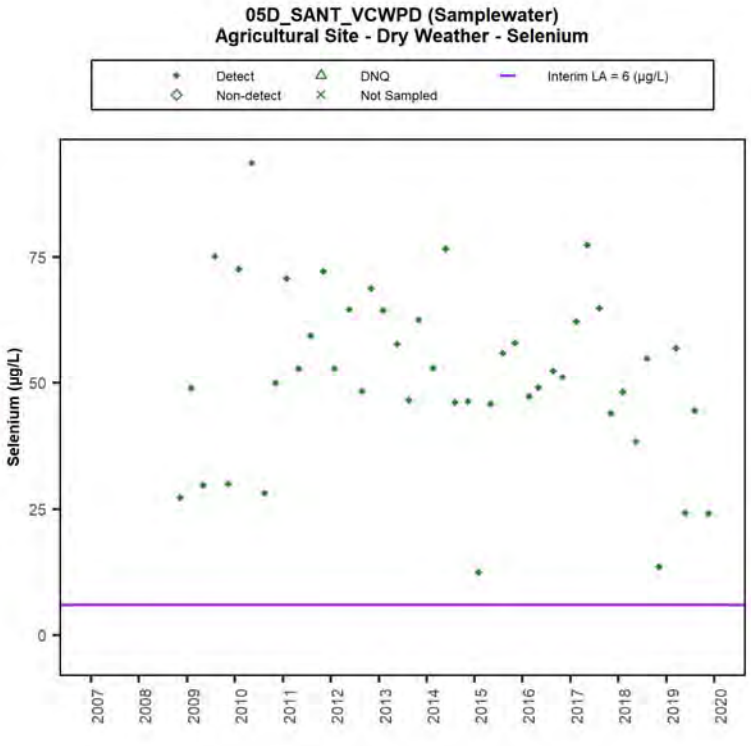


Figure 113. Dry Weather Total Selenium Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

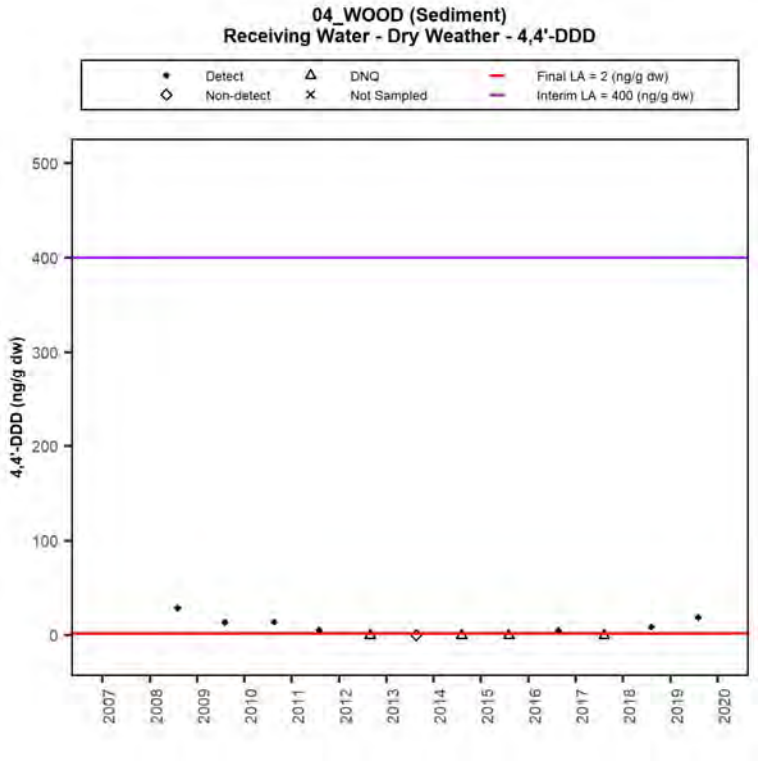


Figure 114. Dry Weather DDD Concentrations at TMDL LA Site 04_WOOD

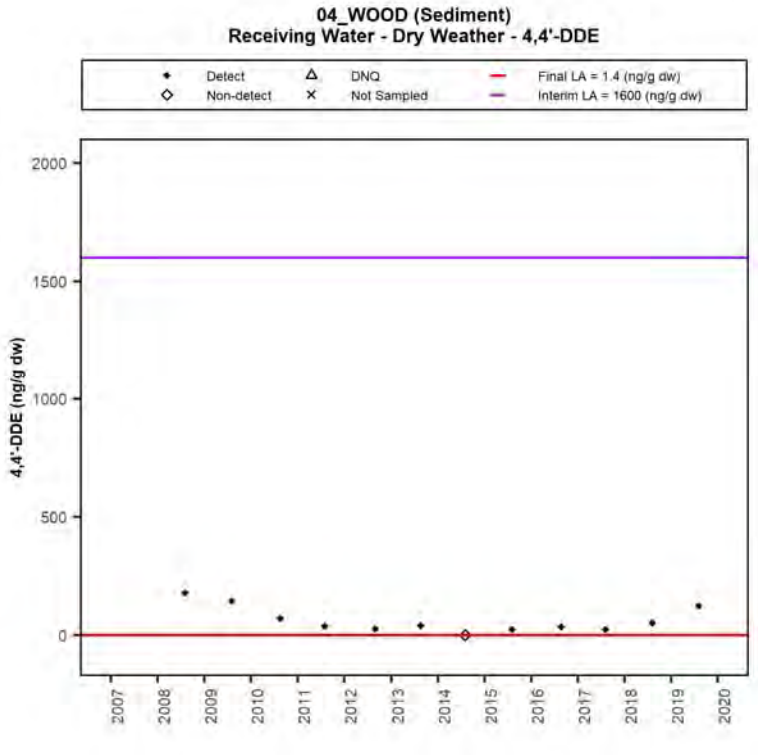


Figure 115. Dry Weather DDE Concentrations at TMDL LA Site 04_WOOD

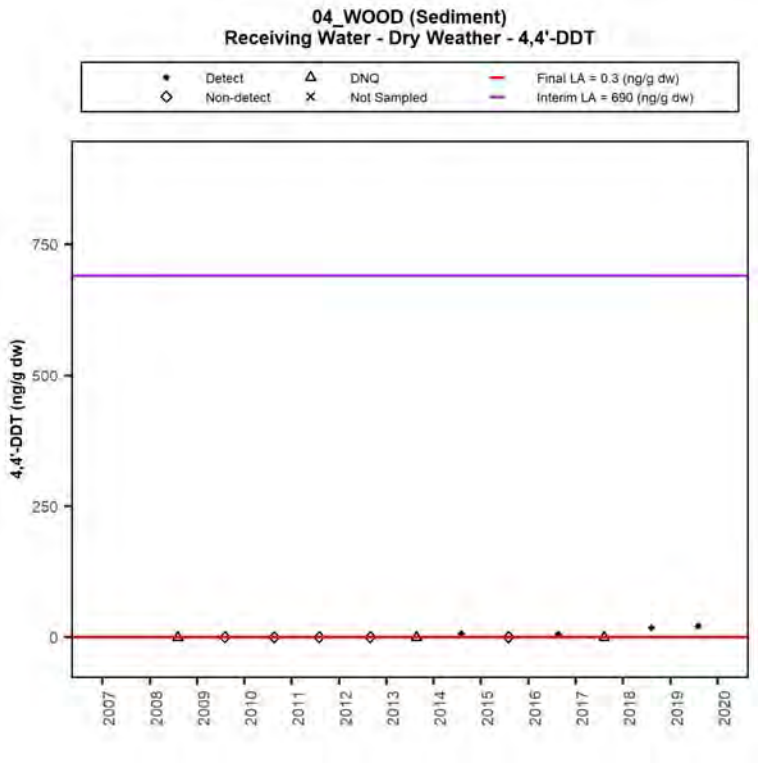


Figure 116. Dry Weather DDT Concentrations at TMDL LA Site 04_WOOD

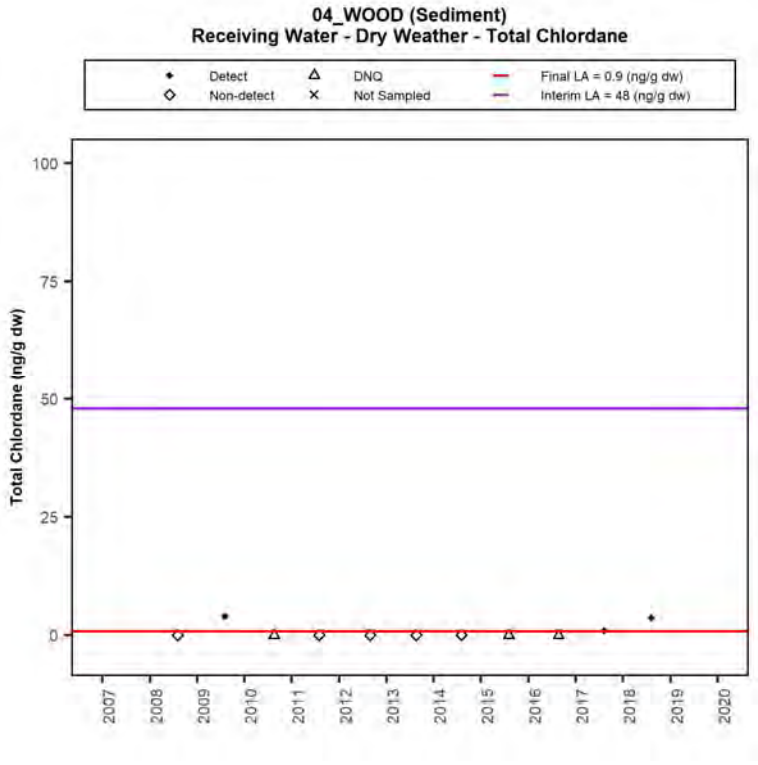


Figure 117. Dry Weather Total Chlordane Concentrations at TMDL LA Site 04_WOOD

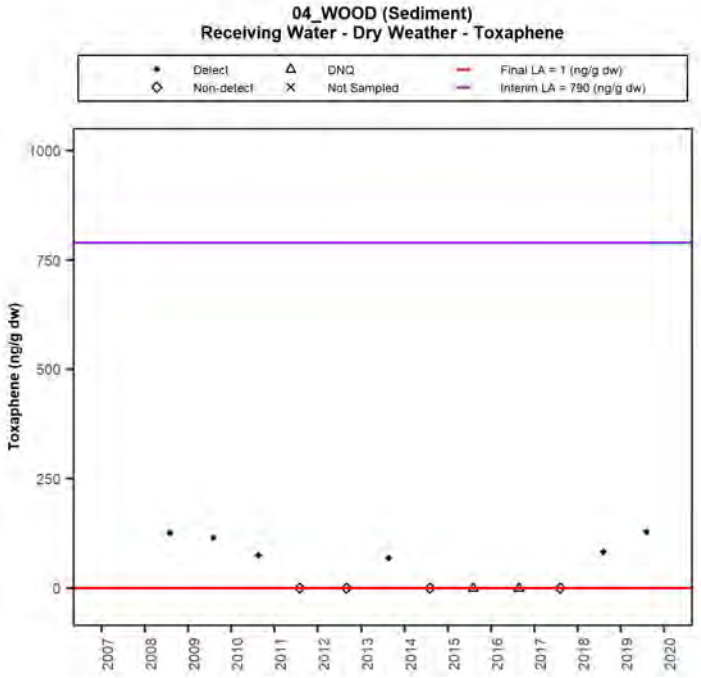


Figure 118. Dry Weather Toxaphene Concentrations at TMDL LA Site 04_WOOD

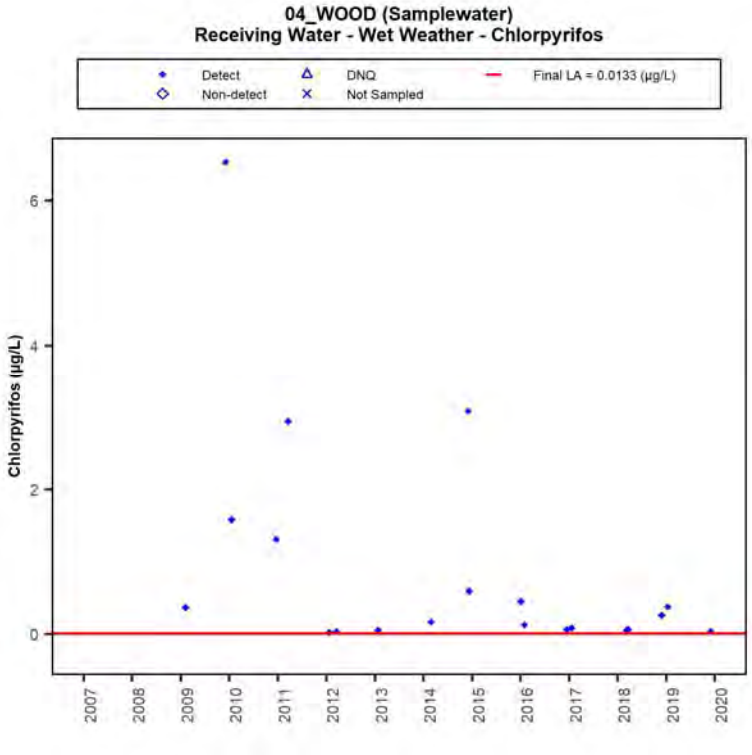


Figure 119. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 04_WOOD

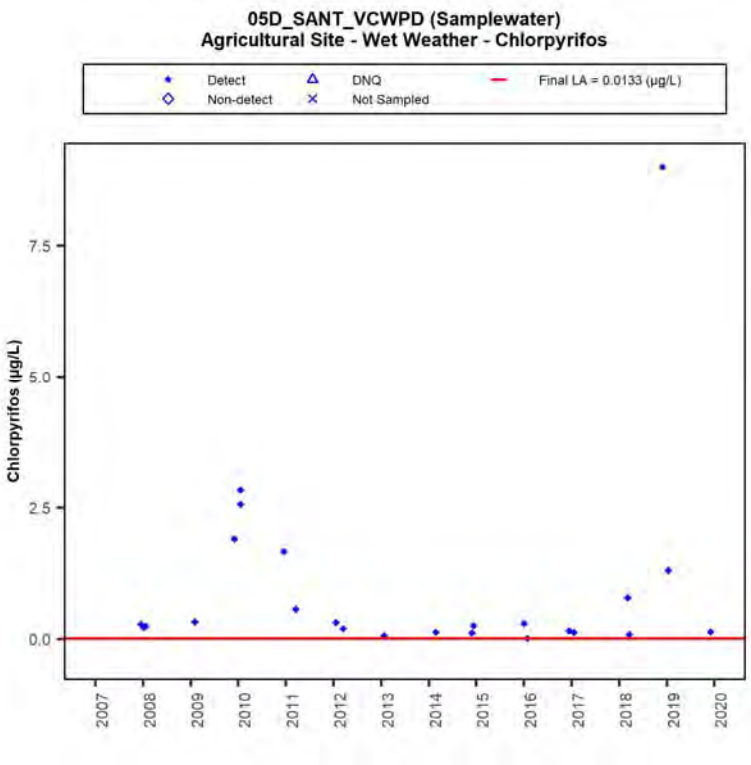


Figure 120. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

Table 60. Summary of Benchmark Exceedance Evaluation for LaVista Drain Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
E. coli					●			☑
Salts								
Boron		● [2]	[3]	[4]				
Nutrients								
Nitrate-N + Nitrite-N		● [5]	● [3]	☑		● [2]	[3]	[4]
Metals and Selenium								
Dissolved Copper					●			☑
Total Selenium		● [2]	● [3]	☑				
OC Pesticides (Legacy)								
DDD		● [6,7]		☑	●	● [6,7]		☑
DDE		● [6,7]		☑	●	● [6,7]		☑
DDT		● [6,7]		☑	●	● [6,7]		☑
Chlordane		● [6,7]		☑	●	● [6,7]		☑
Toxaphene		● [6,7]		☑	●	● [6,7]		☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● [2]	● [3]	☑
Bifenthrin					●			☑
Chronic Toxicity								
Survival Toxicity					● [8]			☑

1. VCAILG monitoring site for Waiver benchmarks is 05D_LAVD.
2. Receiving water site for CCW Salts, Metals, and Toxicity TMDLs is 04_WOOD.
3. TMDLs agricultural land use site is 05D_SANT_VCWPD.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. CCW Nitrogen TMDL receiving water site is 05_CENTR.
6. CCW OC Pesticides TMDL receiving water site is 04_WOOD. TMDL compliance is measured in sediment in receiving water and this location is downstream of where the entire responsibility area discharges. Though sediment is collected during dry weather, the results are applied to both wet and dry weather to ensure management practices minimize sediment transport year-round.
7. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.
8. Single species exceedances for *Ceriodaphnia dubia*.

Table 61. BMPs for Additional Implementation in the LaVista Drain Responsibility Area

Exceedance Condition												
Bacteria	Nutrients	Metals		Legacy Pesticides		Current Pesticides	Toxicity	Survey Responses		% of Total Applicable Surveyed Units		Additional Implementation of Pertinent BMP Needed?
										05D_LAVD Site Drainage Only	LaVista Drain Responsibility Area	
Wet	Dry	Dry	Wet	Dry	Wet	Wet	Wet					
	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	64%	58%	Yes
	x	x		x				Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	96%	84%	Yes
	x	x		x				1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	100%	96%	Yes
	x	x						2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	96%	89%	Yes
	x							3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	73%	49%	Yes
	x						x	4b	Certified nutrient management plan has been prepared for the property	80%	66%	Yes
	x						x	5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	100%	94%	Yes
	x						x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	95%	Yes
	x						x	7b	Irrigation water nitrate is analyzed, and the results are used to adjust fertilizer applications.	92%	82%	Yes
	x						x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	57%	40%	Yes
	x	x	x	x	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	91%	Yes
			x		x	x	x	11	How much non-cropped area is bare soil?	19%	46%	Yes
x	x	x	x	x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	68%	68%	Yes
x	x	x	x	x	x	x	x	13a	Grassed waterways are used	0%	4%	Yes
x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	20%	9%	Yes
						x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	100%	No
						x	x	16	An integrated pest management plan is implemented	100%	99%	No
	x	x		x				18	How many acres produce irrigation runoff?	23%	22%	Yes
x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	27%	19%	Yes

Table 62. Proposed Best Management Practices for the La Vista Drain Responsibility Area

Water Quality Issues								
Bacteria	Nutrients	Metals		Legacy Pesticides		Current Use Pesticides	Toxicity	
Wet Weather	Dry Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Wet Weather	BMPs
								Source Control BMPs
	x	x	x	x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x	x		x				Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x	x		x				Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
	x	x						Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
	x							Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
	x						x	Prepare a certified nutrient management plan for the property
	x						x	Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x						x	Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	x						x	Analyze irrigation water nitrate and use results to adjust fertilizer application
	x						x	Adjust fertilizer application to account for nutrients provided by cover crops
	x	x	x	x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)

Water Quality Issues							
Bacteria	Nutrients	Metals		Legacy Pesticides		Current Use Pesticides	Toxicity	
Wet Weather	Dry Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Wet Weather	BMPs
			x		x	x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
						x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
						x	x	Implement an integrated pest management plan
	x	x		x				Avoid/prevent irrigation runoff
								Structural Non-Treatment BMPs
x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	Use vegetated filter strips
								Optional Treatment BMPs
x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Beardsley Wash Responsibility Area

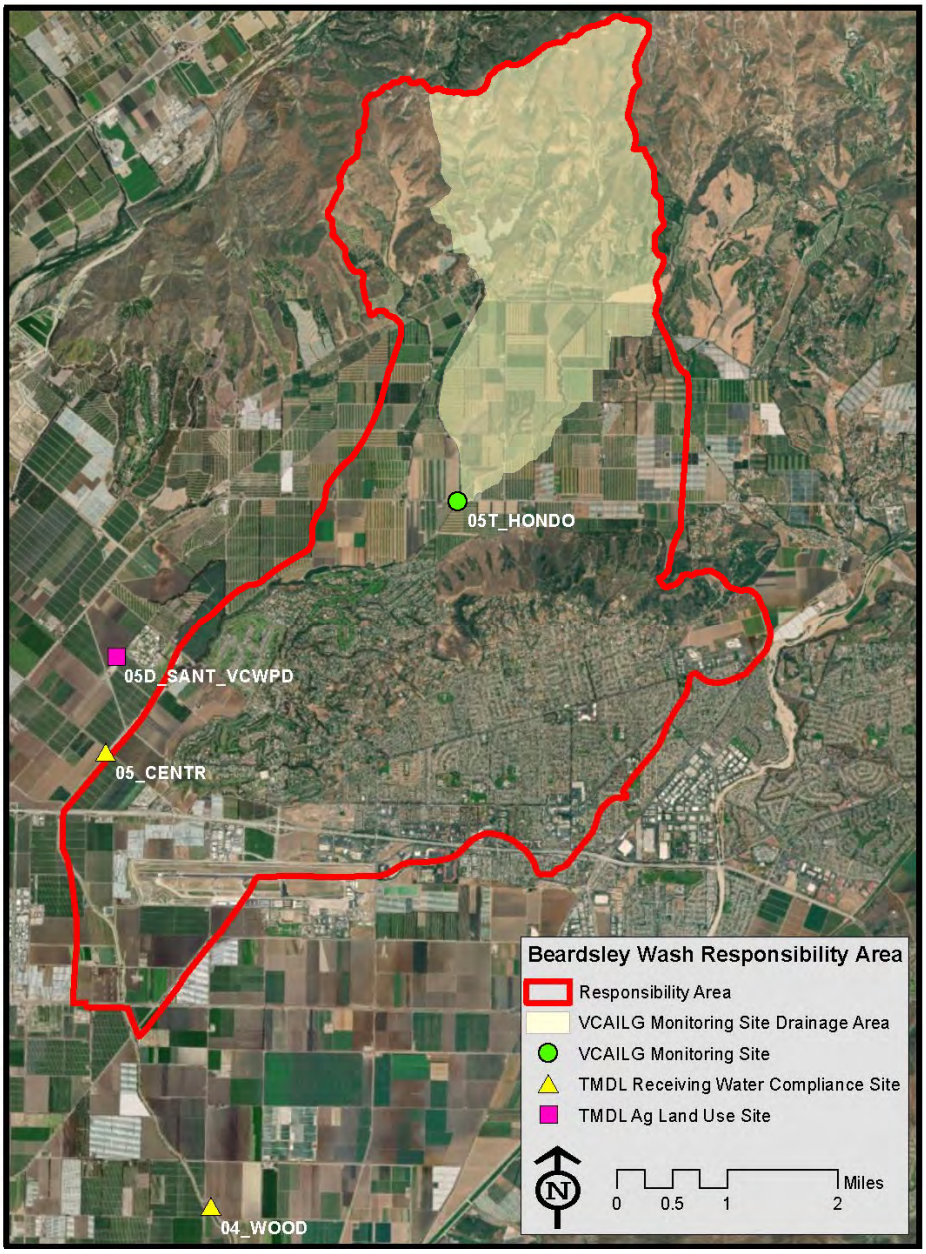


Figure 121. Beardsley Wash Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Beardsley Wash responsibility area are illustrated in Figure 121. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 04_WOOD is a CCW Salts, OC Pesticides and PCBs, Toxicity, and Metals TMDL Receiving Water Compliance Site
- 05_CENTR is a CCW Nitrogen TMDL Receiving Water Compliance Site
- 05D_SANT_VCWPD is a CCW Salts, Nitrogen, Toxicity, and Metal TMDL Ag Land Use Site

Table 63. Beardsley Wash Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site 05T_HONDO
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	8,758	2,660
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	18	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	7,824	2,660
Assessed Acres from Agricultural Parcel List belonging to Non Members	934	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	5,628	1,619
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.72	0.61
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	672	0
Total Estimated Irrigated Acres (Member plus Non Member)	6,300	1,619
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	89%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	5,199	1,611
Percent of Total Estimated Irrigated Acres that were Surveyed	83%	100%
Percent of VCAILG Member Irrigated Acres that were Surveyed	89%	100%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 64. Beardsley Wash Responsibility Area Crop Types and General Production Practices

Crop or Practice	05T_HONDO Site Drainage Only						Beardsley Wash Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	127	153	53	3%	3%	1%
Blueberries	-*	-	-	-*	-	-	340*	-	-	8%*	-	-
Raspberries		19	-		1%	-		428	504		8%	10%
Row Crop	10	57	5	0.7%	3%	0.3%	536	1,078	815	13%	20%	16%
Orchard	1,447	1551	1,591	99%	95%	99%	3,070	3,624	3,749	74%	67%	72%
Nursery	-	-	-	-	-	-	26	25	25	1%	0.5%	0.5%
Flower	10	10	15	0.7%	1%	1%	14	17	15	0.3%	0.3%	0.3%
Sod	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	45	45	37	1%	1%	0.7%
Overhead Cover in Production Areas												
Hoop House	96	23	10	7%	1%	0.62%	142	436	518	3%	8%	10%
No Cover	85	63	10	6%	4%	0.62%	238	1,309	931	6%	24%	18%
Greenhouse	-	-	-	-	-	-	3	-	-	0.1%	-	-
Shade	20	-	-	1%	-	-	20	-	-	0.5	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	80	231	202	5%	14%	12.5%	1,421	2,350	2,251	34%	44%	43.3%
Cover Crop	103	103	101	7%	6%	6.3%	197	110	108	5%	2%	2.1%
Plastic	-	-	-	-	-	-	122	146	47	3%	3%	0.9%
Weed Cloth	-	-	-	-	-	-	7	7	33	0.2%	0.1%	0.6%
Mulch	1,288	1,307	1,342	88%	80%	83.3%	2,507	2,644	2,637	60%	49%	50.7%
Gravel	-	-	-	-	-	-	5	5	5	0.1%	0.1%	0.1%
Other	-	-	-	-	-	-	-	111	151	-	2%	2.9%
Irrigation Systems in Production Areas												
Drip Only	881	941	943	60%	57%	59%	2,118	2,664	2,764	51%	50%	53%
Microsprinkler/Drip	-	-	-	-	-	-	77	94	87	2%	2%	2%
Microsprinkler	586	649	663	40%	40%	41%	1,566	1,692	1,825	38%	32%	35%

Crop or Practice	05T_HONDO Site Drainage Only						Beardsley Wash Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead Sprinkler	-	-	-	-	-	-	51	45	167	1%	1%	3%
Overhead/Drip	-	47	5	-	3%	0.3%	349	875	357	8%	16%	7%
Furrow Flood	-	-	-	-	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	0.0%	-	-	-	-	-	-	-
Other	-	941	-	-	57%	-	-	-	-	-	-	-

Table 65. Beardsley Wash Responsibility Area Grower BMPs

Survey Question	Units	05T_HONDO Site Drainage Only						Beardsley Wash Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	1,382	1,544	1,464	94%	94%	91%	3,491	4,542	4,576	84%	85%	89%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	1,344	1,513	1,516	92%	92%	94%	3,420	4,268	4,391	82%	79%	84%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	43	210	151	3%	13%	10%	1,147	1,492	1,480	28%	29%	30%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	1,389	1,567	1,571	95%	96%	98%	3,518	4,137	4,567	85%	77%	88%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	1,215	1,349	1,399	83%	82%	87%	2,673	2,876	3,720	64%	54%	72%
Q5a: Are soil residual nitrate tests done?	Acres	1,279	1,456	1,481	87%	89%	92%	3,069	3,999	4,014	74%	74%	77%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	1,279	1,456	1,481	87%	89%	92%	3,069	3,999	4,014	74%	74%	77%
Q6: Are leaf/petiole tests conducted?	Acres	1,394	1,498	1,534	95%	95%	95%	3,993	4,668	4,778	97%	94%	97%
Q7a: Is nitrate measured in fertigation water?	Acres	1,380	1,542	1,566	94%	94%	97%	2,895	3,504	3,526	70%	65%	68%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	1,360	1,522	1,546	93%	93%	96%	2,875	3,484	3,506	69%	65%	67%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops	Acres	108	165	121	29%	39%	32%	614	1,074	802	63%	70%	62%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	368	368	503	25%	22%	31%	909	1,197	1,341	22%	22%	26%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	519	519	486	100% [a]	100% [a]	97%	1,085	1,306	1,174	100% [a]	100% [a]	88%
Q11. How much non-cropped area is bare soil?	Acres	277	227	354	19%	25%	35%	428	605	771	10%	32%	39%
Q12a: How many feet of ditches exist?	Feet	42,143	42,143	42,867	N/A	N/A	N/A	351,614	387,160	376,377	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	29,110	29,110	31,334	69%	69%	73%	86,999	101,334	108,572	25%	26%	29%
Q13a: Are grassed waterways present?	Acres	93	93	93	6%	6%	6%	416	390	366	10%	7%	7%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	160	182	158	4%	3%	3%
Q14: How many acres are treated by vegetated filter strips?	Acres	99	99	97	7%	6%	6%	189	223	187	5%	4%	4%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	1,447	1,617	1,591	99%	99%	99%	4,138	5,332	5,168	100%	99%	99%
Q16: Is an IPM Plan being implemented?	Acres	1,447	1,617	1,591	99%	99%	99%	4,116	5,256	5,084	99%	98%	98%
Q17a: How many acres are organically farmed?	Acres	-	47	4	-	3%	0.2%	148	379	336	4%	7%	6%

Survey Question	Units	05T_HONDO Site Drainage Only						Beardsley Wash Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q17b: How many acres are conventionally farmed?	Acres	1,467	1,531	1,607	100%	94%	100%	4,010	4,538	4,863	96%	84%	94%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	-	-	4	-	-	0.2%	73	404	401	2%	8%	8%
Q19: Runoff from how many acres is treated or detained?	Acres	156	156	154	11%	10%	10%	726	750	722	17%	14%	14%

[a] Respondents answers to Q9 and Q10 lead to an illogical adoption rate >100%. 100% is reported in the table as a reasonable interpretation.

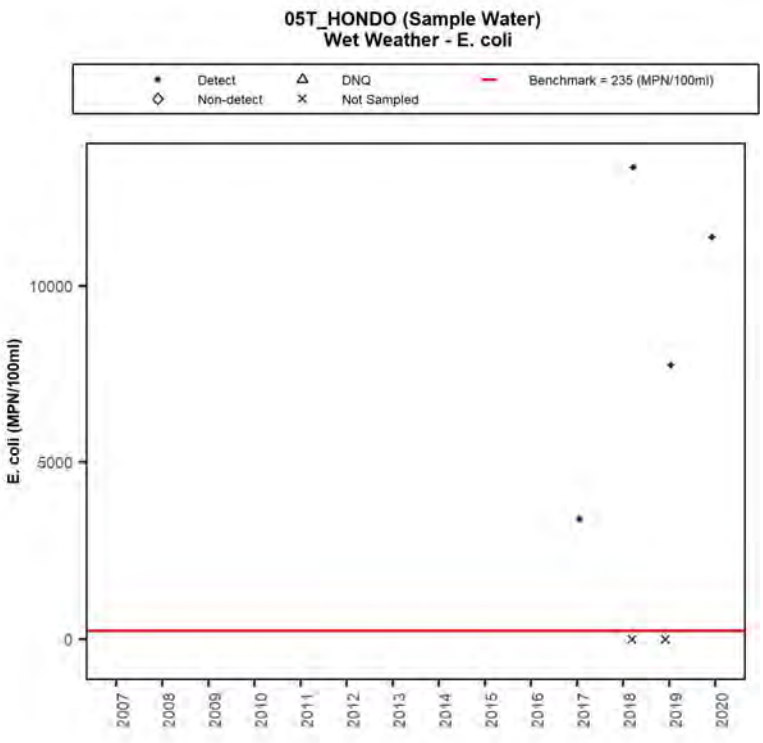


Figure 122. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 05T_HONDO

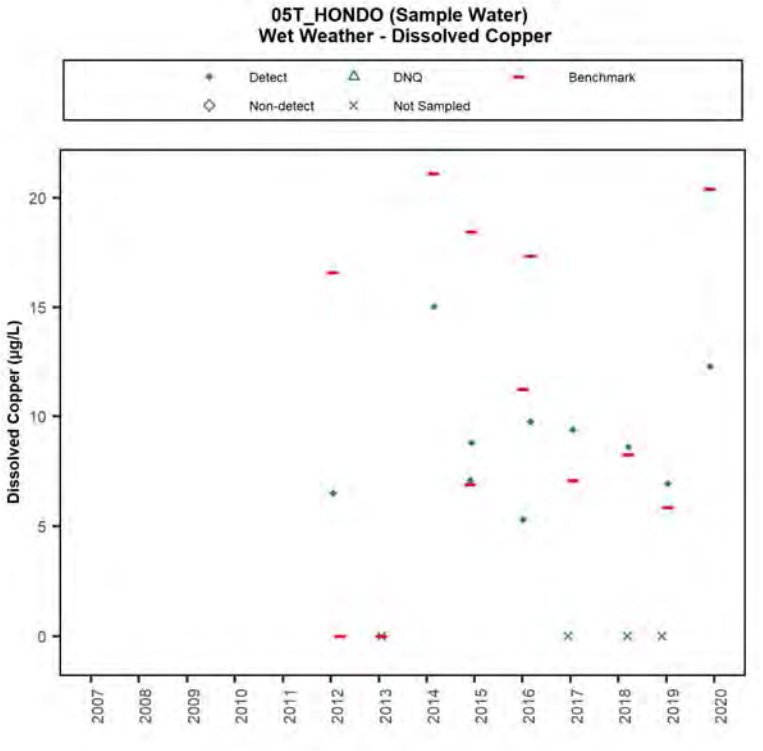


Figure 123. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 05T_HONDO

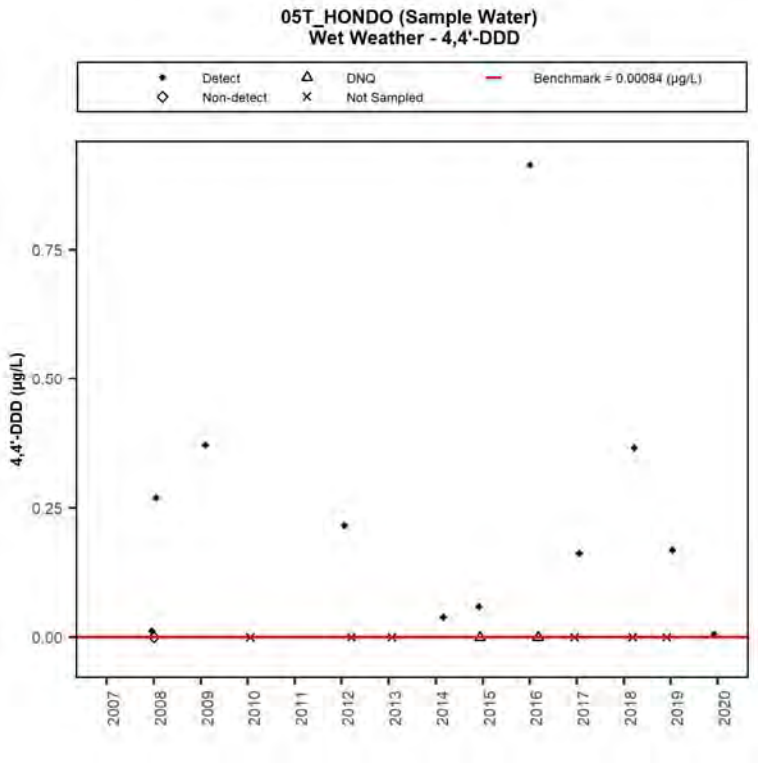


Figure 124. Wet Weather DDD Concentrations at Waiver Benchmark Site 05T_HONDO

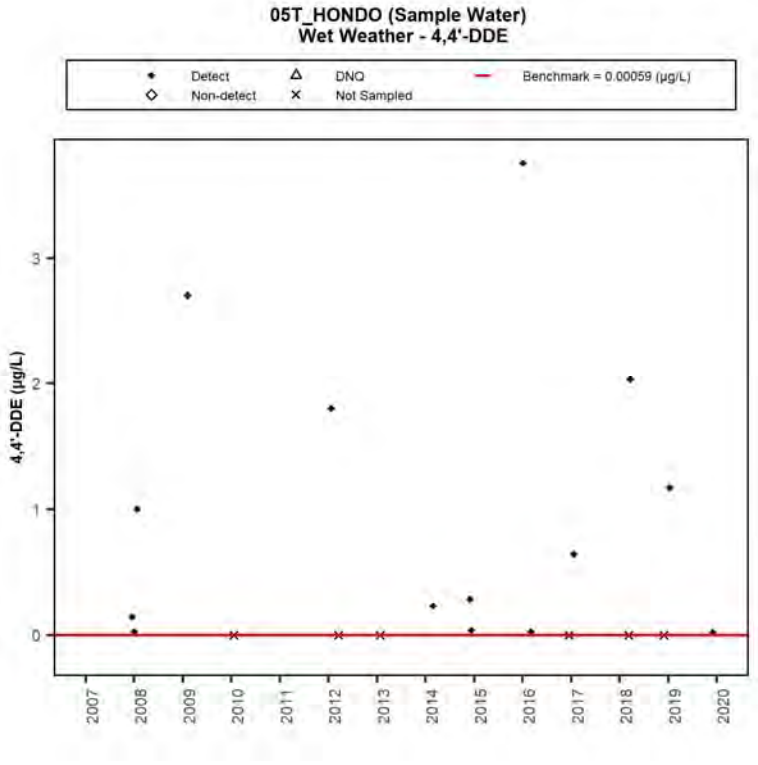


Figure 125. Wet Weather DDE Concentrations at Waiver Benchmark Site 05T_HONDO

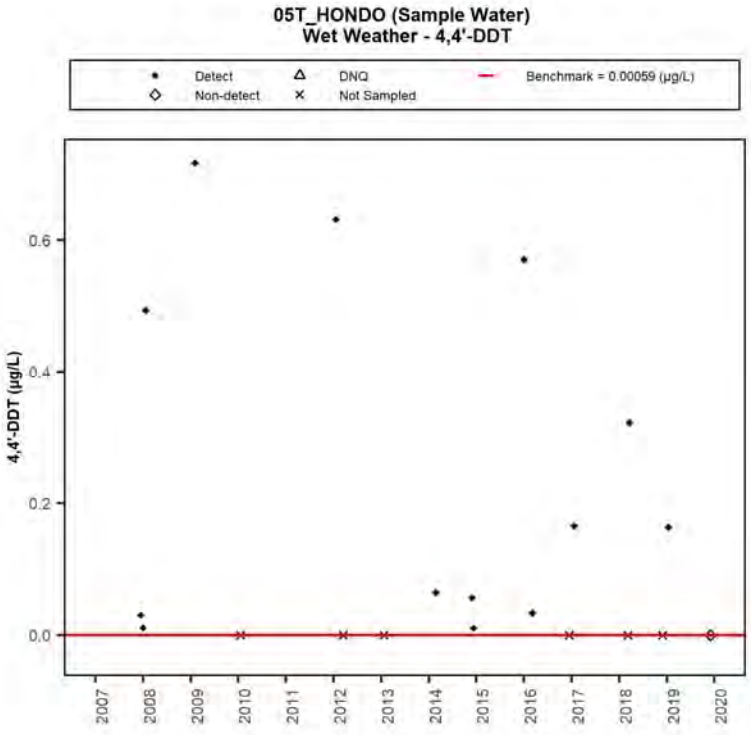


Figure 126. Wet Weather DDT Concentrations at Waiver Benchmark Site 05T_HONDO

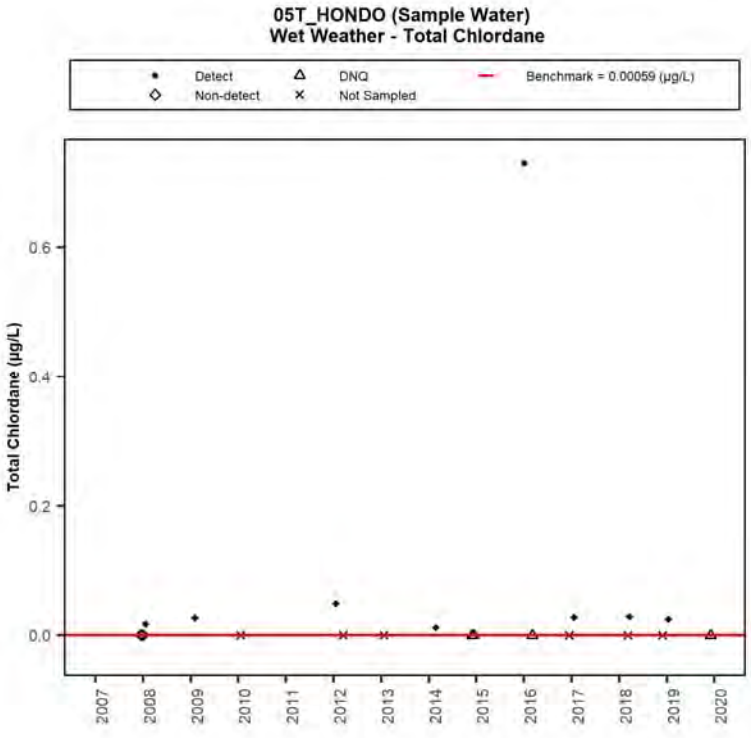


Figure 127. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 05T_HONDO

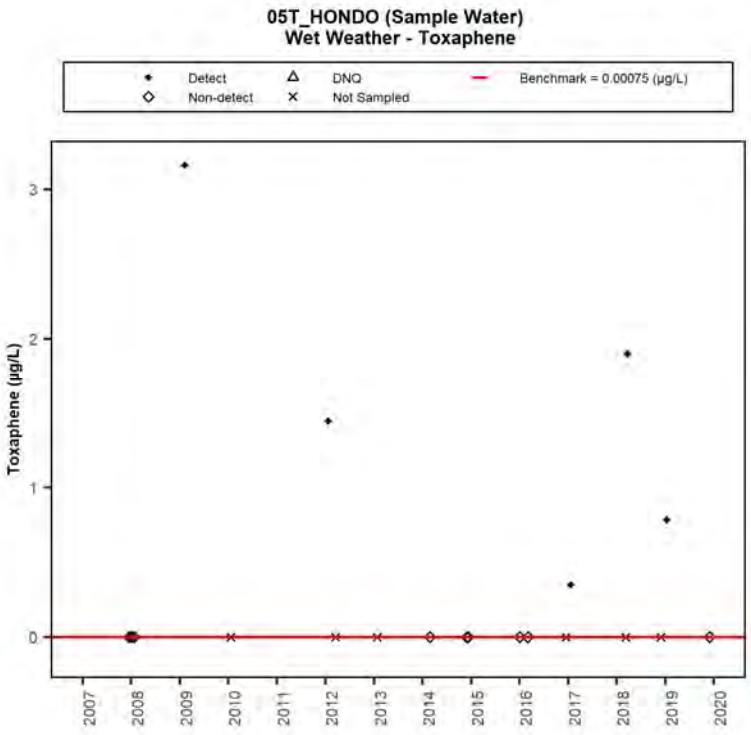


Figure 128. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 05T_HONDO

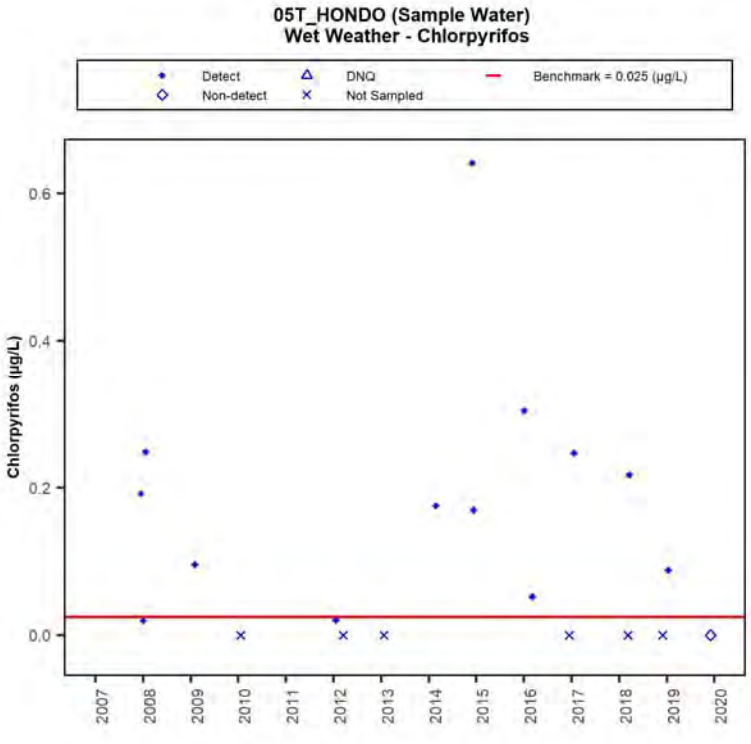


Figure 129. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 05T_HONDO

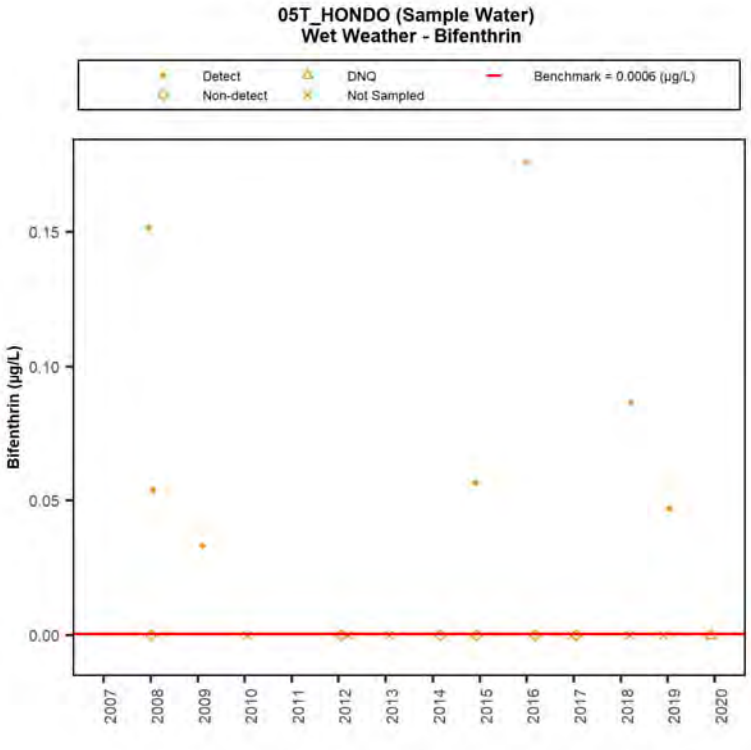


Figure 130. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 05T_HONDO

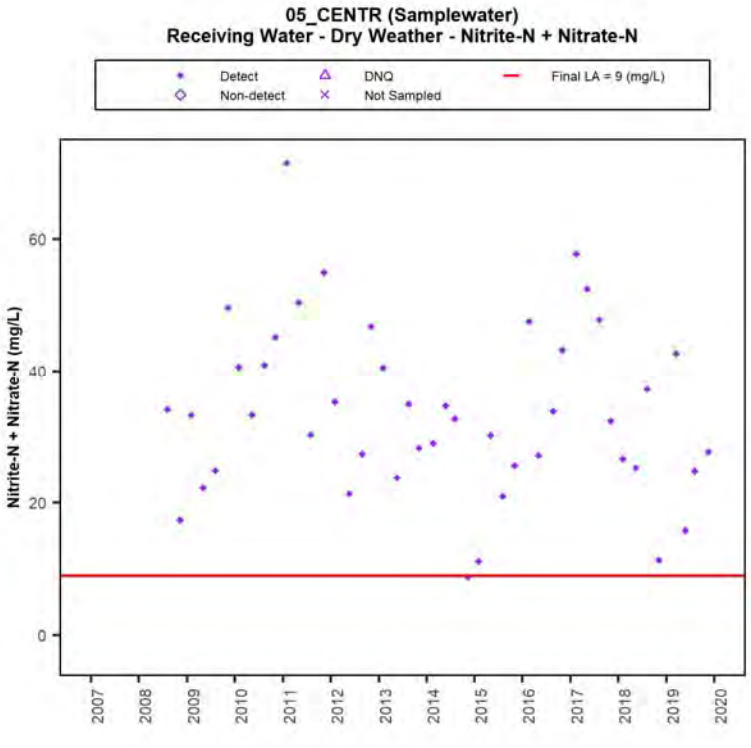


Figure 131. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 05_CENTR

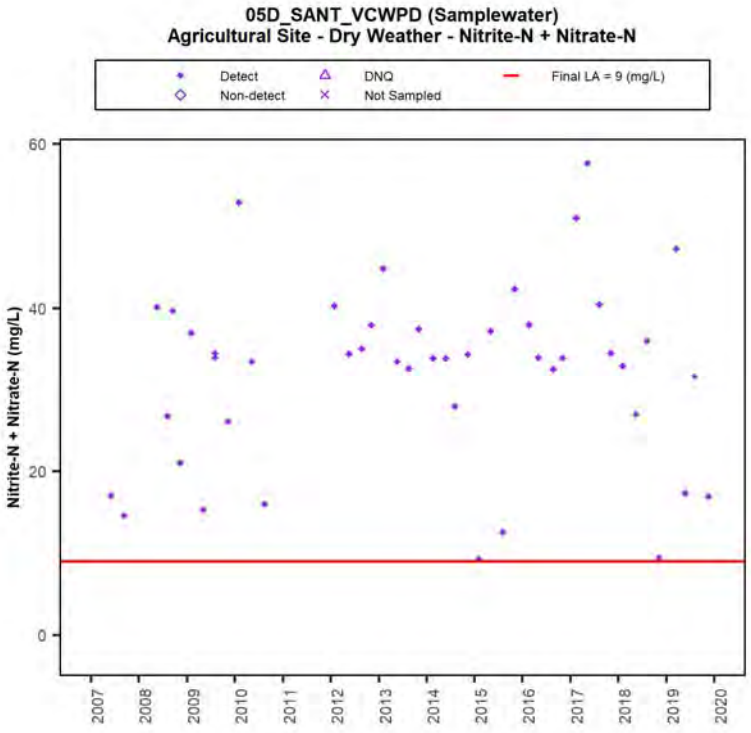


Figure 132. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

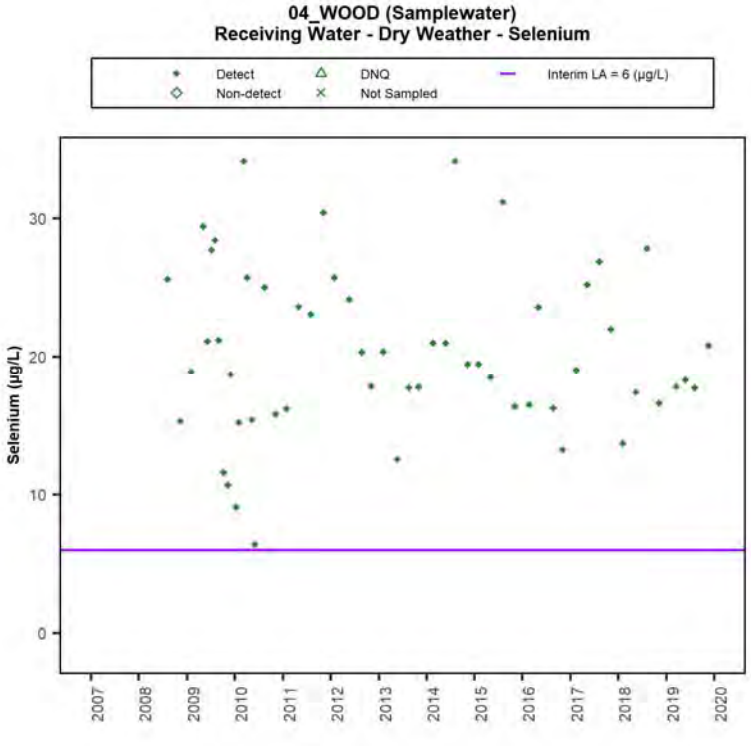


Figure 133. Dry Weather Total Selenium Concentrations at TMDL LA Site 04_WOOD

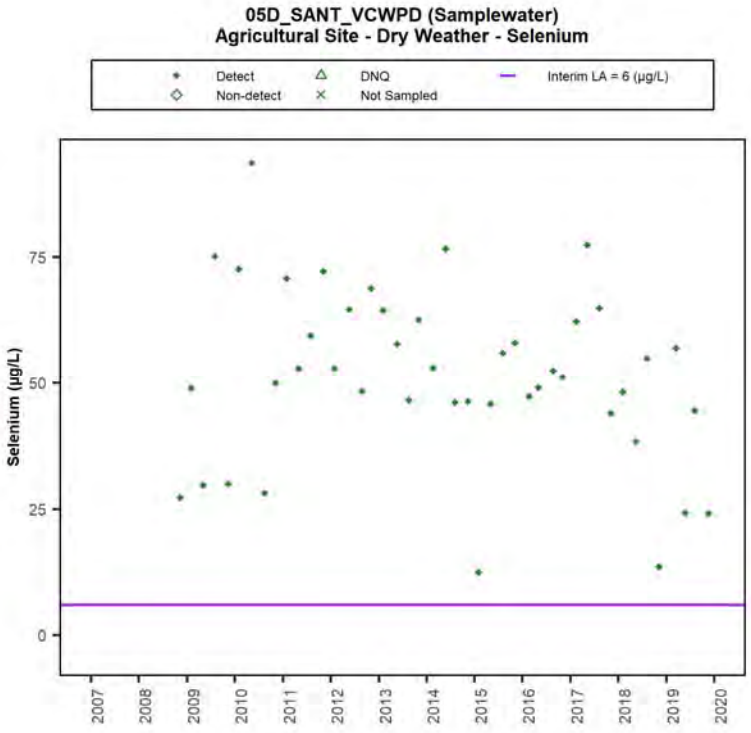


Figure 134. Dry Weather Total Selenium Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

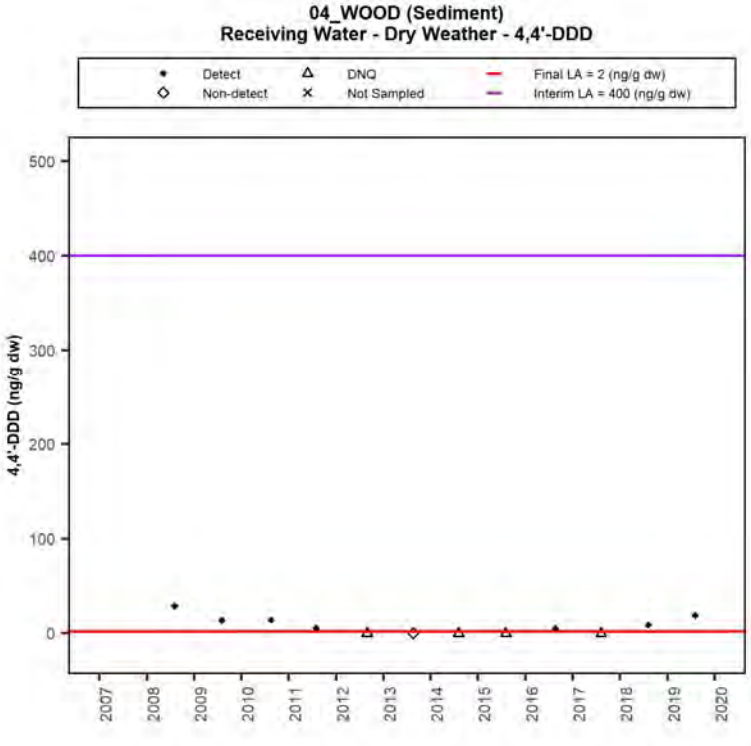


Figure 135. Dry Weather DDD Concentrations at TMDL LA Site 04_WOOD

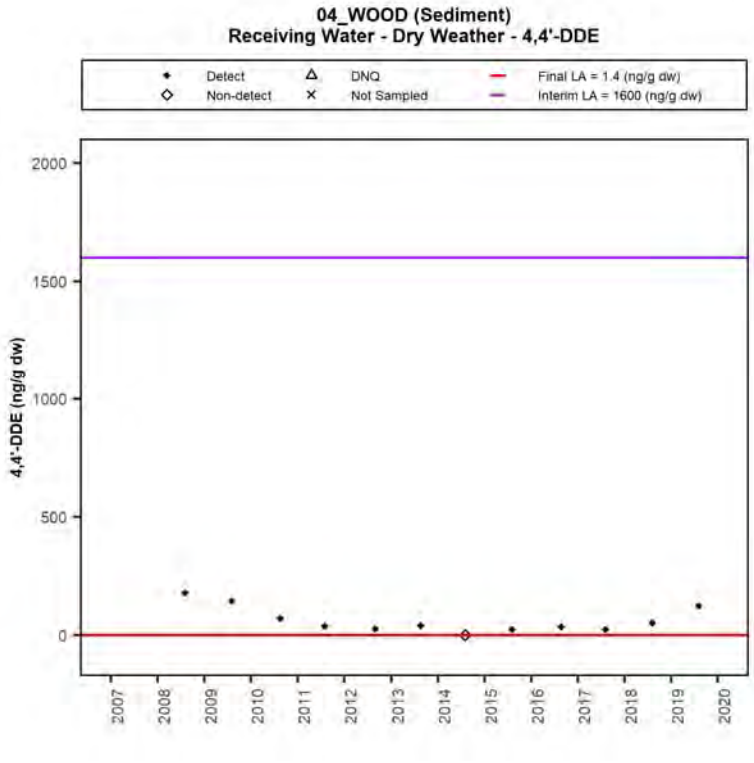


Figure 136. Dry Weather DDE Concentrations at TMDL LA Site 04_WOOD

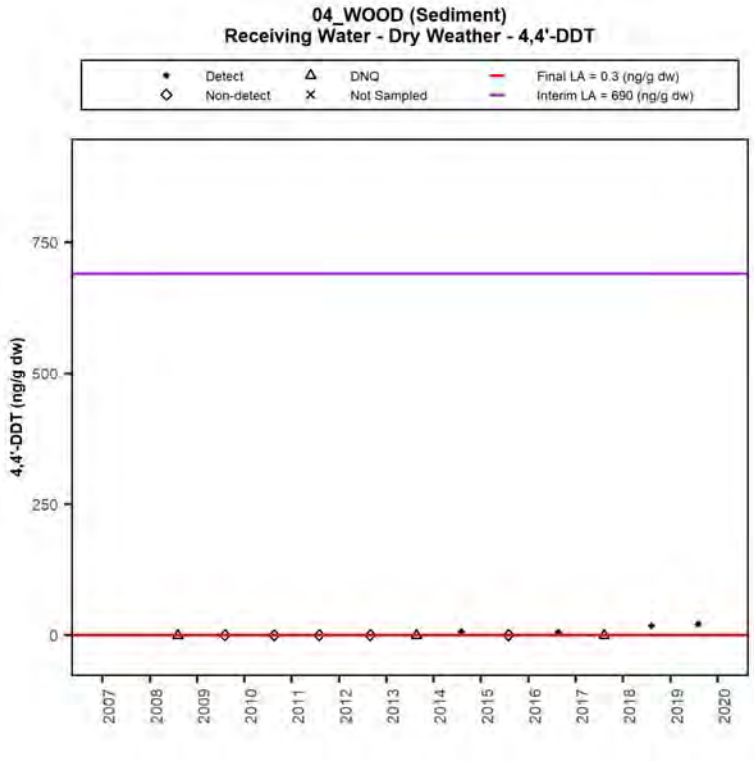


Figure 137. Dry Weather DDT Concentrations at TMDL LA Site 04_WOOD

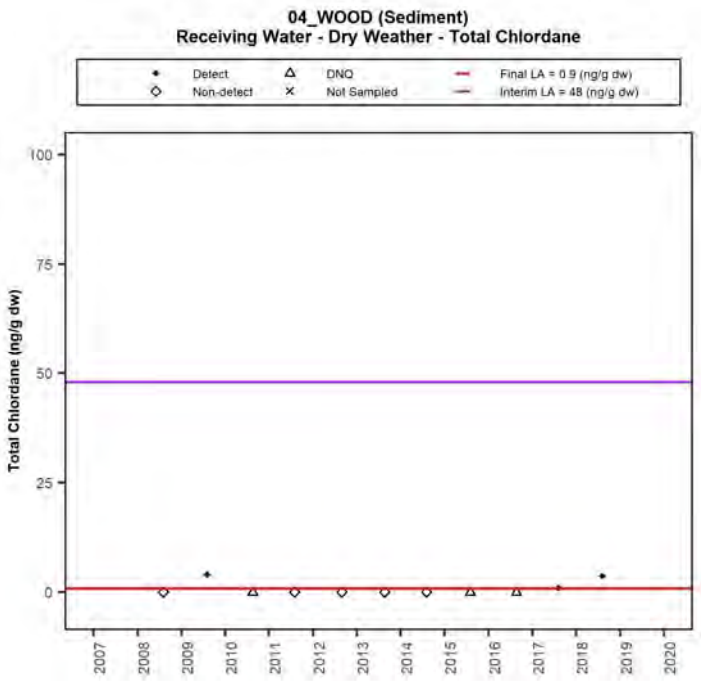


Figure 138. Dry Weather Total Chlordane Concentrations at TMDL LA Site 04_WOOD

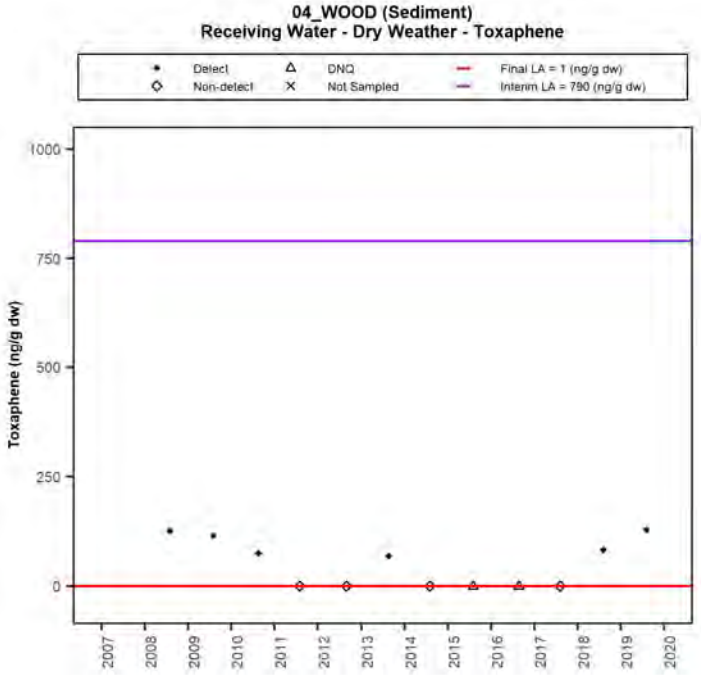


Figure 139. Dry Weather Toxaphene Concentrations at TMDL LA Site 04_WOOD

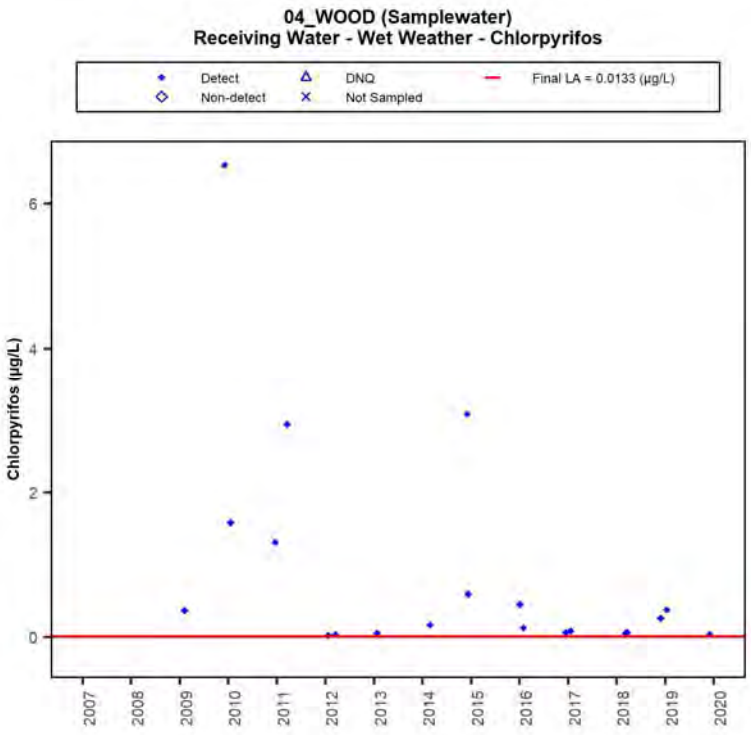


Figure 140. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 04_WOOD

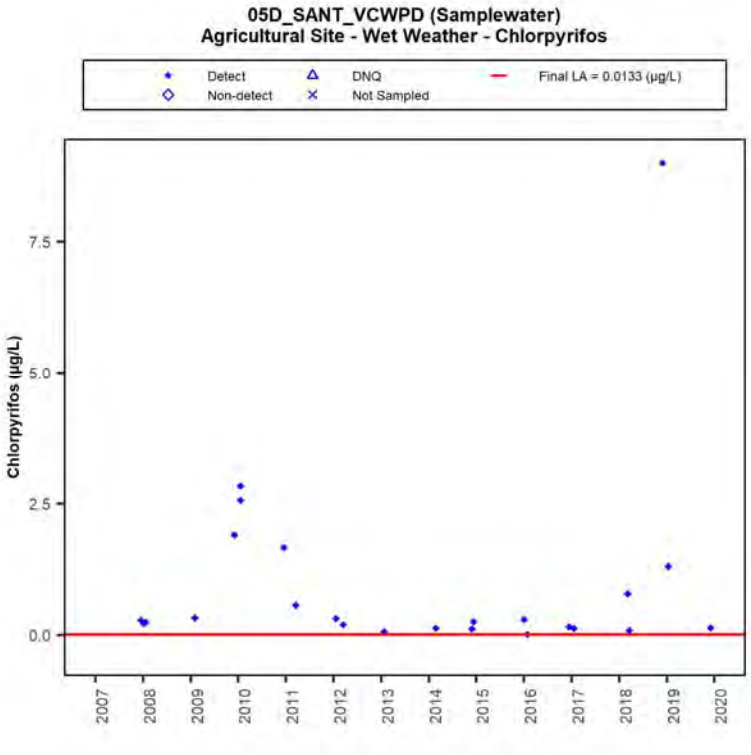


Figure 141. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

Table 66. Summary of Benchmark Exceedance Evaluation for Beardsley Wash Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
E. coli					●			☑
Salts								
Boron		● [2]	[3]	[4]				
Nutrients								
Nitrate-N + Nitrite-N		● [5]	● [3]	☑		● [2]	[3]	[4]
Metals and Selenium								
Dissolved Copper					●			☑
Total Selenium		● [2]	● [3]	☑				
OC Pesticides (Legacy)								
DDD		● [6,7]		☑	●	● [6,7]		☑
DDE		● [6,7]		☑	●	● [6,7]		☑
DDT		● [6,7]		☑	●	● [6,7]		☑
Chlordane		● [6,7]		☑	●	● [6,7]		☑
Toxaphene		● [6,7]		☑	●	● [6,7]		☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● [2]	● [3]	☑
Bifenthrin					●			☑

1. VCAILG monitoring site for Waiver benchmarks is 05T_HONDO.
2. Receiving water site for CCW Salts, Metals, and Toxicity TMDLs is 04_WOOD.
3. TMDLs agricultural land use site is 05D_SANT_VCWPD.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. CCW Nitrogen TMDL receiving water site is 05_CENTR.
6. CCW OC Pesticides TMDL receiving water site is 04_WOOD. TMDL compliance is measured in sediment in receiving water and this location is downstream of where the entire responsibility area discharges. Though sediment is collected during dry weather, the results are applied to both wet and dry weather to ensure management practices minimize sediment transport year-round.
7. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.

