

# 2020-2021 Permit Year

Ventura Countywide Stormwater Quality Management Program Annual Report

## Attachment E – TMDL Reports Part 6



Camarillo
County of Ventura
Fillmore
Moorpark
Ojai
Oxnard
Port Hueneme
Santa Paula
Simi Valley
Thousand Oaks
Ventura

Ventura County Watershed Protection District



# county of ventura

**Jeff Pratt** Agency Director

Central Services

Joan Araujo, Director

Engineering Services
Christopher Cooper, Director

Transportation **David Fleisch**, Director

Water & Sanitation Joseph Pope, Director Watershed Protection **Glenn Shephard**, Director

December 15, 2020

Dr. L.B. Nye, Chief of Regional Programs Regional Water Quality Control Board Los Angeles Region 320 West 4th Street, Suite 200 Los Angeles, CA 90013

SUBJECT: UPPER MALIBU CREEK TRASH TMDL 2019-2020 ANNUAL MONITORING

**REPORT DATED DECEMBER 15, 2020** 

Dear Dr. Nye:

On behalf of the County of Ventura (County) and Ventura County Watershed Protection District (VCPWD), I am pleased to submit the enclosed the Upper Malibu Creek Trash Total Maximum Daily Load (TMDL) Annual Monitoring Report (AMR) for the 2019-2020 monitoring year. The AMR is being submitted per the requirements of the Malibu Creek Trash Total Maximum Daily Load (TMDL), Los Angeles Regional Water Quality Control Board Resolution No. 2008-007 (effective July 7, 2009) and Conditional Waiver of Waste Discharge Requirements for Discharges of Trash from Nonpoint Sources in Waterbodies Subject to Total Maximum Daily Loads for Trash or Debris (effective September 10, 2020).

AMR documents ninth year of implementation of the Malibu Creek Watershed Trash Monitoring and Reporting Plan and Minimum Frequency of Assessment and Collection (TMRP/MFAC) program, submitted collaboratively by the County, the District, and the City of Thousand Oaks on April 30, 2010. It provides a summary of conducted monitoring activities, a summary of the monitoring results, and documentation of on-going maintenance of full capture devices installed by the County/VCWPD towards point source compliance.

If you have any comments or question regarding the attached document, please contact me via email (Ewelina.Mutkowska@ventura.org) or by phone at (805) 645-1382.

Sincerely,

Ewelina Mutkowska Digitally signed by Ewelina Mutkowska Date: 2020.12.15 09:10:50 -08'00'

Ewelina Mutkowska Senior Stormwater Manager

CC: Jun Zhu, Los Angeles Regional Water Quality Control Board
Alexander Prescott, Los Angeles Regional Water Quality Control Board
Jeff Pratt, Ventura County Public Works Agency
Glenn Shephard, Ventura County Public Works Agency Watershed Protection
Arne Anselm, Ventura County Public Works Agency Watershed Protection











**DECEMBER 15, 2020** 

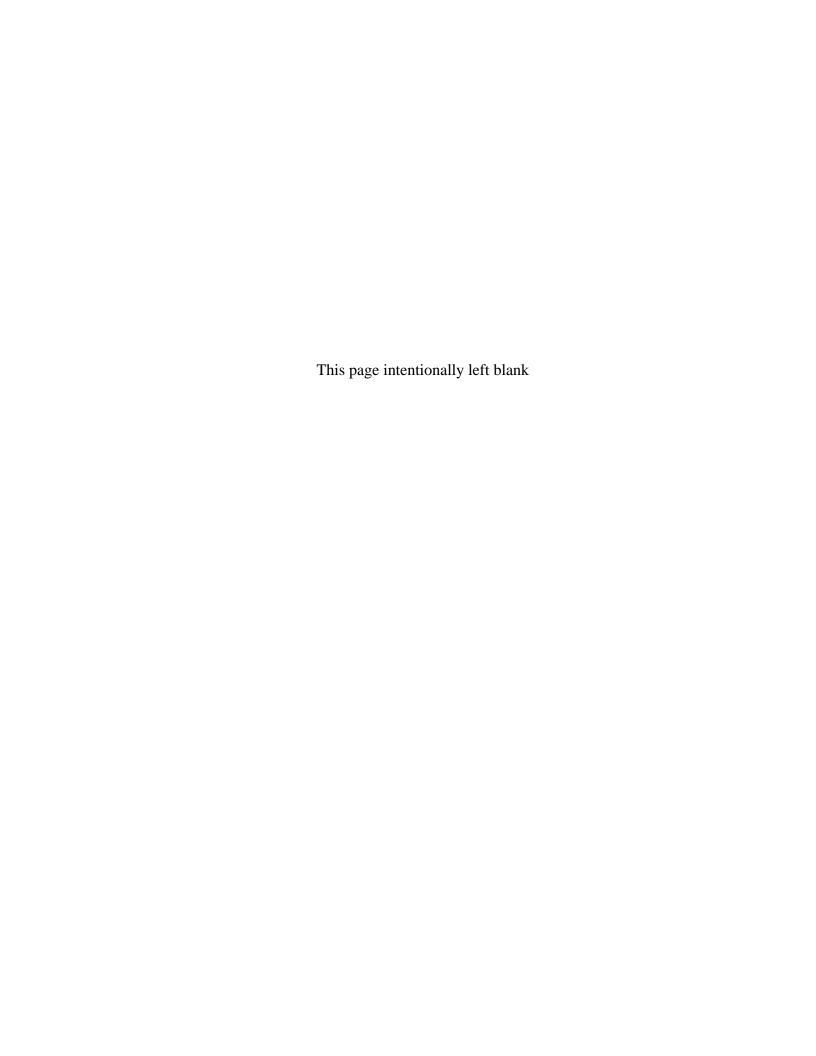
## Upper Malibu Creek Watershed Trash TMDL 2019-2020 Annual Monitoring Report

submitted to

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

submitted by

COUNTY OF VENTURA AND VENTURA COUNTY WATERSHED PROTECTION DISTRICT



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#### **Executive Summary**

The purpose of this report is to present the results of the ninth year (July 1, 2019 through June 30, 2020) monitoring efforts conducted by the County of Ventura (County) and Ventura County Watershed Protection District (VCWPD). The program is designed to comply with the requirements of the Amendments to the Water Quality Control Plan – Los Angeles Region for the Malibu Creek Watershed Trash TMDL (Trash TMDL), Resolution No. R4-2008-007 (effective July 7, 2009). The trash monitoring results and compliance assessments are reported for point source waste load allocations (WLAs) and non-point source load allocations (LAs). Monitoring efforts were conducted according to the Trash Monitoring and Report Plan (TMRP) for the Malibu Creek Trash TMDL submitted to the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) on April 30, 2010.

On September 10, 2020, Regional Water Quality Control Board – Los Angeles Region (Los Angeles Water Board) adopted Conditional Waiver of Waste Discharge Requirements for Discharges of Trash from Nonpoint Sources in Waterbodies Subject to Total Maximum Daily Loads for Trash or Debris (Trash Conditional Waiver). This Conditional Waiver required submittal of annual TMRP reports by December 15, therefore in order to meet reporting requirements of both Revised Trash TMDL and Conditional Waiver, this Annual Report is submitted on December 15, 2020.

The County and VCWPD are complying with the point source requirements of the Trash TMDL through the installation of full capture systems in all conveyances collecting drainage from Priority Land Use areas and implementation of a MFAC/BMP Program in all the non-priority land use areas. To comply with the 2009 Trash TMDL point source requirement of a 100 percent reduction of trash from the baseline WLA, the County and VCWPD needs to show a minimum of a 30 percent decrease from at least one of the three baseline WLAs listed in the TMRP. This is due to the installed full capture systems collecting 70 percent of the total trash generated in the County/VCWPD's jurisdictions.

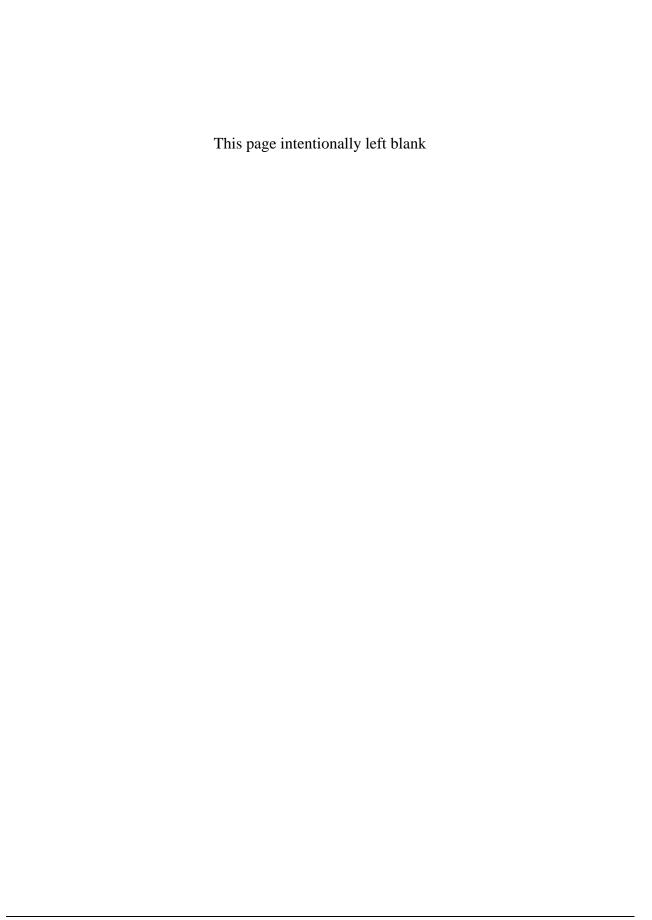
The MFAC trash data showed a 74 percent reduction in the volume of trash compared to the baseline WLA, a 68 percent reduction in the weight of trash compared to the baseline WLA and a 88 percent reduction in trash from the pieces baseline WLA. Based on the amount of trash captured by the County/VCWPD's full capture systems, and the greater than 30 percent reduction shown in the three baseline WLA metrics, the County/VCWPD are complying with the final July 2017 point source requirement of a 100 percent reduction in trash from the baseline WLA.

The County/VCWPD are complying with the non-point source requirements of the Trash TMDL through the implementation of a MFAC/BMP Program. Immediately following each MFAC Event, the MFAC/BMP Program resulted in zero trash as required by the Trash TMDL. Furthermore, the average monthly volume of trash, weight of trash, and the amount of trash were 0.15 cubic feet, 0.43 pounds, and 10 pieces, respectively. This indicates that trash is not accumulating in deleterious amounts that cause nuisance or adversely affect beneficial uses between collections. Therefore, the MFAC/BMP Program is effective for meeting the Trash TMDL's non-point source requirements.

In 2015, the State Water Resources Control Board established statewide Trash Amendments to the Water Quality Control Plans for the Ocean Waters of California and Inland Surface Waters, Enclosed Bays, and Estuaries of California (Trash Amendments) in areas not subject to Trash

TMDLs. The Trash Amendments specified that MS4 permittees may install full capture devices in all storm drains that capture runoff from the priority land uses in their jurisdictions. In June 2018, the Regional Board opened the TMDL for reconsideration. Before the TMDL was revised, MS4 permittees (point sources) that chose to comply with the Trash TMDL WLAs via installation of full capture devices were required to install them in all conveyances discharging to the Malibu Creek Watershed. The Trash TMDL was ultimately revised to align with the Trash Amendments and was adopted in June 2018 (Revised Trash TMDL). The Revised Trash TMDL became effective on May 6, 2020.

As required by the Revised Trash TMDL and Trash Conditional Waiver, on August 6, 2020, the County/VCWP submitted a revised TMRP to the Regional Board proposing revisions to the upper Malibu Creek TMRP. The proposed changes include a transition to a visual trash assessment method and revision of monitoring frequency. Trash assessment program will be revised as soon as revised TMRP is approved for implementation.



#### 1 Overview

The purpose of this Annual Report is to present the results of the ninth-year (2019-2020) monitoring efforts conducted by County of Ventura (County) and Ventura County Watershed Protection District (VCWPD). The monitoring efforts are designed to comply with the requirements of the Amendments to the Water Quality Control Plan – Los Angeles Region for the Malibu Creek Watershed Trash TMDL (Trash TMDL), Resolution No. R4-2008-007 (effective July 7, 2009). Monitoring efforts were conducted according to the Trash Monitoring and Report Plan (TMRP) for the Malibu Creek Trash TMDL submitted to the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) on April 30, 2010. To complete this effort, the responsible parties hired the California Conservation Corps (CCC) to conduct field monitoring efforts.

On September 10, 2020, Regional Water Quality Control Board – Los Angeles Region (Los Angeles Water Board) adopted Conditional Waiver of Waste Discharge Requirements for Discharges of Trash from Nonpoint Sources in Waterbodies Subject to Total Maximum Daily Loads for Trash or Debris (Trash Conditional Waiver). This Conditional Waiver required submittal of annual TMRP reports by December 15, therefore in order to meet reporting requirements of both Revised Trash TMDL and Conditional Waiver, this Annual Report is submitted on December 15, 2020.

The Trash TMDL assigns the County and the VCWPD point source waste load allocations (WLAs) and non-point source load allocations (LAs) as well as a numeric target of "zero trash in the above listed subwatersheds of the Malibu Creek Watershed, and on the shorelines of those waterbodies." For point sources, zero is defined "as no trash discharged into the listed waterbodies of the Malibu Creek Watershed and on the shorelines of those waterbodies." For non-point sources, zero is defined as "no trash immediately following each assessment and collection event with an established Minimum Frequency of Assessment and Collection Program (MFAC Program). The MFAC Program is established at an interval that prevents trash from accumulating in deleterious amounts that cause nuisance or adversely affect beneficial uses between collections." The MFAC Program and TMRP were developed to meet the requirements of the Trash TMDL and to assess compliance with the point source WLAs and non-point source LAs.

#### This TMRP Annual Report includes:

- A description of the MFAC Site and a summary of the monitoring events conducted during the 2019-2020 reporting year;
- A discussion of the data collected during the 2019-2020 reporting year;
- A compliance discussion for point and non-point sources;
- A summary of trash best management practices (BMPs) implemented; and
- Recommended changes to the MFAC/BMP Program and TMRP.

In 2015, the State Water Resources Control Board established statewide Trash Amendments to the Water Quality Control Plans for the Ocean Waters of California and Inland Surface Waters, Enclosed Bays, and Estuaries of California (Trash Amendments) in areas not subject to Trash TMDLs. The Trash Amendments specified that MS4 permittees may install full capture devices in all storm drains that capture runoff from the priority land uses in their jurisdictions. In June 2018, the Regional Board opened the TMDL for reconsideration. Before the TMDL was revised, MS4 permittees (point sources) that chose to comply with the Trash TMDL WLAs via installation

of full capture devices were required to install them in all conveyances discharging to the Malibu Creek Watershed. The Trash TMDL was ultimately revised to align with the Trash Amendments and was adopted in June 2018 (Revised Trash TMDL). The Revised Trash TMDL became effective on May 6, 2020.

As required by the Revised Trash TMDL and Trash Conditional Waiver, on August 6, 2020, the County/VCWP submitted a revised TMRP to the Regional Board proposing revisions to the upper Malibu Creek TMRP. The proposed changes include a transition to a visual trash assessment method and revision of monitoring frequency. Trash assessment program will be revised as soon as revised TMRP is approved for implementation.

#### 2 MFAC Site and Monitoring Events

The following subsections provide information for the MFAC Site and for the completed monitoring events during the 2019-2020 reporting year.

#### 2.1 MFAC SITE LOCATION

The Medea Creek MFAC site (MC1) location was selected at the lowest point of flow from the subwatershed in Ventura County where creek morphology is conducive to accumulate trash deposits. This provides a measure of the level of trash movement in the subwatershed. This location was also judged to be accessible and safe for entry. The area within the County unincorporated community of Oak Park with drainage to Reach 2 of Medea Creek is 3.3 square miles. A breakdown of land uses for this area is: 6.93 percent commercial and community facilities; 30.1 percent residential; and 62.9 percent open space. The population in Oak Park is about 13,800. Medea Creek follows a single flow path as it moves through the assessment area. When flow levels rise due to a storm event, the stream configuration causes bank overflow and deposition of transported trash and debris onto an existing flood plain. The Medea Creek assessment site is shown in **Figure 1**.

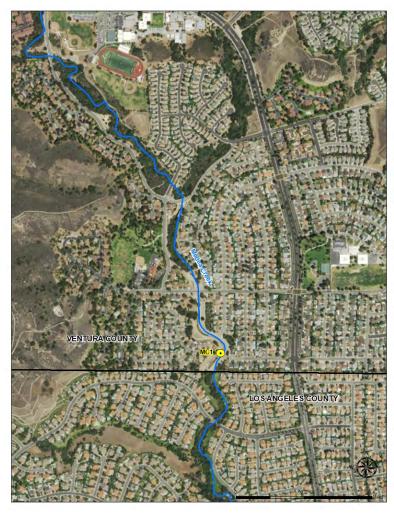


Figure 1. Medea Creek MFAC Site (MC1) Location

#### 2.2 SUMMARY OF MONITORING EVENTS

As specified in the TMRP, a minimum of one MFAC Event per month is conducted at the Medea Creek site. As mentioned above, the CCC conducted all MFAC Events, which were completed as indicated in **Table 1**. The CCC utilized an equivalent method/variation of the Rapid Trash Assessment Protocol (RTAP), developed by the San Francisco Bay Water Board. The CCC began each MFAC event at the lower site boundary and moved upstream making sure to differentiate between items found above and below the high-water line. The CCC collected all identified trash, while simultaneously categorizing and tabulating trash items on the field log (Appendix 1). After the collection was completed, the sum of each item found above and below the high-water line was written next to the item's respective category. The trash collected was then weighed and the volume measured.

**Table 1. MFAC Event Completion Summary (Monitoring)** 

Monitoring Date	Medea Creek Reach 2, MC1 Site
7/31/2019	X
8/27/2019	X
9/26/2019	X
10/24/2019	X
11/19/2019	X
12/17/2019	X
1/22/2020	X
2/22/2020	X
3/24/2020	X
4/29/2020	X
5/26/2020	X
6/24/2020	X

<sup>&</sup>quot;X" indicates a completed MFAC Event

Table 2. MFAC Event Completion Summary (Special Cleanup)

Monitoring Date	Medea Creek Reach 2, MC1 Site
7/25/2019	X
8/14/2019	X
9/17/2019	X
10/17/2019	X
11/7/2019	X
12/10/2019	X
1/7/2020	X
2/6/2020	X
3/17/2020	X
4/23/2020	X
5/2020	N/A
6/10/2020	X

<sup>&</sup>quot;X" indicates a completed MFAC Event

<sup>&</sup>quot;N/A" no Special Cleanup Event conducted in May 2020

#### 3 Data Collection Discussion

The location of trash (i.e., above or below the high-water line) at the site is likely associated with the method that the debris was deposited and can assist the Responsible Parties with sourcing the debris. Items found above the high-water line may have been deposited by wind transport, littering from adjacent land uses, and illegal dumping. Items found below the high-water line may have been deposited by downstream accumulation. During the monitoring year, the types of trash found were consistently urban and recreational.

The trash data collected during the 2019-2020 reporting year were highly variable in that during some months, the volume, weight, and pieces were higher above the high-water line than below and in some months, this trend was reversed. In addition, it is difficult to correlate the volume-to-weight-to-pieces data as the they often do not align. That is, one month there might be a high volume of trash, but a low weight of trash and a low number of pieces. Again, this trend might be reversed another month. Overall, the highest volume of trash occurred during December 2019, the highest weight in March 2020 and April 2020, and the highest number of pieces occurred in March 2020. Generally, the highest weight and pieces of trash occurred in winter and spring, and there is no clear pattern for volume. **Table 3** summarizes the volume, weight and pieces of trash found above and below the high-water line as well as the total amount of trash collected at MC1 site, by month. **Figure 2**, **Figure 3**, and **Figure 4** show the volume of trash collected, the weight of trash collected, and the pieces of trash collected, respectively.

Table 3. Trash Data Collected Above and Below the High-Water Line and Total Trash Collected at MC1 (monitoring)

	Above High-Water Line		Below High-Water Line			Total Trash Collected			
Date	Volume (CF)	Weight (lbs)	Total Pieces of Trash	Volume (CF)	Weight (lbs)	Total Pieces of Trash	Volume (CF)	Weight (lbs)	Total Pieces of Trash
7/31/2019	0.05	0.22	5	0.00	0.11	0	0.05	0.33	5
8/27/2019	0	0.10	5	0	0.17	1	0	0.27	6
9/26/2019	0.05	0.06	1	0.05	0.13	5	0.10	0.19	6
10/24/2019	0.50	0.03	6	0.50	0.01	5	1.0	0.04	11
11/19/2019	0	0	0	0	0	0	0	0	0
12/17/2019	0.05	.006	1	0.10	.66	13	0.15	0.67	14
1/22/2020	0.05	.006	3	0.05	0.5	13	0.10	0.51	16
2/20/2020	0	0	0	0.10	0.69	8	0.10	0.69	8
3/24/2020	0.05	0.34	17	0.05	0.47	16	0.10	0.81	33
4/29/2020	0.05	0.25	3	0.05	0.56	3	0.10	0.81	6
5/26/2020	0.05	0.38	4	0.05	0.28	6	0.10	0.66	10
6/24/2020	0	0	0	0.05	0.22	2	0.05	0.22	2
Totals	0.85	1.39	45	1.00	3.80	72	1.85	5.19	117

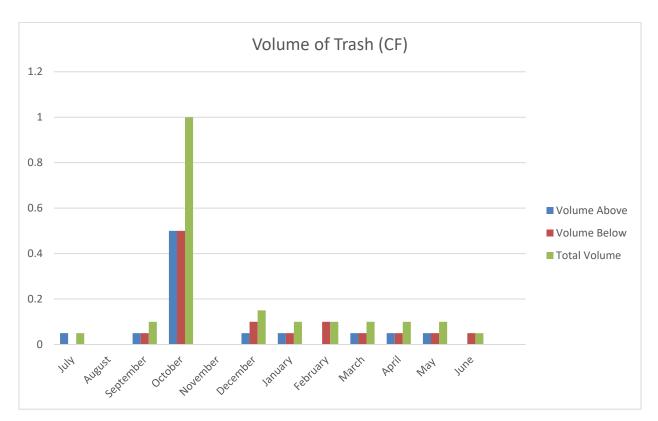


Figure 2. Volume of Trash Collected at MC1

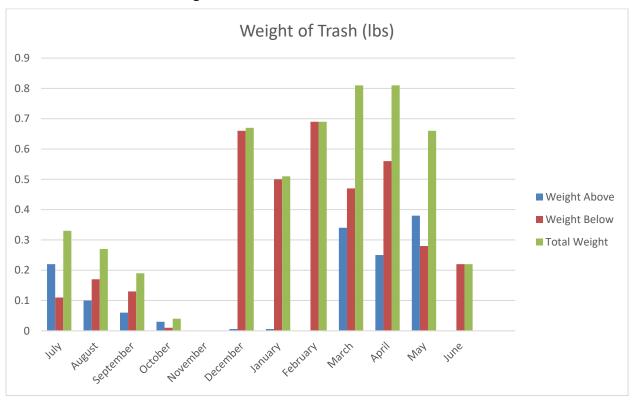


Figure 3. Weight of Trash Collected at MC1

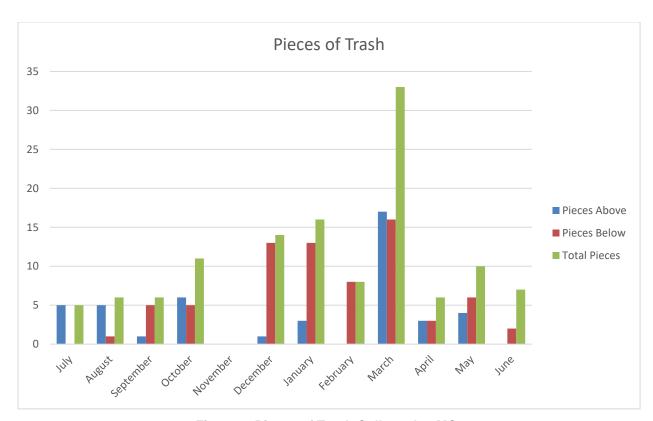


Figure 4. Pieces of Trash Collected at MC1

#### 4 TMDL Compliance Discussion

#### 4.1 POINT SOURCE COMPLIANCE

To address the point source requirements of the Trash TMDL, the County/VCWPD originally implemented a MFAC/BMP Program, which was detailed in the TMRP submitted to the Los Angeles Water Board on April 30, 2010. The Trash TMDL requires implementation of the TMRP six months from receipt of the letter of approval from Regional Board (Table 7-31.2a of the Trash TMDL). The County/VCWPD did not receive a response or approval from Los Angeles Water Board regarding the submitted TMRP and on March 25, 2011, submitted a Notice of Intent (NOI) to proceed with implementing the proposed TMRP. In July 2011, the County/VCWPD commenced implementing the proposed MFAC/BMP Program towards meeting the Trash TMDL's requirements.

The Trash TMDL requires point source dischargers to achieve a stepwise reduction in trash from the baseline WLA in 20 percent increments or install full captures systems in the corresponding percentages of conveyances discharging to the Malibu Creek Watershed. During the first year of monitoring, July 1, 2011 through June 30, 2012, trash volume, weight, and pieces data collected at the Medea Creek (MC1) monitoring location served as the baseline WLAs from which, the County/VCWPD have been assessing compliance (**Table 4**).

Table 4. Baseline WLAs for the Medea Creek Reach 2 (MC1) Sampling Site

Medea Creek Reach 2 (MC1) Sampling Site Baseline WLAs				
Volume (CF)	Weight (lbs)	Pieces		
7.2	16.3	970		

As discussed in details in the 2016-2017 Trash Monitoring Report, in consultation with Regional Water Board staff, the County revised point source compliance strategy and installed full capture devices to address runoff from priority land uses as defined by the Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) and the Proposed Final Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan) (together, "Statewide Trash Provisions"). In addition, County continues addressing all non-priority land uses through a MFAC/BMP Program. To demonstrate compliance with the phased percent reductions required by the Trash TMDL, the County/VCWPD proposed to use the percent reduction identified by the trash data collected during the MFAC Events combined with the percent of total trash generated that is captured by the full capture systems in the priority land use areas. As described in the 2016-2017 Trash Monitoring Report, it was concluded that the County/VCWPD needs to show at least a 30 percent reduction from one of the baselines WLA matrices through the MFAC/BMP Program to comply with the final July 2017's 100 percent reduction from the baseline WLA requirement.

As shown in Table 5, the trash data collected during the 2019-2020 reporting year through the MFAC Program at MC1 showed a 74 percent reduction in the volume of trash compared to the baseline WLA, a 68 percent reduction in the weight of trash compared to the baseline WLA, and a 88 percent reduction in trash from the pieces baseline WLA. Based on the amount of trash captured by the County's/VCWPD's full capture systems, and the greater than 30 percent

reduction shown in the three baseline WLA metrics, the County/VCWPD are complying with the final July 2017 point source requirement of a 100 percent reduction in trash from the baseline WLA.

Table 5. 2018-2019 Percent Reductions from Baseline WLAs

Metric	Volume (CF)	Weight (lbs)	Pieces
Baseline WLA	7.2	16.3	970
30 percent Reduction from Baseline WLA Values	5.04	11.41	649
2019-2020 Trash Data	1.85	5.19	117
Percent Reduction from Baseline WLA	74 percent	68 percent	88percent

The Revised Trash TMDL indicates the responsible parties will only need to address priority land uses within their jurisdictions to meet the point source requirements. The County/VCWPD have installed full capture systems all conveyances collecting drainage from priority land use areas within their jurisdictions. As such, the County/VCWPD will no longer need to show 30% reduction from the baseline WLAs for compliance according to the Revised Trash TMDL.

#### 4.2 NON-POINT SOURCE COMPLIANCE

For non-point sources, the numeric target of zero trash is defined as "no trash immediately following each assessment and collection event with an established Minimum MFAC Program, where the MFAC Program is established at an interval that prevents trash from accumulating in deleterious amounts that cause nuisance or adversely affect beneficial uses between collections."

Immediately following each 2019-2020 MFAC Event, the MFAC Program resulted in zero trash as required by the Trash TMDL for non-point sources. Furthermore, the average monthly volume, weight, and amount of trash were 0.15 cubic feet, 0.43 pounds, and 9.75 pieces, respectively. This indicates that trash is not accumulating in deleterious amounts that cause nuisance or adversely affect beneficial uses between collections. Therefore, the MFAC/BMP Program is effective for meeting the Trash TMDL's non-point source requirements.

#### 5 Trash BMPs Implemented

The County/VCWPD Litter Management Program includes the following:

- Catch basin cleaning Catch basins, including full capture devices, are inspected at least once a year and cleaned when filled to 25 percent or more of the catch basin's capacity as required by the Ventura MS4 Permit. County has been cleaning all inspected catch basins regardless of what percent of catch basin capacity is filled up with vegetation debris and occasional trash. During storm season, all drainage facilities are inspected and cleaned as necessary. Example photos from a full capture device inspection and cleaning event are presented in **Appendix 3**.
- The County is developing an ArcGIS Survey123 app to track catch basin inspections and cleanings. Survey123 allows field staff to collect data via a mobile device and enables staff to efficiently analyze the catch basin inspection results.
- Open channel storm drain maintenance All channels owned and maintained by VCWPD are cleared, inspected, and cleaned as required, at least once per year.
- In July 2018, County/VCWPD initiated additional monthly cleanups events in addition to monthly trash assessment events.
- Ventura County's catch basins are labeled, "Don't Pollute, Flows to Waterways."
- Trash Management at Public Events A trash and litter management plan is required when
  obtaining a permit for staging public events. This plan requires adequate facilities for trash
  collection and disposal.
- Public areas Trash receptacles have been placed within high trash generation areas. These devices are cleaned and maintained regularly to prevent trash overflow.
- The amended Ventura County Stormwater Quality Management Ordinance for Unincorporated Areas (Ventura County Ordinance No. 4450) has been in effect since August 2012. It includes litter and trash specific prohibitions (§ 6942 and § 6954) on the discharge or deposition of trash that may enter the County storm drain system or receiving waters. The revised ordinance also includes increased civil penalties for violations and provisions for issuing administrative fines, recovery of costs, and misdemeanor violations.
- The County and VCWPD participate in the Ventura Countywide Stormwater Quality
  Management Program to that provides outreach and education facilitated by contracted
  services from "Sagent," a professional advertisement group that designs and conducts
  countywide, bilingual outreach programs advocating proper trash disposal. Outreach
  includes social media messages about litter prevention and the protection of stormwater
  quality.
- Various Stormwater Pollution Prevention -related social media posts by the Ventura County Community for Clean Watersheds.
- The County conducts commercial, industrial, and construction facility/site inspections to
  ensure pollution prevention BMPs are adequate and maintained and to educate employees
  about the importance of pollution prevention.

#### 6 Recommended MFAC Program and TMRP Changes

On June 14, 2018, the Los Angeles Water Board adopted proposed revisions to the Trash TMDL that align the Trash TMDL with the Statewide Trash Provisions (Revised Trash TMDL). As required by the Revised Trash TMDL and Trash Conditional Waiver, on August 6, 2020, the County/VCWPD submitted a revised TMRP to the Regional Board proposing revisions to the approved TMRP in response to the revised Trash TMDL. The proposed changes include a transition to a visual trash assessment method and revision of monitoring frequency.

Findings from monitoring during the past nine years have demonstrated that an alternate monitoring method is needed to improve the MFAC/BMP Program. The proposed approach will utilize the methods and monitoring procedures outlined in the approved TMRPs for Ventura River Estuary and the Revolon Slough/Beardsley Wash Trash TMDLs, which have been successfully implemented in these watersheds since June 2014, and May 2015, respectively.

The current TMRP approach assesses the amount of trash present in the Malibu Creek watershed through collecting and counting the number of pieces of trash and measuring the weight and volume of the trash found in two representative sites within the watershed. The responsible parties propose modifying this approach to transition to a more streamlined process, by implementing a visual assessment method. The visual monitoring approach utilizes a three-point scoring system based on the "Level of Trash" scoring category discussed in the Surface Water Ambient Monitoring Program (SWAMP) Protocol to estimate the presence of litter in a specific area.

The responsible parties propose maintaining the monitoring and MFAC/BMP event frequency established by the April 2010 TMRP, but will update the monitoring approach to follow the visual monitoring approach discussed above. The proposed monitoring frequency, combined with the MFAC/BMP program, is anticipated to be sufficient to collect trash generated during critical condition events. As discussed in the annual reports, targeted critical condition monitoring was conducted during the first year of the monitoring program and discontinued based on the results of that assessment. In subsequent years, an assessment of critical conditions was conducted in the annual reports based on a comparison of the trash levels observed during monitoring events that occurred after the critical condition event. Based on those assessments, the reports identified that rain prior to a monitoring event may increase the amount of trash present during the monitoring event. However, similar elevated levels of trash are present regardless of the amount of time between the rain event and the cleanup event, indicating that the regular cleanup and assessment events can be utilized to address trash generated from critical condition events. Wind events do not appear to have as much of an impact on the trash monitoring results. The monitoring results will continue to be used to evaluate the accumulation of trash between visual monitoring events and to determine if any modifications to the clean-up event frequency is needed to address critical conditions.

In addition, County/VCWPD will continue conducting additional monthly cleanup events in addition to the on-going implementation of the BMP Program, as initiated in July 2018.

#### 7 Conclusion

During the 2019-2020 reporting year, the County/VCWPD conducted monthly MFAC Events at the MC1 site in Medea Creek Reach 2 including collection of trash volume, weight, and number of pieces data during each MFAC Event. The trash data collected were highly variable and it is difficult to correlate the volume-to-weight-to-pieces data as the they often do not align. Overall, the highest volume of trash occurred during December 2019, the highest weight in March and April 2020, and the highest number of pieces occurred in March 2020. Generally, the highest weight of trash was found in spring, volume of trash was consistent throughout winter and spring, and there is no clear pattern using pieces of trash data.

The County/VCWPD are complying with the point source requirements of the Trash TMDL through the installation of full capture systems in all conveyances collecting drainage from priority land uses areas and implementation of a MFAC/BMP Program in all the non-priority land use areas. As described in the 2016-2017 Trash Monitoring Report, the installed full capture systems address 70 percent of the total trash generated within the County unincorporated MS4 areas. As such, to comply with the point source requirement of a 100 percent reduction of trash from the baseline WLA, the County/VCWPD needs to show a minimum of a 30 percent decrease from at least one of the three the baseline WLAs listed in the TMRP.