Table 67. BMPs for Additional Implementation in the Beardsley Wash Responsibility Area

Exceedance Condition									% of Total Applicable Surveyed Units		
Bacteria	Nutrients	Metals and Selenium		Legacy Pesticides		Current Pesticides			05T_HONDO Site Drainage Only	Beardsley Wash Responsibility Area	Additional Implementation of Pertinent BMP Needed?
Wet	Dry	Dry [a]	Wet	Dry	Wet	Wet	Survey Responses				
	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	90%	57%	Yes
	x	x		x			Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	100%	90%	Yes
	x	x		x			1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	91%	89%	Yes
	x	x					2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	94%	84%	Yes
	x						3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	10%	30%	Yes
	x						4b	Certified nutrient management plan has been prepared for the property	98%	88%	Yes
	x						5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	92%	77%	Yes
	x						6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	95%	97%	Yes
	x						7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	96%	67%	Yes
	x						8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	32%	62%	Yes
	x	x	x	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	97%	88%	Yes
			x		x	x	11	How much non-cropped area is bare soil?	35%	39%	Yes
x	x	x	x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	73%	29%	Yes
x	x	x	x	x	x	x	13a	Grassed waterways are used	6%	7%	Yes
x	x	x	x	x	x	x	14	Vegetated filter strips are used	6%	4%	Yes
						x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	99%	99%	No
						x	16	An integrated pest management plan is implemented	99%	98%	No
	x	x		x			18	How many acres produce irrigation runoff?	0%	8%	Yes
x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	10%	14%	Yes

[a] Exceedances for selenium.

Table 68. Proposed Best Management Practices for the Beardsley Wash Responsibility Area

Water Quality Issues							
Bacteria	Nutrients	Metals		Legacy Pesticides		Current Use Pesticides	
Wet Weather	Dry Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	BMPs
							Source Control BMPs
	x	x	x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x	x		x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x	x		x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
	x	x					Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
	x						Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
	x						Prepare a certified nutrient management plan for the property
	x						Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x						Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	x						Analyze irrigation water nitrate and use results to adjust fertilizer application
	x						Adjust fertilizer application to account for nutrients provided by cover crops
	x	x	x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
			x		x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
						x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions

Water Quality Issues							
Bacteria	Nutrients	Metals		Legacy Pesticides		Current Use Pesticides	
Wet Weather	Dry Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	BMPs
						x	Implement an integrated pest management plan
	x	x		x			Avoid/prevent irrigation runoff
							Structural Non-Treatment BMPs
x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	Use vegetated filter strips
							Optional Treatment BMPs
x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Arroyo Conejo Responsibility Area

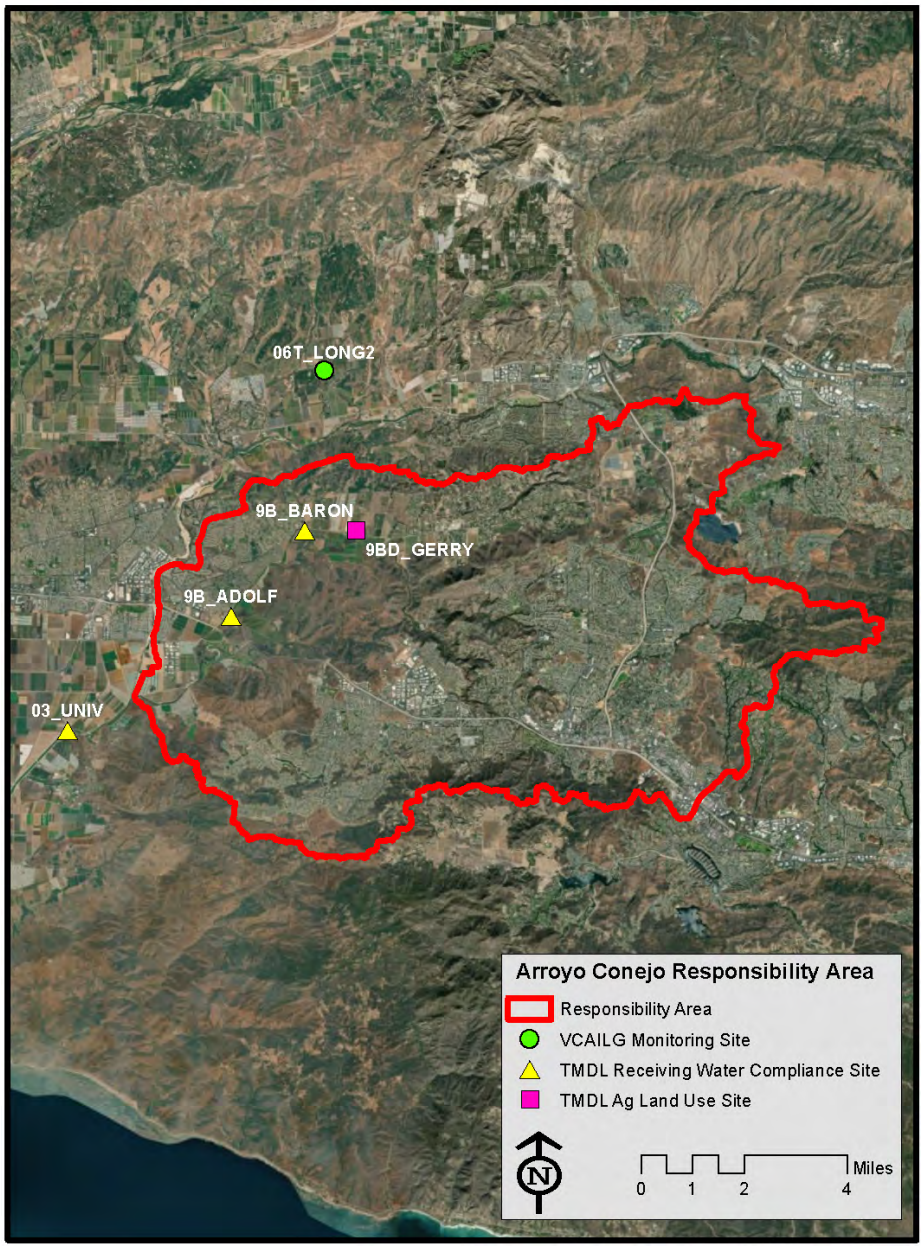


Figure 142. Arroyo Conejo Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Arroyo Conejo responsibility area are illustrated in Figure 142. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 9B_BARON is a CCW Salts TMDL Receiving Water Compliance Site
- 9B_ADOLF is a CCW OC Pesticides and PCBs, Nitrogen, and Toxicity TMDL Receiving Water Compliance Site
- 03_UNIV is a CCW Metals TMDL Receiving Water Compliance Site
- 9BD_GERRY is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 69. Arroyo Conejo Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Responsibility Area [a]	Drainage Area of 06T_LONG2 Monitoring Site [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	8,875	1,818
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [b]	22	12
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	6,814	1,394
Assessed Acres from Agricultural Parcel List belonging to Non Members	2,061	424
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	3,767	1,043
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.55	0.75
Estimated Irrigated Acres in Non Member Agricultural Parcels [c]	1,139	317
Total Estimated Irrigated Acres (Member plus Non Member)	4,906	1,360
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	77%	77%
Survey Response Information		
Sum Surveyed Irrigated Acres	3,118	811
Percent of Total Estimated Irrigated Acres that were Surveyed	64%	60%
Percent of VCAILG Member Irrigated Acres that were Surveyed	82%	78%

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 70. Arroyo Conejo Responsibility Area Crop Types and General Production Practices

Crop or Practice	06T_LONG2 Site Drainage Only						Arroyo Conejo Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	81	241	288	4%	8%	9%
Blueberries	15*	-	-	4%*	-	-	178*	182	181	9%*	6%	6%
Raspberries		103	76		16%	9%		395	404		13%	13%
Row Crop	-	-	-	-	-	-	570	859	900	29%	28%	29%
Orchard	356	495	712	91%	77%	88%	1,071	1,343	1,242	54%	43%	40%
Nursery	-	26	14	-	4%	2%	55	64	51	3%	2%	2%
Flower	-	-	10	-	-	1%	5	5	29	0.3%	0.2%	1%
Sod	-	-	-	-	-	-	-	-	-	-	-	-
Other	22	18	-	6%	3%	-	8	15	23	0.4%	0.5%	1%
Overhead Cover in Production Areas												
Hoop House	74	103	61	19%	16%	7%	-	463	465	0%	15%	15%
No Cover	653	43	39	166%	7%	5%	289	1,238	1,346	15%	40%	43%
Greenhouse	-	-	-	-	-	-	-	7	15	0%	0.2%	0.5%
Shade	-	1	-	-	0.2%	-	1	52	50	0.1%	1.7%	2%
Other	-	-	-	-	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	105	260	243	27%	41%	30%	1,674	2,177	2,106	85%	70%	68%
Cover Crop	54	56	58	14%	9%	7%	64	120	65	3%	4%	2%
Plastic	-	-	-	-	-	-	-	164	211	-	5%	7%
Weed Cloth	-	9	-	-	1%	-	17	176	187	0.9%	6%	6%
Mulch	202	291	473	51%	45%	58%	185	384	497	9%	12%	16%
Gravel	-	-	-	-	-	-	1	2	1	-	0.1%	0.03%
Other	31	33	36	8%	5%	4%	40	86	92	2%	3%	3%
Irrigation Systems in Production Areas												
Drip Only	50	187	138	13%	29%	17%	822	1,215	1,234	42%	39%	40%
Microsprinkler/Drip	-	-	-	-	-	0%	-	160	160	0%	5%	5%
Microsprinkler	321	433	661	82%	67%	81%	857	1,120	983	44%	36%	32%

Crop or Practice	06T_LONG2 Site Drainage Only						Arroyo Conejo Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead Sprinkler	-	2	-	-	-	-	54	178	204	3%	6%	7%
Overhead/Drip	-	-	-	-	-	-	153	326	490	8%	10%	16%
Furrow Flood	-	-	-	-	-	-	40	62	-	2%	2%	-
Hand Watering	-	2	-	-	-	-	15	14	9	0.8%	0.5%	0.3%
Other	22	-	13	6%	0.2%	2%	29	-	39	1%	-	1%

[a] Responsibility area does not include the beacon monitoring site drainage area.

Table 71. Arroyo Conejo Responsibility Area Grower BMPs

Survey Question	Units	06T_LONG2 Site Drainage Only						Arroyo Conejo Responsibility Area [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	282	347	426	74%	72%	59%	1,593	2,226	2,191	87%	80%	79%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	312	436	635	79%	68%	78%	1,265	2,172	2,140	64%	70%	69%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	177	313	204	46%	54%	29%	280	957	1,089	15%	33%	37%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	182	316	349	46%	49%	43%	1,146	1,972	1,796	58%	64%	58%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	132	247	257	34%	38%	32%	485	1,241	1,184	25%	40%	38%
Q5a: Are soil residual nitrate tests done?	Acres	225	406	489	57%	63%	60%	1,013	1,939	1,943	51%	62%	62%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	225	406	489	57%	63%	60%	1,011	1,937	1,917	51%	62%	61%
Q6: Are leaf/petiole tests conducted?	Acres	310	524	535	79%	94%	82%	1,499	2,670	2,536	77%	87%	82%
Q7a: Is nitrate measured in fertigation water?	Acres	135	286	230	34%	44%	28%	1,017	1,981	2,143	52%	64%	69%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	107	286	230	27%	44%	28%	1,016	1,630	1,764	52%	53%	57%
Q8: Is fertilizer adjusted based on nutrients from cover crops	Acres	171	208	158	60%	54%	39%	734	673	688	83%	83%	70%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	161	165	306	41%	26%	38%	566	884	952	29%	28%	31%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	118	118	298	73%	72%	97%	305	568	545	54%	64%	57%
Q11. How much non-cropped area is bare soil?	Acres	37	41	42	9%	10%	19%	730	1,446	1,625	37%	63%	65%
Q12a: How many feet of ditches exist?	Feet	10,375	12,254	19,279	N/A	N/A	N/A	322,764	477,034	430,274	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,800	9,608	16,280	75%	79%	84%	55,146	202,226	154,256	17%	42%	36%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	-	-	165	226	178	8%	7%	6%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	19	50	24	1%	2%	1%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	1	-	-	0.12%	51	88	61	3%	3%	2%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	390	628	797	99%	98%	98%	1,932	3,040	3,080	98%	98%	99%
Q16: Is an IPM Plan being implemented?	Acres	295	534	768	75%	83%	95%	1,915	2,948	3,056	97%	95%	98%
Q17a: How many acres are organically farmed?	Acres	171	154	186	44%	24%	23%	64	190	195	3%	6%	6%
Q17b: How many acres are conventionally farmed?	Acres	222	462	626	56%	72%	77%	1,904	2,295	2,923	97%	74%	94%

Survey Question	Units	06T_LONG2 Site Drainage Only						Arroyo Conejo Responsibility Area [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	42	55	66	11%	9%	8%	363	412	395	18%	13%	13%
Q19: Runoff from how many acres is treated or detained?	Acres	109	113	11	28%	18%	1%	157	264	126	8%	8%	4%

[a] Responsibility area does not include the beacon monitoring site drainage area.

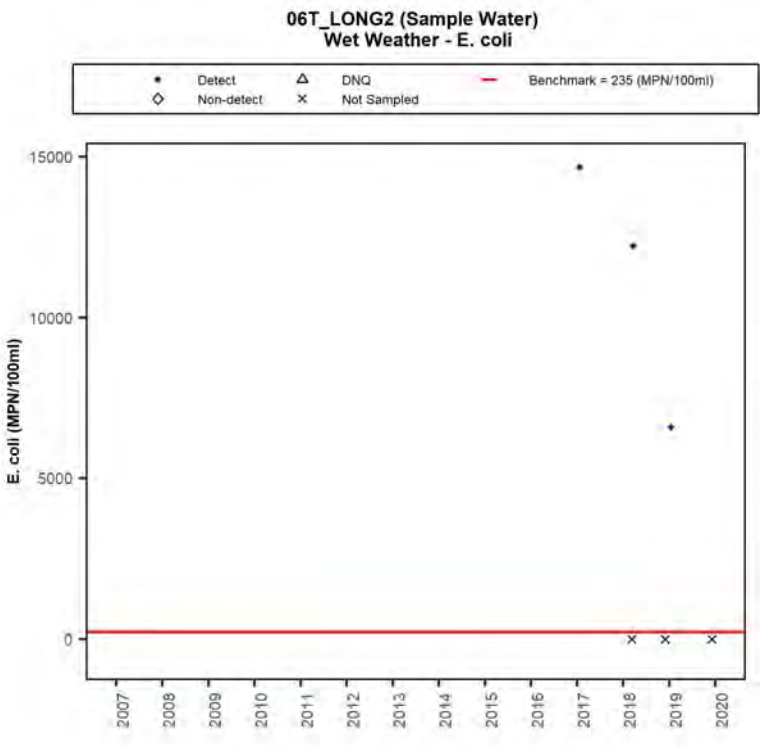


Figure 143. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 06T_LONG2

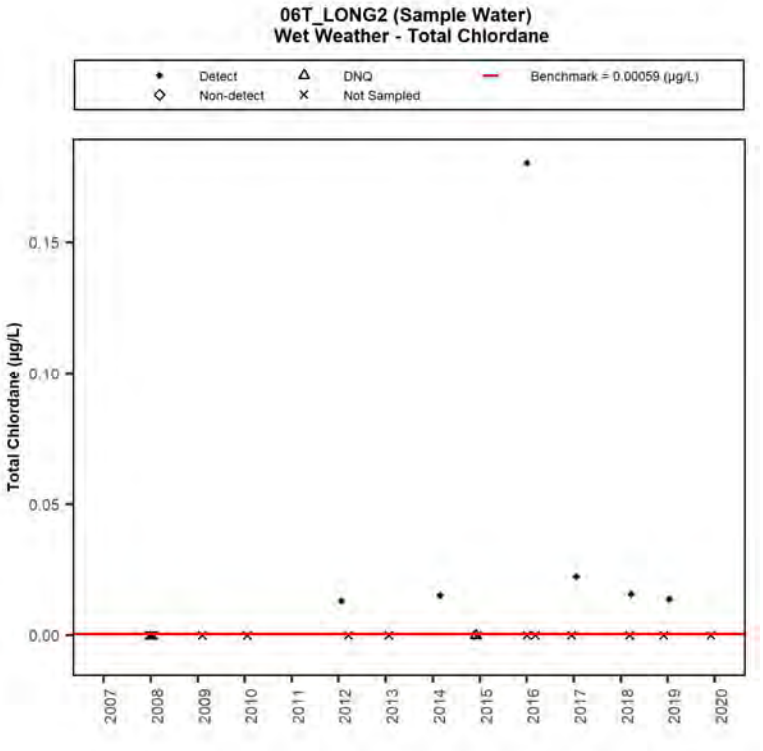


Figure 144. Wet Weather DDD Concentrations at Waiver Benchmark Site 06T_LONG2

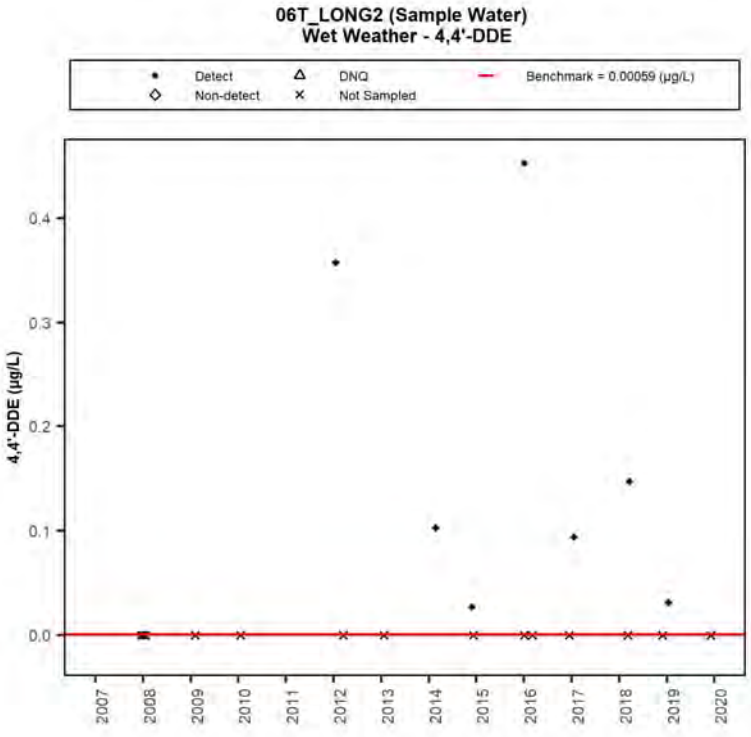


Figure 145. Wet Weather DDE Concentrations at Waiver Benchmark Site 06T_LONG2

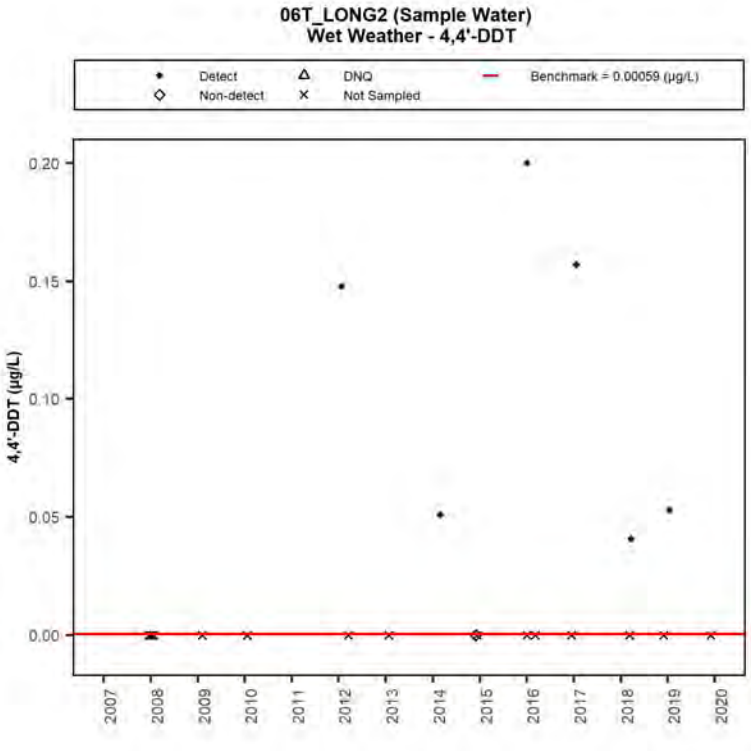


Figure 146. Wet Weather DDT Concentrations at Waiver Benchmark Site 06T_LONG2

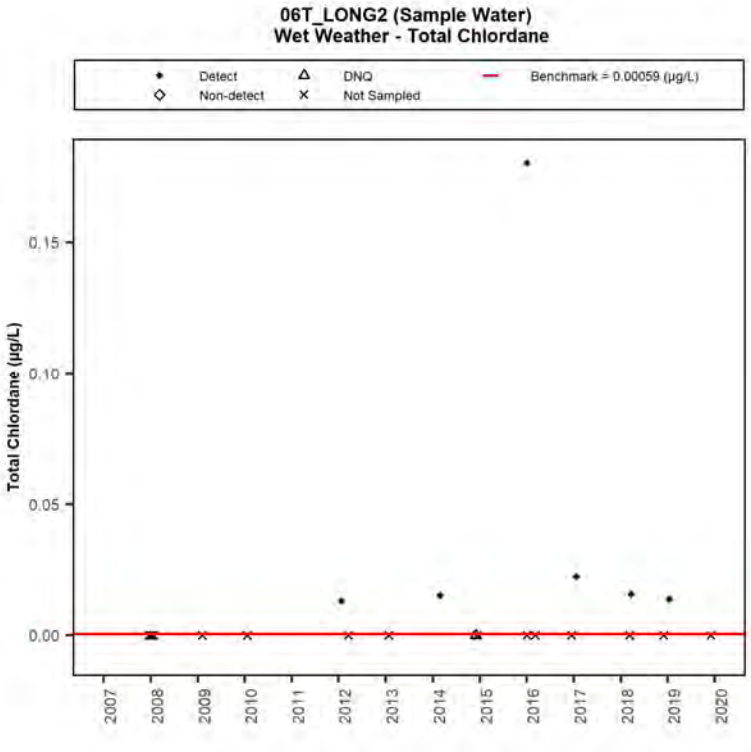


Figure 147. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 06T_LONG2

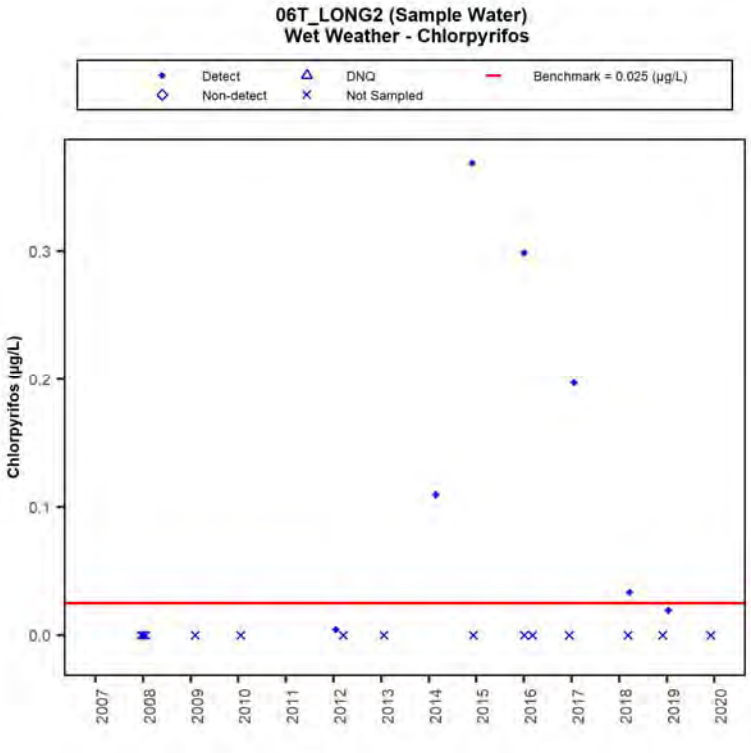


Figure 148. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 06T_LONG2

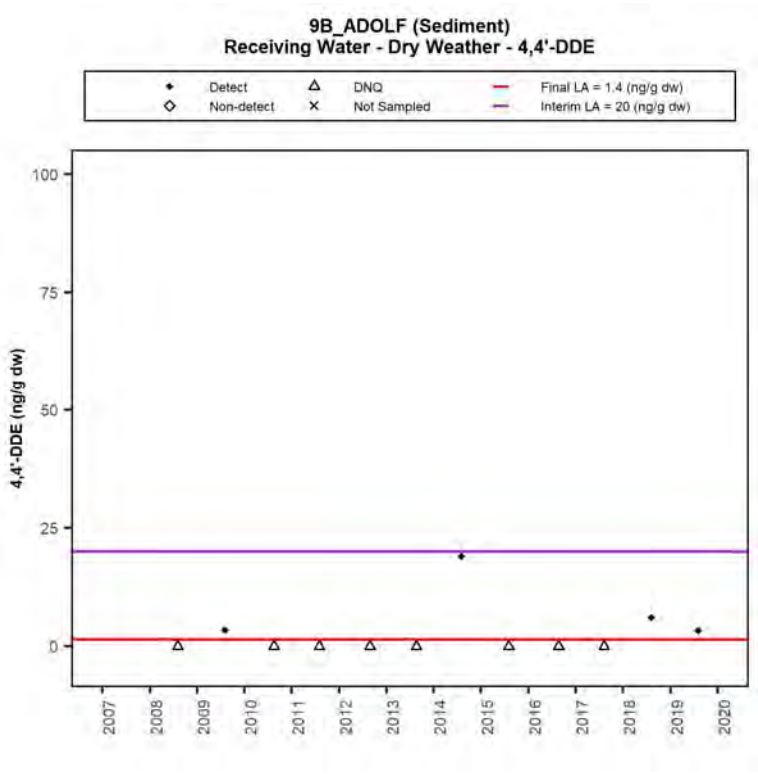


Figure 149. Dry Weather DDE Concentrations at TMDL LA Site 9B_ADOLF

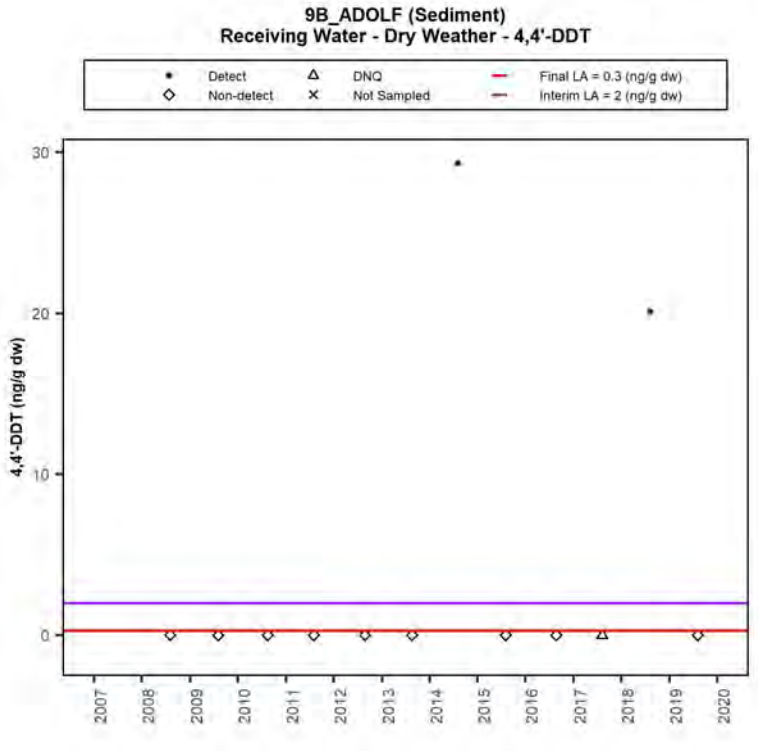


Figure 150. Dry Weather DDT Concentrations at TMDL LA Site 9B_ADOLF

Table 72. Summary of Benchmark Exceedance Evaluation for Arroyo Conejo Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
E. coli					●			☑
OC Pesticides (Legacy)								
DDD					●			☑
DDE		● [2]		☑	●	● [2]		☑
DDT		● [2,3]		☑	●	● [2,3]		☑
Chlordane					●			☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●			☑

1. VCAILG monitoring site for Waiver benchmarks is 06T_LONG2.
2. CCW OC Pesticides TMDL receiving water site is 9B_ADOLF. TMDL compliance is measured in sediment in receiving water and this location is downstream of the responsibility area discharges. Though sediment is collected during dry weather, the results are applied to both wet and dry weather to ensure management practices minimize sediment transport year-round.
3. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.

Table 73. BMPs for Additional Implementation in the Arroyo Conejo Responsibility Area

Exceedance Condition						% of Total Applicable Surveyed Units		
Bacteria	Legacy Pesticides		Current Pesticides					
Wet	Dry	Wet	Wet	Survey Responses		06T_LONG2 Site Drainage [a]	Arroyo Conejo Responsibility Area [a]	Additional Implementation of Pertinent BMP Needed? [b]
	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	70%	34%	Yes
	x			Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	98%	76%	Yes
	x			1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	59%	79%	Yes
	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	97%	57%	Yes
		x	x	11	How much non-cropped area is bare soil?	19%	65%	Yes
x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	84%	36%	Yes
x	x	x	x	13a	Grassed waterways are used	0%	6%	Yes
x	x	x	x	14	Vegetated filter strips are used	0%	2%	Yes
			x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	98%	99%	No
			x	16	An integrated pest management plan is implemented	95%	98%	Yes
	x			18	How many acres produce irrigation runoff?	8%	13%	Yes
x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	1%	4%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area

Table 74. Proposed Best Management Practices for the Arroyo Conejo Responsibility Area

Water Quality Issues				BMPs
Bacteria	Legacy Pesticides		Current Use Pesticides	
Wet Weather	Dry Weather	Wet Weather	Wet Weather	
				Source Control BMPs
	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
			x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
			x	Implement an integrated pest management plan
	x			Avoid/prevent irrigation runoff
				Structural Non-Treatment BMPs
x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	Use grassed waterways
x	x	x	x	Use vegetated filter strips
				Optional Treatment BMPs
x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Arroyo Simi Responsibility Area

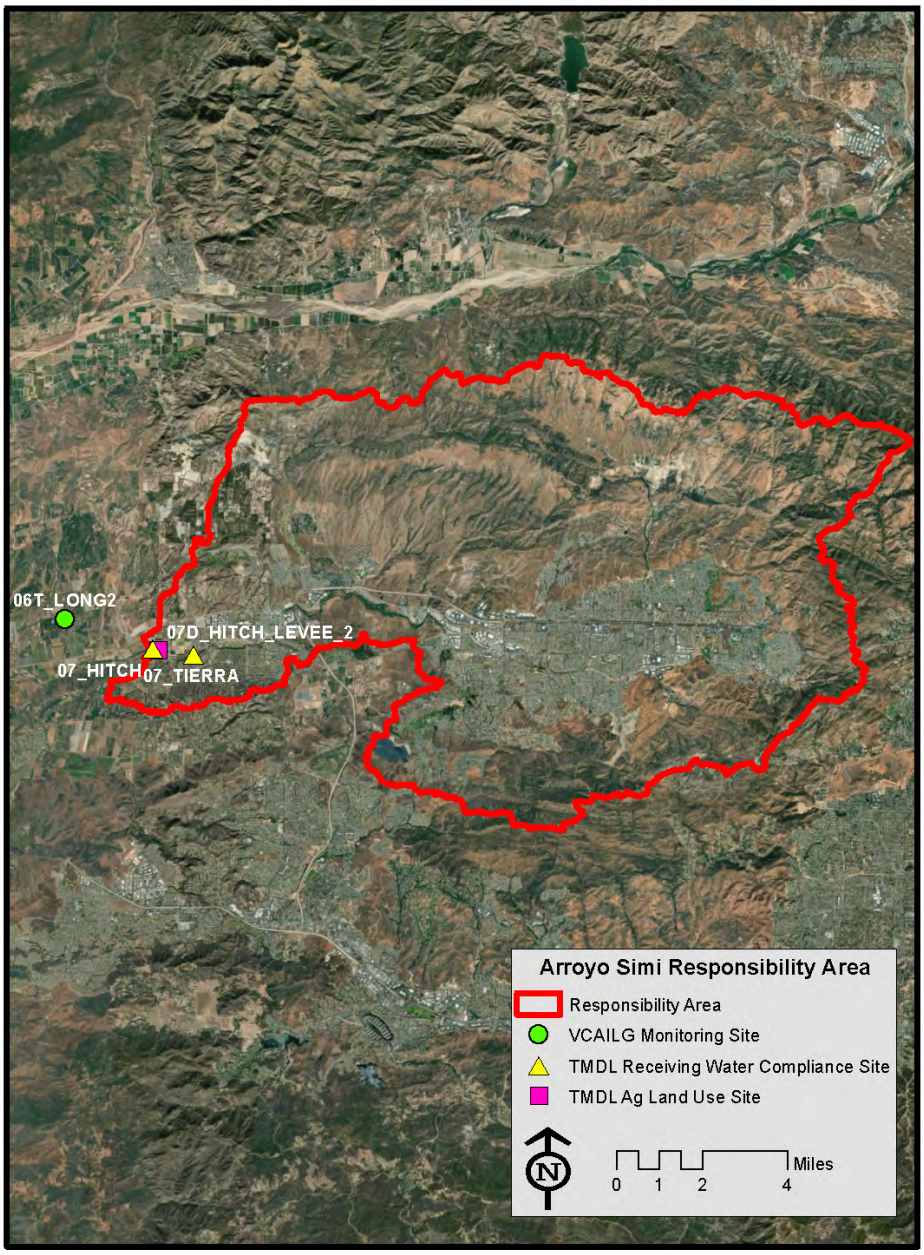


Figure 151. Arroyo Simi Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Arroyo Simi responsibility area are illustrated in Figure 151. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 07_TIERRA is a CCW Salts TMDL Receiving Water Compliance Site
- 07_HITCH is a CCW OC Pesticides and PCBs, Nitrogen, and Toxicity TMDL Receiving Water Compliance Site
- 07D_HITCH_LEVEE_2 is a CCW Salts, Nitrogen, and Toxicity TMDL Ag Land Use Site

Table 75. Arroyo Simi Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Responsibility Area [a]	Drainage Area of Monitoring Site 06T_LONG2 [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	3,824	1,818
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [b]	317	12
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	3,490	1,394
Assessed Acres from Agricultural Parcel List belonging to Non Members	334	424
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	1,969	1,043
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.56	0.75
Estimated Irrigated Acres in Non Member Agricultural Parcels [c]	188	317
Total Estimated Irrigated Acres (Member plus Non Member)	2,157	1,360
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	91%	77%
Survey Response Information		
Sum Surveyed Irrigated Acres	1,577	811
Percent of Total Estimated Irrigated Acres that were Surveyed	73%	60%
Percent of VCAILG Member Irrigated Acres that were Surveyed	76%	78%

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 76. Arroyo Simi Responsibility Area Crop Types and General Production Practices

Crop or Practice	06T_LONG2 Site Drainage Only						Arroyo Simi Responsibility Area [a]					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	-	-	-	-	-	-
Blueberries	15*	-	-	4%*	-	-	-*	27	-	-*	2%	-
Raspberries		103	76		16%	9%		-	-		-	-
Row Crop	-	-	-	-	-	-	-	-	232	-	-	15%
Orchard	356	495	712	91%	77%	88%	910	1,365	1,238	92%	88%	79%
Nursery	-	26	14	-	4%	2%	54	160	106	5%	10%	7%
Flower	-	-	10	-	-	1%	-	-	-	-	-	-
Sod	-	-	-	-	-	-	-	-	-	-	-	-
Other	22	18	-	6%	3%	-	27	2	2	3%	0.1%	0.1%
Overhead Cover in Production Areas												
Hoop House	74	103	61	19%	16%	7%	16	1	1	2%	0.03%	0.03%
No Cover	653	43	39	166%	7%	5%	926	178	335	93%	11%	21.3%
Greenhouse	-	-	-	-	-	-	-	4	1	-	0.2%	0.03%
Shade	-	1	-	-	0.2%	-	-	7	3	-	0.4%	0.16%
Other	-	-	-	-	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	105	260	243	27%	41%	30%	226	321	597	23%	21%	38%
Cover Crop	54	56	58	14%	9%	7%	60	35	35	6%	2%	2%
Plastic	-	-	-	-	-	-	28	28	1	3%	2%	0.1%
Weed Cloth	-	9	-	-	1%	-	1	12	1	0.1%	1%	0.1%
Mulch	202	291	473	51%	45%	58%	789	991	880	80%	64%	56%
Gravel	-	-	-	-	-	-	-	4	-	0%	0.3%	-
Other	31	33	36	8%	5%	4%	1	169	82	0.1%	11%	5%
Irrigation Systems in Production Areas												
Drip Only	50	187	138	13%	26%	17%	58	292	272	6%	19%	17%
Microsprinkler/Drip	-	-	-	-	-	-	-	-	-	-	-	-

Crop or Practice	06T_LONG2 Site Drainage Only						Arroyo Simi Responsibility Area [a]					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Microsprinkler	321	433	661	82%	67%	81%	933	1,245	1,177	94%	80%	75%
Overhead Sprinkler	-	2	-	-	-	-	109	7	120	11%	0.5%	8%
Overhead/Drip	-	-	-	-	-	-	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	-	-	-	-	-	-	-
Hand Watering	-	2	-	-	0.2%	-	1	10	9	0.1%	0.6%	1%
Other	22	-	13	6%	-	2%	-	-	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

Table 77. Arroyo Simi Responsibility Area Grower BMPs

Survey Question	Units	06T_LONG2 Site Drainage Only						Arroyo-Simi Responsibility Area [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	282	347	426	74%	72%	59%	909	1,125	1,330	92%	79%	86%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	312	436	635	79%	68%	78%	772	916	1,103	78%	59%	70%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	177	313	204	46%	54%	29%	133	285	753	14%	20%	55%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	182	316	349	46%	49%	43%	751	887	1,094	76%	57%	69%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	132	247	257	34%	38%	32%	153	289	203	15%	19%	13%
Q5a: Are soil residual nitrate tests done?	Acres	225	406	489	57%	63%	60%	768	891	946	77%	57%	60%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	225	406	489	57%	63%	60%	768	883	916	77%	57%	58%
Q6: Are leaf/petiole tests conducted?	Acres	310	524	535	79%	94%	82%	809	1,057	1,104	82%	70%	73%
Q7a: Is nitrate measured in fertigation water?	Acres	135	286	230	34%	44%	28%	753	878	910	76%	56%	58%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	107	286	230	27%	44%	28%	740	878	880	75%	56%	56%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops	Acres	171	208	158	60%	54%	39%	40	15	113	6%	2%	39%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	161	165	306	41%	26%	38%	773	1,036	928	78%	67%	59%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	118	118	298	73%	72%	97%	763	1,008	911	99%	97%	98%
Q11. How much non-cropped area is bare soil?	Acres	37	41	42	9%	10%	19%	287	498	228	29%	61%	44%
Q12a: How many feet of ditches exist?	Feet	10,375	12,254	19,279	N/A	N/A	N/A	164,567	172,542	164,964	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,800	9680	16,280	75%	79%	84%	157,427	163,252	157,324	96%	95%	95%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	-	-	6	83	53	0.6%	5%	3%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	1	16	16	0.1%	1%	1%

Survey Question	Units	06T_LONG2 Site Drainage Only						Arroyo-Simi Responsibility Area [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	1	-	-	0.12%	2	27	29	0.2%	2%	2%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	390	628	797	99%	98%	98%	960	1,529	1,423	97%	98%	90%
Q16: Is an IPM Plan being implemented?	Acres	295	534	768	75%	83%	95%	961	1,493	1,378	97%	96%	87%
Q17a: How many acres are organically farmed?	Acres	171	154	186	44%	24%	23%	27	22	16	97%	1%	1%
Q17b: How many acres are conventionally farmed?	Acres	222	462	626	56%	72%	77%	965	1,514	1,561	3%	97%	99%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	42	55	66	11%	9%	8%	45	62	6	5%	4%	0.4%
Q19: Runoff from how many acres is treated or detained?	Acres	109	113	11	28%	18%	1%	59	90	52	6%	6%	3%

[a] Responsibility area does not include the beacon monitoring site drainage area.

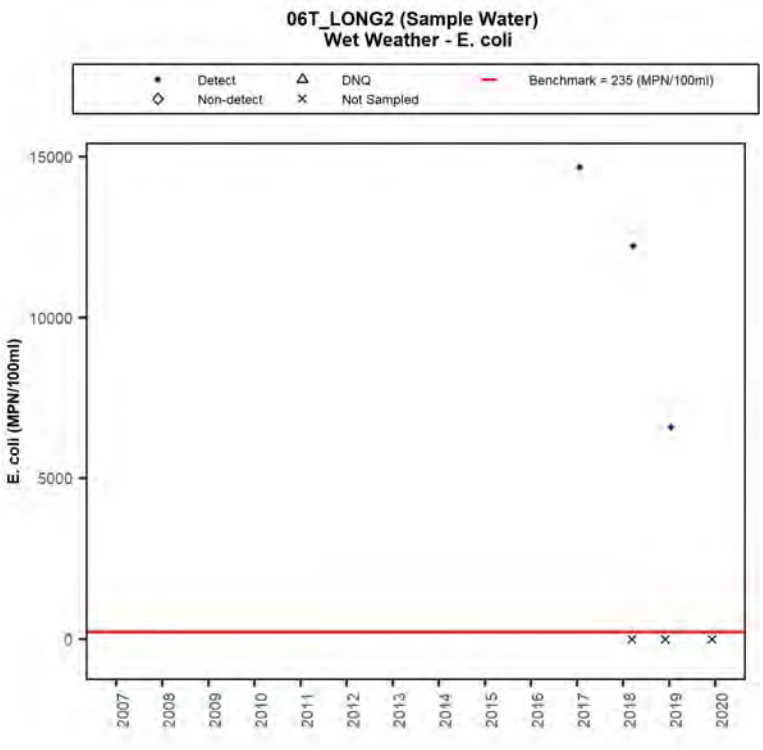


Figure 152. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 06T_LONG2

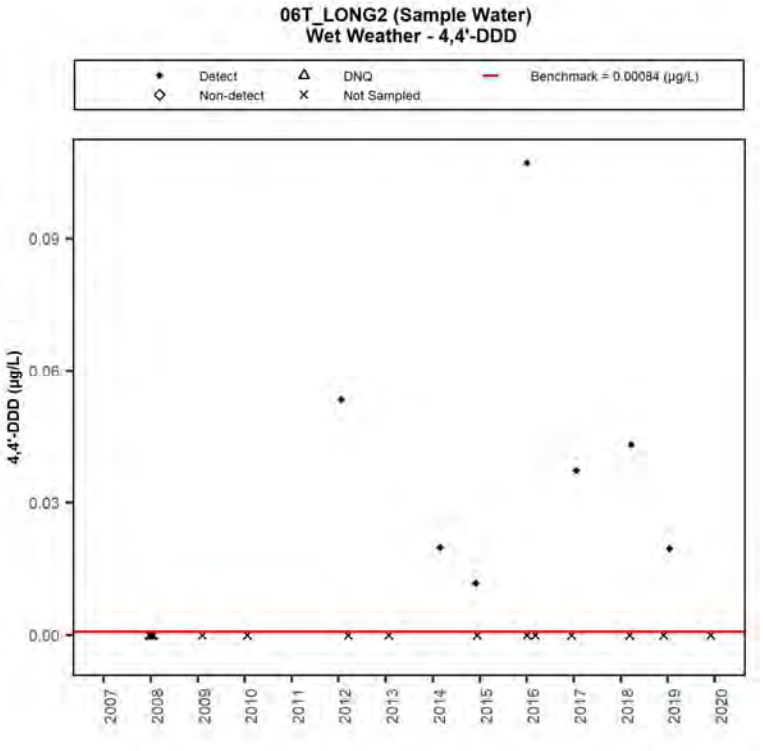


Figure 153. Wet Weather DDD Concentrations at Waiver Benchmark Site 06T_LONG2

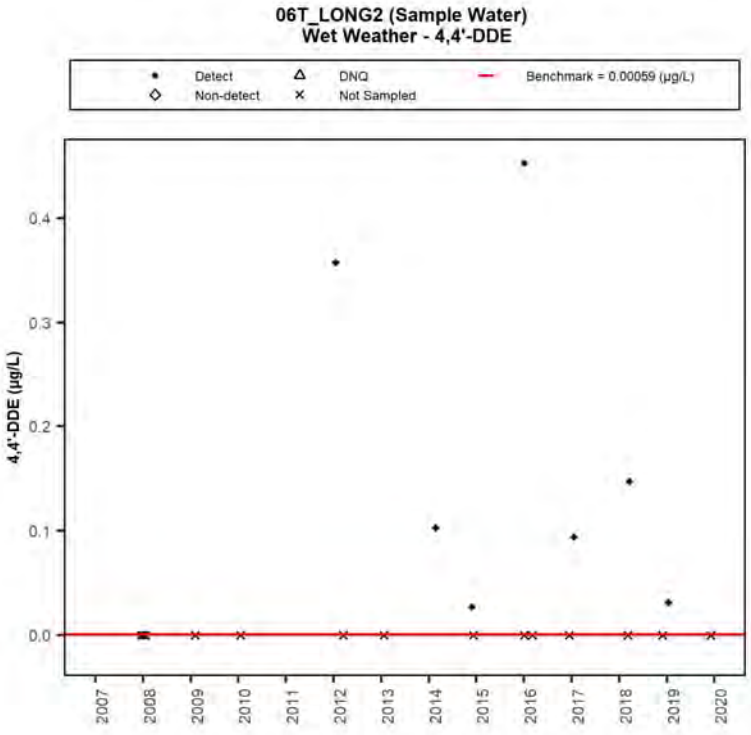


Figure 154. Wet Weather DDE Concentrations at Waiver Benchmark Site 06T_LONG2

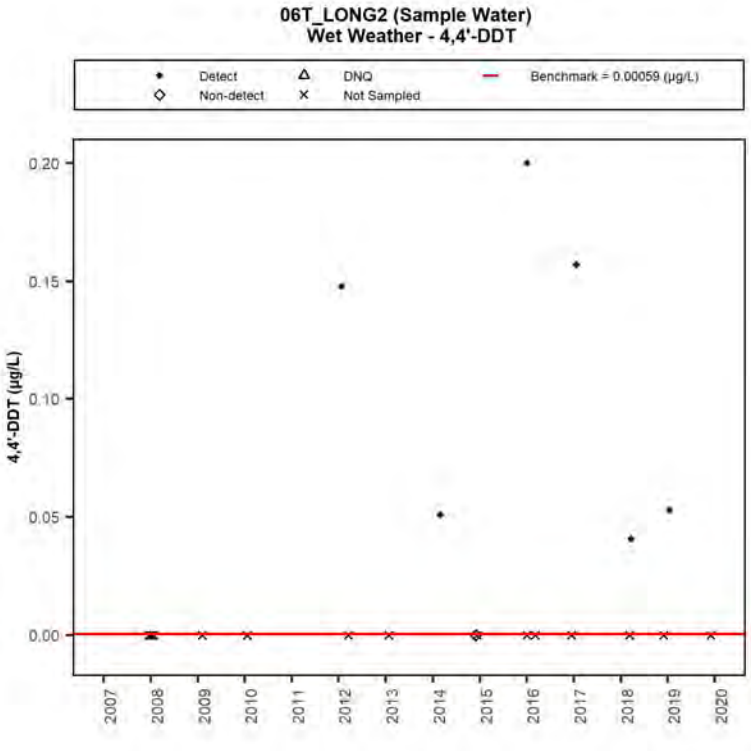


Figure 155. Wet Weather DDT Concentrations at Waiver Benchmark Site 06T_LONG2

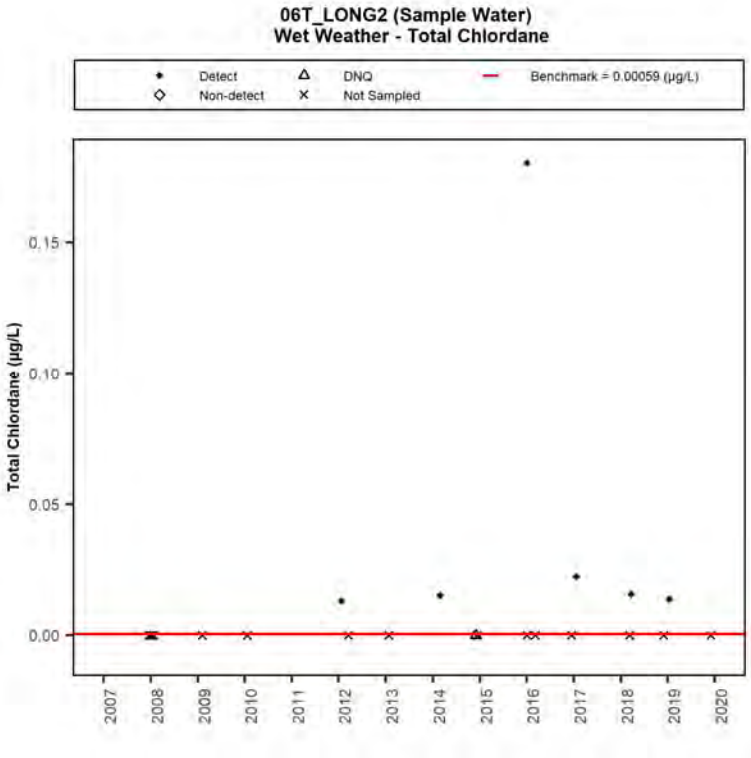


Figure 156. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 06T_LONG2

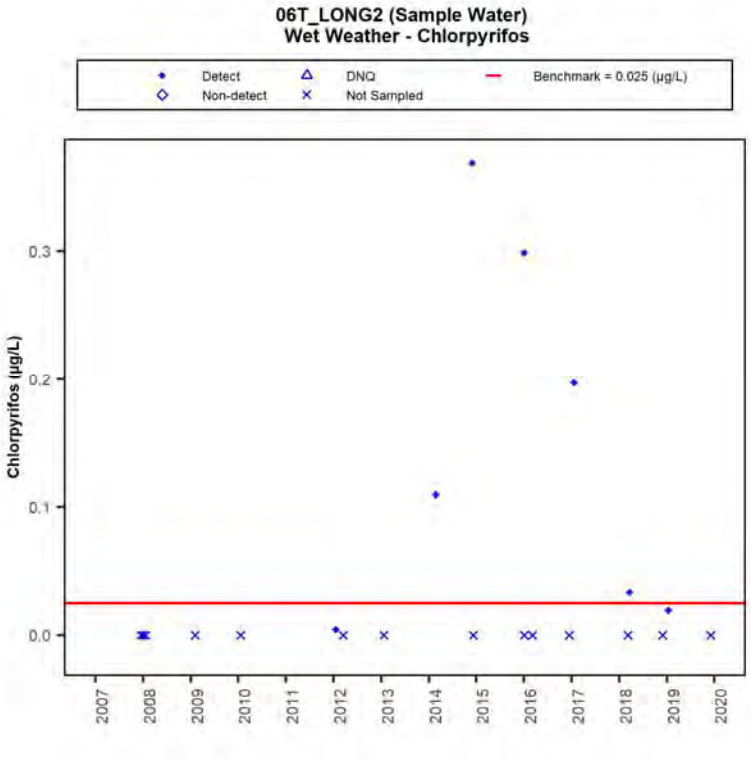


Figure 157. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 06T_LONG2

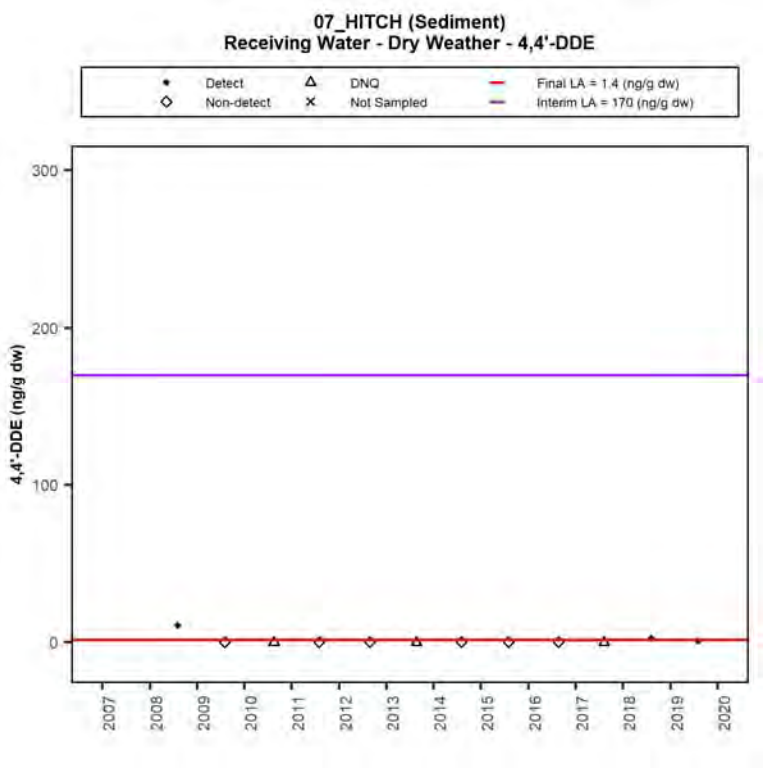


Figure 158. Dry Weather DDE Concentrations at TMDL LA Site 07_HITCH

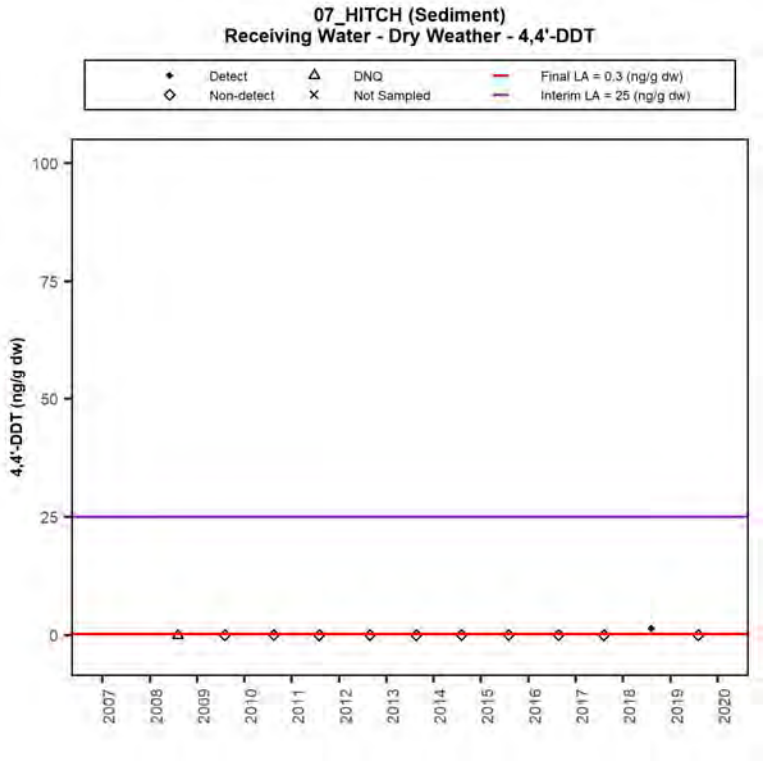


Figure 159. Dry Weather DDT Concentrations at TMDL LA Site 07_HITCH

Table 78. Summary of Benchmark Exceedance Evaluation for Arroyo Simi Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
E. coli					●			☑
Nutrients								
Nitrate-N + Nitrite-N		● [2]	[3]	[4]				
OC Pesticides (Legacy)								
DDD					●			☑
DDE		● [5,6]		☑	●	● [5,6]		☑
DDT		● [5,6]		☑	●	● [5,6]		☑
Chlordane					●			☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●			☑

1. VCAILG monitoring site for Waiver benchmarks is 06T_LONG2.
2. The CCW Nitrogen TMDL receiving water site is 07_HITCH.
3. Agricultural land use site for the Nitrogen TMDLs is 07D_HITCH_LEVEE_2.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. CCW OC Pesticides TMDL receiving water site is 07_HITCH. TMDL compliance is measured in sediment in receiving water and this location is downstream of the responsibility area discharges. Though sediment is collected during dry weather, the results are applied to both wet and dry weather to ensure management practices minimize sediment transport year-round.
6. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.

Table 79. BMPs for Additional Implementation in the Arroyo Simi Responsibility Area

Exceedance Condition						% of Total Applicable Surveyed Units		Additional Implementation of Pertinent BMP Needed? [b]
Bacteria	Legacy Pesticides		Current Pesticides					
Wet	Dry	Wet	Wet	Survey Responses		06T_LONG2 Site Drainage [a]	Arroyo Simi Responsibility Area [a]	
	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	70%	63%	Yes
	x			Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	98%	92%	Yes
	x			1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	59%	86%	Yes
	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	97%	98%	No[c]
		x	x	11	How much non-cropped area is bare soil?	19%	44%	Yes
x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	84%	95%	Yes
x	x	x	x	13a	Grassed waterways are used	0%	3%	Yes
x	x	x	x	14	Vegetated filter strips are used	0%	2%	Yes
			x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	98%	90%	No
			x	16	An integrated pest management plan is implemented	95%	87%	Yes
	x			18	How many acres produce irrigation runoff?	8%	0%	Yes
x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	1%	3%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area.
[c] Because the responsibility area does not include the 06T_LONG2 site drainage, only the survey response percentages for the Arroyo Simi RA were considered for whether additional BMP implementation is needed.

Table 80. Proposed Best Management Practices for the Arroyo Simi Responsibility Area

Water Quality Issues				
Bacteria	Legacy Pesticides		Current Use Pesticides	
Wet Weather	Dry Weather	Wet Weather	Wet Weather	BMPs
				Source Control BMPs
	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
			x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
			x	Implement an integrated pest management plan
	x			Avoid/prevent irrigation runoff
				Structural Non-Treatment BMPs
x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	Use grassed waterways
x	x	x	x	Use vegetated filter strips
				Optional Treatment BMPs
x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Las Posas Responsibility Area

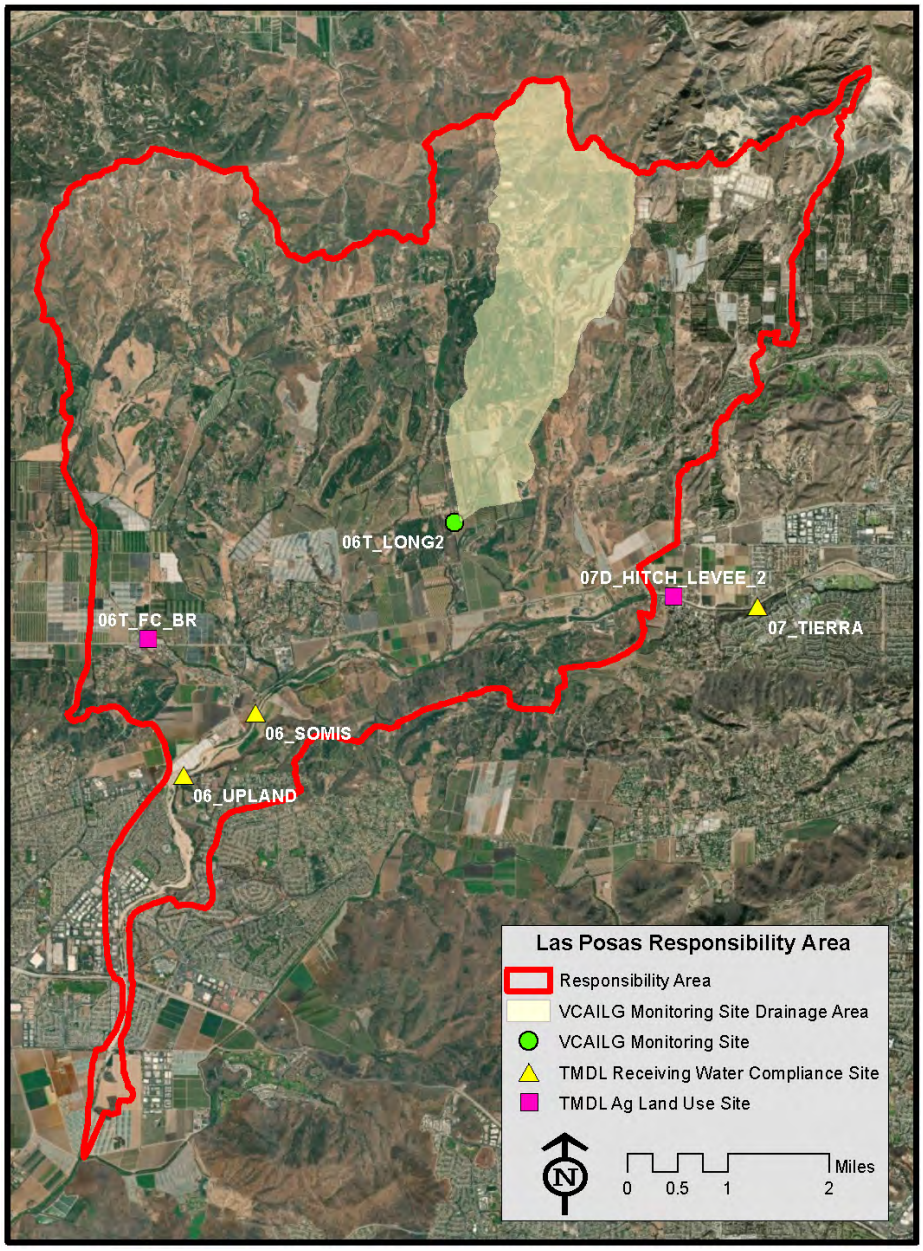


Figure 160. Las Posas Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Las Posas responsibility area are illustrated in Figure 160. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 07_TIERRA is a CCW Salts TMDL Receiving Water Compliance Site
- 06_SOMIS and 06_UPLAND are CCW OC Pesticides and PCBs, Nitrogen, and Toxicity TMDL Receiving Water Compliance Sites
- 07D_HITCH_LEVEE_2 is a CCW Salts TMDL Ag Land Use Site
- 06T_FC_BR is a CCW Nitrogen and Toxicity TMDL Ag Land Use Site

Table 81. Las Posas Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site 06T_LONG2
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	16,686	1,818
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	117	12
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	13,831	1,394
Assessed Acres from Agricultural Parcel List belonging to Non Members	2,855	424
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	9,711	1,043
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.70	0.75
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	2,005	317
Total Estimated Irrigated Acres (Member plus Non Member)	11,716	1,360
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	83%	77%
Survey Response Information		
Sum Surveyed Irrigated Acres	6,862	811
Percent of Total Estimated Irrigated Acres that were Surveyed	59%	60%
Percent of VCAILG Member Irrigated Acres that were Surveyed	71%	78%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 82. Las Posas Responsibility Area Crop Types and General Production Practices

Crop or Practice	06T_LONG2 Site Drainage Only						Las Posas Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	65	60	40	1%	1%	1%
Blueberries	15*	-	-	4%*	-	-	413*	390	26	7%*	5%	0.4%
Raspberries		103	76		16%	9%		685	598		9%	9%
Row Crop	-	-	-	-	-	-	541	497	362	10%	6%	5%
Orchard	356	495	712	91%	77%	88%	4,023	5,629	5,509	71%	73%	80%
Nursery	-	26	14	-	4%	2%	156	377	314	3%	5%	5%
Flower	-	-	10	-	-	1%	-	4	10	-	0.05%	0.1%
Sod	-	-	-	-	-	-	-	5	-	-	0.1%	-
Other	22	18	-	6%	3%	-	443	59	2	8%	1%	0.03%
Overhead Cover in Production Areas												
Hoop House	74	103	61	19%	16%	7%	269	1,050	634	5%	14%	9.2%
No Cover	653	43	39	166%	7%	5%	5,280	985	684	94%	13%	10.0%
Greenhouse	-	-	-	-	-	-	1	11	10	-	0.1%	0.2%
Shade	-	1	-	-	032%	-	1	27	24	-	0.4%	0.3%
Other	-	-	-	-	-	-	43	-	-	0.8%	-	-
Surface Treatments in Production Areas												
Bare Soil	105	260	243	27%	41%	30%	2,451	3,533	3,000	43%	46%	43.7%
Cover Crop	54	56	58	14%	9%	7%	334	431	292	6%	6%	4.3%
Plastic	-	-	-	-	-	0%	213	251	60	4%	3%	0.9%
Weed Cloth	-	9	-	-	1%	0%	18	46	24	0.3%	1%	0.3%
Mulch	202	291	473	51%	45%	58%	2,702	2,951	2,991	48%	38%	43.6%
Gravel	-	-	-	-	-	-	20	36	28	0.4%	0.5%	0.4%
Other	31	33	36	8%	5%	4%	165	578	1,086	3%	8%	15.8%
Irrigation Systems in Production Areas												
Drip Only	50	187	138	13%	29%	17%	1,635	2,814	2,284	30%	37%	33.3%
Microsprinkler/Drip	-	-	-	-	-	-	-	-	-	-	-	-
Microsprinkler	321	433	661	82%	67%	81%	3,694	4,403	4,222	66%	57%	61.5%

Crop or Practice	06T_LONG2 Site Drainage Only						Las Posas Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead Sprinkler	-	2	-	-	0.3%	-	218	316	55	4%	4%	0.8%
Overhead/Drip	-	-	-	-	-	-	230	62	240	4%	1%	3.5%
Furrow Flood	-	-	-	-	-	-	26	10	2	0.5%	0.1%	0.03%
Hand Watering	-	2	-	-	0.3%	-	33	54	45	0.6%	0.7%	0.7%
Other	22	-	13	6%	-	2%	47	-	13	0.8%	-	0.2%

Table 83. Las Posas Responsibility Area Gower BMPs

Survey Question	Units	06T_LONG2 Site Drainage Only						Las Posas Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	282	347	426	74%	72%	59%	4,033	5,824	5,356	73%	79%	80%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	312	436	635	79%	68%	78%	3,715	5,437	5,064	66%	71%	74%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	177	313	204	46%	54%	29%	2,702	4,047	3,183	50%	56%	51%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	182	316	349	46%	49%	43%	2,732	4,551	3,911	48%	59%	57%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	132	247	257	34%	38%	32%	1,710	3,548	2,933	30%	46%	43%
Q5a: Are soil residual nitrate tests done?	Acres	225	406	489	57%	63%	60%	3,337	5,009	4,567	59%	65%	67%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	225	406	489	57%	63%	60%	3,317	4,828	4,379	59%	63%	64%
Q6: Are leaf/petiole tests conducted?	Acres	310	524	535	79%	94%	82%	4,441	5,539	5,174	84%	84%	83%
Q7a: Is nitrate measured in fertigation water?	Acres	135	286	230	34%	44%	28%	2,708	4,332	3,723	48%	56%	54%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	107	286	230	27%	44%	28%	2,648	4,098	3,477	47%	53%	51%
Q8: Is fertilizer adjusted based on nutrients from cover crops	Acres	171	208	158	60%	54%	39%	2,359	2,557	1,686	75%	62%	54%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	161	165	306	41%	26%	38%	2,600	3,226	3,251	46%	42%	47%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	118	118	298	73%	72%	97%	2,438	3,272	2,816	94%	100%	87%
Q11. How much non-cropped area is bare soil?	Acres	37	41	42	9%	10%	19%	774	1,470	1,007	14%	44%	41%
Q12a: How many feet of ditches exist?	Feet	10,375	12,254	19,279	N/A	N/A	N/A	830,647	850,958	859,529	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,800	9,680	16,280	75%	79%	84%	135,214	149,069	168,217	16%	18%	20%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	-	-	1,103	1,167	1,245	20%	15%	18%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	590	552	651	11%	7%	9%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	1	-	-	0.12%	335	391	411	6%	5%	6%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	390	628	797	99%	98%	98%	5,423	7,319	6,484	96%	95%	94%
Q16: Is an IPM Plan being implemented?	Acres	295	534	768	75%	83%	95%	4,184	6,200	5,533	74%	80%	81%
Q17a: How many acres are organically farmed?	Acres	171	154	186	44%	24%	23%	1,294	1,739	1,056	23%	23%	15%
Q17b: How many acres are conventionally farmed?	Acres	222	462	626	56%	72%	77%	4,347	5,679	5,806	77%	74%	85%
Runoff Management/Treatment													

Survey Question	Units	06T_LONG2 Site Drainage Only						Las Posas Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q18: How many acres produce irrigation runoff?	Acres	42	55	66	11%	9%	8%	928	752	965	16%	10%	14%
Q19: Runoff from how many acres is treated or detained?	Acres	109	113	11	28%	18%	1%	1,060	1,255	652	19%	16%	9%

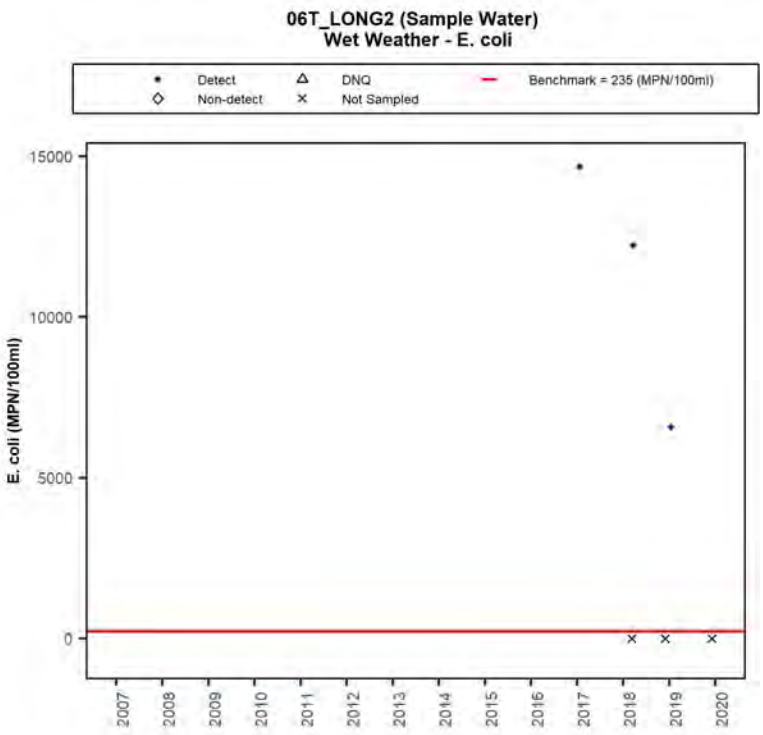


Figure 161. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 06T_LONG2

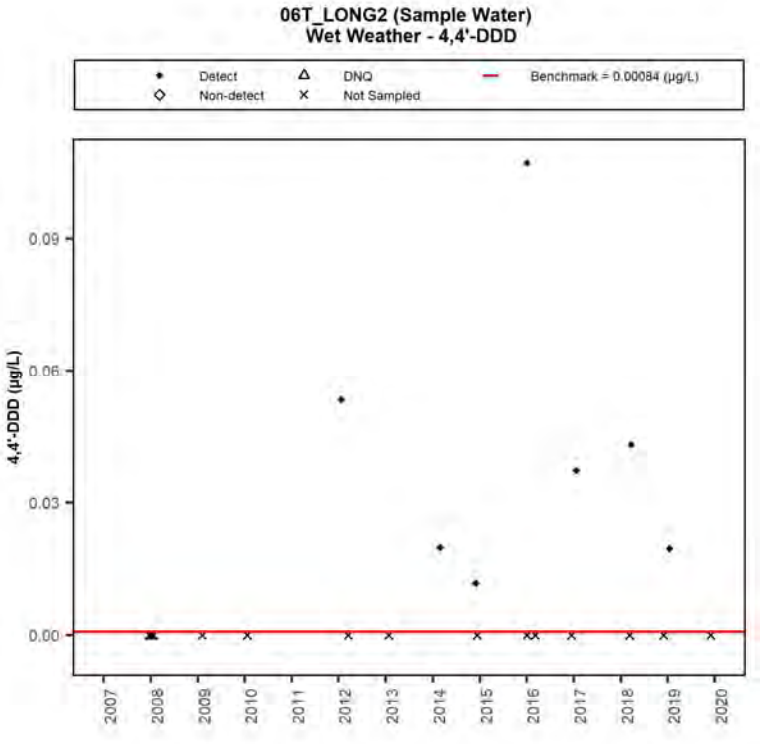


Figure 162. Wet Weather DDD Concentrations at Waiver Benchmark Site 06T_LONG2

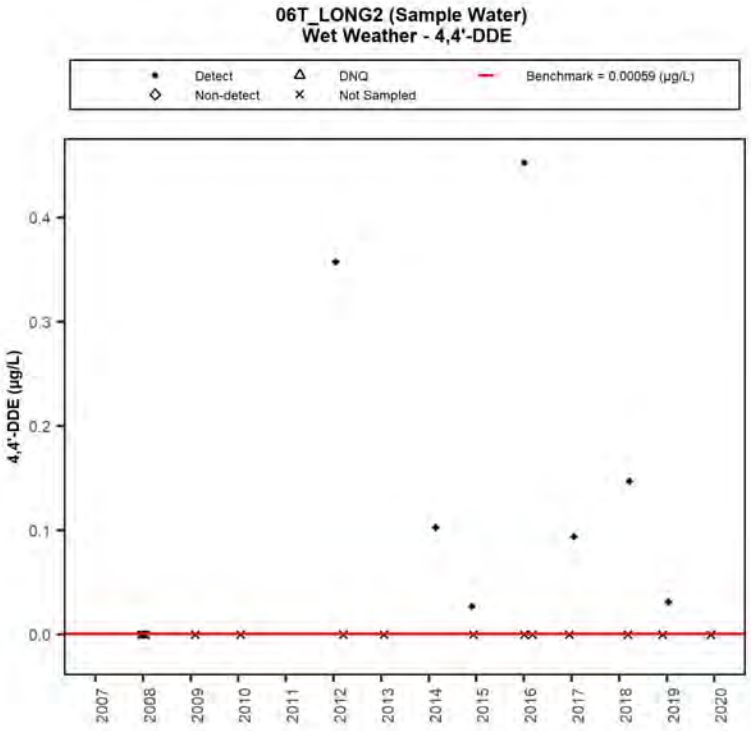


Figure 163. Wet Weather DDE Concentrations at Waiver Benchmark Site 06T_LONG2

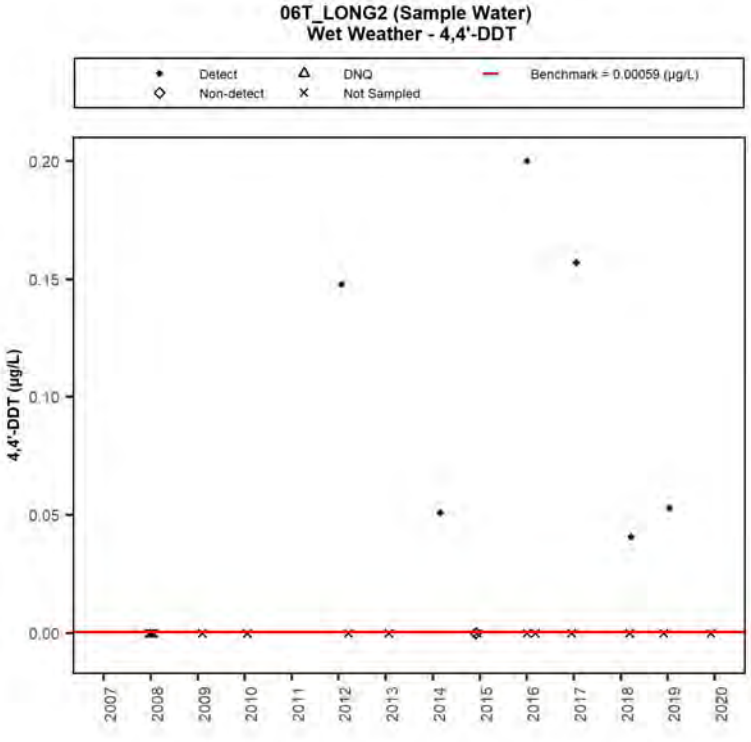


Figure 164. Wet Weather DDT Concentrations at Waiver Benchmark Site 06T_LONG2

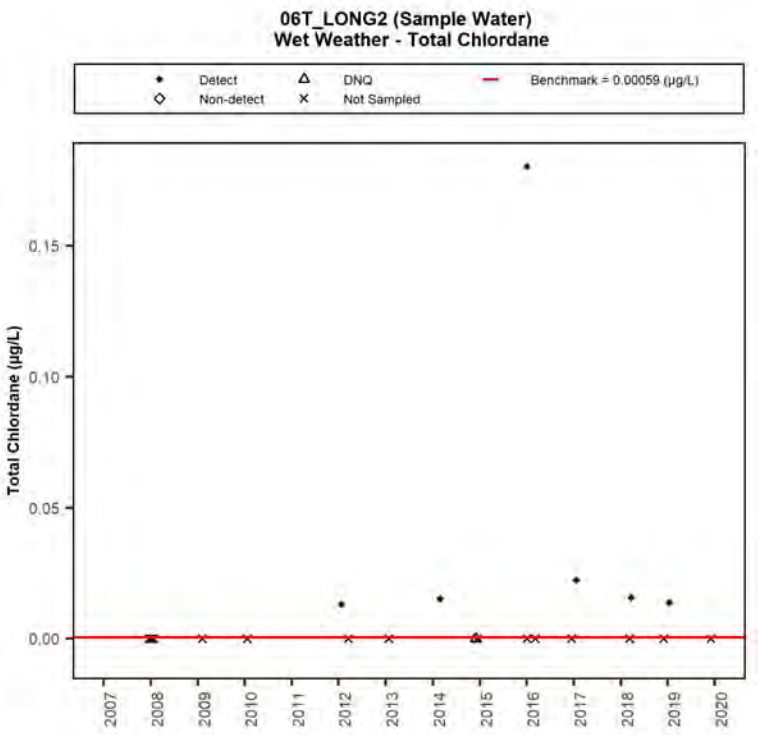


Figure 165. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 06T_LONG2

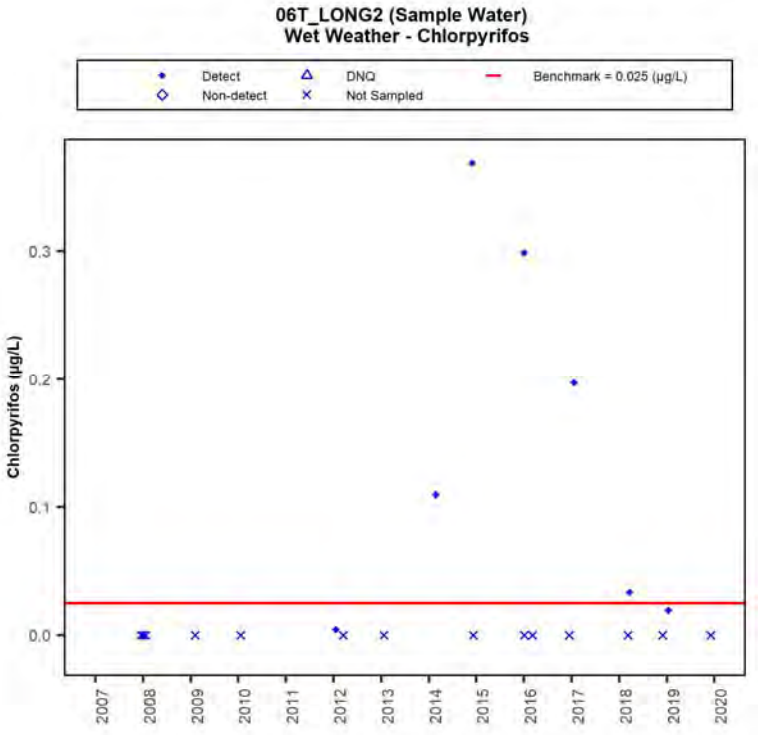


Figure 166. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 06T_LONG2

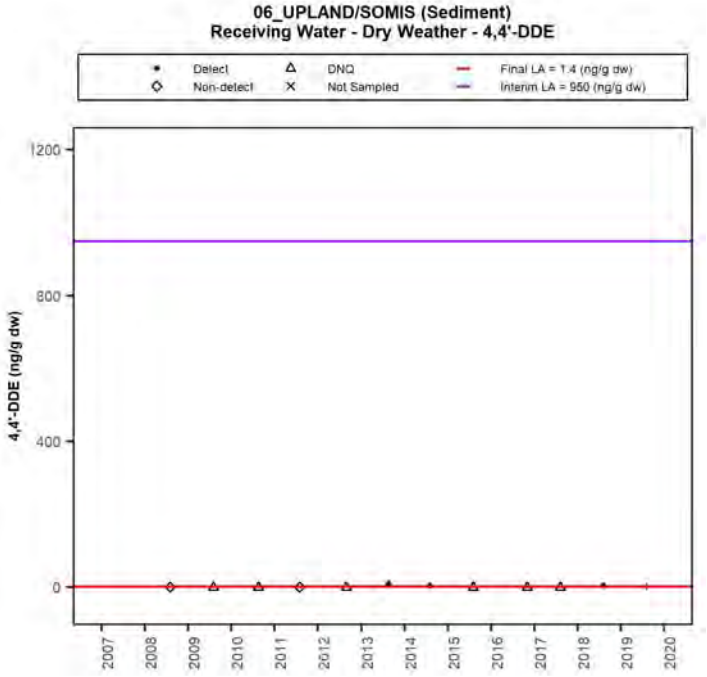


Figure 167. Dry Weather DDE Concentrations at TMDL LA Site 06_SOMIS (through 2015) 06_UPLAND (2016 onward)

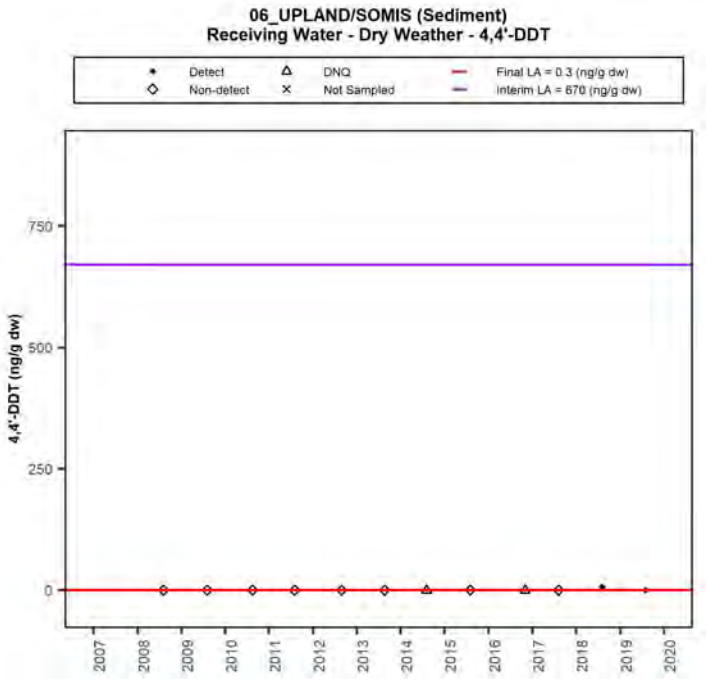


Figure 168. Dry Weather DDT Concentrations at TMDL LA Site 06_SOMIS (through 2015) 06_UPLAND (2016 onward)

Table 84. Summary of Benchmark Exceedance Evaluation for Las Posas Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
E. coli					●			☑
OC Pesticides (Legacy)								
DDD					●			☑
DDE		● [2,3]		☑	●	● [2,3]		☑
DDT		● [2,3]		☑	●	● [2,3]		☑
Chlordane					●			☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● [4]	[5]	☑

1. VCAILG monitoring site for Waiver benchmarks is 06T_LONG2.
2. CCW OC Pesticides TMDL receiving water site is 06_UPLAND. TMDL compliance is measured in sediment in receiving water and this location is downstream of the responsibility area discharges. Though sediment is collected during dry weather, the results are applied to both wet and dry weather to ensure management practices minimize sediment transport year-round.
3. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.
4. CCW Toxicity TMDL receiving water site is 06_UPLAND.
5. Agricultural land use site for the Toxicity TMDL is 06T_FC_BR.

Table 85. BMPs for Additional Implementation in the Las Posas Responsibility Area

Exceedance Condition						% of Total Applicable Surveyed Units		
Bacteria	Legacy Pesticides		Current Pesticides					
Wet	Dry	Wet	Wet		Survey Responses	06T_LONG2 Site Drainage Only	Las Posas Responsibility Area	Additional Implementation of Pertinent BMPs Needed?
	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	70%	65%	Yes
	x			Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	98%	95%	Yes
	x			1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	59%	80%	Yes
	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	97%	87%	Yes
		x	x	11	How much non-cropped area is bare soil?	19%	41%	Yes
x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	84%	20%	Yes
x	x	x	x	13a	Grassed waterways are used	0%	18%	Yes
x	x	x	x	14	Vegetated filter strips are used	0.1%	6%	Yes
			x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	98%	94%	Yes
			x	16	An integrated pest management plan is implemented	95%	81%	Yes
	x			18	How many acres produce irrigation runoff?	8%	14%	Yes
x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	1%	9%	Yes

Table 86. Proposed Best Management Practices for the Las Posas Responsibility Area

Water Quality Issues				BMPs
Bacteria	Legacy Pesticides		Current Use Pesticides	
Wet Weather	Dry Weather	Wet Weather	Wet Weather	
				Source Control BMPs
	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
			x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
			x	Implement an integrated pest management plan
	x			Avoid/prevent irrigation runoff
				Structural Non-Treatment BMPs
x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	Use grassed waterways
x	x	x	x	Use vegetated filter strips
				Optional Structural BMPs
x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Tapo Canyon Responsibility Area

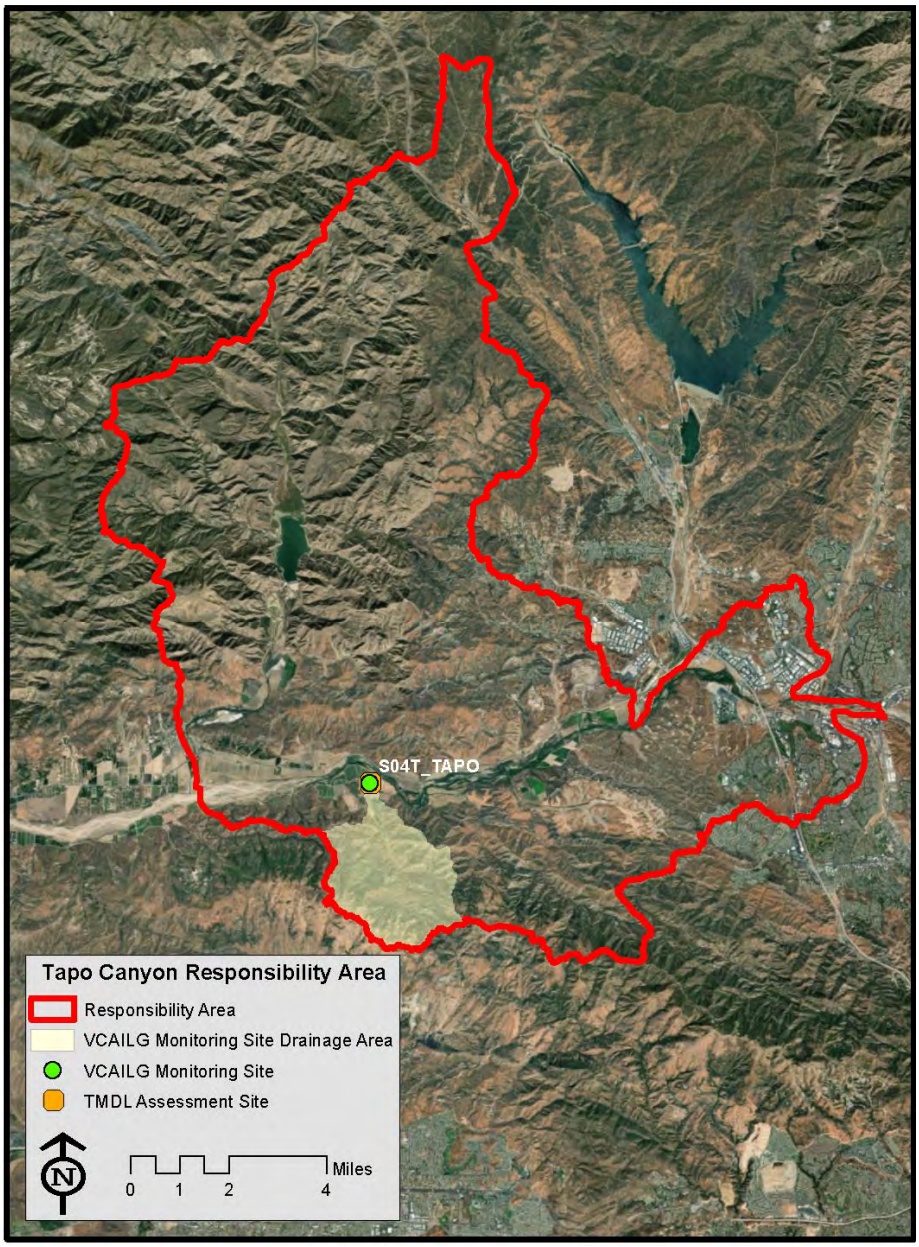


Figure 169. Tapo Canyon Responsibility Area Map

The Tapo Canyon responsibility area is illustrated in Figure 169. The VCAILG monitoring site S04T_TAPO also serves as a TMDL assessment site for the SCR Nitrogen TMDL and Upper SCR Chloride TMDL.

Table 87. Tapo Canyon Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site S04T_TAPO
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	14,006	640
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	0	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	13,816	640
Assessed Acres from Agricultural Parcel List belonging to Non Members	190	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	3,348	50
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.24	0.08
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	46	0
Total Estimated Irrigated Acres (Member plus Non Member)	3,394	50
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	99%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	3,337	50
Percent of Total Estimated Irrigated Acres that were Surveyed	98%	100%
Percent of VCAILG Member Irrigated Acres that were Surveyed	100%	100%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 88. Tapo Canyon Responsibility Area Crop Types and General Production Practices

Crop or Practice	S04T_TAPO Site Drainage Only						Tapo Canyon Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017 [a]	2018	2020	2017 [a]	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	-	52	52	-	2%	2%
Blueberries	-*	-	-	-*	-	-	-*	-	-	-*	-	-
Raspberries		-	-		-	-		24	24		1%	1%
Row Crop	-	26	-	-	48%	-	-	1852	982	-	57%	29%
Orchard	19	27	23	83%	52%	46%	19	753	798	83%	23%	24%
Nursery	-	-	-	-	-	-	-	81	84	-	2%	3%
Flower	4	-	-	17%	-	-	4	-	4	17%	-	0.1%
Sod	-	-	-	-	-	-	-	119	119	-	4%	4%
Other	-	-	27	-	-	54%	-	394	1,273	-	12%	38%
Overhead Cover in Production Areas												
Hoop House	-	-	-	-	-	-	-	107	107	-	3%	3%
No Cover	-	26	27	-	48%	54%	-	2267	2,284	-	69%	68%
Greenhouse	-	-	-	-	-	-	-	27	27	-	1%	0.8%
Shade	-	-	-	-	-	-	-	2	2	-	0.1%	0.06%
Other	-	-	-	-	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	-	53	50	-	100%	100%	-	2253	1,016	-	69%	30%
Cover Crop	-	-	-	-	-	-	-	721	2,083	-	22%	62%
Plastic	-	-	-	-	-	-	-	52	298	-	2%	9%
Weed Cloth	-	-	-	-	-	-	-	90	90	-	3%	3%
Mulch	19	-	-	83%	-	-	19	425	425	83%	13%	13%
Gravel	-	-	-	-	-	-	-	-	-	-	-	-
Other	4	-	-	17%	-	-	4	-	-	17%	-	-
Irrigation Systems in Production Areas												
Drip Only	7	27	-	30%	52%	-	7	320	554	30%	10%	17%
Microsprinkler/Drip	-	-	-	-	-	-	-	52	52	-	2%	2%
Microsprinkler	-	-	23	-	-	46%	-	721	797	-	22%	24%
Overhead Sprinkler	-	-	27	-	-	54%	-	530	1,306	-	16%	39%

Crop or Practice	S04T_TAPO Site Drainage Only						Tapo Canyon Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017 [a]	2018	2020	2017 [a]	2018	2020
Overhead/Drip	-	26	-	-	48%	-	-	1650	626	-	50%	19%
Furrow Flood	-	-	-	-	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	2	2	-	0.1%	0.06%
Other	16	-	-	70%	-	-	16	-	-	70%	-	-

* Value for 2017 is for Raspberries & Blueberries combined.

[a] In 2017, no surveys were submitted for parcels in the S04T_TAPO drainage area outside of the nested drainage for site SO4_TAPO

Table 89. Tapo Canyon Responsibility Area Grower BMPs

Survey Question	Units	SO4T_TAPO Site Drainage Only						Tapo Canyon Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017 [a]	2018	2020	2017 [a]	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	23	53	50	100%	100%	100%	23	3,153	3,332	100%	100%	100%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	17	53	50	74%	100%	100%	17	2,545	3,118	74%	78%	93%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	-	-	50	-	-	100%	-	539	2,478	-	18%	74%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	-	53	50	-	100%	100%	-	2,058	2,478	-	63%	74%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	-	-	50	-	-	100%	-	530	2,478	-	16%	74%
Q5a: Are soil residual nitrate tests done?	Acres	-	53	50	-	100%	100%	-	2,893	3,333	-	88%	100%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	-	53	50	-	100%	100%	-	2,893	3,333	-	88%	100%
Q6: Are leaf/petiole tests conducted?	Acres	-	53	50	-	100%	100%	-	2,893	3,333	-	95%	100%
Q7a: Is nitrate measured in fertigation water?	Acres	-	53	50	-	100%	100%	-	2,039	2,479	-	62%	74%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	-	53	50	-	100%	100%	-	2,039	2,479	-	62%	74%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	-	53	50	-	100%	100%	-	1,808	2,995	-	70%	92%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	17	53	50	74%	100%	100%	17	2,202	2,261	74%	67%	68%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	17	53	50	100%	100%	100%	17	1,985	1,950	100%	90%	86%
Q11. How much non-cropped area is bare soil?	Acres	125	-	-	534% [b]	-	-	125	2,458	2,520	534% [b]	30%	29%
Q12a: How many feet of ditches exist?	Feet	-	1,629	1,589	N/A	N/A	N/A	-	112,547	163,636	-	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	N/A	1,629	1,589	N/A	100%	100%	N/A	98,952	106,494	N/A	88%	65%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	-	-	-	756	829	-	23%	25%

Survey Question	Units	SO4T_TAPO Site Drainage Only						Tapo Canyon Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017 [a]	2018	2020	2017 [a]	2018	2020
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	-	381	436	-	12%	13%
Q14: How many acres are treated by vegetated filter strips?	Acres	17	-	-	74%	-	-	17	75	75	74%	2%	2%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	22	53	50	96%	100%	100%	22	3,275	3,332	96%	100%	100%
Q16: Is an IPM Plan being implemented?	Acres	22	53	50	96%	100%	100%	22	3,153	3,337	96%	96%	100%
Q17a: How many acres are organically farmed?	Acres	6	-	-	26%	-	-	6	411	691	26%	13%	21%
Q17b: How many acres are conventionally farmed?	Acres	17	26	50	74%	48%	100%	17	2,073	2,646	74%	63%	79%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	22	53	50	96%	100%	100%	22	2,013	2,072	96%	61%	62%
Q19: Runoff from how many acres is treated or detained?	Acres	23	53	50	100%	100%	100%	23	1,348	1,369	100%	41%	41%

[a] No surveys were submitted for parcels in the S04T_TAPO drainage area outside of the nested drainage for site SO4_TAPO.

[b] Respondents reported 125 acres were bare soil, but the two parcels for which surveys were submitted amount to only 23 irrigated acres

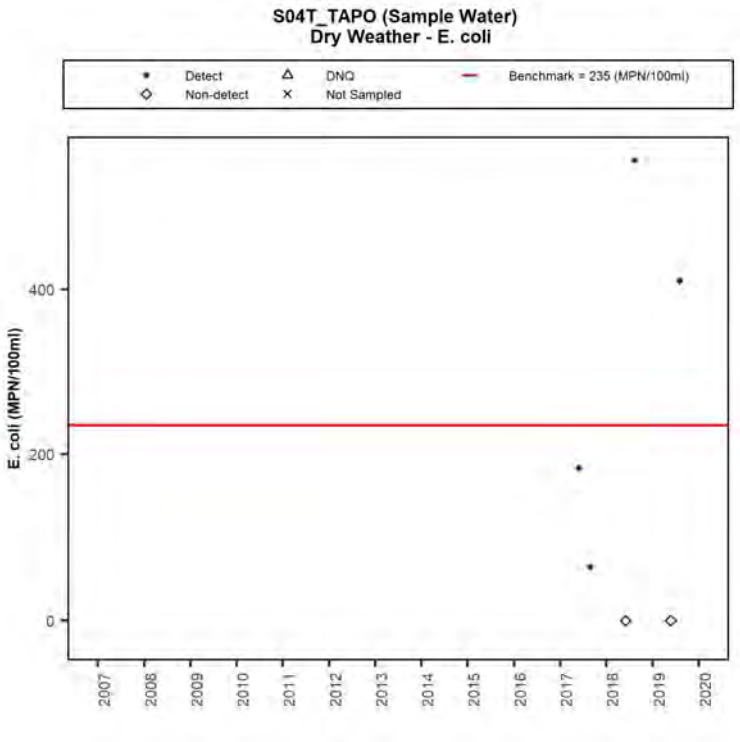


Figure 170. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site S04T_TAPO

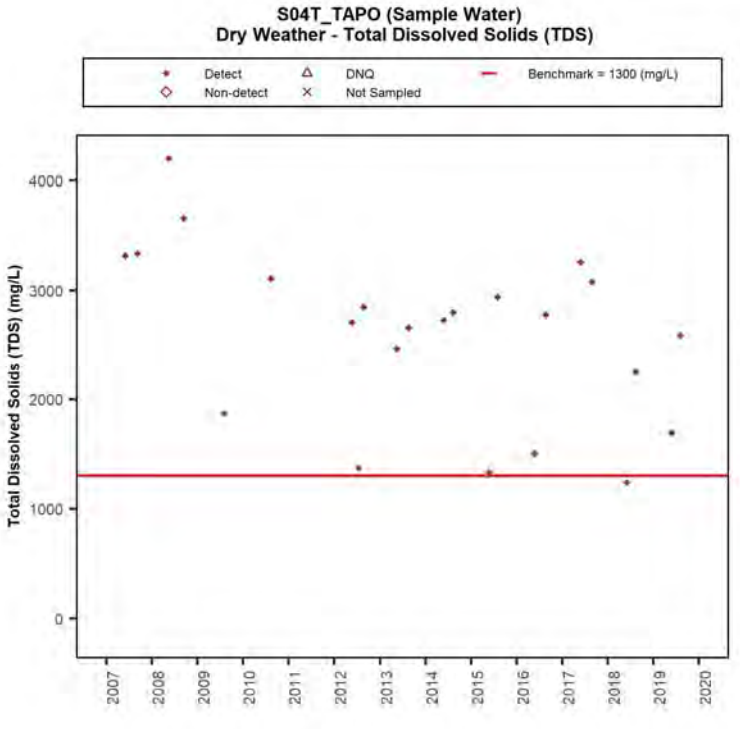


Figure 171. Dry Weather Total Dissolved Solids Concentrations at Waiver Benchmark Site S04T_TAPO

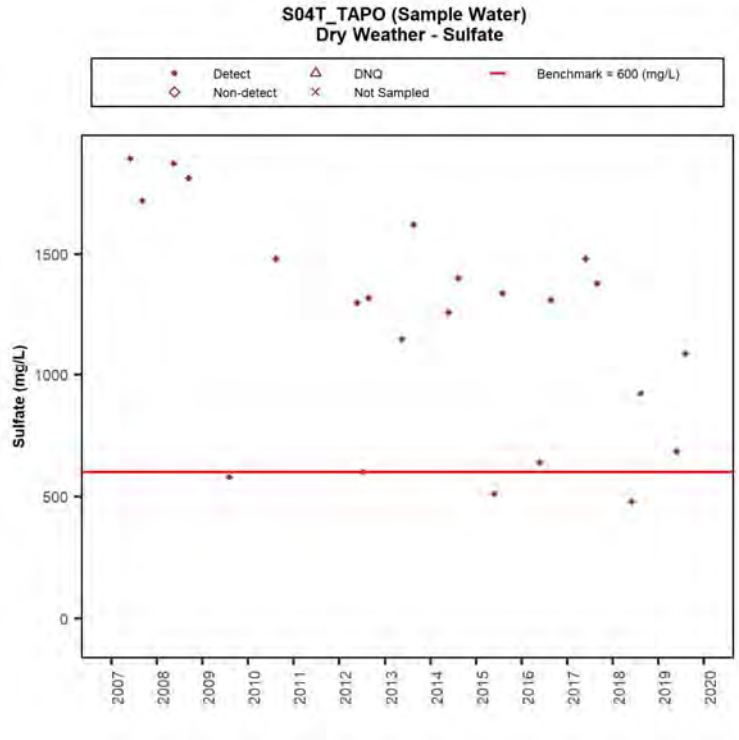


Figure 172. Dry Weather Sulfate Concentrations at Waiver Benchmark Site S04T_TAPO

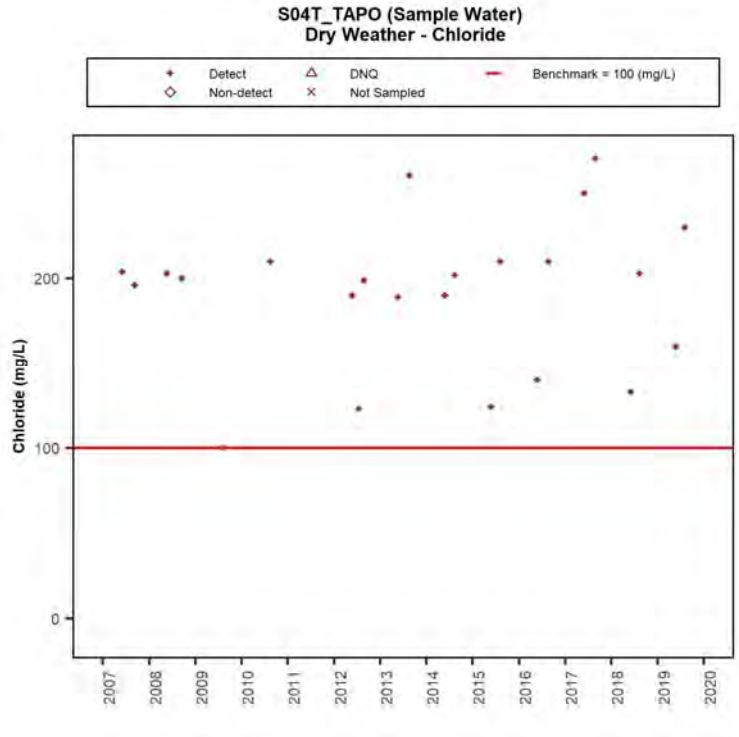


Figure 173. Dry Weather Chloride Concentrations at Waiver Benchmark Site and TMDL LA Site S04T_TAPO

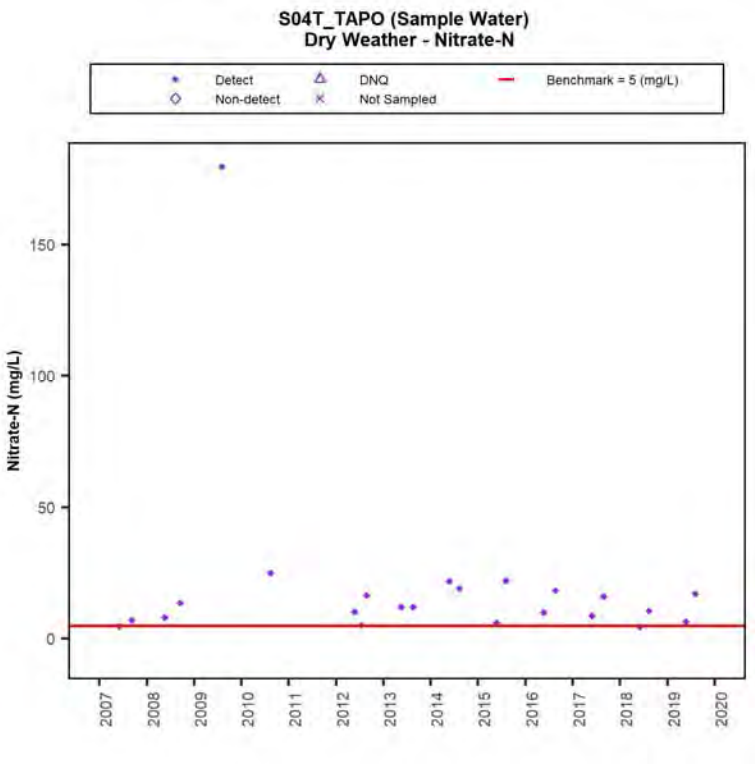


Figure 174. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site S04T_TAPO

Table 90. Dry Weather Survival Toxicity during the 2016 Waiver Period at Waiver Benchmark Site S04T_TAPO

Dry Weather Survival Toxicity - S04T_TAPO	
# of Events with Significant Mortality	1
# of Events with No Significant Mortality	2

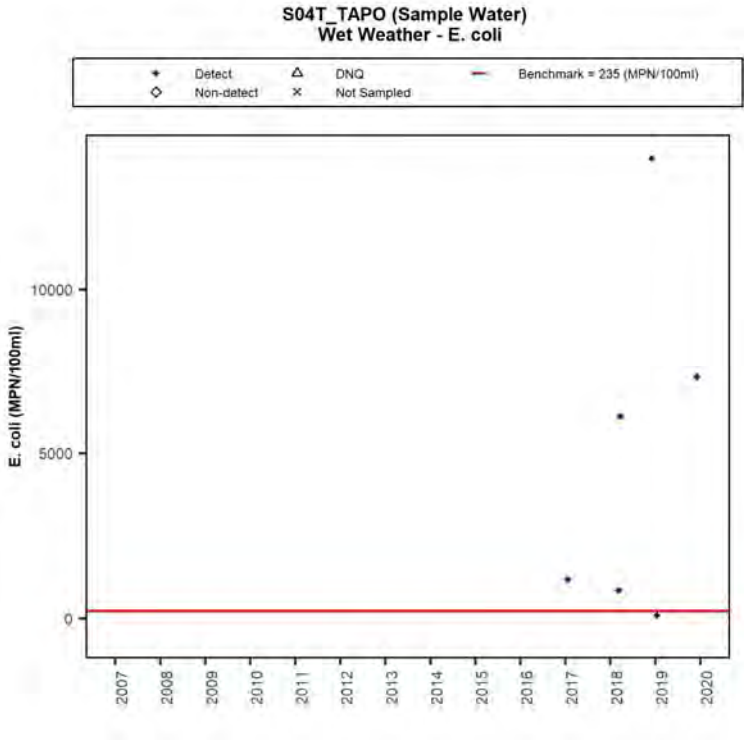


Figure 175. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site S04T_TAPO

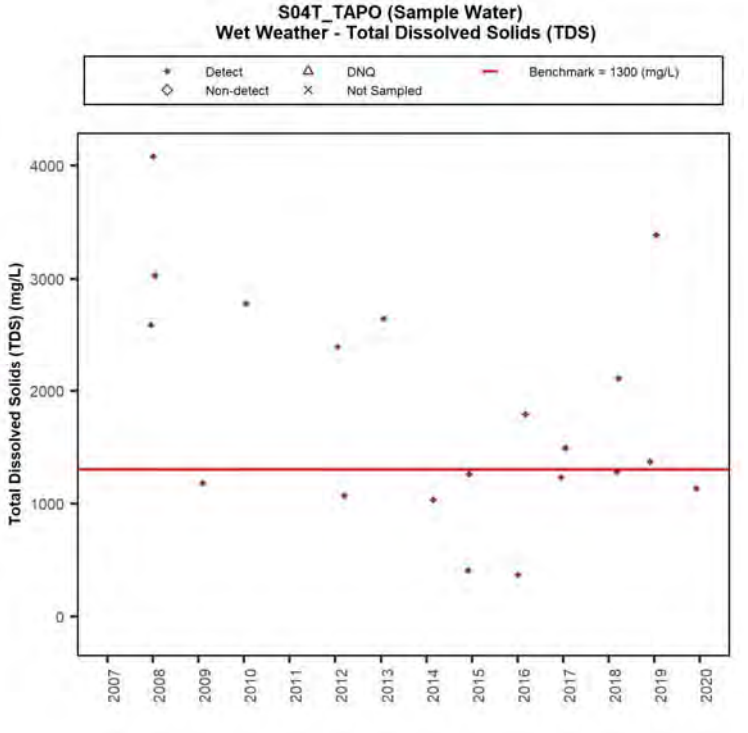


Figure 176. Wet Weather Total Dissolved Solids Concentrations at Waiver Benchmark Site S04T_TAPO

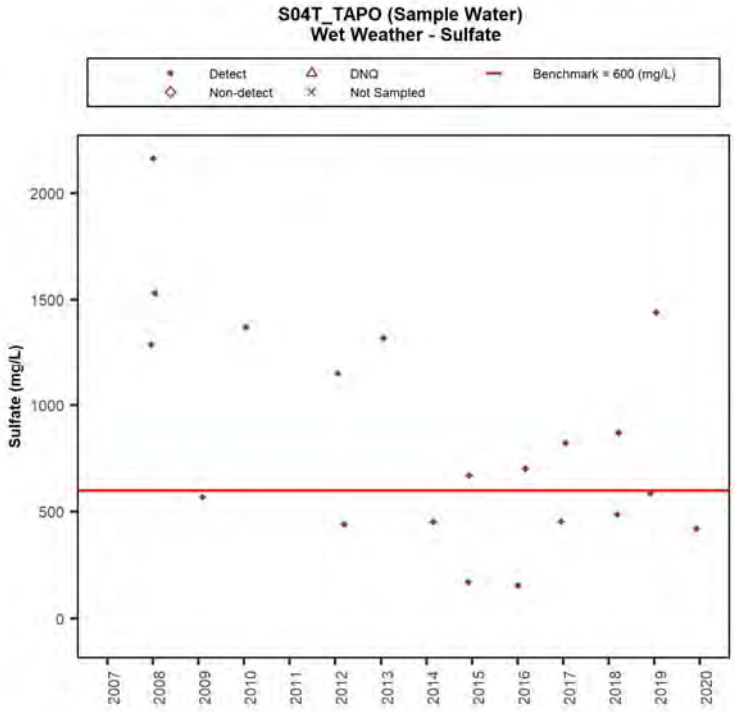


Figure 177. Wet Weather Sulfate Concentrations at Waiver Benchmark Site S04T_TAPO

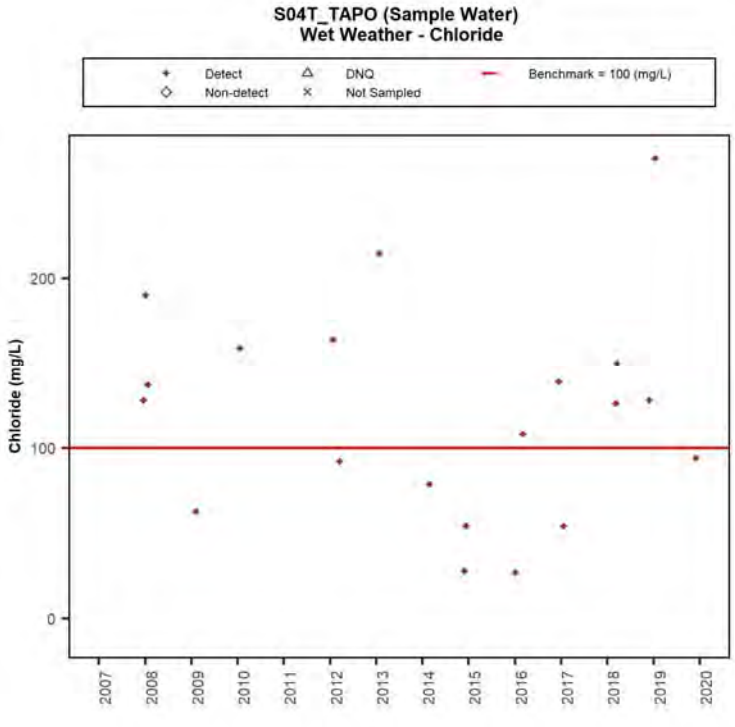


Figure 178. Wet Weather Chloride Concentrations at Waiver Benchmark Site and TMDL LA Site S04T_TAPO

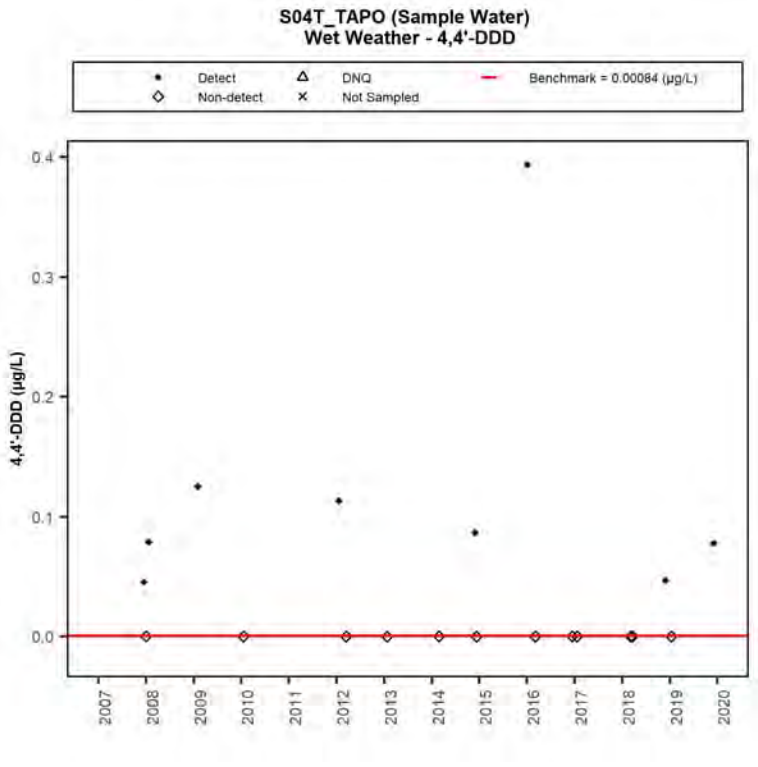


Figure 179. Wet Weather DDD Concentrations at Waiver Benchmark Site S04T_TAPO

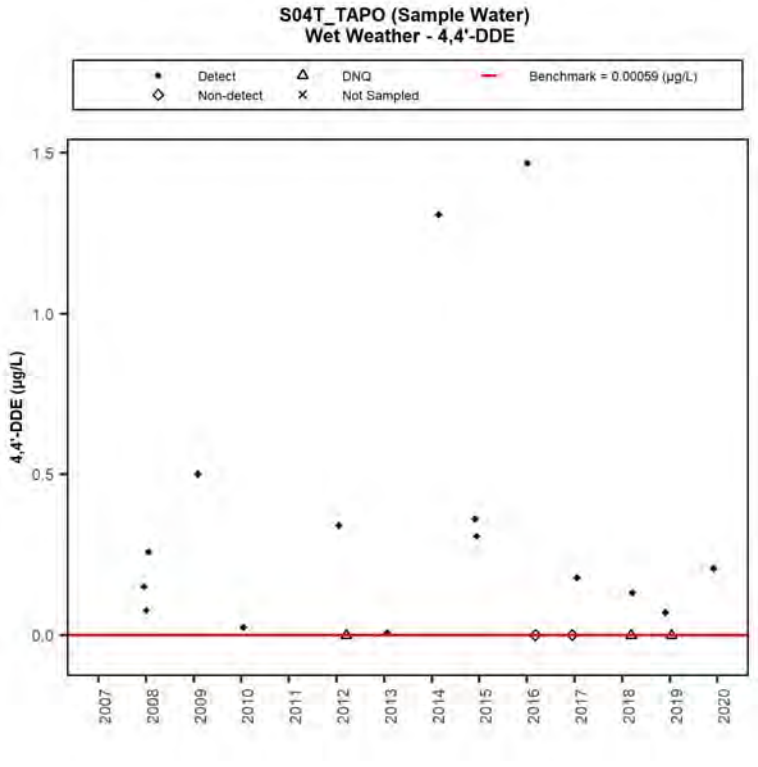


Figure 180. Wet Weather DDE Concentrations at Waiver Benchmark Site S04T_TAPO

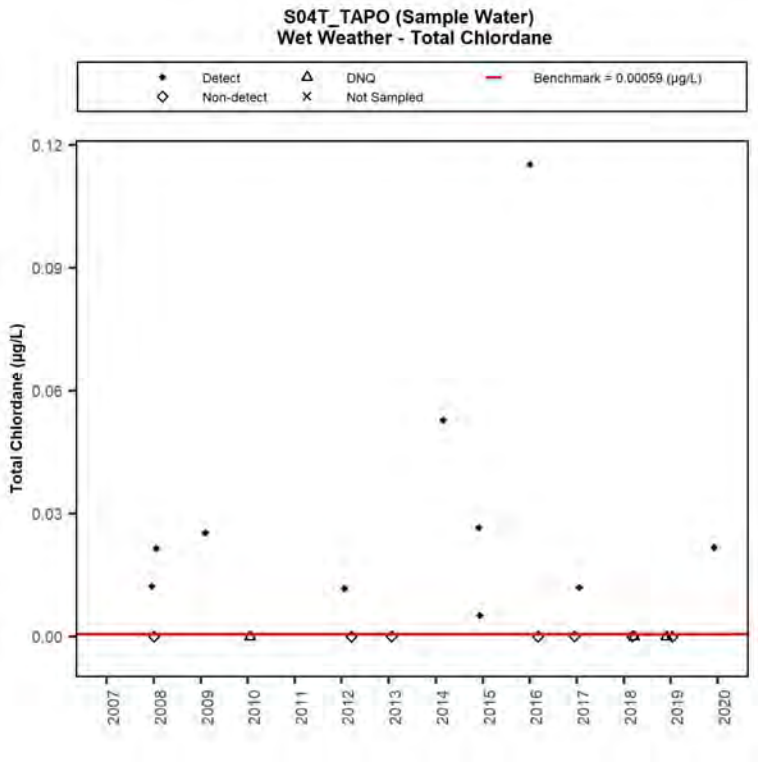


Figure 181. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S04T_TAPO

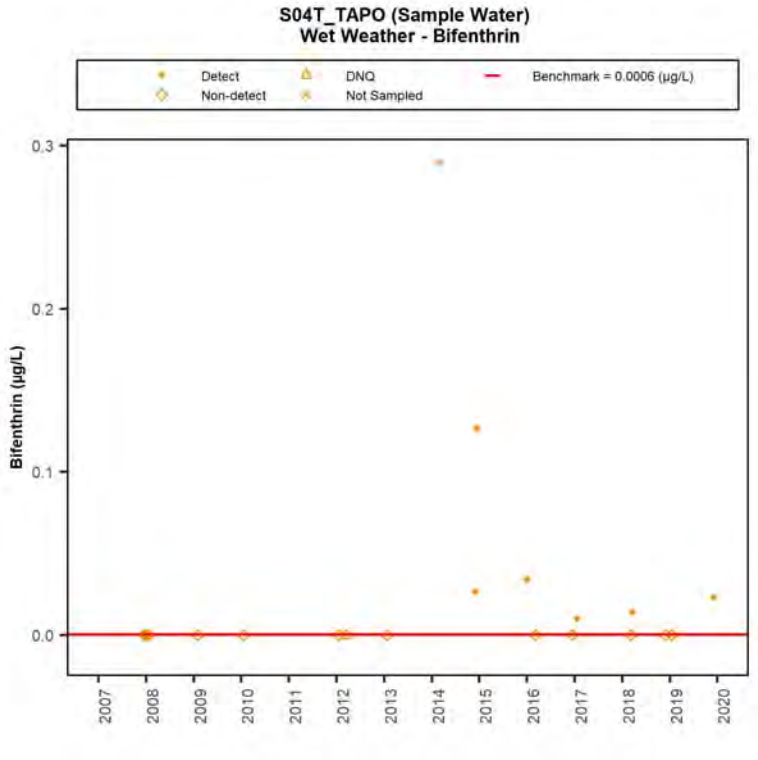


Figure 182. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S04T_TAPO

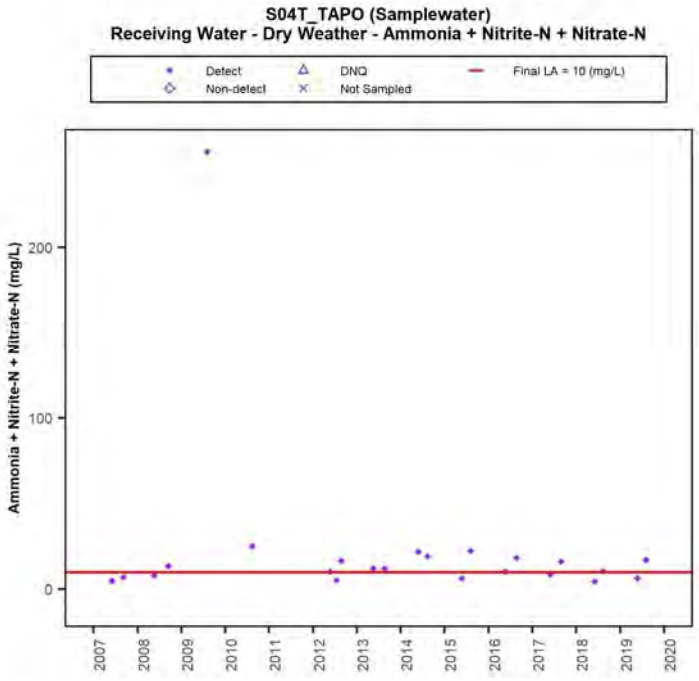


Figure 183. Dry Weather Nitrogen Compounds Concentrations at TMDL LA Site S04T_TAPO

Table 91. Summary of Benchmark Exceedance Evaluation for Tapo Canyon Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
E. coli	●		☑	●		☑
Salts						
TDS	●		☑	●		☑
Sulfate	●		☑	●		☑
Chloride	●	● [2]	☑	●	● [2]	☑
Nutrients						
Nitrate-N	●		☑			
Ammonia-N + Nitrate-N + Nitrite-N		● [2]	☑			
OC Pesticides (Legacy)						
DDD				●		☑
DDE				●		☑
Chlordane				●		☑
OP and Pyrethroid Pesticides (Current)						
Bifenthrin				●		☑
Chronic Toxicity						
Survival Toxicity	● [3]		☑			

1. VCAILG monitoring site for Waiver benchmarks is S04T_TAPO.
2. TMDL LAs for the Santa Clara River Nutrients TMDL and Upper Santa Clara River Chloride TMDL were compared to data from S04T_TAPO.
3. Single species exceedances for *Hyalella azteca*.

Table 92. BMPs for Additional Implementation in the Tapo Canyon Responsibility Area

Exceedance Condition										% of Total Applicable Surveyed Units		
Bacteria		Salt		Nutrients	Legacy Pesticides	Current Pesticides	Toxicity			S04T_TAPO Site Drainage Only	Tapo Canyon Responsibility Area	Additional Implementation of Pertinent BMP Needed?
Dry	Wet	Dry	Wet	Dry	Wet	Wet	Dry	Survey Responses				
				x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	100%	87%	Yes
x		x		x			x	Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	46%	42%	Yes
		x		x			x	1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	100%	100%	No
		x		x			x	2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	100%	93%	Yes
		x		x			x	3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	100%	74%	Yes
				x			x	4b	Certified nutrient management plan has been prepared for the property	100%	74%	Yes
				x			x	5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	100%	100%	No
				x			x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	100%	No
				x			x	7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	100%	74%	Yes
				x			x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	100%	92%	Yes
				x	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	86%	Yes
					x	x		11	How much non-cropped area is bare soil?	0%	29%	Yes
x	x			x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	100%	65%	Yes
x	x	x	x	x	x	x	x	13a	Grassed waterways are used	0%	25%	Yes
x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	0%	2%	Yes
						x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	100%	No
						x	x	16	An integrated pest management plan is implemented	100%	100%	No
x		x		x			x	18	How many acres produce irrigation runoff?	100%	62%	Yes
x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	100%	41%	Yes

Table 93. Proposed Best Management Practices for the Tapo Canyon Responsibility Area

Water Quality Issues								
Bacteria		Salts		Nutrients	Legacy Pesticides	Current Use Pesticides	Toxicity	
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	BMPs
								Source Control BMPs
				x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x		x		x			x	Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
		x		x			x	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
		x		x			x	Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
		x		x			x	Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
				x			x	Prepare a certified nutrient management plan for the property
				x			x	Conduct soil residual nitrate tests and use results to adjust fertilizer application
				x			x	Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
				x			x	Analyze irrigation water nitrate and use results to adjust fertilizer application
				x			x	Adjust fertilizer application to account for nutrients provided by cover crops
				x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)

Water Quality Issues								
Bacteria		Salts		Nutrients	Legacy Pesticides	Current Use Pesticides	Toxicity	
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	BMPs
					x	x		Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
						x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
						x	x	Implement an integrated pest management plan
x		x		x			x	Avoid/prevent irrigation runoff
								Structural Non-Treatment BMPs
x	x			x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	Use vegetated filter strips
								Optional Treatment BMPs
x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Boulder Creek Responsibility Area

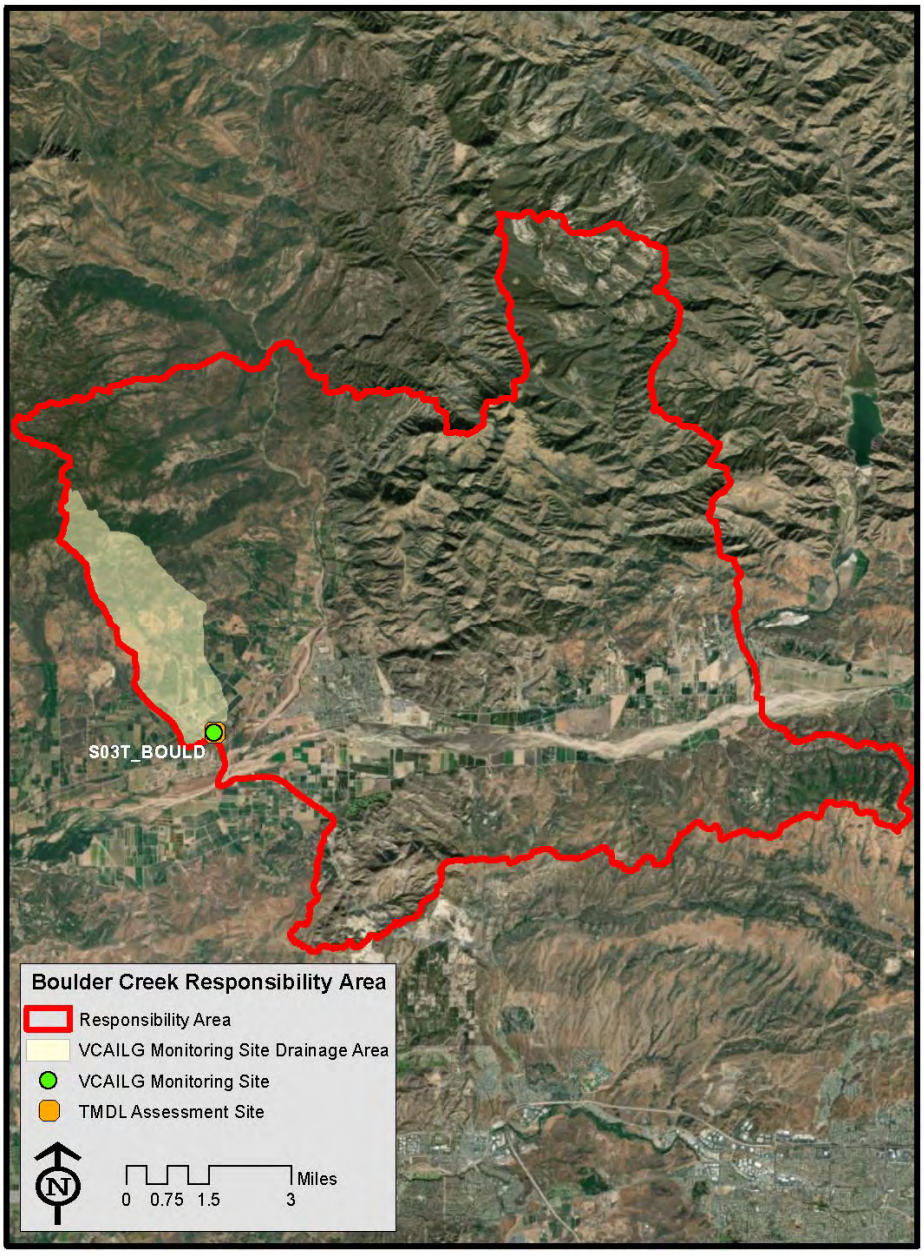


Figure 184. Boulder Creek Responsibility Area Map

The Boulder Creek responsibility area is illustrated in Figure 184. The VCAILG monitoring site also serves as a TMDL assessment site for the SCR Nitrogen TMDL.