The 2019-2020 MFAC trash data showed a 74 percent reduction in the volume of trash compared to the baseline WLA, 68 percent reduction in the weight of trash compared to the baseline WLA and a 88 percent reduction in trash from the pieces baseline WLA. Based on the amount of trash captured by the County's/VCWPD's full capture systems, and the greater than 30 percent reduction shown in the three baseline WLA metrics, the County/VCWPD are complying with the final July 2017 point source requirement of a 100 percent reduction in trash from the baseline WLA.

As of the effective date of Revised Trash TMDL, May 6, 2020, County/VCWPD complies with point-source WLAs by installation and maintenance of full capture devices in Priority Land Use and does not need to show at least 30% reduction of trash.

The County/VCWPD are complying with the non-point source requirements of the Trash TMDL through the implementation of a MFAC/BMP Program. Immediately following each MFAC Event, the MFAC/BMP Program resulted in zero trash as required by the Trash TMDL. Furthermore, the average monthly volume of trash, weight of trash, and the amount of trash were 0.15 cubic feet, 0.43 pounds, and 9.75 pieces, respectively. This indicates that trash is not accumulating in deleterious amounts that cause nuisance or adversely affect beneficial uses between collections. Therefore, the MFAC/BMP Program is effective for meeting the Trash TMDL's non-point source requirements.

As required by the Revised Trash TMDL and Trash Conditional Waiver, on August 6, 2020, the County/VCWP submitted a revised TMRP to the Regional Board proposing revisions to the upper Malibu Creek TMRP. The proposed changes include a transition to a visual trash assessment method and revision of monitoring frequency. Trash assessment program will be revised as soon as revised TMRP is approved for implementation

# Appendix 1 Field Logs and Photos

available at

https://countyofventuraca-my.sharepoint.com/:f:/g/personal/ewelina\_mutkowska\_ventura\_org/Er6t 66\_EqVhFpHMsst9NL4sBMuAX1ls2vTR3HabG0z1U1Q?e=Vh6yfb

# Appendix 2 2019-2020 Public Educational Outreach





September 2019 – Coastal Cleanup Day 2019 posters

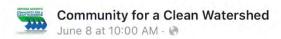


County Stormwater Program information booth setup for the CSU Channel Islands Science Carnival March 2020 in Oxnard, California



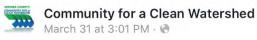
During 2020 Annual Public Works Week, the County Stormwater Program and 1st grade "intern" prepared bilingual, in English and Spanish, presentation about pervious concrete. The movie is available at <a href="https://www.vcpublicworks.org/npww/">https://www.vcpublicworks.org/npww/</a>

#### **Social Media Posts**



Litter is preventable. Keep litter off our streets and parks and out of our rivers, creeks, and ocean. Do your part by putting trash and recyclables in the proper bin. Remember, Ventura County watersheds are yours to enjoy, yours to protect! Visit CleanWatershed.org. #MyCleanWatershed





No one likes litter, especially our watersheds! Keep our watersheds clean and happy by picking up any litter you see while you're practicing #socialdistancing and enjoying our watersheds. #MyCleanWatershed



7 1 Comment



Did you know cigarette butts make up over half of littered objects? Cigarette butts and other kinds of litter (like bottles and cans) take years to decompose, polluting our local waters. Elelp #KeepVenturaBeautiful by making sure your litter ends up in the proper bins



Comment

Like

Share

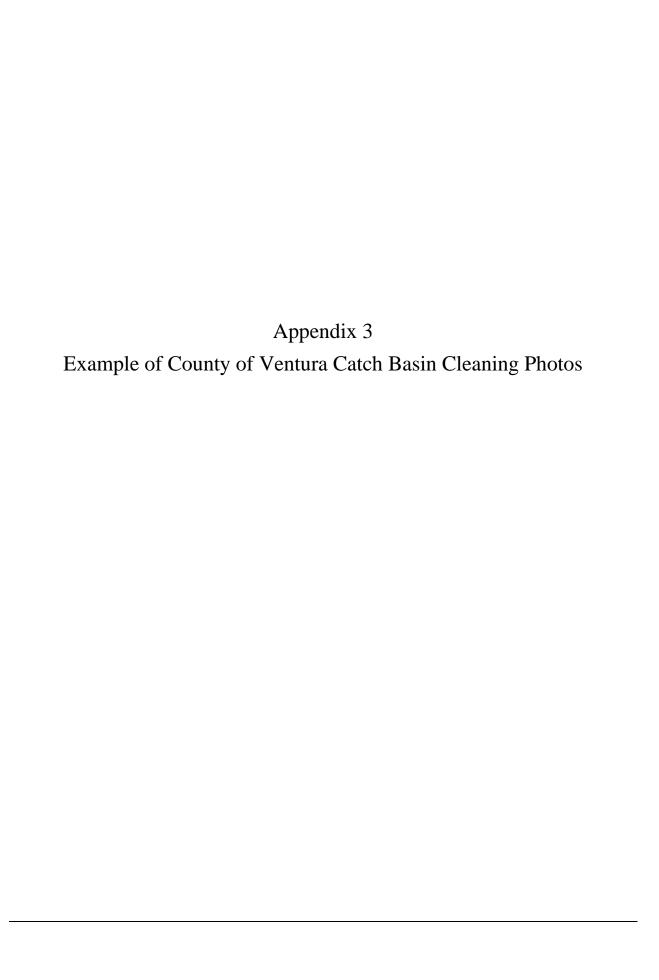




Figure 1: Catch basin prior to cleaning



Figure 2: Cleaned catch basin















December 16, 2020

Dr. L.B. Nye, Regional Programs Section Chief Regional Water Quality Control Board 320 W. 4th St., Suite 200 Los Angeles, CA 90013

Subject: 2020 DRY SEASON DATA SUMMARY FOR THE VENTURA RIVER ALGAE

TMDL (RESOLUTION NO. R12-011)

Dear Dr. Nye:

Enclosed for your review and consideration is the 2020 Dry Season Data Summary prepared and submitted to document completion of monitoring activities required by the Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients Total Maximum Daily Load, Resolution No. R12-011 (Ventura River Algae TMDL) and the Ventura River Algae TMDL Comprehensive Monitoring Plan for Receiving Water approved by Regional Water Quality Control Board on October 20, 2014.

This document is being submitted on behalf of the Ojai Valley Sanitary District, County of Ventura, Ventura County Watershed Protection District, City of Ojai, City of Ventura, California Department of Transportation, and the Ventura County Agricultural Irrigated Lands Group (represented by the Farm Bureau of Ventura County).

If you have any comments or questions regarding the attached document, please contact me at (805) 645-1382 or <a href="mailto:Ewelina.Mutkowska@ventura.org">Ewelina.Mutkowska@ventura.org</a>.

Sincerely,

Ewelina Mutkowska Digitally signed by Ewelina Mutkowska Date: 2020.12.16 09:01:36 -08'00'

Ewelina Mutkowska, Manager County Stormwater Program Ventura County Public Works Agency Dr. L.B. Nye December 16, 2020 Page 2 of 2

cc: Jun Zhu, Regional Water Quality Control Board
Jeff Pratt, County of Ventura Public Works Agency
Glenn Shephard, Ventura County Watershed Protection District
Arne Anselm, Ventura County Watershed Protection District
Joe Yahner, City of Ventura
Greg Grant, City of Ojai
Jeff Palmer, Ojai Valley Sanitary District
John Krist, Farm Bureau of Ventura County
Shirley Pak, California Department of Transportation
Bhaskar Joshi, California Department of Transportation

#### DECEMBER 2020















# TOTAL MAXIMUM DAILY LOAD FOR ALGAE, EUTROPHIC CONDITIONS, AND NUTRIENTS IN VENTURA RIVER, INCLUDING THE ESTUARY, AND ITS TRIBUTARIES (VR ALGAE TMDL)

#### **2020 DRY SEASON DATA SUMMARY**

Submitted to

TMDL Responsible Agencies Implementing Receiving Water Monitoring Requirements:

City of Ojai
City of Ventura
County of Ventura
Ojai Valley Sanitary District
California Department of Transportation
Ventura County Agricultural Irrigated Lands Group
Ventura County Watershed Protection District

Prepared by:



Rincon Consultants, Inc. December 16, 2020

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#### **Appendices**

Appendix A. Monthly In-situ Parameters
Appendix B. Monthly Nutrient Data

Appendix C. Dry Season Riverine Monthly Algal Biomass (Chlorophyll a) and Percent Macroalgal Cover

Appendix D. Full Size Continuous Data Logging Charts

#### **EXECUTIVE SUMMARY**

On behalf of the Total Maximum Daily Load (TMDL) Responsible Agencies, the Ventura County Watershed Protection District (District) began monitoring in accordance with the Ventura River Algae TMDL Comprehensive Monitoring Plan for Receiving Waters (CMP) on January 14, 2015. Beginning in January 2020, the Responsible Agencies retained Rincon Consultants (Rincon) to implement this monitoring and reporting program. Aquatic Bioassay Consulting Laboratories (ABC) and Larry Walker Associates, subconsultants to Rincon, have been assisting with completion of the work.

As required by the TMDL, the CMP prescribes year-round monthly water quality monitoring for nutrients and other water quality parameters at one site in the Ventura River Estuary (TMDL-Est), one site in each of the Ventura River reaches 1 – 4, and in two main tributaries, Cañada Larga and San Antonio Creek (TMDL-R1, TMDL-R2, TMDL-R3, TMDL-R4, TMDL-CL and TMDL-SA, respectively). Continuous monitoring of dissolved oxygen (DO) and pH, as well as conductivity are required at each site every quarter. The CMP also requires monthly monitoring of algae during the dry season (May – September). This report includes dry season monitoring results, monthly checks for flow at observation sites, field and laboratory results, and continuous data logging results from monitoring conducted from May to September 2020.

The Ventura River Watershed has been subjected to increased environmental stresses in recent years. In addition to severe drought, the watershed was heavily impacted by the Thomas Fire, which started on December 4, 2017 and was declared contained on January 12, 2018, becoming, at that time, the largest recorded wildfire in California history. The fire burned most of the open space and forest lands in the Ventura River and other Ventura County watersheds, as well as orchards, homes, and other structures from Fillmore to Santa Barbara. Areas that did not burn, mainly the floor of the Ojai Valley, were still subject to heavy ash deposition.

The 2019/20 wet season produced slightly less than average rainfall and unlike the 2019 dry season, in which surface flow was continuous from the upper watershed through the estuary until September 2019, during the 2020 dry season surface flow in the Ventura River became discontinuous near Santa Ana Blvd by July 2020. Surface flow became discontinuous in San Antonio Creek upstream of TMDL-SA by July 2020 as well. Surface flow continued at TMDL-R4 for the duration of the dry season, and TMDL-R3 and below are perennial. The flow at TMDL-R2 is a combination of flow in the Ventura River downstream of TMDL-R3 and discharge from the Ojai Valley Sanitary District's wastewater treatment plant. Potential causes for changes in flow include surface/subsurface flow, groundwater interaction, geology and infiltration rates, antecedent moisture, agricultural and urban inputs and extractions, etc.

Three out of five sampleable sites exceeded the seasonal average numeric target for macroalgal cover ( $\leq$ 15% for the estuary and  $\leq$ 30% for the riverine sites). All sites met the seasonal average numeric target for algal biomass (estuarine phytoplankton seasonal average chlorophyll a target of  $\leq$ 20 micrograms per liter ( $\mu$ g/L), riverine seasonal average chlorophyll a target of  $\leq$ 150 milligrams per square meter ( $\mu$ g/m²). All measurements for pH were within the numeric target limits except for TMDL-Est during the June monthly monitoring and TMDL-CL during the May continuous monitoring. Levels of DO below the numeric target were generally measured during periods of low flow and at the low points of the diurnal patterns at some sites. The measured range for total nitrogen was 0.077 Detected Not Quantified (DNQ) milligrams per liter ( $\mu$ g/L) to 1.68 mg/L and total phosphorus was 0.016 (DNQ) mg/L to 0.17 mg/L.

Hydrolab HL4 water quality sondes have been used for the quarterly two-week continuous monitoring requirement since March 2015. As required by the TMDL, the sondes were deployed in May and September during the 2020 Dry Season; however, the estuary sonde was not deployed in May due to high vandalism risk. Sondes were deployed at all other sites in May and at all sites except TMDL-SA and TMDL-CL in September, due to dry conditions. The sondes were calibrated by ABC before each event to ensure measurements were accurate. Point measurements were taken near the sondes during sonde retrieval to check for drift/fouling of the sonde sensors. Deployed sondes logged data for a two-week period in the 2<sup>nd</sup> and 3<sup>rd</sup> quarters beginning on May 15 and September 10, respectively.

Monitoring event data, including field data sheets and laboratory reports, will be provided in the 2020-21 Annual Report.

#### **BACKGROUND**

The Water Quality Control Plan for the Los Angeles Region was amended on December 6, 2012 to incorporate the Total Maximum Daily Load for Algae, Eutrophic Conditions, and Nutrients in the Ventura River, including the Estuary, and its Tributaries (VR Algae TMDL). The VR Algae TMDL became effective on June 28, 2013 and required the development and implementation of a comprehensive monitoring plan (CMP) for receiving water monitoring to assess numeric attainment and measure in-stream nutrient concentrations. The CMP submitted by the Responsible Agencies (Ojai Valley Sanitary District, Ventura County Watershed Protection District, County of Ventura, City of Ojai, City of San Buenaventura (Ventura), California Department of Transportation, and the Ventura County Agricultural Irrigated Lands Group (represented by the Farm Bureau of Ventura County) was approved by the Los Angeles Regional Water Quality Control Board (Regional Board) on October 20, 2014.

On November 18, 2014, the Ventura County Watershed Protection District (District) was retained by the Responsible Agencies to conduct monitoring in accordance with the CMP for up to 5 years. The CMP required monitoring to begin no later than 90 days after the Los Angeles Regional Water Quality Control Board approved the CMP, which equates to January 18, 2015. Monitoring began on January 14, 2015.

As required by the VR Algae TMDL, the CMP prescribes year-round monthly water quality monitoring for nutrients and other water quality parameters at one site in the Ventura River Estuary, one site in each of the Ventura River reaches 1-4, and in two main tributaries, Cañada Larga Creek and San Antonio Creek. Continuous monitoring of dissolved oxygen (DO) and pH (both of which also require temperature monitoring), as well as conductivity are required at each site every quarter. The CMP requires monthly monitoring of algae (chlorophyll a and percent macroalgal cover) during the dry season (May – September). This report is a summary of monthly dry season monitoring results from May 2020 to September 2020, and quarterly continuous data logging results conducted in May and September.

FIGURE 1. MONITORING SITES AND FLOW OBSERVATION LOCATIONS



## **ACCESS PERMISSION**

In 2015, to allow for continuity of site locations, five-year easements were sought from property owners where the sites are located for the fee of \$250 per term. The temporary easements expire five years from the date of approval (early 2020). Two property owners declined the five-year easement request but signed a revocable access permit instead. The sites affected by the permits are TMDL-R2 (which was moved upstream of the site listed in the CMP because the owner of that parcel denied the access request) and TMDL-SA directly above the confluence with the Ventura River. TMDL-R2 was sampled approximately 200 meters upstream of the Ojai Valley Sanitary District OVSD site (OVSD-R5) for monthly monitoring and approximately 300 meters upstream for continuous monitoring to be entirely on permitted property.

# MONTHLY MONITORING

Monthly monitoring was conducted during the 2020 dry season in accordance with the CMP, which included collection of nutrient grab samples, in-situ parameters, flow, algal biomass samples and macroalgae percent cover. Note that storm flows over the 2018 – 2019 wet season redirected the Ventura River near TMDL-R4 to the west bank and heavy flows made access difficult to the former monitoring area during the 2019-2020 monitoring period. As such, monitoring was conducted approximately 100 meters downstream of the previous location. Monitoring event dates and monitoring agency details are presented in **Table 1**.

TABLE 1. MAY - SEPTEMBER 2020 WATER QUALITY MONITORING DATES

Site	Monitoring	Monitoring Date									
Site	Agency	May 2020	June 2020	July 2020	August 2020	September 2020					
TMDL-Est	Rincon/ABC	5/14/2020	6/11/2020	7/9/2020	8/20/2020	9/10/2020					
TMDL-R1	Rincon/ABC	5/14/2020	6/11/2020	7/9/2020	8/20/2020	9/10/2020					
TMDL-R2	Rincon/ABC	5/14/2020	6/11/2020	7/9/2020	8/20/2020	9/10/2020					
TMDL-R3	Rincon/ABC	5/13/2020	6/10/2020	7/8/2020	8/19/2020	9/9/2020					
TMDL-R4	Rincon/ABC	5/13/2020	6/10/2020	7/8/2020	8/19/2020	9/9/2020					
TMDL-SA	Dincon/ADC	E /12 /2020	6/10/2020	(MOSTLY DRY)	(DRY)	(DRY)					
TIVIDL-SA	Rincon/ABC	5/13/2020	6/10/2020	7/8/2020	8/19/2020	9/9/2020					
TMDL CL	Pincon/APC	E /12 /2020	6/10/2020	(DRY)	(DRY)	(DRY)					
TMDL-CL	Rincon/ABC	5/13/2020	6/10/2020	7/8/2020	8/19/2020	9/9/2020					

#### **Table Notes:**

Grey shading indicates dry or mostly dry conditions.

#### MONTHLY FIELD RESULTS

#### **FLOW**

Surface flow was continuous from the upper watershed through to the estuary for both the Ventura River and San Antonio Creek sites through June. After June, surface flow became discontinuous near Santa Ana Boulevard in the Ventura River, and upstream of TMDL-SA in San Antonio Creek. TMDL-R4 flowed for the duration of the dry season monitoring period in addition to the downstream reaches of the Ventura River (TMDL-R3 through TMDL-Est) which are characteristically perennial. Flow presence/absence observations (flowing, ponded, or dry) are provided for the visual observation monitoring locations in **Table 2**. In addition, the estuary berm was open throughout the 2020 dry season monitoring period. A summary table of all monthly field parameters is included in **Appendix A**.

<sup>&</sup>quot;Mostly Dry" indicates that water was present at the monitoring site, but flow was insufficient to meet algae sampling protocols so monthly monitoring parameters were sampled but algae monitoring/collection could not be conducted.

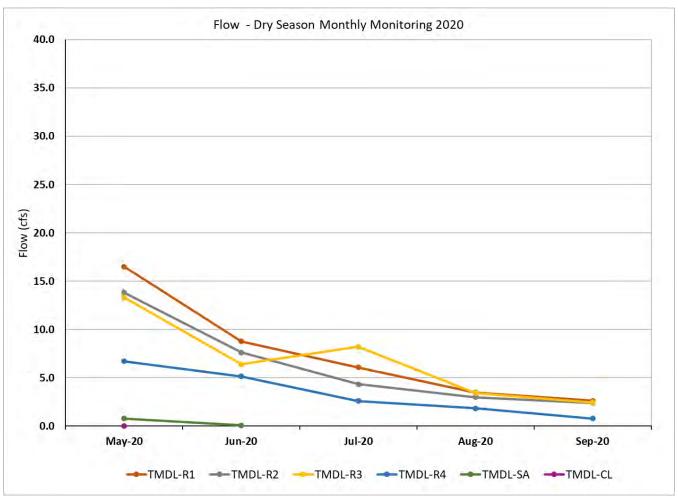
<sup>&</sup>quot;Dry" sites had insufficient water present for any sampling to take place due to absence of flow.

**TABLE 2. MAY - SEPTEMBER 2020 OBSERVATION SITES** 

Date	Ventura River at Hwy 150	Ventura River at Santa Ana Blvd	Ventura River at Casitas Vista Road
5/20/2020	Flowing	Flowing	Flowing
6/19/2020	Flowing	Flowing (Low Flow)	Flowing
7/23/2020	Flowing (Low Flow)	Dry	Flowing
8/20/2020	Dry	Dry	Flowing
9/28/2020	Dry	Dry	Flowing

Monthly flow data for the water quality monitoring locations are presented in **Figure 2**. As seen in this chart, flow during the dry season follows a receding trend, with flow at the four sites on the main stem of the Ventura River gradually receding. As expected, flow at the tributary sites TMDL-SA and TMDL-CL was much lower than at sites in the main stem of the Ventura River, and both sites became dry by June. Note that some variability has been observed during the dry season, potential causes of which may include surface/subsurface flow, groundwater interaction, geology and infiltration rates, antecedent moisture, agricultural and urban inputs and extractions.

FIGURE 2. 2020 DRY SEASON MONTHLY FLOW MONITORING



#### **Figure Notes:**

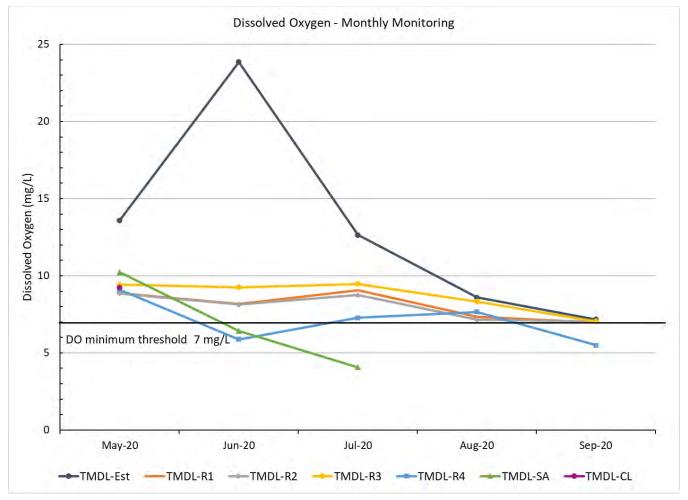
Missing data points for TMDL-CL and TMDL-SA after June are due to measurements not taken as a result of flow conditions (e.g., the site was dry or ponded).

Sites TMDL-R1, TMDL-R2, and TMDL-R3 are perennial. Flow at TMDL-R2 is a combination of flow in the Ventura River downstream of TMDL-R3 and discharge from the Ojai Valley Sanitary District's wastewater treatment plant.

#### **DISSOLVED OXYGEN**

During the 2020 dry season monitoring period DO concentrations measured during monthly monitoring events ranged from  $4.07 - 23.86 \,\text{mg/L}$  (Figure 3). The minimum ( $4.07 \,\text{mg/L}$ ) was recorded at TMDL-SA during the July monitoring event at 9:45am, the maximum ( $23.86 \,\text{mg/L}$ ) was recorded at TMDL-Est during the June monitoring event at 1:15pm. DO concentrations fell below the minimum threshold ( $7 \,\text{mg/L}$ ) at two of the seven sites (TMDL-SA and TMDL-R4), and all concentrations below the minimum threshold were measured between  $7:00 - 10:00 \,\text{am}$ . Low levels of DO tended to occur during periods of low flow (Figure 2), possibly due to the ponding (and potential stagnation) of water observed upstream and/or at the measurement location. In addition, DO is typically lower in the early morning and increases during the day, which may have also contributed to these low measurements.





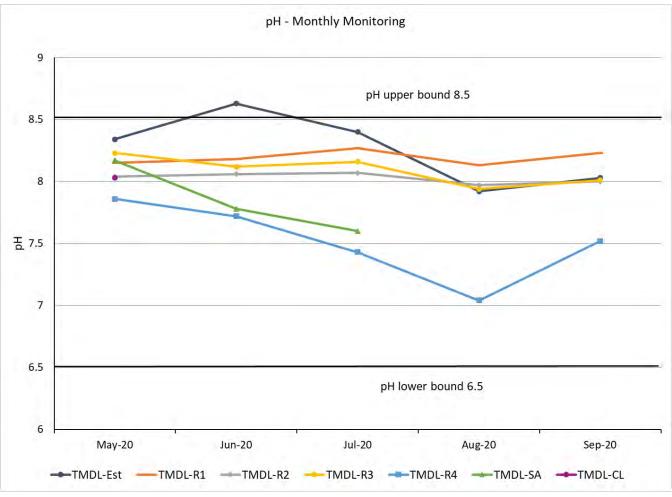
#### **Figure Notes:**

Missing data points for TMDL-CL after May and TMDL-SA after June are due to measurements not taken as a result of flow conditions (e.g., the site was dry or ponded).

РΗ

During the 2020 dry season monitoring period, pH measurements taken during monthly monitoring events ranged from 7.04 to 8.63 (Figure 4). The minimum (7.04) was recorded at TMDL-R4 during the July monitoring event at 7:55am, and the maximum (8.94) was recorded at TMDL-R4 during the August monitoring event at 7:50am. pH measurements at all sites, except TMDL-Est, were within the pH target range (6.5 - 8.5) for the duration of the monitoring period. At TMDL-Est, pH exceeded the upper bound of the target range (8.5) in June with a measurement of 8.63 taken at 1:15pm.

FIGURE 4. 2020 DRY SEASON MONTHLY MONITORING - PH



Missing data points for TMDL-CL after May and TMDL-SA after June are due to measurements not taken as a result of flow conditions (e.g., the site was dry or ponded).

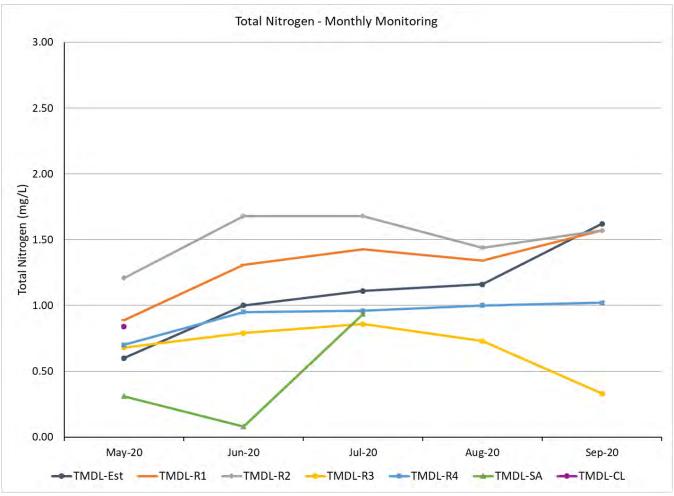
#### MONTHLY NUTRIENT RESULTS

Charts of results for total nitrogen and total phosphorus from the 2020 dry season are included below. A summary table of all nutrient results from the 2020 dry season is included in **Appendix B**.

#### **NITROGEN**

During the 2020 dry season monitoring, concentrations of total nitrogen above the laboratory reporting limit (0.4 mg/L) ranged from 0.60 mg/L to 1.68 mg/L (Figure 5). The lowest concentrations, including results below the reporting limit, occurred at TMDL-SA. The maximum concentration occurred during the July monitoring event at TMDL-R2, which had a dry season average of 1.5 mg/L. As a general trend, TMDL-SA and TMDL-R3 had the lowest total nitrogen concentrations, and TMDL-R1 and TMDL-R2 had the highest concentrations. A nitrogen summary table showing all results from the 2020 dry season monthly data is provided as **Appendix B**.

FIGURE 5. 2020 DRY SEASON MONTHLY MONITORING - TOTAL NITROGEN

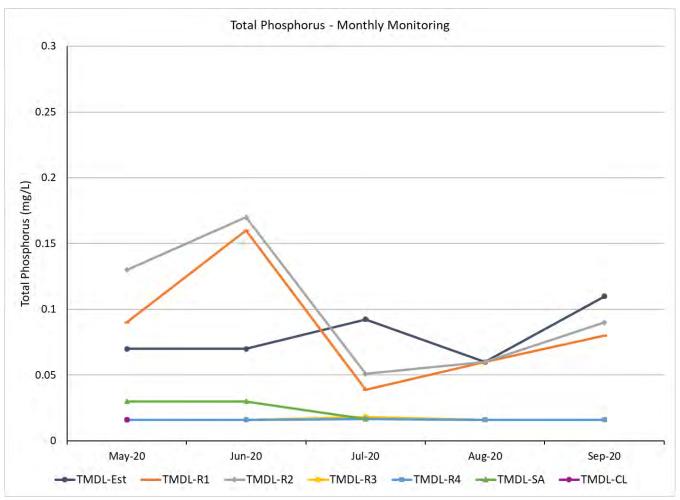


Missing data points for TMDL-CL after May and TMDL-SA after June are due to measurements not taken as a result of flow conditions (e.g., the site was dry or ponded).

#### **PHOSPHORUS**

During 2020 dry season monitoring, concentrations of total phosphorus above the laboratory reporting limit (0.02 mg/L) ranged from 0.027 mg/L to 0.171 mg/L (**Figure 6**). The maximum concentration occurred during the June monitoring event at TMDL-R2, which had a dry season average of 0.098 mg/L. As a general trend, sites TMDL-Est, TMDL-R1, and TMDL-R2 had higher total phosphorus concentrations than the other monitoring locations.

FIGURE 6, 2020 DRY SEASON MONTHLY MONITORING - TOTAL PHOSPHORUS



Missing data points for TMDL-CL after May and TMDL-SA after June are due to measurements not taken as a result of flow conditions (e.g., the site was dry or ponded).

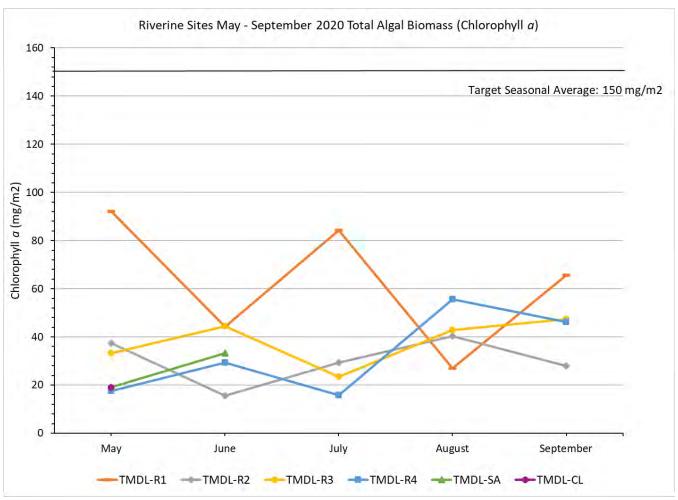
#### MONTHLY ALGAE RESULTS

The 2020 dry season sampling occurred monthly from May through September in accordance with the CMP. As discussed above, the upper watershed remained connected to the lower watershed into June 2020, before surface flows became discontinuous in July 2020 (see **Table 2**). All water quality monitoring locations had enough flow for algae sampling in May 2020. TMDL-CL was completely dry by the June 2020 monitoring event, and TMDL-SA was too dry for algae sampling by the July monitoring event.

#### RIVERINE SITES

In accordance with the VR Algae TMDL and CMP, algae sampling was conducted using the Surface Water Ambient Monitoring Program (SWAMP) protocol for riverine sites. This includes percent cover measurements of both suspended (floating) and attached (land-based), and total algal biomass [measured as chlorophyll a (mg/m²)]. Macroalgal percent cover measurements were collected by taking five presence/absence measurements at each of the 11 transects within a site and only include alive algae. Riverine total algal biomass concentrations are shown in **Figure 7** and macroalgal percent cover is displayed in **Figure 8**.

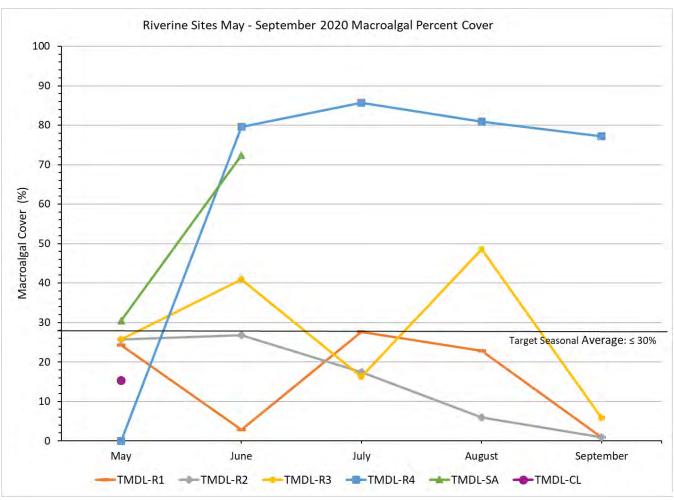
FIGURE 7. 2020 DRY SEASON - TOTAL ALGAL BIOMASS (CHLOROPHYLL A) AT RIVERINE SITES



Missing data points for TMDL-CL after May and TMDL-SA after June are due to measurements not taken as a result of flow conditions (e.g., the site was dry or ponded).

The VR Algae TMDL seasonal average numeric target of 150 mg/m² is plotted for reference.

FIGURE 8, 2020 DRY SEASON - MACROALGAL PERCENT COVER AT RIVERINE SITES



Missing data points for TMDL-CL after May and TMDL-SA after June are due to measurements not taken as a result of flow conditions (e.g., the site was dry or ponded).

The VR Algae TMDL seasonal average numeric target of  $\leq$  30% is plotted for reference.

Total algal biomass (measured as chlorophyll a) ranged from 15.5 to 92.1 mg/m<sup>2</sup> across all six riverine sites (**Figure 7**). The maximum (92.1 mg/m<sup>2</sup>) was recorded at TMDL-R1 during the May sampling event, and the minimum (15.5 mg/m<sup>2</sup>) was recorded at TMDL-R2 during the June sampling event. Seasonal average concentrations (**Table 3**) were below the target seasonal average for all sites.

Macroalgal percent cover ranged from 0 to 86 % across all six riverine sites (**Figure 8**). The minimum (0%) occurred at TMDL-R4 during the May sampling event, and the maximum (86%) occurred at TMDL-R4 during the July sampling event. The lowest percent cover observations occurred during the September sampling event for TMDL-R1, TMDL-R2, and TMDL-R3. Seasonal average concentrations were above the target seasonal average (≤30%) at TMDL-R4 (65%) and TMDL-SA (51%) (**Table 3**).

Seasonal averages and comparison to exceedances for both total algal biomass and macroalgal percent cover at the riverine water quality monitoring locations are summarized in **Table 3**. A detailed results summary for dry season monthly algae monitoring is provided in **Appendix C**.