Table 94. Boulder Creek Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site S03T_BOULD
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	18,629	1,954
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	166	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	15,634	1,954
Assessed Acres from Agricultural Parcel List belonging to Non Members	2,994	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	7,425	1,105
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.47	0.57
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	1,422	0
Total Estimated Irrigated Acres (Member plus Non Member)	8,847	1,105
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	84%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	5,388	756
Percent of Total Estimated Irrigated Acres that were Surveyed	61%	68%
Percent of VCAILG Member Irrigated Acres that were Surveyed	72%	67%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 95. Boulder Creek Responsibility Area Crop Types and General Production Practices

Crop or Practice	S03T_BOULD Site Drainage Only						Boulder Creek Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	-	-	2	-	-	0.04%
Blueberries	-*	-	-	-*	-	-	1*	1	1	<0.1%*	0.01%	0.01%
Raspberries		-	-		-	-		1	1		0.01%	0.02%
Row Crop	-	-	-	-	-	-	569	788	607	11%	13%	11.3%
Orchard	671	672	576	79%	79%	76%	4,174	4,590	4,173	79%	76%	77.4%
Nursery	180	180	180	21%	21%	24%	545	654	582	10%	11%	10.8%
Flower	-	-	-	-	-	-	-	22	10	-	0.4%	0.19%
Sod	-	-	-	-	-	-	-	-	1	-	-	0.02%
Other	-	-	-	-	-	-	1	8	11	<0.1%	0.13%	0.20%
Overhead Cover in Production Areas												
Hoop House	-	5	5	-	1%	0.66%	399	24	20	8%	0.4%	0.37%
No Cover	225	165	165	26%	19%	22%	1,511	1,426	1,175	29%	24%	21.80%
Greenhouse	-	5	5	-	1%	0.66%	31	12	12	0.6%	0.2%	0.21%
Shade	-	5	5	-	0.6%	0.66%	2	11	8	0%	0.2%	0.15%
Other	-	-	-	-	-	-	11	-	-	0.2%	-	-
Surface Treatments in Production Areas												
Bare Soil	260	210	212	31%	25%	28%	1,7200	1,999	1,999	33%	33%	37%
Cover Crop	-	-	-	-	-	-	265	532	530	5%	9%	10%
Plastic	-	-	-	-	-	-	42	287	163	1%	5%	3%
Weed Cloth	-	-	-	-	-	-	11	42	40	0.2%	1%	1%
Mulch	512	563	465	60%	66%	62%	2,892	3,086	2,549	55%	51%	47%
Gravel	95	95	95	11%	11%	13%	311	344	270	6%	6%	5%
Other	-	-	-	-	-	-	106	160	164	2%	3%	3%
Irrigation Systems in Production Areas												
Drip Only	210	210	172	25%	25%	23%	870	820	751	16%	14%	13.9%
Microsprinkler/Drip	-	-	-	-	-	-	-	-	12	-	-	0.21%
Microsprinkler	626	627	569	74%	74%	75%	4,045	4,453	4,043	77%	73%	75.0%

Crop or Practice	S03T_BOULD Site Drainage Only						Boulder Creek Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead Sprinkler	5	5	5	0.6%	1%	1%	75	154	87	1%	3%	1.61%
Overhead/Drip	-	-	-	-	-	-	230	564	432	4%	9%	8.02%
Furrow Flood	-	-	-	-	-	-	59	47	29	1%	1%	0.55%
Hand Watering	10	10	10	1%	1.2%	1.3%	21	25	33	0.4%	0.4%	0.61%
Other	-	-	-	-	-	-	1	-	1	<0.1%	-	0.02%

Table 96. Boulder Creek Responsibility Area Grower BMPs

Survey Question	Units	S03T_BOULD Site Drainage Only						Boulder Creek Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	851	714	587	100%	84%	78%	3,749	4,366	3,775	73%	74%	71%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	571	571	475	67%	67%	63%	4,034	4,831	4,457	76%	80%	83%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	-	-	68	-	-	9%	979	1,108	1,010	20%	20%	20%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	341	342	508	40%	40%	67%	1,826	2,369	2,630	35%	39%	49%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	74	74	209	9%	9%	28%	644	1,014	1,796	12%	17%	33%
Q5a: Are soil residual nitrate tests done?	Acres	378	646	549	44%	76%	73%	3,105	4,223	3,848	59%	70%	71%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	378	646	549	44%	76%	73%	3,076	4,214	3,822	58%	70%	71%
Q6: Are leaf/petiole tests conducted?	Acres	671	672	576	79%	79%	76%	3,550	4,057	3,663	69%	68%	71%
Q7a: Is nitrate measured in fertigation water?	Acres	603	604	440	71%	71%	58%	3,465	4,047	3,567	66%	67%	66%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	603	604	440	71%	71%	58%	3,465	4,047	3,567	66%	67%	66%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	185	185	248	39%	39%	46%	1,505	1,712	1,580	38%	39%	40%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	252	520	354	30%	61%	47%	1,627	2,342	1,828	31%	39%	34%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	227	227	61	90%	44%	17%	1,381	1,747	1,333	85%	75%	73%
Q11. How much non-cropped area is bare soil?	Acres	25	15	17	3%	2%	8%	1,389	559	565	26%	11%	14%
Q12a: How many feet of ditches exist?	Feet	10,500	15,500	18,690	N/A	N/A	N/A	161,680	185,164	165,323	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,600	12,600	15,790	72%	81%	84%	95,798	107,936	96,545	59%	58%	58%
Q13a: Are grassed waterways present?	Acres	5	5	-	0.6%	1%	-	422	402	345	8%	7%	6%
Q13b: How many acres drain to grassed waterways?	Acres	5	5	-	0.6%	1%	-	195	134	117	4%	2%	2%
Q14: How many acres are treated by vegetated filter strips?	Acres	197	197	-	23%	23%	-	280	314	65	5%	5%	1%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	851	852	756	100%	100%	100%	5,026	5,773	5,109	95%	95%	95%
Q16: Is an IPM Plan being implemented?	Acres	851	852	756	100%	100%	100%	4,476	5,205	4,710	85%	86%	87%
Q17a: How many acres are organically farmed?	Acres	-	-	51	-	-	7%	261	407	485	5%	7%	9%
Q17b: How many acres are conventionally farmed?	Acres	851	852	706	100%	100%	93%	5,029	5,427	4,904	95%	90%	91%

Survey Question	Units	S03T_BOULD Site Drainage Only						Boulder Creek Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	-	-	-	-	-	-	398	789	809	8%	13%	15%
Q19: Runoff from how many acres is treated or detained?	Acres	197	197	-	23%	23%	-	809	1,044	733	15%	17%	14%

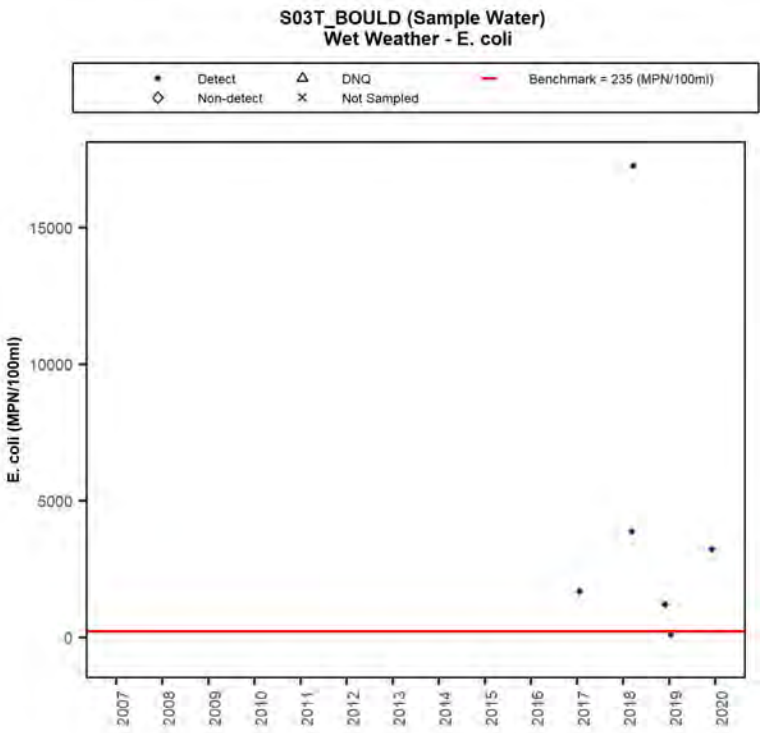


Figure 185. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site S03T_BOULD

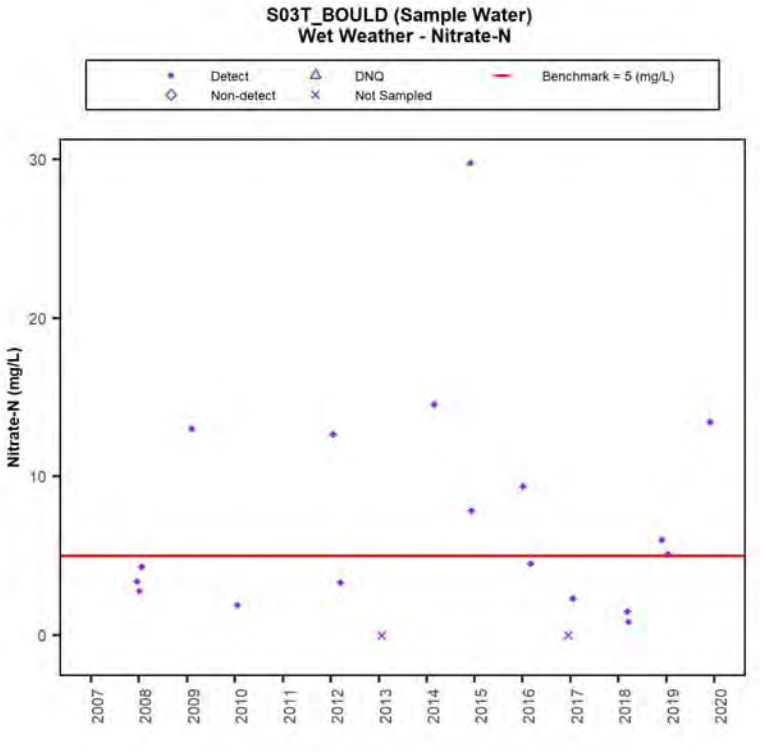


Figure 186. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site S03T_BOULD

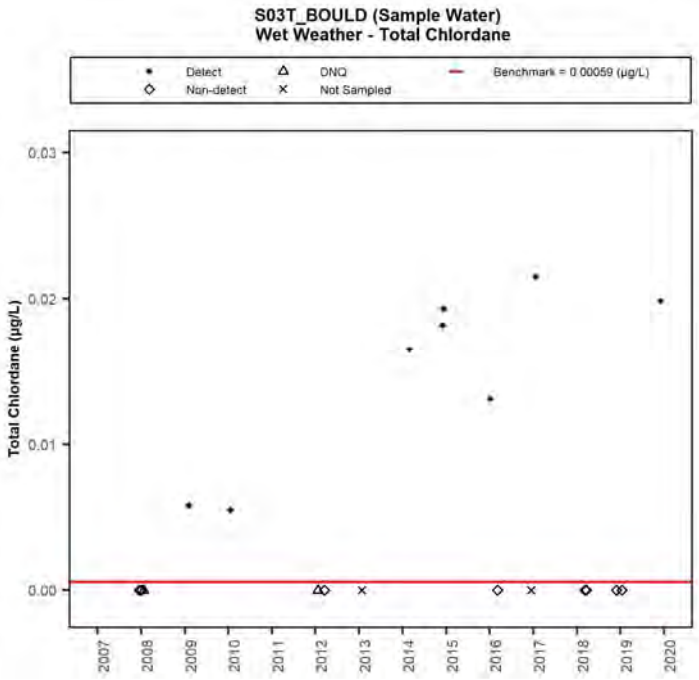


Figure 187. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S03T_BOULD

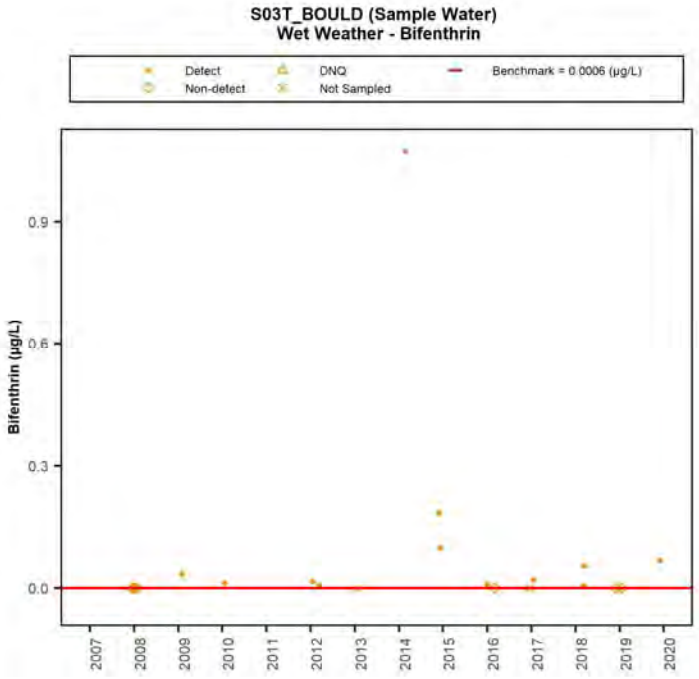


Figure 188. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S03T_BOULD

Table 97. Summary of Benchmark Exceedance Evaluation for Boulder Creek Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
E. coli				●		☑
Nutrients						
Nitrate-N				●		☑
OC Pesticides (Legacy)						
Chlordane				●		☑
OP and Pyrethroid Pesticides (Current)						
Bifenthrin				●		☑

1. VCAILG monitoring site for Waiver benchmarks is S03T_BOULD.

Table 98. BMPs for Additional Implementation in the Boulder Creek Responsibility Area

Exceedance Condition						% of Total Applicable Surveyed Units		
Bacteria	Nutrients	Legacy Pesticides	Current Pesticides		Survey Responses	S03T_BOULD Site Drainage Only	Boulder Creek Responsibility Area	Additional Implementation of Pertinent BMP Needed?
Wet	Wet	Wet	Wet					
	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	74%	69%	Yes
	x			4b	Certified nutrient management plan has been prepared for the property	28%	33%	Yes
	x			5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	73%	71%	Yes
	x			6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	76%	71%	Yes
	x			7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	58%	66%	Yes
	x			8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	46%	40%	Yes
	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	17%	73%	Yes
	x	x	x	11	How much non-cropped area is bare soil?	8%	14%	Yes
x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	84%	58%	Yes
x	x	x	x	13a	Grassed waterways are used	0%	6%	Yes
x	x	x	x	14	Vegetated filter strips are used	0%	1%	Yes
			x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	95%	Yes
			x	16	An integrated pest management plan is implemented	100%	87%	Yes
x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	0%	14%	Yes

Table 99. Proposed Best Management Practices for the Boulder Creek Responsibility Area

Water Quality Issues				
Bacteria	Nutrients	Legacy Pesticides	Current Use Pesticides	
Wet Weather	Wet Weather	Wet Weather	Wet Weather	BMPs
				Source Control BMPs
	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x			Prepare a certified nutrient management plan for the property
	x			Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x			Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	x			Analyze irrigation water nitrate and use results to adjust fertilizer application
	x			Adjust fertilizer application to account for nutrients provided by cover crops
	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
	x	x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
			x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
			x	Implement an integrated pest management plan
				Structural Non-Treatment BMPs
x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	Use grassed waterways
x	x	x	x	Use vegetated filter strips
				Optional Treatment BMPs
x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bardsdale Responsibility Area

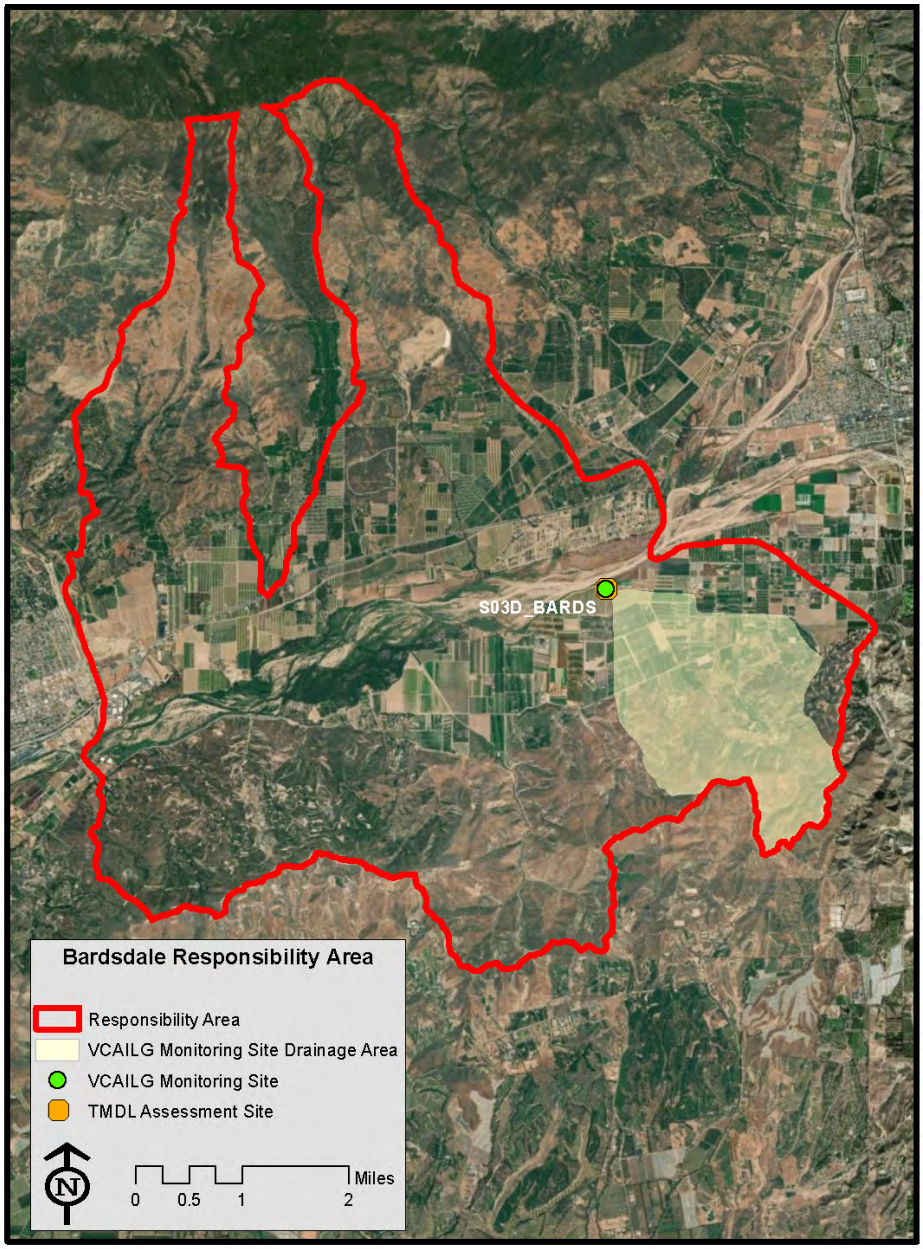


Figure 189. Bardsdale Responsibility Area Map

The Bardsdale responsibility area is illustrated in Figure 189. The VCAILG monitoring site is also used as a TMDL assessment site for the SCR Nitrogen TMDL.

Table 100. Bardsdale Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site S03D_BARDS
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	10,332	1,066
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	1	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	9,508	969
Assessed Acres from Agricultural Parcel List belonging to Non Members	824	97
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	5,883	847
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.62	0.87
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	510	85
Total Estimated Irrigated Acres (Member plus Non Member)	6,393	932
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	92%	91%
Survey Response Information		
Sum Surveyed Irrigated Acres	3,546	474
Percent of Total Estimated Irrigated Acres that were Surveyed	55%	51%
Percent of VCAILG Member Irrigated Acres that were Surveyed	60%	54%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 101. Bardsdale Responsibility Area Crop Types and General Production Practices

Crop or Practice	S03D_BARDS Site Drainage Only						Bardsdale Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	-	-	-	-	-	-
Blueberries	-*	-	-	-*	-	-	-*	-	-	-*	-	-
Raspberries		-	-		-	-		-	-		-	-
Row Crop	18	26	26	2%	3%	6%	427	360	344	12%	8%	10%
Orchard	801	768	448	97%	97%	94%	2,978	3,760	2,920	80%	85%	82%
Nursery	4	-	-	0.5%	-	-	293	290	238	8%	7%	7%
Flower	-	-	-	-	-	-	-	-	44	-	-	1%
Sod	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	16	-	-	0.4%	-	-
Overhead Cover in Production Areas												
Hoop House	-	-	-	-	-	-	55	-	-	2%	-	0.01%
No Cover	170	26	26	21%	3%	6%	1,359	649	624	37%	15%	17.60%
Greenhouse	-	-	-	-	-	-	15	1	1	0.4%	0.02%	0.03%
Shade	-	-	-	-	-	-	10	-	1	0.3%	-	0.02%
Other	-	-	-	-	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	456	489	250	55%	62%	53%	2,050	2,299	1,736	55%	52%	49%
Cover Crop	190	143	146	23%	18%	31%	401	420	496	11%	10%	14%
Plastic	-	-	-	-	-	-	25	15	44	0.7%	0.3%	1.2%
Weed Cloth	-	-	-	-	-	-	-	4	-	-	0.1%	-
Mulch	177	166	78	22%	21%	17%	1,086	1,481	1,246	29%	34%	35%
Gravel	-	-	-	-	-	-	262	263	238	7%	6%	7%
Other	-	-	-	-	-	-	-	21	52	-	0.5%	1.5%
Irrigation Systems in Production Areas												
Drip Only	89	75	75	11%	9%	16%	596	482	445	16%	11%	12.6%
Microsprinkler/Drip	-	-	-	-	-	-	-	-	-	-	-	-
Microsprinkler	693	657	344	84%	83%	73%	2,880	3,675	2,894	78%	83%	81.6%

Crop or Practice	S03D_BARDS Site Drainage Only						Bardsdale Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead Sprinkler	-	-	-	-	-	-	105	86	46	3%	2%	1.3%
Overhead/Drip	18	26	26	2%	3%	6%	49	43	43	1%	1%	1.2%
Furrow Flood	23	36	29	3%	5%	6%	128	124	117	3	3%	3.3%
Hand Watering	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	5	-	-	0.1%	-	-

Table 102. Bardsdale Responsibility Area Grower BMPs

Survey Question	Units	S03D_BARDS Site Drainage Only						Bardsdale Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	745	697	390	91%	89%	84%	2,599	3,091	2,321	73%	73%	71%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	709	691	418	86%	87%	88%	2,989	3,329	2,938	80%	75%	83%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	370	38	43	45%	5%	9%	1,133	1,135	1,113	32%	27%	35%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	616	259	262	75%	33%	55%	2,378	2,286	1,959	64%	52%	55%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	99	101	71	12%	13%	15%	985	1,505	1,303	27%	34%	37%
Q5a: Are soil residual nitrate tests done?	Acres	601	560	280	73%	71%	59%	2,166	2,403	1,907	58%	54%	54%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	601	560	280	73%	71%	59%	2,166	2,403	1,907	58%	54%	54%
Q6: Are leaf/petiole tests conducted?	Acres	773	730	445	94%	92%	94%	3.481	4,089	3,176	95%	94%	93%
Q7a: Is nitrate measured in fertigation water?	Acres	544	513	188	66%	65%	40%	2,376	2,817	2,028	64%	64%	57%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	544	513	188	66%	65%	40%	2,376	2,810	2,027	64%	64%	57%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops	Acres	172	146	174	30%	57%	62%	957	810	676	43%	39%	39%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	62	95	86	7%	12%	18%	676	909	631	18%	21%	18%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	73	60	60	100% [a]	63%	70%	614	767	497	91%	84%	79%
Q11. How much non-cropped area is bare soil?	Acres	16	32	5	2%	41%	11%	448	603	611	12%	21%	26%
Q12a: How many feet of ditches exist?	Feet	21,308	20,678	18,625	N/A	N/A	N/A	112,475	126,164	197,485	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	13,330	11,205	11,690	63%	54%	63%	64,100	71,819	68,592	57%	57%	35%
Q13a: Are grassed waterways present?	Acres	283	283	283	34%	36%	60%	394	376	407	11%	9%	11%
Q13b: How many acres drain to grassed waterways?	Acres	146	146	146	18%	18%	31%	192	185	185	5%	4%	5%
Q14: How many acres are treated by vegetated filter strips?	Acres	184	185	184	22%	23%	39%	252	251	225	7%	6%	6%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	703	674	354	85%	85%	75%	3,565	4,248	3,397	96%	96%	96%
Q16: Is an IPM Plan being implemented?	Acres	666	621	317	81%	78%	67%	3,338	4,117	3,176	90%	93%	90%

Survey Question	Units	S03D_BARDS Site Drainage Only						Bardsdale Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q17a: How many acres are organically farmed?	Acres	172	157	157	21%	20%	33%	316	302	282	8%	7%	8%
Q17b: How many acres are conventionally farmed?	Acres	651	637	317	79%	80%	67%	3,399	4,038	3,264	92%	92%	92%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	44	25	18	5%	3%	4%	334	380	218	9%	9%	6%
Q19: Runoff from how many acres is treated or detained?	Acres	61	45	45	7%	6%	9%	407	410	286	11%	9%	8%

[a] Respondents answers to Q9 and Q10 led to an illogical adoption rate >100%. 100% is reported in the table as a reasonable interpretation.

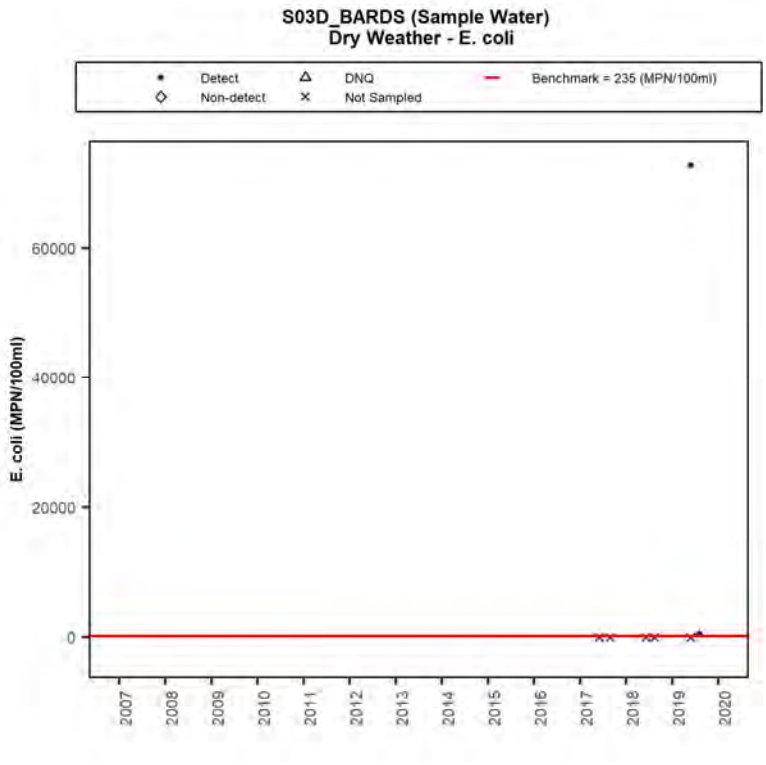


Figure 190. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site S03D_BARDS

Table 103. Dry Weather Survival Toxicity during the 2016 Waiver Period at Waiver Benchmark Site S03D_BARDS

Dry Weather Survival Toxicity - S03D_BARDS	
# of Events with Significant Mortality	1
# of Events with No Significant Mortality	0

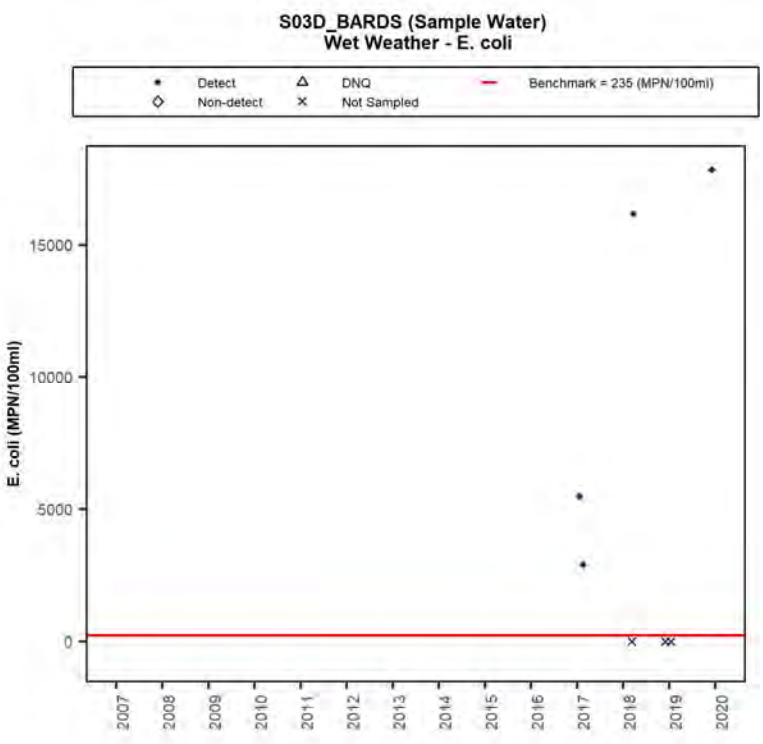


Figure 191. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site S03D_BARDS

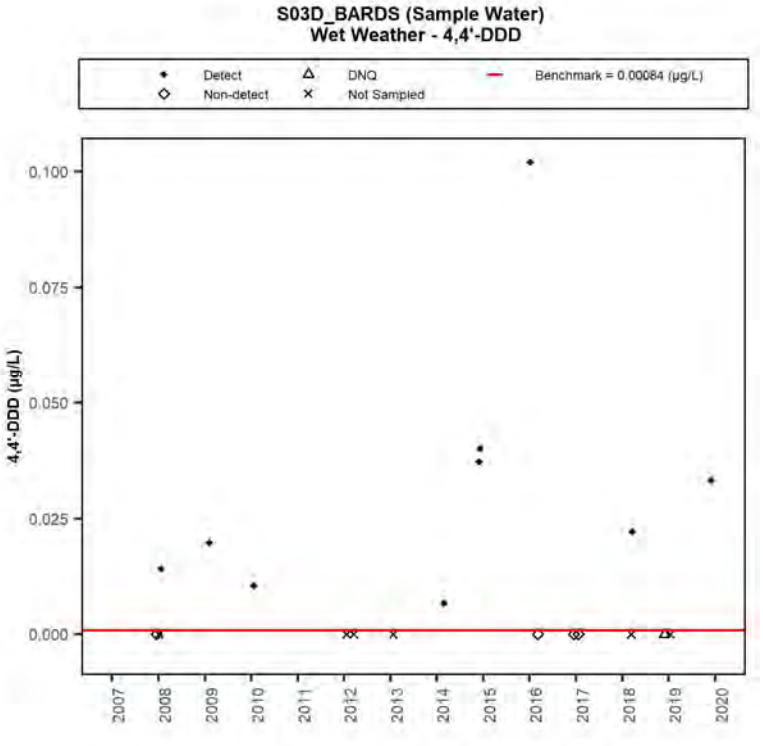


Figure 192. Wet Weather DDD Concentrations at Waiver Benchmark Site S03D_BARDS

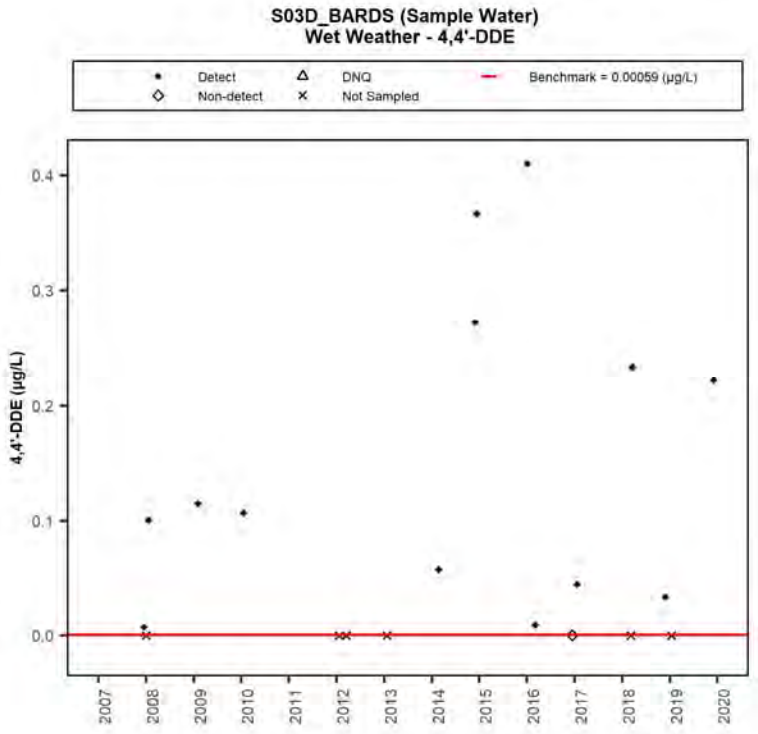


Figure 193. Wet Weather DDE Concentrations at Waiver Benchmark Site S03D_BARDS

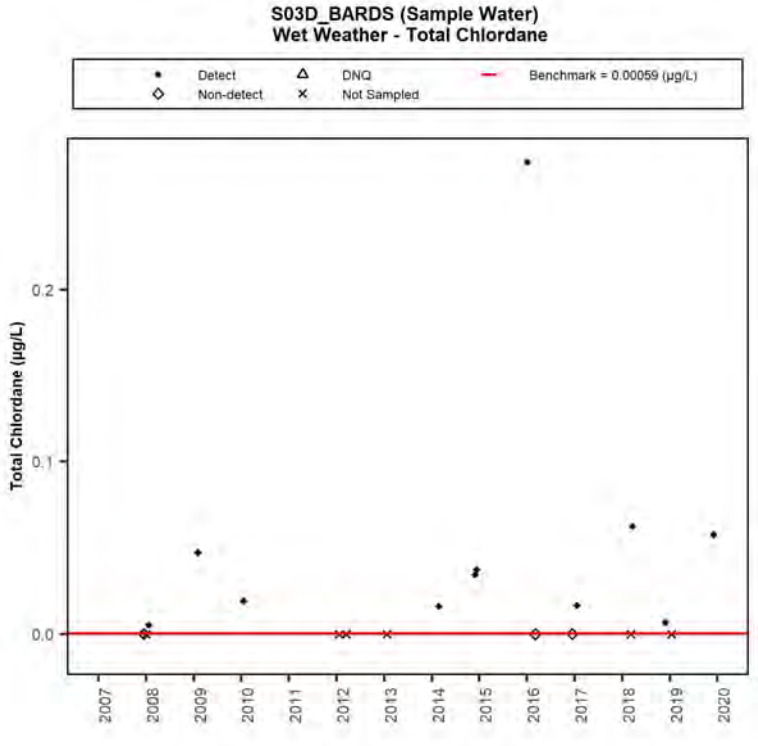


Figure 194. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S03D_BARDS

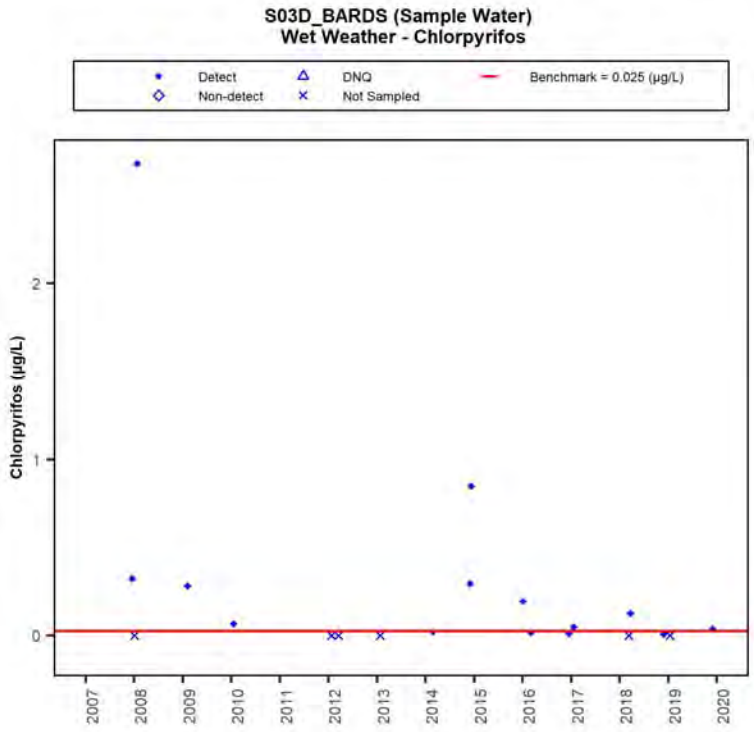


Figure 195. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site S03D_BARDS

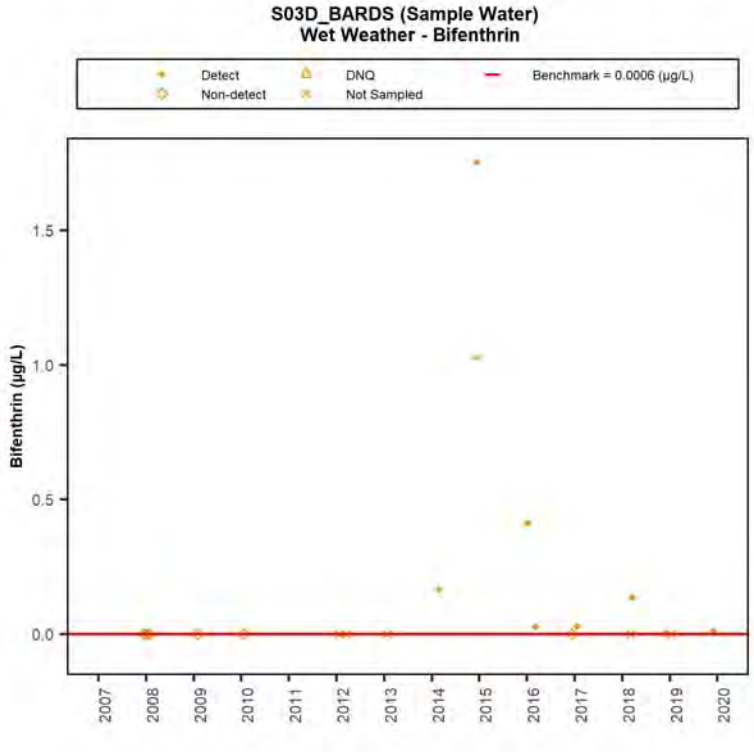


Figure 196. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S03D_BARDS

Table 104. Summary of Benchmark Exceedance Evaluation for Bardsdale Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
E. coli	●		☑	●		☑
OC Pesticides (Legacy)						
DDD				●		☑
DDE				●		☑
Chlordane				●		☑
Toxaphene				●		☑
OP and Pyrethroid Pesticides (Current)						
Chlorpyrifos				●		☑
Bifenthrin				●		☑
Chronic Toxicity						
Survival Toxicity	● [2]		☑			

1. VCAILG monitoring site for Waiver benchmarks is S03D_BARDS.
2. Single species exceedances for *Ceriodaphnia dubia*.

Table 105. BMPs for Additional Implementation in the Bardsdale Responsibility Area

Exceedance Condition							% of Total Applicable Surveyed Units		
Bacteria		Legacy Pesticides	Current Pesticides	Toxicity					
Dry	Wet	Wet	Wet	Dry	Survey Responses		S03D_BARDS Site Drainage Only	Bardsdale Responsibility Area	Additional Implementation of Pertinent BMP Needed?
		x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	47%	59%	Yes
x				x	Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	89%	94%	Yes
				x	1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	84%	71%	Yes
				x	2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	88%	83%	Yes
				x	3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	9%	35%	Yes
				x	4b	Certified nutrient management plan has been prepared for the property	15%	37%	Yes
				x	5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	71%	54%	Yes
				x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	94%	93%	Yes
				x	7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	40%	57%	Yes
				x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	62%	39%	Yes
		x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	70%	79%	Yes
		x	x		11	How much non-cropped area is bare soil	11%	26%	Yes
x	x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	63%	35%	Yes
x	x	x	x	x	13a	Grassed waterways are used	60%	11%	Yes
x	x	x	x	x	14	Vegetated filter strips are used	39%	6%	Yes
			x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	75%	96%	Yes
			x	x	16	An integrated pest management plan is implemented	67%	90%	Yes
x				x	18	How many acres produce irrigation runoff	4%	6%	Yes
x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	9%	8%	Yes

Table 106. Proposed Best Management Practices for the Bardsdale Responsibility Area

Water Quality Issues					
Bacteria		Legacy Pesticides	Current Use Pesticides	Toxicity	
Dry Weather	Wet Weather	Wet Weather	Wet Weather	Dry Weather	BMPs
					Source Control BMPs
		x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x				x	Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
				x	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
				x	Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
				x	Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
				x	Prepare a certified nutrient management plan for the property
				x	Conduct soil residual nitrate tests and use results to adjust fertilizer application
				x	Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
				x	Analyze irrigation water nitrate and use results to adjust fertilizer application
				x	Adjust fertilizer application to account for nutrients provided by cover crops
		x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		x	x		Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
			x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
			x	x	Implement an integrated pest management plan
x				x	Avoid/prevent irrigation runoff

Water Quality Issues					
Bacteria		Legacy Pesticides	Current Use Pesticides	Toxicity	
Dry Weather	Wet Weather	Wet Weather	Wet Weather	Dry Weather	BMPs
					Structural Non-Treatment BMPs
x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	Use grassed waterways
x	x	x	x	x	Use vegetated filter strips
					Optional Treatment BMPs
x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Santa Paula Creek Responsibility Area

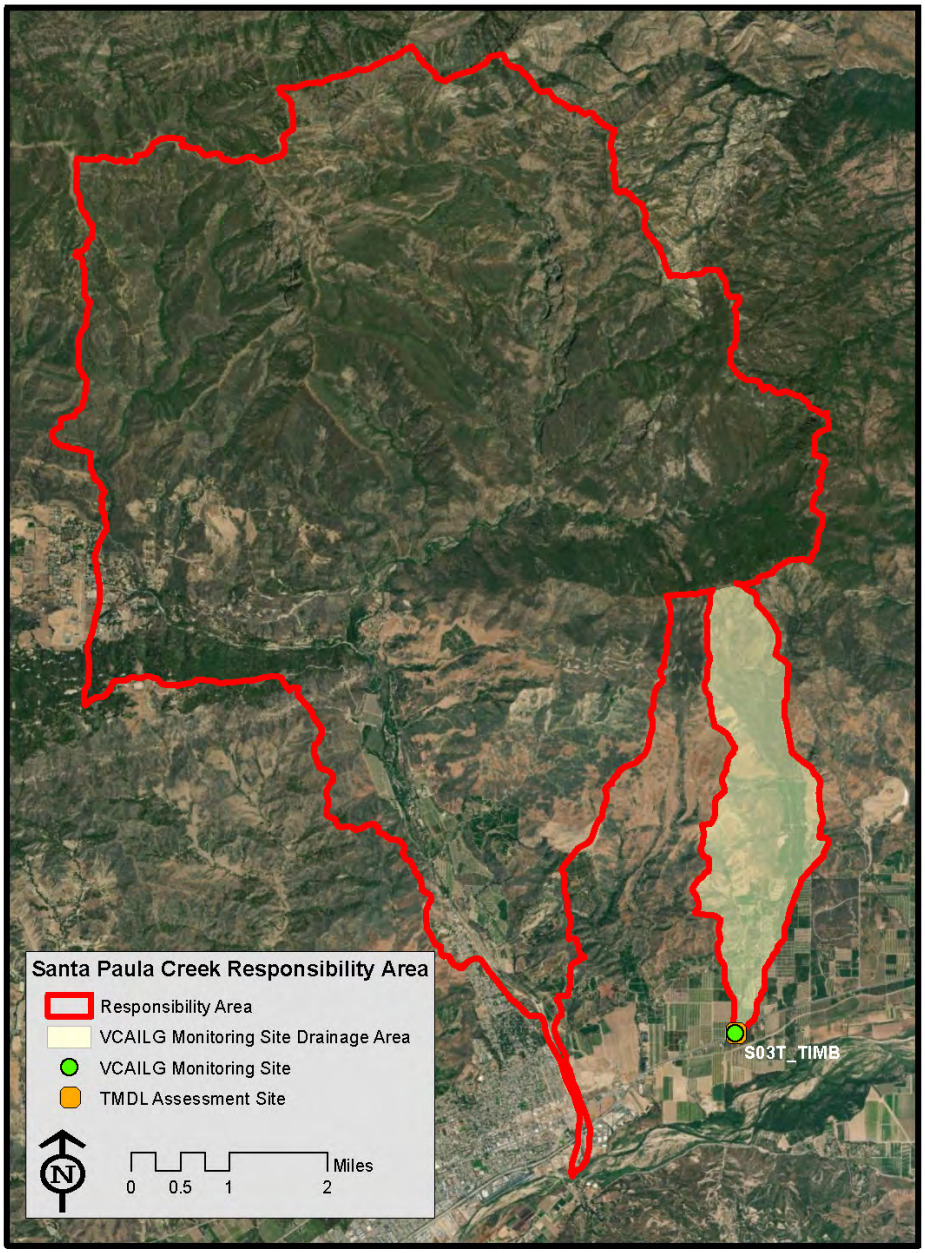


Figure 197. Santa Paula Creek Responsibility Area Map

The Santa Paula Creek responsibility area is illustrated in Figure 197. The VCAILG monitoring site also serves as a TMDL assessment site for the SCR Nitrogen TMDL.

Table 107. Santa Paula Creek Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site S03T_TIMB
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	2,980	716
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	9	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	2,904	709
Assessed Acres from Agricultural Parcel List belonging to Non Members	75	7
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	1,326	410
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.46	0.58
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	34	4
Total Estimated Irrigated Acres (Member plus Non Member)	1,360	414
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	97%	99%
Survey Response Information		
Sum Surveyed Irrigated Acres	1,106	459
Percent of Total Estimated Irrigated Acres that were Surveyed	81%	100%
Percent of VCAILG Member Irrigated Acres that were Surveyed	83%	100%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 108. Santa Paula Creek Responsibility Area Crop Types and General Production Practices

Crop or Practice	S03T_TIMB Site Drainage Only						Santa Paula Creek Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	-	-	-	-	-	-
Blueberries	-*	-	-	-*	-	-	-*	-	-	-*	-	-
Raspberries		-	-		-	-		-	-		-	-
Row Crop	-	-	-	-	-	-	-	-	-	-	-	-
Orchard	254	360	410	100%	100%	100%	714	1,207	1,106	100%	100%	100%
Nursery	-	-	-	-	-	-	-	-	-	-	-	-
Flower	-	-	-	-	-	-	-	-	-	-	-	-
Sod	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Overhead Cover in Production Areas												
Hoop House	-	-	-	-	-	-	-	-	-	-	-	-
No Cover	74	-	-	29%	-	-	141	-	-	20%	-	-
Greenhouse	-	-	-	-	-	-	-	-	-	-	-	-
Shade	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	-	106	94	-	29%	23%	261	533	342	37%	44%	31%
Cover Crop	-	-	-	-	-	-	25	42	16	4%	3%	1%
Plastic	-	-	-	-	-	-	-	-	-	-	-	-
Weed Cloth	-	-	-	-	-	-	-	-	-	-	-	-
Mulch	165	165	231	65%	46%	56%	255	464	582	36%	38%	53%
Gravel	-	-	-	-	-	-	-	-	-	-	-	-
Other	89	89	89	35%	25%	22%	177	183	186	25%	15%	17%
Irrigation Systems in Production Areas												
Drip Only	-	-	44	-	-	11%	130	163	204	18%	14%	18%
Microsprinkler/Drip	-	-	-	-	-	-	-	-	-	-	-	-
Microsprinkler	254	360	366	100%	100%	89%	584	1,044	903	82%	86%	82%

Crop or Practice	S03T_TIMB Site Drainage Only						Santa Paula Creek Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead Sprinkler	-	-	-	-	-	-	-	-	-	-	-	-
Overhead/Drip	-	-	-	-	-	-	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-		-

Table 109. Santa Paula Creek Responsibility Area Grower BMPs

Survey Question	Units	S03T_TIMB Site Drainage Only						Santa Paula Creek Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	134	245	459	53%	68%	100%	594	852	982	83%	71%	89%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	134	184	309	53%	51%	67%	364	911	860	51%	75%	78%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	-	50	198	-	16%	48%	106	343	431	18%	32%	45%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	134	134	139	53%	37%	30%	316	518	457	44%	43%	41%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	134	134	139	53%	37%	30%	223	376	315	31%	31%	28%
Q5a: Are soil residual nitrate tests done?	Acres	134	134	139	53%	37%	30%	421	616	420	59%	51%	38%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	134	134	139	53%	37%	30%	421	616	420	59%	51%	38%
Q6: Are leaf/petiole tests conducted?	Acres	254	360	459	100%	100%	100%	703	1,113	1,012	98%	92%	92%
Q7a: Is nitrate measured in fertigation water?	Acres	45	117	265	18%	33%	58%	377	620	707	53%	51%	64%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	45	117	265	18%	33%	58%	313	556	707	44%	46%	64%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	-	-	88	-	-	100%	25	25	38	56%	9%	15%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	175	185	265	69%	51%	58%	317	373	399	44%	31%	36%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	61	76	165	35%	41%	62%	190	358	283	60%	96%	71%
Q11. How much non-cropped area is bare soil?	Acres	11	21	17	4%	7%	2%	280	569	545	39%	39%	40%
Q12a: How many feet of ditches exist?	Feet	14,840	18,040	24,129	N/A	N/A	N/A	19,468	51,168	37,418	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	4,540	14,840	20,929	31%	82%	87%	8,790	28,940	33,640	45%	57%	90%
Q13a: Are grassed waterways present?	Acres	44	44	44	18%	12%	10%	114	117	121	16%	10%	11%
Q13b: How many acres drain to grassed waterways?	Acres	5	5	5	2%	1%	1%	5	5	8	1%	0.4%	1%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	-	-	-	-	-	5	5	-	0.4%	0.5%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	254	360	459	100%	100%	100%	605	1,069	993	85%	89%	90%
Q16: Is an IPM Plan being implemented?	Acres	254	321	459	100%	89%	100%	605	1,030	993	85%	85%	90%
Q17a: How many acres are organically farmed?	Acres	-	-	-	-	-	-	-	79	79	-	7%	7%
Q17b: How many acres are conventionally farmed?	Acres	254	360	410	100%	100%	89%	714	1,129	1,027	100%	93%	93%
Runoff Management/Treatment													

Survey Question	Units	S03T_TIMB Site Drainage Only						Santa Paula Creek Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q18: How many acres produce irrigation runoff?	Acres	-	5	70	-	1%	15%	14	67	82	2%	6%	7%
Q19: Runoff from how many acres is treated or detained?	Acres	-	-	50	-	-	11%	9	9	9	1%	1%	1%

There were no benchmark exceedances triggering graphs for this RA. Therefore, tables noting exceedance categories, levels of applicable BMP implementation, and recommendations for BMPs to address any exceedances are not included for this RA.

Todd Barranca Responsibility Area

Figure 198. Todd Barranca Responsibility Area Map

The Todd Barranca responsibility area is illustrated in Figure 198. Compliance with TMDL LAs applicable to this responsibility area are evaluated at the following monitoring sites in the manner described:

- S02T_TODD is an SCR Nitrogen TMDL Assessment Site
- Site S02T_ELLS is an SCR Estuary Toxaphene TMDL Suspended Sediment Assessment Site for Reach 2
- Site S01D_MONAR is an SCR Estuary Toxaphene TMDL Suspended Sediment Assessment Site for Reach 1

- The yellow circle marks the SCR Estuary Toxaphene TMDL Fish Tissue Assessment Area

Table 110. Todd Barranca Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site S02T_TODD
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	17,275	352
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	81	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	15,406	253
Assessed Acres from Agricultural Parcel List belonging to Non Members	1,869	100
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	9,857	154
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.64	0.61
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	1,196	61
Total Estimated Irrigated Acres (Member plus Non Member)	11,053	215
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	89%	72%
Survey Response Information		
Sum Surveyed Irrigated Acres	7,983	99
Percent of Total Estimated Irrigated Acres that were Surveyed	72%	46%
Percent of VCAILG Member Irrigated Acres that were Surveyed	80%	64%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 111. Todd Barranca Responsibility Area Crop Types and General Production Practices

Crop or Practice	S02T_TODD Site Drainage Only						Todd Barranca Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	1,285	1,693	1,767	19%	21%	22%
Blueberries	41*	-	-	10%*	-	-	41*	19	-	1*	0.2%	-
Raspberries		41	-		27%	-		42	-		1%	-
Row Crop	20	-	20	5%	-	5%	984	1,321	1,025	14%	16%	13%
Orchard	374	112	374	86%	73%	86%	4,397	4,790	5,028	64%	59%	63%
Nursery	-	-	-	-	-	-	60	103	71	1%	1%	1%
Flower	-	-	41	-	-	10%	96	100	141	1%	1%	2%
Sod	-	-	-	-	-	-	-	-	4	-	-	-
Other	-	-	-	-	-	-	19	17	-	0.3%	0.2%	-
Overhead Cover in Production Areas												
Hoop House	-	41	-	-	27%	-	79	106	134	1%	1%	2%
No Cover	-	-	61	-	-	14%	507	3,109	2,776	7%	38%	35%
Greenhouse	-	-	-	-	-	-	4	39	15	0.1%	0.5%	0.2%
Shade	-	-	-	-	-	-	1	16	15	-	0.2%	0.2%
Other	-	-	-	-	-	-	-	24	64	-	0.3%	0.8%
Surface Treatments in Production Areas												
Bare Soil	61	96	61	14%	62%	14%	2,332	3,198	2,247	34%	40%	28%
Cover Crop	-	-	-	-	-	-	130	392	428	2%	5%	5%
Plastic	-	-	-	-	-	-	1,400	1,805	1,829	20%	22%	23%
Weed Cloth	-	-	-	-	-	-	39	85	59	1%	1%	1%
Mulch	374	58	374	86%	38%	86%	2,756	2,552	3,584	40%	32%	45%
Gravel	-	-	-	-	-	-	5	9	9	0.1%	0.1%	0.1%
Other	-	-	-	-	-	-	239	374	270	4%	5%	3%
Irrigation Systems in Production Areas												
Drip Only	86	41	136	20%	27%	31%	1,126	1,377	1,464	16%	17%	18%
Microsprinkler/Drip	-	-	-	-	-	-	782	936	799	11%	12%	10%
Microsprinkler	349	112	299	80%	73%	69%	3,835	4,048	3,977	56%	50%	49%
Overhead Sprinkler	-	-	-	-	-	-	201	74	74	3%	1%	0.9%
Overhead/Drip	-	-	-	-	-	-	881	1,542	1,622	13%	19%	20%
Furrow Flood	-	-	-	-	-	-	94	74	86	1%	1%	1.1%

Crop or Practice	S02T_TODD Site Drainage Only						Todd Barranca Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Hand Watering	-	-	-	-	-	-	8	17	13	0.1%	0.2%	0.2%
Other	-	-	-	-	-	-	-	-	-	-	-	-

* Value for 2017 is for Raspberries & Blueberries combined

Table 112. Todd Barranca Responsibility Area Grower BMPs

Survey Question	Units	S02T_TODD Site Drainage Only						Todd Barranca Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	436	96	-	100%	62%	-	5,885	4,889	4,849	86%	61%	62%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	27	112	394	6%	73%	90%	2,927	5,847	6,169	43%	72%	77%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	41	41	-	10%	42%	-	1,481	1,942	2,458	22%	25%	31%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	351	96	394	81%	62%	90%	4,197	3,531	6,031	61%	44%	75%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	-	96	394	-	62%	90%	1,341	2,167	5,151	19%	27%	64%
Q5a: Are soil residual nitrate tests done?	Acres	84	154	436	19%	100%	100%	3,914	6,338	6,585	57%	78%	82%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	84	154	436	19%	100%	100%	3,914	6,338	6,585	57%	78%	82%
Q6: Are leaf/petiole tests conducted?	Acres	436	112	394	100%	100%	100%	6,465	7,299	7,493	94%	93%	94%
Q7a: Is nitrate measured in fertigation water?	Acres	436	154	436	100%	100%	100%	5,089	5,858	6,075	74%	72%	76%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	436	154	436	100%	100%	100%	5,011	5,844	6,054	73%	72%	75%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	41	41	41	100%	100%	100%	1,928	2,420	1,964	68%	70%	70%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	27	27	27	6%	18%	6%	1,424	1,734	1,457	21%	21%	18%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	27	27	27	100%	100%	100%	1,466	1,778	1,311	100% [a]	100% [a]	90%
Q11. How much non-cropped area is bare soil?	Acres	57	55	60	13%	55%	51%	868	1,608	1,275	13%	39%	38%
Q12a: How many feet of ditches exist?	Feet	6,000	700	6,300	N/A	N/A	N/A	158,730	213,729	200,084	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	2,400	700	3,100	40%	100%	49%	69,914	85,816	96,299	44%	40%	48%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	-	-	448	405	581	7%	5%	7%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	375	324	451	6%	4%	6%
Q14: How many acres are treated by vegetated filter strips?	Acres	2	-	2	0.5%	-	-	269	227	232	4%	3%	3%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	436	154	436	100%	100%	100%	6,736	7,833	7,623	98%	97%	95%
Q16: Is an IPM Plan being implemented?	Acres	436	99	436	100%	65%	100%	6,532	7,368	7,583	95%	91%	94%
Q17a: How many acres are organically farmed?	Acres	41	41	-	10%	27%	-	307	214	148	4%	3%	2%
Q17b: How many acres are conventionally farmed?	Acres	394	112	436	90%	73%	100%	6,574	7,158	7,887	96%	89%	98%

Survey Question	Units	S02T_TODD Site Drainage Only						Todd Barranca Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	-	-	-	-	-	-	545	1,056	1,035	8%	13%	13%
Q19: Runoff from how many acres is treated or detained?	Acres	-	-	-	-	-	-	821	1,158	1,094	12%	14%	14%

[a] Respondents answers to Q9 and Q10 lead to an illogical adoption rate >100%. 100% is reported in the table as a reasonable interpretation.