**TABLE 3. DRY SEASON RIVERINE SEASONAL AVERAGES** 

Site	Seasonal Average Biomass (mg/m² chlorophyll a)	Seasonal Average Macroalgal Cover (%)
	Numeric Target Seasonal Average 150 mg/m²	Numeric Target Seasonal Average ≤30%
TMDL-R1	62.62	16
TMDL-R2	30.1	15
TMDL-R3	38.0	27
TMDL-R4	32.92	65*
TMDL-SA	26.2	51*
TMDL-CL	18.9	15

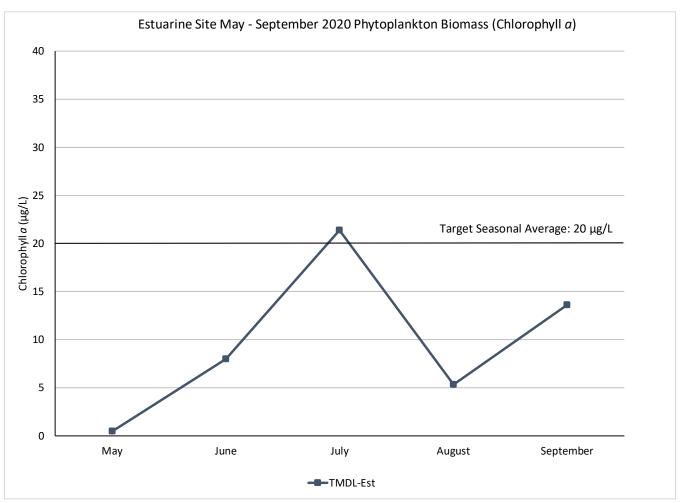
**Table Notes:** 

#### **ESTUARINE SITE**

In accordance with the VR Algae TMDL and CMP, algae sampling was conducted using the Southern California Bight Regional Monitoring Program: Estuarine Eutrophication (Bight 2008) protocol for the estuary water quality monitoring location. Per this protocol, estuarine phytoplankton biomass [measured as chlorophyll a ( $\mu$ g/L)] samples are collected from the water column. Macroalgal percent cover is measured on the shoreline (referred to herein as "attached") approximately three quarters of the distance upslope from the water's edge at the mean lowest low water line (MLLW), approximately 1 to 2 feet above MLLW. Coverage of floating algae was estimated from shore to a depth of 0.3 meters, and includes dead, desiccated, fresh, and intermediate algae. Estuarine phytoplankton biomass concentrations are displayed in **Figure 9** and macroalgal percent cover results are displayed in **Figure 10**.

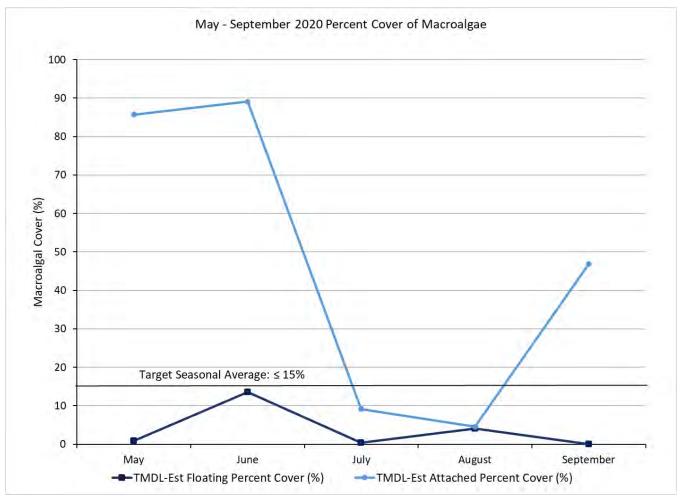
<sup>\*</sup>Bolded averages exceed numeric targets

FIGURE 9. 2020 DRY SEASON - ESTUARY CHLOROPHYLL A



**Figure Notes:** 

The VR Algae TMDL seasonal average numeric target (20  $\mu$ g/L chlorophyll a) is plotted for reference.



**Figure Notes:** 

The VR Algae TMDL seasonal average numeric target (≤ 15 % coverage) is plotted for reference.

Phytoplankton biomass (measured as chlorophyll a) ranged from <1.0  $\mu$ g/L – 21.4  $\mu$ g/L (the minimum was below the minimum detection limit of 1  $\mu$ g/L) at the estuary water quality monitoring location TMDL-Est (**Figure 9**). The maximum occurred during the July monitoring event and the minimum during the May monitoring event. The phytoplankton biomass seasonal average at TMDL-Est (9.7  $\mu$ g/L) was below the numeric target (20  $\mu$ g/L) (**Table 4**).

Attached macroalgal percent cover ranged from 5-89% and floating macroalgal percent cover ranged from 0-14% (**Figure 10**). Attached macroalgal cover was above the target seasonal average ( $\leq 15\%$ ) during 3 of the 5 monitoring events (May, June, and September). Floating macroalgal percent cover was below the target seasonal average ( $\leq 15\%$ ) during all monitoring events. The seasonal average for attached macroalgal percent cover at TMDL-Est (47%) was above the numeric target ( $\leq 15\%$ ) and the season average for floating macroalgal percent cover (4%) was below the numeric target (**Table 4**).

TABLE 4. DRY SEASON ESTUARINE MONTHLY OBSERVATIONS AND SEASONAL AVERAGE

Site	Date	Field Replicate	Phytoplankton Biomass Chlorophyll a (µg/L)	Attached Macroalgal Cover (%)	Floating Macroalgal Cover (%)
Seasonal Ave	erage Numeric Target		20 μg/L	≤ 1	5%
TMDL-Est	5/14/2020	1	<11	86*	1
TMDL-Est	6/11/2020	1	8.01	89*	14
TMDL-Est	7/9/2020	1	21.40*	9	0
TMDL-Est	8/20/2020	1	5.34	5	4
TMDL-Est	9/10/2020	1	13.6	47*	0
	Seasonal Average		9.7 <sup>2</sup>	47*	4

**Table Notes:** 

# FIELD OBSERVATIONS

#### TMDL-EST

The estuary berm was open for the entirety of the 2020 dry season monitoring period, with flow exiting through the east end. Dogs off leash and people recreating in the lagoon are frequently seen, and birds (especially gulls) are commonly present.

#### TMDL-R1

The water level was too high to monitor at the typical transect "A" location so the transect was moved upstream and the distance between all transects was shortened to avoid deep pools at both ends. The lower section of this reach is frequently littered with washing materials and containers (e.g. soap, shampoo, laundry detergent, clothing, towels, etc.) and is commonly known as the "laundry site" due to its frequent use for that purpose by the homeless in the area. The Ventura Land Trust removes the items when it sees them and posts signs, as well as speaks with people directly about the hazards and illegal nature of washing in the stream, however most of the activity occurs when no one is around, although one person was actively washing their clothing in May while the monitoring crew was onsite. The use is heavier in the summer months. The Ventura Land Trust plans to remove some of the vegetation in the area outside of nesting season and investigate funding and partnerships for starting an alternative laundry program for homeless people in the area. There were several piles of encampment litter (e.g. discarded clothing, sleeping gear, food containers, etc.) along the access trail to the east of the river, as well as encampment litter in the river.

#### TMDL-R2

One large homeless camp was present on the private property in this area. The camp was located on the east bank among the Arundo and spans from transect "C" to transect "G". Evidence of washing (e.g. soap, shampoo bottles, etc.) are frequently seen near the water. Some rocks have been moved to create deeper pools for the camp. Arundo was cleared and the camp expanded upstream from May through September, and an earthen berm was constructed in this new area to create an additional pool of water. Additionally, overgrown Arundo on the left bank occasionally made measurements on that bank infeasible, with the greatest impact to monitoring during June and August.

#### TMDL-R3

The channel splits at transect "H" and the left channel was monitored during every monitoring event of the dry season. Debris from the wet season blocked the original access path so flow and water monitoring occurred downstream of the deep pool to allow crew safer access. Algae was sampled upstream of the pool in the same area as previous years.

<sup>\*</sup>Bolded averages exceed numeric targets.

<sup>&</sup>lt;sup>1</sup>The result was below the minimum detection limit (1 µg/L).

#### TMDL-R4

Monitoring was conducted on the west bank and downstream of previous dry season locations due to the change in the path of the river.

#### TMDL-SA

Evidence of urban recreational use at transect "F" was observed during the May monitoring event, and horses were observed downstream of the site during this event as well. During the June monitoring event, some areas were not monitored due to the presence of dense poison oak. By the July monitoring event the site was dry above transect "C" and only water quality and in-situ field parameters were monitored. The site was dry by August.

#### TMDL-CL

Water was not present at the site by June, although the streambed was still damp at this time. The streambed was completely dry by July.

# **CONTINUOUS DATA LOGGING**

In accordance with the VR Algae TMDL and CMP, DO and pH were measured continuously for two-week periods during May and September. This section provides an overview of the equipment used to measure these parameters and presents results for the 2020 dry season monitoring period.

# DATA COLLECTION EQUIPMENT

Continuous water quality measurements have been collected over the past five years using Hydrolab HL4 water quality data sondes. The HL4 measures and logs DO, pH, conductivity and temperature within a self-contained package. An adjustment for salinity is required for DO measurements in saltwater, which the HL4 completes internally utilizing its conductivity sensor.

Data sonde installations are vulnerable to vandalism and theft, which has occurred at the estuary monitoring location (TMDL-Est) over the five-year period of this monitoring program. Two HL4 data sondes have been stolen from this deployment location, including an underwater and mid-channel anchored location and a hidden shore anchored location. Field staff have taken extensive measures to hide and secure equipment at inconspicuous locations using anti-theft housings, chains, and cables. However, theft and vandalism will continue to be an issue at these water quality monitoring locations due to the homeless community presence. Additional actions were eventually taken to further secure future deployments, including evaluation of alternative deployment locations, enhanced housings for the data loggers, and procurement of a robust security chain and locking system. These actions proved successful and no theft occurred during the September deployment at TMDL-Est.

## CONTINUOUS WATER QUALITY RESULTS

Continuous water quality monitoring for pH and DO was conducted in accordance with the VR Algae TMDL and CMP in May and September of the dry season monitoring period. **Table 5** presents deployment dates and provides general notes related to each deployment where applicable. As noted, the 2020 dry season monitoring period presented several challenges with continuous water quality data collection. These challenges included technical malfunction of equipment during deployments, and non-deployment due to the risk of theft and vandalism. Continuous water quality monitoring data for pH and DO measured during each quarter is presented as **Figure 10** and **Figure 11**, respectively, for full size charts see **Appendix D**. As discussed below, data for multiple deployments are suspect. For the most part, pH and DO did not exceed numeric thresholds excluding consistently low DO measurements at TMDL-Est during the September deployment.

TABLE 5, 2020 DRY SEASON TWO-WEEK CONTINUOUS MONITORING PERIODS

Site	2020 Quarter 2 (May¹)	2019 Quarter 3 (September¹)
TMDL-Est	Not deployed <sup>2</sup>	9/10/2020-9/25/2020
TMDL-R1	5/15/2020 - 6/1/2020 <sup>3</sup>	9/10/2020-9/25/2020
TMDL-R2	5/15/2020 – 6/1/2020	9/10/2020-9/25/2020
TMDL-R3	5/15/2020 – 6/1/2020	9/10/2020-9/25/2020
TMDL-R4	5/15/2020 – 6/1/2020	9/10/2020-9/25/2020 <sup>6</sup>
TMDL-SA	5/15/2020 – 6/1/2020	DRY
TMDL-CL	5/15/2020 – 6/1/2020 <sup>4,5</sup>	DRY

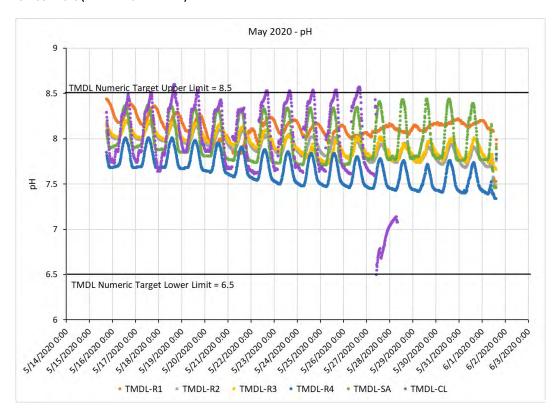
#### **Table Notes:**

- 1. Month required by TMDL.
- 2. The estuary lacked a deployable location due to high theft/vandalism risk after high wet-season flows cleared out concealing vegetation and reshaped the estuary eliminating the discreet locations for deployment.
- 3. pH sensor maintenance expired 5/22 11:15pm and data are suspect
- 4. HOBO used for pH and DO monitoring, no specific conductivity data available due to using HOBO
- 5. The pH sensor appears to have become bio-fouled or otherwise disturbed on 5/27 and data after this date are suspect
- 6. Specific conductivity sensor had error code Parameter Reading Unstable on 9/25, indicating sensor maintenance or replacement could be necessary if the environment is stable, data after this date are suspect.

In May 2020, four Hydrolab HL4 water quality data sondes were installed and began logging data on May 15, 2019 at 6:00pm. Estuary shape precluded deployment of a sonde at TMDL-Est as described above. A HOBO data logger was deployed for continuous water quality monitoring at TMDL-CL. HOBO data loggers do not collect specific conductivity data and therefore this parameter was not monitored at TMDL-CL, however conductivity is not a required measurement. The TMDL-CL pH sensor appears to have become bio-fouled or otherwise disturbed on May 27<sup>th</sup> after which pH measurements sharply declined, and pH data collected after this date at TMDL-CL are suspect. The maintenance expired on the TMDL-R1 pH sensor during deployment, and while there is a noticeable change after this the data are within the range of readings taken before the pH sensor maintenance expired.

In September 2020, sondes were installed at five water quality monitoring sites for continuous data logging. Sondes were not installed at TMDL-SA and TMD-CL due to dry conditions. The sondes were installed before the logging program began on September 10, 2020 and were removed after two weeks of logging. The TMDL-R4 specific conductivity sensor had an error code on September 25<sup>th</sup> and while conductivity data collected after this date don't substantially change, the data should be considered suspect.

FIGURE 11. DRY SEASON 2020 (MAY AND SEPTEMBER) - PH



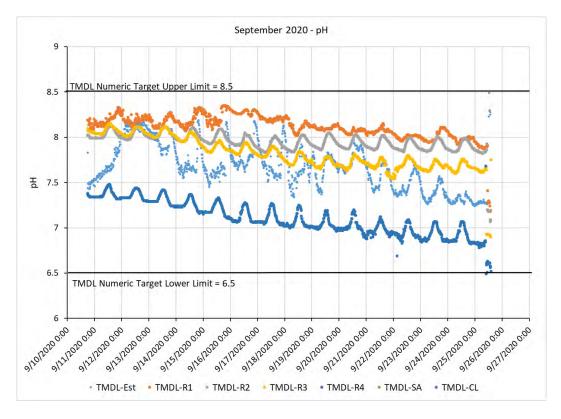
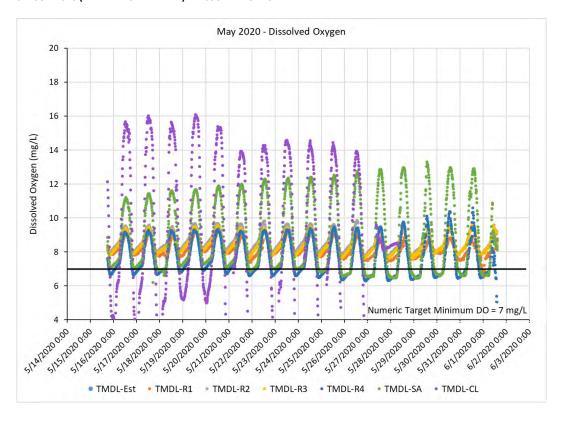
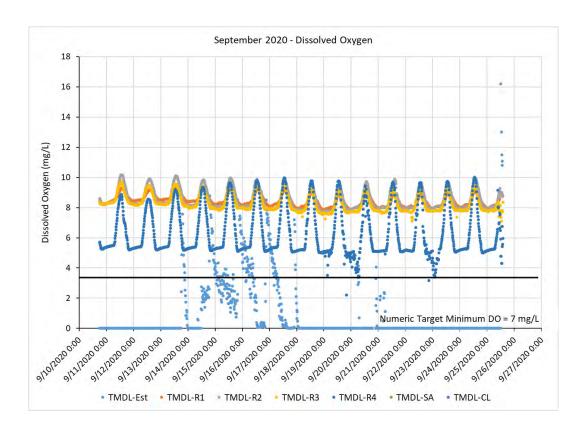


FIGURE 12. DRY SEASON 2020 (MAY AND SEPTEMBER) - DISSOLVED OXYGEN





# **OBSERVATIONS AND LESSONS LEARNED**

This section presents a summary of key monitoring results including the frequency of exceedances for VR Algae TMDL numeric targets and general data trends and observations. Important lessons learned during the 2019-2020 monitoring period are discussed to further inform future monitoring program implementation and management decisions.

#### **KEY FINDINGS**

A summary of exceedances is provided in **Table 6**, which considers monthly grab sample and continuous water quality monitoring results. While DO measurements at three monitoring locations (TMDL-R1, TMDL-R4, and TMDL-SA) and pH measurements at one monitoring location (TMDL-Est) exceeded VR TMDL numeric targets during monthly monitoring events, continuous water quality monitoring measurements coupled with monthly in-situ measurements indicate that DO and pH are meeting the VR Algae TMDL numeric targets. Numeric target exceedances during monthly monitoring events for DO (7 mg/L) occurred at TMDL-R1, TMDL-R4, and TMDL-SA, where minimum measurements for each site were 6.99 mg/L (TMDL-R1 September 2020), 5.49 mg/L (TMDL-R4, September 2020), and 4.07 mg/L (TMDL-SA, July 2020). Low DO concentrations at TMDL-SA were likely attributed to low flow conditions, particularly during the July monitoring event where the site was ponded and mostly dry (<0.01 cubic feet per second (cfs)). In addition, DO is typically lower in the early morning due to photosynthesis stopping at night while respiration continues, and increases during the day, which may have contributed to low results during monthly grab monitoring events. This was observed in the continuous water quality monitoring data, which illustrates daily variation. An exceedance of the upper bound (8.5) of numeric targets for pH occurred during one monthly monitoring event at TMDL-Est (8.63, June 2020). The seasonal average numeric targets for macroalgal percent cover (≤ 15% for the estuary and ≤ 30% for riverine sites) were exceeded at three monitoring locations (TMDL-Est, TMDL-R4, and TMDL-SA).

TABLE 6. EXCEEDANCES BY SITE AND MONTH

Season	Sample Month	TMDL-Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL-SA	TMDL-CL
Dry Season	May 2020	No Sonde	-	-	-	DO (c)	DO (c)	pH (c) DO (c)
2020	Jun 2020	> pH (m)	-	-	-	DO (m)	DO (m)	Dry
	Jul 2020	-	-	-	-	-	DO (m)*	Dry
	Aug 2020	-	-	-	-	-	Dry	Dry
	Sept 2020	DO (c)	DO (m)	-	-	DO (m) DO (c)	Dry	Dry
	Seasonal Average	Macroalgal cover	-	-	-	Macroalgal cover	Macroalgal cover	-

#### **Table Notes:**

(m): Monthly grab sample measurement.

No Sonde: No sonde data available due to no deployment or questionable data (see continuous data logging section)

#### LESSONS LEARNED

Following the theft of the data sonde from TMDL-Est during the March 2020 deployment, Rincon researched and procured Onset's HOBO data loggers to replace the stolen HL4 data sonde. The HOBO data loggers are designed as standalone loggers for DO, temperature, and pH. To reduce costs while optimizing equipment suitability, Rincon only purchased two loggers. To correctly measure DO in the estuary during future monitoring events, an existing HL4 data sonde will be deployed at TMDL-Est and the HOBO loggers will be deployed at a freshwater monitoring location (i.e., TMDL-R4). Additional actions were taken to further secure future deployments, including evaluation of alternative deployment locations, enhanced housings for the

<sup>(</sup>c): Continuously monitored sonde measurement.

<sup>\*:</sup> Very low flow (<0.01 cfs). Low flow conditions likely contributed to exceedance of DO numeric target.

<sup>-:</sup> No exceedances.

data loggers, and procurement of a robust security chain and locking system. These actions proved successful and no theft occurred during the September deployment at TMDL-Est.

Siltation can be an issue in slow moving water and when data sondes and data loggers are installed higher in the water column in areas where this is likely to occur. All data sondes and loggers were checked and/or calibrated by monitoring staff before and after deployment, regardless of history, and field meter readings were taken in the vicinity of the sondes immediately prior to their removal to check/confirm that the sondes were still reading accurately in situ at the end of the deployment.

# APPENDICES TO DRY SEASON REPORT

# APPENDIX A. MONTHLY IN-SITU PARAMETERS

Site	Sample Date	Sample Time	Berm Status	Flow Field Meter (cfs)	pH Field Meter (pH Units) Numeric Target 6.5 - 8.5	DO Field Meter (mg/L) Numeric Target >7 mg/L	SC Field Meter (µS)	Salinity Field Meter (ppt)	Water Temp Field Meter (°C)
TMDL-			Open-east						
Est	5/14/2020	13:27	end	NA	8.34	13.6	1472	0.7	21.2
TMDL-			Open-east						
Est	6/11/2020	13:15	end	NA	8.63	23.86	2030	1.0	26.4
TMDL-	7/0/2020	12.00	Open-east	NIA	0.4	12.64	2510	1.0	22.2
Est TMDL-	7/9/2020	13:00	end Open-east	NA	8.4	12.64	3519	1.8	23.3
Est	8/20/2020	11:40	end	NA	7.92	8.59	26122	16.0	24.2
TMDL-	5/ = 5/ = 5 = 5		Open-east			0.00			
Est	9/10/2020	11:10	end	NA	8.03	7.17	3502	1.8	20.7
TMDL-R1	5/14/2020	10:20	NA	16.5	8.15	8.88	1186	0.6	18.3
TMDL-R1	6/11/2020	10:20	NA	8.8	8.18	8.16	1263	0.6	19.5
TMDL-R1	7/9/2020	10:10	NA	6.1	8.27	9.05	1051	0.5	20.3
TMDL-R1	8/20/2020	9:35	NA	3.5	8.13	7.34	1293	0.7	23.1
TMDL-R1	9/10/2020	9:20	NA	2.6	8.23	6.99	1355	0.7	19.9
TMDL-R2	5/14/2020	7:40	NA	13.8	8.04	8.86	1090	0.5	17.5
TMDL-R2	6/11/2020	7:40	NA	7.6	8.06	8.13	1135	0.6	18.8
TMDL-R2	7/9/2020	7:50	NA	4.3	8.07	8.75	965	0.5	19.9
TMDL-R2	8/20/2020	7:40	NA	3.0	7.97	7.15	1102	0.6	22.6
TMDL-R2	9/10/2020	7:20	NA	2.4	8.00	7.04	1122	0.6	20.1
TMDL-R3	5/13/2020	14:23	NA	13.3	8.23	9.42	1050	0.5	20.5
TMDL-R3	6/10/2020	12:05	NA	6.4	8.12	9.26	1081	0.5	19.4
TMDL-R3	7/8/2020	10:30	NA NA	8.2	8.16	9.47	9.54	0.5	19.3
TMDL-R3	8/19/2020	10:00	NA NA	3.4	7.94	8.34	1032	0.5	22
TMDL-R3	9/9/2020	9:35	NA NA	2.5	8.01	7.04	1031	0.5	20
TMDL-R4	5/13/2020	9:57	NA	6.7	7.86	9.1	986	0.5	17.6
TMDL-R4	6/10/2020	8:00	NA	5.2	7.72	5.88	1032	0.5	17.6
TMDL-R4	7/8/2020	7:55	NA	2.6	7.43	7.28	880	0.4	18.3
TMDL-R4	8/19/2020	7:50	NA	1.8	7.04	7.66	1003	0.5	19.4
TMDL-R4	9/9/2020	7:45	NA	0.8	7.52	5.49	1012	0.5	18.8
TMDL-SA	5/13/2020	11:35	NA	0.8	8.17	10.22	1532	0.8	20.3
TMDL-SA	6/10/2020	9:30	NA	0.1	7.78	6.42	1537	0.8	17.7
TMDL-SA	7/8/2020	9:45	NA	Mostly Dry	7.60	4.07	873	0.4	17.3
TMDL-SA	8/19/2020	9:25	NA NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	9/9/2020	9:25	NA NA	DRY	DRY	DRY	DRY	DRY	DRY

Site	Sample Date	Sample Time	Berm Status	Flow Field Meter (cfs)	pH Field Meter (pH Units) Numeric Target 6.5 - 8.5	DO Field Meter (mg/L) Numeric Target >7 mg/L	SC Field Meter (µS)	Salinity Field Meter (ppt)	Water Temp Field Meter (°C)
TMDL-CL	5/13/2020	7:25	NA	0.0	8.03	9.22	4172	2.2	12.6
TMDL-CL	6/12/2020	7:10	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	7/8/2020	7:15	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	8/19/2020	7:10	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	9/9/2020	7:12	NA	DRY	DRY	DRY	DRY	DRY	DRY

Table Notes:

Grey shading indicates a value in exceedance of numeric targets

# APPENDIX B. MONTHLY NUTRIENT DATA

	Sample	P Total EPA 365.1		P Diss EPA 365.1		TKN Total EPA 351.2		TKN Diss EPA 351.2		N Total Calculated		N Diss Calculated		NO₃+NO₂-N EPA 353.2	
Site	Date	(mg/L)	RL	(mg/L)*	RL	(mg/L)	RL	(mg/L)	RL	(mg/L)	RL	(mg/L)	RL	(mg/L)	RL
TMDL-Est	5/14/2020	0.0691	0.02	0.0448	0.03	0.200 (DNQ)	0.4	0.100 (DNQ)	0.4	0.604	NA	0.504	NA	0.404	NA
TMDL-Est	6/11/2020	0.0673	0.02	0.0571	0.03	0.530	0.4	0.170 (DNQ)	0.4	1.001	NA	0.641	NA	0.471	NA
TMDL-Est	7/9/2020	0.0924	0.02	0.0217 (DNQ)	0.03	0.610	0.4	0.49	0.4	1.110	NA	0.990	NA	0.500	NA
TMDL-Est	8/20/2020	0.0571	0.02	<0.0160	0.03	1.000	0.4	0.057 (DNQ)	0.4	1.155	NA	0.212	NA	0.155	NA
TMDL-Est	9/10/2020	0.11	0.02	0.0502	0.03	0.79	0.4	0.670	0.4	1.621	NA	1.501	NA	0.831	NA
TMDL-R1	5/14/2020	0.089	0.02	0.0726	0.03	0.200 (DNQ)	0.4	0.200 (DNQ)	0.4	0.889	NA	0.889	NA	0.689	NA
TMDL-R1	6/11/2020	0.159	0.02	0.132	0.03	0.120 (DNQ)	0.4	0.120 (DNQ)	0.4	1.310	NA	1.310	NA	1.190	NA
TMDL-R1	7/9/2020	0.0388	0.02	0.0343	0.03	0.530	0.4	0.380 (DNQ)	0.4	1.427	NA	1.277	NA	0.897	NA
TMDL-R1	8/20/2020	0.0637	0.02	0.0406	0.03	0.580	0.4	0.350 (DNQ)	0.4	1.344	NA	1.114	NA	0.764	NA
TMDL-R1	9/10/2020	0.0767	0.02	0.0675	0.03	0.370 (DNQ)	0.4	0.32	0.4	1.570	NA	1.520	NA	1.200	NA
TMDL-R2	5/14/2020	0.127	0.02	0.11	0.03	0.250 (DNQ)	0.4	0.110 (DNQ)	0.4	1.210	NA	1.070	NA	0.960	NA
TMDL-R2	6/11/2020	0.171	0.02	0.162	0.03	0.170 (DNQ)	0.4	0.110 (DNQ)	0.4	1.680	NA	1.620	NA	1.510	NA
TMDL-R2	7/9/2020	0.0509	0.02	0.0463	0.03	0.40 (DNQ)	0.4	0.360 (DNQ)	0.4	1.680	NA	1.640	NA	1.280	NA
TMDL-R2	8/20/2020	0.0566	0.02	0.0489	0.03	0.450	0.4	0.300 (DNQ)	0.4	1.436	NA	1.286	NA	0.986	NA
TMDL-R2	9/10/2020	0.0883	0.02	0.0824	0.03	0.140 (DNQ)	0.4	<0.052	0.4	1.570	NA	1.430	NA	1.430	NA
TMDL-R3	5/13/2020	<0.0160	0.02	<0.0160	0.03	0.190 (DNQ)	0.4	0.091 (DNQ)	0.4	0.683	NA	0.584	NA	0.493	NA
TMDL-R3	6/10/2020	<0.0160	0.02	<0.0160	0.03	0.110 (DNQ)	0.4	<0.052	0.4	0.793	NA	0.683	NA	0.683	NA

		P Total													
		EPA		P Diss		TKN Total		TKN Diss		N Total		N Diss		NO <sub>3</sub> +NO <sub>2</sub> -N	
<b></b>	Sample	365.1		EPA 365.1		EPA 351.2		EPA 351.2		Calculated		Calculated		EPA 353.2	
Site	Date	(mg/L)	RL	(mg/L)*	RL	(mg/L)	RL	(mg/L)	RL	(mg/L)	RL	(mg/L)	RL	(mg/L)	RL
	_ /- /	0.0181				0.340		0.200							NA
TMDL-R3	7/8/2020	(DNQ)	0.02	<0.0160	0.03	(DNQ)	0.4	(DNQ)	0.4	0.858	NA	0.718	NA	0.518	
TMDL-R3	8/19/2020	<0.0160	0.02	<0.0160	0.03	0.460	0.4	0.400	0.4	0.727	NA	0.667	NA	0.267	NA
TMDL-R3	9/9/2020	<0.0160	0.02	<0.0160	0.03	<0.052	0.4	<0.052	0.4	0.334	NA	0.334	NA	0.334	NA
						0.099		0.054							NA
TMDL-R4	5/13/2020	<0.0160	0.02	<0.0160	0.03	(DNQ)	0.4	(DNQ)	0.4	0.697	NA	0.652	NA	0.598	11/3
TMDL-R4	6/10/2020	<0.0160	0.02	<0.0160	0.03	<0.052	0.4	<0.052	0.4	0.949	NA	0.949	NA	0.949	NA
		0.0165				0.170		0.100							NA
TMDL-R4	7/8/2020	(DNQ)	0.02	<0.0160	0.03	(DNQ)	0.4	(DNQ)	0.4	0.960	NA	0.890	NA	0.790	INA
						0.350		0.210							NA
TMDL-R4	8/19/2020	<0.0160	0.02	<0.0160	0.03	(DNQ)	0.4	(DNQ)	0.4	0.998	NA	0.858	NA	0.648	INA
						0.390									NA
TMDL-R4	9/9/2020	<0.0160	0.02	<0.0160	0.03	(DNQ)	0.4	0.21	0.4	1.024	NA	0.844	NA	0.634	INA
				0.0204		0.270		0.240							NIA
TMDL-SA	5/13/2020	0.0267	0.02	(DNQ)	0.03	(DNQ)	0.4	(DNQ)	0.4	0.314	NA	0.284	NA	0.044	NA
				0.0299		0.060		0.072							N. A
TMDL-SA	6/10/2020	0.0306	0.02	(DNQ)	0.03	(DNQ)	0.4	(DNQ)	0.4	0.077	NA	0.089	NA	0.017	NA
		0.0167		DDV				0.100						0.207	210
TMDL-SA	7/8/2020	(DNQ)	0.02	DRY	0.03	0.650	0.4	(DNQ)	0.4	0.937	NA	0.387	NA	0.287	NA
TMDL-SA	8/19/2020	DRY	0.02	DRY	0.03	DRY	0.4	DRY	0.4	DRY	NA	DRY	NA	DRY	NA
TMDL-SA	9/9/2020	DRY	0.02	DRY	0.03	DRY	0.4	DRY	0.4	DRY	NA	DRY	NA	DRY	NA
								0.370							<b>—</b>
TMDL-CL	5/13/2020	<0.0160	0.02	<0.0160	0.03	0.840	0.4	(DNQ)	0.4	0.840	NA	0.370	NA	0.00	NA
TMDL-CL	6/10/2020	DRY	0.02	DRY	0.03	DRY	0.4	DRY	0.4	DRY	NA	DRY	NA	DRY	NA
TMDL-CL	7/8/2020	DRY	0.02	DRY	0.03	DRY	0.4	DRY	0.4	DRY	NA	DRY	NA	DRY	NA
TMDL-CL	8/19/2020	DRY	0.02	DRY	0.03	DRY	0.4	DRY	0.4	DRY	NA	DRY	NA	DRY	NA
TMDL-CL	9/9/2020	DRY	0.02	DRY	0.03	DRY	0.4	DRY	0.4	DRY	NA	DRY	NA	DRY	NA
Table Notes:	-,0,-0-0														<del></del>

Table Notes:

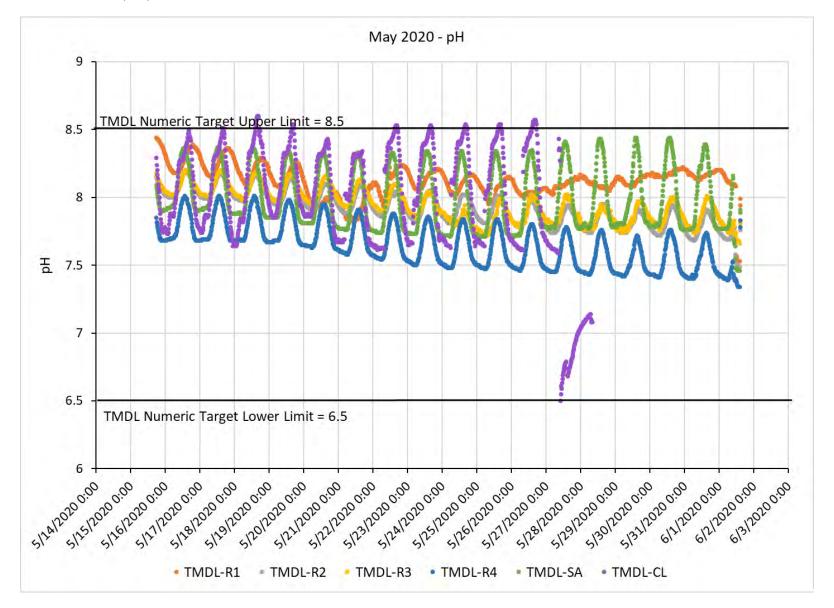
DNQ: Detected Not Quantified (analyte can be positively identified but is below the method reporting limit)