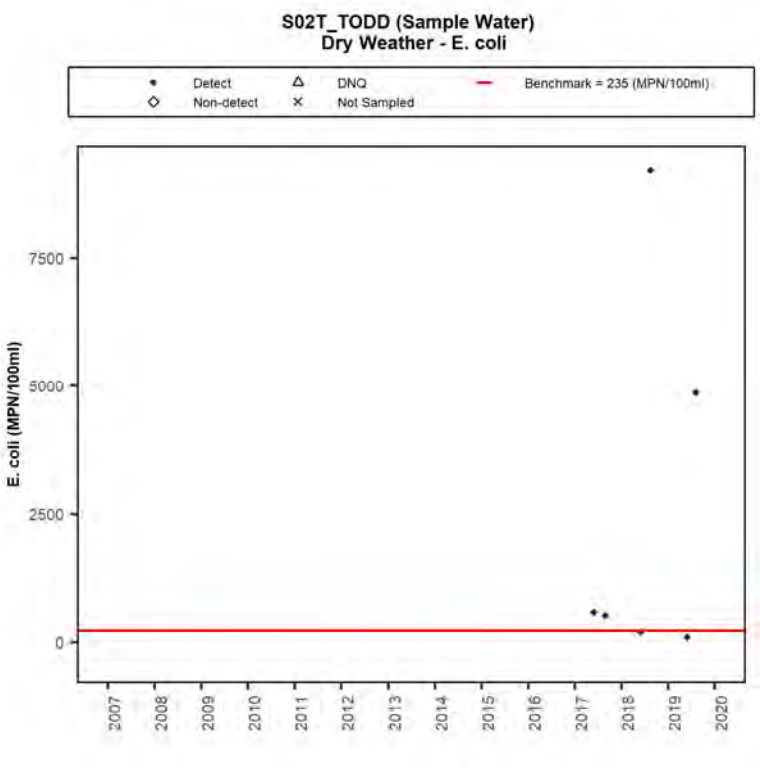


Figure 199. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site S02T_TODD

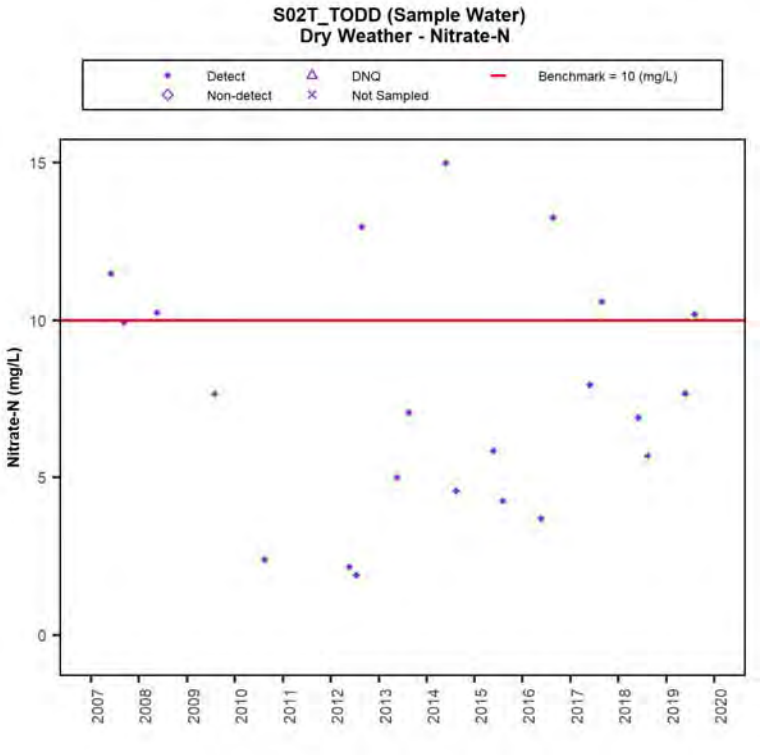


Figure 200. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site S02T_TODD

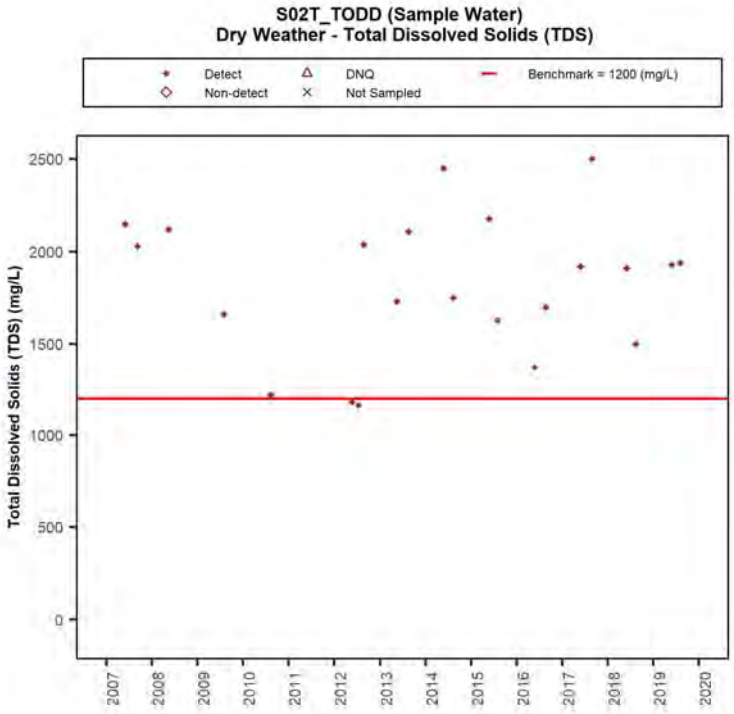


Figure 201. Dry Weather Total Dissolved Solids Concentrations at Waiver Benchmark Site S02T_TODD

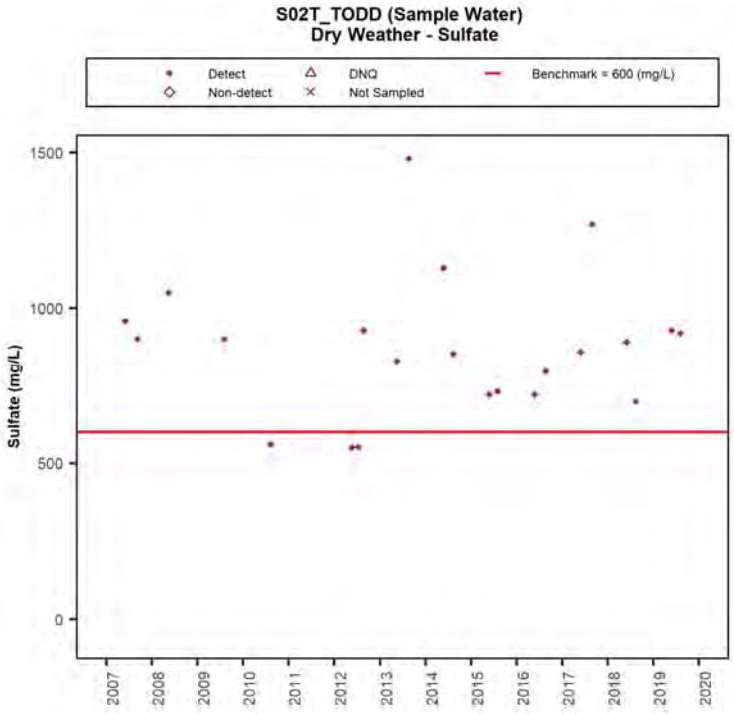


Figure 202. Dry Weather Sulfate Concentrations at Waiver Benchmark Site S02T_TODD

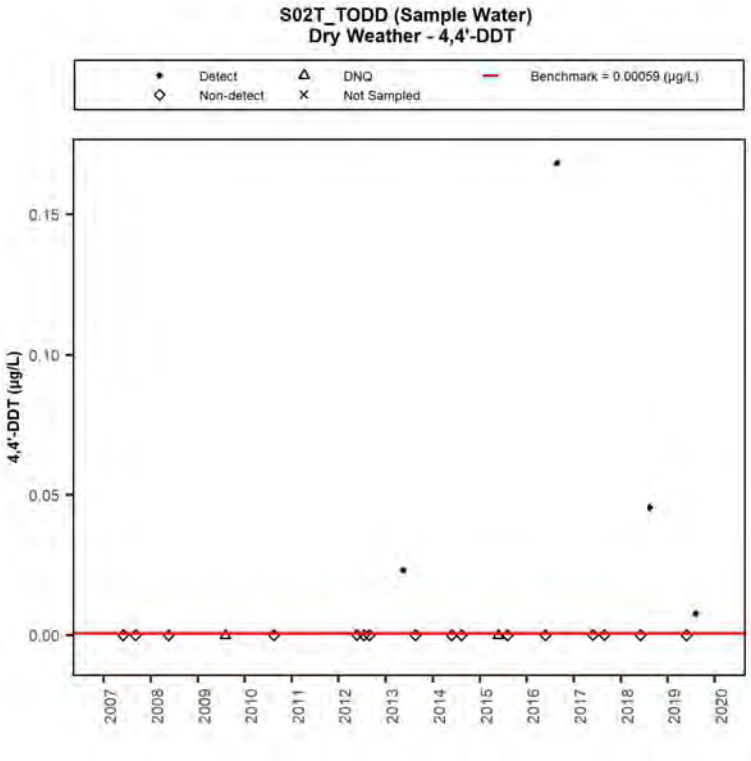


Figure 203. Dry Weather DDT Concentrations at Waiver Benchmark Site S02T_TODD

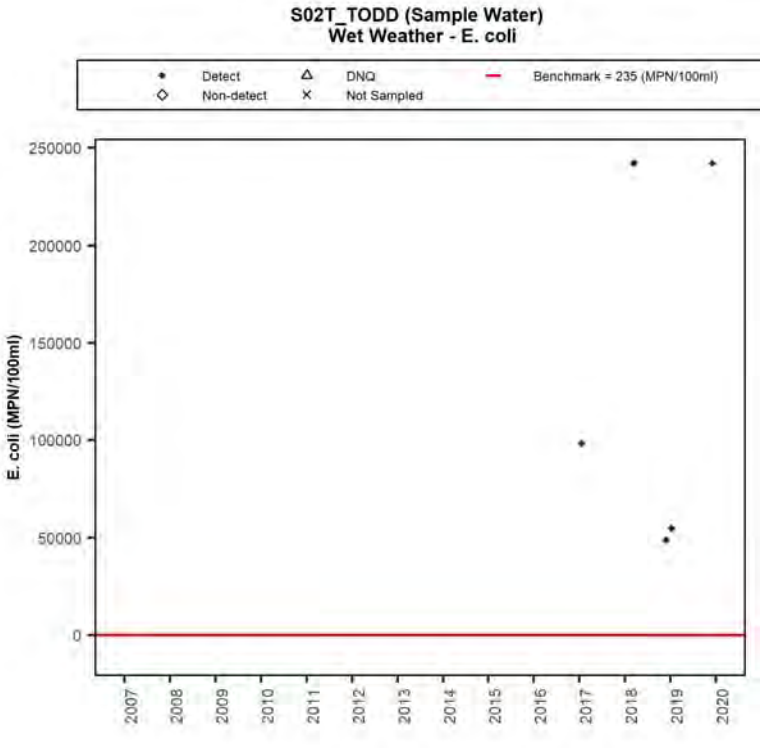


Figure 204. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site S02T_TODD

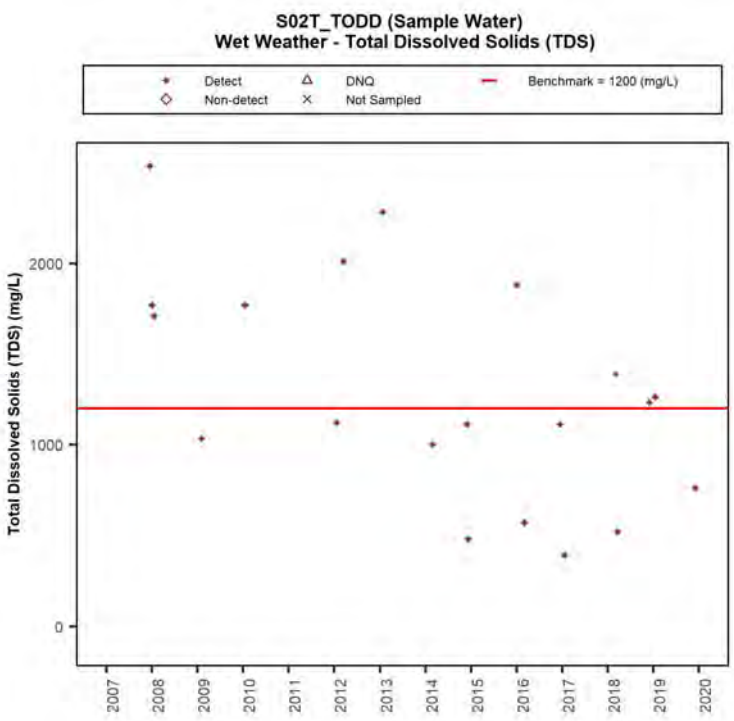


Figure 205. Wet Weather Total Dissolved Solids (TDS) Concentrations at Waiver Benchmark Site S02T_TODD

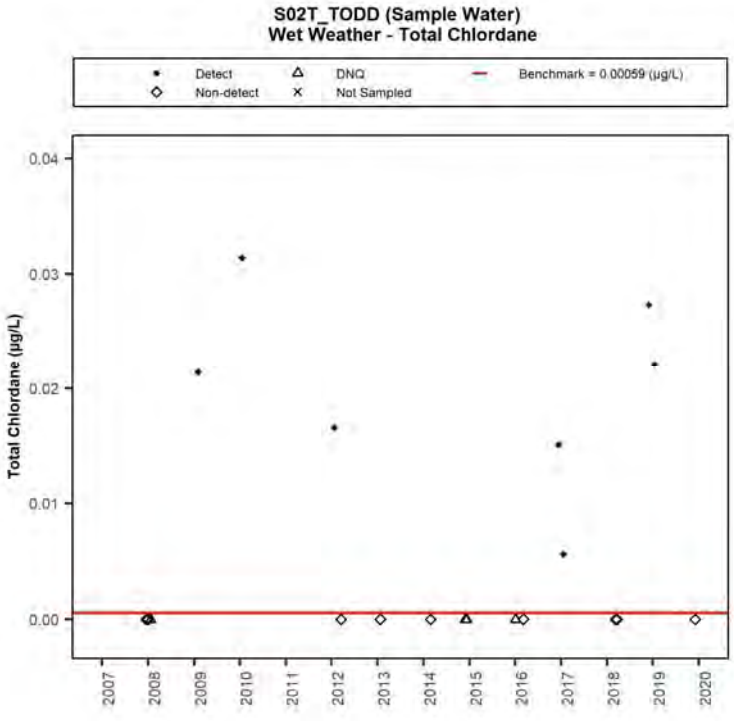


Figure 206. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S02T_TODD

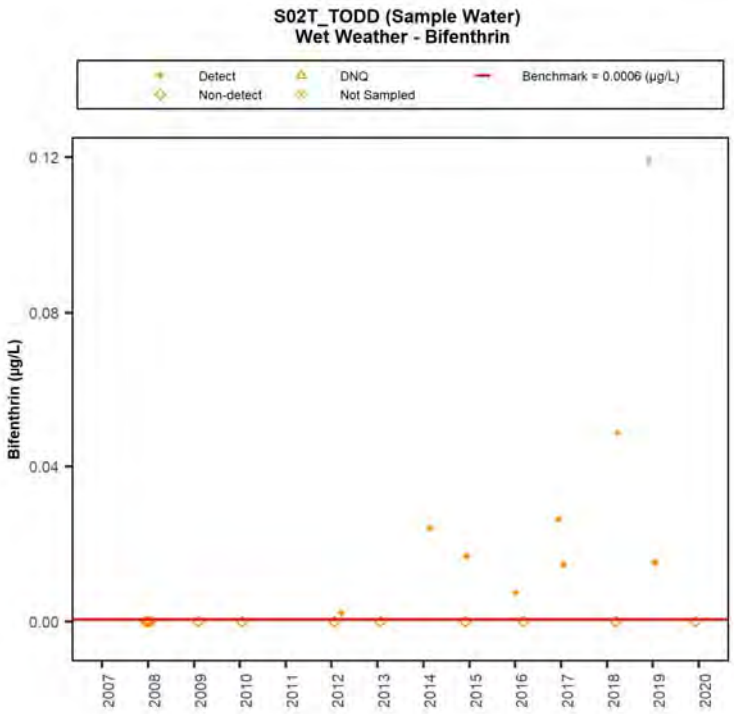


Figure 207. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S02T_TODD

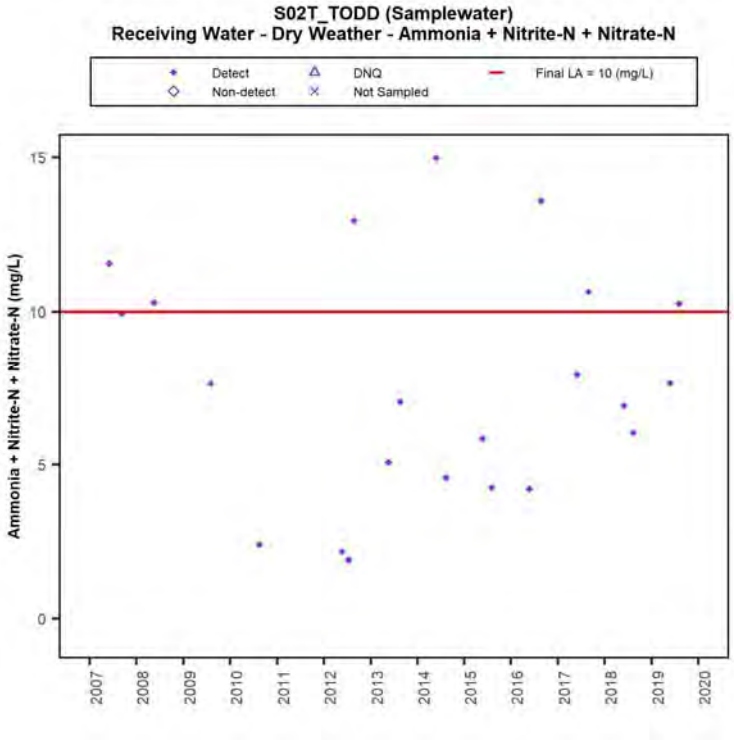


Figure 208. Wet Weather Nitrogen Compounds Concentrations at TMDL LA Site S02T_TODD

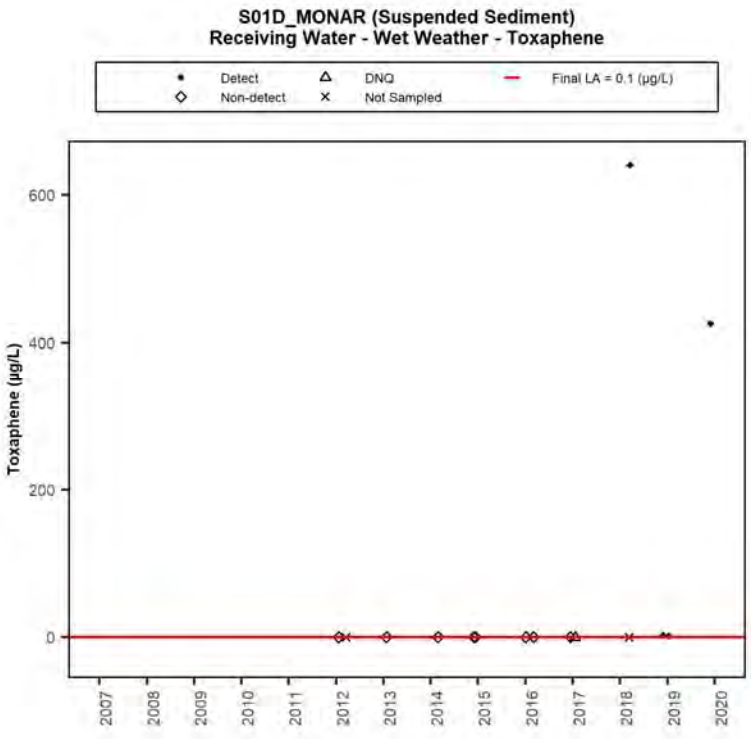


Figure 209. Wet Weather Toxaphene Concentrations at TMDL LA Site S01D_MONAR

Table 113. Summary of Benchmark Exceedance Evaluation for Todd Barranca Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
E. coli	●		☑	●		☑
Nutrients						
Nitrate-N	●		☑			
Ammonia-N + Nitrate-N + Nitrite-N		● [2]	☑			
Salts						
TDS	●		☑	●		☑
Sulfate	●		☑			
OC Pesticides (Legacy)						
DDT	●		☑			
Chlordane				●		☑
Toxaphene					● [3]	☑
OP and Pyrethroid Pesticides (Current)						
Bifenthrin				●		☑

1. VCAILG monitoring site for Waiver benchmarks is S02T_TODD.
2. TMDL LAs for the Santa Clara River Nutrients TMDL were compared to data from S02T_TODD.
3. TMDL LAs for the Santa Clara River Estuary Toxaphene TMDL were compared suspended sediment data from S01D_MONAR.

Table 114. BMPs for Additional Implementation in the Todd Barranca Responsibility Area

Exceedance Condition										% of Total Applicable Surveyed Units		
Bacteria		Nutrients	Salt		Legacy Pesticides		Current Use Pesticides					
Dry	Wet	Dry	Dry	Wet	Dry	Wet	Wet		Survey Responses	S02T_TODD Site Drainage Only	Todd Barranca Responsibility Area	Additional Implementation of Pertinent BMP Needed?
		x			x	x	x	Crop management [a]	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	86%	77%	Yes
x		x	x		x			Irrigation system type [a]	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	100%	78%	Yes
		x	x		x			1 [a]	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	0%	62%	Yes
		x	x					2 [a]	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	90%	77%	Yes
		x	x					3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	0%	31%	Yes
		x						4b	Certified nutrient management plan has been prepared for the property	90%	64%	Yes
		x						5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	100%	82%	Yes
		x						6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	94%	Yes
		x						7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	100%	75%	Yes
		x						8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	100%	70%	Yes
		x			x	x	x	10 [a]	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	90%	Yes
						x	x	11 [a]	How much non-cropped area is bare soil?	51%	38%	Yes
x	x	x			x	x	x	12b [a]	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	49%	48%	Yes
x	x	x	x	x	x	x	x	13a [a]	Grassed waterways are used	0%	7%	Yes
x	x	x	x	x	x	x	x	14 [a]	Vegetated filter strips are used	0%	3%	Yes
							x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	95%	Yes
							x	16	An integrated pest management plan is implemented	100%	94%	Yes
x		x	x		x			18 [a]	How many acres produce irrigation runoff?	0%	13%	Yes
x	x	x	x	x	x	x	x	19 [a]	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	0%	14%	Yes

[a] BMP with potential to reduce sediment runoff or improve irrigation efficiency to achieve LAs for the Santa Clara River Estuary Toxaphene TMDL.

Table 115. Proposed Best Management Practices for the Todd Barranca Responsibility Area

Water Quality Issues							BMPs
Bacteria		Nutrients	Salts	Legacy Pesticides		Current Use Pesticides	
Dry Weather	Wet Weather	Dry Weather	Dry Weather	Dry Weather	Wet Weather	Wet Weather	
							Source Control BMPs
		x		x	x	x	**Reduce bare soil in production area with cover crops, gravel, mulch, etc.**
x		x	x	x			**Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)**
		x	x	x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
		x	x				**Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration**
		x	x				Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
		x					Prepare a certified nutrient management plan for the property
		x					Conduct soil residual nitrate tests and use results to adjust fertilizer application
		x					Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
		x					Analyze irrigation water nitrate and use results to adjust fertilizer application
		x					Adjust fertilizer application to account for nutrients provided by cover crops
		x		x	x	x	**Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)**
					x	x	**Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel**
						x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
						x	Implement an integrated pest management plan
x		x	x	x			**Avoid/prevent irrigation runoff**
							Structural Non-Treatment BMPs

Water Quality Issues							BMPs
Bacteria		Nutrients	Salts	Legacy Pesticides		Current Use Pesticides	
Dry Weather	Wet Weather	Dry Weather	Dry Weather	Dry Weather	Wet Weather	Wet Weather	
x	x	x		x	x	x	**Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals**
x	x	x	x	x	x	x	**Use grassed waterways**
x	x	x	x	x	x	x	**Use vegetated filter strips**
							Optional Treatment BMPs
x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required by the Conditional Waiver to the degree appropriate for achieving the Santa Clara River Estuary Toxaphene TMDL.

Ellsworth Barranca Responsibility Area

Figure 210. Ellsworth Barranca Responsibility Area Map

The Ellsworth Barranca responsibility area is illustrated in Figure 210. Compliance with TMDL LAs applicable to this responsibility area are evaluated at the following monitoring sites in the manner described:

- S02T_ELLS is an SCR Nitrogen TMDL Assessment Site and SCR Estuary Toxaphene TMDL Suspended Sediment Assessment Site
- The yellow circle marks the SCR Estuary Toxaphene TMDL Fish Tissue Assessment Area

Table 116. Ellsworth Barranca Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Drainage Area Monitoring Site S02T_ELLS
Assessed Acreage Information	
Total Assessed Acres from Agricultural Parcel List	2,648
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	2,605
Assessed Acres from Agricultural Parcel List belonging to Non Members	43
Irrigated Acreage Information	
VCAILG Member Acreage Reported as Irrigated	780
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.30
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	13
Total Estimated Irrigated Acres (Member plus Non Member)	793
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	98%
Survey Response Information	
Sum Surveyed Irrigated Acres	723
Percent of Total Estimated Irrigated Acres that were Surveyed	91%
Percent of VCAILG Member Irrigated Acres that were Surveyed	93%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 117. Ellsworth Barranca Responsibility Area Crop Types and General Production Practices

Crop or Practice	S02T_ELLS Site Drainage [a]					
	Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020
Crop Type						
Strawberries	-	-	-	-	-	-
Blueberries	-*	-	-	-*	-	-
Raspberries		-	-		-	-
Row Crop	81	63	54	15%	9%	7%
Orchard	467	624	670	85%	91%	93%
Nursery	-	-	-	-	-	-
Flower	-	-	-	-	-	-
Sod	-	-	-	-	-	-
Other	-	-	-	-	-	-
Overhead Cover in Production Areas						
Hoop House	-	-	-	-	-	0%
No Cover	-	63	54	-	9%	7%
Greenhouse	-	-	-	-	-	-
Shade	-		-	-		-
Other	-	-	-	-	-	-
Surface Treatments in Production Areas						
Bare Soil	428	413	378	78%	60%	52%
Cover Crop	23	89	89	4%	13%	12%
Plastic	-	-	-	-	-	-
Weed Cloth	-	-	-	-	-	-
Mulch	158	185	257	29%	27%	36%
Gravel	-	-	-	-	-	-
Other	9	-	9	2%	-	1%
Irrigation Systems in Production Areas						
Drip Only	164	180	180	30%	26%	25%
Microsprinkler/Drip	-	-	-	-	-	-
Microsprinkler	435	507	543	79%	74%	75%
Overhead Sprinkler	-	-	-	-	-	-
Overhead/Drip	9	-	-	2%	-	-
Furrow Flood	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-
Other	-	-	-	-	-	-

[a] Monitoring site drainage area serves as a complete Responsibility Area

* Value for 2017 is for Raspberries & Blueberries combined

Table 118. Ellsworth Barranca Responsibility Area Grower BMPs

Survey Question	Units	S02T_ELLS Site Drainage Only					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management							
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	536	310	351	98%	45%	49%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	242	570	634	44%	83%	88%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	48	44	126	9%	7%	18%
Nutrient Management							
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	357	90	562	65%	13%	78%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	36	-	562	7%	-	78%
Q5a: Are soil residual nitrate tests done?	Acres	202	600	651	37%	87%	90%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	202	532	651	37%	77%	90%
Q6: Are leaf/petiole tests conducted?	Acres	520	679	715	95%	99%	99%
Q7a: Is nitrate measured in fertigation water?	Acres	440	513	644	80%	75%	89%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	440	461	624	80%	67%	86%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	14	126	171	100%	83%	100%
Sediment Management							
Q9: How many cropped acres have a slope greater than 2%?	Acres	244	319	309	44%	46%	43%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	244	319	309	100%	100%	100%
Q11. How much non-cropped area is bare soil?	Acres	422	438	405	77%	25%	23%
Q12a: How many feet of ditches exist?	Feet	4,920	7,120	6,420	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	1,920	4,920	4,820	39%	69%	75%
Q13a: Are grassed waterways present?	Acres	80	254	254	14%	37%	35%
Q13b: How many acres drain to grassed waterways?	Acres	45	95	95	8%	14%	13%
Q14: How many acres are treated by vegetated filter strips?	Acres	32	32	34	6%	5%	5%
Pest Management							
Q15: Are PCAs used for pesticide management decisions?	Acres	489	628	664	89%	91%	92%
Q16: Is an IPM Plan being implemented?	Acres	489	623	659	89%	91%	91%
Q17a: How many acres are organically farmed?	Acres	9	-	-	2%	-	-
Q17b: How many acres are conventionally farmed?	Acres	539	624	723	98%	91%	100%
Runoff Management/Treatment							
Q18: How many acres produce irrigation runoff?	Acres	19	17	12	3%	3%	2%
Q19: Runoff from how many acres is treated or detained?	Acres	56	33	22	10%	5%	3%

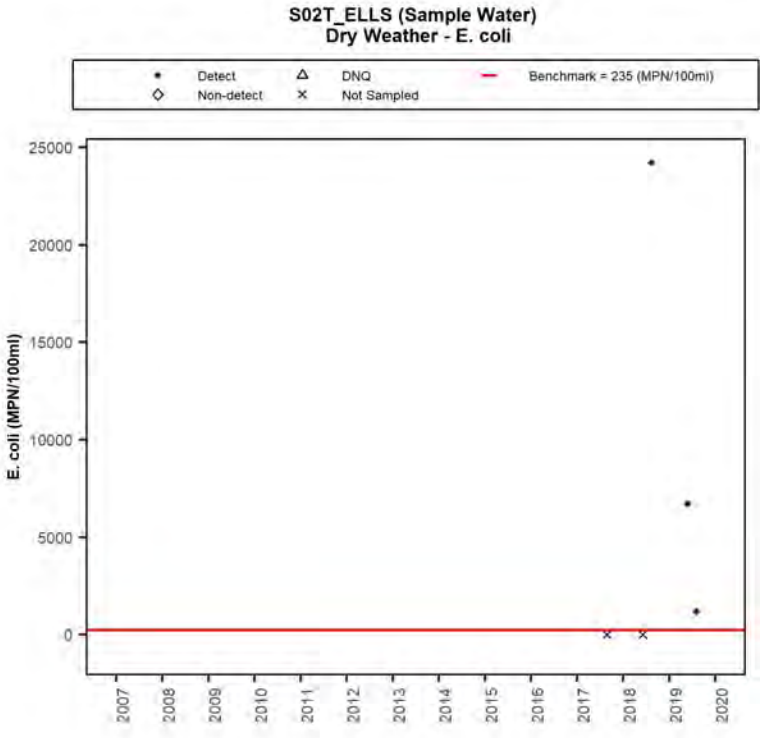


Figure 211. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site S02T_ELLS

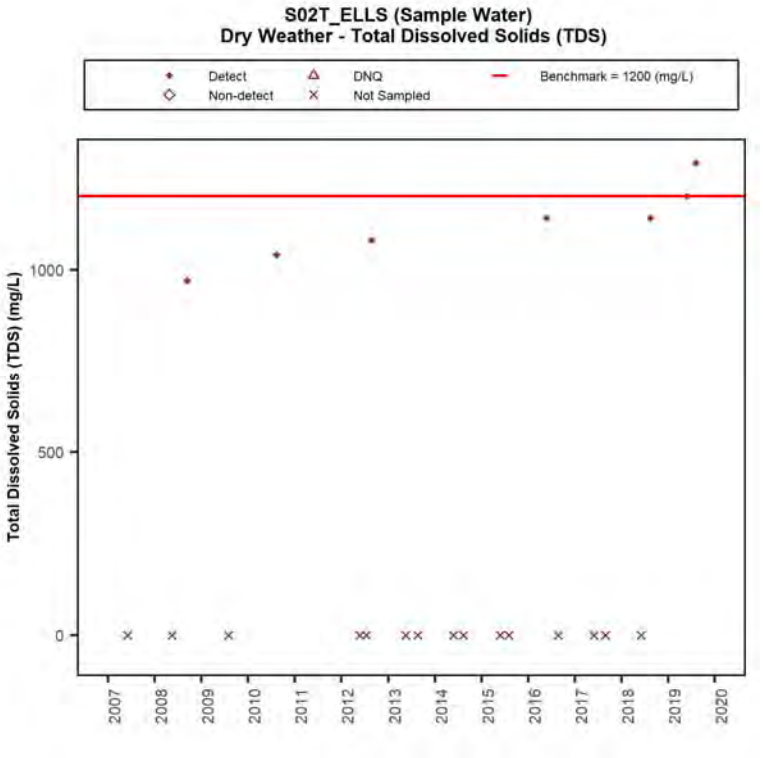


Figure 212. Dry Weather TDS Concentrations at Waiver Benchmark Site S02T_ELLS

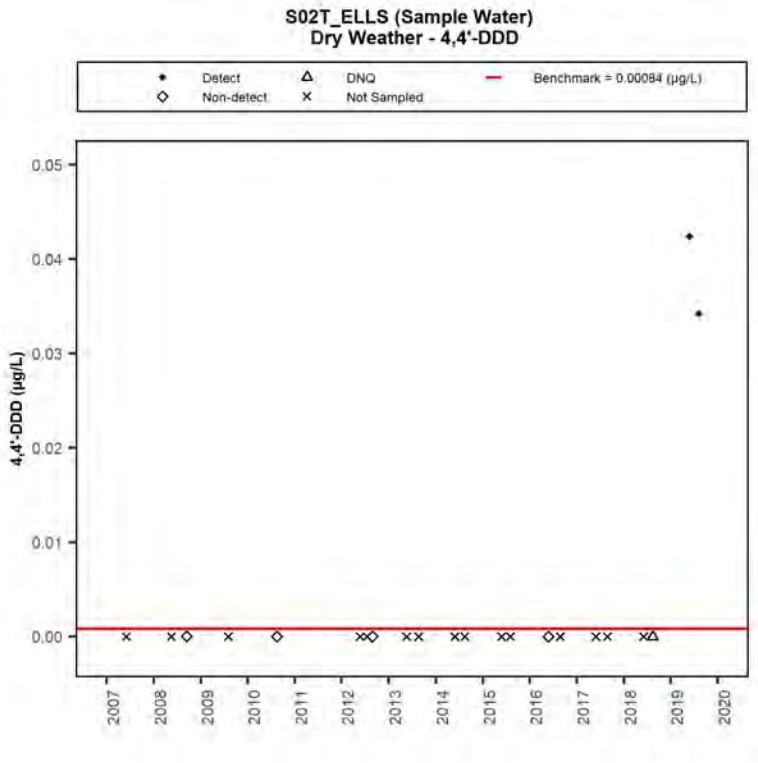


Figure 213. Dry Weather DDD Concentrations at Waiver Benchmark Site S02T_ELLS

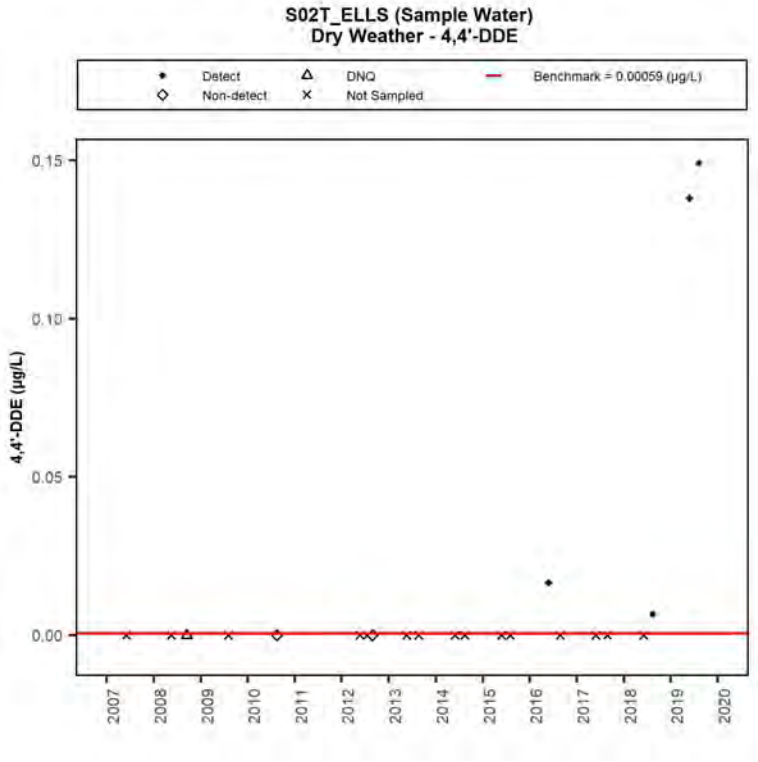


Figure 214. Dry Weather DDE Concentrations at Waiver Benchmark Site S02T_ELLS

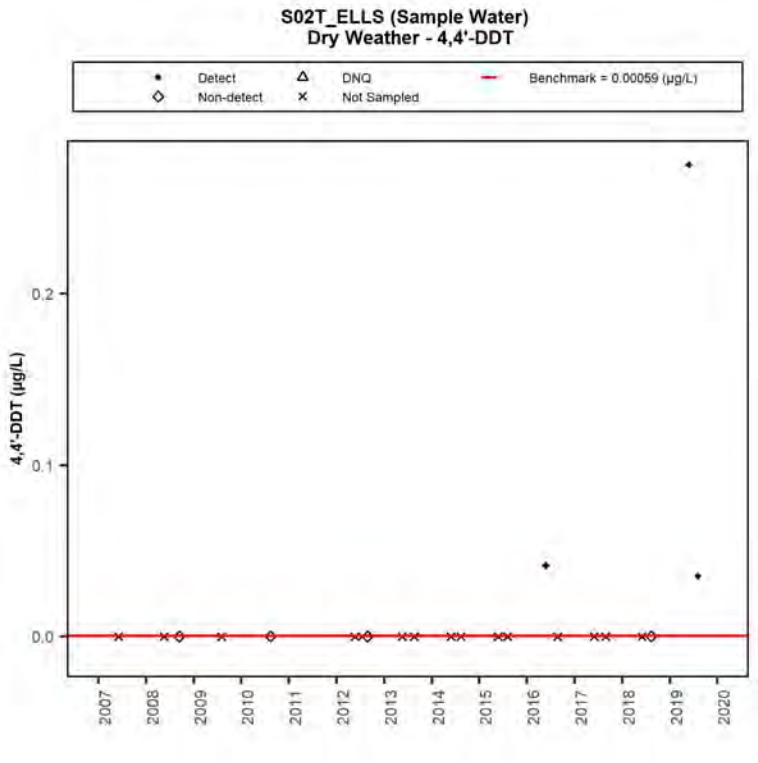


Figure 215. Dry Weather DDT Concentrations at Waiver Benchmark Site S02T_ELLS

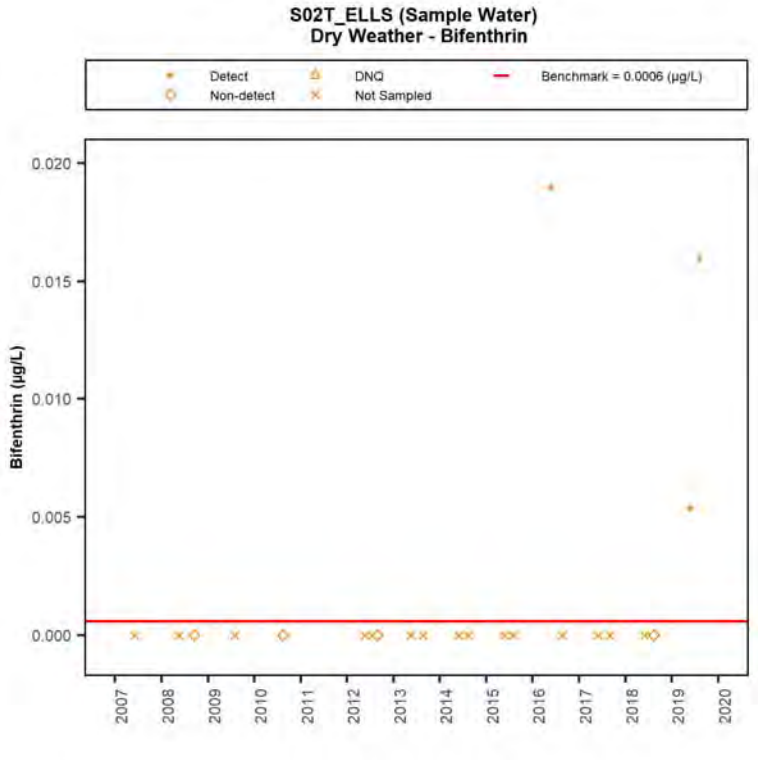


Figure 216. Dry Weather Bifenthrin Concentrations at Waiver Benchmark Site S02T_ELLS

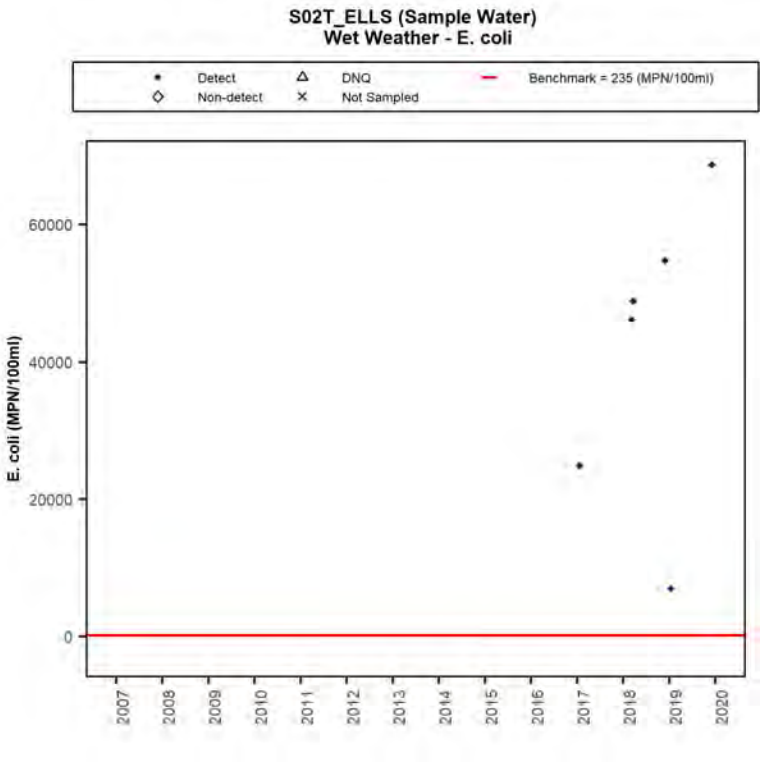


Figure 217. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site S02T_ELLS

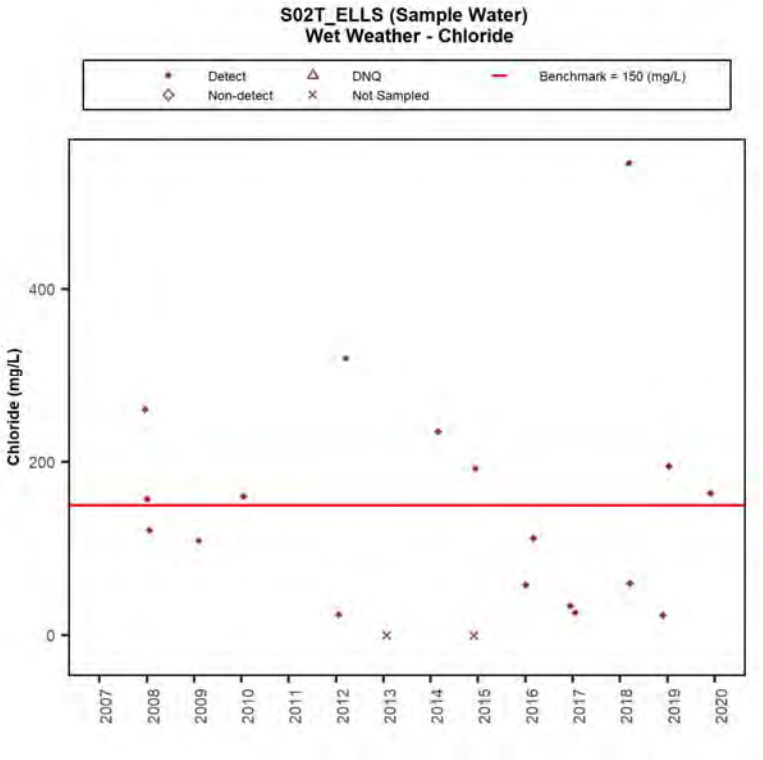


Figure 218. Wet Weather Chloride Concentrations at Waiver Benchmark Site S02T_ELLS

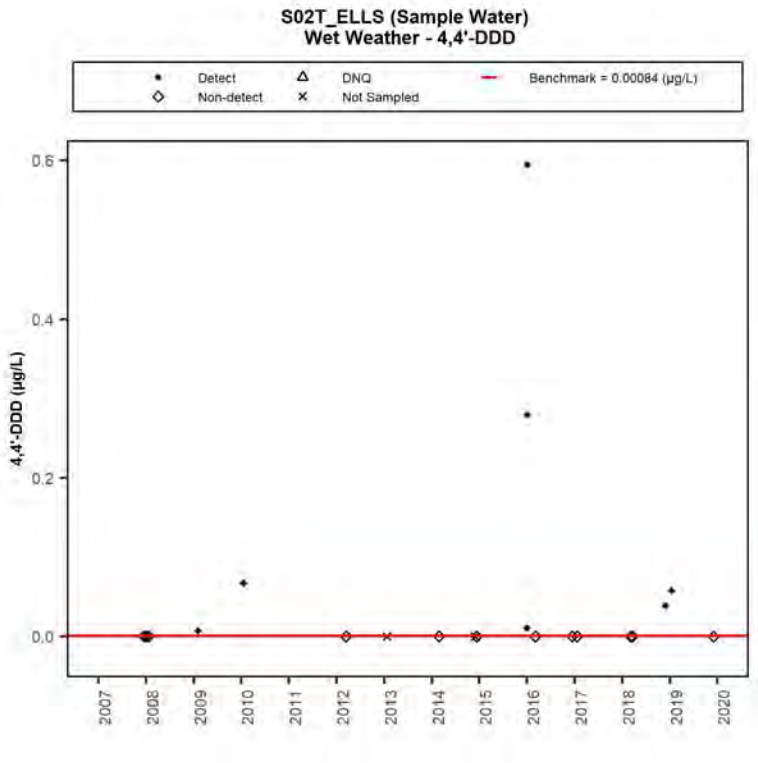


Figure 219. Wet Weather DDD Concentrations at Waiver Benchmark Site S02T_ELLS

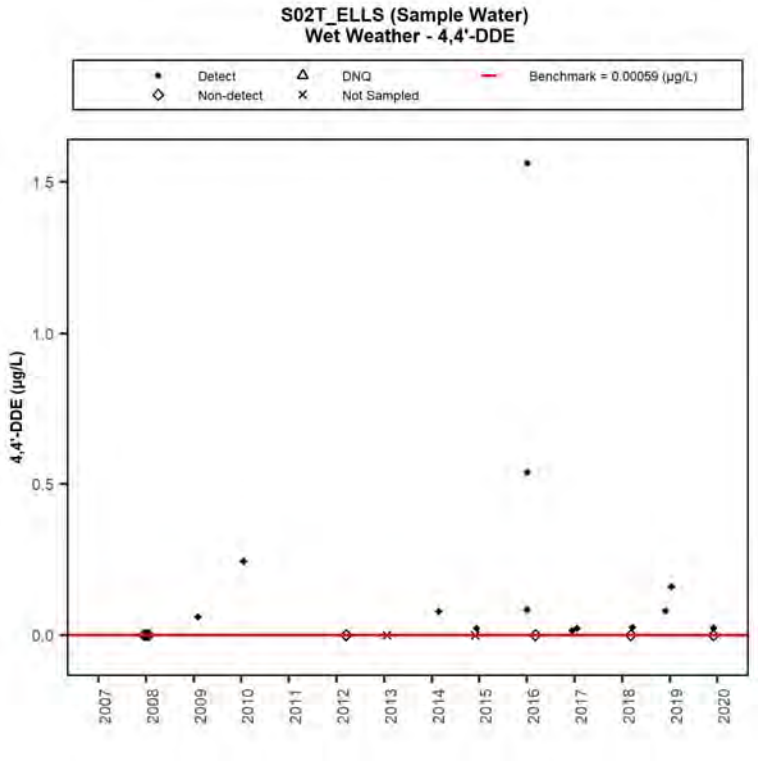


Figure 220. Wet Weather DDE Concentrations at Waiver Benchmark Site S02T_ELLS

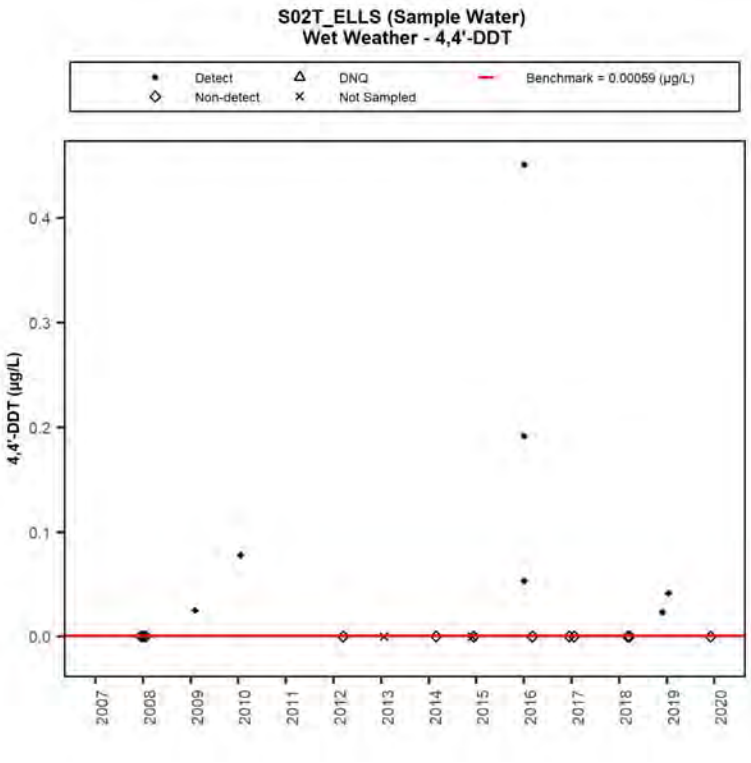


Figure 221. Wet Weather DDT Concentrations at Waiver Benchmark Site S02T_ELLS

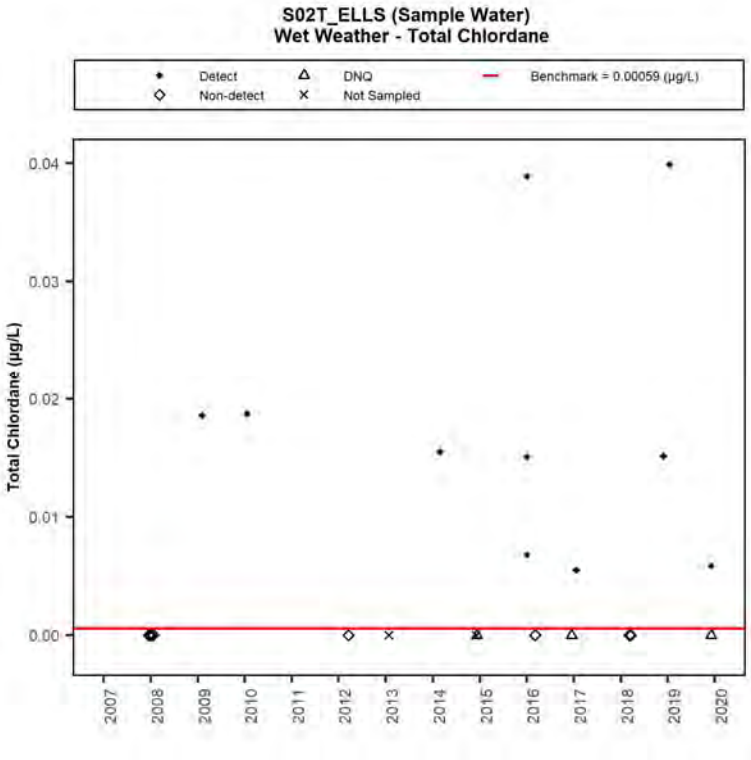


Figure 222. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S02T_ELLS

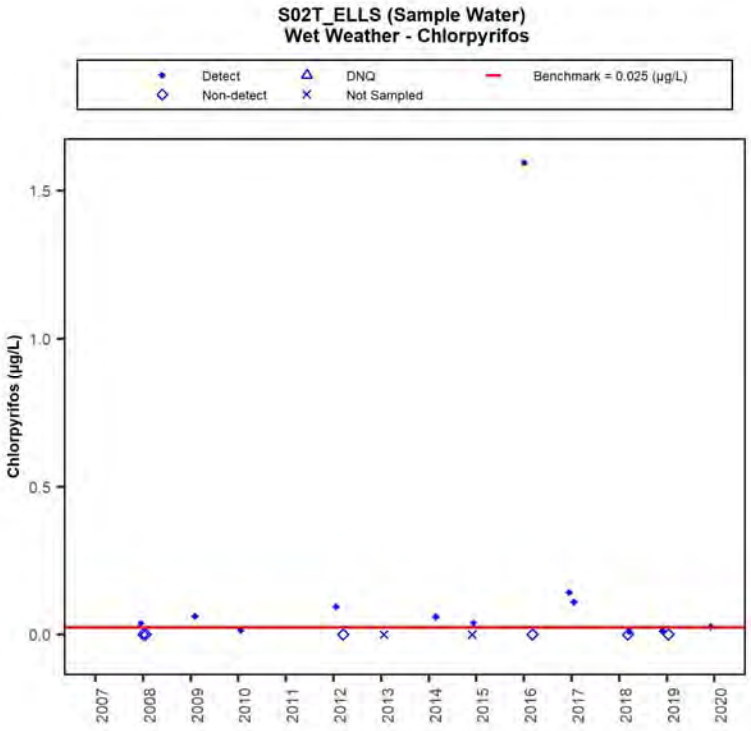


Figure 223. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site S02T_ELLS

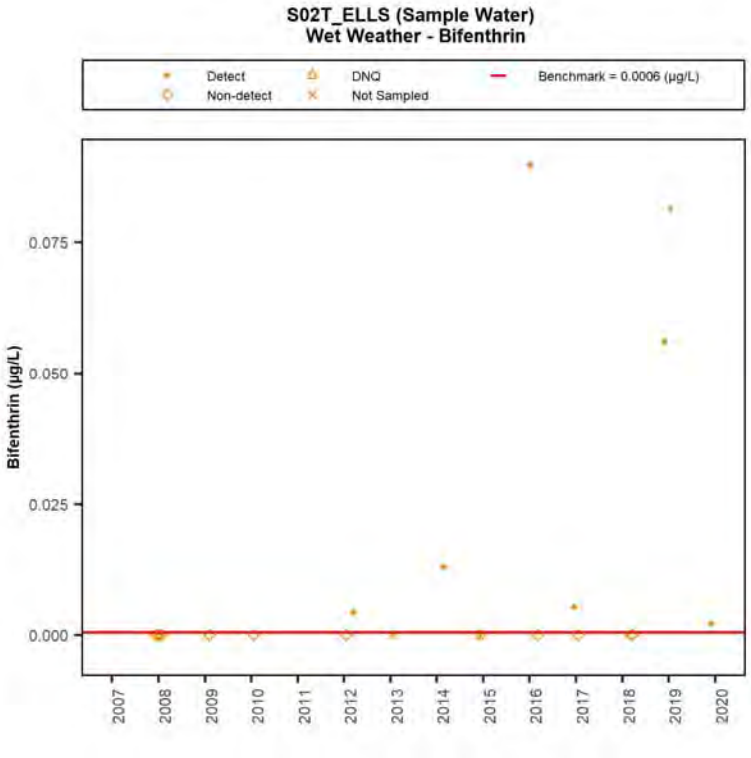


Figure 224. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S02T_ELLS

Table 119. Summary of Benchmark Exceedance Evaluation for Ellsworth Barranca Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
E. coli	●		☑	●		☑
Salts						
TDS	●		☑			
Chloride				●		☑
OC Pesticides (Legacy)						
DDD	●		☑	●		☑
DDE	●		☑	●		☑
DDT	●		☑	●		☑
Chlordane				●		☑
OP and Pyrethroid Pesticides (Current)						
Chlorpyrifos				●		☑
Bifenthrin	●		☑	●		☑

1. VCAILG monitoring site for Waiver benchmarks is S02T_ELLS.

Table 120. BMPs for Additional Implementation in the Ellsworth Barranca Responsibility Area

Exceedance Condition											
Bacteria		Salts		Legacy Pesticides		Current Use Pesticides				% of Total Applicable Surveyed Units	Additional Implementation of Pertinent BMP Needed?
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet		Survey Responses	S02T_ELLS Site Drainage	
				x	x	x	x	Crop management [a]	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	49%	Yes
x		x		x		x		Irrigation system type [a]	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	100%	No
		x		x		x		1 [a]	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	49%	Yes
		x				x	x	2 [a]	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	88%	Yes
		x						3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	18%	Yes
				x	x	x	x	10 [a]	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	No
					x		x	11 [a]	How much non-cropped area is bare soil?	23%	Yes
x	x			x	x	x	x	12b [a]	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	75%	Yes
x	x	x	x	x	x	x	x	13a [a]	Grassed waterways are used	35%	Yes
x	x	x	x	x	x	x	x	14 [a]	Vegetated filter strips are used	5%	Yes
						x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	92%	Yes
						x	x	16	An integrated pest management plan is implemented	91%	Yes
x		x		x		x		18 [a]	How many acres produce irrigation runoff?	2%	No[b]
x	x	x	x	x	x	x	x	19 [a]	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	3%	Yes

[a] BMP with potential to reduce sediment runoff or improve irrigation efficiency to achieve LAs for the Santa Clara River Estuary Toxaphene TMDL.
[b] A 2% positive response to this survey question means that 98% of the surveyed acreage has the desired outcome of not producing irrigation runoff.

Table 121. Proposed Best Management Practices for the Ellsworth Barranca Responsibility Area

Water Quality Issues								
Bacteria		Salts		Legacy Pesticides		Current Use Pesticides		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	BMPs
								Source Control BMPs
				x	x	x	x	**Reduce bare soil in production area with cover crops, gravel, mulch, etc.**
x		x		x		x		**Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)**
		x		x		x		Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
		x				x		Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
		x						Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
				x	x	x	x	**Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)**
					x		x	**Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel**
						x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
						x	x	Implement an integrated pest management plan
x		x		x		x		**Avoid/prevent irrigation runoff**
								Structural Non-Treatment BMPs
x	x			x	x	x	x	**Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals**
x	x	x	x	x	x	x	x	**Use grassed waterways**
x	x	x	x	x	x	x	x	**Use vegetated filter strips**
								Optional Treatment BMPs
x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required by the Conditional Waiver to the degree appropriate for achieving the Santa Clara River Estuary Toxaphene TMDL.

Ventura River Inland Responsibility Area

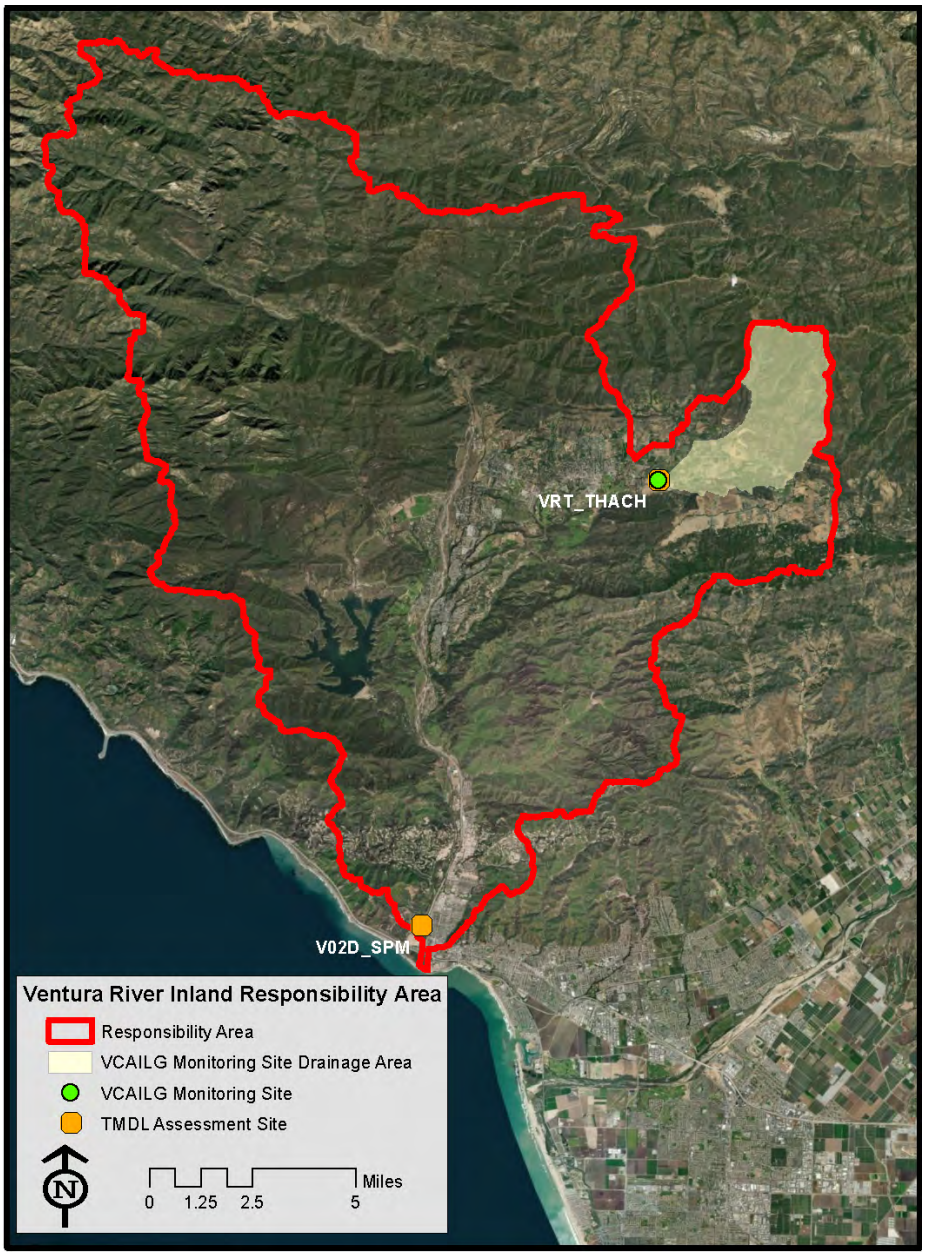


Figure 225. Ventura River Inland Responsibility Area Map

The Ventura River Inland responsibility area is illustrated in Figure 225. The VCAILG monitoring site is also used as a TMDL assessment site for the VR Algae TMDL. Site V02D_SPM is a VR Algae TMDL assessment site.

Table 122. Ventura River Inland Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site VRT_THACH
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	16,500	1,415
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	1,271	75
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	15,682	1,359
Assessed Acres from Agricultural Parcel List belonging to Non Members	819	56
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	2,709	657
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.17	0.48
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	141	27
Total Estimated Irrigated Acres (Member plus Non Member)	2,850	684
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	95%	96%
Survey Response Information		
Sum Surveyed Irrigated Acres	1,761	265
Percent of Total Estimated Irrigated Acres that were Surveyed	62%	39%
Percent of VCAILG Member Irrigated Acres that were Surveyed	65%	40%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 123. Ventura River Inland Responsibility Area Crop Types and General Production Practices

Crop or Practice	VRT_THACH Site Drainage Only						Ventura River Inland Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	3	70	70	0.1%	3%	4%
Blueberries	-*	-	-	-*	-	-	-*	-	-	-*	-	-
Raspberries		-	-		-	-		-	-		-	-
Row Crop	-	-	-	-	-	-	18	34	16	1%	1%	1%
Orchard	245	549	263	99%	100%	99%	1,816	2,225	1,580	94%	92%	90%
Nursery	-	-	-	-	-	-	-	2	1	-	0.1%	0.1%
Flower	-	-	-	-	-	-	3	4	3	0.2%	0.1%	0.2%
Sod	-	-	-	-	-	-	-	2	-	-	0.1%	-
Other	2	-	2	0.8%	-	1%	86	86	90	4%	4%	5%
Overhead Cover in Production Areas												
Hoop House	342	-	-	138%	-	-	1,019	55	55	53%	2%	3%
No Cover	135	-	2	54%	-	0.8%	768	140	125	40%	6%	7%
Greenhouse	5	-	-	2%	-	-	6	-	-	0.3%	-	-
Shade	-	-	-	-	-	-	1	1	1	0.03%	0.04%	0.03%
Other	10	-	-	4%	-	-	39	-	-	2%	-	-
Surface Treatments in Production Areas												
Bare Soil	118	165	148	48%	30%	56%	1,106	1,035	750	58%	43%	43%
Cover Crop	19	25	16	8%	5%	6%	56	81	88	3%	3%	5%
Plastic	-	-	-	-	-	-	8	48	48	0.4%	2%	3%
Weed Cloth	-	-	-	-	-	-	1	3	1	0.01	0.1%	0.1%
Mulch	129	359	86	52%	65%	33%	704	1,133	733	37%	47%	42%
Gravel	-	-	-	-	-	-	-	-	-	-	-	-
Other	11	54	54	5%	10%	20%	159	213	192	8%	9%	11%
Irrigation Systems in Production Areas												
Drip Only	12	22	12	5%	4%	4%	287	281	231	15%	12%	13%

Crop or Practice	VRT_THACH Site Drainage Only						Ventura River Inland Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Microsprinkler/Drip	-	424	-	-	77%	-	3	494	70	0.1%	20%	4%
Microsprinkler	234	287	251	95%	52%	95%	1,675	1,797	1,425	87%	74%	81%
Overhead Sprinkler	2	-	2	0.8%	-	1%	15	15	15	0.8%	1%	1%
Overhead/Drip	-	-	-	-	-	-	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	-	-	18	18	-	1%	1%
Hand Watering	-	-	-	-	-	-	-	1	1	-	0.04%	0.03%
Other	-	-	-	-	-	-	-	-	-	-	-	-

Table 124. Ventura River Inland Responsibility Area Grower BMPs

Survey Question	Units	VRT_THACH Site Drainage Only						Ventura River Inland Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	138	408	153	56%	74%	58%	1,311	1,931	1,396	69%	81%	81%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	163	445	228	66%	81%	86%	1,530	2,009	1,508	79%	83%	86%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	29	52	52	15%	10%	24%	598	752	724	37%	35%	48%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	152	153	170	61%	28%	64%	981	1,115	1,086	51%	46%	1,086
Q4b: Is it a Certified Nutrient Management Plan?	Acres	111	112	129	45%	20%	49%	376	505	726	20%	21%	726
Q5a: Are soil residual nitrate tests done?	Acres	160	358	133	65%	65%	50%	1,127	1,639	1,244	59%	68%	1,244
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	160	358	133	65%	65%	50%	1,127	1,622	1,244	59%	67%	1,244
Q6: Are leaf/petiole tests conducted?	Acres	214	473	207	97%	88%	81%	1,722	2,059	1,579	93%	87%	1,579
Q7a: Is nitrate measured in fertigation water?	Acres	142	125	152	57%	23%	57%	1,313	1,391	1,275	68%	57%	1,275
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	105	125	152	42%	23%	57%	1,276	1,391	1,275	66%	57%	1,275
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	107	352	78	63%	80%	54%	430	716	234	44%	48%	234
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	67	188	100	27%	34%	38%	932	1,209	950	48%	50%	54%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	19	244	27	29%	100% [a]	26%	810	1,230	814	100% [a]	100% [a]	86%
Q11. How much non-cropped area is bare soil?	Acres	32	96	27	13%	21%	31%	368	579	385	19%	14%	12%
Q12a: How many feet of ditches exist?	Feet	5,120	11,115	7,635	N/A	N/A	N/A	147,391	182,330	68,574	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	4,170	8,590	5,560	81%	77%	73%	42,180	62,598	50,178	29%	34%	73%
Q13a: Are grassed waterways present?	Acres	-	246	3	-	45%	1%	586	928	780	30%	38%	44%
Q13b: How many acres drain to grassed waterways?	Acres	-	21	1	-	4%	0.2%	323	360	378	17%	15%	21%
Q14: How many acres are treated by vegetated filter strips?	Acres	25	33	17	10%	6%	6%	195	237	187	10%	10%	11%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	218	501	232	88%	91%	88%	1,777	2,229	1,591	92%	92%	90%
Q16: Is an IPM Plan being implemented?	Acres	214	516	248	87%	94%	94%	1,736	2,208	1,624	90%	91%	92%

Survey Question	Units	VRT_THACH Site Drainage Only						Ventura River Inland Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q17a: How many acres are organically farmed?	Acres	73	101	75	30%	18%	28%	174	221	222	9%	9%	13%
Q17b: How many acres are conventionally farmed?	Acres	174	448	190	70%	82%	72%	1,751	1,887	1,539	91%	78%	87%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	-	1	-	-	0.1%	-	33	123	105	2%	5%	6%
Q19: Runoff from how many acres is treated or detained?	Acres	1	249	8	0.4%	45%	3%	390	739	367	20%	31%	21%

[a] Respondents' answers to Q9 and Q10 led to an illogical adoption rate >100%. 100% is reported in the table as a reasonable interpretation.