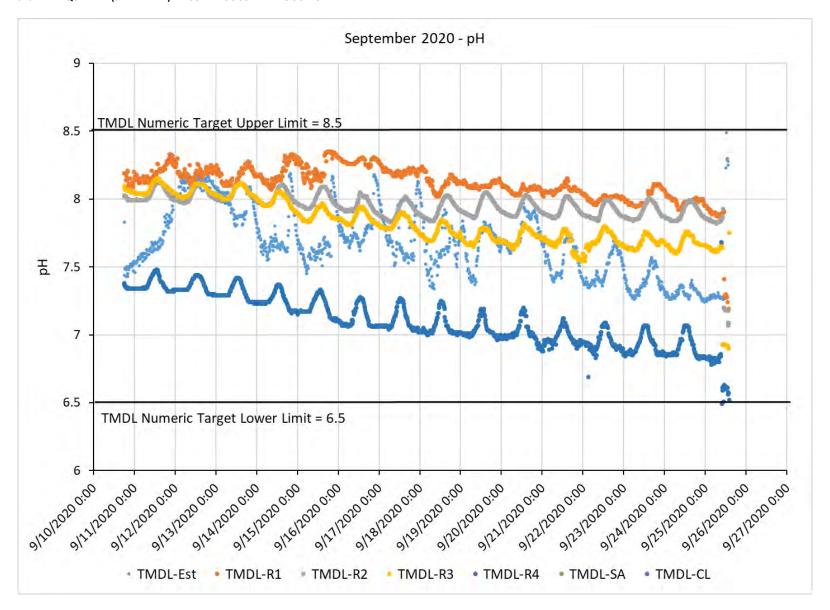
APPENDIX C. RIVERINE MONTHLY ALGAL BIOMASS (CHLOROPHYLL A) AND PERCENT MACROALGAL COVER

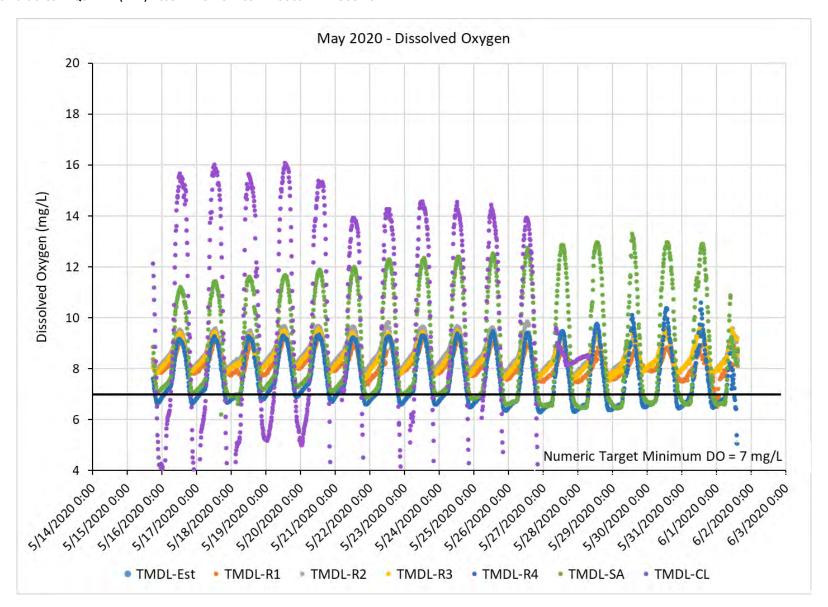
Site	Date	Field Replicate	Number of Transects Collected	Chlorophyll a	Chlorophyll a units	Macroalgal Cover (%)
TMDL-R1	5/14/2020	1	11	92.1	mg/m <sup>2</sup>	24
TMDL-R1	6/11/2020	1	11	44.2	mg/m <sup>2</sup>	3
TMDL-R1	7/9/2020	1	11	84.2	mg/m²	28
TMDL-R1	8/20/2020	1	11	27	mg/m <sup>2</sup>	23
TMDL-R1	9/10/2020	1	11	65.6	mg/m <sup>2</sup>	1
TMDL-R2	5/14/2020	1	11	37.3	mg/m <sup>2</sup>	26
TMDL-R2	6/11/2020	1	11	15.5	mg/m <sup>2</sup>	27
TMDL-R2	7/9/2020	1	11	29.4	mg/m <sup>2</sup>	17
TMDL-R2	8/20/2020	1	11	40.3	mg/m <sup>2</sup>	6
TMDL-R2	9/10/2020	1	11	28	mg/m <sup>2</sup>	1
TMDL-R3	5/13/2020	1	11	33.3	mg/m <sup>2</sup>	26
TMDL-R3	6/10/2020	1	11	44.4	mg/m <sup>2</sup>	41
TMDL-R3	7/8/2020	1	11	23.5	mg/m <sup>2</sup>	16
TMDL-R3	8/19/2020	1	11	42.8	mg/m <sup>2</sup>	49
TMDL-R3	9/9/2020	1	11	47.3	mg/m <sup>2</sup>	6
TMDL-R4	5/13/2020	1	11	17.5	mg/m <sup>2</sup>	0
TMDL-R4	6/10/2020	1	11	29.4	mg/m <sup>2</sup>	80
TMDL-R4	7/8/2020	1	11	15.8	mg/m <sup>2</sup>	86
TMDL-R4	8/19/2020	1	11	55.7	mg/m <sup>2</sup>	81
TMDL-R4	9/9/2020	1	11	46.2	mg/m <sup>2</sup>	77
TMDL-SA	5/13/2020	1	11	19.2	mg/m <sup>2</sup>	30
TMDL-SA	6/10/2020	1	11	33.2	mg/m <sup>2</sup>	72
TMDL-SA	7/8/2020	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-SA	8/19/2020	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-SA	9/9/2020	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-CL	5/13/2020	1	11	32.1	mg/m <sup>2</sup>	15
TMDL-CL	6/10/2020	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-CL	7/8/2020	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-CL	8/19/2020	1	DRY	DRY	mg/m²	DRY
TMDL-CL	9/9/2020	1	DRY	DRY	mg/m <sup>2</sup>	DRY

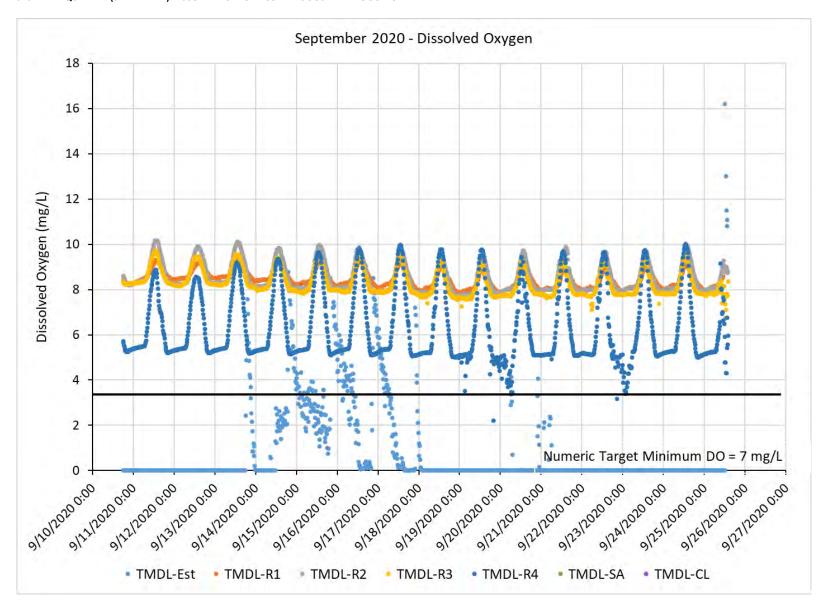
# APPENDIX D. FULL SIZE CONTINUOUS MONITORING CHARTS

FIGURE D1. 2020 SECOND QUARTER (MAY) PH CONTINUOUS DATA LOGGING























July 31, 2020

LB Nye, Chief of Regional Programs
Los Angeles Regional Water Quality Control Board
320 W. 4th St., Suite 200
Los Angeles, CA 90013

Subject: 2020 ANNUAL REPORT FOR THE VENTURA RIVER ALGAE TMDL

(RESOLUTION NO. R12-011)

Dear Ms. Nye:

Enclosed for your review and consideration is the 2020 Annual Report prepared and submitted to document completion of monitoring activities required by the Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients Total Maximum Daily Load, Resolution No. R12-011 (Ventura Algae TMDL) and the Ventura Algae TMDL Comprehensive Monitoring Plan for Receiving Water approved by Los Angeles Regional Water Quality Control Board on October 20, 2014.

This document is being submitted on behalf of the County of Ventura, Ventura County Watershed Protection District, Ojai Valley Sanitary District, City of Ojai, City of Ventura, California Department of Transportation, and the Ventura County Agricultural Irrigated Lands Group (represented by the Farm Bureau of Ventura County).

If you have any comments or questions regarding the attached document, please contact me at (805) 645-1382 or <a href="mailto:Ewelina.Mutkowska@ventura.org">Ewelina.Mutkowska@ventura.org</a>.

Sincerely,

Ewelina Mutkowska

Senior Stormwater Manager

Ventura County Public Works Agency

Ms. LB Nye, July 28, 2020 Page 2 of 2

CC: Jun Zhu, Los Angeles Regional Water Quality Control Board
Jeff Pratt, Ventura County Public Works Agency
Glenn Shephard, Ventura County Watershed Protection District
Arne Anselm, Ventura County Watershed Protection District
Jodi Switzer, Farm Bureau of Ventura County
Joe Yahner, City of Ventura
Peter Shallenberger, City of Ventura
Greg Grant, City of Ojai
Jeff Palmer, Ojai Valley Sanitary District
Shirley Pak, California Department of Transportation
Bhaskar Joshi, California Department of Transportation
Mike Roger, California Department of Transportation















# TOTAL MAXIMUM DAILY LOAD FOR ALGAE, EUTROPHIC CONDITIONS, AND NUTRIENTS IN VENTURA RIVER, INCLUDING THE ESTUARY, AND ITS TRIBUTARIES (VR ALGAE TMDL)

# **2020 ANNUAL REPORT**

Submitted to

TMDL Responsible Agencies Implementing Receiving Water Monitoring Requirements:

City of Ojai
City of Ventura
County of Ventura
Ojai Valley Sanitary District
California Department of Transportation
Ventura County Agricultural Irrigated Lands Group
Ventura County Watershed Protection District

Prepared by:



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Ventura River Alago TADI	July 2020

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# **APPENDICES**

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Appendix E. Field Data Sheets

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# **EXECUTIVE SUMMARY**

On behalf of the Ventura River Algae Total Maximum Daily Load (VR Algae TMDL) Responsible Agencies, the Ventura County Watershed Protection District (VCPWD) began sampling in accordance with the VR Algae TMDL Comprehensive Monitoring Plan (CMP) for Receiving Waters on January 14, 2015. Beginning in January 2020, the Responsible Agencies retained Rincon Consultants (Rincon) to implement this monitoring and reporting program. Aquatic Bioassay Consulting Laboratories and Larry Walker Associates, subconsultants to Rincon, have been assisting with completion of the work.

This monitoring report covers monitoring activities conducted in the Ventura River Estuary (TMDL-Est), Ventura River reaches 1 – 4, and in two main tributaries from May 2019 through April 2020. The VCWPD conducted monitoring from May 2019 through December 2019 and Rincon conducted from January 2020 to April 2020. This report includes field measurements and observations, continuous data logger results, and laboratory results at each site, including monthly flow measurements, nutrients, dissolved oxygen (DO), and pH; two-week continuous monitoring of DO and pH every quarter; qualitative observations of flow along the Ventura River mainstem (flowing, ponded, or dry); and monthly monitoring of algae during the dry season (May – September) for chlorophyll a (total algal and phytoplankton biomass) and macroalgal cover.

The Ventura River Watershed was subjected to increased environmental stresses over the past five years of this monitoring program. Severe drought conditions existed during the first three years of monitoring activities, from 2015-2017. The entire watershed was heavily impacted by the Thomas Fire, which started on December 4, 2017 and continued through January 9, 2018, becoming the largest recorded wildfire in California history at that time. The fire burned most of the open space and forest lands in the Ventura River and other Ventura County watersheds, as well as orchards, homes, and other structures from Fillmore to Santa Barbara. Areas that did not burn (mainly the Ojai Valley), were still subject to heavy ash deposition.

Drought conditions have generally eased for Ventura County and the past three wet seasons produced average or just below average rainfall. While it is unclear how much current flow patterns are related to rainfall and/or land cover changes and channel deposition post-fire, surface flow during the 2019 dry season was continuous from the upper watershed through to the estuary for both Ventura River and San Antonio Creek until September. In October, flow became discontinuous for the Ventura River near Santa Ana Boulevard and upstream of the San Antonio Creek monitoring location. Flow was present at the Ventura River Reach 4, San Antonio Creek, and Cañada Larga monitoring locations later in the season than in any of the preceding five years due to late storms in March and April 2020. The monitoring sites at Ventura River Reach 4 and downstream were perennial, and flow at the Ventura River Reach 2 monitoring location includes treated discharge waters from the Ojai Valley Sanitary District's wastewater treatment plant.

DO at the San Antonio Creek monitoring location was below the daily minimum numeric target for DO (7 mg/L) during four of the monthly in-situ measurement collection events but the pH instantaneous numeric target range (6.5 – 8.5) was not exceeded at this site. DO at Ventura River Reach 4 was also below the minimum threshold daily minimum numeric target for DO during four of the monthly monitoring events; pH at this site exceeded the upper pH instantaneous numeric target range during the March 2020 monthly event. pH exceeded the upper pH instantaneous numeric target range at the estuary monitoring location during the June, August, and October 2019 monitoring events. Continuous water quality monitoring measurements indicate that DO measurements at the Reach 4 monitoring location fell below the daily minimum numeric target for DO for numerous 5-min intervals during the May and December monitoring event, while DO measurements at the San Antonio Creek monitoring location fell below the minimum numeric target for DO during several days in the beginning of the December monitoring event. However, continuous water quality monitoring measurements coupled with monthly in-situ measurements indicate that pH and DO follow similar trends at each monitoring location and in general are within the VR Algae TMDL numeric targets.

The Ventura River Reach 2 was the only monitoring location where the seasonal average for total algal or phytoplankton biomass (measured as chlorophyll a) was exceeded. However, the VR Algae TMDL seasonal average numeric target for macroalgal cover ( $\leq 30\%$  for riverine sites,  $\leq 15\%$  for the estuary) was exceeded at all monitoring locations. Per the VR Algae TMDL, if no significant difference is observed between monthly dry season algal biomass measurements after two years of

CMP implementation, algal biomass monitoring may be reduced to three times per dry season (i.e., conducted in May, July and September). Referencing the five year dataset for algal biomass, monthly algal biomass measurement differences occur depending on the monitoring location and year. However, over the past five years, seasonal averages calculated using a 5-month (May through September) and 3-month (May, July, and September) dataset produce nearly identical compliance results. As such, the 3-month dataset appears to provide representative data of the dry season average for comparison to the VR Algae TMDL numeric targets. The Responsible Agencies are planning to discuss the monitoring results with RWQCB staff and request monitoring frequency reduction.

Field teams have continued to experience technical issues as well as logistical challenges related to deployment of the continuous water quality monitoring equipment. Technical challenges experienced over the 2019-2020 monitoring period included sensor errors related to calibration, biofouling, and failure. As discussed in previous monitoring reports, homeless persons and their encampments continue to present a high risk for vandalism and theft at numerous continuous monitoring locations. Equipment was not deployed at the estuary monitoring location during the second and third quarters of 2019 due to risk of vandalism. Monitoring equipment was deployed during the first quarter of 2020 in a manner intended to be less conspicuous, but this was ineffective as equipment was still stolen. Considering this theft, actions have been taken to further secure future deployments, including evaluation of alternative locations, enhanced housings for the data loggers, and procurement of a robust security chain and locking system.

# **BACKGROUND**

The Water Quality Control Plan for the Los Angeles region was amended on December 6, 2012 to incorporate the TMDL for algae, eutrophic conditions, and nutrients in the Ventura River, including the Estuary, and its tributaries (VR Algae TMDL). The VR Algae TMDL became effective on June 28, 2013 and required the development and implementation of a CMP for receiving water monitoring to assess numeric attainment and measure in-stream nutrient concentrations. The CMP submitted by the Responsible Agencies<sup>1</sup> was approved by the Los Angeles Regional Water Quality Control Board on October 20, 2014.

On November 18, 2014, the Ventura County Watershed Protection District (VCWPD) was retained by the Responsible Agencies to conduct monitoring in accordance with the CMP for up to five years. The CMP required sampling to begin no later than 90 days after the Los Angeles Regional Water Quality Control Board approved the CMP, and monitoring began on January 14, 2015. Beginning in January 2020, the TMDL Responsible Agencies retained Rincon to continue implementation of this monitoring and reporting program.

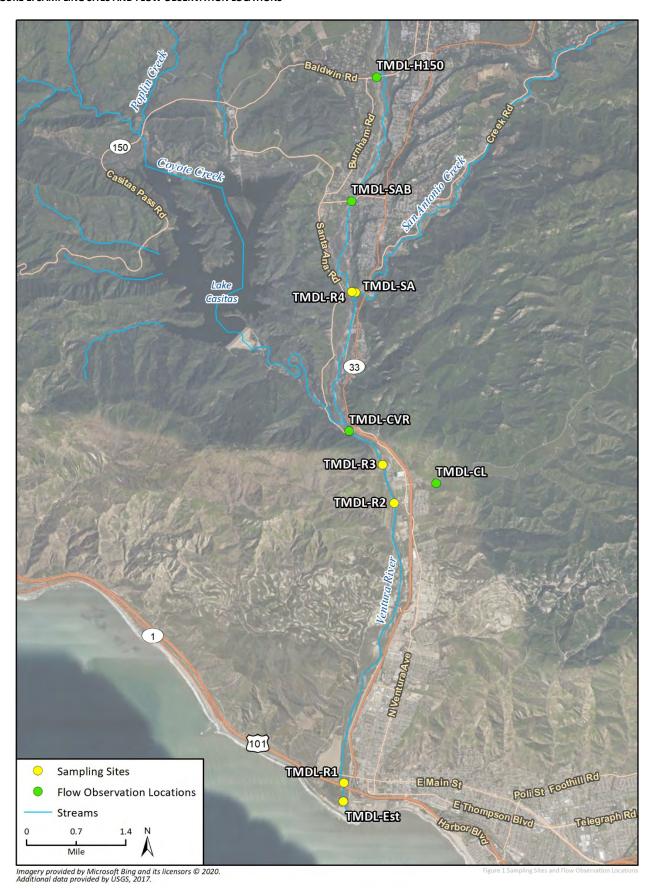
Water quality monitoring is conducted at seven locations (**Figure 1**), including one site in the Ventura River Estuary (TMDL-Est), one site in each of the four Ventura River reaches identified in the VR Algae TMDL (TMDL-R1, TMDL-R2, TMDL-R3, and TMDL-R4), and in two main tributaries: Cañada Larga (TMDL-CL) and San Antonio Creek (TMDL-SA). Visual observations of river status and flow conditions are conducted at three locations on Ventura River at Casitas Vista Road Bridge (TMDL-CVR), Santa Ana Boulevard Bridge (TMDL-SAB), and State Route 150 bridge (TMDL-H150).

In accordance with the CMP, water quality monitoring is conducted for algal biomass, algal percent cover, nutrients (total and dissolved), in situ water quality parameters (dissolved oxygen, pH, temperature, electrical conductivity), and flow for the river and estuary. Visual observations are made to document the status of the Estuary (open or closed), and the status of the river (flowing, ponded, or dry) at specific flow observation locations, which identifies wet/dry delineations and potential locations of groundwater upwelling. Monitoring for algal biomass and percent cover is conducted once per month in the dry season (May 1st to September 30th), and sampling for nutrients, in-situ parameters, and flow is conducted monthly throughout the year. In addition, DO and pH are measured continuously for two-week periods on a quarterly basis; these measurements occur during the months of May and September in the second and third quarters in accordance with the CMP. DO and pH were also measured continuously for two-week periods during the months of December and March in the fourth and first quarters.

This report is a summary of monthly dry season monitoring data from May 2019 – September 2019, monthly wet season monitoring data from October 2019 – April 2020, and quarterly continuous data logging conducted in May 2019, September 2019, and December 2019, and March 2020.

\_

<sup>&</sup>lt;sup>1</sup> Responsible Agencies include Ojai Valley Sanitary District, Ventura County Watershed Protection District, County of Ventura, City of Ojai, City of San Buenaventura (Ventura), California Department of Transportation, and the Ventura County Agricultural Irrigated Lands Group (represented by the Farm Bureau of Ventura County)



## **Access Permission**

In 2015, to allow for continuity of monitoring site locations, five-year easements were sought from property owners where sampling sites are located for the fee of \$250 per term. The temporary easements expire five years from the date of approval (early 2020). Two property owners declined the five-year easement request but signed a revocable access permit instead. The sites affected by the permits are TMDL-R2 (which was moved upstream of the site listed in the CMP because the owner of that parcel denied the access request) and TMDL-SA directly above the San Antonio Creek confluence with the Ventura River. TMDL-R2 was sampled approximately 200 meters upstream of the Ojai Valley Sanitary District site (OVSD-R5) for monthly monitoring and approximately 300 meters upstream for continuous monitoring to be entirely on permitted property.

## MONTHLY MONITORING

Monthly monitoring was conducted in accordance with the CMP, which included collection of nutrient grab samples, in-situ parameters, and flow during the wet and dry season, and collection of algal biomass samples and macroalgae percent cover during the dry season. Note that storm flows over the 2018 – 2019 wet season redirected the Ventura River near TMDL-R4 to the west bank and heavy flows made access difficult to the former sampling area during the 2019-2020 monitoring period. As such, monitoring was conducted approximately 100 meters downstream of the previous location. Monitoring event dates and collecting agency details are presented in **Table 1**. Monthly in-situ parameters for each site are presented in **Appendix A**.

TABLE 1. MAY 2019 - APRIL 2020 WATER QUALITY SAMPLE COLLECTION DATES

					!	Sample Date	)		
Sample Month	Season	Data Collection	TMDL- Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL- SA	TMDL-CL
MAY 2019	Dry	VCWPD	5/8	5/8	5/8	5/7	5/7	5/7	5/15
JUN 2019	Dry	VCWPD	6/13	6/13	6/13	6/12	6/12	6/12	6/13
JUL 2019	Dry	VCWPD	7/10	7/11	7/11	7/10	7/10	7/10	7/10
AUG 2019	Dry	VCWPD	8/14	8/15	8/15	8/14	8/14	8/14	Dry (8/15)
SEP 2019	Dry	VCWPD	9/9	9/11	9/11	9/9	9/9	Mostly Dry (9/9)	Dry (9/11)
OCT 2019	Wet	VCWPD	10/16	10/16	10/16	10/16	10/16	10/16	Dry (10/16)
NOV 2019	Wet	VCWPD	11/6	11/6	11/6	11/6	11/6	11/6	Dry (11/6)
DEC 2019	Wet	VCWPD	12/19	12/19	12/19	12/19	12/19	12/19	12/19
JAN 2020	Wet	Rincon	1/15	1/15	1/15	1/15	1/15	1/15	1/15
FEB 2020	Wet	Rincon	2/12	2/12	2/12	2/12	2/12	2/12	2/12
MAR 2020	Wet	Rincon	3/19	3/19	3/19	3/19	3/19	3/19	3/19
APR 2020	Wet	Rincon	4/15	4/15	4/15	4/15	4/15	4/15	4/15

#### **Table Notes:**

Grey shading indicates dry or mostly dry conditions.

## MONTHLY FIELD RESULTS

#### FLOW

Unlike previous years, surface flow was continuous from the upper watershed through to the estuary for both Ventura River and San Antonio Creek from May through September 2019. After September, flow became discontinuous for the Ventura

<sup>&</sup>quot;Mostly Dry" indicates that water was present at the monitoring site, but flow was insufficient to meet algae sampling protocols so monthly monitoring parameters were sampled but algae monitoring/collection could not be conducted.

<sup>&</sup>quot;Dry" sites had insufficient water present for any sampling to take place due to absence of flow.

River near Santa Ana Boulevard for the Ventura River, and upstream of TMDL-SA for San Antonio Creek. In addition, TMDL-R4, TMDL-SA, and TMDL-CL flowed longer than in any of the preceding 5 years, with TMDL-R4 flowing for the duration of the 2019-2020 monitoring period. Flow presence/absence observations (flowing, ponded, or dry) are provided for the visual observation monitoring locations in **Table 2**. In addition, the estuary berm was open throughout the 2019-2020 monitoring period.

TABLE 2. MAY 2019 - APRIL 2020 QUALITATIVE FLOW OBSERVATIONS

Date	Ventura River at Hwy 150	Ventura River at Santa Ana Blvd	Ventura River at Casitas Vista Road
5/10/2019	Flowing	Flowing	Flowing
6/10/2019	Flowing	Flowing	Flowing
7/10/2019	Flowing	Flowing	Flowing
8/14/2019	Flowing	Flowing (< 1 cfs)	Flowing
9/9/2019	Flowing	Dry	Flowing
10/14/2019	Flowing	Dry	Flowing
11/6/2019	Flowing	Dry	Flowing
12/18/2019	Flowing	Flowing	Flowing
1/15/2020	Flowing	Flowing	Flowing
2/12/2020	Flowing	Flowing	Flowing
3/19/2020	Flowing	Flowing	Flowing
4/15/2020	Flowing	Flowing	Flowing

#### **Table Notes:**

During the months of January through April 2020 river status observations were not performed in the field. River status observations were derived by inference from flow estimates obtained at water quality monitoring locations and desktop assessment of County gages SOTC1, VRTC1, and VRVC1.

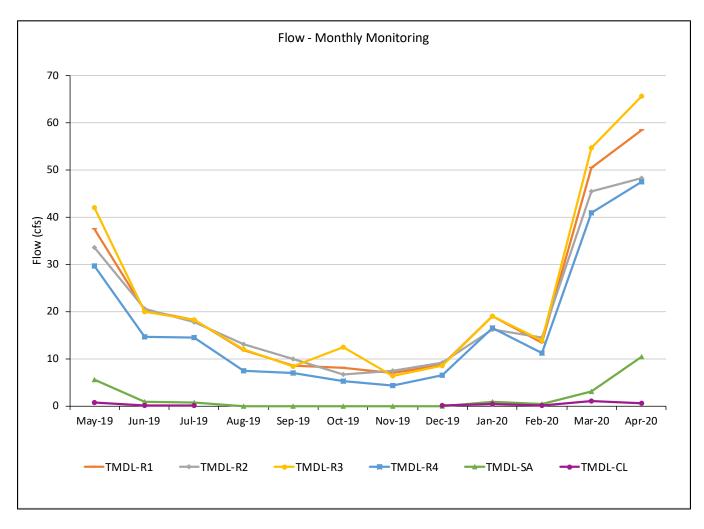
cfs: cubic feet per second

Monthly flow data for the water quality monitoring locations are presented in **Figure 2**. As seen in this chart, flow follows a cyclical trend of elevated flow during the wet season with a gradual decline into the dry season, followed by an increase as storm events deliver precipitation in the watershed. As seen in the monitoring results, flow began to increase following the November monitoring event which corresponds with a recorded total of 4.9 inches of rainfall at the Ojai-County Fire Station (Site ID 030D) between the November and December monitoring event.<sup>2</sup> Note that some variability has been seen during the dry season, potential causes of which may include surface/subsurface flow, groundwater interaction, geology and infiltration rates, antecedent moisture, agricultural and urban inputs and extractions.

**Figures 3 and 4** provide additional context to the flow regime at the water quality monitoring locations over the past five years and present monthly instantaneous flow measurements (primary y-axis) compared to monthly rainfall totals measured at the Ojai-County Fire Station (secondary y-axis).<sup>3</sup> As illustrated in this figure, flow began to increase following a series of storm events during the 2017 rainy season. The flows during the dry season were elevated in 2018 and 2019 at the four Ventura River monitoring locations compared to the previous three years.

<sup>&</sup>lt;sup>2</sup> Data download available here: https://www.vcwatershed.net/hydrodata/php/getstation.php?siteid=030D#rain\_hour

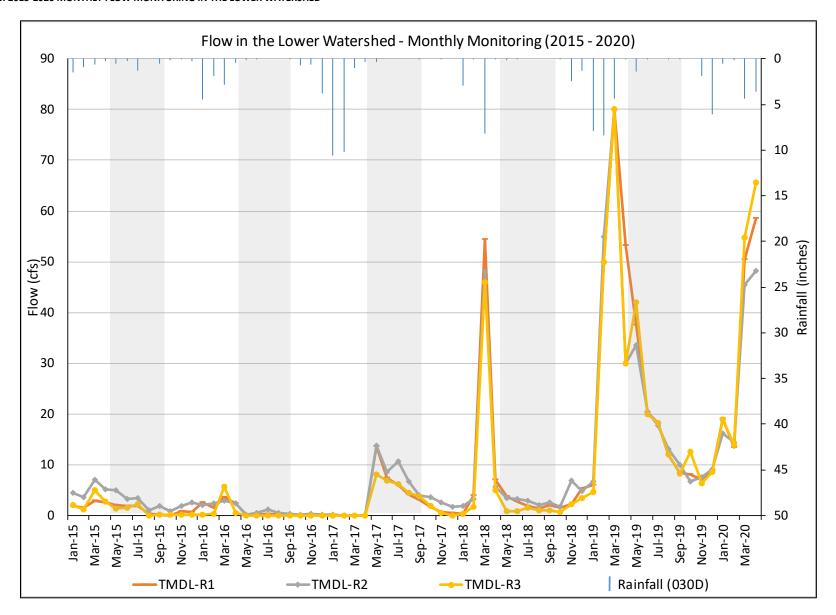
<sup>&</sup>lt;sup>3</sup> Note that river discharge responds more to rain in the upper watershed, where precipitation depths are much higher than those recorded at Site ID 030D. The rainfall data is presented here as an indicator of the differences



## Figure Notes:

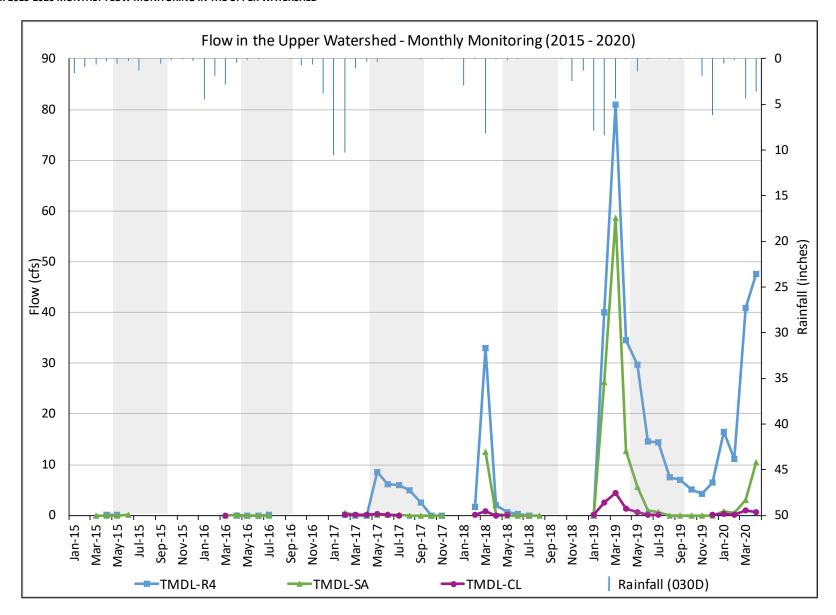
Missing data points for TMDL-CL between August 2019 and November 2019 indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded).

Sites TMDL-R1, TMDL-R2, and TMDL-R3 are perennial. Flow at TMDL-R2 is a combination of flow in the Ventura River downstream of TMDL-R3 and discharge from the Ojai Valley Sanitary District's wastewater treatment plant.



**Figure Notes:** 

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded). Grey bars indicate dry season (May – September).



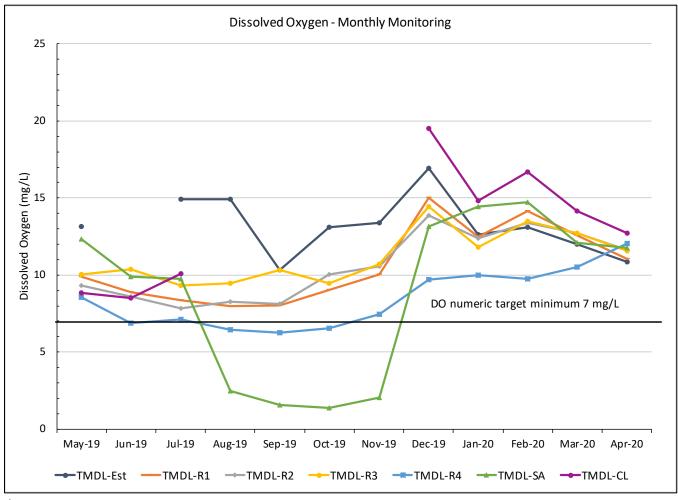
**Figure Notes:** 

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded). Grey bars indicate dry season (May – September).

#### **DISSOLVED OXYGEN**

During the 2019-2020 monitoring period DO concentrations measured during monthly sampling ranged from  $1.39 - 19.5 \, \text{mg/L}$  (Figure 5). The minimum (1.39 mg/L) was recorded at TMDL-SA during the October sampling event at 10:00am, the maximum (19.5 mg/L) was recorded at TMDL-CL during the December sampling event at 7:45am. DO concentrations fell below the target minimum (7 mg/L) at two of the seven sites (TMDL-SA and TMDL-R4), and these concentrations were all measured between 8:00 - 10:00am during the August – November sampling events. Low levels of DO tended to occur during periods of low flow (Figure 2, Table 2), possibly due to the ponding (and potential stagnation) of water observed upstream and/or at the measurement location. In addition, DO is typically low in the early morning and increases during the day, which may explain these low measurements.

FIGURE 5. 2019 - 2020 MONTHLY MONITORING - DISSOLVED OXYGEN

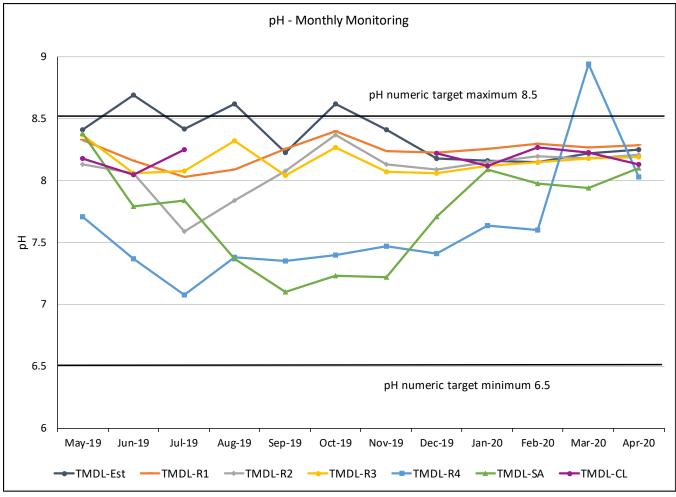


## **Figure Notes:**

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded).

РΗ

During the 2019-2020 monitoring period, pH measurements taken during monthly sampling ranged from 7.08 - 8.94 (**Figure 6**). The minimum (7.08) was recorded at TMDL-R4 during the July sampling event at 7:55am, and the maximum (8.94) was recorded at TMDL-R4 during the March sampling event at 8:35am. pH measurements at all sites, except TMDL-Est, were within the pH target range (6.5 - 8.5) for the duration of the monitoring period. At TMDL-Est, pH exceeded the upper bound of the target range (8.5) in June, August, and October; these three measurements were all taken between 1:30 - 2:30pm. pH at TMDL-R4 exceeded the upper bound of the target range in March.



**Figure Notes:** 

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded).

### MONTHLY NUTRIENT RESULTS

Nutrient levels show variation between sites, seasons, and years. Charts of results for total nitrogen and total phosphorus from 2019-2020 and the previous five years (2015-2020) are included below for comparison.

## Nitrogen

During 2019-2020 monitoring, concentrations of total nitrogen above the laboratory reporting limit (0.2 and 0.3 mg/L) ranged from 0.25 mg/L to 2.05 mg/L (Figure 7). The lowest concentrations, including results below the reporting limit, occurred at TMDL-SA and TMDL-CL. The maximum concentration occurred during the February sampling event at TMDL-R2, which had an annual average of 1.6 mg/L. As a general trend, TMDL-SA and TMDL-CL had the lowest total nitrogen concentrations, and TMDL-R2 and TMDL-R4 had the highest concentrations. A nitrogen summary table showing all results from the 2019-2020 monthly data is provided as **Appendix B**.

To provide important context as to how these results compare to previous monitoring periods, **Figures 8 and 9** present the past five years of nitrogen monitoring results. Total nitrogen concentrations in 2019-2020 were generally lower and varied less between site and season than in previous years. Through a visual assessment of the results it is apparent that nitrogen concentrations at all monitoring locations have historically (since monitoring began in 2015) demonstrated greater seasonal

variation, and in general had higher concentrations during dry years. TMDL-R3 is an exception to this trend with low concentrations throughout 2015 and 2016, and again through the 2018 dry season. These results may be associated with the period of severe drought prior to 2018 during which mobilization and transport of nitrogen during wet weather may have enhanced seasonal variation in water quality.

FIGURE 7. 2019 - 2020 MONTHLY MONITORING - TOTAL NITROGEN

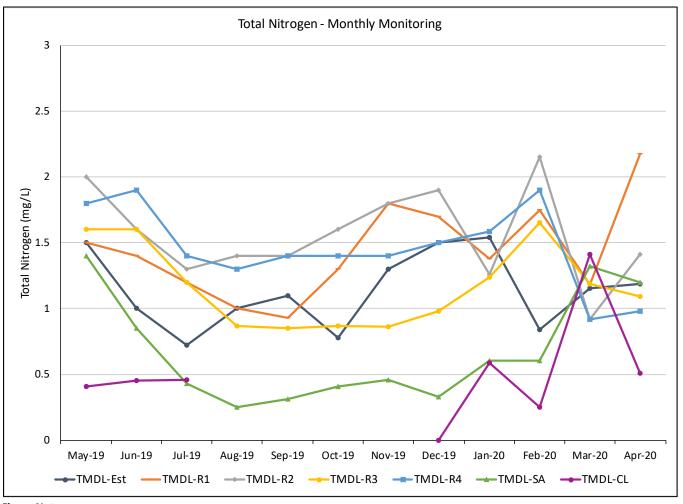


Figure Notes:

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded)

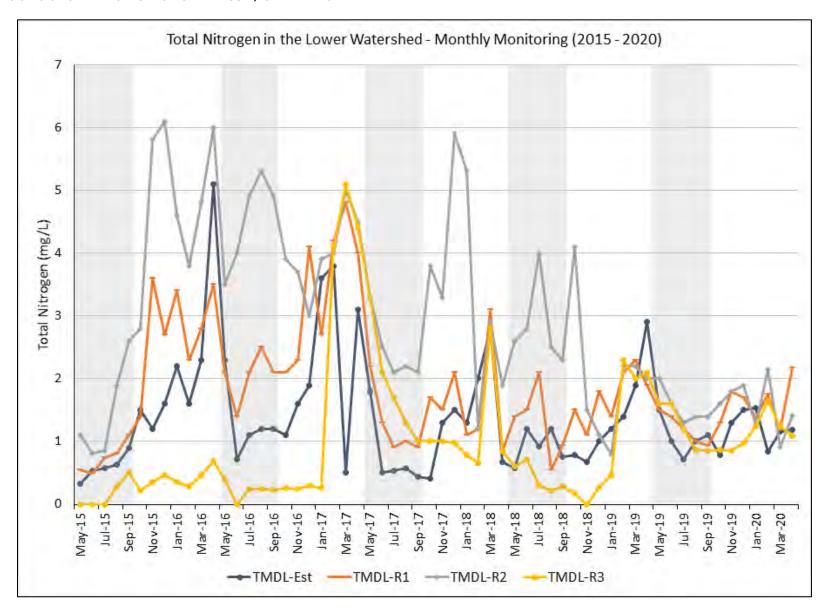
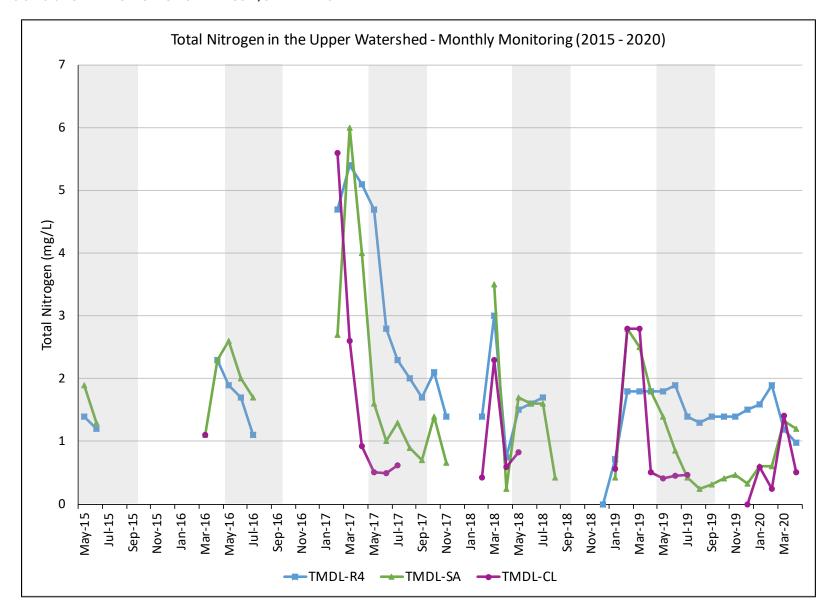


Figure Notes:

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded). Grey bars indicate dry season (May – September).



**Figure Notes:** 

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded). Grey bars indicate dry season (May – September).

#### **PHOSPHORUS**

During 2019-2020 monitoring, concentrations of total phosphorus above the minimum detection limit (0.0014 or 0.016) ranged from 0.012 mg/L to 0.23 mg/L (**Figure 10**). The lowest concentrations occurred throughout the monitoring period at TMDL-CL, TMDL-SA, TMDL-R4, and TMDL-R3. The maximum concentration occurred during the March sampling event TMDL-R2, which had an annual average of 0.034 mg/L. As a general trend, sites TMDL-Est, TMDL-R1, and TMDL-R2 had higher total phosphorus concentrations than the other monitoring locations.

Similar to the long-term data assessment for nitrogen presented above, total phosphorus concentrations for the 2019 – 2020 monitoring period were generally lower and varied less between site and season than in previous years. **Figures 11 and 12** present the past five years of total phosphorous monitoring results, which illustrate greater seasonal variation, especially for TMDL-R2. Unlike the historic variation of nitrogen concentrations, total phosphorous does not display the same level of variation between sites over this five-year dataset.

FIGURE 10. 2019 - 2020 MONTHLY MONITORING - TOTAL PHOSPHORUS

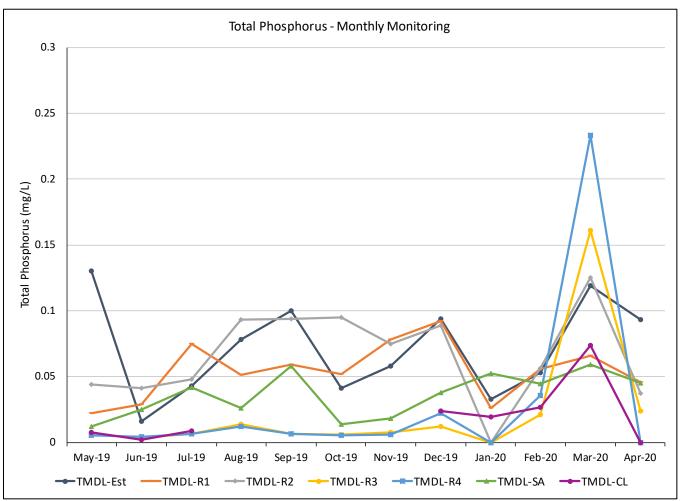
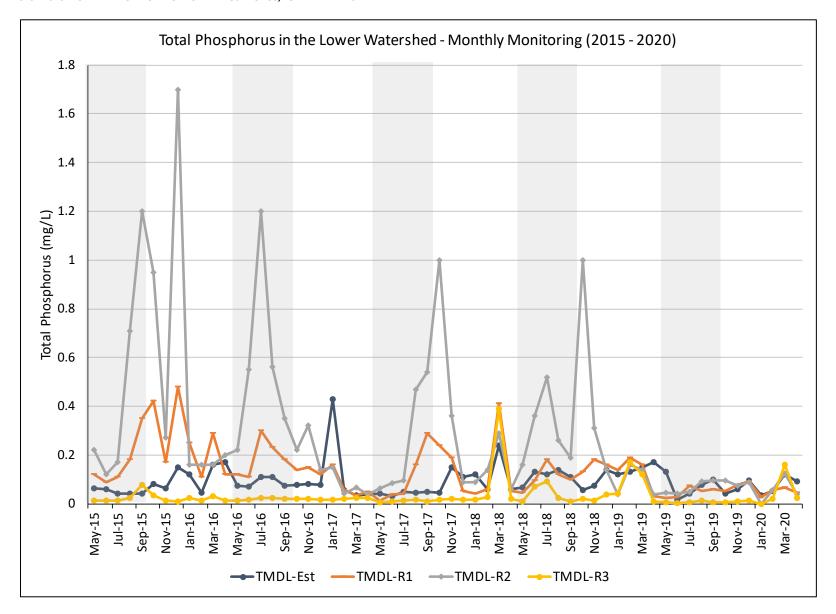


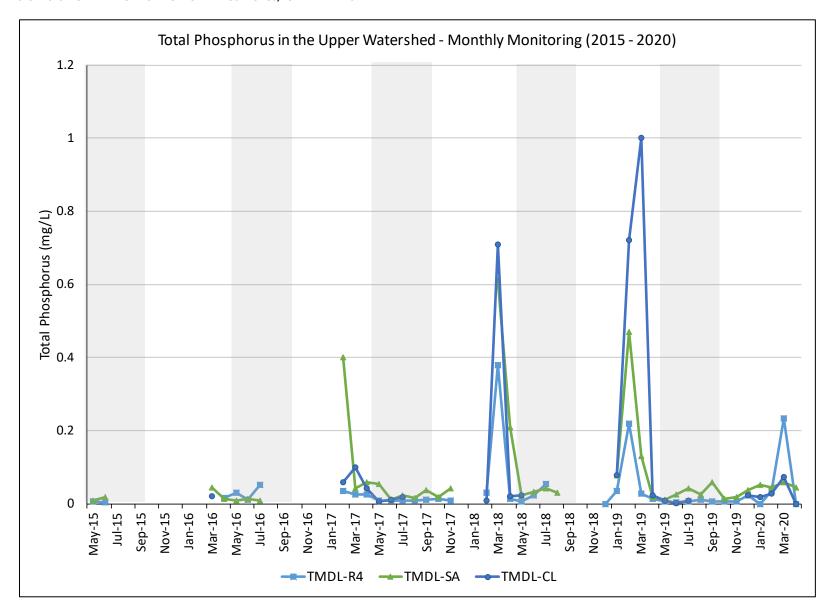
Figure Notes:

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded).



#### **Figure Notes:**

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded). Grey bars indicate dry season (May – September).



#### **Figure Notes:**

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded). Grey bars indicate dry season (May – September).

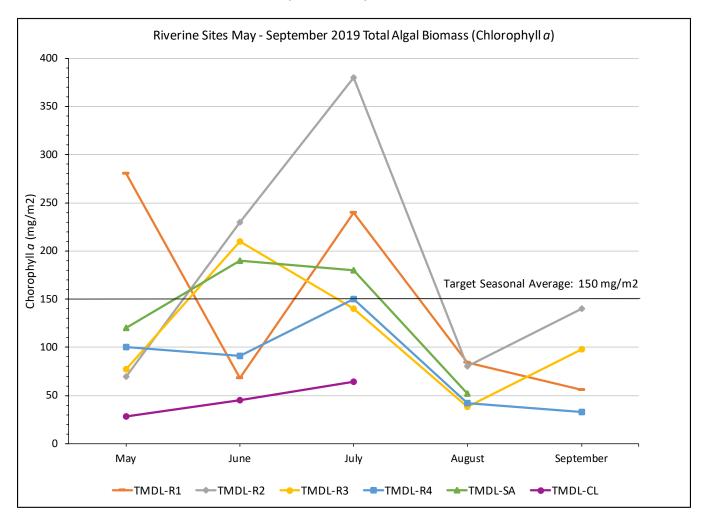
#### DRY SEASON MONTHLY ALGAE RESULTS

The 2019 dry season sampling occurred monthly from May through September in accordance with the CMP. As discussed above, the upper watershed remained connected to the lower watershed into August 2019, before the river became dry at Santa Ana Boulevard in September 2019 (see **Table 1**). All water quality monitoring locations had enough flow for algae sampling through July 2019. TMDL-CL was completely dry by the August 2019 monitoring event, and TMDL-SA was too dry for algae sampling by the September monitoring event.

#### RIVERINE SITES

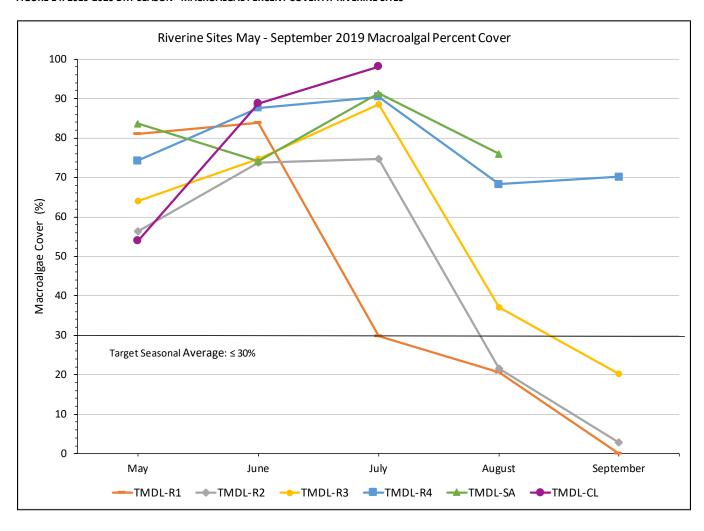
In accordance with the VR Algae TMDL and CMP, algae sampling was conducted using the Surface Water Ambient Monitoring Program (SWAMP) protocol for riverine sites. This includes percent cover estimates of both suspended (floating) and attached (land-based), and total algal biomass [measured as chlorophyll a (mg/m²)]. Macroalgal percent cover estimates only include alive algae. Riverine total algal biomass concentrations are shown in **Figure 13** and macroalgal percent cover is displayed in **Figure 14**.

FIGURE 13. 2019-2020 DRY SEASON - TOTAL ALGAL BIOMASS (CHLOROPHYLL A) AT RIVERINE SITES



#### **Figure Notes:**

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded). The VR Algae TMDL seasonal average numeric target of 150 mg/ $m^2$  is plotted for reference, and seasonal averages for each site are presented in Table 3.



#### **Figure Notes:**

Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded). The VR Algae TMDL seasonal average numeric target of  $\leq$  30% is plotted for reference, and seasonal averages for each site are presented in Table 3.

Total algal biomass (measured as chlorophyll a) ranged from  $28 - 380 \text{ mg/m}^2$  across all six riverine sites (**Figure 13**). The maximum (380 mg/m<sup>2</sup>) was recorded at TMDL-R2 during the July sampling event, and the minimum (28 mg/m<sup>2</sup>) was recorded at TMDL-CL during the May sampling event. Seasonal average concentrations (**Table 3**) were below the target seasonal average for all sites except for TMDL-R2.

Macroalgal percent cover ranged from 0-98.02% across all six riverine sites (**Figure 14**). The minimum (0%) occurred at TMDL-R1 during the September sampling event, and the maximum (98.02%) occurred at TMDL-CL during the July sampling event. The lowest percent cover observations occurred during the September sampling event for TMDL-R1, TMDL-R2, and TMDL-R3. Seasonal average concentrations were above the target seasonal average ( $\leq$  30%) at all sites, ranging from 43.05% (TMDL-R1) to 81.23% (TMDL-SA).

Seasonal averages and comparison to exceedances for both total algal biomass and macroalgal percent cover at the riverine water quality monitoring locations are summarized in **Table 3**. A detailed results summary for dry season monthly algae monitoring is provided in **Appendix C**.

**TABLE 3. DRY SEASON RIVERINE SEASONAL AVERAGES** 

Site	Seasonal Average Biomass (mg/m² chlorophyll a)	Seasonal Average Macroalgal Cover (%)
	Numeric Target Seasonal Average 150 mg/m²	Numeric Target Seasonal Average ≤ 30%
TMDL-R1	145.60	43.05*
TMDL-R2	180.00*	45.89*
TMDL-R3	113.00	56.95*
TMDL-R4	83.20	78.16*
TMDL-SA	133.00	81.23*
TMDL-CL	45.67	80.23*

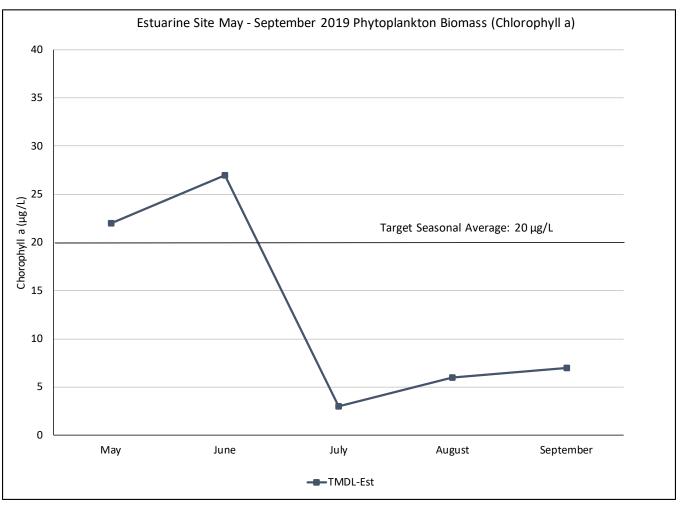
**Table Notes:** 

#### **ESTUARINE SITE**

In accordance with the VR Algae TMDL and CMP, algae sampling was conducted using the Southern California Bight Regional Monitoring Program: Estuarine Eutrophication (Bight 2008) protocol for the estuary water quality monitoring location. Per this protocol, estuarine phytoplankton biomass [measured as chlorophyll a ( $\mu g/L$ )] samples are collected from the water column. Macroalgal percent cover is measured on the shoreline approximately three quarters of the distance upslope from the water's edge at the mean lowest low water line (MLLW), approximately 1 to 2 feet above MLLW, as well as floating to a depth of 0.3 meters, and includes dead, desiccated, fresh, and intermediate algae. Estuarine phytoplankton biomass concentrations are displayed in **Figure 15** and macroalgal percent cover results are displayed in **Figure 16**.

<sup>\*</sup>Bolded averages exceed numeric targets.

#### FIGURE 15. 2019-2020 DRY SEASON - ESTUARY CHLOROPHYLL A



**Figure Notes:** 

The VR Algae TMDL seasonal average numeric target (20  $\mu$ g/L chlorophyll a) is plotted for reference, and seasonal averages for each site are presented in Table 4.

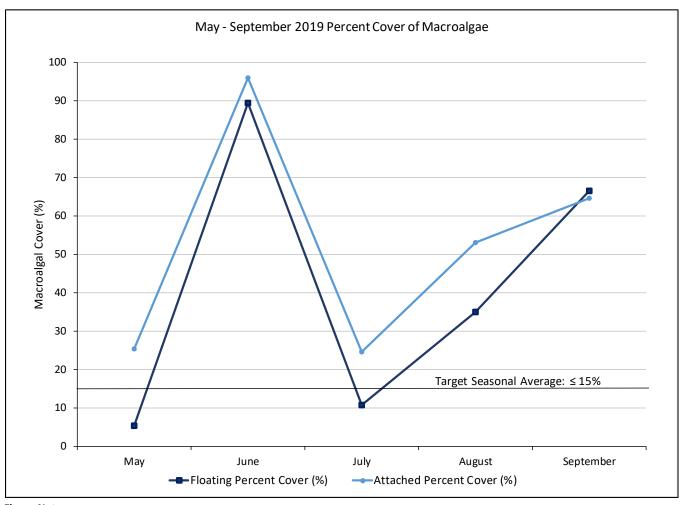


Figure Notes:

The VR Algae TMDL seasonal average numeric target (≤ 15 % coverage) is plotted for reference, and seasonal averages for each site are presented in Table 4.

Phytoplankton biomass (measured as chlorophyll a) ranged from 3  $\mu$ g/L – 27  $\mu$ g/L at the estuary water quality monitoring location TMDL-Est (**Figure 15**). The maximum occurred during the June sampling event and the minimum during the July sampling event. The phytoplankton biomass seasonal average at TMDL-Est (12.67  $\mu$ g/L) was below the numeric target (20  $\mu$ g/L)(**Table 4**).

Attached macroalgal percent cover ranged from 25.31 - 64.69% and floating macroalgal percent cover ranged from 5 - 67% (**Figure 16**). Attached macroalgal cover was above the target seasonal average ( $\le 15\%$ ) during each sampling event. Floating macroalgal percent cover was above the target seasonal average ( $\le 15\%$ ) during 3 of the 5 sampling events (June, August, and September). The seasonal averages for macroalgal percent cover at TMDL-Est were above the numeric target ( $\le 15\%$ ) for both attached (52.73%) and floating macroalgae (41.43%) (**Table 4**).

TABLE 4. DRY SEASON ESTUARINE MONTHLY OBSERVATIONS AND SEASONAL AVERAGE

Site	Date	Field Replicate	Phytoplankton Biomass Chlorophyll a (µg/L)	Attached Macroalgal Cover (%)	Floating Macroalgal Cover (%)
Seasonal Ave	Seasonal Average Numeric Target		20 μg/L	≤1	5%
TMDL-Est	5/8/2019	1	22	25.31	5.44
TMDL-Est	6/13/2019	1	27	95.99	89.46
TMDL-Est	6/13/2019	2	11	NA	NA
TMDL-Est	7/11/2019	1	3	24.69	10.71
TMDL-Est	8/14/2019	1	6	52.99	35.03
TMDL-Est	9/9/2019	1	7	64.69	66.50
Seasonal Average			12.67	52.73*	41.43*

**Table Notes:** 

#### CHLOROPHYLL A EVALUATION

Per the VR Algae TMDL, if no significant difference is observed between monthly dry season algal biomass measurements after two years of CMP implementation, algal biomass monitoring may be reduced to three times per dry season (i.e., conducted in May, July and September). An evaluation of the five year dataset was completed to assess monthly algal biomass differences to determine if a reduced monitoring frequency may be warranted.

Over the past five years, maximum monthly measurements occurred most frequently during the month of June, followed by May, July, August, and September at all monitoring locations. **Table 5** presents the monthly maximum measurement frequency during the five year monitoring period. In addition, a quantitative comparison of numeric target exceedances for the 5-month (May through September) and 3-month (May, July, and September) seasonal average is summarized in **Table 6**, which references the VR Algae TMDL numeric targets of 150 mg/m² and 20  $\mu$ g/L for riverine and estuary monitoring locations, respectively. Note that one difference between dry season average numeric target exceedances occurred at TMDL-R1 during the 2019 dry season. The 2019 seasonal average concentration at this monitoring location for the 5-month average was 146 mg/m², whereas the 3-month average was 192 mg/m². This difference of 46 mg/m² is approximately a 30 percent difference between the two seasonal averages and is less than the season's standard deviation of 120 mg/m².

TABLE 5. FREQUENCY OF MAXIMUM MEASUREMENTS BY DRY SEASON MONITORING MONTH

Dry Season Monitoring Month	Maximum Measurement Frequency
June	10
May	9
July	8
August	4
September	2

<sup>\*</sup>Bolded averages exceed numeric targets.

**TABLE 6. ALGAL BIOMASS NUMERIC TARGET EXCEEDANCES** 

<b>Monitoring Location</b>	Algal Biomass Exceedances (5-month dataset)	Algal Biomass Exceedances (3-month dataset)
TMDL-Est	3	3
TMDL-R1	4	5
TMDL-R2	4	4
TMDL-R3	2	2
TMDL-R4	1	1
TMDL-CL	0	0
TMDL-SA	1	1
Total:	15	16

Table Note:

May, July, and September measurements were used to evaluate numeric target exceedances for the 3-month average calculation

## FIELD OBSERVATIONS

#### TMDL-EST

Water level in the estuary fluctuates with tides and river flow, which also affects berm status and estuary shape. Heavy runoff during the 2018/19 wet season breached the berms at the east and west ends of the estuary and altered the shape of the estuary. At the start of the dry season, all flow exited the estuary through the west end. The east end was disconnected from the river by a berm that formed during high flow events in the main channel upstream, but it was still open and connected to the ocean. By July, the west end berm closed, resulting in water levels high enough to flow over the rock berm and through connector channels to the east end which was open to the ocean. By August and September, the estuary had returned to its most recent horseshoe shape condition, and all flow exited through the east end (Figure 17). Dogs are frequently seen in the water and birds (especially gulls) are always present.

FIGURE 17. PHOTOS OF ESTUARY BERM STATUS





Figure Note:

Landward view of east end of the estuary in May when all flow exited through the west end (left), and landward view of the east end of the estuary in August when all flow exited through the east end (right).

#### TMDL-R1

The water level was too high and fast in May to sample at the typical transect "A" location so the transect was moved upstream and shortened to avoid deep pools at both ends, and velocity was not measured across the whole wetted width. The lower section of this reach is frequently littered with washing materials and containers (e.g. soap, shampoo, laundry detergent, clothing, towels, etc.) and is commonly known as the "laundry site" due to its frequent use for that purpose by

the homeless in the area. The Ventura Land Trust occasionally removes trash and debris, posts signs, and communicates with people directly about the hazards and illegal nature of washing in the stream. Most of this activity occurs when no one is around, although one person was actively washing clothing in September while the monitoring crew was onsite. The use is heavier in the summer months. The Ventura Land Trust plans to remove some of the vegetation in the area outside of nesting season and investigate funding and partnerships for starting an alternative laundry program for homeless people in the area. There were several piles of encampment litter (e.g., discarded clothing, sleeping gear, food containers) along the access trail to the east of the river including a recently used portable toilet chair.

#### TMDL-R2

Several homeless camps are present on the private property in this area. Two camps are on the east bank among stands of giant reed (*Arundo donax*). Evidence of washing (e.g., soap, shampoo bottles) and human waste are frequently seen near the water. Some rocks have been moved to create deeper sections for the camps. In July, a new camp was being built next to an established camp. In August, there was modification of the east bank at the camp to create an earthen "patio" on which a portable toilet-chair with toilet paper roll was positioned with evidence of recent digging underneath the chair. A new stand of *Arundo* had been cleared and a chain link fence panel was laying by the River. In September, there were horseshoe pits added to the patio, three free-range chickens were observed at the camp, and a tent had been placed in the cleared *Arundo*. The toilet chair was still on the patio, with disturbed dirt under and next to it and the area had a strong latrine odor.

#### TMDL-R3

Debris from the wet season blocked the original access path so flow and water samples were collected approximately 100 feet downstream of the deep pool to allow crew safer access. Similar to previous year, algae was sampled just upstream of the pool.

## TMDL-R4

Monitoring was conducted on the west bank and approximately 100 meters downstream of previous dry season locations due to the change in the path of the river.

#### TMDL-SA

A natural spring tends to keep the area directly above the confluence with the Ventura River wet for most or all of the year, but upstream/influent flow dried out by September.

#### TMDL-CL

Water was not present at the site by August, although the streambed was still damp. The streambed was completely dry by September.

## CONTINUOUS DATA LOGGING

In accordance with the VR Algae TMDL and CMP, DO and pH is measured continuously for two-week periods on a quarterly basis during the months of May, September, December and March. This section provides an overview of the equipment used to measure these parameters and presents results for the 2019-2020 monitoring period.

## DATA COLLECTION EQUIPMENT

Continuous water quality measurements have been collected over the past five years using Hydrolab HL4 water quality data sondes. The HL4 can accurately measure and log DO and pH, as well as conductivity and temperature within a self-contained

package. An adjustment for salinity is required for DO measurements in saltwater, which the HL4 completes internally utilizing its conductivity sensor.

Data sondes installations are vulnerable to vandalism and theft, which has occurred at the estuary monitoring location (TMDL-Est) over the five-year period of this monitoring program. Two HL4 data sondes have been stolen from this deployment location, including an underwater and mid-channel anchored location and a hidden shore anchored location. Field staff have taken extensive measures to hide and secure equipment at inconspicuous locations using anti-theft housings, chains, and cables. However, theft and vandalism will continue to be an issue at these water quality monitoring locations due to the homeless community presence.

## CONTINUOUS WATER QUALITY RESULTS

Continuous water quality monitoring for pH and DO was conducted in accordance with the VR Algae TMDL and CMP in May, September, and December 2019, and March 2020. **Table 7** presents deployment dates and provides general notes related to each deployment where applicable. As noted, the 2019-2020 monitoring period presented several challenges with continuous water quality data collection. These challenges included technical malfunction of equipment during numerous deployments, non-deployment due to the risk of theft and vandalism, and actual theft of data logging equipment in March 2020. Continuous water quality monitoring data for pH and DO measured during each quarter is presented as **Figure 18** and **Figure 19**, respectively (full size charts are provided as **Appendix D)**. As discussed below, data for multiple deployments are suspect and are not displayed in the figures below. For the most part, pH and DO did not exceed numeric thresholds.

**TABLE 7. SONDE DEPLOYMENT DATES** 

Site	2019 Quarter 2 (May¹)	2019 Quarter 3 (September¹)	2019 Quarter 4 (December)	2020 Quarter 1 (March)
TMDL-Est	Not deployed <sup>2</sup>	Not deployed <sup>2</sup>	12/11/2019 – 12/24/2019	Stolen
TMDL-R1	5/17/2019 – 5/31/2019 <sup>3</sup>	9/13/2019 - 9/27/2019 <sup>4</sup>	12/11/2019 -12/24/2019	3/25/2020 – 4/4/2020
TMDL-R2	5/17/2019 - 5/31/2019	9/13/2019 - 9/27/2019	12/11/2019 – 12/24/2019	3/25/2020 – 4/4/2020
TMDL-R3	5/17/2019 - 5/31/2019	9/13/2019 - 9/27/2019	12/11/2019 – 12/23/2019	3/25/2020 – 4/4/2020
TMDL-R4	5/17/2019 - 5/31/2019	9/13/2019 - 9/27/2019 <sup>5</sup>	12/11/2019 – 12/23/2019	3/25/2020 – 4/4/2020
TMDL-SA	5/17/2019 – 5/31/2019 <sup>5</sup>	Dry	12/11/2019 – 12/24/2019 <sup>6</sup>	3/25/2020 – 4/4/2020 <sup>7</sup>
TMDL-CL	5/17/2019 – 5/31/2019	Dry	12/27/2019 – 1/10/2020	Not Deployed <sup>8</sup>

#### Table Notes:

- 1. Month required by TMDL.
- 2. The estuary lacked a deployable location due to high theft/vandalism risk after high wet-season flows cleared out concealing vegetation and reshaped the estuary eliminating the discreet locations for deployment.
- 3. Conductivity sensor became bio-fouled several days after deployment but data appears reliable.
- 4. Temperature sensor failed during deployment and data are suspect.
- 5. Conductivity sensors not properly calibrated and data are suspect.
- 6. DO and conductivity sensors not properly calibrated and data are suspect.
- 7. DO, pH, and Conductivity sensors failed during deployment and data are suspect.
- 8. Calibration failed prior to deployment and sondes was not deployed.