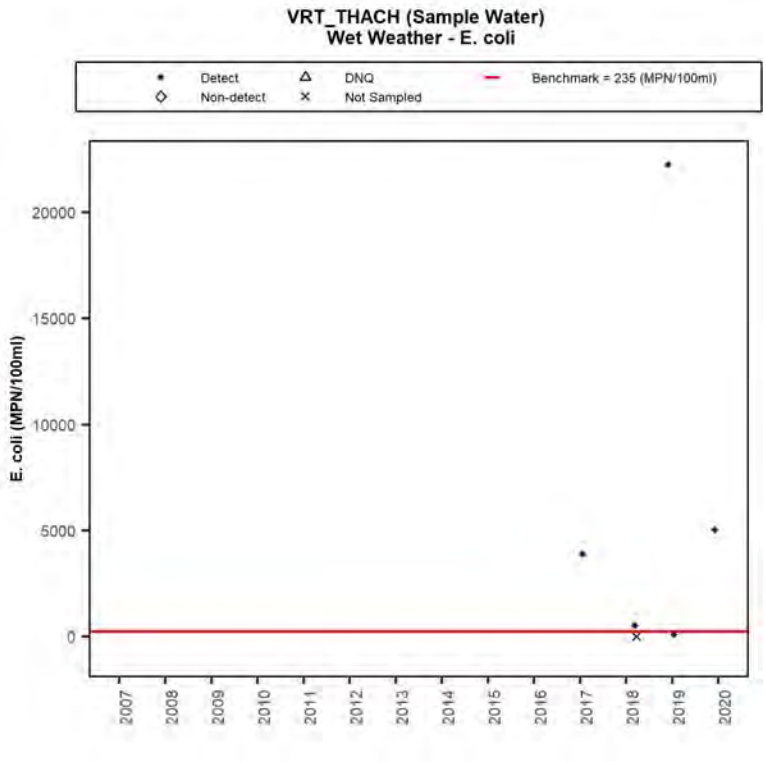


Figure 226. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site VRT_THACH

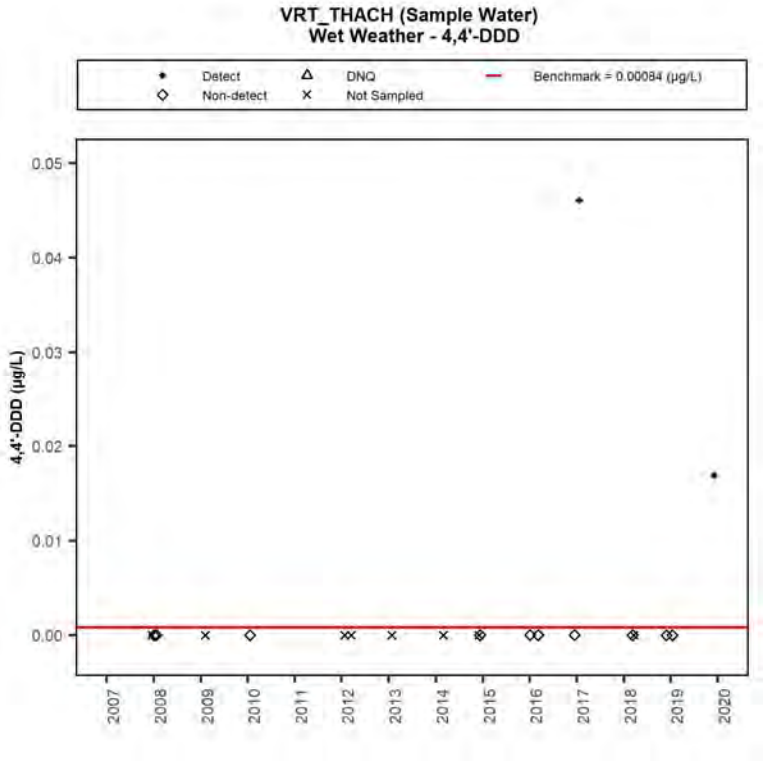


Figure 227. Wet Weather DDD Concentrations at Waiver Benchmark Site VRT_THACH

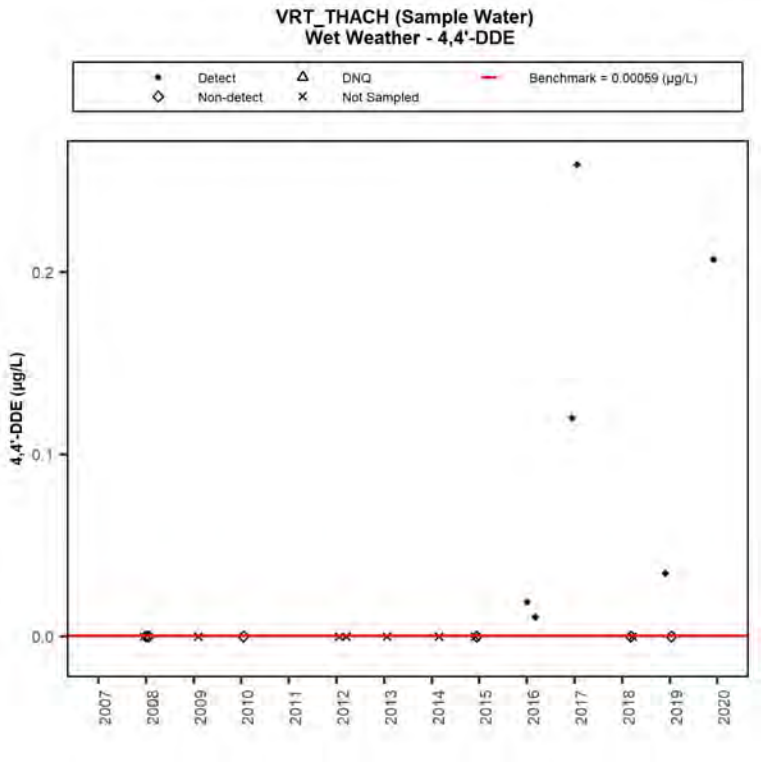


Figure 228. Wet Weather DDE Concentrations at Waiver Benchmark Site VRT_THACH

Table 125. Summary of Benchmark Exceedance Evaluation for Ventura River Inland Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
E. coli				●		☑
OC Pesticides (Legacy)						
DDD				●		☑
DDE				●		☑

1. VCAILG monitoring site for Waiver benchmarks is VRT_THACH.

Table 126. BMPs for Additional Implementation in the Ventura River Inland Responsibility Area

Exceedance Condition					% of Total Applicable Surveyed Units		
Bacteria	Legacy Pesticides				VRT_THACH Site Drainage Only	Ventura River Inland Responsibility Area	Additional Implementation of Pertinent BMP Needed?
Wet	Wet	TMDL-Specific Management Practice		Survey Responses			
	x		Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	59%	60%	Yes
	x		10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	26%	86%	Yes
	x		11	How much non-cropped area is bare soil?	31%	12%	Yes
x	x		12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	73%	73%	Yes
x	x		13a	Grassed waterways are used	1%	44%	Yes
x	x		14	Vegetated filter strips are used	6%	11%	Yes
x	x		19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	3%	21%	Yes
		x	4b [a]	Certified nutrient management plan has been prepared for the property	49%	41%	Yes

[a] TMDL-specific management practice for the Ventura River Algae TMDL.

Table 127. Proposed Best Management Practices for the Ventura River Inland Responsibility Area

Water Quality Issues			
Bacteria	**Legacy Pesticides**		
Wet Weather	**Wet Weather**	**TMDL-Specific Management Practice**	**BMPs**
			Source Control BMPs
	x		Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x		Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
	x		Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
		x	**Prepare a certified nutrient management plan for the property by January 2019**
			Structural Non-Treatment BMPs
x	x		Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x		Use grassed waterways
x	x		Use vegetated filter strips
			Optional Treatment BMPs
x	x		Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required for achieving Ventura River Algae TMDL.

Ventura River Coastal Responsibility Area

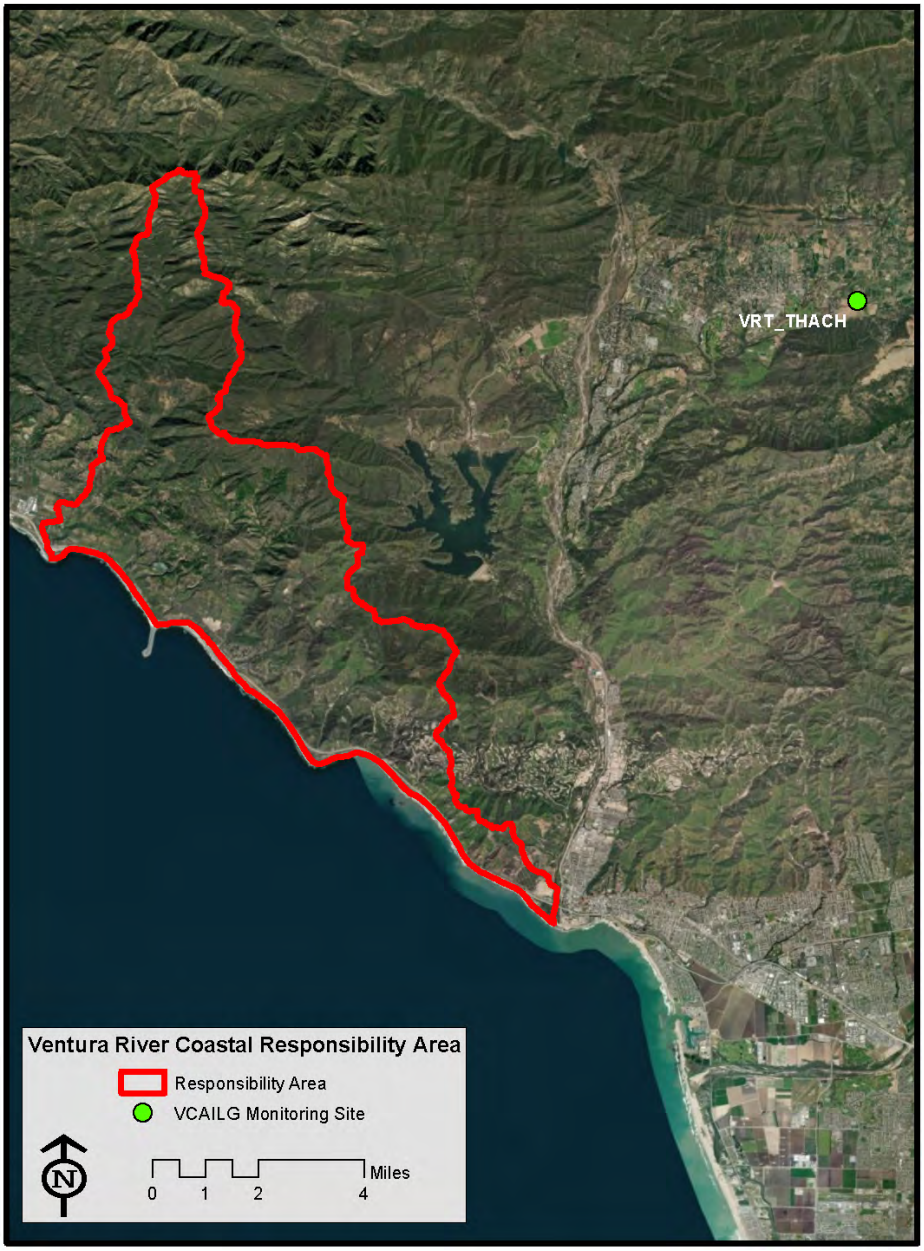


Figure 229. Ventura River Coastal Responsibility Area Map

The Ventura River Coastal responsibility area is illustrated in Figure 229. VRT_THACH serves as the Conditional Waiver benchmark beacon site for the responsibility area. No TMDLs apply.

Table 128. Ventura River Coastal Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Responsibility Area [a]	Drainage Area of Monitoring Site VRT_THACH [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	3,641	1,415
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [b]	412	75
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	3,144	1,359
Assessed Acres from Agricultural Parcel List belonging to Non Members	497	56
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	731	657
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.23	0.48
Estimated Irrigated Acres in Non Member Agricultural Parcels [c]	116	27
Total Estimated Irrigated Acres (Member plus Non Member)	847	684
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	86%	96%
Survey Response Information		
Sum Surveyed Irrigated Acres	695	265
Percent of Total Estimated Irrigated Acres that were Surveyed	82%	39%
Percent of VCAILG Member Irrigated Acres that were Surveyed	90%	40%

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 129. Ventura River Coastal Responsibility Area Crop Types and General Production Practices

Crop or Practice	VRT_THACH Site Drainage Only						Ventura River Coastal Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	139	139	139	41%	33%	20%
Blueberries	-*	-	-	-*	-	-	-*		-	-*	-	-
Raspberries		-	-		-	-			-		-	-
Row Crop	-	-	-	-		-	-		-	-	-	-
Orchard	245	549	263	99%	100%	99%	171	253	525	50%	60%	76%
Nursery	-	-	-	-	-	-	16	17	16	5%	4%	2%
Flower	-	-	-	-	-	-	3	3	3	0.7%	1%	0.4%
Sod	-	-	-	-	-	-	13	13	-	4%	3%	-
Other	2	-	2	0.8%	-	1%	-	-	13	-	-	2%
Overhead Cover in Production Areas												
Hoop House	342	-	-	138%	-	-	-	-	-	-	-	-
No Cover	135	-	2	54%	-	0.8%	39	157	169	11%	37%	24.4%
Greenhouse	5	-	-	2%	-	-	-	1	-	-	0.2%	-
Shade	-	-	-	-	-	-	-	-	1	-	-	0.1%
Other	10	-	-	4%	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	118	165	148	48%	30%	56%	112	148	95	33%	35%	14%
Cover Crop	19	25	16	8%	5%	6%	36	-	84	11%	-	12%
Plastic	-	-	-	-	-	-	139	139	139	41%	33%	20%
Weed Cloth	-	-	-	-	-	-	1	1	1	0.1%	0.2%	0.1%
Mulch	129	359	86	52%	65%	33%	47	112	181	14%	26%	26%
Gravel	-	-	-	-	-	-	-	-	-	-	-	-
Other	11	54	54	5%	10%	20%	7	24	199	2%	6%	29%
Irrigation Systems in Production Areas												
Drip Only	12	22	12	5%	4%	4%	24	96	87	7%	23%	13%
Microsprinkler/Drip	-	424	-	-	77%	-	139	139	139	41%	33%	20%
Microsprinkler	234	287	251	95%	52%	95%	164	176	454	48%	41%	65%

Crop or Practice	VRT_THACH Site Drainage Only						Ventura River Coastal Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead Sprinkler	2	-	2	0.8%	-	1%	15	15	15	4%	3%	2%
Overhead/Drip	-	-	-	-	-	-	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

Table 130. Ventura River Coastal Responsibility Area Grower BMPs

Survey Question	Units	VRT_THACH Site Drainage Only						Ventura River Coastal Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	138	408	153	56%	74%	58%	179	366	636	52%	87%	92%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	163	445	228	66%	81%	86%	207	249	588	61%	59%	85%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	29	52	52	15%	10%	24%	-	10	18	-	4%	3%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	152	153	170	61%	28%	64%	294	392	675	86%	92%	97%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	111	112	129	45%	20%	49%	100	197	345	29%	46%	50%
Q5a: Are soil residual nitrate tests done?	Acres	160	358	133	65%	65%	50%	117	352	605	34%	83%	87%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	160	358	133	65%	65%	50%	117	352	605	34%	83%	87%
Q6: Are leaf/petiole tests conducted?	Acres	214	473	207	97%	88%	81%	330	407	680	97%	97%	98%
Q7a: Is nitrate measured in fertigation water?	Acres	142	125	152	57%	23%	57%	278	315	588	82%	74%	85%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	105	125	152	42%	23%	57%	278	315	588	82%	74%	85%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	107	352	78	63%	80%	54%	76	40	306	32%	17%	60%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	67	188	100	27%	34%	38%	152	256	523	45%	60%	75%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	19	244	27	29%	100% [b]	26%	152	254	522	100%	99%	100%
Q11. How much non-cropped area is bare soil?	Acres	32	96	27	13%	21%	31%	48	72	67	14%	6%	4%
Q12a: How many feet of ditches exist?	Feet	5,120	11,115	7,635	N/A	N/A	N/A	11,100	11,650	34,400	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	4,170	8,590	5,560	81%	77%	73%	8,550	9,350	32,100	77%	80%	93%
Q13a: Are grassed waterways present?	Acres	-	246	3	-	45%	1%	236	204	208	69%	48%	30%
Q13b: How many acres drain to grassed waterways?	Acres	-	21	1	-	4%	0.2%	56	48	54	16%	11%	8%
Q14: How many acres are treated by vegetated filter strips?	Acres	25	33	17	10%	6%	6%	45	44	289	13%	10%	42%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	218	501	232	88%	91%	88%	327	330	636	96%	78%	92%
Q16: Is an IPM Plan being implemented?	Acres	214	516	248	87%	94%	94%	327	329	644	96%	77%	93%
Q17a: How many acres are organically farmed?	Acres	73	101	75	30%	18%	28%	7	24	296	2%	6%	43%
Q17b: How many acres are conventionally farmed?	Acres	174	448	190	70%	82%	72%	334	250	399	98%	59%	57%

Survey Question	Units	VRT_THACH Site Drainage Only						Ventura River Coastal Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	0.2	1	-	0.1%	0.1%	-	7	7	7	2%	2%	1%
Q19: Runoff from how many acres is treated or detained?	Acres	1	249	8	0.4%	45%	3%	210	206	216	62%	49%	31%

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Respondents answers to Q9 and Q10 lead to an illogical adoption rate >100%. 100% is reported in the table as a reasonable interpretation.

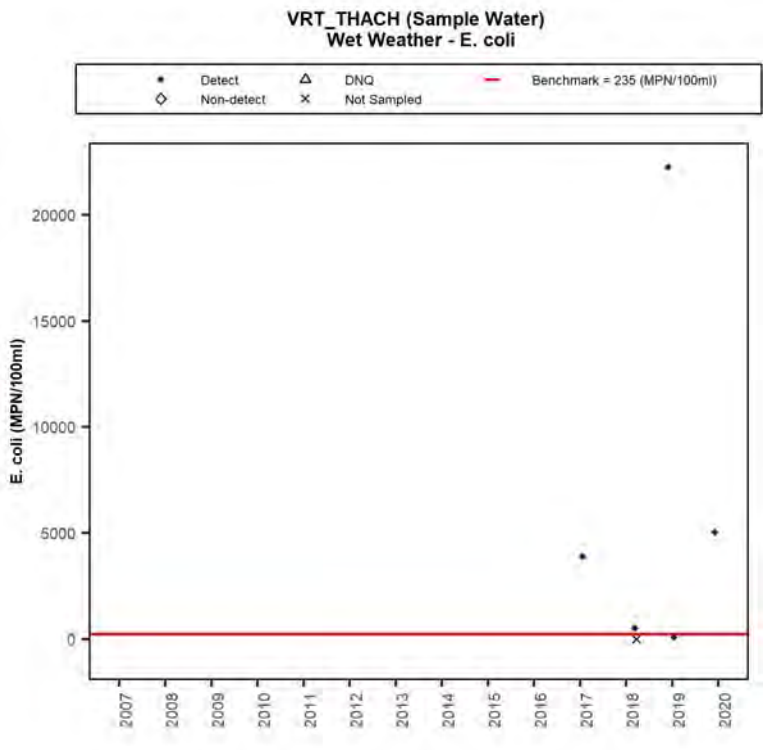


Figure 230. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site VRT_THACH

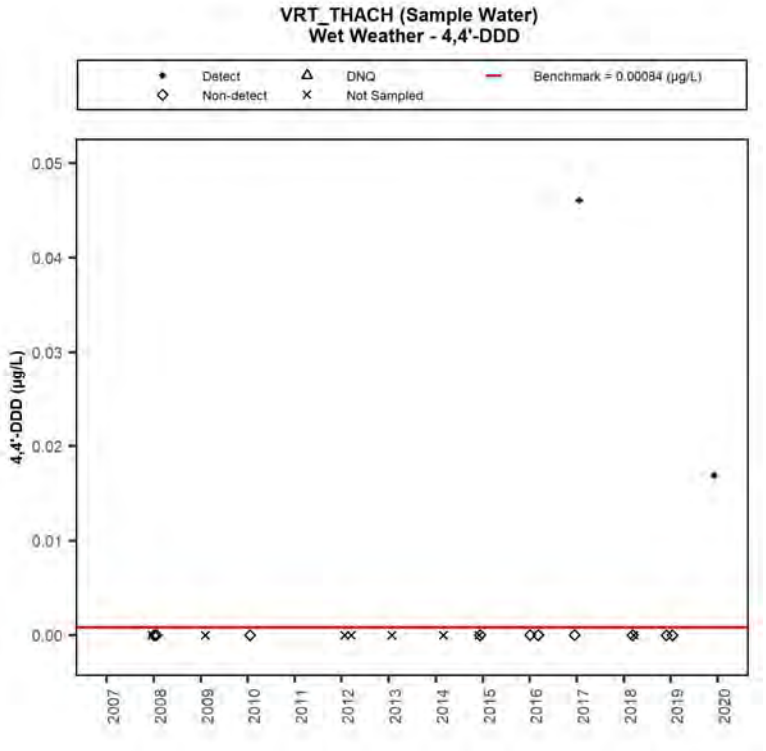


Figure 231. Wet Weather DDD Concentrations at Waiver Benchmark Site VRT_THACH

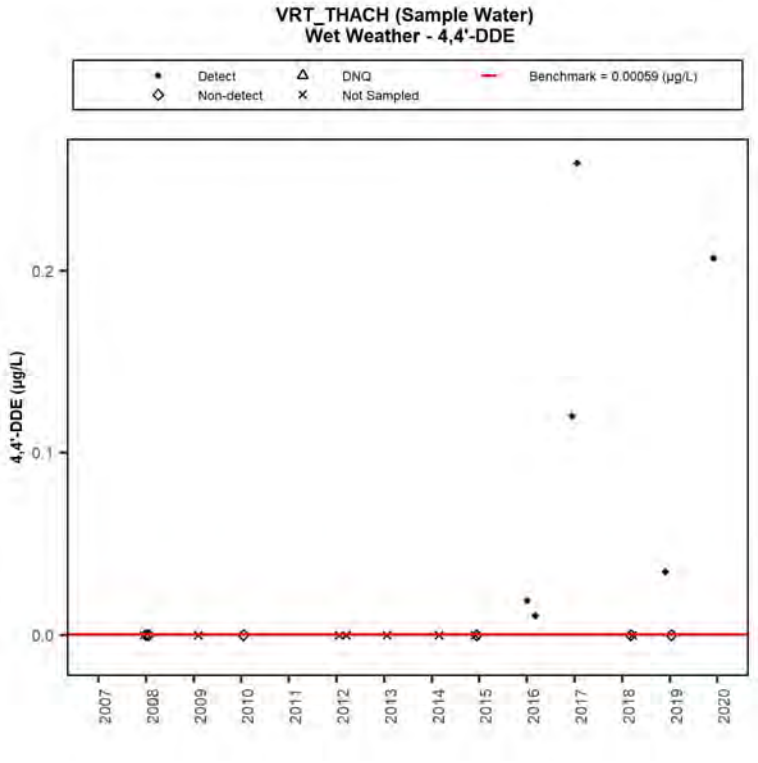


Figure 232. Wet Weather DDE Concentrations at Waiver Benchmark Site VRT_THACH

Table 131. Summary of Benchmark Exceedance Evaluation for Ventura River Coastal Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
E. coli				●		☑
OC Pesticides (Legacy)						
DDD				●		☑
DDE				●		☑

1. VCAILG monitoring site for Waiver benchmarks is VRT_THACH.

Table 132. BMPs for Additional Implementation in the Ventura River Coastal Responsibility Area

Exceedance Condition				% of Total Applicable Surveyed Units		Additional Implementation of Pertinent BMP Needed? [b]
Bacteria	Legacy Pesticides					
Wet	Wet		Survey Responses	VRT_THACH Site Drainage [a]	Ventura River Coastal Responsibility Area [a]	
	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	59%	87%	Yes
	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	26%	100%	No [a]
	x	11	How much non-cropped area is bare soil?	31%	67%	Yes
x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	73%	93%	Yes
x	x	13a	Grassed waterways are used	1%	30%	Yes
x	x	14	Vegetated filter strips are used	6%	42%	Yes
x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	3%	31%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area.

Table 133. Proposed Best Management Practices for the Ventura River Coastal Responsibility Area

Water Quality Issues		
Bacteria	**Legacy Pesticides**	
Wet Weather	**Wet Weather**	**BMPs**
		Source Control BMPs
	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
		Structural Non-Treatment BMPs
x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	Use grassed waterways
x	x	Use vegetated filter strips
		Optional Treatment BMPs
x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

San Antonio Creek Responsibility Area

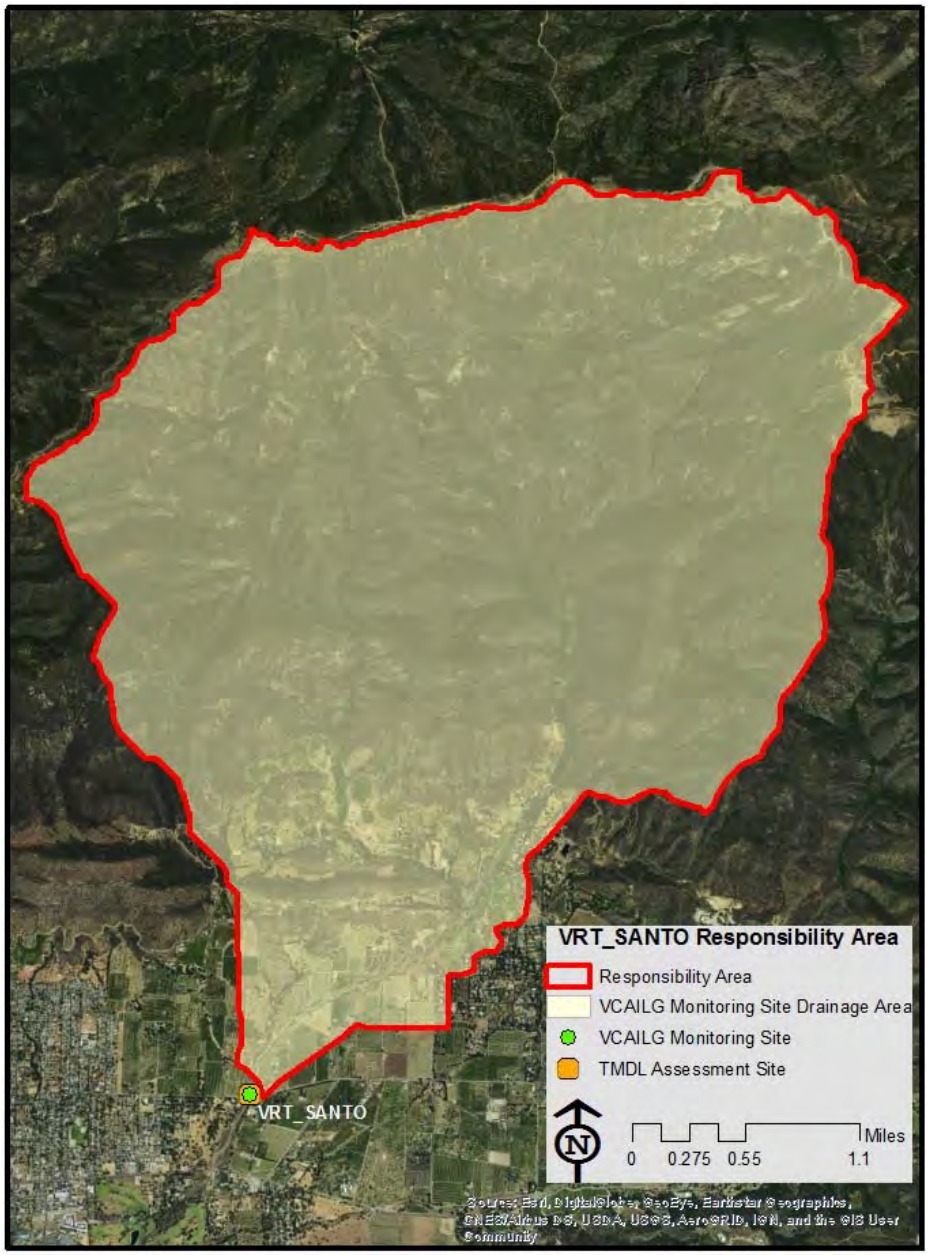


Figure 233. San Antonio Creek Responsibility Area Map

The San Antonio Creek responsibility area is illustrated in Figure 233. The VCAILG monitoring site is also used as a TMDL assessment site for the Ventura River Algae TMDL.

Table 134. San Antonio Creek Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Drainage Area of Monitoring Site VRT_SANTO
Assessed Acreage Information	
Total Assessed Acres from Agricultural Parcel List	1,061
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	945
Assessed Acres from Agricultural Parcel List belonging to Non Members	116
Irrigated Acreage Information	
VCAILG Member Acreage Reported as Irrigated	486
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.51
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	60
Total Estimated Irrigated Acres (Member plus Non Member)	546
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	89%
Survey Response Information	
Sum Surveyed Irrigated Acres	438
Percent of Total Estimated Irrigated Acres that were Surveyed	80%
Percent of VCAILG Member Irrigated Acres that were Surveyed	90%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 135. VRT_SANTO Drainage Area Crop Types and General Production Practices

Crop or Practice	VRT_SANTO Site Drainage [a]					
	Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020
Crop Type						
Strawberries	-	-	-	-	-	-
Blueberries	-*	-	-	-*	-	-
Raspberries		-	-		-	-
Row Crop	-	-	-	-	-	-
Orchard	327	336	438	100%	100%	100%
Nursery	-	-	-	-	-	-
Flower	-	-	-	-	-	-
Sod	-	-	-	-	-	-
Other	-	-	-	-	-	-
Overhead Cover in Production Areas						
Hoop House	1	-	-	0.2%	-	-
No Cover	206	-	-	63%	-	-
Greenhouse	1	-	-	0.2%	-	-
Shade	2	-	-	0.5%	-	-
Other	-	-	-	-	-	-
Surface Treatments in Production Areas						
Bare Soil	206	212	260	63%	63%	59%
Cover Crop	6	5	6	2%	1%	1%
Plastic	-	-	-	-	-	-
Weed Cloth	-	-	-	-	-	-
Mulch	91	113	161	28%	34%	37%
Gravel	-	-	-	-	-	-
Other	35	14	20	11%	4%	5%
Irrigation Systems in Production Areas						
Drip Only	17	11	20	5%	3%	5%
Microsprinkler/Drip	-	-	-	-	-	-
Microsprinkler	310	324	418	95%	97%	95%
Overhead Sprinkler	-	-	-	-	-	-
Overhead/Drip	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-
Other	-	-	-	-	-	-

[a] Monitoring site drainage area serves as a complete Responsibility Area.
* Value for 2017 is for Blueberries & Raspberries combined

Table 136. VRT_SANTO Drainage Area Grower BMPs

Survey Question	Units	VRT_SANTO Site Drainage [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management							
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	203	211	277	62%	63%	63%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	308	317	367	94%	94%	84%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	6	9	6	3%	4%	2%
Nutrient Management							
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	106	115	361	32%	34%	82%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	6	15	187	2%	4%	43%
Q5a: Are soil residual nitrate tests done?	Acres	162	191	190	49%	57%	43%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	162	191	190	49%	57%	43%
Q6: Are leaf/petiole tests conducted?	Acres	324	333	351	99%	99%	80%
Q7a: Is nitrate measured in fertigation water?	Acres	267	276	324	82%	82%	74%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	267	276	310	82%	82%	71%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	137	135	125	67%	73%	60%
Sediment Management							
Q9: How many cropped acres have a slope greater than 2%?	Acres	175	180	213	53%	54%	49%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	32	42	31	18%	23%	14%
Q11. How much non-cropped area is bare soil?	Acres	24	19	31	7%	8%	7%
Q12a: How many feet of ditches exist?	Feet	10,776	16,731	18,656	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,885	14,135	15,150	73%	84%	81%
Q13a: Are grassed waterways present?	Acres	22	22	39	7%	7%	9%
Q13b: How many acres drain to grassed waterways?	Acres	5	17	22	2%	5%	5%
Q14: How many acres are treated by vegetated filter strips?	Acres	2	2	-	0.6%	1%	-
Pest Management							
Q15: Are PCAs used for pesticide management decisions?	Acres	310	319	422	95%	95%	96%
Q16: Is an IPM Plan being implemented?	Acres	327	336	436	100%	100%	100%
Q17a: How many acres are organically farmed?	Acres	2	-	46	1%	-	10%
Q17b: How many acres are conventionally farmed?	Acres	325	336	392	99%	100%	89%

Survey Question	Units	VRT_SANTO Site Drainage [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020
Runoff Management/Treatment							
Q18: How many acres produce irrigation runoff?	Acres	-	-	-	-	-	-
Q19: Runoff from how many acres is treated or detained?	Acres	34	36	35	10%	11%	8%

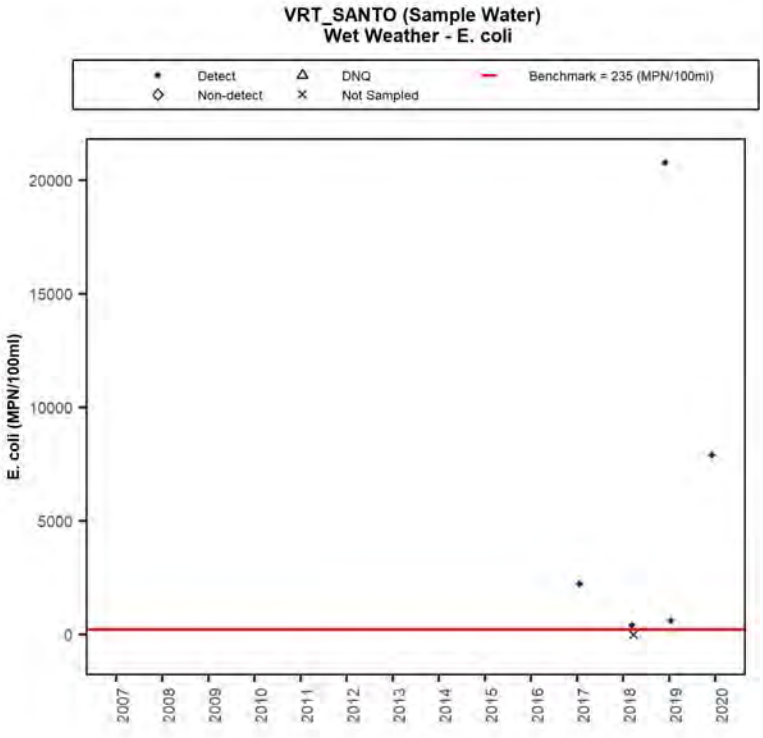


Figure 234. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site VRT_SANTO

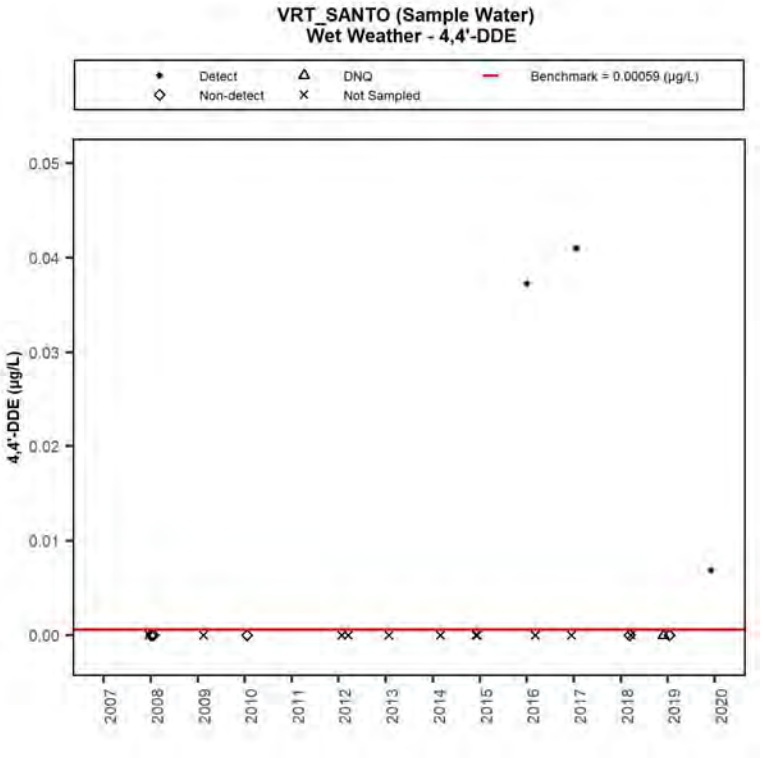


Figure 235. Wet Weather DDE Concentrations at Waiver Benchmark Site VRT_SANTO

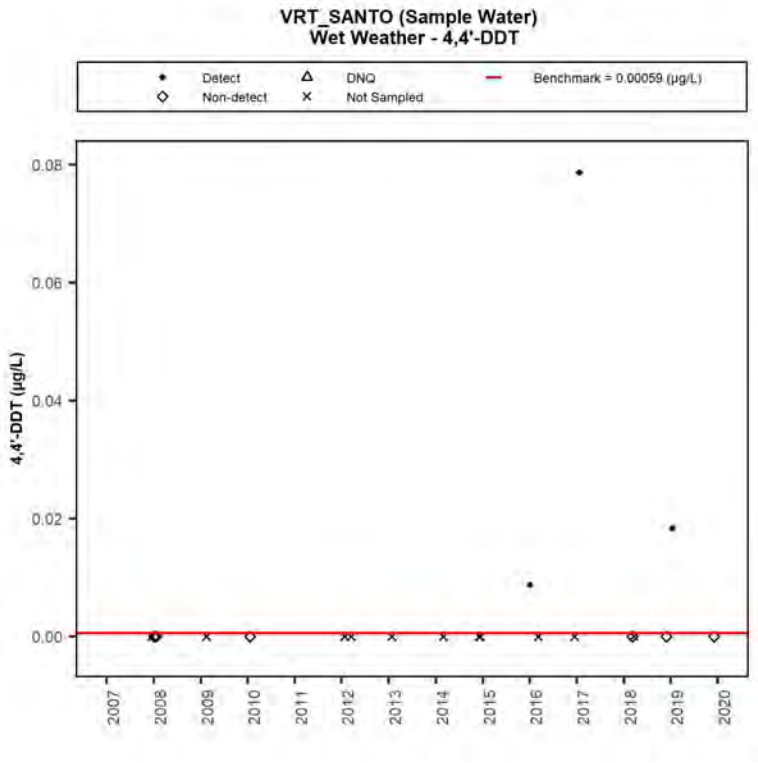


Figure 236. Wet Weather DDT Concentrations at Waiver Benchmark Site VRT_SANTO

Table 137. Summary of Benchmark Exceedance Evaluation for San Antonio Creek Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
E. coli				●		☑
OC Pesticides (Legacy)						
DDE				●		☑
DDT				●		☑

1. VCAILG monitoring site for Waiver benchmarks is VRT_SANTO.

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Table 138. BMPs for Additional Implementation in the San Antonio Creek Responsibility Area

Exceedance Condition		TMDL-Specific Management Practice	Survey Responses		% of Total Applicable Surveyed Units	Additional Implementation of Pertinent BMP Needed?
Bacteria	Legacy Pesticides				VRT_SANTO Site Drainage	
Wet	Wet					
	x		Crop Management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	43%	Yes
		x	4b [a]	Certified nutrient management plan has been prepared for the property	43%	Yes
	x		10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	14%	Yes
	x		11	How much non-cropped area is bare soil?	7%	Yes
x	x		12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	81%	Yes
x	x		13a	Grassed waterways are used	9%	Yes
x	x		14	Vegetated filter strips are used	0%	Yes
x	x		19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	8%	Yes

[a] TMDL-specific management practice for the Ventura River Algae TMDL.

Table 139. Proposed Best Management Practices for the San Antonio Creek Responsibility Area

Water Quality Issues		TMDL-Specific Management Practice	BMPs
Bacteria	Legacy Pesticides		
Wet Weather	Wet Weather		
			Source Control BMPs
	x		Reduce bare soil in production area with cover crops, gravel, mulch, etc.
		x	**Prepare a certified nutrient management plan for the property**
	x		Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
	x		Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
			Structural Non-Treatment BMPs
x	x		Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x		Use grassed waterways
x	x		Use vegetated filter strips
			Optional Treatment BMPs
x	x		Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required for achieving Ventura River Algae TMDL.

McGrath Lake Coastal Responsibility Area

Figure 237. McGrath Lake Coastal Responsibility Area Map

The McGrath Lake Coastal responsibility area is illustrated in Figure 237. The VCAILG monitoring site also serves as a TMDL assessment site for the McGrath Lake Pesticides, PCBs, and Sediment Toxicity TMDL.

Table 140. McGrath Lake Coastal Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area of Monitoring Site OXD_CENTR
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	5,307	1,075
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	4	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	4,653	639
Assessed Acres from Agricultural Parcel List belonging to Non Members	654	436
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	3,101	485
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.67	0.76
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	436	331
Total Estimated Irrigated Acres (Member plus Non Member)	3,537	816
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	88%	59%
Survey Response Information		
Sum Surveyed Irrigated Acres	2,790	808
Percent of Total Estimated Irrigated Acres that were Surveyed	79%	99%
Percent of VCAILG Member Irrigated Acres that were Surveyed	78%	87%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 141. McGrath Lake Coastal Responsibility Area Crop Types and General Production Practices

Crop or Practice	OXD_CENTR Site Drainage Only						McGrath Lake Coastal Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	5	285	382	10%	33%	47%	1,573	1,879	1,812	75%	59%	65%
Blueberries	-*	-	-	-*	-	-	-*	-	-	-*	-	-
Raspberries		-	-		-	-		-	-		-	-
Row Crop	40	473	389	90%	55%	48%	336	1,020	811	16%	32%	29%
Orchard	-	-	-	-	-	-	141	127	91	7%	4%	3%
Nursery	-	19	-	-	2%	-	15	27	8	0.7%	1%	0.3%
Flower	-	79	37	-	9%	5%	31	109	67	2%	3%	2%
Sod	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Overhead Cover in Production Areas												
Hoop House	-	29	8	-	3%	1.0%	125	151	51	6%	5%	1.8%
No Cover	-	788	778	-	92%	96%	142	2,832	2,611	7%	90%	94%
Greenhouse	-	37	20	-	4%	2.5%	2	52	35	0.1%	2%	1.2%
Shade	-	1	2	-	0.1%	0.25%	2	1	2	0.1%	0.03%	0.1%
Other	-	-	-	-	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	44	549	498	100%	64%	62%	722	1,265	1,155	35%	40%	41%
Cover Crop	-	-	47	-	-	6%	686	686	725	33%	22%	26%
Plastic	-	285	335	-	33%	41%	803	1,039	835	38%	33%	30%
Weed Cloth	-	21	-	-	2%	-	4	25	4	0.2%	1%	0.1%
Mulch	-	-	-	-	-	-	1	188	185	0.1%	6%	7%
Gravel	-	-	-	-	-	-	15	-	-	1%	-	-
Other	-	1	8	-	0.1%	1%	62	1	8	3%	0.03%	0.3%
Irrigation Systems in Production Areas												
Drip Only	3	436	396	7%	51%	49%	435	895	693	21%	28%	25%
Microsprinkler/Drip	2	285	285	3%	33%	35%	853	1,270	1,241	41%	40%	44%
Microsprinkler	2	20	25	3%	2%	3%	150	42	43	7%	1.3%	2%
Overhead Sprinkler	3	15	-	7%	2%	-	42	28	13	2%	0.9%	0.5%

Crop or Practice	OXD_CENTR Site Drainage Only						McGrath Lake Coastal Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead/Drip	35	98	98	80%	11%	12%	768	926	795	37%	29%	29%
Furrow Flood	-	-	-	-	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	5	-	-	0.2%	-	-
Other	-	-	4	-	-	0.5%	-	-	4	-	-	0.1%

Table 142. McGrath Lake Coastal Responsibility Area Grower BMPs

Survey Question	Units	OXD_CENTR Site Drainage Only						McGrath Lake Coastal Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	44	117	424	100%	14%	52%	1,843	2,129	2,118	88%	67%	76%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	40	433	468	90%	51%	58%	1,404	2,132	2,012	67%	67%	72%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	35	478	456	80%	56%	56%	1,481	2,257	1,994	76%	75%	72%
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	-	-	159	-	-	20%	515	841	935	25%	27%	34%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	-	-	-	-	-	-	386	528	542	18%	17%	19%
Q5a: Are soil residual nitrate tests done?	Acres	35	819	771	80%	96%	95%	1,717	2,864	2,473	82%	91%	89%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	35	819	771	80%	96%	95%	1,717	2,864	2,473	82%	91%	89%
Q6: Are leaf/petiole tests conducted?	Acres	-	758	736	-	89%	91%	1,569	2,457	2,193	75%	84%	82%
Q7a: Is nitrate measured in fertigation water?	Acres	35	108	72	80%	13%	9%	1,281	1,610	1,206	61%	51%	43%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	35	108	72	80%	13%	9%	1,281	1,610	1,206	61%	51%	43%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops	Acres	9	19	-	100%	5%	-	1,174	1,513	1,236	98%	80%	74%
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	-	19	-	-	2%	-	233	252	76	11%	8%	3%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	-	-	-	-	-	N/A	231	231	74	99%	92%	97%
Q11. How much non-cropped area is bare soil?	Acres	6	11	8	14%	5%	4%	105	135	102	5%	9%	7%
Q12a: How many feet of ditches exist?	Feet	5,300	20,375	11,575	N/A	N/A	N/A	111,065	149,362	134,591	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	5,000	5,000	5,000	94%	25%	43%	28,925	45,225	35,075	26%	30%	26%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	-	-	277	293	251	13%	9%	9%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	193	199	199	9%	6%	7%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	-	-	-	-	179	200	200	9%	6%	7%
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	44	855	808	100%	100%	100%	2,084	3,151	2,785	99%	100%	100%
Q16: Is an IPM Plan being implemented?	Acres	35	478	456	80%	56%	56%	2,066	2,723	2,434	99%	86%	87%
Q17a: How many acres are organically farmed?	Acres	-	-	-	-	-	-	115	123	123	5%	4%	4%

Survey Question	Units	OXD_CENTR Site Drainage Only						McGrath Lake Coastal Responsibility Area					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q17b: How many acres are conventionally farmed?	Acres	44	730	808	100%	85%	100%	1,980	2,795	2,667	95%	88%	96%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	9	163	131	20%	19%	16%	748	829	686	36%	26%	25%
Q19: Runoff from how many acres is treated or detained?	Acres	35	108	72	80%	13%	9%	788	846	777	38%	27%	28%

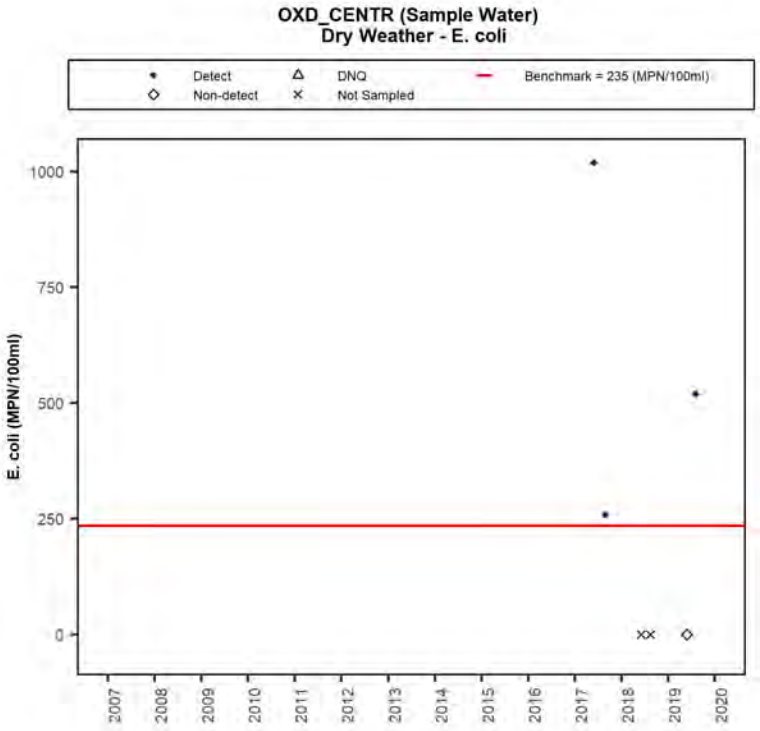

Figure 238. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site OXD_CENTR

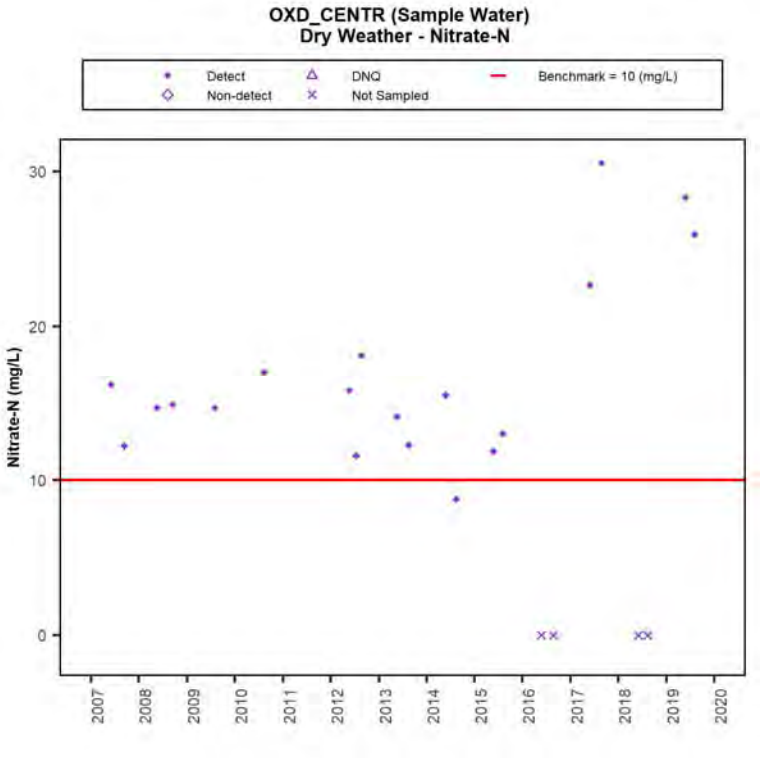

Figure 239. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site OXD_CENTR

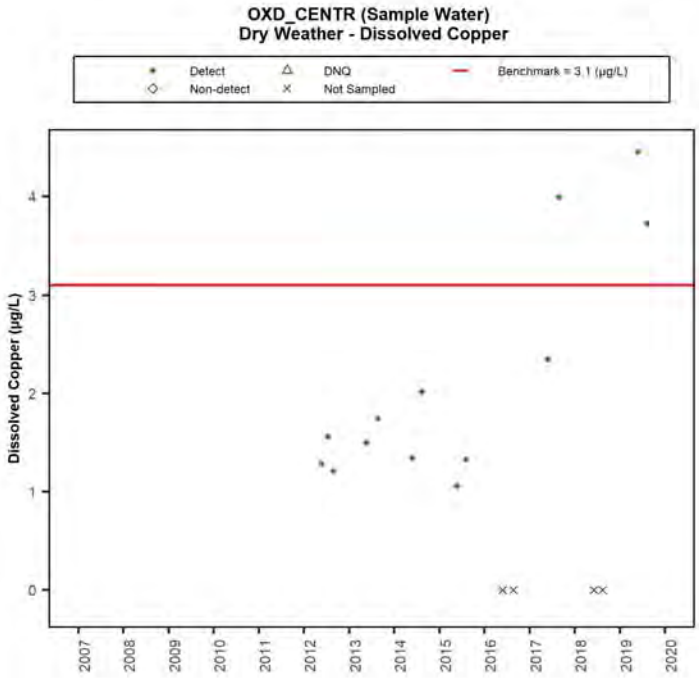

Figure 240. Dry Weather Dissolved Copper Concentrations at Waiver Benchmark Site OXD_CENTR

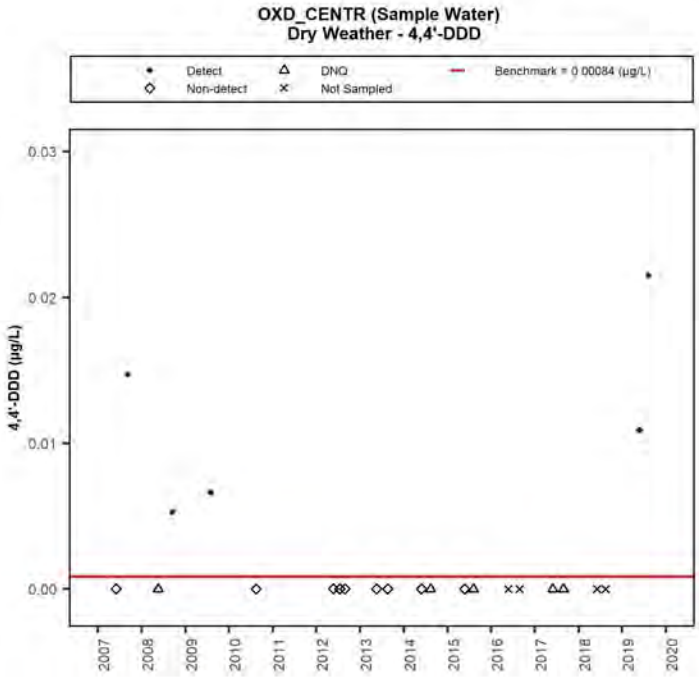

Figure 241. Dry Weather DDD Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

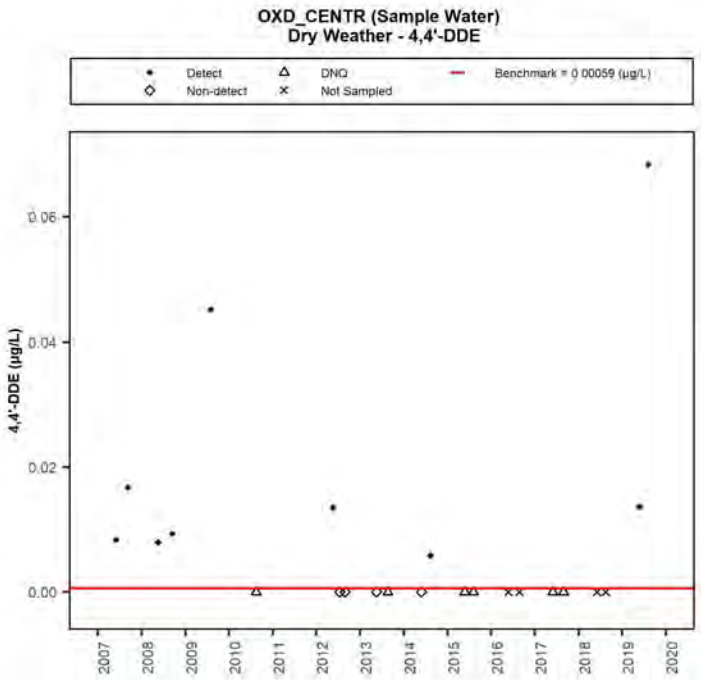

Figure 242. Dry Weather DDE Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

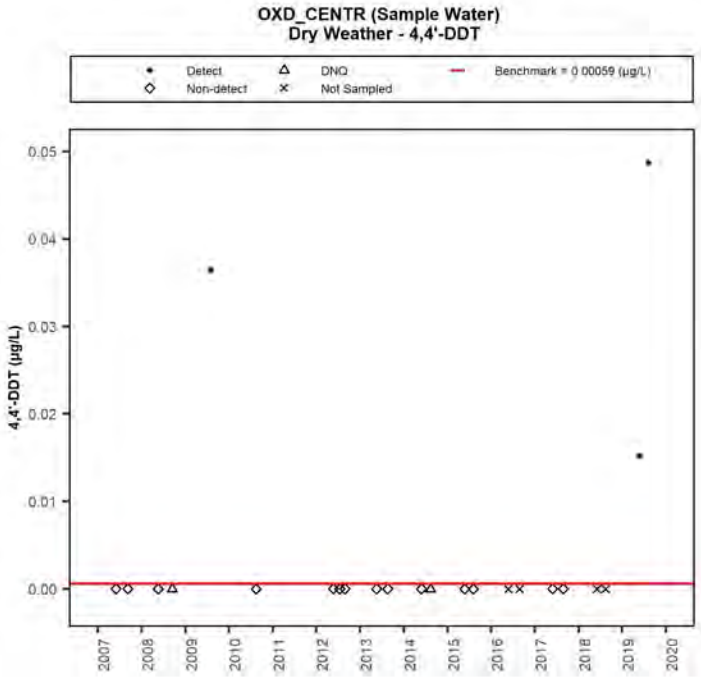

Figure 243. Dry Weather DDT Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

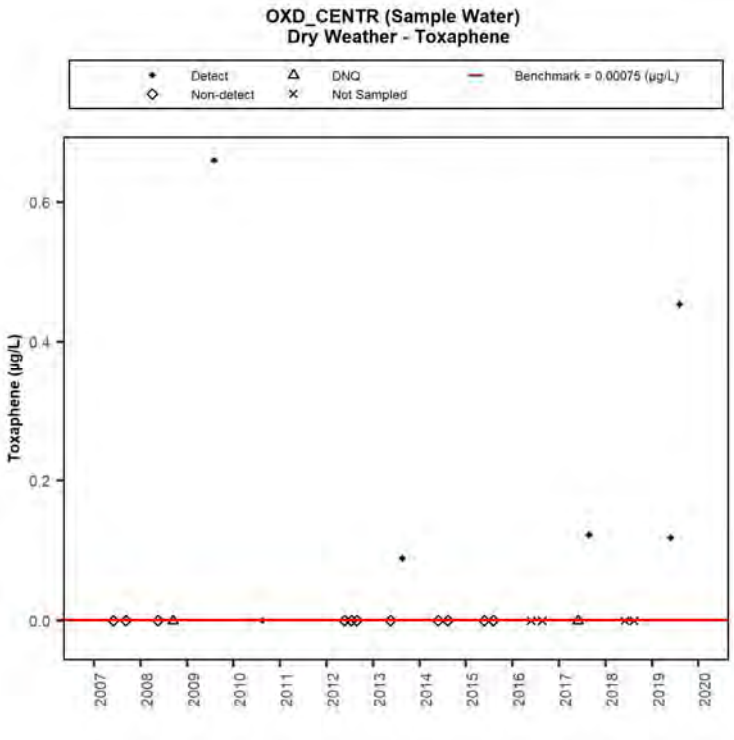

Figure 244. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site OXD_CENTR

Table 143. Dry Weather Survival Toxicity during the 2016 Waiver Period at Waiver Benchmark Site OXD_CENTR

Dry Weather Survival Toxicity - OXD_CENTR	
# of Events with Significant Mortality	1
# of Events with No Significant Mortality	1