In May 2019, six Hydrolab HL4 water quality data sondes were installed and began logging data on May 17, 2019. The estuary lacked a location where the equipment could be deployed due to high theft/vandalism risk after high wet-season flows cleared out concealing vegetation and reshaped the estuary. This eliminated the discreet locations for deployment at TMDL-Est. The conductivity sensor at TMDL-R1 became bio-fouled several days after deployment and the conductivity sensor at

TMDL-SA read in error for the full deployment. Conductivity is not a required measurement at these sites because it is low enough at those locations not to affect the other data collected.<sup>4</sup>

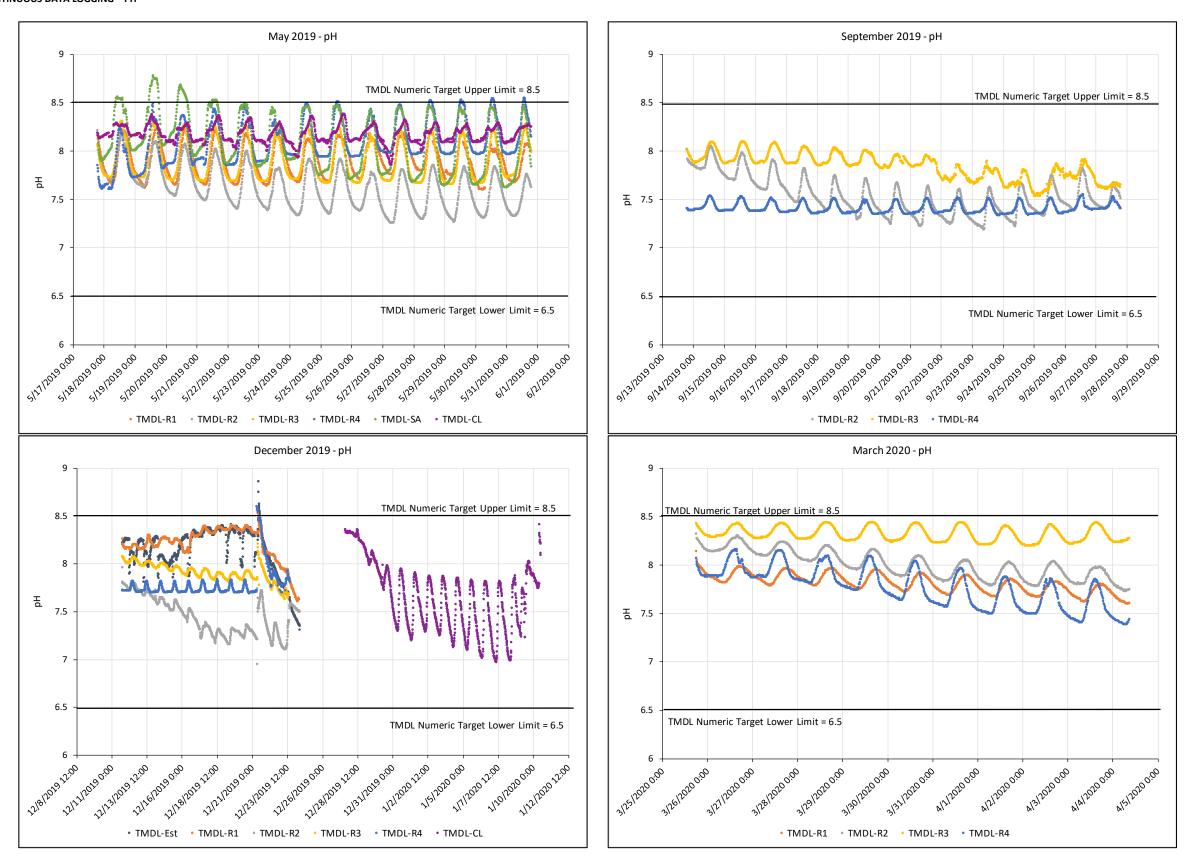
In September 2019, sondes were installed at four water quality monitoring sites for continuous data logging. Sondes were not installed at TMDL-Est due to a continuing high risk of vandalism, nor at TMDL-SA and TMD-CL due to dry conditions. The sondes were installed before the logging program began on September 13, 2019 and were removed after two weeks of logging. The temperature sensor failed at TMDL-R1 during this deployment, making all data suspect as temperature is required for sensors to read accurately (per manufacturer). DO and conductivity sensors for TMDL-R4 were not calibrated properly and data are suspect.

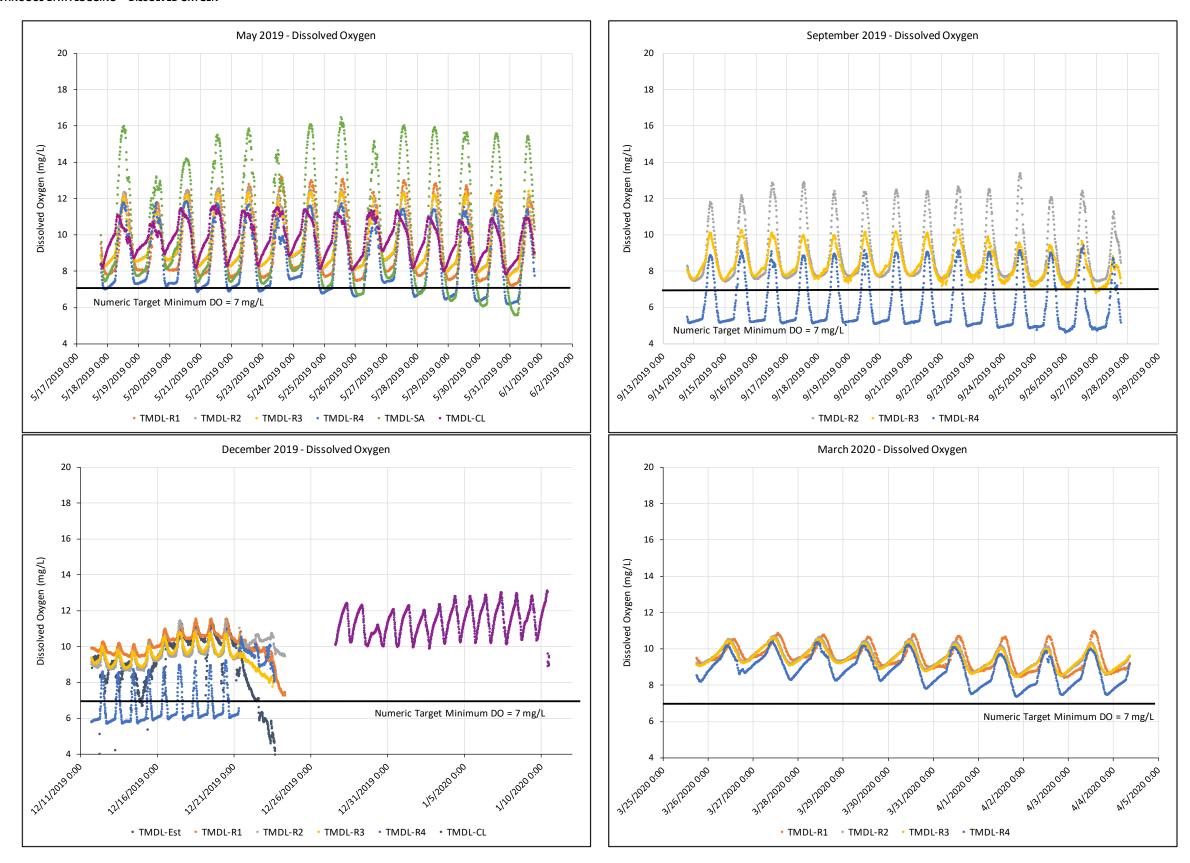
In December 2019, sondes were installed at all seven water quality monitoring sites and began logging data on December 11, 2019. The DO and conductivity sensors at TMDL-SA did not calibrate properly as the sensor failed for the duration of the sampling period and data is suspect. Following manufacturer technical support which delayed deployment, the sonde for TMDL-CL was deployed for data collection on December 27, 2019.

In March 2020, sondes were installed at six water quality monitoring locations and began logging on March 25, 2020 following a series of storm events and manufacturer technical support activities that prohibited earlier deployment. Prior to this deployment, four data loggers experienced system failures and were maintained by the manufacturer at the end of February 2020. This deployment was limited to one week due to a forecasted storm event for April 5, 2020, which produced over 3.5 inches of rainfall at the Ojai-County Fire Station rain gage. The integrity of data recorded at TMDL-SA during this event was questionable due to sensor failures for DO, pH, and conductivity. The monitoring equipment at TMDL-Est was stolen. Scheduled maintenance and equipment purchases will reduce the potential for the issues that occurred during this monitoring season. Increased security measures will also reduce the potential of theft for future monitoring events.

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<sup>&</sup>lt;sup>4</sup> The sonde uses the conductivity measurement when calculating DO, but the influence of conductivity on DO measurements for the conductivity levels seen at the TMDL riverine stations is negligible.





## **OBSERVATIONS AND LESSONS LEARNED**

This section presents a summary of key monitoring results including the frequency of exceedances for VR Algae TMDL numeric targets and general data trends and observations. Important lessons learned during the 2019-2020 monitoring period are discussed to further inform future monitoring program implementation and management decisions. Field data sheets are provided as **Appendix E** and chain of custody forms and laboratory results are included as **Appendix F**.

#### **KEY FINDINGS**

Unlike past years, the 2019-2020 monitoring period experienced elevated flows at multiple monitoring locations throughout the year. Over the past five years, flows were generally observed to increase starting in the 2017 rainy season with higher flow rates through 2018, 2019, and 2020. Unlike past years when chlorophyll a concentrations exceeded the seasonal average numeric target (150 mg/m²) at multiple locations, in 2019-2020 TMDL-R2 was the only monitoring location where chlorophyll a exceeded the seasonal average numeric target (**Table 8**). Macroalgal percent cover exceeded the VR Algae TMDL seasonal average numeric target at all monitoring locations.

A summary of exceedances is provided in **Table 8**, which considers monthly grab sample and continuous water quality monitoring results. While DO and pH measurements at two monitoring locations (TMDL-R4 and TMDL-SA) exceeded VR TMDL numeric targets during several monitoring events, continuous water quality monitoring measurements coupled with monthly in-situ measurements indicate that pH and DO are meeting the VR Algae TMDL numeric targets. Exceedances of the numeric targets for pH during monthly monitoring events occurred for the upper target (8.5) at TMDL-Est and TMDL-R4, where the highest measurements for each site were 8.69 (June 2019) and 8.94 (March 2020), respectively. Numeric target exceedances during monthly monitoring events for DO (7 mg/L) occurred only at TMDL-R4 and TMDL-SA, where minimum measurements for each site were 6.24 (September 2019) and 1.39 (October 2019), respectively. Low DO concentrations at TMDL-SA were likely attributed to low flow conditions (<0.01 cfs). In addition, DO is typically low in the early morning and increases during the day, which may explain low measurements during monthly grab sampling events. This is observed in the continuous water quality monitoring data, which illustrates daily variation.

Referencing the five year dataset for algal biomass, monthly algal biomass measurement differences occur depending on the monitoring location and year. However, over the past five years, seasonal averages calculated using a 5-month (May through September) and 3-month (May, July, and September) dataset produce nearly identical compliance results. As such, the 3-month dataset appears to provide representative data of the dry season average for comparison to the VR Algae TMDL numeric targets.

**TABLE 8. EXCEEDANCES BY SITE AND MONTH** 

Season	Sample Month	TMDL-Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL-SA	TMDL-CL
Dry Season 2019	May 2019	No Sonde	-	-	-	pH (c) DO (c)	pH (c) DO (c)	-
	Jun 2019	> pH (m)	-	-	-	DO (m)	-	-
	Jun 2019	-	-	-	-		-	-
	Aug 2019	> pH (m)	-	-	-	DO (m)	DO (m)*	Dry
	Sept 2019	No Sonde	No Sonde	-	DO (c)	DO (m) DO (c)	DO (m)*	Dry
	Seasonal Average	Macroalgal cover	Macroalgal cover	Chl a Macroalgal cover	Macroalgal cover	Macroalgal cover	Macroalgal cover	Macroalgal cover
Wet	Oct 2019	> pH (m)	-	-	-	DO (m)	DO (m)*	Dry
Season	Nov 2019	-	-	-	-	-	DO (m)*	Dry
2019/2020	Dec 2019	> pH (c)	> pH (c)	-	-	> pH (c)	No Sonde	-

Season	Sample Month	TMDL-Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL-SA	TMDL-CL
		DO (c)				DO (c)		
	Jan 2020	-	-	-	-	-	-	-
	Feb 2020	-	-	-	-	-	-	-
	Mar 2020	No Sonde	-	-	-	>pH (m)	No Sonde	No Sonde
	Apr 2020	-	-	-	-	-	-	-

#### **Table Notes:**

(m): Monthly grab sample measurement.

(c): Continuously monitored sonde measurement.

\*: Very low flow (<0.01 cfs). Low flow conditions likely contributed to exceedance of DO numeric target.

No Sonde: No sonde data available due to no deployment or questionable data (see continuous data logging section)

-: No exceedances.

Chl a: Chlorophyll a, a measurement of algal biomass.

#### LESSONS LEARNED

Following the theft of the data sonde from TMDL-Est during the March 2020 deployment, Rincon researched and procured onset HOBO data loggers to replace the stolen HL4 data sonde. The HOBO data loggers are designed as standalone sondes for DO/temperature, pH, and conductivity. To reduce costs while optimizing equipment suitability, Rincon only purchased two sondes (DO/temperature and pH). To correctly measure DO in the estuary during future monitoring events, an existing HL4 data logger will be deployed at TMDL-Est and the HOBO loggers will be deployed at a freshwater monitoring location (i.e., TMDL-R4). Additional actions were taken to further secure future deployments, including evaluation of alternative deployment locations, enhanced housings for the data loggers, and procurement of a robust security chain and locking system.

Siltation can be an issue in slow moving water and when sondes are installed higher in the water column in areas where this is likely to occur. All sondes were checked and/or calibrated by monitoring staff before and after deployment, regardless of history, and field meter readings were taken in the vicinity of the sondes immediately prior to their removal to check/confirm that the sondes were still reading accurately in situ at the end of the deployment.

# APPENDICES TO ANNUAL REPORT

Summarized field data, field data sheets, chain of custodies, and laboratory reports are provided as appendices to this report.

# APPENDIX A. MONTHLY IN-SITU PARAMETERS

TMDL-Est   5/8/2019   13:15		Sample Date	Sample Time	Berm Status	Flow (cfs)	pH (pH Units)	DO (mg/L)	SC (μS/cm)	Salinity (ppt)	Water Temp (°C)
IMDL-Est         5/8/2019         13:15         ends end         NA         8.41         13:15         1,532         0.7         18:9           TMDL-Est         6/13/2019         13:30         Open-west end         NA         8.69         Over range range range         4,514         2.4         23.9           TMDL-Est         7/10/2019         12:25         end         NA         8.42         14.91         9,940         5.6         24.4           TMDL-Est         8/14/2019         13:40         Open-east end         NA         8.62         14.91         9,940         5.6         24.4           TMDL-Est         9/9/2019         13:20         Open-east end         NA         8.62         13.1         17,130         10.3         20.9           TMDL-Est         10/14/2019         15:15         Open-east end         NA         8.62         13.1         17,130         10.3         20.5           TMDL-Est         11/6/2019         14:40         Open-east end         NA         8.18         16.94         5,100         2.76         13.5           TMDL-Est         1/15/2020         12:48         end         NA         8.16         12.6         2,645         1.38         12.6						Target	Target			
TMDL-Est   6/13/2019   13:30   end   NA   8.69   range   4,514   2.4   23.9	TMDL-Est	5/8/2019	13:15	•	NA	8.41	13.15	1,532	0.7	18.9
MDL-Est   7/10/2019   12:25   end   NA   8.42   14:9   2,810   1.5   23.7	TMDL-Est	6/13/2019	13:30	•	NA	8.69		4,514	2.4	23.9
MDL-Est   8/14/2019   13:40   end   NA   8.62   14.91   9,940   5.6   24.4	TMDL-Est	7/10/2019	12:25	•	NA	8.42	14.9	2,810	1.5	23.7
IMDL-Est         9/9/2019         13:20         end         NA         8.23         10.3         2,990         1.5         22.9           TMDL-Est         10/14/2019         15:15         Open-east end         NA         8.62         13.1         17,130         10.3         20.5           TMDL-Est         11/6/2019         14:40         Open-east end         NA         8.41         13.38         13,890         8         18.2           TMDL-Est         12/19/2019         13:01         Open-east west         NA         8.18         16.94         5,100         2.76         13.5           TMDL-Est         1/15/2020         12:48         open-east end         NA         8.15         13.11         2,999         11.13         14.3           TMDL-Est         3/19/2020         13:22         Open-east end         NA         8.15         13.11         2,999         11.13         14.3           TMDL-Est         3/19/2020         13:22         Open-east end         NA         8.25         10.84         1,262         0.68         15.2           TMDL-Bst         4/15/2020         12:40         open-east end         NA         8.25         10.84         1,262         0.63         18.6	TMDL-Est	8/14/2019	13:40	•	NA	8.62	14.91	9,940	5.6	24.4
MDI-Est   11/6/2019   15:15   end   NA   8.62   13.1   17,130   10.3   20.5	TMDL-Est	9/9/2019	13:20	•	NA	8.23	10.3	2,990	1.5	22.9
IMDL-Est         11/6/2019         14:40         end         NA         8.41         13.38         13,890         8         18.2           TMDL-Est         12/19/2019         13:01         Open-east west         NA         8.18         16.94         5,100         2.76         13.5           TMDL-Est         1/15/2020         12:48         end         NA         8.16         12.6         2,645         1.38         12.6           TMDL-Est         2/12/2020         12:05         Open-east end         NA         8.15         13.11         2,999         11.13         14.3           TMDL-Est         3/19/2020         13:22         Open-east end         NA         8.22         12         1,345         0.68         15.2           TMDL-Est         4/15/2020         12:40         Open-east end         NA         8.25         10.84         1,262         0.63         18.6           TMDL-R1         5/8/2019         11:00         NA         37.5         8.33         9.9         1,183         0.6         17.5           TMDL-R1         6/13/2019         10:20         NA         18.2         8.03         8.38         1,236         0.6         20.3           TMDL-R1<	TMDL-Est	10/14/2019	15:15		NA	8.62	13.1	17,130	10.3	20.5
IMDL-Est         12/19/2019         13:01         west         NA         8:18         16:94         5,100         2.76         13:5           TMDL-Est         1/15/2020         12:48         Open-east end         NA         8:16         12.6         2,645         1:38         12.6           TMDL-Est         2/12/2020         12:05         open-east end         NA         8:15         13:11         2,999         11:13         14:3           TMDL-Est         3/19/2020         13:22         Open-east end         NA         8:22         12         1,345         0.68         15:2           TMDL-Est         4/15/2020         12:40         Open-east end         NA         8:25         10:84         1,262         0:63         18:6           TMDL-R1         5/8/2019         11:00         NA         37:5         8:33         9.9         1,183         0.6         17:5           TMDL-R1         6/13/2019         11:45         NA         20:3         8:16         8:87         1,206         0.6         21:2           TMDL-R1         7/11/2019         10:20         NA         18:2         8:03         8:38         1,236         0.6         20:3           TMDL-R1<	TMDL-Est	11/6/2019	14:40	•	NA	8.41	13.38	13,890	8	18.2
IMDL-Est         1/15/2020         12:48         end         NA         8.16         12.6         2,645         1.38         12.6           TMDL-Est         2/12/2020         12:05         Open-east end         NA         8.15         13:11         2,999         11:13         14:3           TMDL-Est         3/19/2020         13:22         Open-east end         NA         8.22         12         1,345         0.68         15:2           TMDL-Est         4/15/2020         12:40         Open-east end         NA         8.25         10.84         1,262         0.63         18.6           TMDL-R1         5/8/2019         11:00         NA         37.5         8.33         9.9         1,183         0.6         17.5           TMDL-R1         6/13/2019         11:45         NA         20.3         8.16         8.87         1,206         0.6         21.2           TMDL-R1         7/11/2019         10:20         NA         18.2         8.03         8.38         1,236         0.6         20.3           TMDL-R1         8/15/2019         10:40         NA         11.8         8.09         7.96         1,300         0.7         20.8           TMDL-R1         <	TMDL-Est	12/19/2019	13:01	•	NA	8.18	16.94	5,100	2.76	13.5
TMDL-Est         2/12/2020         12:05         end         NA         8.15         13.11         2,999         11.13         14.3           TMDL-Est         3/19/2020         13:22         Open-east end         NA         8.22         12         1,345         0.68         15.2           TMDL-Est         4/15/2020         12:40         Open-east end         NA         8.25         10.84         1,262         0.63         18.6           TMDL-R1         5/8/2019         11:00         NA         37.5         8.33         9.9         1,183         0.6         17.5           TMDL-R1         6/13/2019         11:45         NA         20.3         8.16         8.87         1,206         0.6         21.2           TMDL-R1         7/11/2019         10:20         NA         18.2         8.03         8.38         1,236         0.6         20.3           TMDL-R1         8/15/2019         10:40         NA         11.8         8.09         7.96         1,300         0.7         20.8           TMDL-R1         9/11/2019         10:50         NA         8.5         8.26         8.02         1,285         0.6         20.4           TMDL-R1         10/14/201	TMDL-Est	1/15/2020	12:48	•	NA	8.16	12.6	2,645	1.38	12.6
TMDL-Est         3/19/2020         13:22         end         NA         8.22         12         1,345         0.68         15.2           TMDL-Est         4/15/2020         12:40         Open-east end         NA         8.25         10.84         1,262         0.63         18.6           TMDL-R1         5/8/2019         11:00         NA         37.5         8.33         9.9         1,183         0.6         17.5           TMDL-R1         6/13/2019         11:45         NA         20.3         8.16         8.87         1,206         0.6         21.2           TMDL-R1         7/11/2019         10:20         NA         18.2         8.03         8.38         1,236         0.6         20.3           TMDL-R1         8/15/2019         10:40         NA         11.8         8.09         7.96         1,300         0.7         20.8           TMDL-R1         9/11/2019         10:50         NA         8.5         8.26         8.02         1,285         0.6         20.4           TMDL-R1         10/14/2019         13:30         NA         8.1         8.4         9.04         1,355         0.7         16.8           TMDL-R1         11/6/2019	TMDL-Est	2/12/2020	12:05		NA	8.15	13.11	2,999	11.13	14.3
IMDL-EST         4/15/2020         12:40         end         NA         8.25         10.84         1,262         0.63         18.6           TMDL-R1         5/8/2019         11:00         NA         37.5         8.33         9.9         1,183         0.6         17.5           TMDL-R1         6/13/2019         11:45         NA         20.3         8.16         8.87         1,206         0.6         21.2           TMDL-R1         7/11/2019         10:20         NA         18.2         8.03         8.38         1,236         0.6         20.3           TMDL-R1         8/15/2019         10:40         NA         11.8         8.09         7.96         1,300         0.7         20.8           TMDL-R1         9/11/2019         10:50         NA         8.5         8.26         8.02         1,285         0.6         20.4           TMDL-R1         10/14/2019         13:30         NA         8.1         8.4         9.04         1,355         0.7         16.8           TMDL-R1         11/6/2019         13:45         NA         7.0         8.24         10.02         1,339         0.7         15.1           TMDL-R1         12/19/2019         11:5	TMDL-Est	3/19/2020	13:22		NA	8.22	12	1,345	0.68	15.2
TMDL-R1         6/13/2019         11:45         NA         20.3         8.16         8.87         1,206         0.6         21.2           TMDL-R1         7/11/2019         10:20         NA         18.2         8.03         8.38         1,236         0.6         20.3           TMDL-R1         8/15/2019         10:40         NA         11.8         8.09         7.96         1,300         0.7         20.8           TMDL-R1         9/11/2019         10:50         NA         8.5         8.26         8.02         1,285         0.6         20.4           TMDL-R1         10/14/2019         13:30         NA         8.1         8.4         9.04         1,355         0.7         16.8           TMDL-R1         11/6/2019         13:45         NA         7.0         8.24         10.02         1,339         0.7         15.1           TMDL-R1         11/6/2019         11:54         NA         8.7         8.23         15.03         1,517         0.77         10.5           TMDL-R1         1/15/2020         12:00         NA         19.1         8.26         12.48         1,327         0.67         11.8           TMDL-R1         3/19/2020         12	TMDL-Est	4/15/2020	12:40	•	NA	8.25	10.84	1,262	0.63	18.6
TMDL-R1         7/11/2019         10:20         NA         18.2         8.03         8.38         1,236         0.6         20.3           TMDL-R1         8/15/2019         10:40         NA         11.8         8.09         7.96         1,300         0.7         20.8           TMDL-R1         9/11/2019         10:50         NA         8.5         8.26         8.02         1,285         0.6         20.4           TMDL-R1         10/14/2019         13:30         NA         8.1         8.4         9.04         1,355         0.7         16.8           TMDL-R1         11/6/2019         13:45         NA         7.0         8.24         10.02         1,339         0.7         15.1           TMDL-R1         12/19/2019         11:54         NA         8.7         8.23         15.03         1,517         0.77         10.5           TMDL-R1         1/15/2020         12:00         NA         19.1         8.26         12.48         1,327         0.67         11.8           TMDL-R1         2/12/2020         11:30         NA         13.4         8.3         14.14         1,327         0.69         12.3           TMDL-R2         3/19/2020	TMDL-R1	5/8/2019	11:00	NA	37.5	8.33	9.9	1,183	0.6	17.5
TMDL-R1         8/15/2019         10:40         NA         11.8         8.09         7.96         1,300         0.7         20.8           TMDL-R1         9/11/2019         10:50         NA         8.5         8.26         8.02         1,285         0.6         20.4           TMDL-R1         10/14/2019         13:30         NA         8.1         8.4         9.04         1,355         0.7         16.8           TMDL-R1         11/6/2019         13:45         NA         7.0         8.24         10.02         1,339         0.7         15.1           TMDL-R1         12/19/2019         11:54         NA         8.7         8.23         15.03         1,517         0.77         10.5           TMDL-R1         1/15/2020         12:00         NA         19.1         8.26         12.48         1,327         0.67         11.8           TMDL-R1         2/12/2020         11:30         NA         13.4         8.3         14.14         1,327         0.69         12.3           TMDL-R1         3/19/2020         12:25         NA         50.5         8.27         12.58         1,220         0.61         13.3           TMDL-R2         5/8/2019 <td< td=""><td>TMDL-R1</td><td>6/13/2019</td><td>11:45</td><td>NA</td><td>20.3</td><td>8.16</td><td>8.87</td><td>1,206</td><td>0.6</td><td>21.2</td></td<>	TMDL-R1	6/13/2019	11:45	NA	20.3	8.16	8.87	1,206	0.6	21.2
TMDL-R1         9/11/2019         10:50         NA         8.5         8.26         8.02         1,285         0.6         20.4           TMDL-R1         10/14/2019         13:30         NA         8.1         8.4         9.04         1,355         0.7         16.8           TMDL-R1         11/6/2019         13:45         NA         7.0         8.24         10.02         1,339         0.7         15.1           TMDL-R1         12/19/2019         11:54         NA         8.7         8.23         15.03         1,517         0.77         10.5           TMDL-R1         1/15/2020         12:00         NA         19.1         8.26         12.48         1,327         0.67         11.8           TMDL-R1         2/12/2020         11:30         NA         13.4         8.3         14.14         1,327         0.69         12.3           TMDL-R1         3/19/2020         12:25         NA         50.5         8.27         12.58         1,220         0.61         13.3           TMDL-R2         4/15/2020         11:20         NA         58.5         8.29         11.05         1,185         0.59         16.8           TMDL-R2         5/8/2019         <	TMDL-R1	7/11/2019	10:20	NA	18.2	8.03	8.38	1,236	0.6	20.3
TMDL-R1         10/14/2019         13:30         NA         8.1         8.4         9.04         1,355         0.7         16.8           TMDL-R1         11/6/2019         13:45         NA         7.0         8.24         10.02         1,339         0.7         15.1           TMDL-R1         12/19/2019         11:54         NA         8.7         8.23         15.03         1,517         0.77         10.5           TMDL-R1         1/15/2020         12:00         NA         19.1         8.26         12.48         1,327         0.67         11.8           TMDL-R1         2/12/2020         11:30         NA         13.4         8.3         14.14         1,327         0.69         12.3           TMDL-R1         3/19/2020         12:25         NA         50.5         8.27         12.58         1,220         0.61         13.3           TMDL-R1         4/15/2020         11:20         NA         58.5         8.29         11.05         1,185         0.59         16.8           TMDL-R2         5/8/2019         7:50         NA         33.5         8.13         9.32         1,068         0.5         16.9           TMDL-R2         6/13/2019         <	TMDL-R1	8/15/2019	10:40	NA	11.8	8.09	7.96	1,300	0.7	20.8
TMDL-R1         11/6/2019         13:45         NA         7.0         8.24         10.02         1,339         0.7         15.1           TMDL-R1         12/19/2019         11:54         NA         8.7         8.23         15.03         1,517         0.77         10.5           TMDL-R1         1/15/2020         12:00         NA         19.1         8.26         12.48         1,327         0.67         11.8           TMDL-R1         2/12/2020         11:30         NA         13.4         8.3         14.14         1,327         0.69         12.3           TMDL-R1         3/19/2020         12:25         NA         50.5         8.27         12.58         1,220         0.61         13.3           TMDL-R1         4/15/2020         11:20         NA         58.5         8.29         11.05         1,185         0.59         16.8           TMDL-R2         5/8/2019         7:50         NA         33.5         8.13         9.32         1,068         0.5         16.9           TMDL-R2         6/13/2019         9:20         NA         20.5         8.06         8.59         1,064         0.5         19.6           TMDL-R2         7/11/2019         <										
TMDL-R1         12/19/2019         11:54         NA         8.7         8.23         15.03         1,517         0.77         10.5           TMDL-R1         1/15/2020         12:00         NA         19.1         8.26         12.48         1,327         0.67         11.8           TMDL-R1         2/12/2020         11:30         NA         13.4         8.3         14.14         1,327         0.69         12.3           TMDL-R1         3/19/2020         12:25         NA         50.5         8.27         12.58         1,220         0.61         13.3           TMDL-R1         4/15/2020         11:20         NA         58.5         8.29         11.05         1,185         0.59         16.8           TMDL-R2         5/8/2019         7:50         NA         33.5         8.13         9.32         1,068         0.5         16.9           TMDL-R2         6/13/2019         9:20         NA         20.5         8.06         8.59         1,064         0.5         19.6           TMDL-R2         7/11/2019         7:50         NA         17.7         7.59         7.85         1,061         0.5         19.1           TMDL-R2         8/15/2019 <t< td=""><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td>1,355</td><td></td><td>1</td></t<>					1			1,355		1
TMDL-R1         1/15/2020         12:00         NA         19:1         8.26         12:48         1,327         0.67         11:8           TMDL-R1         2/12/2020         11:30         NA         13:4         8.3         14:14         1,327         0.69         12:3           TMDL-R1         3/19/2020         12:25         NA         50.5         8.27         12:58         1,220         0.61         13:3           TMDL-R1         4/15/2020         11:20         NA         58.5         8.29         11:05         1,185         0.59         16:8           TMDL-R2         5/8/2019         7:50         NA         33.5         8.13         9:32         1,068         0.5         16:9           TMDL-R2         6/13/2019         9:20         NA         20.5         8.06         8.59         1,064         0.5         19:6           TMDL-R2         7/11/2019         7:50         NA         17.7         7.59         7.85         1,061         0.5         19:1           TMDL-R2         8/15/2019         8:20         NA         13.0         7.84         8.25         1,125         0.6         20:2           TMDL-R2         9/11/2019         8										1
TMDL-R1         2/12/2020         11:30         NA         13.4         8.3         14.14         1,327         0.69         12.3           TMDL-R1         3/19/2020         12:25         NA         50.5         8.27         12.58         1,220         0.61         13.3           TMDL-R1         4/15/2020         11:20         NA         58.5         8.29         11.05         1,185         0.59         16.8           TMDL-R2         5/8/2019         7:50         NA         33.5         8.13         9.32         1,068         0.5         16.9           TMDL-R2         6/13/2019         9:20         NA         20.5         8.06         8.59         1,064         0.5         19.6           TMDL-R2         7/11/2019         7:50         NA         17.7         7.59         7.85         1,061         0.5         19.1           TMDL-R2         8/15/2019         8:20         NA         13.0         7.84         8.25         1,125         0.6         20.2           TMDL-R2         9/11/2019         8:45         NA         9.9         8.08         8.12         1,113         0.6         19.5					1			t		
TMDL-R1         3/19/2020         12:25         NA         50.5         8.27         12.58         1,220         0.61         13.3           TMDL-R1         4/15/2020         11:20         NA         58.5         8.29         11.05         1,185         0.59         16.8           TMDL-R2         5/8/2019         7:50         NA         33.5         8.13         9.32         1,068         0.5         16.9           TMDL-R2         6/13/2019         9:20         NA         20.5         8.06         8.59         1,064         0.5         19.6           TMDL-R2         7/11/2019         7:50         NA         17.7         7.59         7.85         1,061         0.5         19.1           TMDL-R2         8/15/2019         8:20         NA         13.0         7.84         8.25         1,125         0.6         20.2           TMDL-R2         9/11/2019         8:45         NA         9.9         8.08         8.12         1,113         0.6         19.5					1			1		<b>†</b>
TMDL-R1         4/15/2020         11:20         NA         58.5         8.29         11.05         1,185         0.59         16.8           TMDL-R2         5/8/2019         7:50         NA         33.5         8.13         9.32         1,068         0.5         16.9           TMDL-R2         6/13/2019         9:20         NA         20.5         8.06         8.59         1,064         0.5         19.6           TMDL-R2         7/11/2019         7:50         NA         17.7         7.59         7.85         1,061         0.5         19.1           TMDL-R2         8/15/2019         8:20         NA         13.0         7.84         8.25         1,125         0.6         20.2           TMDL-R2         9/11/2019         8:45         NA         9.9         8.08         8.12         1,113         0.6         19.5					1			1		<b>†</b>
TMDL-R2         5/8/2019         7:50         NA         33.5         8.13         9.32         1,068         0.5         16.9           TMDL-R2         6/13/2019         9:20         NA         20.5         8.06         8.59         1,064         0.5         19.6           TMDL-R2         7/11/2019         7:50         NA         17.7         7.59         7.85         1,061         0.5         19.1           TMDL-R2         8/15/2019         8:20         NA         13.0         7.84         8.25         1,125         0.6         20.2           TMDL-R2         9/11/2019         8:45         NA         9.9         8.08         8.12         1,113         0.6         19.5										ł
TMDL-R2         6/13/2019         9:20         NA         20.5         8.06         8.59         1,064         0.5         19.6           TMDL-R2         7/11/2019         7:50         NA         17.7         7.59         7.85         1,061         0.5         19.1           TMDL-R2         8/15/2019         8:20         NA         13.0         7.84         8.25         1,125         0.6         20.2           TMDL-R2         9/11/2019         8:45         NA         9.9         8.08         8.12         1,113         0.6         19.5								1		
TMDL-R2     7/11/2019     7:50     NA     17.7     7.59     7.85     1,061     0.5     19.1       TMDL-R2     8/15/2019     8:20     NA     13.0     7.84     8.25     1,125     0.6     20.2       TMDL-R2     9/11/2019     8:45     NA     9.9     8.08     8.12     1,113     0.6     19.5								1		
TMDL-R2         8/15/2019         8:20         NA         13.0         7.84         8.25         1,125         0.6         20.2           TMDL-R2         9/11/2019         8:45         NA         9.9         8.08         8.12         1,113         0.6         19.5										
TMDL-R2 9/11/2019 8:45 NA 9.9 8.08 8.12 1,113 0.6 19.5										
								1		1
IMDI-R2   10/14/2019   12:10   NA   67   837   10/04   1.161   0.6   185	TMDL-R2	10/14/2019	12:10	NA NA	6.7	8.37	10.04	1,113	0.6	18.5