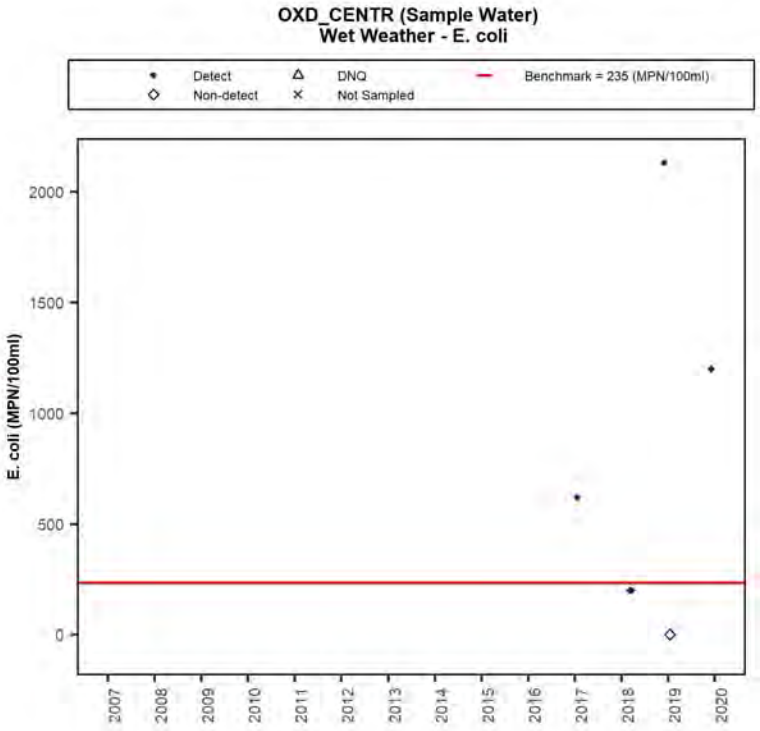

Figure 245. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site OXD_CENTR

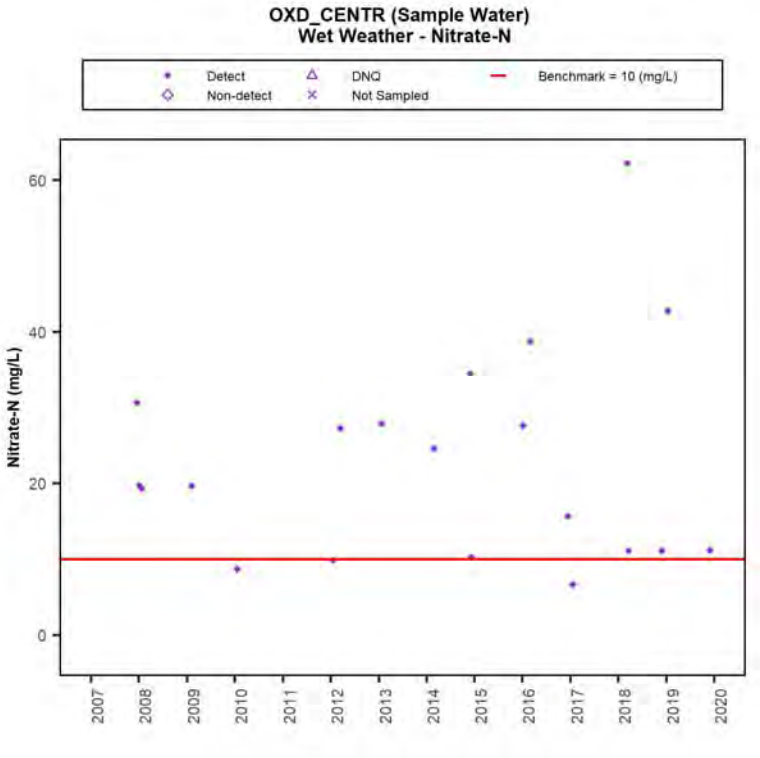

Figure 246. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site OXD_CENTR

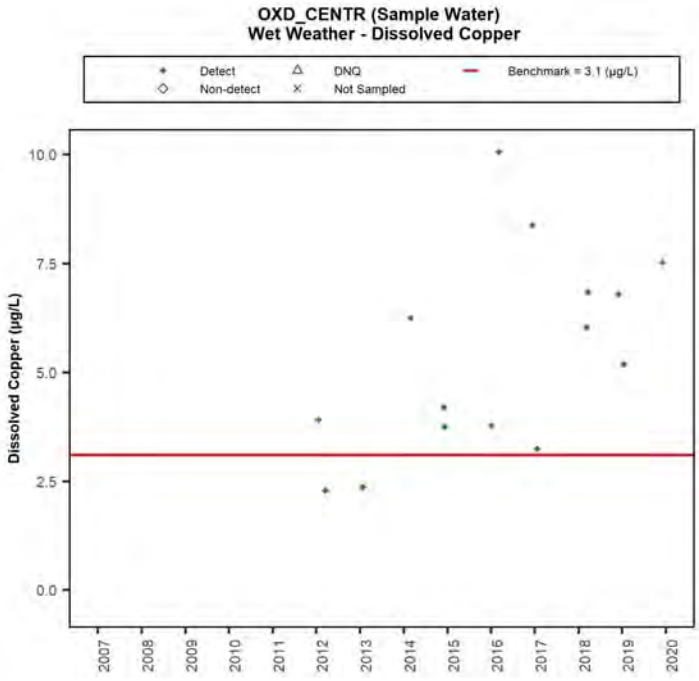

Figure 247. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site OXD_CENTR

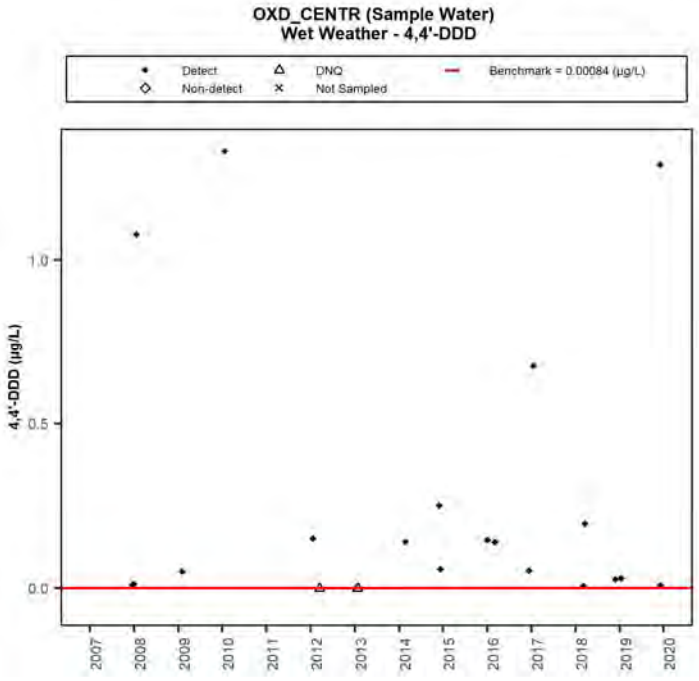

Figure 248. Wet Weather DDD Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

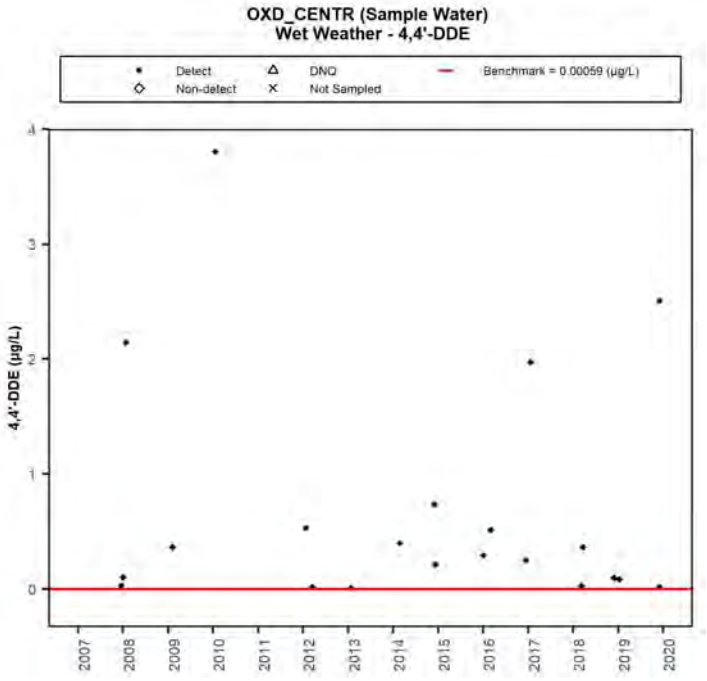

Figure 249. Wet Weather DDE Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

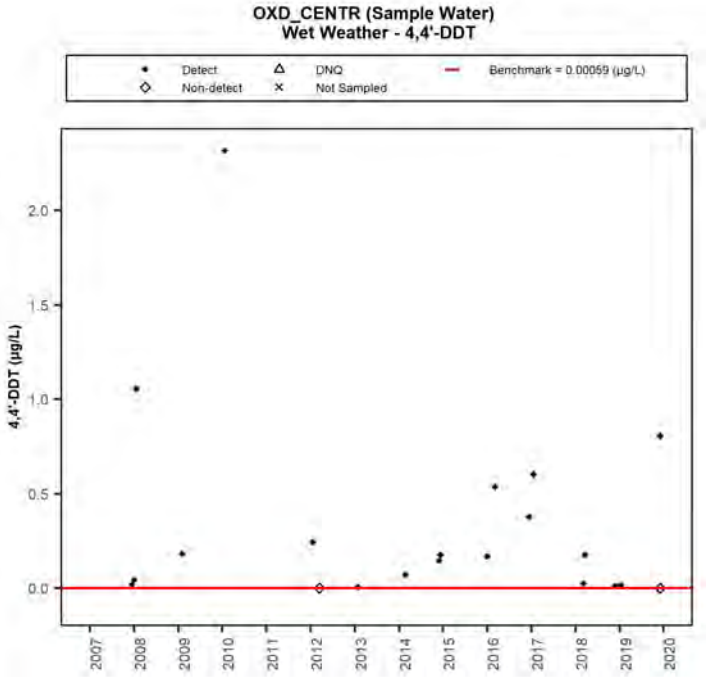

Figure 250. Wet Weather DDT Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

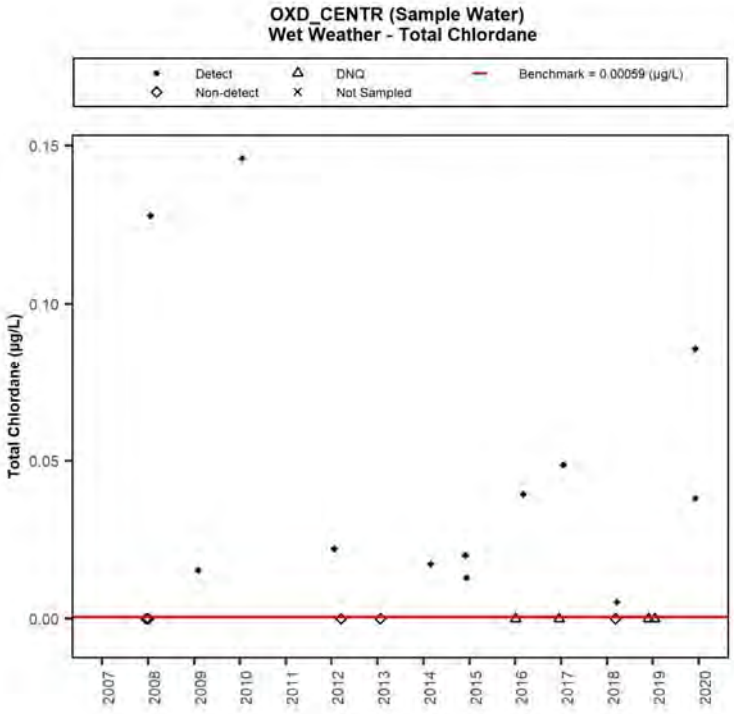

Figure 251. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

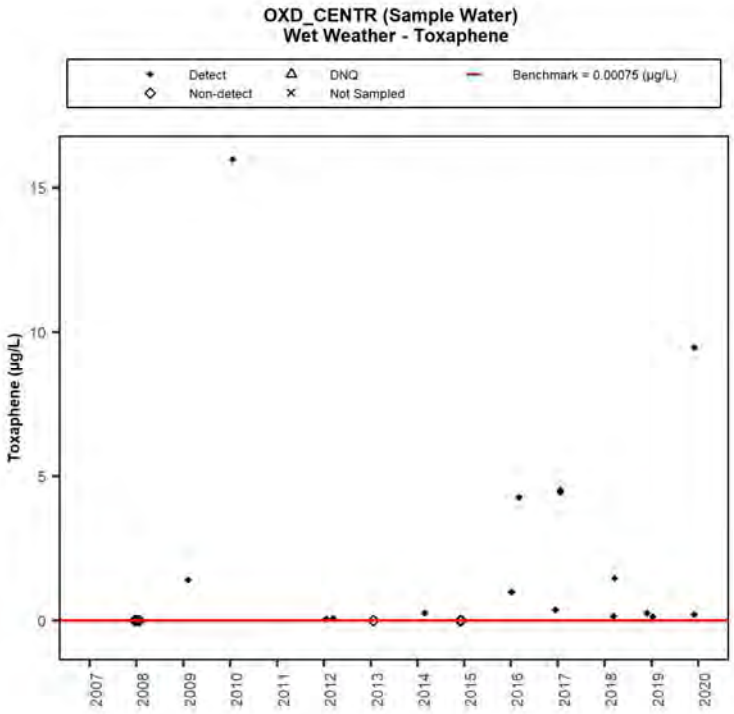

Figure 252. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site OXD_CENTR

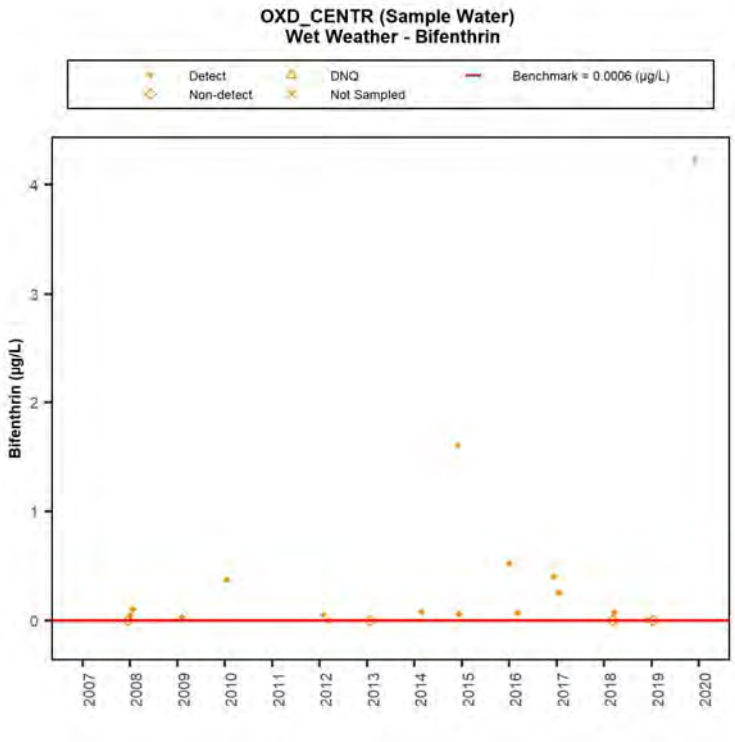

Figure 253. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site OXD_CENTR

Table 144. Wet Weather Survival Toxicity during the 2016 Waiver Period at Waiver Benchmark Site OXD_CENTR

Wet Weather Survival Toxicity - OXD_CENTR	
# of Events with Significant Mortality	3
# of Events with No Significant Mortality	0

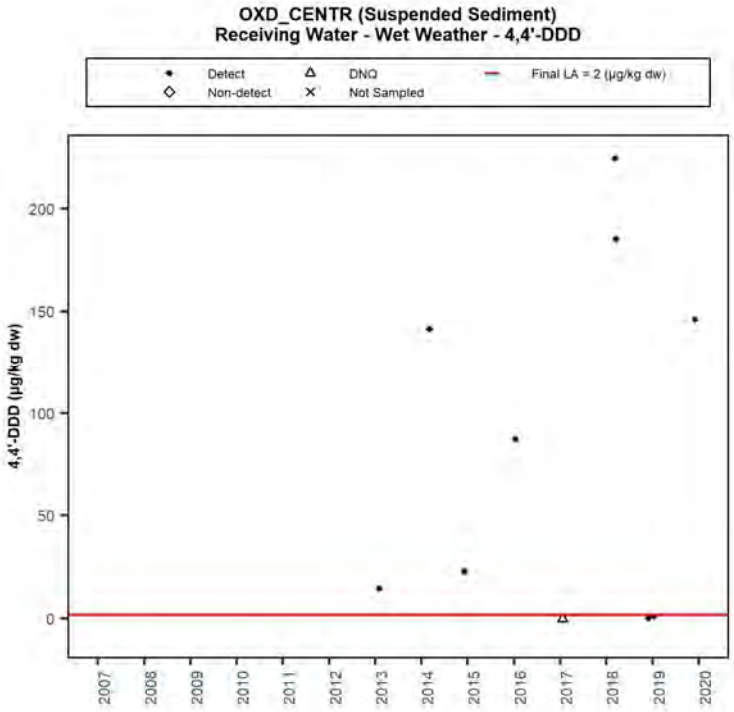

Figure 254. Wet Weather DDD Concentrations at TMDL LA Site OXD_CENTR

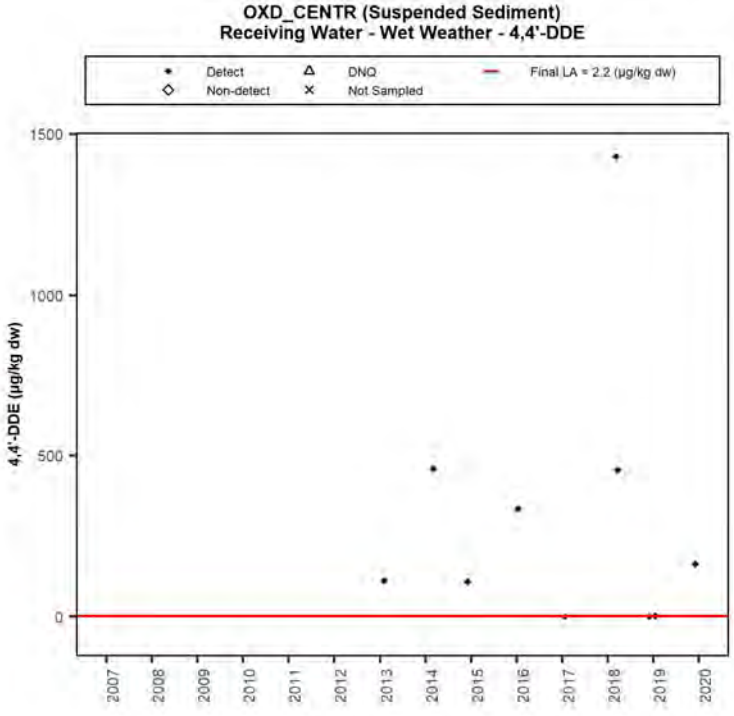

Figure 255. Wet Weather DDE Concentrations at TMDL LA Site OXD_CENTR

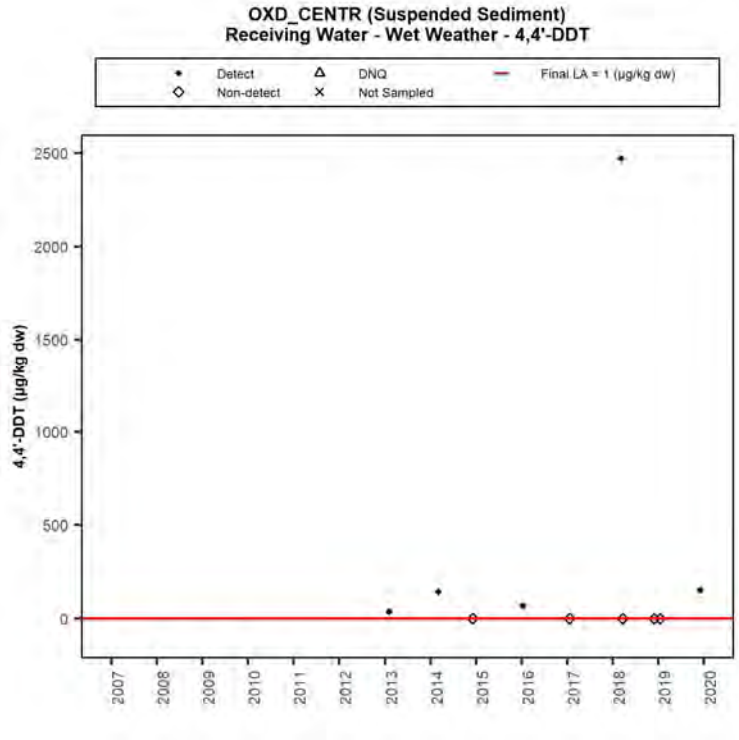

Figure 256. Wet Weather DDT Concentrations at TMDL LA Site OXD_CENTR

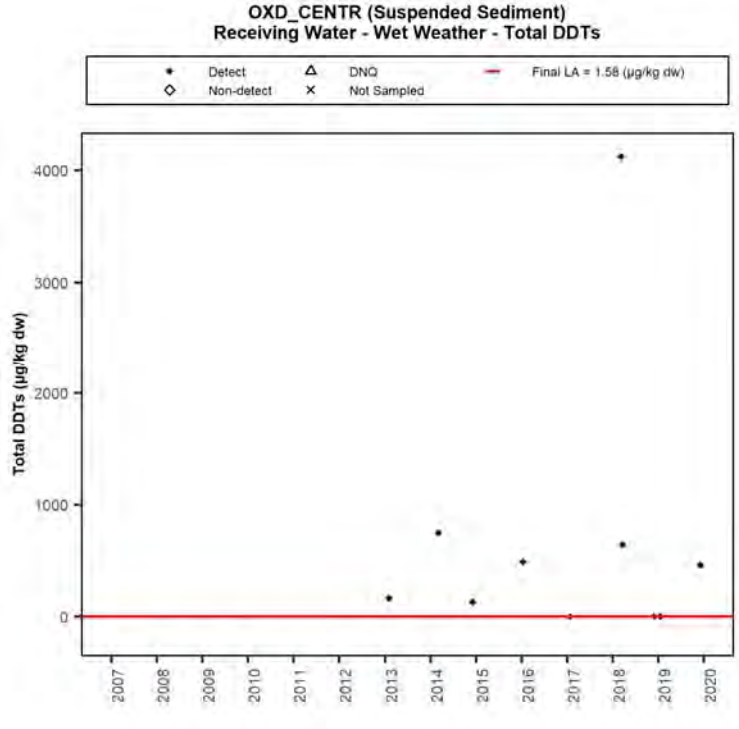

Figure 257. Wet Weather Total DDT Concentrations at TMDL LA Site OXD_CENTR

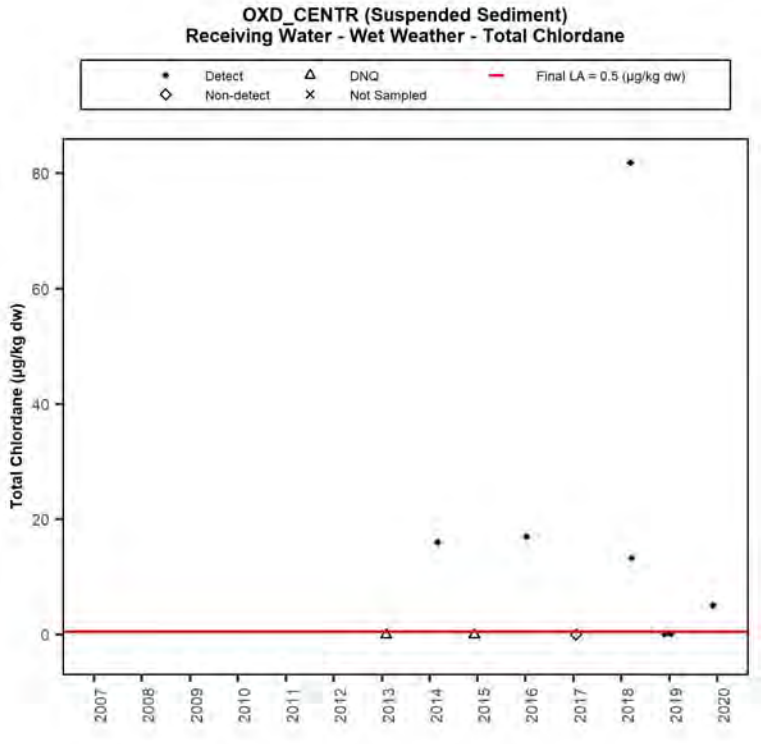

Figure 258. Wet Weather Total Chlordane Concentrations at TMDL LA Site OXD_CENTR

Table 145. Summary of Benchmark Exceedance Evaluation for McGrath Lake Coastal Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances [1]	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances [1, 3]	Review Implementation and Plan BMPs [4]
Bacteria						
E. coli	●		☑	●		☑
Nutrients						
Nitrate-N	●		☑	●		☑
Metals and Selenium						
Dissolved Copper	●		☑	●		☑
OC Pesticides (Legacy)						
DDD	●	● [2]	☑	●	● [2,5]	☑
DDE	●	● [2]	☑	●	● [2,5]	☑
DDT	●	● [2]	☑	●	● [2,6]	☑
Chlordane				●	● [2,5]	☑
Toxaphene	●		☑	●		☑
OP and Pyrethroid Pesticides (Current)						
Bifenthrin				●		☑
Chronic Toxicity						
Survival Toxicity	●		☑	●		☑

1. The monitoring site for Waiver benchmarks and TMDL LAs is site OXD_CENTR.
2. TMDL water column load allocations for this constituent are the same as the Conditional Waiver benchmarks.
3. The McGrath Lake PCBs, Pesticides and Sediment Toxicity TMDL includes LAs for suspended sediment as well as the water column.
4. TMDL LA exceedances coincide with Waiver benchmark exceedances, therefore recommendations for BMPs will apply to the entire responsibility area and separate considerations for the McGrath Lake TMDL responsibility area are not necessary.
5. Exceedance in both water column and suspended sediment.
6. Exceedance of 4,4'-DDT in water column, and Total DDT in suspended sediment.
7. Multiple species exceedances for *Hyalella azteca* and *Ceriodaphnia dubia*.

Table 146. BMPs for Additional Implementation in the McGrath Lake Coastal Responsibility Area

Exceedance Condition														
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity			% of Total Applicable Surveyed Units		
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet	Dry	Wet	Survey Responses	OXD_CENTR Site Drainage Only	McGrath Lake Coastal Responsibility Area	Additional Implementation of Pertinent BMP Needed?
		x	x	x	x	x	x	x	x	x	Crop management [a]	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	48%	63%	Yes
x		x		x		x			x		Irrigation system type [a]	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	87%	71%	Yes
		x		x		x			x		1 [a]	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	52%	76%	Yes
		x		x					x		2 [a]	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	58%	72%	Yes
		x							x		3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	56%	72%	Yes
		x	x						x	x	4b	Certified nutrient management plan has been prepared for the property	0%	19%	Yes
		x	x						x	x	5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	95%	89%	Yes
		x	x						x	x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	91%	82%	Yes
		x	x						x	x	7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	9%	43%	Yes
		x	x						x	x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	0%	74%	Yes
		x	x	x	x	x	x	x	x	x	10 [a]	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	N/A	97%	Yes
			x		x		x	x		x	11 [a]	How much non-cropped area is bare soil?	4%	7%	Yes
x	x	x	x	x	x	x	x	x	x	x	12b [a]	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	43%	26%	Yes
x	x	x	x	x	x	x	x	x	x	x	13a [a]	Grassed waterways are used	0%	9%	Yes
x	x	x	x	x	x	x	x	x	x	x	14 [a]	Vegetated filter strips are used	0%	7%	Yes
								x	x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	100%	No
								x	x	x	16	An integrated pest management plan is implemented	56%	87%	Yes
x		x		x		x			x		18 [a]	How many acres produce irrigation runoff	16%	25%	Yes
x	x	x	x	x	x	x	x	x	x	x	19 [a]	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	9%	28%	Yes

[a] BMP with potential to reduce sediment runoff and improve irrigation efficiency for the McGrath Lake OC Pesticides and PCBs TMDL.

Table 147. Proposed Best Management Practices for the McGrath Lake Coastal Responsibility Area

Water Quality Issues											
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	Wet Weather	BMPs
											Source Control BMPs
		x	x	x	x	x	x	x	x	x	**Reduce bare soil in production area with cover crops, gravel, mulch, etc.**
x		x		x		x			x		**Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)**
		x		x		x			x		Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
		x		x					x		**Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration**
		x							x		Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
		x	x						x	x	Prepare a certified nutrient management plan for the property
		x	x						x	x	Conduct soil residual nitrate tests and use results to adjust fertilizer application
		x	x						x	x	Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
		x	x						x	x	Analyze irrigation water nitrate and use results to adjust fertilizer application
		x	x						x	x	Adjust fertilizer application to account for nutrients provided by cover crops

Water Quality Issues											BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather	Wet Weather	
		x	x	x	x	x	x	x	x	x	**Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)**
			x		x		x	x		x	**Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel**
								x	x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
				x	x			x	x	x	Implement an integrated pest management plan
x		x		x		x			x		**Avoid/prevent irrigation runoff**
											Structural Non-Treatment BMPs
x	x	x	x	x	x	x	x	x	x	x	**Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals**
x	x	x	x	x	x	x	x	x	x	x	**Use grassed waterways**
x	x	x	x	x	x	x	x	x	x	x	**Use vegetated filter strips**
											Optional Treatment BMPs
x	x	x	x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required by the Conditional Waiver to the degree appropriate for achieving compliance with the McGrath Lake OC Pesticides and PCBs TMDL.

Malibu Responsibility Area

Figure 259. Malibu Responsibility Area Map

The Malibu responsibility area is illustrated in Figure 259. The VCAILG monitoring site 05T_HONDO also serves as a proxy TMDL assessment site for the Malibu Creek Watershed Sedimentation and Nutrients TMDLs.

Table 148. Malibu Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Responsibility Area [a]	Drainage Area of 05T_HONDO Monitoring Site [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	310	2,660
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [b]	27	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	79	2,660
Assessed Acres from Agricultural Parcel List belonging to Non Members	231	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	29	1,619
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.37	0.61
Estimated Irrigated Acres in Non Member Agricultural Parcels [c]	85	0
Total Estimated Irrigated Acres (Member plus Non Member)	114	1,619
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	25%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	14	1,611
Percent of Total Estimated Irrigated Acres that were Surveyed	12%	100%
Percent of VCAILG Member Irrigated Acres that were Surveyed	48%	100%

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.
[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 149. Malibu Responsibility Area Crop Types and General Production Practices

Crop or Practice	05T_HONDO Site Drainage Only						Malibu Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Crop Type												
Strawberries	-	-	-	-	-	-	-	-	-	-	-	-
Blueberries	-*	-	-	-*	-	-	-*	-	-	-*	-	-
Raspberries		19	-		1%	-		-	-		-	-
Row Crop	10	57	5	1%	3%	0.3%	-	-	-	-	-	-
Orchard	1,447	1,551	1,591	99%	95%	99%	14	14	14	100%	100%	100%
Nursery	-	-	-	-	-	-	-	-	-	-	-	-
Flower	10	10	15	1%	1%	1%	-	-	-	-	-	-
Sod	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Overhead Cover in Production Areas												
Hoop House	96	23	10	7%	1%	0.6%	-	-	-	-	-	-
No Cover	85	63	10	6%	4%	0.6%	-	-	-	-	-	-
Greenhouse	-	-	-	-	-	-	-	-	-	-	-	-
Shade	20	-	-	1%	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas												
Bare Soil	80	231	202	5%	14%	13%	14	14	14	100%	100%	100%
Cover Crop	103	103	101	7%	6%	6%	-	-	-	-	-	-
Plastic	-	-	-	-	-	-	-	-	-	-	-	-
Weed Cloth	-	-	-	-	-	-	-	-	-	-	-	-
Mulch	1,288	1,307	1,342	88%	80%	83%	-	-	-	-	-	-
Gravel	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation Systems in Production Areas												
Drip Only	881	941	943	60%	57%	59%	14	14	14	100%	100%	100%
Microsprinkler/Drip	-	-	-	-	-	-	-	-	-	-	-	-
Microsprinkler	586	649	663	40%	40%	41%	-	-	-	-	-	-

Crop or Practice	05T_HONDO Site Drainage Only						Malibu Responsibility Area					
	Acres with Crop or Practice			% of Surveyed Acres			Acres with Crop or Practice			% of Surveyed Acres		
	2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Overhead Sprinkler	-	-	-	-	-	-	-	-	-	-	-	-
Overhead/Drip	-	47	5	-	3%	0.3%	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

* Value for 2017 is for Raspberries & Blueberries combined

Table 150. Malibu Responsibility Area Grower BMPs

Survey Question	Units	05T_HONDO Site Drainage Only						Malibu Responsibility Area [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Irrigation and Salinity Management													
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	1,382	1,544	1,464	94%	94%	91%	14	14	14	100%	100%	100%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	1,344	1,513	1,516	92%	92%	94%	-	-	-	-	-	-
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	43	210	151	3%	13%	10%	-	N/A	N/A	-	N/A	N/A
Nutrient Management													
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	1,389	1,567	1,571	95%	96%	98%	-	-	-	-	-	-
Q4b: Is it a Certified Nutrient Management Plan?	Acres	1,215	1,349	1,399	83%	82%	87%	-	-	-	-	-	-
Q5a: Are soil residual nitrate tests done?	Acres	1,279	1,456	1,481	87%	89%	92%	-	-	-	-	-	-
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	1,279	1,456	1,481	87%	89%	92%	-	-	-	-	-	-
Q6: Are leaf/petiole tests conducted?	Acres	1,394	1,498	1,534	95%	95%	95%	14	14	14	100%	100%	100%
Q7a: Is nitrate measured in fertigation water?	Acres	1,380	1,542	1,566	94%	94%	97%	-	-	-	-	-	-
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	1,360	1,522	1,546	93%	93%	96%	-	-	-	-	-	-
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	108	165	121	29%	39%	32%	-	N/A	N/A	-	N/A	N/A
Sediment Management													
Q9: How many cropped acres have a slope greater than 2%?	Acres	368	368	503	25%	22%	31%	14	14	14	100%	100%	100%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	519	519	486	100% [b]	100% [b]	97%	14	14	14	100%	100%	100%
Q11. How much non-cropped area is bare soil?	Acres	277	227	354	19%	25%	35%	13	13	13	94%	100%	100%
Q12a: How many feet of ditches exist?	Feet	42,143	42,143	42,867	N/A	N/A	N/A	50	50	50	N/A	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	29,110	29,110	31,334	69%	69%	73%	50	50	50	100%	100%	100%
Q13a: Are grassed waterways present?	Acres	93	93	93	6%	6%	6%	-	-	-	-	-	-
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	-	-	-	-	-	-
Q14: How many acres are treated by vegetated filter strips?	Acres	99	99	97	7%	6%	6%	-	-	-	-	-	-
Pest Management													
Q15: Are PCAs used for pesticide management decisions?	Acres	1,447	1,617	1,591	99%	99%	99%	-	-	-	-	-	-
Q16: Is an IPM Plan being implemented?	Acres	1,447	1,617	1,591	99%	99%	99%	-	-	-	-	-	-
Q17a: How many acres are organically farmed?	Acres	-	47	4	-	1%	0.2%	-	-	-	-	-	-

Survey Question	Units	05T_HONDO Site Drainage Only						Malibu Responsibility Area [a]					
		Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units			Surveyed Units Meeting Criterion			% of Total Applicable Surveyed Units		
		2017	2018	2020	2017	2018	2020	2017	2018	2020	2017	2018	2020
Q17b: How many acres are conventionally farmed?	Acres	1,467	1,531	1,607	100%	94%	100%	14	14	14	100%	100%	100%
Runoff Management/Treatment													
Q18: How many acres produce irrigation runoff?	Acres	-	-	4	-	-	0.2%	-	-	-	-	-	-
Q19: Runoff from how many acres is treated or detained?	Acres	156	156	154	11%	10%	10%	-	-	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Respondents' answers to Q9 and Q10 led to an illogical adoption rate >100%. 100% is reported in the table as a reasonable interpretation.

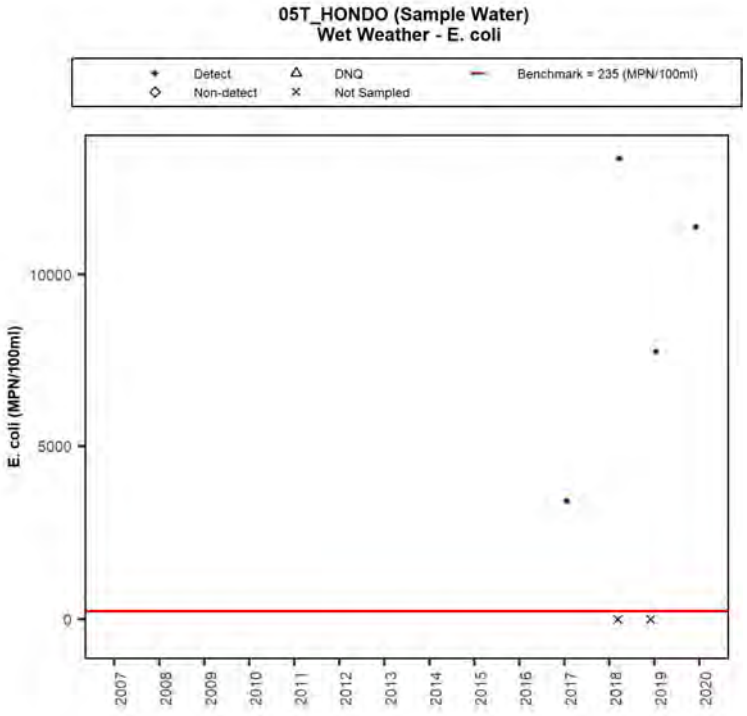

Figure 260. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 05T_HONDO

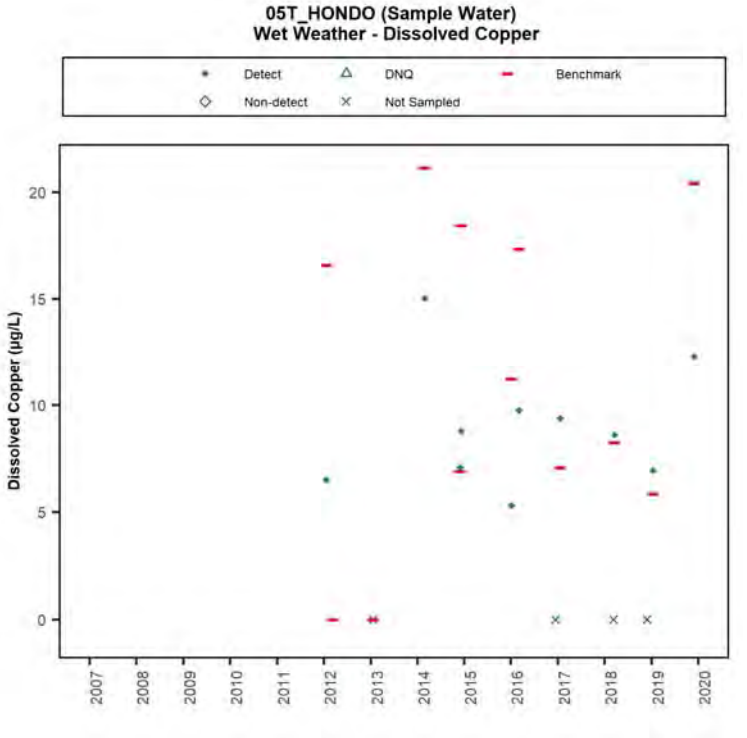

Figure 261. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 05T_HONDO

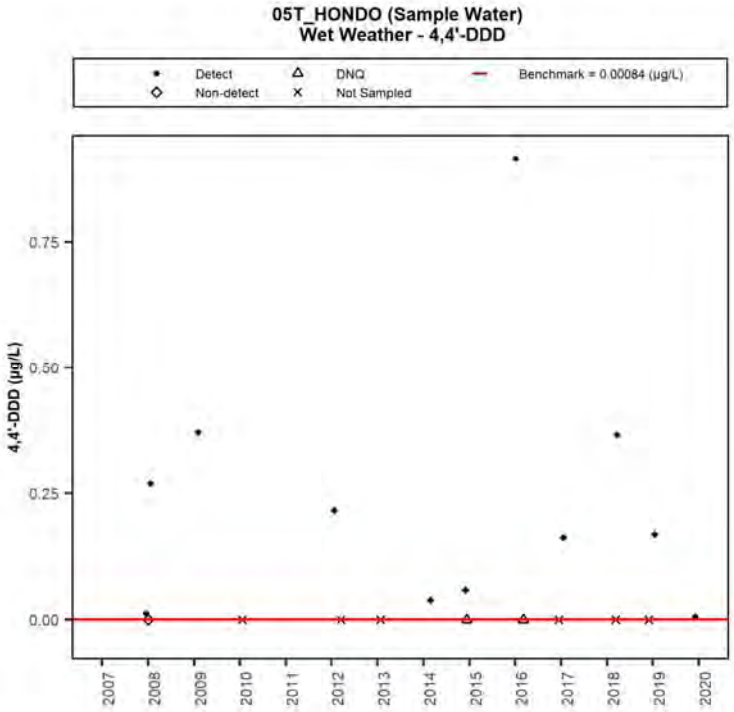

Figure 262. Wet Weather DDD Concentrations at Waiver Benchmark Site 05T_HONDO

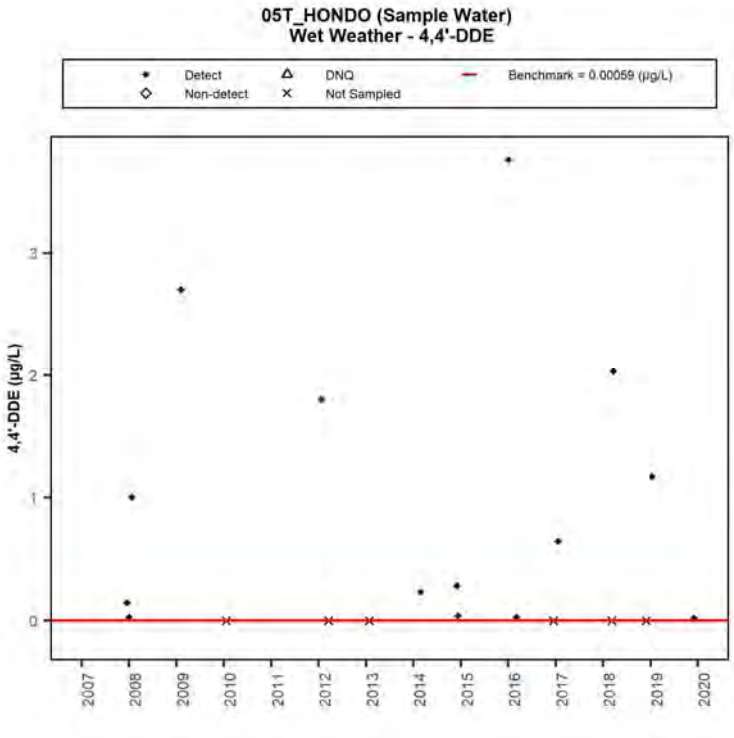

Figure 263. Wet Weather DDE Concentrations at Waiver Benchmark Site 05T_HONDO

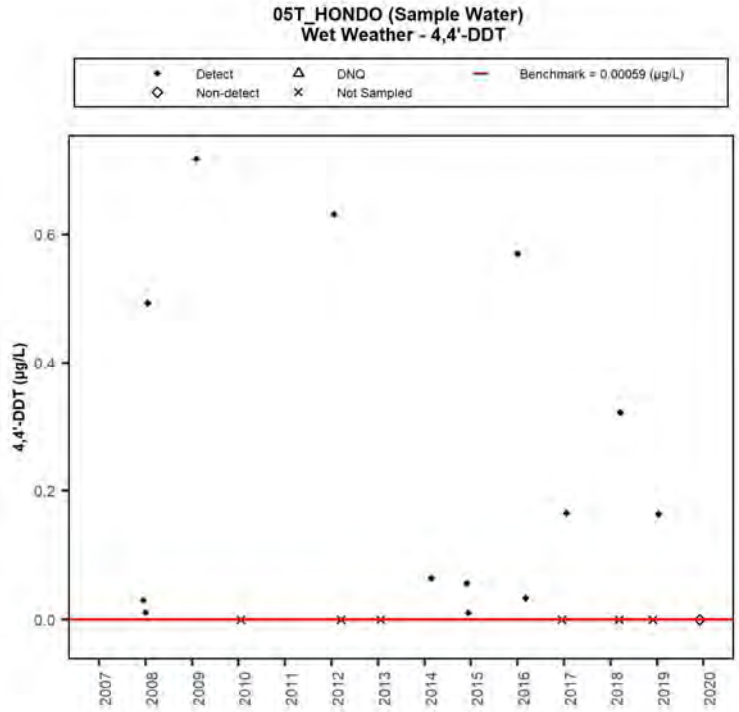

Figure 264. Wet Weather DDT Concentrations at Waiver Benchmark Site 05T_HONDO

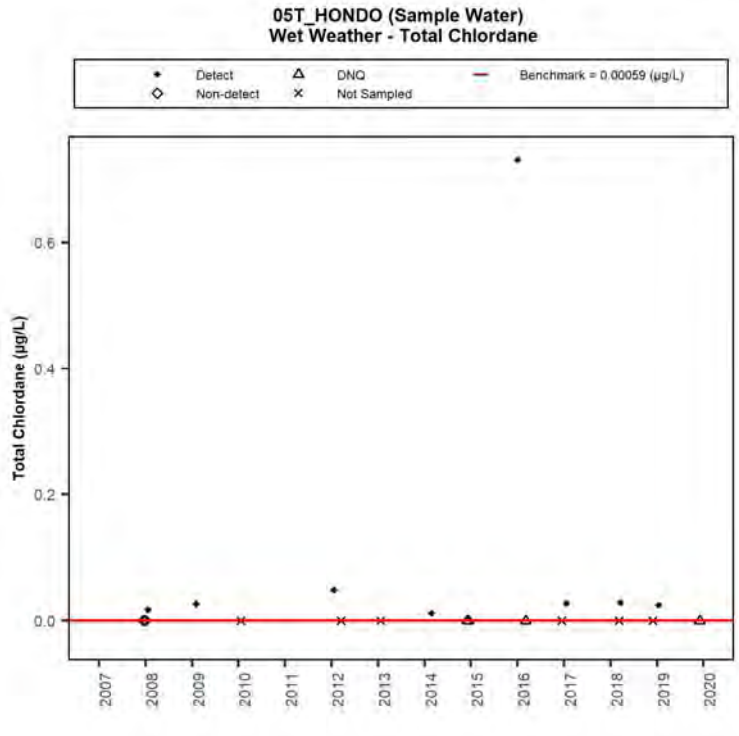

Figure 265. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 05T_HONDO

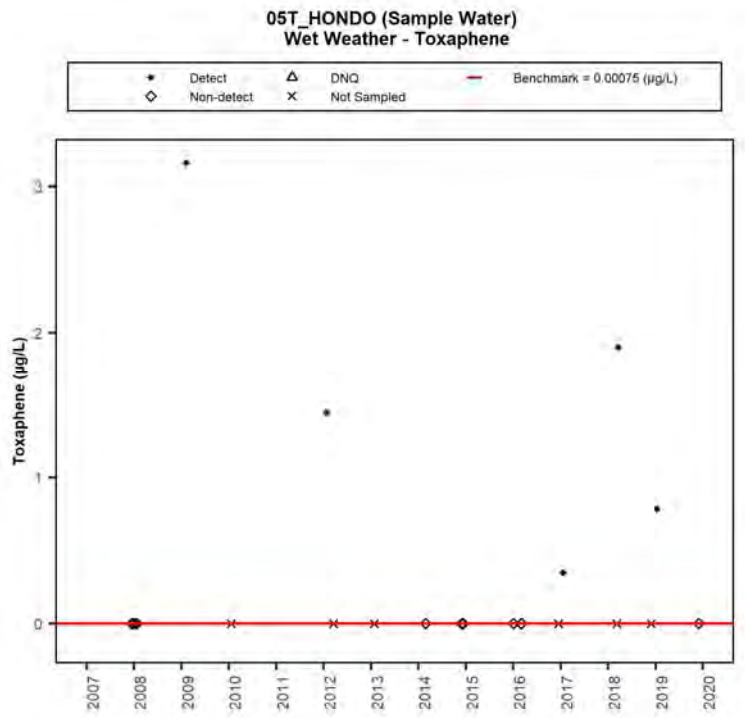

Figure 266. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 05T_HONDO

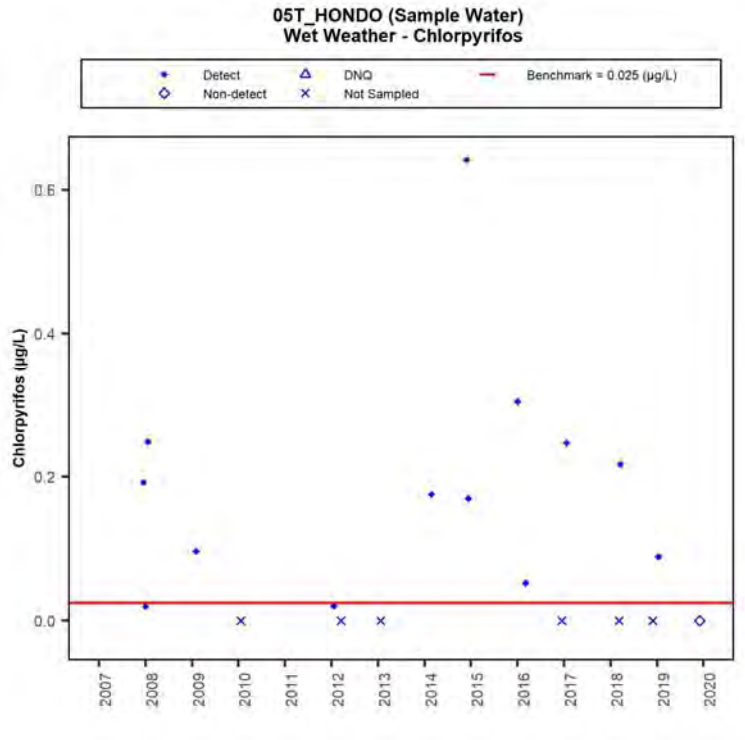

Figure 267. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 05T_HONDO

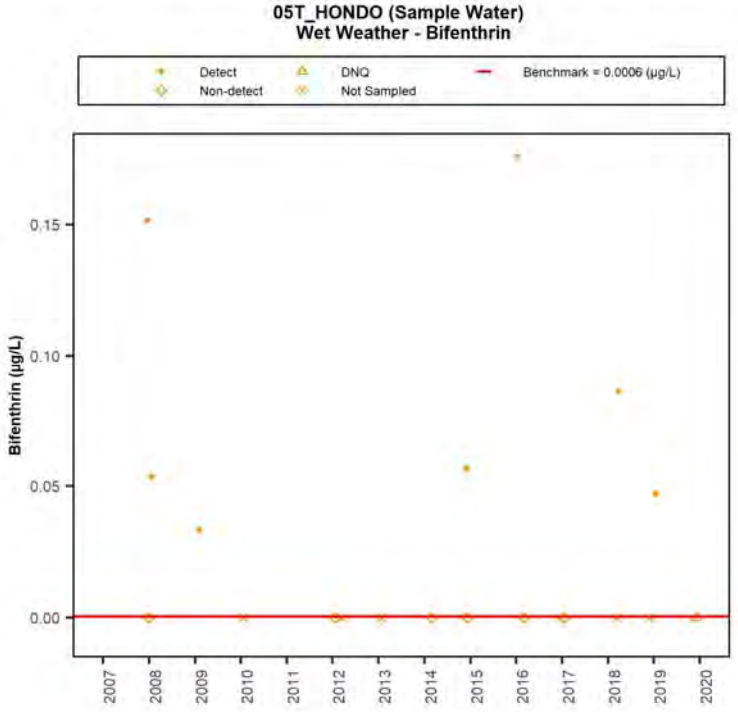

Figure 268. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 05T_HONDO

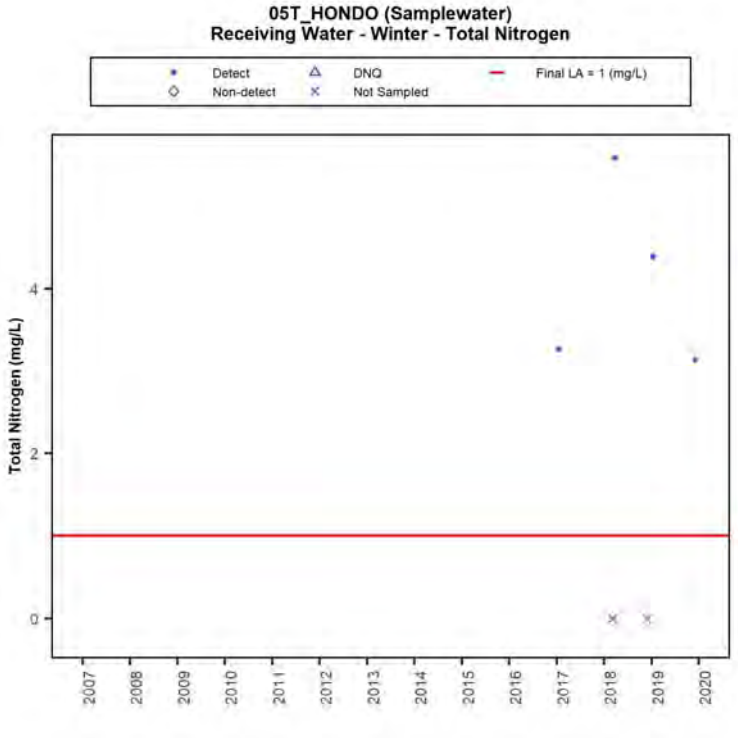

Figure 269. Winter Season Total Nitrogen Concentrations at TMDL Proxy Site 05T_HONDO

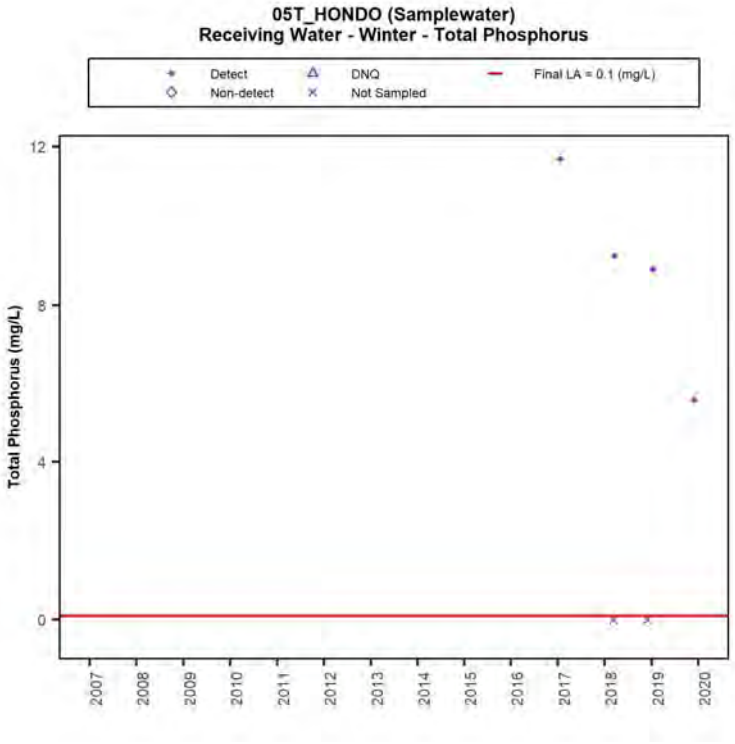

Figure 270. Winter Season Total Phosphorus Concentrations at TMDL Proxy Site 05T_HONDO

Table 151. Summary of Benchmark Exceedance Evaluation for Malibu Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances [1]	TMDL LA Site Exceedances [2]	Review Implementation and Plan BMPs
Bacteria						
E. coli				●		☑
Nutrients						
Total Nitrogen					●	☑
Total Phosphorus					●	☑
Metals and Selenium						
Dissolved Copper				●		☑
OC Pesticides (Legacy)						
DDD				●		☑
DDE				●		☑
DDT				●		☑
Chlordane				●		☑
Toxaphene				●		☑
OP and Pyrethroid Pesticides (Current)						
Chlorpyrifos				●		☑
Bifenthrin				●		☑

1. VCAILG monitoring site for Waiver benchmarks is 05T_HONDO.
2. TMDL proxy monitoring site for the Malibu Creek and Lagoon TMDLs for Sedimentation and Nutrients to Address Benthic Community Impairments and Malibu Creek Watershed Nutrients TMDL is 05T_HONDO. Exceedances are for winter season.

Table 152. BMPs for Additional Implementation in the Malibu Responsibility Area

Exceedance Condition							% of Total Applicable Surveyed Units		
Bacteria	Nutrients	Metals	Legacy Pesticides	Current Pesticides					
Wet	Wet	Wet	Wet	Wet		Survey Responses	05T_HONDO Site Drainage [a]	Malibu Responsibility Area [a]	Additional Implementation of Pertinent BMP Needed? [b]
	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	90%	0%	Yes
	x				4b	Certified nutrient management plan has been prepared for the property	87%	0%	Yes
	x				5b	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	92%	0%	Yes
	x				6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	95%	100%	No
	x				7b	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	96%	0%	Yes
	x				8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	32%	N/A	No
	x	x	x	x	10	Erosion on sloped areas is minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	97%	100%	No
	x	x	x	x	11	How much non-cropped area is bare soil?	35%	100%	Yes
x	x	x	x	x	12b	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	73%	100%	No
x	x	x	x	x	13a	Grassed waterways are used	6%	0%	Yes
x	x	x	x	x	14	Vegetated filter strips are used	6%	0%	Yes
				x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	99%	0%	Yes
				x	16	An integrated pest management plan is implemented	99%	0%	Yes
x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	10%	0%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.
[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area.

Table 153. Proposed Best Management Practices for the Malibu Responsibility Area

Water Quality Issues					
Bacteria	Nutrients	Metals	Legacy Pesticides	Current Use Pesticides	
Wet Weather	Wet Weather	Wet Weather	Wet Weather	Wet Weather	BMPs
					Source Control BMPs
	x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x				Prepare a certified nutrient management plan for the property
	x				Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x				Analyze irrigation water nitrate and use results to adjust fertilizer application
	x				Adjust fertilizer application to account for nutrients provided by cover crops
	x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
	x	x	x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
				x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
				x	Implement an integrated pest management plan
					Structural Non-Treatment BMPs
x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	Use grassed waterways
x	x	x	x	x	Use vegetated filter strips
					Optional Treatment BMPs
x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

PESTICIDE USE EVALUATION

In 1990, California became the first state to require full reporting of agricultural pesticide use in response to demands for more realistic and comprehensive pesticide use data. Under the program, all agricultural pesticide use must be reported monthly to county agricultural commissioners, who in turn, report the data to the Department of Pesticide Regulation (DPR). California has a broad legal definition of "agricultural use" so the reporting requirements include pesticide applications to parks, golf courses, cemeteries, rangeland, pastures, and along roadside and railroad rights-of-way. In addition, all post harvest pesticide treatments of agricultural commodities must be reported along with all pesticide treatments in poultry and fish production as well as some livestock applications. Only agricultural applications, as noted by specific commodity treated, are summarized in this document.

Section 2)a)iv. of Appendix 3 of the Conditional Waiver requires "a pesticide use evaluation assessment, including the timing of pesticide applications, the application rates, the amounts of pesticides applied, and the points of application". In addition, Section 2)a)iv. requires a comparison of changes in pesticide concentrations at specific monitoring sites to pesticide use patterns for land areas draining to the monitoring site (i.e., a monitoring site's drainage area). To accomplish this, pesticide use records obtained from the Ventura County Agricultural Commissioner's office[8] were compared to VCAILG monitoring data. The timeframe for the analysis is June 4, 2018 – June 30, 2020, which begins where the first WQMP pesticide use evaluation ended.

The evaluation included diazinon, chlorpyrifos, and bifenthrin since those are the three presently permitted pesticides with water quality benchmarks under the Conditional Waiver. To conduct the comparison between the pesticide use records and the VCAILG monitoring data, pesticide application locations had to be linked to the appropriate monitoring site drainage, as not all pesticide applications within Ventura County occurred within a VCAILG monitoring site drainage area.

Additional manipulation of the pesticide use data included multiplying the percent concentration of the active ingredient (i.e., the percent of diazinon, chlorpyrifos, of bifenthrin within the specific product used) by the total volume or weight of the specific product applied. Depending on the product formulation, the calculated amount of pesticide used was either in gallons or pounds of active ingredient. The dates and amounts of pesticides applied were then compared to the VCAILG monitoring data and benchmark exceedances. Table 154 to Table 156 include June 4, 2018 – June 30, 2020 chlorpyrifos, diazinon, and bifenthrin application information by crop type as well as a comparison to water quality data from associated VCAILG monitoring sites.

Chlorpyrifos

For agricultural application, chlorpyrifos is the active ingredient in several products including Lorsban, Dursban, Nufos, and Warhawk. Use of chlorpyrifos is common on lemons, oranges, and onions in Ventura County. Chlorpyrifos was applied within the drainage areas of 3 of 15 VCAILG monitoring sites during the analysis timeframe. Chlorpyrifos was applied within

[8] All effort was made to obtain the most up-to-day pesticide use information from the Ventura County Agricultural Commissioner's office. However, if paper pesticide use reports had been submitted within a few months of the data request, those reports may not have been reflected in the data obtained due to the information required to be entered manually, which delays the addition of the data to the database.

drainage areas 21 times. There were 5 instances of exceedances at the 3 monitoring sites where chlorpyrifos was applied within the drainage area; all during wet weather. There were 5 additional exceedances at monitoring sites that did not have agricultural applications of chlorpyrifos within the drainage area, all during wet weather with the exception of one dry weather exceedance. The following factors may contribute to the likelihood that chlorpyrifos is transported off-site: pesticide formulation and application method, date of application in relation to subsequent rain events, and proximity to a drainage channel, stream, or tributary. On October 9, 2019, the California Department of Pesticide Regulation announced the end of practically all agricultural uses of chlorpyrifos by December 31, 2020. Water quality benchmark exceedances due to chlorpyrifos are anticipated to decline and cease following the usage ban.

Diazinon

No diazinon applications occurred at VCAILG monitoring site drainage areas during the reporting period; however, there was one wet weather exceedance of the water quality benchmark at a monitoring site.

Bifenthrin

Bifenthrin was applied within the drainage areas of 6 of 15 VCAILG monitoring sites during the analysis timeframe. Bifenthrin was applied within those six site drainage areas 108 times. There were 18 instances of exceedances at the 6 monitoring sites where bifenthrin was applied within the drainage area; all during wet weather with the exception of two dry weather exceedances. There were exceedances of bifenthrin in 6 drainages where it was not applied. In these drainages, there were 11 wet weather exceedances and 3 dry weather exceedances.

Summary

Based on the results of the analysis that compared water quality data from the VCAILG sites and the agricultural pesticide use within the associated site drainage areas, it is difficult to discern any patterns between water quality benchmark exceedances and agricultural pesticide use. While the VCAILG monitoring sites' drainage areas aim to include predominantly agricultural land use, none of the drainage areas are completely comprised of agricultural land use. Applications of pesticides often occur outside the agricultural land use areas and are not reflected in the pesticide use records used for the analysis. In addition, pesticide use is variable and performed in response to a variety of factors such as pest pressures, sudden outbreaks of latent diseases and/or pathogens, cropping patterns, variation in neighboring crops that may have incompatible maximum residue limits, etc. Also, the use of a specific pesticide on a particular crop varies from year to year. To mitigate this variability and the changing landscape of pesticide use, all pesticide use decisions are based on farmer and pest control advisor (PCA) expertise, and applied under the authority of the local Agricultural Commissioner's office and the DPR. Additionally, all pesticide-applicable BMPs are included in the suite of BMPs identified in the WQMP when triggered by exceedances of the pesticide benchmarks. In this WQMP, structural non-treatment BMPs are prioritized in the farmer outreach handouts for implementation to address these wet weather current use pesticides exceedances.

Table 154. Chlorpyrifos[1] Applications and Benchmark Exceedances by Monitoring Site, June 4, 2018 – June 30, 2020

	Site Application Information				Site Exceedance Information				
Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
04D_LAS	6/20/2018	Radish	--	3.8	N/A	N/A	0.025	N/A	1,339
04D_LAS	6/27/2018	Radish	--	3.8	N/A	N/A	0.025	N/A	1,339
04D_LAS	7/2/2018	Radish	--	3.8	N/A	N/A	0.025	N/A	1,339
04D_LAS	7/10/2018	Radish	--	3.8	N/A	N/A	0.025	N/A	1,339
04D_LAS	7/17/2018	Radish	--	3.8	N/A	N/A	0.025	N/A	1,339
04D_LAS	7/25/2018	Radish	--	3.8	N/A	N/A	0.025	N/A	1,339
04D_LAS	7/30/2018	Radish	--	3.8	N/A	N/A	0.025	N/A	1,339
04D_LAS	8/18/2018	Radish	--	4.5	N/A	N/A	0.025	N/A	1,339
04D_LAS	8/25/2018	Radish	--	4.5	N/A	N/A	0.025	N/A	1,339
04D_LAS	4/5/2019	Radish	--	5.3	N/A	N/A	0.025	N/A	1,339
04D_LAS	5/14/2019	Radish	--	6.0	N/A	N/A	0.025	N/A	1,339
04D_LAS	5/27/2019	Radish	--	9.0	N/A	N/A	0.025	N/A	1,339
04D_LAS	7/1/2019	Radish	--	7.5	N/A	N/A	0.025	N/A	1,339
04D_LAS	7/20/2019	Radish	--	7.5	N/A	N/A	0.025	N/A	1,339
04D_LAS	8/23/2019	Radish	--	4.5	N/A	N/A	0.025	N/A	1,339
04D_LAS	11/29/2019	Radish	--	6.1	N/A	N/A	0.025	N/A	1,339
04D_LAS	11/29/2019	Radish	--	6.1	N/A	N/A	0.025	N/A	1,339
04D_ETTG	N/A	N/A	N/A	N/A	11/29/2018	Wet	0.025	0.440	3,309
05D_LAVD	10/31/2018	Lemon	1.8	--	11/29/2018	Wet	0.025	0.386	877
05D_LAVD	11/11/2018	Lemon	3.6	--	1/15/2019	Wet	0.025	0.187	877
05D_LAVD	11/11/2018	Lemon	27.4	--	12/4/2019	Wet	0.025	0.249	877
05D_LAVD	N/A	N/A	N/A	N/A	3/17/2020	Wet	0.025	0.031	877
05T_HONDO	8/25/2018	Lemon	7.0	--	1/15/2019	Wet	0.025	0.089	3,928
S02T_ELLS	N/A	N/A	N/A	N/A	12/4/2019	Wet	0.025	0.027	9,015
S02T_TODD	N/A	N/A	N/A	N/A	11/29/2018	Wet	0.025	0.030	5,748
S03D_BARDS	N/A	N/A	N/A	N/A	5/28/2019	Dry	0.025	0.866	2,214
S03D_BARDS	N/A	N/A	N/A	N/A	12/4/2019	Wet	0.025	0.038	2,214

1. There were exceedances at monitoring sites where chrlopyrifos was applied within the associated drainage area and exceedances at monitoring sites without chlorpyrifos applications within the associated drainage area.

Table 155. Diazinon[1] Applications and Benchmark Exceedances by Monitoring Site, June 4, 2018 – June 30, 2020

Site Application Information					Site Exceedance Information				
Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
06T_LONG2	N/A	N/A	N/A	N/A	1/15/2018	Wet	0.1	0.2	2,183

1. There were exceedances at monitoring sites where no diazinon application occurred in the associated drainage area.

Table 156. Bifenthrin[1] Applications and Benchmark Exceedances by Monitoring Site, June 4, 2018 – June 30, 2020

Site Application Information					Site Exceedance Information				
Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
01T_ODD3_EDI	N/A	N/A	N/A	N/A	12/4/2019	Wet	0.0006	0.0104	643
01T_ODD3_EDI	N/A	N/A	N/A	N/A	3/17/2020	Wet	0.0006	0.0029	643
04D_ETTG	9/25/2018	Celery	0.3	--	11/29/2018	Wet	0.0006	0.0341	3,778
04D_ETTG	10/2/2018	Celery	0.0	--	1/15/2019	Wet	0.0006	0.0251	3,778
04D_ETTG	10/6/2018	Celery	0.1	--	12/4/2019	Wet	0.0006	0.1030	3,778
04D_ETTG	10/10/2018	Celery	0.2	--	3/17/2020	Wet	0.0006	0.0025	3,778
04D_ETTG	10/10/2018	Celery	0.3	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	10/26/2018	Celery	0.3	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	10/27/2018	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	11/2/2018	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	11/2/2018	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	11/6/2018	Celery	0.2	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	11/6/2018	Celery	0.3	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	11/7/2018	Celery	0.3	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	11/20/2018	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	11/28/2018	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	12/12/2018	Celery	0.3	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	12/12/2018	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778

Site Application Information						Site Exceedance Information			
Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
04D_ETTG	12/28/2018	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	12/28/2018	Celery	0.3	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/2/2019	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/5/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/5/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/5/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/8/2019	Celery	--	5.1	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/8/2019	Celery	--	2.0	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/13/2019	Celery	--	1.5	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/20/2019	Celery	0.2	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/24/2019	Celery	--	2.1	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/24/2019	Celery	--	1.6	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/25/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/25/2019	Celery	--	8.5	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/25/2019	Celery	--	2.9	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/30/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	1/30/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	2/8/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	2/19/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	2/22/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	2/22/2019	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	2/23/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	2/27/2019	Celery	--	10.7	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	2/27/2019	Celery	--	1.8	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/3/2019	Celery	0.3	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/3/2019	Celery	0.2	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/3/2019	Celery	--	1.9	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/5/2019	Celery	--	0.7	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/11/2019	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778

Site Application Information					Site Exceedance Information				
Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
04D_ETTG	3/12/2019	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/12/2019	Celery	0.2	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/12/2019	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/19/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/22/2019	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/25/2019	Cauliflower	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/25/2019	Celery	0.1	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	3/29/2019	Celery	0.2	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	4/5/2019	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	4/12/2019	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	4/12/2019	Celery	0.2	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	4/20/2019	Celery	0.0	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	4/27/2019	Celery	0.2	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	5/11/2019	Celery	0.2	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	5/25/2019	Celery	0.2	--	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	6/1/2019	Strawberry	--	2.8	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	6/1/2019	Strawberry	--	2.2	N/A	N/A	0.0006	N/A	3,778
04D_ETTG	6/29/2019	Strawberry	--	7.0	N/A	N/A	0.0006	N/A	3,778
04D_LAS	9/8/2018	Artichoke	--	1.9	12/4/2020	Wet	0.0006	0.0061	1,339
04D_LAS	9/29/2018	Artichoke	--	0.8	N/A	N/A	0.0006	N/A	1,339
04D_LAS	10/3/2018	Artichoke	--	4.7	N/A	N/A	0.0006	N/A	1,339
04D_LAS	10/13/2018	Celery	--	5.0	N/A	N/A	0.0006	N/A	1,339
04D_LAS	11/17/2018	Celery	--	5.0	N/A	N/A	0.0006	N/A	1,339
04D_LAS	9/27/2019	Artichoke	--	1.4	N/A	N/A	0.0006	N/A	1,339
04D_LAS	9/28/2019	Artichoke	--	2.2	N/A	N/A	0.0006	N/A	1,339
04D_LAS	9/28/2019	Artichoke	--	2.1	N/A	N/A	0.0006	N/A	1,339
05D_LAVD	6/9/2018	Tomato	0.1	--	11/29/2018	Wet	0.0006	0.0046	877
05D_LAVD	6/9/2018	Tomato	0.1	--	1/15/2019	Wet	0.0006	0.0898	877
05D_LAVD	6/30/2018	Tomato	0.0	--	12/4/2019	Wet	0.0006	0.0907	877

Site Application Information					Site Exceedance Information				
Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
05D_LAVD	6/30/2018	Tomato	0.1	--	3/17/2020	Wet	0.0006	0.0134	877
05D_LAVD	6/30/2018	Tomato	0.1	--	N/A	N/A	0.0006	N/A	877
05D_LAVD	6/30/2018	Tomato	0.1	--	N/A	N/A	0.0006	N/A	877
05D_LAVD	7/13/2018	Tomato	0.2	--	N/A	N/A	0.0006	N/A	877
05D_LAVD	7/13/2018	Tomato	0.2	--	N/A	N/A	0.0006	N/A	877
05D_LAVD	7/20/2018	Tomato	0.2	--	N/A	N/A	0.0006	N/A	877
05D_LAVD	7/25/2018	Tomato	0.2	--	N/A	N/A	0.0006	N/A	877
05D_LAVD	7/28/2018	Tomato	0.2	--	N/A	N/A	0.0006	N/A	877
05D_LAVD	7/28/2018	Tomato	0.1	--	N/A	N/A	0.0006	N/A	877
05T_HONDO	N/A	N/A	N/A	N/A	1/15/2019	Wet	0.0006	0.0470	3,928
OXD_CENTR	10/2/2018	Nursery/Greenhouse	0.0	--	11/29/2018	Wet	0.0006	0.0075	1,243
OXD_CENTR	10/8/2018	Brussel Sprout	0.5	--	8/7/2019	Wet	0.0006	0.0046	1,243
OXD_CENTR	10/22/2018	Brussel Sprout	0.4	--	12/4/2019	Wet	0.0006	4.2200	1,243
OXD_CENTR	11/12/2018	Brussel Sprout	0.1	--	3/17/2020	Wet	0.0006	0.0185	1,243
OXD_CENTR	11/12/2018	Brussel Sprout	0.4	--	6/2/2020	Dry	0.0006	0.0028	1,243
S02T_ELLS	N/A	N/A	N/A	N/A	11/29/2018	Wet	0.0006	0.0561	9,015
S02T_ELLS	N/A	N/A	N/A	N/A	1/15/2019	Wet	0.0006	0.0812	9,015
S02T_ELLS	N/A	N/A	N/A	N/A	5/28/2019	Dry	0.0006	0.0054	9,015
S02T_ELLS	N/A	N/A	N/A	N/A	8/7/2019	Dry	0.0006	0.0160	9,015
S02T_ELLS	N/A	N/A	N/A	N/A	12/4/2019	Wet	0.0006	0.0022	9,015
S02T_ELLS	N/A	N/A	N/A	N/A	3/17/2020	Wet	0.0006	0.0113	9,015
S02T_TODD	6/19/2019	Cabbage	0.0	--	11/29/2018	Wet	0.0006	0.1190	5,748
S02T_TODD	6/19/2019	Cabbage	0.1	--	1/15/2019	Wet	0.0006	0.0153	5,748
S02T_TODD	6/20/2019	Cabbage	0.1	--	8/7/2019	Dry	0.0006	0.0920	5,748
S02T_TODD	6/20/2019	Cabbage	0.1	--	N/A	N/A	0.0006	N/A	5,748
S02T_TODD	6/28/2019	Cabbage	0.1	--	N/A	N/A	0.0006	N/A	5,748
S02T_TODD	6/28/2019	Cabbage	0.2	--	N/A	N/A	0.0006	N/A	5,748
S03D_BARDS	N/A	N/A	N/A	N/A	11/29/2018	Wet	0.0006	0.0027	2,214

Site	Site Application Information				Site Exceedance Information				
	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
S03D_BARDS	N/A	N/A	N/A	N/A	5/28/2019	Dry	0.0006	0.0178	2,214
S03D_BARDS	N/A	N/A	N/A	N/A	12/4/2019	Wet	0.0006	0.0134	2,214
S03T_BOULD	6/9/2018	Nursery/Outdoor	0.1	--	12/4/2019	Wet	0.0006	0.0685	3,764
S03T_BOULD	6/11/2018	Nursery/Outdoor	0.1	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	6/12/2018	Nursery/Outdoor	0.1	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	6/13/2018	Nursery/Outdoor	0.1	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	6/14/2018	Nursery/Outdoor	0.1	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	6/15/2018	Nursery/Outdoor	0.1	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	6/16/2018	Nursery/Outdoor	0.1	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	6/18/2018	Nursery/Outdoor	0.1	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	8/21/2018	Nursery/Outdoor	0.0	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	10/8/2019	Nursery/Outdoor	0.0	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	10/10/2019	Nursery/Outdoor	0.0	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	10/14/2019	Nursery/Outdoor	0.0	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	10/22/2019	Nursery/Outdoor	0.0	--	N/A	N/A	0.0006	N/A	3,764
S03T_BOULD	10/29/2019	Nursery/Outdoor	0.0	--	N/A	N/A	0.0006	N/A	3,764
S03T_TIMB	N/A	N/A	N/A	N/A	3/17/2020	Wet	0.0006	0.0200	2,183
S04T_TAPO	N/A	N/A	N/A	N/A	12/4/2019	Wet	0.0006	0.0234	3,686

1. There were exceedances at monitoring sites where bifenthrin was applied within the associated drainage area and exceedances at monitoring sites without bifenthrin applications within the associated drainage area.

Schedule

In the previous section, an analysis of exceedances, associated BMPs and current adoption rates were used to assess whether additional implementation of specific BMPs is needed. TMDL-specific BMPs listed in the Conditional Waiver were also added, where appropriate. The following table provides target adoption rates for BMPs to be achieved by the end of the current Conditional Waiver in 2021. In the scheduling table, BMPs are referred to by three general categories:

- Source control and non-structural BMPs (captures all survey BMPs except question #'s 12, 13, 14, and 19 that can be considered applicable to the constituent category with benchmark exceedances identified in the previous section)
- Structural non- treatment BMPs (survey questions 12, 13, and 14, which can be summarized as ditch management and filter strips)
- Optional treatment BMPs (survey question 19, treatment or detention of runoff using any of the following: sediment traps, detention/retention basins, bioreactor, or constructed wetlands)

At this time all source control and other non-structural BMPs have not been fully implemented (using a 98% adoption rate for the drainage area and responsibility area, and taking into consideration that the survey responses cover 79% of the irrigated acres currently enrolled in VCAILG) for any of the responsibility areas. Therefore, structural/treatment management practices are not yet required per Appendix 3, Section 2.b.i. However, VCAILG I s taking a proactive approach with increased target adoption rates of structural non-treatment BMPs and by prioritizing these types of BMPs in the outreach handouts provided to VCAILG members. This category of structural BMPs includes ditch erosion protection, grassed waterways, and vegetated filter strips are being recommended for greater implementation due to the multiple categories of pollutants they can address and to promote a proactive approach to addressing the water quality issues that have been identified. Treatment and capture BMPS, as specified by survey question 19 will be implemented by the growers on a voluntary basis. These BMPs are listed as optional in the outreach handouts (Appendix F).

The management practice implementation goals have been updated for the remainder of the 2016 Waiver period. If needed, treatment BMPs will be planned later in the implementation schedule as needed to meet the benchmarks and to allow more time for planning; or sooner, if necessary, to achieve TMDL load allocations by the compliance deadline.

The first table below summarizes the exceedance categories requiring BMPs for each responsibility area along with the compliance date and adoption rates for source control and non-structural BMPs, followed by structural non-treatment BMPs. These are updated goals for implementation at the conclusion of the current Conditional Waiver term. The second table is specific for where nutrient management plans are required and similarly, includes the compliance date and target adoption rate.

Table 157. BMP Implementation Schedule for Each Responsibility Area

Responsibility Area	Constituent Category for Benchmark Exceedance(s)	Compliance Date	Target Adoption Rate for Source Control and Non-Structural BMPs in 2021	Target Adoption Rate for Structural Non-Treatment BMPs in 2021 [1]
Mugu Lagoon	Nutrients	October 2025	90%	65%
	Metals	March 2022	90%	65%
	Legacy Pesticides	April 2026	90%	65%
	Current Pesticides	March 2022/ April 2026	90%	65%
	Toxicity	April 2027	90%	65%
	Bacteria	April 2027	90%	65%
Etting-Wood	Nutrients	October 2025	90%	65%
	Metals	March 2022	98%	65%
	Legacy Pesticides	March 2026	90%	65%
	Current Pesticides	March 2022	98%	65%
	Toxicity	April 2027	90%	65%
	Bacteria	April 2027	90%	65%
Lower Calleguas Creek	Nutrients	October 2025	90%	65%
	Metals	March 2022	98%	65%
	Legacy Pesticides	March 2026	90%	65%
	Current Pesticides	March 2022	98%	65%
	Toxicity	April 2027	90%	65%
	Bacteria	April 2027	90%	65%
South Revolon	Nutrients	October 2025	90%	65%
	Metals	March 2022	98%	65%
	Legacy Pesticides	March 2026	90%	65%
	Current Pesticides	March 2022	98%	65%
	Toxicity	April 2027	90%	65%
	Bacteria	April 2027	90%	65%

Responsibility Area	Constituent Category for Benchmark Exceedance(s)	Compliance Date	Target Adoption Rate for Source Control and Non-Structural BMPs in 2021	Target Adoption Rate for Structural Non-Treatment BMPs in 2021 [1]
LaVista Drain	Nutrients	October 2025	90%	65%
	Metals and Selenium	March 2022	98%	65%
	Legacy Pesticides	March 2026	90%	65%
	Current Pesticides	March 2022	98%	65%
	Toxicity	April 2027	90%	65%
	Bacteria	April 2027	90%	65%
Beardsley Wash	Nutrients	October 2025	90%	65%
	Metals and Selenium	April 2027/ March 2022	98%	65%
	Legacy Pesticides	March 2026	90%	65%
	Current Pesticides	March 2022	98%	65%
	Bacteria	April 2027	90%	65%
Arroyo Conejo	Legacy Pesticides	March 2026	90%	65%
	Current Pesticides	March 2022	98%	65%
	Bacteria	April 2027	90%	65%
Arroyo Simi	Legacy Pesticides	March 2026	90%	65%
	Current Pesticides	March 2022	98%	65%
	Bacteria	April 2027	90%	65%
Las Posas	Legacy Pesticides	March 2026	90%	65%
	Current Pesticides	March 2022	98%	65%
	Bacteria	April 2027	90%	65%
Tapo Canyon	Salts	October 2020/ April 2027	98%	45%
	Nutrients	October 2022	98%	45%
	Legacy Pesticides	April 2027	90%	45%
	Current Pesticides	April 2027	85%	45%
	Toxicity	April 2027	85%	45%
	Bacteria	April 2027	85%	45%
Boulder Creek	Nutrients	October 2022	98%	45%
	Legacy Pesticides	April 2027	90%	40%
	Current Pesticides	April 2027	85%	40%
	Bacteria	April 2027	85%	40%

Responsibility Area	Constituent Category for Benchmark Exceedance(s)	Compliance Date	Target Adoption Rate for Source Control and Non-Structural BMPs in 2021	Target Adoption Rate for Structural Non-Treatment BMPs in 2021 [1]
Bardsdale	Legacy Pesticides	April 2027	85%	40%
	Current Pesticides	April 2027	90%	40%
	Toxicity	April 2027	85%	40%
	Bacteria	April 2027	85%	40%
Todd Barranca	Nutrients	October 2022	90%	60%
	Salts	April 2027	90%	60%
	Legacy Pesticides	October 2025	90%	60%
	Current Pesticides	April 2027	90%	60%
	Bacteria	April 2027	95%	60%
Ellsworth Barranca	Salts	April 2027	90%	60%
	Legacy Pesticides	October 2025	90%	60%
	Current Pesticides	April 2027	90%	60%
	Bacteria	April 2027	90%	60%
Ventura River Inland	Legacy Pesticides	April 2027	80%	50%
	Bacteria	April 2027	80%	50%
Ventura River Coastal	Legacy Pesticides	April 2027	80%	50%
	Bacteria	April 2027	80%	50%
San Antonio Creek	Legacy Pesticides	April 2027	90%	50%
	Bacteria	April 2027	90%	50%
Malibu	Nutrients	July 2021	90%	50%
	Metals	April 2027	90%	50%
	Legacy Pesticides	April 2027	90%	50%
	Current Pesticides	April 2027	90%	50%
	Bacteria	April 2027	90%	50%
McGrath Lake Coastal	Nutrients	April 2027	95%	65%
	Metals	April 2027	95%	65%
	Legacy Pesticides	June 2021	95%	65%
	Current Pesticides	April 2027	95%	65%
	Toxicity	April 2027	95%	65%
	Bacteria	April 2027	95%	65%

[1] Should treatment BMPs be preferable to structural non-treatment options by some VCAILG members, that would also be encouraged for implementation progress and attainment of benchmarks.

Table 158. Implementation Schedule for Certified Nutrient Management Plans for Responsibility Areas Where Currently Needed

Responsibility Area	Nutrient TMDL Compliance Date	Nutrient Management Plan Completion Date Goal	Target Adoption Rate by Plan Completion Date Goal
Etting-Wood	October 14, 2025	April 2021	90%
Lower Calleguas Creek	October 14, 2025	April 2021	90%
South Revolon	October 14, 2025	April 2021	90%
LaVista Drain	October 14, 2025	April 2021	90%
Mugu Lagoon	October 14, 2025	April 2021	90%
Beardsley Wash	October 14, 2025	April 2021	90%
McGrath Lake Coastal	N/A	April 2021	75%
Tapo Canyon	October 14, 2022	April 2021	90%
Todd Barranca	October 14, 2022	April 2021	90%
Boulder Creek	October 14, 2022	April 2021	90%
Ventura River Inland	June 28, 2019	January 2019	100%
San Antonio Creek	June 28, 2019	January 2019	100%
Malibu	July 2, 2021	September 2019	100%

Outreach Plan

A comprehensive outreach strategy for VCAILG members is key to greater implementation and adoption of best management practices (BMPs) throughout Ventura County. The Conditional Waiver states that the "WQMP shall include a strategy for communicating to growers the need to implement additional or upgraded management practices. For each monitoring site:

- Provide regular communication (a minimum of twice per year) to members alerting them of additional and upgraded management practice requirements specific to their responsibility area.
- Provide education classes, referrals to technical assistance providers, and notices of available funding to members, targeting the constituents specific to their responsibility area."

COMMUNICATIONS

A variety of communications will be utilized to educate members about the water quality conditions specific to their areas and the targeted BMPs needed to meet benchmarks by their compliance dates. Outreach materials, where possible, will be crop-specific in nature and prepared in electronic, paper and Spanish versions to reach the widest range of members.

- VCAILG e-Mail News and Announcements: Electronic communications is the most efficient method to keep members well informed. With a distribution list of over 1,300 emails, the VCAILG e-Mail News and Announcements will be sent bi-monthly, at a minimum, and cover current topics important to the program including upcoming educational sessions, BMP technical and funding resources, and recent program activities.
- Traditional Avenues: Flyers, magazine, mailers and annual newsletters will also be published to engage membership without access to electronic media.
- Website: VCAILG will continue to update, link and expand information, reports and resources on the Farm Bureau of Ventura County website, which was recently enhanced to include a mobile-friendly version. The Water Quality section of the Farm Bureau website is located here: http://www.farmbureauvc.com/issues/water-issues/water-quality/ and includes information related to VCAILG and TMDLs.

All three of the approaches to reach VCAILG members will be used as part of the outreach program, however emphasis will be placed on the WQMP webpage as all forms of communication will direct farmers to this location for more detailed information. The WQMP webpage can be found here: http://www.farmbureauvc.com/issues/water-issues/water-quality/wq-mgmt and contains the following:

- Link to this WQMP document, upon approval
- Responsibility Areas description and explanation
- Responsibility Area specific compliance summaries detailing what VCAILG members need to know and do in order to meet Conditional Waiver requirements (each compliance summary handout can be accessed directly from the WQMP website linked above)
- Look-up table to determine the responsibility area assignment for each parcel.
- Responsibility Area maps

- Resources and templates for developing Nitrogen Management Plans

EDUCATION

Workshop and other educational opportunities will be conducted to provide sufficient opportunities for all members to fulfill their requirements and gain greater understanding of water quality goals in their specific areas. Educational opportunities with focus on the following areas:

- BMP Implementation – The focus of these workshops will include a summary of Conditional Waiver requirements, a review of water quality impairments specific to each watershed or responsibility area, an overview of the responsibility area handouts and other resources available to VCAILG members, a review of responsibility area-specific BMPs and how best to implement them in the field. The resources available to VCAILG members, as noted earlier, are also available online for future reference. In addition, technical resources and funding opportunities will be covered. Pre-COVID-19, the workshops were held at various locations throughout the County and publicized through all appropriate avenues. Members could attend any of the sessions since the information was consistently presented, a crop and watershed specific focus was given to the areas nearest the workshop location. The responsibility area specific compliance summaries were provided in hard copy at each meeting with maps displayed for VCAILG members to locate their farm(s). VCAILG staff were available to answer questions and provide one-on-one assistance to workshop attendees.
  In response to the COVID-19 health crisis, all workshops were transitioned to a live online format beginning in early 2020. Efforts have been made to provide the same crop and watershed-specific guidance, as was available in an in-person format, by including interactive polls to gauge farm watershed locations and crops grown by those in attendance. Based on the results of those polls, presenters will focus content on most applicable water quality issues and other targeted BMP information. In addition, attendees are able to ask questions and interact with the presenters using the audio function of the training platform or by typing within the chat feature. All handouts that were previously provided in hard copy during an in-person workshop are now shared with attendees as an electronic file or download link.
- Nutrient Management – This second category of education will emphasize nutrient management, including both introductory nutrient management classes as well as self-certification workshops to assisting members in developing nutrient management plans for the areas who are required to prepare them. These self-certification workshops will follow the CDFA FREP program guidelines already developed for farmers in other parts of the state and will have a crop-specific focus as the most efficient way to deliver this important information to targeted interests. Again, workshops will be open to all members, but priority registration and proximity locations will be focused on those members and areas with the most need. In collaboration with CDFA FREP, VCAILG has transitioned the self-certification training program to live online instruction with an electronic exam.
- Ongoing Education Partnerships - VCAILG will continue to partner with the Ventura County Resource Conservation District, the USDA Natural Resources Conservation Service, the University of California Cooperative Extension, California Department of Food and Agriculture Fertilizer Research and Education Program (CDFA FREP), and

other related organizations to provide ongoing and more specialized opportunities to educate members about a wide range of relevant topics.

TARGETED OUTREACH

In addition to the communication and education outreach strategies directed at all VCAILG members, growers located in areas where source investigation studies indicated the need for additional BMP implementation have received targeted outreach.

Where source investigation results identified an agricultural parcel as contributing to a water quality benchmark exceedance, or as having a high mobility and concentration potential for legacy pesticides, the growers and/or property owners of the parcel received direct communications from VCAILG. This targeted outreach included a letter from VCAILG summarizing the results of the source investigation study, notifying them of the conditions that prompted the targeted outreach, and providing constituent-specific BMP recommendations, resources to assist in the implementation of recommended BMPs, and an overview of funding availability through CCWAMMP and other cost-share programs.

In addition, a special-issue newsletter was distributed to VCAILG members during the fourth quarter of 2019. This newsletter included an overview of source investigation activities, water quality monitoring results, study conclusions, and additional BMP implementation recommendations for members with crop types and management practices associated with those that triggered targeted outreach within the three source investigation areas.

Nitrogen Management Program

The Conditional Waiver requires growers in RAs linked to monitoring sites that exceed water quality benchmarks for nutrients to develop certified Nitrogen Management Plans "to a degree appropriate to adequately address Water Quality Benchmark exceedances within 10 years or according to the schedule in Table 3". The approved methods of certification include the following:

a) Self-certified by the Member who attends a California Department of Food and Agriculture or other Executive Officer approved training program for nutrient plan certification
b) Self-certified by the Member that the plan adheres to a site-specific recommendation from the Natural Resources Conservation Service (NRCS) or the University of California Cooperative Extension (UCCE)
c) Certified by a Crop Advisor certified by the American Society of Agronomy, or Technical Service Providers certified in nutrient management in California by the National Resource Conservation Service (NRCS)

Plans that are self-certified by members are likely to be more effective, as well as being the most efficient method of meeting the requirement. VCAILG recognized an opportunity to provide expanded nutrient management education and has been working proactively with partners from the California Department of Food and Agriculture Fertilizer Research and Education Program (CDFA FREP), UCCE, the Ventura County Resource Conservation District, NRCS, and Fruit Growers Laboratory to develop a program specific to the needs of Ventura County growers.

This program, developed under the oversight of CDFA FREP, contains core curriculum developed for the Central Valley Region self-certification training and further provides crop-specific irrigation and nutrient management information most relevant to VCAILG members.

What has resulted from these partnerships is a robust, stand-alone education program that provides growers the knowledge necessary to make improved nutrient management decisions, as well as the practical skills to apply learned concepts to a crop nitrogen budget. When needed, one-on-one assistance is provided to growers and all workshop attendees are given course books for future reference and crop-specific nitrogen demand literature (since spring 2020 these files are all shared directly with training attendees electronically). Going forward, these program partnerships will work towards supporting research opportunities for determining crop-specific nitrogen demand factors, where currently unavailable, and translating written and live training presentations for Spanish-speaking audiences.

The deadlines for developing Nitrogen Management Plans have been determined based on degree of water quality exceedance, with the RAs requiring more time to address water quality issues being required earlier. Table 158, shown previously, details where Nutrient Management Plans are required and includes applicable compliance dates and target adoption rates.

To date, VCAILG has conducted five Nitrogen Management Plan Self-Certification Training Workshops. Additional workshops were planned for April 2020, but were canceled due to COVID-19 public health mandates prohibiting public gatherings. As a result, VCAILG worked with CDFA FREP to transition the in-person training program to an online format. The first online training workshop was conducted over a three-day period in June 2020 and a second online training workshop is scheduled for November 2020.

Calleguas Creek Agricultural Management Measures Program

In anticipation of Source Investigation Study requirements, based on historical constituent trends, VCAILG partnered with the Ventura County Resource Conservation District on the development and implementation of a funding assistance grant program specific to the drainage areas of Etting-Wood, South Revolon, and Mugu Lagoon RAs, called the Calleguas Creek Agricultural Management Measures Program. This program, funded through the Federal CWA 319(h) Program and administered by the SWRCB, is designed to work together with VCAILG's Source Investigation Study by providing Nitrogen Management Plan funding opportunities to growers identified as potentially contributing to an exceedance condition.

The program itself will provide cost sharing for a wide range of BMPs, including irrigation efficiency improvements, nutrient management practices, pesticide management practices, and sediment control projects. Recommended measures will be based on the water quality issues specific to a parcel's drainage area, and VCAILG's existing water quality monitoring program will be used to evaluate effectiveness. In addition, information generated through project implementation, as well as BMP effectiveness monitoring, will be used to inform expanded grower outreach and provide BMP demonstration.

To encourage grower participation in the program, VCAILG has highlighted the program at all VCAILG-hosted education events conducted since the summer of 2019. In addition, CCWAMMP information has been featured in quarterly VCAILG e-newsletters and targeted emails were delivered to growers and property owners located in the three drainage areas where

source investigation studies were conducted (Etting-Wood, South Revolon, and Mugu Lagoon RAs).

Interactive Irrigation Management to Reduce the Leaching of Nitrogen (IIMRLN)

The Ventura County Resource Conservation District was awarded 319(h) grant funding to install interactive Nutrient and Irrigation Management (NIM) stations on farms and work collaboratively with growers to track and interpret irrigation and leaching data in order to maximize both irrigation and fertilization efficiencies while preventing runoff and leaching.

Meetings of the Stakeholder and Technical Advisory Committees for this grant have taken place and applications for collaborating participants are being sought. Applications from growers located in RAs with nutrient exceedances in surface water monitoring or that are overlying nitrate-impacted groundwater basins will be prioritized.

National Water Quality Initiative Watershed Assessments

The Ventura River Watershed and Calleguas Creek Watersheds have both been identified as priority watersheds under the United States Department of Agriculture's National Water Quality Initiative (NWQI) program. Implemented through NRCS, the goal of the NWQI program is to fund voluntary, on-farm conservation practices in watersheds where they will have the greatest impact to water quality. A condition of this on-farm funding is the development of watershed assessments to identify the areas with the greatest need and develop an implementation plan to effectively allocate resources.

As a partner in this effort, VCAILG will work closely with NRCS and the Ventura County Resource Conservation District to conduct assessments for both the Ventura River and Calleguas Creek Watersheds in advance of fiscal year 2021 NWQI funding availability. Once completed, these watershed-specific assessments will provide a framework for encouraging grower participation in the NWQI program and incentivizing increased conservation practice implementation.

Explanation of Compliance List Appendices

The Conditional Waiver requires that dischargers obtain a minimum of two hours of educational training every year. Appendix D lists VCAILG members' education credits received during the first ten months of the fourth Waiver year. The current education credit year spans from December 1, 2019 through November 30, 2020. There are currently three additional classes planned for this current education credit year. The number of education credit classes for the fourth Waiver year is much less than normal due to complications caused by COVID-19 and transitioning to online webinars. On May 5, 2020 VCAILG submitted a "Remote Education and Outreach Plan in Response to COVID-19". Though formal approval of the plan approach to remote education has not been received, Regional Board staff have given verbal support to the approach and all online classes have been conducted following this plan. The VCAILG 2019-2020 Annual Monitoring Report due on December 15, 2020, will include as part of the WQMP Progress Report a complete list of VCAILG Members' Status in Completing Education Requirements.

To date, four classes were offered during the fourth year of Conditional Waiver implementation. Table 159 lists the approved classes and the hours of credit for each class.

Table 159. Courses for Education Credit – December 1, 2019 through October 1, 2020

Date	Course Title	Education Hours
6/23-25/2020	Nitrogen Management Plan Self-Certification Training Program	6
7/8/2020	Water Quality BMP Workshop	2
7/15/2020	CropManage Hands-On Webinar	2.5
9/3/2020	Water Management Tactics Through Inputs	2

[a] Education credit year spans from December 1, 2019 through November 30, 2020. Three more classes are planned for the month of November 2020.

As part of the WQMP, VCAILG is also required to submit information regarding the responses of its members including completion of the BMP survey or response to any other information requests, participation in group monitoring, if applicable, and payment of required fees. Appendix E is a complete parcel list with notations for current VCAILG membership status and BMP survey completion. Fee payment status is not included at this time due to invoices being mailed in early September and the deadline for payment has not passed. An updated Appendix E, including fee payment status will be available in early 2020, if requested. Appendix E is current as of October 6, 2020.

Waiver Program Progress and Recommendations

The Conditional Waiver relies on an iterative process and the gathering of feedback information to assess water quality, determine the improvements that need to be made, inform VCAILG members, allow them to implement practices to improve water quality, and document that progress. The efforts of Regional Board staff, VCAILG administrators, and the VCAILG members are all critical in this regulatory structure to address impacts to water quality by discharges from irrigated agriculture.

As the end of the 2016 Conditional Waiver term is approaching, this section discusses some of the lessons learned, successes, and recommendations for the program moving forward. Relationships between the actions taken by VCAILG and growers and the resulting impact on discharges and receiving water quality are described. The following figure summarizes the overall implementation process.

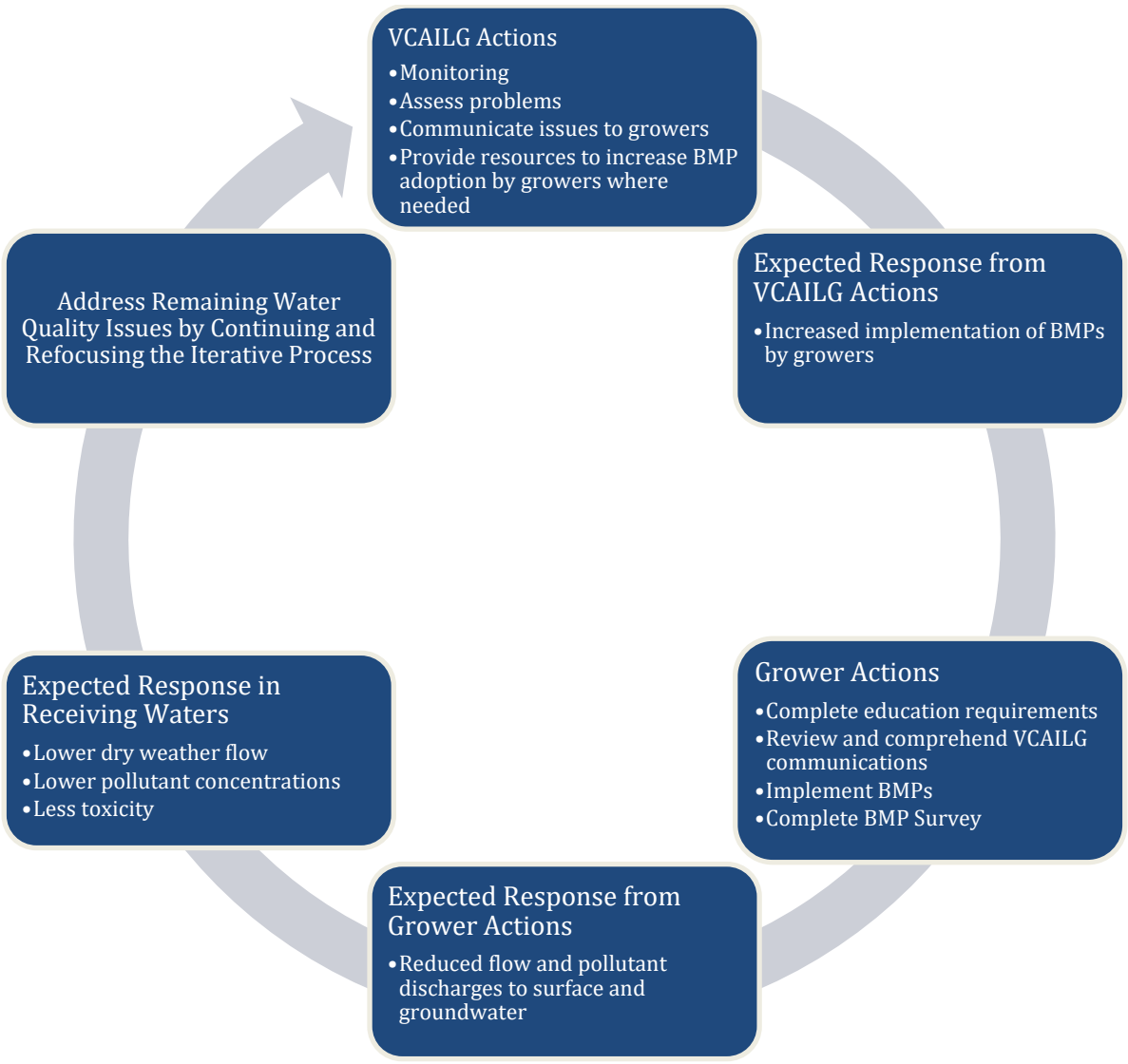

Figure 271. Conditional Waiver Actions Taken by VCAILG and VCAILG Members with Expected Reponses to Show the Iterative Implementation Process

The following graphic summarizes some of the key accomplishments of the 2016 Conditional Waiver term based on the responsibilities of VCAILG, VCAILG members, and the desired water quality outcomes.

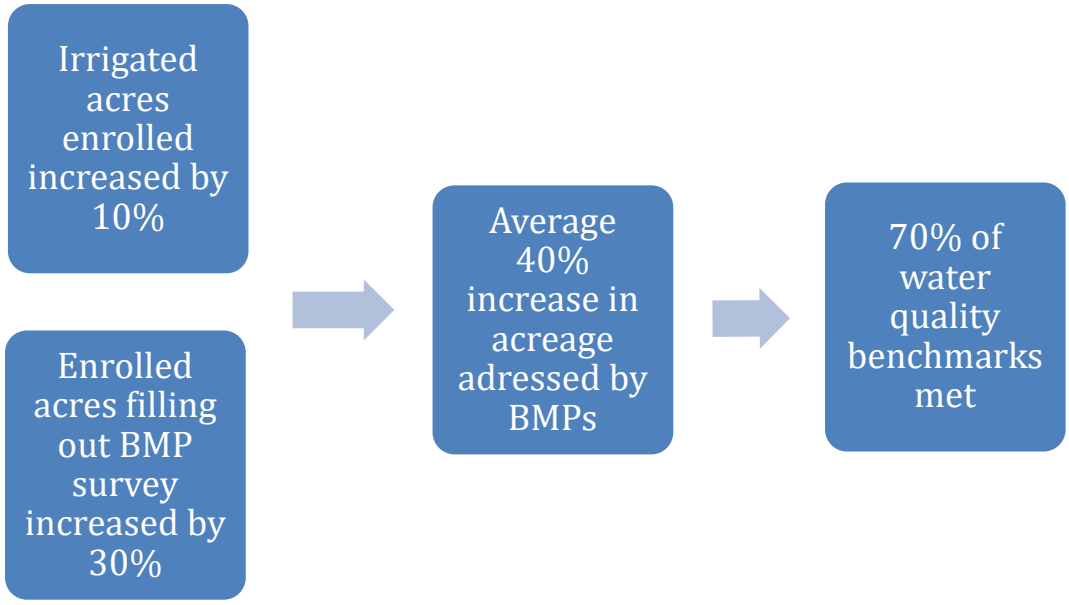

Figure 272. Highlighted Actions and Responses During the 2016 Conditional Waiver

VCAILG ACTION - ENROLLMENT AND EDUCATION

VCAILG continues to maintain high participation and enrollment. Significant effort is put into tracking parcel and ownership changes and notifying new owners of the Conditional Waiver and compliance requirements. Enrollment reports are provided with VCAILG report submittals, including this WQMP or as requested by the Regional Board. Maintaining VCAILG enrollment is critical for overall Waiver compliance (to date there are no Ventura County farmers complying with the Conditional Waiver as individuals), but also to spread costs, streamline outreach and information, and maximize water quality improvements. Enforcement for unenrolled farming operations is a key component to continued program success.

Table 160. VCAILG Membership Statistics from WQMPs

WQMP Year	Landowner Count	Parcel Count	Irrigated Acres	Percent of Estimated Irrigated Acres in VCAILG
2017	1,107	2,685	75,571	79%
2018 revised	1,469	3.353	83,259	90%
2020	1,421	3,278	81,783	89%

The Conditional Waiver requires two hours of education classes annually as part of discharger group membership and compliance. This time is valuable for sharing water quality information, BMP recommendations, nitrogen management training, and other information applicable to Waiver compliance. Not completing the annual education credits is enforceable by the Regional Board.

Table 161. Education Hours from Annual Monitoring Reports

	2016 - 17	2017 - 18	2018 - 19	2019-20	Total
# of Education Hours Offered	31.15	27	39	Education Year Still	97.15
Total Education Hours Obtained by VCAILG Members	2,187	2,203	3,862	in Progress	8,252

GROWER ACTIONS - BMP SURVEY

BMP Survey completion is an individual member requirement of the 2016 Conditional Waiver. Having a survey response rate close to 100% allows for the most accurate tracking and documentation over time of BMP implementation and analyzing those values in relation to water quality changes. When surveys are completed on a different cohort of parcels each time, it limits the ability of VCAILG to make meaningful decisions related to BMP effectiveness, including which practices to recommend based on the water quality exceedances, and to determine an appropriate outreach strategy.

Survey completion rates have improved since the 2017 survey, though there was a decline between 2019 and 2020, likely due to the timing of the 2020 survey occurring shortly after the onset of the COVID-19 public health crisis. The following are VCAILG survey completion rates based on the number of surveyed irrigated acres divided by the total number of irrigated acres enrolled in VCAILG, as well as the VCAILG member irrigated acres covered by a survey:

Table 162. Total VCAILG Surveyed Irrigated Acres for Each WQMP

	2017 WQMP	2019 WQMP	2020 WQMP
Sum of Surveyed Irrigated Acres	50,908	69,333	65,918
Percent of VCAILG Enrolled Irrigated Acres with a Completed Survey	62%	83.5%	79%

The body of this WQMP looks in depth at the water quality issues and BMPs implemented over time within each RA. To get a sense of overall progress and implementation, Table 163 provides the total VCAILG survey responses by WQMP for each BMP question. It is important to note that for all but two questions, listed below, there was a significant increase in implementation, with an average increase of 40% more acreage being addressed by a given BMP.

- Q11: How much non-cropped area is bare soil?
  - Surveyed acreage of bare soil increased by 4,512 acres.
  - This increase in bare soil may be due to food safety requirements and SGMA-driven irrigation allocation restrictions.
- Q18: How many acres produce irrigation runoff?
  - Surveyed acreage producing irrigation runoff increased by 5,223.
  - The use of efficient irrigation systems has increased in Ventura County due to a multitude of driving factors (i.e. increasing water costs, pumping restrictions, water delivery limits, outreach and grant programs to upgrade systems and increase efficiency, etc.). VCAILG will need to investigate whether this may be due to how the question itself is worded. Eliminating irrigation runoff is an overarching outreach priority for VCAILG.

Table 163. VCAILG Member Overall Survey Responses by WQMP Year

All Sites		2017	2019 (Revised)	2020	Increased Implementation from 2017
Sum of Irrigated Surveyed Acres	Acres	50,908	69,333	65,918	Yes
Irrigation and Salinity Management					
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	40,905	54,042	52,178	Yes
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	33,858	51,081	51,451	Yes
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	18,636	26,015	28,181	Yes
Nutrient Management					
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	27,019	35,922	40,359	Yes
Q4b: Is it a Certified Nutrient Management Plan?	Acres	15,117	21,472	30,562	Yes
Q5a: Are soil residual nitrate tests done?	Acres	33,399	51,233	50,819	Yes
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	33,321	50,922	50,508	Yes
Q6: Are leaf/petiole tests conducted?	Acres	43,221	57,681	56,286	Yes
Q7a: Is nitrate measured in fertigation water?	Acres	31,361	44,004	43,826	Yes
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	30,516	42,493	42,870	Yes
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	16,251	21,953	20,113	Yes
Sediment Management					
Q9: How many cropped acres have a slope greater than 2%?	Acres	11,990	18,576	17,279	N/A [1]
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	11,752	17,860	14,599	Yes
Q11. How much non-cropped area is bare soil?	Acres	7,528	13,070	12,040	*No*
Q12a: How many feet of ditches exist?	Feet	3,088,566	4,107,834	3,774,313	N/A [2]
Q12b: How many feet of ditches are protected from erosion?	Feet	958,014	1,537,379	1,512,193	Yes
Q13a: Are grassed waterways present?	Acres	5,022	6,610	6,411	Yes

All Sites		2017	2019 (Revised)	2020	Increased Implementation from 2017
Q13b: How many acres drain to grassed waterways?	Acres	2,617	3,125	3,167	Yes
Q14: How many acres are treated by vegetated filter strips?	Acres	2,376	3,105	2,846	Yes
Pest Management					
Q15: Are PCAs used for pesticide management decisions?	Acres	49,672	67,425	63,862	Yes
Q16: Is an IPM Plan being implemented?	Acres	47,203	63,796	61,112	Yes
Q17a: How many acres are organically farmed	Acres	3,827	5,680	5,679	N/A [3]
Q17b: How many acres are conventionally farmed?	Acres	47,081	57,853	60,246	N/A [3]
Runoff Management/Treatment					
Q18: How many acres produce irrigation runoff?	Acres	8,066	13,179	13,289	*No*
Q19: Runoff from how many acres is treated or detained?	Acres	8,577	11,213	9,059	Yes

[1] Number of cropped acres grown on a slope is not a BMP, rather this question is used to evaluation how much of that area has implemented erosion control measures.

[2] Length of ditches is not a BMP. Evaluating the answer to how many feet of ditches are protection from erosion is the desired practice.

[3] VCAILG does not make recommendations for whether a farm should be conventional or organic. This information is useful in understanding the needs of VCAILG membership and what BMPs are most applicable to the different operations.

The WQMP Schedule considers three general BMP categories:

- Source control and non-structural BMPs (includes all survey questions except for 12, 13, 14, and 19, which are applicable to the constituent category with benchmark exceedances identified in the previous question section)
- Structural non- treatment BMPs (survey questions 12, 13, and 14, which can be summarized as ditch management and filter strips)
- Optional treatment BMPs (survey question 19, treatment or detention of runoff using any of the following: sediment traps, detention/retention basins, bioreactor, or constructed wetlands)

Source control non-structural BMPs are considered the starting point for review and implementation. Most of the BMPs included in the survey fall under this category since their aim is to determine what is needed by the crop and provide those inputs in an efficient manner and in the correct amounts. A large source control BMP category that has been the focus of VCAILG outreach, and will continue to be a priority when incorporating the precedential State Water Board WQ 2018-0002, is the requirement for irrigation and nitrogen management planning. Survey results show a steady increase in each WQMP for acreage with nitrogen management plans and plans that are certified.

Table 164. Nutrient Management Planning Progress

	2017	2019 (Revised)	2020
Surveyed acres with a Nutrient Management Plan	27,019	35,922	40,359
% of surveyed acres with a Nutrient Management Plan	53%	52%	61%
Surveyed acres with a Certified Nutrient Management Plan	15,117	21,472	30,562
% of acreage with a Nutrient Management Plan that is also Certified	56%	60%	76%

Structural non-treatment BMPs include ditch erosion control, filter strips and grassed waterways; all of which work to slow, infiltrate, and/or filter runoff. Increased implementation was reported for each of these BMPs, particularly erosion control in ditches. An additional 554,179 feet of farm ditches with erosion control was added since 2017.

Based on available survey results, an additional 482 irrigated acres have implemented treatment BMPs. This is significant because these structural treatment projects are quite costly to install and maintain. In many cases farmland is taken out of production to make room for their installation.

EXPECTED RESPONSE - AGRICULTURAL MONITORING LOCATION WATER QUALITY TRENDS

Evaluation of water quality monitoring data focuses on determining Waiver or TMDL load allocation benchmark exceedances (reported in Annual Monitoring Reports), followed by determining the BMPs already being implemented in the area where the exceedances are occurring and planning for the implementation of additional BMPs (parcel level BMP surveys compiled and reported in this and previous WQMPs). Outreach is then performed to notify

VCAILG members farming those properties of the water quality issues and types of BMPs that address them.

The focus of surface water quality reporting required by the Waiver is on identifying problems, what types and where exceedances are occurring. The exceedance information is important for planning the outreach and BMP implementation to improve water quality; however, progress or acknowledgement of benchmark attainment can be lost.

WQMP Exceedance Evaluation

The Water Quality Benchmark Exceedance Evaluation Process section of this WQMP describes the steps taken to consider the most recent three years of monitoring data and comparing those results to applicable Waiver and TMDL load allocation benchmarks. The following figure provides information not just on how many exceedance graphs were generated for this WQMP, but also how many benchmark comparisons showed data achieving the desired levels. The number of times additional BMPs were not needed to address water quality benchmark exceedances far outweighs the exceedances. It is also important to note the proactive approach of VCAILG in comparing data to final, rather than interim, TMDL load allocations, where applicable, in an effort to ensure that VCAILG is providing members with the information needed to work towards meeting final load allocation benchmarks.

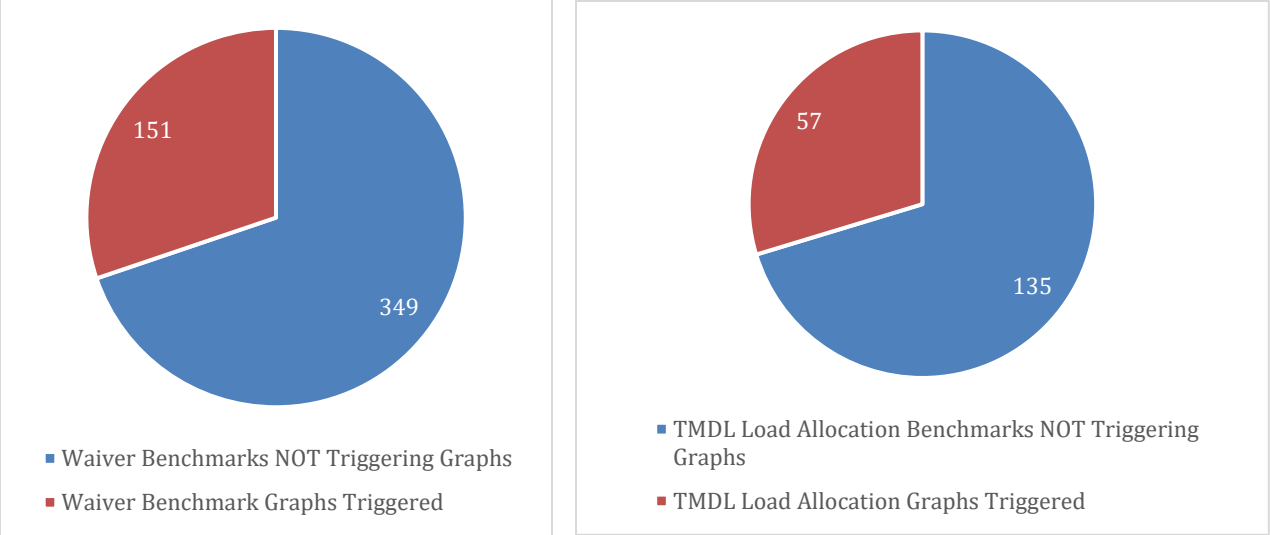

Figure 273. 2020 WQMP Number of Possible Exceedance Graphs Triggered and Not Triggered for Waiver and TMDL Benchmarks

A significant part of the WQMP includes relating the types of water quality benchmark exceedances (constituent categories) and linking those to applicable BMPs for additional implementation by VCAILG members. This information was presented exhaustively by responsibility area within previous sections of the WQMP. Overall, there has been a decline in the number of exceedance graphs triggered for current pesticides. This is with the addition of the benchmark for bifenthrin in the 2016 Waiver.

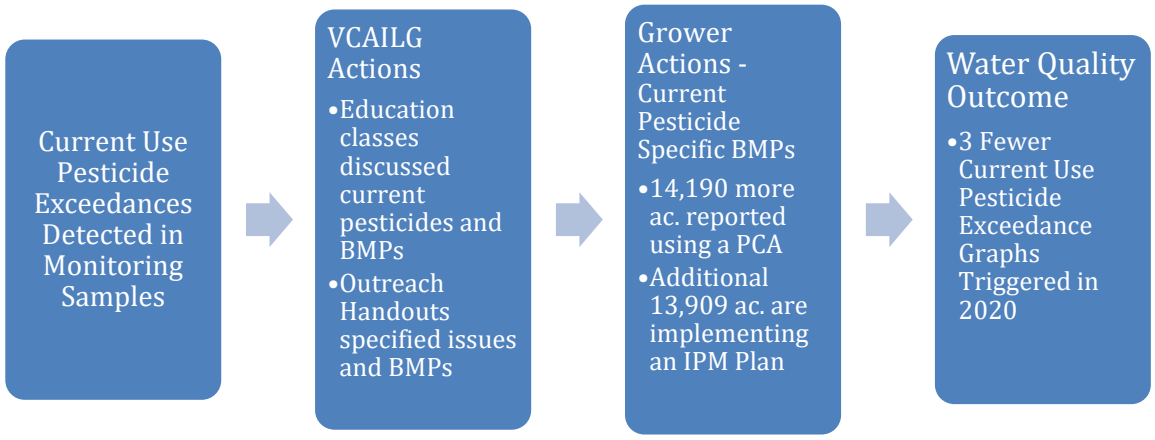

Figure 274. Actions and Responses Led to Water Quality Improvements Related to Current Use Pesticides

Source Investigation

Source Investigation Trends

To develop the Source Investigation Work Plan submitted in October 2018 and revised in January 2019, a trend analysis was conducted to determine what types of trends, if any, were evident for ten years of VCAILG monitoring data. Sampling data for constituents and monitoring locations that were determined to have exceeded applicable benchmarks, as sorted and evaluated in the 2017 VCAILG Water Quality Management Plan, were used as the initial dataset in the trend analysis process. The dataset and associated time series plots included in the 2017 VCAILG Water Quality Management Plan were updated to include data from the 2016-2017 monitoring year. The updated dataset, which includes samples from 2007-2017, was subjected to statistical trend analysis as detailed in the Source Investigation Work Plan.

The resulting time series plots resulted in three dry weather increasing trends, which were further evaluated and described in the Source Investigation Report. A number of no trend conditions were observed, particularly for wet weather, which would be expected due to the variable conditions of storm intensity, duration, and rainfall. Lastly, there was a finding of five dry weather decreasing trends for DDTs, nitrate, TDS, and sulfate. Two wet weather decreasing trends were established for nitrate and sulfate. As the Source Investigation process goal was to focus on persistent exceedances, it is important to note the numerous site and constituent combinations that were not even considered for the evaluation since they did not rise to the exceedance level triggering trend analysis.

Table 165. Summary of Trend Analysis Findings[9]

Event Type	Dry Weather			Wet Weather		
Trend Type	**Increasing**	**Decreasing**	**No Trend**	**Increasing**	**Decreasing**	**No Trend**
No. of Sites	3	5	8	1	2	17
Constituents	Nitrate, copper, toxaphene	DDTs, nitrate, TDS, sulfate	Nitrogen, selenium, copper, toxaphene, DDT compounds, chloride	DDE	Nitrate, sulfate	DDTs, bifenthrin, chlordane, chlorpyrifos, copper, diazinon, toxaphene, nitrogen, TDS, sulfate, chloride
Details for Increasing Trends	04D_LAS (nitrate) 01T_ODD3_ARN-EDI (nitrate and copper) 04D_ETTG (toxaphene)			VRT_THACH (DDE)		
Prioritization	Implement source investigations for 04D_LAS and 01T_ODD3_ARN-EDI, and 04D_ETTG. This Work Plan addresses these three sites with increasing dry weather trends.		No trends have been observed with existing data, but data points may consistently be above TMDL benchmarks. No source investigations will be conducted; however, the Work Plan Analysis will inform applicable revisions to the WQMP.	Legacy pesticide with few samples. No source investigation; amplify BMP implementation requirements in WQMP.		No trends have been observed with existing data, but data points may consistently be above TMDL benchmarks. No source investigations will be conducted; however, the Work Plan Analysis will inform applicable revisions to the WQMP.

[9] LWA (2018, revised 2019). VCAILG Source Investigation Work Plan. Submitted to the Los Angeles Regional Water Quality Control Board, January 2019.

Source Investigation Report Conclusions

Results of the VCAILG source investigations of the drainages with constituents exhibiting increasing trends, are reported in the Source Investigation Report[10]. The Source Investigation Report provides the results of the intensive drainage site monitoring investigations performed by collecting samples from static drainage sites, communal drainage channels, direct edge-of-field discharge from agricultural land, and other observed discharge sources (e.g. industrial landscape irrigation, tidal inflow, and leaking supply water sources). VCAILG considered the results of this intensive discharge monitoring investigation in light of BMP survey results submitted by VCAILG members within the corresponding site drainage areas. The goal of this evaluation was to determine whether conclusions could be drawn regarding BMP effectiveness for investigated exceedances and guide specific revisions to the VCAILG WQMP Outreach Plan, both for the RAs targeted in the source investigations and other RAs with the same water quality issues. The following is a summary of some of the conclusions from this report:

- The level of BMP implementation was consistent across farms with discharges both above and below the water quality benchmark.
- Edge-of-field data was not useful in evaluating BMP effectiveness. It also did not support predicting whether or not a field was likely to exceed a water quality benchmark based on survey results. Rather the observation of overhead sprinkler use was the greatest predictor of runoff and likely exceedance.
- Irrigation type was a significant predictor of whether irrigation runoff was found.
- Both drainages where nitrogen exceedances were investigated had low implementation of nitrogen management plans (0% adoption in the 01T_ODD3_ARN drainage and 58% adoption in the 04D_LAS drainage; with 19% of those plans being certified).

[10] LWA (2019). VCAILG Source Investigation Report. Submitted to the Los Angeles Regional Water Quality Control Board, September 2019.

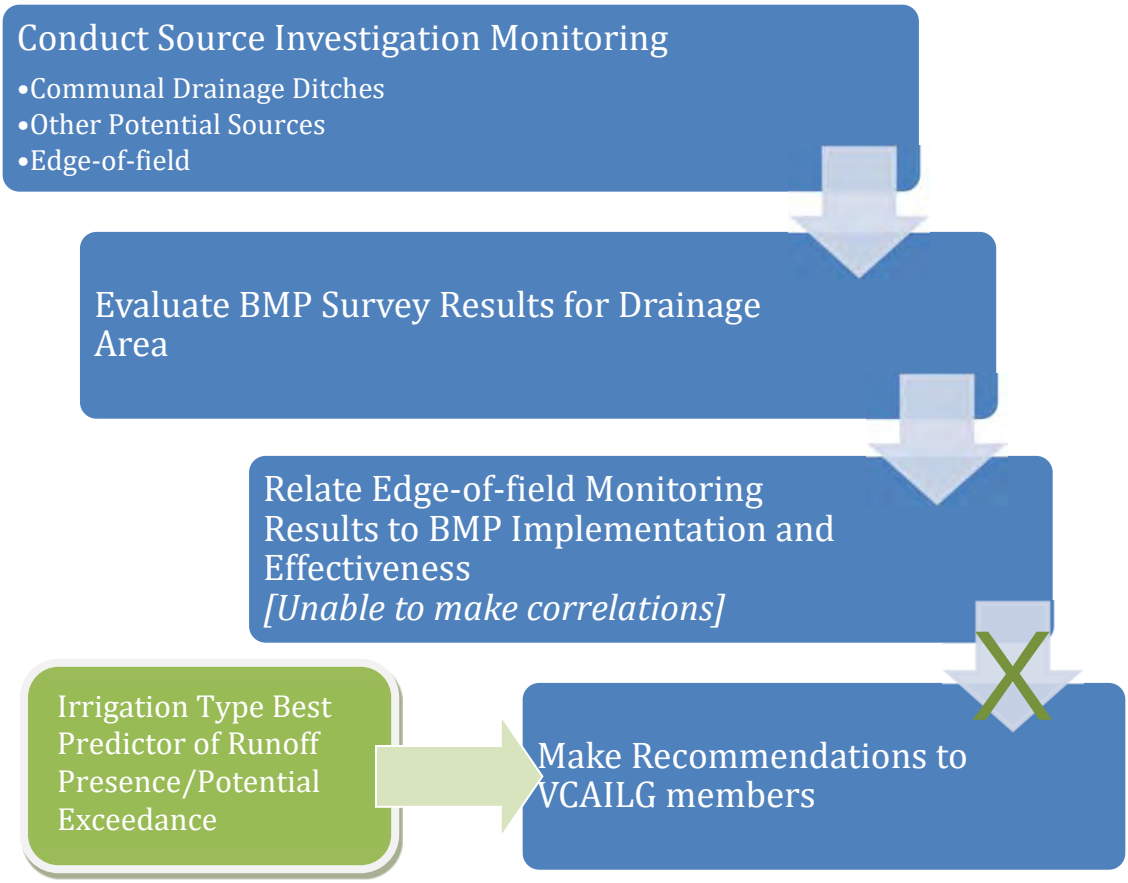

Figure 275. Breakdown Point in the Source Investigation Process and More Relevant Outcome Indicator

GROUNDWATER MONITORING TRENDS

The last Groundwater Trends 2019 Annual Monitoring Report was submitted December 15, 2019. This report compiles nitrate groundwater data beneath irrigated agricultural lands. Well trend maps, graphs, and other details are included in this report and most recent report summary is provided below:

> "Among all the basins covered by this report, 287 wells passed the screening criteria and, thus, have been identified as suitable, representative wells for nitrate trends reporting. The mean nitrate-N concentrations for the current 3-year averaging period (7/2016-6/2019) exceeded the MCL (10 mg/L nitrate-N) in only 8 of the 287 wells. The prior averaging period (7/2015-6/2018) yielded 15 wells with 3-year averages greater than the MCL. The decrease may be related to higher rainfall in the 2018-2019 winter compared to several previous winters, and thus higher recharge from precipitation and streamflow, or surface water spreading operations.
>
> Twenty-nine wells have 2016-2019 mean nitrate-N concentrations between 5-10 mg/L, but in only eight cases were nitrate-N concentrations in this range also paired with a long-term increasing nitrate-N concentration trend. The numbers of wells in these two categories are provided by groundwater basin in Table 2 [refer to actual report submittal for Groundwater Trends].

The Oxnard Forebay and portions of the Oxnard Subbasin that are confined but immediately adjacent to the Oxnard Forebay (a.k.a. Oxnard Pressure Plain) continues to present a number of wells that are exceeding, or show potential to exceed, the nitrate MCL. However, the number of wells in this basin with 3-year rolling averages above the MCL declined from 7 in last year's (December 2018) report to 3 in this current report. Nitrate concentrations and long-term nitrate trends are strongly influenced in this region by groundwater levels. Groundwater levels in the Oxnard Forebay are affected by precipitation, but also by artificial recharge performed by UWCD in the El Rio and Saticoy spreading grounds. UWCD performed recharge during 2016-2019 using purchased imported water. Groundwater levels in the Oxnard Forebay rose for the first time since 2011 in water years 2016/2017 and 2018/2019."

Table 166. Numbers of Wells Exceeding the MCL for Nitrate-N or Indicating Potential to Exceed the MCL in the Future

	Number of Wells with 2016-2019 Mean Nitrate-N Concentration 5-10 mg/L and Increasing Trend	Number of Wells with 2016-2019 Mean Nitrate-N Concentration > 10 mg/L
Upper Ventura River Basin	1	
Oxnard Basin (in or near Forebay)	5	3
Fillmore Basin	1	2
Arroyo Santa Rosa Valley Basin		2
Tierra Rejada Basin		1

While groundwater is greatly influenced by rainfall patterns, pumping, and recharge operations, as noted previously, it is also worth mentioning that since 2017 VCAILG members have Nutrient Management Plans covering an additional 13,340 acres of irrigated farmland. At this time almost half of the VCAILG enrolled irrigated acres have reported implementation of Nutrient Management Plans. Additional information will be submitted regarding the effect of management practices on groundwater quality in the Groundwater Management Practice Evaluation Report due December 15, 2020.

PROGRAM RECOMMENDATIONS

In considering the implementation process and findings of this Conditional Waiver, VCAILG is providing the following recommendations supported by the information shared above.

WQMP Scheduling Recommendation

In considering water quality monitoring results, it is important to frame the short amount of time in between the submittal of each WQMP. A significant portion of the data overlaps between the WQMPs as each considers the most recent three years of monitoring data and they are submitted less than three years apart.

VCAILG recommends spreading out the submittal of WQMPs to at a minimum of every four years for the following reasons:

- Allows for the compilation of discrete three-year data collection periods (data considered in each WQMP would no longer overlap)
- VCAILG can focus efforts between WQMP updates to implement its outreach and education plan

- VCAILG members need adequate time to receive information regarding water quality issues and BMP recommendations, determine what is most appropriate for their operation, and obtain funds, as needed, to implement new BMPs
- Current WQMP update frequency means that the information and recommendations provided to growers is constantly changing. Simplifying the number of updates and recommendations growers need to track will allow them to work towards more consistent improvement goals.
- Time between surveying VCAILG members needs to be sufficient for them to have made measurable on-farm upgrades.

Source Investigation Recommendation

Source Investigations proved exceedingly costly for members in those RAs and the collected monitoring data did not enhance the evaluation of BMP implementation reported by growers during the most recent survey. Rather, it is the recommendation of VCAILG to focus efforts using survey results in the following manner to guide and assist in water quality improvements:

- Work with VCAILG members to improve irrigation efficiency and eliminate irrigation runoff. This will address dry weather exceedances across all constituent categories.
- Continue providing Nitrogen Management Plan Self-Certification Training and preparing VCAILG members for the incorporation of the State Board's precedential requirements related to irrigation and nitrogen management planning and reporting.

Outreach Strategy and BMP Survey Recommendations

Based on the results of the Source Investigation Report, VCAILG modified its Outreach Plan, first as part of the Source Investigation Report, and also in this 2020 WQMP. VCAILG relies on the evaluation of water quality benchmark exceedances and BMP survey responses compiled in the WQMP to develop its outreach goals and priorities.

In order to focus efforts, funds, and prioritize meaningful progress and attainment of water quality benchmarks, it is the recommendation of VCAILG that a baseline outreach program, as previously detailed, continues while adding some enhancements to pursue measurable improvements on high priority water quality issues.

- In high priority RAs, perform a number of survey verification visits.
    - Sites with low BMP adoption will be provided with information on applicable grants and other assistance resources.
    - Sites reporting high BMP adoption will be included for verification purposes.
    - The Regional Board may complete site visits for these same categories and also those that did not comply with survey completion requirements.
- Focus on irrigation runoff elimination by encouraging and facilitating VCAILG members' pursuit of technical advisement and funding for irrigation improvement projects.

There are a number of positive impacts that we foresee from this approach including: an improvement in the data that VCAILG uses to base its recommendations and outreach, better program and farm specific understanding of how BMPs can work for their operation by VCAILG members, a focus on measurable dry weather improvements which impacts all constituent categories, and oversight of key program components to ensure equity in compliance.

Groundwater Quality Trends Reporting Recommendations

Reporting of groundwater quality trends is precedential statewide per the State Water Resources Control Board Order WQ 2018-0002 (East San Joaquin WDR), however the specifics of this reporting is left to the discretion of the Regional Boards. There are a limited number groundwater basins in Ventura County with wells exceeding the nitrate MCL and effects due to changes in agricultural practices are not going to be apparent on an annual basis. Much like the WQMP, VCAILG recommends decreasing the frequency of this reporting. As more growers implement irrigation and nitrogen management planning, it will take time for a groundwater response to demonstrate those positive impacts. Annual reporting of groundwater quality is too fine a scale to be meaningful.

State Water Resources Control Board WQ 2018-0002 Precedential Items

VCAILG representatives and members look forward to working with the Regional Board to implement the precedential items in State Water Resources Control Board WQ 2018-0002 in a thoughtful manner, considering the unique setting and agriculture of Ventura County. The State Board recognized the vast variability in farm sizes, operations, and crops throughout California and allowed for regional discretion in how certain precedential components are implemented. VCAILG has taken a proactive approach in implementing many of these items in anticipation of their inclusion in the Conditional Waiver program.