	Sample	Sample	Berm Status	Flow	pH (pH	DO	sc	Salinity	Water Temp
	Date	Time	Dermi Status	(cfs)	Units)	(mg/L)	(μS/cm)	(ppt)	(°C)
					Numeric	Numeric			
					Target	Target			
TAADL DO	11/6/2010	12.00	NIA.	7.5	6.5 - 8.5	>7 mg/L	4 445	0.6	477
TMDL-R2	11/6/2019	12:00	NA NA	7.5	8.13	10.58	1,115	0.6	17.7
TMDL-R2	12/19/2019 1/15/2020	11:03	NA NA	9.2 16.2	8.09	13.85	1,212	0.61	12.4
TMDL-R2		11:07	NA NA	1	8.15	12.4	1,128	0.56	11.9
TMDL-R2	2/12/2020	10.35 11:08	NA NA	14.5 45.5	8.2 8.18	13.4 12.74	1,180	0.59 0.52	12.8 12.4
TMDL-R2	3/19/2020 4/15/2020	10:30	NA NA	48.2	8.21	11.62	1,038 1,077	0.54	15.5
TMDL-R3	5/7/2019	12:00	NA NA	42.0	8.37	10.05	1,077	0.5	18
TMDL-R3	6/12/2019	12:45	NA NA	20.0	8.06	10.05	1,031	0.5	22.5
TMDL-R3	7/10/2019	11:00	NA NA	18.3	8.08	9.32	1,020	0.5	19.4
TMDL-R3	8/14/2019	11:30	NA NA	12.0	8.32	9.45	1,044	0.5	20.4
TMDL-R3	9/9/2019	11:05	NA NA	8.3	8.04	10.34	1,030	0.5	19.8
TMDL-R3	10/14/2019	10:40	NA NA	12.5	8.27	9.46	1,043	0.5	16
TMDL-R3	11/6/2019	11:10	NA NA	6.3	8.07	10.7	1,043	0.5	15.8
TMDL-R3	12/19/2019	10:12	NA NA	8.6	8.06	14.42	1,139	0.57	10.9
TMDL-R3	1/15/2020	10:12	NA NA	19.0	8.12	11.81	1,120	0.56	11.4
TMDL-R3	2/12/2020	9:45	NA NA	13.9	8.15	13.48	1,136	0.50	11.4
TMDL-R3	3/19/2020	10:20	NA NA	54.7	8.13	12.72	1,020	0.5	11.9
TMDL-R3	4/15/2020	9:40	IVA	65.6	8.19	11.58	1,020	0.5	14.8
TMDL-R3	5/7/2019	7:50	NA	29.7	7.71	8.54	920	0.5	16.3
TMDL-R4	6/12/2019	7:55	NA NA	14.6	7.71	6.87	974	0.5	19.7
TMDL-R4	7/10/2019	7:55	NA NA	14.4	7.08	7.13	990	0.5	18.7
TMDL-R4	8/14/2019	8:00	NA NA	7.5	7.38	6.46	1,018	0.5	19.1
TMDL-R4	9/9/2019	8:40	NA NA	7.0	7.35	6.24	1,015	0.5	19.4
TMDL-R4	10/14/2019	9:10	NA NA	5.2	7.33	6.54	986	0.5	18.1
TMDL-R4	11/6/2019	9:00	NA	4.3	7.47	7.47	919	0.5	18
TMDL-R4	12/19/2019	8:55	NA	6.5	7.41	9.7	1,071	0.53	16
TMDL-R4	1/15/2020	8:54	NA	16.5	7.64	10.01	1,060	0.53	12.8
TMDL-R4	2/12/2020	8:35	NA	11.2	7.6	9.73	1,071	0.53	14.2
TMDL-R4	3/19/2020	8:35	NA	40.8	8.94	10.51	937	0.46	10.5
TMDL-R4	4/15/2020	8:28	NA	47.6	8.03	12.04	938	0.47	14.2
TMDL-SA	5/7/2019	10:10	NA	5.6	8.38	12.33	1,377	0.7	16.9
TMDL-SA	6/12/2019	10:00	NA	0.9	7.79	9.87	1,407	0.7	21.1
TMDL-SA	7/10/2019	9:35	NA	0.7	7.84	9.77	1,476	0.7	19.7
TMDL-SA	8/14/2019	9:30	NA	<0.01	7.37	2.49	1,057	0.5	17.7
TMDL-SA	9/9/2019	10:10	NA	<0.01	7.1	1.55	1,040	0.5	17.7
TMDL-SA	10/14/2019	10:00	NA	<0.01	7.23	1.39	1,019	0.5	14.4
TMDL-SA	11/6/2019	9:30	NA	<0.01	7.22	2.06	1,007	0.5	13.7
TMDL-SA	12/19/2019	9:25	NA	<0.01	7.71	13.17	1,515	0.77	9
TMDL-SA	1/15/2020	9:15	NA	0.8	8.09	14.42	1,614	0.82	10
TMDL-SA	2/12/2020	9:00	NA	0.4	7.98	14.75	1,631	0.83	9.7
TMDL-SA	3/19/2020	9:10	NA	3.1	7.94	12.09	1,607	0.82	12
TMDL-SA	4/15/2020	8:55	NA	10.4	8.1	11.74	1,389	0.7	13.6
TMDL-CL	5/7/2019	14:20	NA	0.7	8.18	8.85	3,734	2	21.8
TMDL-CL	6/13/2019	7:45	NA	0.2	8.05	8.51	3,750	2	19
TMDL-CL	7/10/2019	12:55	NA	0.1	8.25	10.07	3,793	2	31.5
TMDL-CL	8/15/2019	8:00	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	9/11/2019	8:25	NA	DRY	DRY	DRY	DRY	DRY	DRY

	Sample Date	Sample Time	Berm Status	Flow (cfs)	pH (pH Units)	DO (mg/L)	SC (μS/cm)	Salinity (ppt)	Water Temp (°C)
					Numeric Target 6.5 - 8.5	Numeric Target >7 mg/L			
TMDL-CL	10/14/2019	8:40	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	11/6/2019	8:30	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	12/19/2019	7:45	NA	0.1	8.22	19.5	4,548	2.39	1.6
TMDL-CL	1/15/2020	7:45	NA	0.4	8.12	14.84	4,388	2.31	2.9
TMDL-CL	2/12/2020		NA	0.1	8.27	16.67	4,326	2.29	4.1
TMDL-CL	3/19/2020	7:47	NA	0.9	8.23	14.13	4,356	2.32	7
TMDL-CL	4/15/2020	7:45	NA	0.6	8.13	12.71	4,193	2.24	11.6

Grey shaded cells indicate a value in exceedance of numeric targets.

# APPENDIX B. MONTHLY NUTRIENT DATA

Site	Sample Date	P Total EPA 365.1	P Diss EPA 365.1	TKN Total EPA 351.2	TKN Diss EPA 351.2	N Total Calculated	N Diss Calculated	NO3+NO2- N EPA 353.2
		(mg/L)*	(mg/L)*	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TMDL-Est	5/8/2019	0.1300	0.028	0.26	0.12	1.50	1.30	1.2
TMDL-Est	6/13/2019	0.0160	0.027	0.3	0.16	1.00	0.86	0.7
TMDL-Est	7/10/2019	0.0430	0.043	0.39	0.32	0.72	0.64	0.32
TMDL-Est	8/14/2019	0.0780	0.062	0.61	0.31	1.00	0.72	0.41
TMDL-Est	9/9/2019	0.1000	0.033	0.79	0.42	1.10	0.74	0.32
TMDL-Est	10/16/2019	0.0410	0.024	0.31	0.26	0.78	0.73	0.47
TMDL-Est	11/6/2019	0.0580	0.04	0.42	0.23	1.30	1.10	0.83
TMDL-Est	12/19/2019	0.0940	0.07	0.2	0.16	1.50	1.50	1.3
TMDL-Est	1/15/2020	0.0330	0.0195 (DNQ)	0.604	0.387 (DNQ)	1.54		0.93
TMDL-Est	2/12/2020	0.0527	0.0165 (DNQ)	0.087 (DNQ)	0.083 (DNQ)	0.84	0.84	0.75
TMDL-Est	3/19/2020	0.1190	0.0222	0.29	0.13	1.16	1.00	0.87
TMDL-Est	4/15/2020	0.0935	0.0345	0.23 (DNQ)	0.17	1.19	1.13	0.96
TMDL-R1	5/8/2019	0.0220	0.023	0.065 (DNQ)	<0.050	1.50	1.40	1.4
TMDL-R1	6/13/2019	0.0290	0.043	0.27	<0.050	1.40	1.10	1.1
TMDL-R1	7/11/2019	0.0750	0.079	0.29	0.22	1.20	1.10	0.88
TMDL-R1	8/15/2019	0.0510	0.049	0.21	0.24	1.00	1.10	0.82
TMDL-R1	9/11/2019	0.0590	0.052	0.24	0.096 (DNQ)	0.93	0.79	0.69
TMDL-R1	10/16/2019	0.0520	0.048	0.28	0.18	1.30	1.20	1
TMDL-R1	11/6/2019	0.0780	0.077	0.26	0.26	1.80	1.80	1.5
TMDL-R1	12/19/2019	0.0920	0.072	0.19	0.21	1.70	1.70	1.5
TMDL-R1	1/15/2020	0.0258	<0.016	0.342 (DNQ)	0.369 (DNQ)	1.38		1.04
TMDL-R1	2/12/2020	0.0555	0.0181 (DNQ)	0.39 (DNQ)	0.34 (DNQ)	1.75	1.70	1.36
TMDL-R1	3/19/2020	0.0659	<0.016	0.26	0.15	1.18	1.16	0.92
TMDL-R1	4/15/2020	0.0454	0.0258 (DNQ)	1.2	0.13 (DNQ)	2.17	1.10	0.97
TMDL-R2	5/8/2019	0.0440	0.049	0.17	0.1	2.00	2.00	1.8
TMDL-R2	6/13/2019	0.0410	0.051	<0.050	<0.050	1.60	1.60	1.6
TMDL-R2	7/11/2019	0.0480	0.057	0.074 (DNQ)	<0.050	1.30	1.30	1.3
TMDL-R2	8/15/2019	0.0930	0.09	0.16	0.28	1.40	1.50	1.2
TMDL-R2	9/11/2019	0.0940	0.087	0.31	<0.050	1.40	1.10	1.1
TMDL-R2	10/16/2019	0.0950	0.075	0.11	0.13	1.60	1.60	1.5
TMDL-R2	11/6/2019	0.0750	0.063	0.22	0.19	1.80	1.80	1.6
TMDL-R2	12/19/2019	0.0890	0.078	<0.018	<0.018	1.90	1.90	1.9
TMDL-R2	1/15/2020	<0.0160	<0.016	0.285 (DNQ)	0.298 (DNQ)	1.26		0.97
TMDL-R2	2/12/2020	0.0561	0.0306	0.47	0.37 (DNQ)	2.15	2.05	1.68
TMDL-R2	3/19/2020	0.1250	<0.016	0.21	0.13	1.24	1.07	0.89
TMDL-R2	4/15/2020	0.0372	0.0258 (DNQ)	0.25 (DNQ)	0.21 (DNQ)	1.41	1.37	1.16

Site	Sample Date	P Total EPA 365.1 (mg/L)*	P Diss EPA 365.1 (mg/L)*	TKN Total EPA 351.2 (mg/L)	TKN Diss EPA 351.2 (mg/L)	N Total Calculated (mg/L)	N Diss Calculated (mg/L)	NO3+NO2- N EPA 353.2 (mg/L)
TMDL-R3	5/7/2019	0.0057 (DNQ)	<0.012	<0.050	<0.050	1.60	1.60	1.6
TMDL-R3	6/12/2019	0.0037 (DNQ)	<0.012	0.071 (DNQ)	<0.050	1.60	1.50	1.5
TMDL-R3	7/10/2019	0.0065 (DNQ)	0.015 (DNQ)	<0.050	0.087 (DNQ)	1.20	1.20	1.2
TMDL-R3	8/14/2019	0.0140	0.022	<0.050	<0.050	0.87	0.87	0.87
TMDL-R3	9/9/2019	0.0065 (DNQ)	0.0045 (DNQ)	0.069 (DNQ)	<0.050	0.85	0.78	0.78
TMDL-R3	10/16/2019	0.0059 (DNQ)	0.0045 (DNQ)	0.070 (DNQ)	<0.050	0.87	0.80	0.8
TMDL-R3	11/6/2019	0.0076 (DNQ)	0.0075 (DNQ)	0.037 (DNQ)	0.031 (DNQ)	0.86	0.85	0.82
TMDL-R3	12/19/2019	0.0120	0.010	<0.018	<0.018	0.98	0.98	0.98
TMDL-R3	1/15/2020	<0.0160	<0.016	0.251 (DNQ)	0.506	1.24		0.99
TMDL-R3	2/12/2020	0.0208	<0.016	0.36 (DNQ)	0.2 (DNQ)	1.65	1.49	1.29
TMDL-R3	3/19/2020	0.1610	<0.016	0.3	0.15	1.19	1.04	0.95
TMDL-R3	4/15/2020	0.0240	0.0179 (DNQ)	0.22 (DNQ)	0.18 (DNQ)	1.09	1.05	0.87
TMDL-R4	5/7/2019	0.0054 (DNQ)	0.012 (DNQ)	<0.050	<0.050	1.80	1.80	1.8
TMDL-R4	6/12/2019	0.0043 (DNQ)	<0.012	<0.050	<0.050	1.90	1.90	1.9
TMDL-R4	7/10/2019	0.0064 (DNQ)	<0.012	<0.050	<0.050	1.40	1.40	1.4
TMDL-R4	8/14/2019	0.012	<0.012	<0.050	<0.050	1.30	1.30	1.3
TMDL-R4	9/9/2019	0.0065 (DNQ)	0.0039 (DNQ)	0.2	<0.050	1.40	1.20	1.2
TMDL-R4	10/16/2019	0.0052 (DNQ)	0.0052 (DNQ)	0.13	0.12	1.40	1.40	1.3
TMDL-R4	11/6/2019	0.0058 (DNQ)	0.0093 (DNQ)	<0.018	<0.018	1.40	1.40	1.4
TMDL-R4	12/19/2019	0.0220	0.0083 (DNQ)	<0.018	<0.018	1.50	1.50	1.5
TMDL-R4	1/15/2020	<0.0160	<0.016	0.41	0.358 (DNQ)	1.59		1.18
TMDL-R4	2/12/2020	0.0356	<0.016	0.28 (DNQ)	0.21 (DNQ)	1.90	1.83	1.62
TMDL-R4	3/19/2020	0.2330	<0.016	0.37	0.24	0.92	0.76	1.03
TMDL-R4	4/15/2020	<0.016	<0.016	0.18 (DNQ)	0.11 (DNQ)	0.98	0.91	0.80
TMDL-SA	5/7/2019	0.0120	<0.012	0.21	0.090 (DNQ)	1.40	1.30	1.2
TMDL-SA	6/12/2019	0.0250	0.038	0.22	0.056 (DNQ)	0.85	0.68	0.63
TMDL-SA	7/10/2019	0.0420	0.047	0.22	0.19	0.43	0.40	0.21
TMDL-SA	8/14/2019	0.0260	<0.012	<0.050	<0.050	0.25	0.25	0.25

Site	Sample Date	P Total EPA 365.1 (mg/L)*	P Diss EPA 365.1 (mg/L)*	TKN Total EPA 351.2 (mg/L)	TKN Diss EPA 351.2 (mg/L)	N Total Calculated (mg/L)	N Diss Calculated (mg/L)	NO3+NO2- N EPA 353.2 (mg/L)
TMDL-SA	9/9/2019	0.0580	0.014	0.091 (DNQ)	<0.050	0.31	0.22	0.22
TMDL-SA	10/16/2019	0.0140	0.0052 (DNQ)	0.064 (DNQ)	<0.050	0.41	0.34	0.34
TMDL-SA	11/6/2019	0.0180	0.0052 (DNQ)	0.049 (DNQ)	<0.018	0.46	0.41	0.41
TMDL-SA	12/19/2019	0.0380	0.029	<0.018	0.088 (DNQ)	0.33	0.42	0.33
TMDL-SA	1/15/2020	0.0523	0.0489	0.4	0.403	0.60		0.20
TMDL-SA	2/12/2020	0.0448	<0.016	0.19 (DNQ)	0.27 (DNQ)	0.60	0.68	0.41
TMDL-SA	3/19/2020	0.0589	0.0329	0.42	0.26	1.32	1.19	0.50
TMDL-SA	4/15/2020	0.0450	0.0393	0.26 (DNQ)	0.24 (DNQ)	1.20	1.18	0.95
TMDL-CL	5/7/2019	0.0076 (DNQ)	0.014 (DNQ)	0.41	0.34	0.41	0.34	<0.083
TMDL-CL	6/13/2019	0.0022 (DNQ)	<0.012	0.45	0.46	0.45	0.46	<0.083
TMDL-CL	7/10/2019	0.0085 (DNQ)	<0.012	0.46	0.45	0.46	0.45	<0.083
TMDL-CL	8/15/2019	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	9/11/2019	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	10/16/2019	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	11/6/2019	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	12/19/2019	0.0240	0.02	0.25	0.25	<0.098	<0.098	<0.080
TMDL-CL	1/15/2020	0.0193 (DNQ)	<0.016	0.575	0.624	0.59		0.01
TMDL-CL	2/12/2020	0.0267	<0.016	0.25 (DNQ)	0.32 (DNQ)	0.25	0.32	0
TMDL-CL	3/19/2020	0.0737	0.0739	1.1	0.97	1.41	1.28	0.31
TMDL-CL	4/15/2020	<0.0160	<0.016	0.49	0.43	0.51	0.45	0.02

<sup>\*</sup>Total and dissolved phosphorus analyzed using Standard Method (SM) methodologies for January, February, March, April samples. These are accepted as equivalent to EPA methodologies.

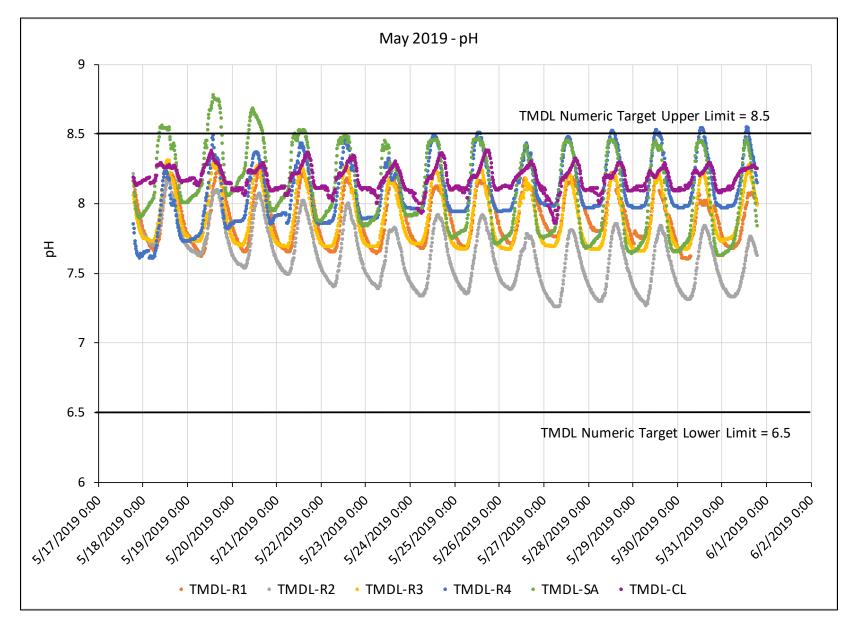
DNQ: Did Not Quantify, the measurement is above the minimum detection limit but below the reporting limit.

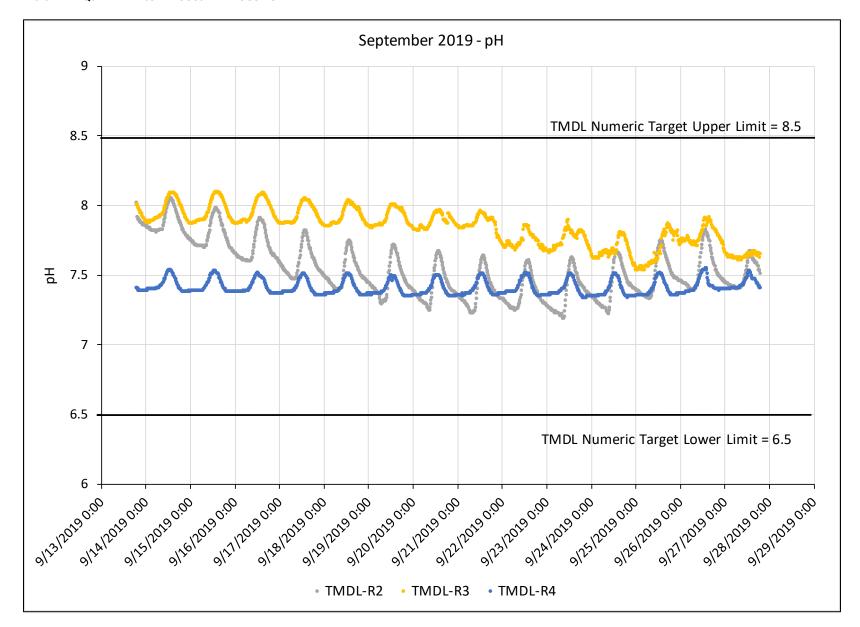
APPENDIX C. DRY SEASON RIVERINE MONTHLY ALGAL BIOMASS (CHLOROPHYLL A) AND PERCENT MACROALGAL COVER

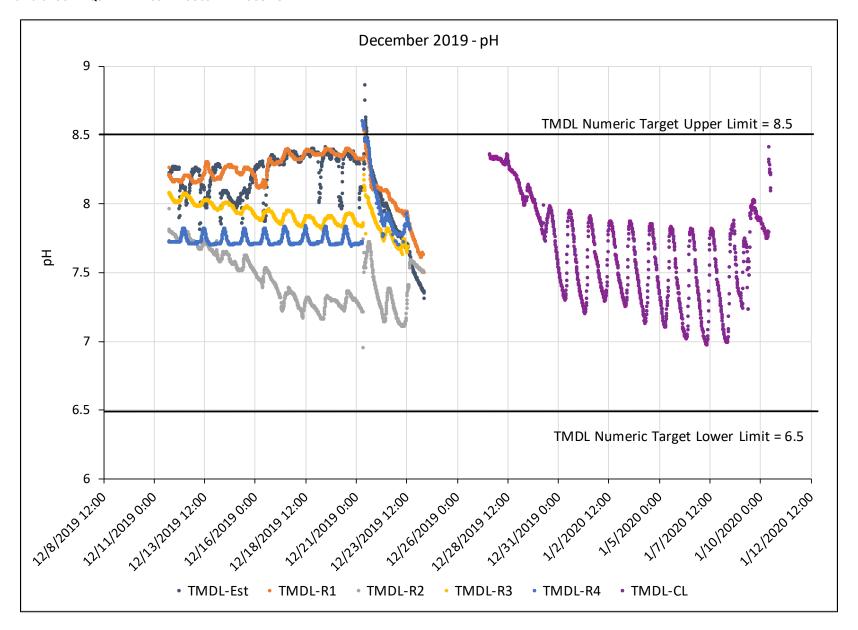
Site	Date	Field Replicate	Number of Transects Collected	Chlorophyll a (mg/m2)	Percent Presence Macroalgae (%)
TMDL-R1	5/8/2019	1	11	280	81.05
TMDL-R1	6/13/2019	1	11	68	83.81
TMDL-R1	7/11/2019	1	11	240	29.81
TMDL-R1	8/15/2019	1	11	84	20.59
TMDL-R1	9/11/2019	1	11	56	0.00
TMDL-R2	5/8/2019	1	11	70	56.44
TMDL-R2	6/12/2019	1	11	230	73.79
TMDL-R2	7/11/2019	1	11	380	74.76
TMDL-R2	8/14/2018	1	11	80	21.57
TMDL-R2	9/11/2019	1	11	140	2.88
TMDL-R3	5/7/2019	1	11	77	64.08
TMDL-R3	6/12/2019	1	11	210	74.76
TMDL-R3	7/10/2019	1	11	140	88.57
TMDL-R3	8/14/2019	1	11	38	37.14
TMDL-R3	9/9/2019	1	11	98	20.19
TMDL-R4	5/7/2019	1	11	100	74.23
TMDL-R4	6/12/2019	1	11	91	87.62
TMDL-R4	7/10/2019	1	11	150	90.48
TMDL-R4	8/14/2019	1	11	42	68.27
TMDL-R4	9/9/2019	1	11	33	70.19
TMDL-SA	5/7/2019	1	11	120	83.65
TMDL-SA	6/12/2019	1	11	190	74.04
TMDL-SA	6/12/2019	2	11	170	NA
TMDL-SA	7/10/2019	1	11	180	91.26
TMDL-SA	8/14/2019	1	11	52	75.96
TMDL-SA	9/9/2019	1	DRY	DRY	DRY
TMDL-CL	5/7/2019	1	11	28	54.00
TMDL-CL	6/13/2019	1	11	45	88.66
TMDL-CL	7/10/2019	1	11	64	98.02
TMDL-CL	8/15/2019	1	DRY	DRY	DRY
TMDL-CL	9/11/2019	1	DRY	DRY	DRY

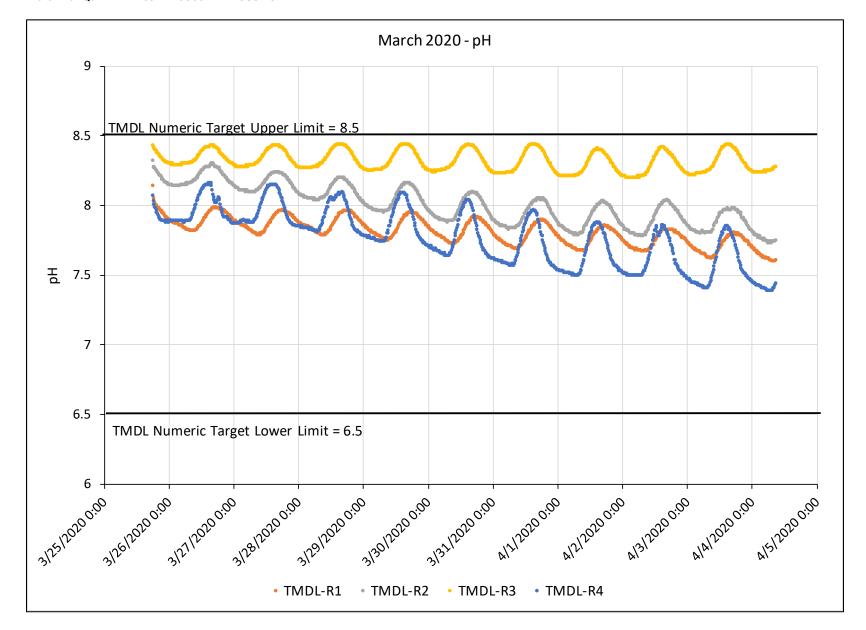
## APPENDIX D. FULL SIZE CONTINUOUS MONITORING CHARTS

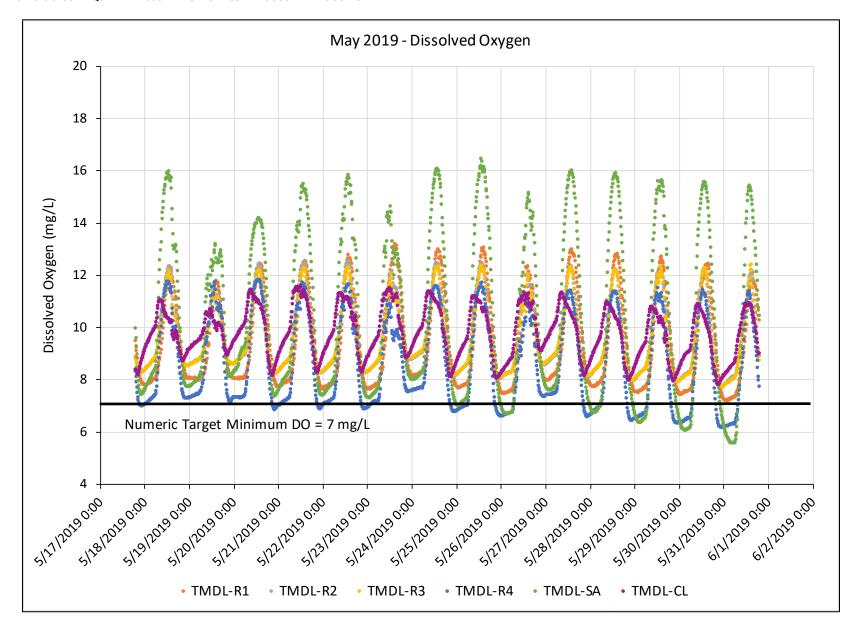
FIGURE D1. 2019 SECOND QUARTER PH CONTINUOUS DATA LOGGING

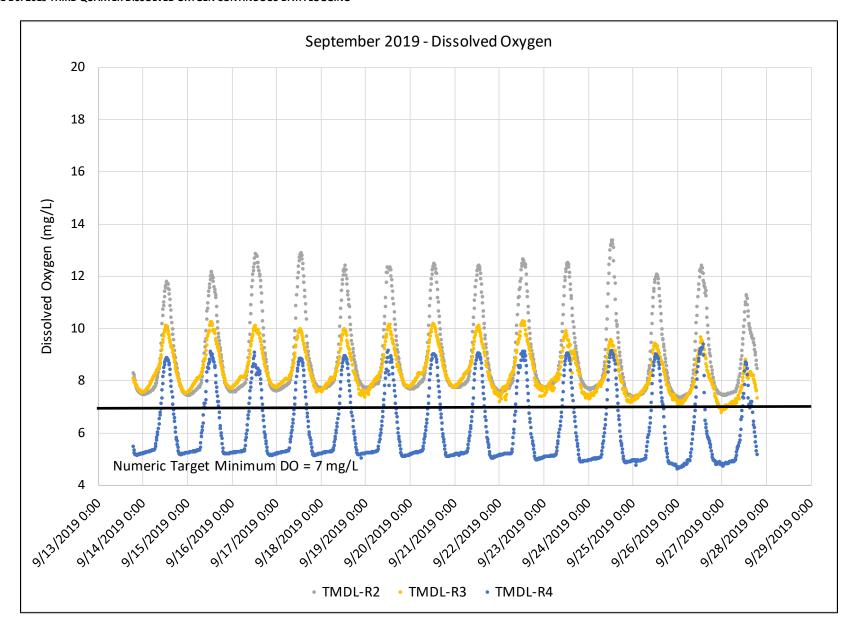


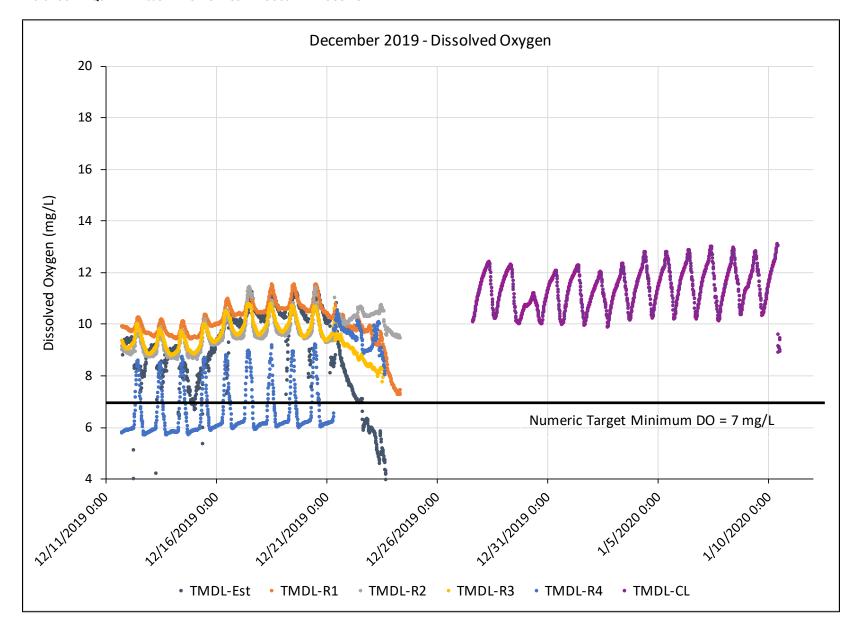


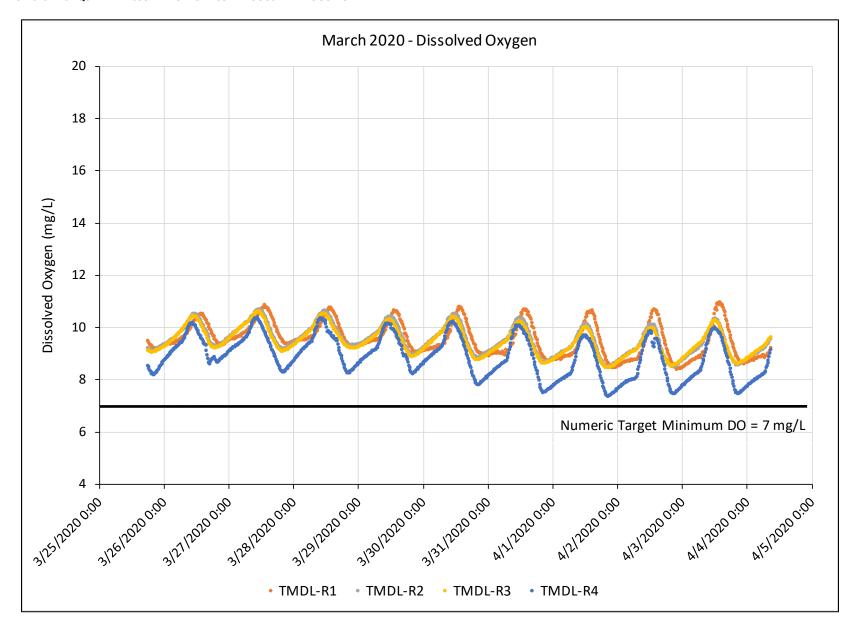












### APPENDIX E. FIELD DATA SHEETS

# Ventura River Algae TMDL Event Details

EVENT DETAILS  Event ID (Month Year): MAY 2019  Crew Members: K.HAHS E. LOMELL J. MANN (5)	5/7+8/19
event ID (Month Year): 1711/7 201	Date: 5/110/11
Crew Members: K.HAHS E. LOMELI J. MANN (5)	1114) B. JONES (2/8/14) Y. MARTE
<b>Neather (circle):</b> Clear / Partly Cloudy / Overcast / Showers / Rain / O	Other
event Type (check):   □ Dry (<0.1" rain per day for the preceding to	three days)
□ Wet (days with ≥0.1" rain and the three da	avs following)
Notes: YS185 # OSE1126	ays rememmen
Beeting 255 # 2554	
Beamon 280 H 2339	
OBSERVATION SITES (RIVER FLOW)	5/10/19
and the second	<b>3</b> / · / ·
Ventura River at Highway 150 (Baldwin Road)	
Flow Status: Dry / Ponded Flowing (Estimated Flow: 20 cfs)	Photos Taken: Upstream / Downstream
Notes:	
/entura River at Santa Ana Blvd	<b>DIA T I I I I I I I I I I</b>
Flow Status: Dry / Ponded Flowing (Estimated Flow: 20 cfs)	Photos Taken: Upstream / Downstream
Notes:	
/entura River at Casitas Vista Road	DE T
low Status: Dry / Ponded / Flowing (Estimated Flow: 37 cfs)	Photos Taken: Upstream / Downstream
Votes: (USE5 q	auge)
V	07
Additional Observation Site:	
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Notes:	
INSAMPLED TMDL SITES	1
ite ID: Time:	Photos Taken: Upstream / Downstream
low Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Thotas rate in opsically bownstream
eason not sampled (if flowing):	
otes:	
te ID: Time:	Photos Taken: Upstream / Downstream
ow Status: Dry / Ponded / Flowing (Estimated Flow:cfs)	Photos Taken. Opstream / Downstream
eason not sampled (if flowing):	
otes:	
ite ID: Time:	Photos Taken: Upstream / Downstream
ow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	
eason not sampled (if flowing)	
otes:	
otes.	
ita ID.	Photo Talle 11 a 15
ite ID: Time:	Photos Taken: Upstream / Downstream
low Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	
eason not Kampled (if flowing):	
lotes:	

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

### Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est	
Event ID (Month Year):	_ Date: 5/8/19 13.15
Crew Members: KH EL BJ AW	
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle one): Open / Restricted / Closed
Direction of Tide: Ebb / Flood / Slack / N/A	Time of Low Tide: 0658 Time of High Tide: 1339
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / W	rindy / Strong Wind Wind Direction: Blowing From/ To Wy connected to ocean. Part entrs + stays on west end. 1 > 100 gulls
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): 🖂 ಕೆ ಕಾರ್ತಿ 🔍	y connected to ocean. Patre entrs + stays on west and 1 > 100 alls
each side.	J 3 4

# **TRANSECT 1**

Monthly (Jan—Dec):		
рН: <u>8-Ч</u> рН units	EC: 1177 μS/cm	Water Temp: 18・9 °C
DO: 13-15 mg/L	SC: 1532 μS/cm	· <del></del>
DO: 141-8 %	Salinity: 0-7 ppt	

Photos:   Oceanward   Landward	Start Time: 1325 End Time: 135	0				
Start Latitude: 34 - 27685	Start Longitude: -119.30885  End Longitude: -119.30885					
End Latitude: 34 - 27 657						
PVC Latitude:	PVC Longitude:					

[Collect at Floating Macroalgae Q	uadrat 1, Transect 1]	
Monthly Water (Jan—Dec):		
Nitrogen, total and dissolved:	×	
Phosphorus, total and dissolved:	<b>x</b>	
Nitrate + Nitrite as Nitrogen:	⋈	
Dry Season Algae (May—Sep):		
Chlorophyll a (phytoplankton):	×	
Volume filtered per sample:		
	[Collect at Floating Macroalgae Of Monthly Water (Jan—Dec): Nitrogen, total and dissolved: Phosphorus, total and dissolved: Nitrate + Nitrite as Nitrogen:  Dry Season Algae (May—Sep): Chlorophyll a (phytoplankton):	Nitrogen, total and dissolved:  Phosphorus, total and dissolved:  Nitrate + Nitrite as Nitrogen:   Dry Season Algae (May—Sep):  Chlorophyll a (phytoplankton):

		MACROALGAE—LAND BASED							FLOATING MACROALGAE					
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	2-2	3	4.3	6.4	7-3	9.3	17-5	18.6	25.5	27.3				
Water Depth (must be ≤ 0.3 m)											0.3			- California de la cali
<b>Condition</b> [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Ersh Int Des Dd	Frsh Int Des Dd	Frsb Int Des Dd	Ersh Int Des Dd	Frsb Int Des Dd	Frsh Int Des Dd	Frsh 3 Int 1 Des Dd	Ersh Int Des Dd	FrshVo Int 1 Des Dd	Frsh 7 Int 4 Des Dd	Frsh Int Des Od	Frsh Int Des Dd	Ersb Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	01	12	8	4	3	11	84	8	11	1)	1	0		0
No. Crosshairs with Macroalgae Absent	39	37	47	45	46	38	45	41	39	38	48	49	48	49
Crosshair Total (must equal 49)	49									>	49	49	49	Ya

82/490

2/196

### Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2

Ventura River Algae TMDL— Estuary Transect Measurements Date: 5/8 | Crew: KH EL BT AW **TRANSECT 2** 1357 End Time: 1415 **d** Landward □ Oceanward Photos: Start Time: -119.30901 34.27 640 Start Longitude: Start Latitude: 34-27612 End Longitude: -119.30906 End Latitude: **PVC Longitude:** PVC Latitude: FLOATING MACROALGAE MACROALGAE-LAND BASED 10 1 2 4 Quadrat 1 2 3 5 6 64 9-3 27.3 4.3 25.5 18:6 3 7.3 17.5 Distance (m) 2-2 0-3 Water Depth (must be ≤ 0.3 m) Frsh 19 Frsh 1 2Frsh Frsh8 Frsh\_3 Frsh 8 Frsh 13 Frsh Frsh Frsh Frsh Frsh30 Frsh 12 Frsh 😝 Condition (Int Int 5 Int 2 Int 3 ◍ Int Int Int 3 Int 5 Int 6 H Int & Int Int 3 Int 2 [Frsh=Fresh, Int=Intermediate, Des Des=Dessicated, Dd=Dead] Dd 33 6 6 15 15 0 No. Crosshairs with Macroalgae Present 25 10 36 16 43 34 34 48 48 48 40 24 43 38 No. Crosshairs with Macroalgae Absent Crosshair Total (must equal 49) 49 490 196 **TRANSECT 3** Start Time: 1422 End Time: 1436 **≰**Landward Photos: Proceanward Start Latitude: 34 -27597 Start Longitude: -119 · 30907 -119.30920 34.27 575 End Longitude: End Latitude: **PVC Latitude: PVC Longitude:** FLOATING MACROALGAE MACROALGAE—LAND BASED 10 4 8 Quadrat 1 2 3 717-5 2 18.6 25-5 27.3 4.3 2.2 Distance (m) 0.3 Water Depth (must be ≤ 0.3 m) Frsh 23 Frsh 17 Frsh5 Frsh 22 Frsh 3 Frsh 2 8 Frsh 30 Frsh25 Frsh 20 Frsh12 Frsh 🖖 Frsh Frsh Frsh 12 Condition Int 5 Int int Int 6 Int Int Int Int 2 Int 2\_ Int 3 Int # Int Int Int [Frsh=Fresh, Int=Intermediate, Des Des=Dessicated, Dd=Dead] Dd 19 23 27 12 No. Crosshairs with Macroalgae Present 64 26 38 23 37 27 30 47 26 32 40 27 49 47 No. Crosshairs with Macroalgae Absent 49 49 Crosshair Total (must equal 49)

157490

27/96

Event ID (Month Year): MAY 2019
Site ID: TMDL-RI
Date/Time: <u>05/08/19</u> 1100
Crew Members:
34-28058 -119-30855
Latitude/Longitude: KH, EL, BJ AW
Flow (circle one): Flowing/ Ponded / Dry
Wind Strength:
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.): Shortened reach dire
to deep pools at both ends
January—December Monthly In Situ Measurements:  pH: Δ-30 pH units EC: 1015 μS/cm 1015  DO: 1919 mg/L SC: 1183 μS/cm  DO: 1011 % Salinity: 0.10 ppt  Water Temp: 135 °C  Flow (from discharge measurement): 37-5 cfs
Samples Collected (check box)
January—December Monthly Water:
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
, , , , , , , , , , , , , , , , , , ,
Nitrogen (unfiltered):
Although free is
Nitrogen (unfiltered):

	1st		charge Mea nt = left bank		<b>nt</b> g downstrear	m)
Vel	ocity Area M	lethod (pref	erred)		<b>Bu</b> (Use only if v	oya eloc
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)		Distance (ft)	
1	3.0	<del>(</del> )	0	Flo	oat Time (sec	)
2	4.5	0.7	1.23		Float	Rea
3	6.0	0.9	1.66			
4	7.5	0.2	1.73		Width	1
5	9.0	1.65	0.72		Depth 1	
6	10.5	1.85	1.60		Depth 2	
7	12.0	1.75	1,45		Depth 3	
8	13.5	1.80	1,39		Depth 4	1
9	15.5	1.8	1.50	L	Depth 5	
10	17.0	1.7	1.74		-September	
11	18.5	1.5	1.33		<b>h Length (1</b> 5) tted width > 1	
12	20.0	1.5	1.11		Collec	tio
13	21.5	1.8	0.92		(sum # tran	sec
14	23.0	1.9	0.49	Rubb	er Delimiter	(Are
15	24:5	0.8	0.10	PVC [	Delimiter (Are	ea=:
16	26.0	0.5	0.18	Syrin	ge Scrubber (	Are
17	27.2	A	0	Othe	r (Area=	
18				Num	ber of Transe	cts
19		1		Comp	oosite Volum	e (n

<b>Buoy</b> (Use only if vel	rant Object ocity area m		ossible)							
	Float 1	Float 2	Float 3							
Distance (ft)										
Float Time (sec)										
Float R	Float Reach Cross Section (ft)									
	Upper Section	Middle Section	Lower Section							
Width										
Depth 1										
Depth/2										
Depth 3										
Depth 4	}; = - }									
Depth 5										

	May—September: Algae Collection for Chlorophyll a
ı	Reach Length (150 m if wetted width ≤ 10 m; 250 m
	if wetted width > 10 m):
П	

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	3
PVC Delimiter (Area=12.6cm²)	3
Syringe Scrubber (Area=5.3cm²)	150
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	363
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

		Macroalgae	Presence/Abs	ence (P/A) aı	nd Water Depth	n ( <del>mm/it/in</del> )			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	5	2P	59A	699	759	25 A	2	2	9	0	
AB	4.8	30	50760	60P	50P	55A					
В	5-6	inaccess	14A	64P	42P	OA	17	17	15	16	
ВС	5.6	Incless	50A	55P	250	40	DE D				
С	5	40	30P	419	60P	00	11	8	Ч	1	
CD	5	19	37P	55p	470	OP	1 1 7				
D	6.5	naccess	32P	45p	30P	3P	9	0	10	5	5 H 5
DE	4	2P	719	67P	42P	200					1115
E	4	IP	479	448	478	29	17	13	12	2	
EF	Ч	20	579	60P	55 P	IP					
F	4-1	3P	578	499	300	208	17	3	6	5	
FG	3.5	56P	6819	70P	469	38					- Lui
G	4.7	Inaccess	159	130	58	OA	17	17	17	17	
GH	3	TA	119	300	120	OP		2 1 4			
Н	3-8	Tinaccess	Zop	23P	99	OA	12	5	8	0	الدالد ال
НІ	3-2	inaccess	36P	53P	379	OP				*	
1	3.7	2A	40	25 P	2530P	29	7	8	12	12	10-1-1
IJ	2-6	48	20P	40P	168	OA					
J	6.5	3A	52P	68P	36 A	OA		11	17	0	Later-
JK	9	inaccess	74P	95P	90A	OA				-	
К	8	Inaccess	79 A	123A	DEEP	inaccess	17	17	17	13	/

Event ID (Month Year): MAY 2019		1st		nt = left bank	(looking downstream)	)		
Site ID: R2	V	elocity Area N	lethod (pref	ferred)	<b>Buo</b> y (Use only if vel	/ant Object		ossible)
Date/Time: 5/8/19 0750		Distance		Velocity	(GSC Strily in vol	Float 1	Float 2/	Float 3
Crew Members: Ku EL BJ AW	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)	-		
Latitude/Longitude: 34.33937 -119.29725		-1. D	D	N	Float Time (sec)			
Flow (circle one): Flowing / Ponded / Dry	1	T.O	70	10	Float P	each Cross	Section (ft)	1-2
Wind Strength:	2	1.0	0.75	0.31	Float R	/		
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	3	3.0	1.7	0.06		Upper Section	Middle Section	Lower
Wind Direction: Blowing (circle one) From / To	-		100	-		Section	Section	Section
Photos (check): Upstream Downstream	4	5.0	2.0	0.97	Width			
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	10	n :1	2.09	Depth 1			
discharge comments, etc.) :	6	9.0	2.4	0.27	Depth 2			
	-	1	ilo Co.		Dept/ 3			
	7	10.0	201	0.70	Depth 4			
	8	12.0	2.2	1.47	Depth 5			
January—December Monthly In Situ Measurements:	9	14.0	1.0	0.80	/beptii 5			
pH: <u>0.13</u> pH units EC: <u>904</u> μS/cm	10	16.0	1,10	0.83	May—September:			
DO: <u>9-32</u> mg/L SC: <u>10(α%</u> μS/cm	11	18.0	1 7	0.57	Reach Length (150			0 m; 250 n
DO: 910 9 % Salinity: 5 ppt			1. 0		if wetted width > 10	J m):		
Water Temp:°C Flow (from discharge measurement):33-5 <sub>cfs</sub>	12	20.0	1.0	0.56	Collecti	ion Device		Quantit
Flow (from discharge measurement): cts	13	22.0	0.8	0.47	(sum # trans	ects per De	evice)	
	14	25.0	X	0	Rubber Delimiter (A	Area=12.6c	m²)	3
Samples Collected (check box)	15	20.0			PVC Delimiter (Area	a=12.6cm²)		
January—December Monthly Water:					Syringe Scrubber (A	rea=5.3cm	<sup>2</sup> )	1
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16			-		22 3.30111	,	-
Nitrogen (unfiltered):	17			25-14	Other (Area=		)	<u> </u>
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transec	ts Sampled	(0-11)	11
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		544
Chlorophyll a (filters—algae):	20				Chlorophyll <i>a</i> Volun	ne		75
		_			(use GF/F filter, 25	mL preferre	ed volume)	07

12

		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depti	(mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	6	28	200	28P	25P	OA	14	5	8	0	/
АВ	5	4A	35P	60P	60P	55₽					
В	5.5	OP	12P	53P	408	20	17	8	13	4	
ВС	5	158	35P	40P	30P	58					
С	9	80	37P	32P	4A	OA	17	17	6/	12	
CD	10	20	43 A	53P	359	OA					
D	6	4A	60P	65P	75P	44	17	9	8	10	
DE	7	62P	69P	858	55₽	10A					
E	10	inaccess	DEX	549	20 A	IOA	15	5	4	6	
EF	7-5	28A	67P	909	659	OA					
F	7-5	13A_	549	634	60P	OA	17	9	11	13	/
FG	9	Maccess	20A	55 P	339	a <sub>A</sub>					
G	8.1	IDA	30A	199	450	OA	14	0	12_	9	
GH	9-5	BA	279	55P	23A	OA					
Н	8	morres	42P	34P	110	OA	17	15	14	5	
HI	6.5	5A	56P	50 P	528	2A					
°I	6	2A	21A	67P	639	OA	17	17	17	1	
IJ	7.5	2A	38A	52P	48A	OA					
J	6.5	2A	48A	590	468	OA	17	17	17		
JK	7.4	2A	66A	45A	10 P	OA					
K	7.2	15A	33A	8A	IHP	OA	17	17	1		/

Event ID (Month Yea	ar): MAY 2019
Site ID:R	3
Date/Time: _5/~	7/19 1200
Crew Members: KH	, EL, JM, AW
Latitude/Longitude: 34	1-34584 -119-29978
Flow (circle one): Flow	
Wind Strength:	9
Calm / Light Breeze / Mode	erate Breeze / Strong Breeze / Windy
Wind Direction: Blowing	g (circle one) From / To
Photos (check): Upst	tream   Downstream
Notes (e.g. homeless, w	ildlife, horses, swimming/recrea
discharge comments, et	c.) :

<u>January—December Monthly In Situ Measurements:</u>
pH: <u>8-37</u> pH units EC: <u>894</u> μS/cm
DO: 10-05 mg/L SC: 103   μS/cm
DO: Salinity: 6-5 ppt
Water Temp: K O C
Flow (from discharge measurement): - cfs

# Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered): May—September Dry Season Monthly Algae: Chlorophyll a (filters—algae):

### Discharge Measurement

1st Measurement = left bank (looking downstream)

Vel	ocity Area M	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	3.4	D	0
2	4.5	1.1	0.53
3	5.5	1.7	1.43
4	6.5	1.7	2.34
5	7.5	1.8	3.24
6	8.5	1.7	3.60
7	9.5	1.5	3.50
8	10.5	1.2	3.94
9	11.5	1.2	2.74
10	12.5	1.2	2.37
11 ,	13.5	101	2.32
12	14.5	0.9	3.2
13	15.5	0.5	1.88
14	16.5	0.5	0.99
15	17.5	0.2	0.30
16	17.9	D	-0
17			
18			
19			
20			

Buoy (Use only if velo	ant Object ocity area m		ossible
	Float 1	Float 2	Float 3
Distance (ft)		/	
Float Time (sec)			
Float Re	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2		,4.4	<u></u>
Depth 3			Î
pepth 4			
Depth 5			

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	4
PVC Delimiter (Area=12.6cm²)	4
Syringe Scrubber (Area=5.3cm²)	3
Other (Area= )	
Number of Transects Sampled (0-11)	17
Composite Volume (mL)	460
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)
Site: R3 Date: 5 / 1/9 Crew: KH, E

		Macroalgae	Presence/Abs	sence (P/A) a	nd Water Depth	(mm/ft/in)_			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	11	OA	30P	549	29P	Image	3	15	12	0	<b>/</b>
AB	12	OA	260	408	449	3A					
В	10	00	20A	400	388	inaccol	10	0	12		
ВС	12.5	OA	80	38P	25P	5A					
С	12-	2A	359	32p	268	100	8	3	12	0	
CD	12	OA	398	37p	36p	39					
D	12	OA	2A	55A	56p	2A	10	0	14		
DE	9	OA	24A	50 P	572P	3A					
E	10	OA	24 A	400	59P	ISA	8	0	11		
EF	10	OA	348	408	57P	599					
F	6-5	OA	37A	65P	639	201	10	4	13	2	/
FG	6	OP	41P	55 P	489	30P					
G	6.5	90	279	58°	56P	40A	2	4	13	7	
GH	6-5	OA	30 P	65P	45P	13A					
Н	0	OP	29	42A	65P	109	17	11	12	17	
н	5	2A	35A	65P	39P	15A					
1	5	5A	150	410	38p	20	Part of the state	7	14	5	
IJ	5	2A	38P	40 P	32A	13A					
ا ل	6-5	OA	47P	400	50P	38A	14	15	17	11	
JK	5-5	18	219	109	47A	SA					
К	\$65	OA	178	53P	438	109	15	6	10	14	/

-	nth Year): $N$	1AY 2019
Site ID:	RY	
Date/Time: _	5/7/M	0750
Crew Members:	KH, EL, J	M AW
 Latitude/Longitu	ude: 34,3299	77,-119.30861
Flow (circle one)	: Flowing Por	nded / Dry
Wind Strength:		
Calmy Light Breez	e / Moderate Bree	ze / Strong Breeze / Windy
Wind Direction:	Blowing (circle o	one) From / To
Photos (check):	□ Upstream	□ Downstream
Notes (e.g. home	eless, wildlife, ho	orses, swimming/recreatior

	January—December Monthly In Situ Measurements:
	pH: 7.7 pH units EC: 769 μS/cm
	DO: <u>8.54</u> mg/L SC: <u>920</u> μS/cm
	DO: <u>&amp; 7</u> % Salinity: <u>. 5</u> ppt
Ì	Water Temp: 14.3 °C
	Flow (from discharge measurement): 29-7 cfs

Samples Collected (check box)	
January—December Monthly Wate	er:
Total Phosphorus , Total Nitrogen, a	nd Nitrate + Nitrite as
Nitrogen (unfiltered):	<b>×</b>
Dissolved Phosphorus and Nitrogen	(field filtered): 😾
May—September Dry Season Mont	thly Algae:
Chlorophyll a (filters—algae):	<b>*</b>

### Discharge Measurement

1st Measurement = left bank (looking downstream)

Velocity Area Method (preferred)							
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)				
1	16	8	-0				
2	15	8.2	0.45				
3	17	0.0	0.05				
4	19	0.5	-0.02				
5	21	0.5	0.82				
6	23	F.0	0.61				
7	25	0.5	0.79				
8	27	0.5	17.0				
9	29	0.5	1.93				
10	31	F.0	1.48				
11	33	0.0	1.79				
12	35	0.8	1.74				
13	37	0.7	1.52				
14	39	0,19	1.90				
15	41	().19	1,59				
16	43	0.10	1.94				
17	45	0.7	1,99				
18	47	0.0	1.32				
19	49	0.6	1,60				
20	51	0.7	1.22				
21	53	1,45	0.63				
12	533	1.4	10.0				

Buoy (Use only if velo	rant Object ocity area m		ossible)	
	Float 1	Float 2	Float 3	
Distance (ft)		/		
Float Time (sec)				
Float Re	each Cross	Section (ft	)	
	Upper Section	Middle Section	Lower Section	
Width	/			
Depth 1	,			
Depth 2				
Depth 3				
Depth 4				
Depth 5				

May-September: Algae Collection for Ch	lorophyll a
Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	m; 250 m
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	3
PVC Delimiter (Area=12.6cm <sup>2</sup> )	8
Syringe Scrubber (Area=5,3cm²)	7
Other (Area= )	
Number of Transects Sampled (0-11)	K
Composite Volume (mL)	360
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

		Macroalgae	Presence/Abs	sence (P/A) ar	nd Water Depth	(mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted M Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	13	OA	30P	26P	277	28	8	4	13	4	/
AB	12	OA	279	190	368	inaccess					
В	13	OA	15P	11300	466	68	١٦	17	9	14	
ВС	191	OA	109	359	489	2A					
С	10.5	inacces/	15P	30P	709	Traces	14	5	8	5	
CD	-11	4A	22 P	309	519	5A					
D	8	0 A	369	55P	45P	38	11	13	16	15	
DE	9	OA	518	60P	60P	inaccess					
E	7	09	70P	65P	286	3A	@12	0	11	14	
EF	6	marcesy	Inuccess	309	DRY	IA					
F	9	00	6P	\$\$,25P	118	89	3	0	3	2	
FG	1)	49	150	201	329	29					
G	1/	OA	25P	228	28P	5A	12	8	3	0	
GH	11	OA	22P	22P	23 P	58					
Н	10.5	OA	35P	DRY	198	89	13	2	3	2	
н	10.5	OA	348	37P	24P	9A					
1	9	15A	34P	460	33P	159	13	2	2	2	
IJ	9-28	10A	33 P	429	318	15A		44.5		1 32 3 7 1	
J	8	OA	35P	388	489	9A	3	0	0	0	
JK	9	OA	379	239	218	28					· · · · · · /= · · ·
К	12	OP	348	209	259	2A	0	0	0	0	A



Front ID (Month Year), MAY 05.5	Discharge Measurement  1st Measurement = left bank (looking downstream)										
Event ID (Month Year): MAY 2019 Site ID: SA	V	elocity Area N			Buoyant Object Method						
Date/Time: 5/7/19 1010		Distance		Velocity	(Use only if vel	ocity area m	Float 2	ossible Float 3			
Crew Members: KH EL, JM AW	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)		/	110000			
Latitude/Longitude: 34-38081 -119-30735		3.70	~	N	Float Time (sec)		/				
Flow (circle one): Flowing Ponded / Dry	1		0	0			-/				
Wind Strength:	2	5.0	0.0	0.18	Float R	each Cross	Section (ft				
Calmy Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3	(0.0)	0.9	0.39		Upper Section	Middle Section	Lower Section			
Photos (check):   Upstream   Downstream	4	-	0 1		NAC dala	Jection	Section	Section			
Notes (e.g. homeless, wildlife, horses, swimming/recreation,		7.0	0.95		Width	/					
discharge comments, etc.) :	5	8.0	0.9	0.22	Depth 1						
	6	10.0	0.8	0.51	Depth 2						
	7	12.0	0.7	0.78	Depth 3						
	8				Depth 4						
		14.0	0.7	1.15	Depth 5						
January—December Monthly In Situ Measurements:	9	16.0	0.0	49.0	100						
pH: 3 30 pH units EC: 1100 μS/cm DO: 1377 μS/cm	10	18.0	0.25	0.22	May—September:			/			
DO: 7 % Salinity: O. 7 ppt	11	19.6	0	0	Reach Length (150 if wetted width > 10			J m; 250 m			
Water Temp: 4 9 °C	12	1 1000			- Watter Wilder			/			
Flow (from discharge measurement): 5-6 cfs	12					on Device	/	Quantity			
	13				(sum # transe	ects per De	vice)				
	14				Rubber Delimiter (A	rea=12.6cr	n²)	4			
Samples Collected (check box)	15				PVC Delimiter (Area	=12.6cm²)		7			
January—December Monthly Water:	16				Syringe Scrubber (A	rea=5 3cm <sup>2</sup>	21	2			
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16					- J.JCIII	<u>'</u>	90			
Nitrogen (unfiltered):	17				Other (Area=		)				
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transect	s Sampled	(0-11)	11			
May—September Dry Season Monthly Algae:	19		-		Composite Volume	(mL)		420			
Chlorophyll a (filters—algae):	20				Chlorophyll a Volum	e	Y	-			
				-	(use GF/F filter, 25 r		d volume)	25			

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)
Site: 5A Date: 5/7/19 Crew: 54.5

		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)						Photo (✓ when Taken)			
Transect	Wetted // Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	5.0	5 A	24A	27P	13A	15 A	17	16	11	6	1
AB	5.3	5A	20 A	24 P	30 P	OA				,	
В	5.0	20	23 P	118	25 P	OA	17	17	8	17	
ВС	5.0	70P	34 P	304	80	90					
С	6.7.	20	26P	150	68	OA	15	13	17	17	
CD	9	30	48	DRY)	OP	OP				4	1
D	8	28	49	IOP	139	09	13	5	10	17	
DE	6	18	140	150	59	IP					
E	6	39	IMP	110	209	OP	5	3	0	6	
EF	8	3P	98	98	118	30		41.5			
F	8	9A	140	99	8P	OP	3	1	15	11	/
FG	7	5P	16P	130	90	OA					
G	7	SA	66P	13 2	70	15A	4	10	9	4	
GH	7	22P	58	148	248	OA			,		
Н	6	30	50	148	199	20	3	12	17	16	
Н	5-4	6A	15P	20P	218	OA					1
1	6	28	10 P	140	22P	OP	9	7	15	15	
IJ	5	39	5P	68	229	18				+	
J	7	19	90	178	129	10	0	3	16	6	
JK	6	18	80	219	279	OA					
K	4-5	10	99	268	-229	199	0	0	0		<b>/</b>

87/104

	16L CL_
	5.7.19 1420
Crew Members:	KHEL, JM AW
Latitude/Longitu	de: 34-34208, -119-28637
Flow (circle one):	: Flowing / Ponded / Dry
Wind Strength:	
Calm / Light Breeze	/ Moderate Breeze / Strong Breeze / Windy
Wind Direction: E	Blowing (circle one) From / To N
Photos (check):	<b>∆</b> Upstream <b>&gt;</b> Downstream
Notes (e.g. home	eless, wildlife, horses, swimming/recreation ents, etc.) :

January—December Monthly In Situ Measurements:
pH: <u>8.18</u> pH units EC: <u>3,509</u> μS/cm
DO: <u>8.85</u> mg/L SC: <u>3.734</u> μS/cm DO: <u>/0/.8</u> % Salinity: <u>2.9</u> ppt
DO: <u>/ 6/ 8                                </u>
Water Temp: <u>2/⋅8</u> °C
Flow (from discharge measurement):cfs

Samples Collected (check box)	
January—December Monthly Water:	,
Total Phosphorus , Total Nitrogen, and N	Nitrate + Nitrite as
Nitrogen (unfiltered):	×
Dissolved Phosphorus and Nitrogen (fiel	d filtered):
May—September Dry Season Monthly	Algae:
Chlorophyll a (filters—algae):	¥

### Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	Velocity Area Method (preferred)									
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)							
1	3.5	0.0	0.0							
2	4.5	0.55	0-13							
3	5.0	0.50	0.56							
4	5.5	0.40	0.66							
5	6.0	0.40	0.39							
6	6.5	0.40	0.54							
7	7.0	0.30	0.34							
8	7.5	0.20	0.27							
9	6,3	0.20	0.34							
10	8.5	0.15	6,20							
11	19.5	0.0	0.0							
12										
13										
14										
15										
16										
17		1								
18										
19										
20										

	Float 1	'Float 2	Float 3
Distance (ft)		/	
Float Time (sec)		-/	
Float Re	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			4-
Depth 4			
Depth 5			

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	1
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	3
PVC Delimiter (Area=12.6cm²)	8
Syringe Scrubber (Area=5.3cm²)	Ø
Other (Area= )	1
Number of Transects Sampled (0-11)	1)
Composite Volume (mL)	446
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	25

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
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		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depth	(mm/ft/in)	Densiometer (0-17)  Count covered dots				Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	3.9	OA	20	28	78	20	0	0	5	0	/
AB	3.8	OA	150	14	48	の無や					
В	1.8	OA	119	15A	IIP	AO	0	0	6	0	
ВС	2.2	OA	19	5 P	8A	OA					
С	2-75	〇篇个	109	DRY	156	5P	0	0	2	0	
CD	4.3	OA	7A	DRY	99	OA					
D	4.2	2P	28	IP/	119	39	0	0	0	0	
DE	3-95	OA	OA	DRY	IIA	OP					
E	3-6	OP	OA	0	7A	19	0	0	0	0	
EF	4-15	OA	DRY	5A	39	OP					
F	54.05	20	56	40	2P	419	0	0	1		/
FG	5	OA	HA	9A	2P	OA			2		
G	5-7	MP	DRY	70	40	18	0	1	0	0	
GH	4-8	OA	OA	8A	ZA	OA					
Н	3.25	19	4A	99	HP	19		0	14	0	-
н	2.8	OP	5A	A8	O <sub>A</sub>	OA					
. 1	2.0	48	5A	5A	OP	19	3	0	0	0	
n	2.4	OA	6A	5A	5A	OA					
1	135	28	14A	99	OA	OP	2	0	2	0	
JK	1-35	90	139	IOP	109	OA					
K	1.5	IA	108	94	90	IA	以伤	4214	杨柳	16	/

3-25

# **Ventura River Algae TMDL Event Details**

EVENT DETAILS	1
Event ID (Month Year): JUNE 2019	Date: 6/10 M 12 13 14/2019
Crew Members: K. HAHS, J. PEREZ, A. WALLE	NGREN B. JONES (RITEST)
Weather (circle): Clear (Partly Cloudy ) Overcast / Showers / Rain	n / Other
Event Type (check): \(\times \text{Dry (<0.1" rain per day for the preced)}\)	
□ Wet (days with ≥0.1" rain and the thre	
Notes:	ac days following,
OBSERVATION SITES (RIVER FLOW) 6/10/1	9
Ventura River at Highway 150 (Baldwin Road) Flow Status: Dry / Ponded Flowing (Estimated Flow: cfs Notes:	Photos Taken: Upstream / Downstream
Venture Biver et Sente And Blad	4/19
Flow Status: Dry / Ponded Flowing (Estimated Flow: ^) _ cfs	) Photos Taken: Upstream / Downstream
Notes:	<del></del>
Ventura River at Casitas Vista Road Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs Notes:	Photos Taken: Upstream / Downstream
~ 10 cfs east book Avon ~	and of west bast
All list and all all	
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs Notes:	) Photos Taken: Upstream / Downstream
UNSAMPLED TMDL SITES	
Site ID: Time:	Photos Taken: Upstream / Downstream
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)  Reason not sampled (if flowing):	
Notes:	·
Site ID: Time:	Photos Taken: Upstream / Downstream
Site ID: Time: cfs) Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Reason not sampled (if flowing):	
Notes:	
Site ID: Time:	Photos Taken: Upstream / Downstream
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Reason not sampled (if flowing): Notes:	
Site ID: Time: cfs) Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Obotos Tokoma Umotusana / Danumatusana
riow status : Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

### Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est	
Event ID (Month Year): JUNE 2019	Date: 6/13/19 1330
Crew Members: KH JP AW	
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle one): Open Restricted Closed Open west and
Direction of Tide: Ebb / Flood / Slack / N/A	Time of Low Tide: 13°-11 Time of High Tide: 1935
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / N	Windy / Strong Wind Wind Direction: Blowing From / To SW
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): Field dy	for chi as bern closed east and NGO alls into water

# **TRANSECT 1**

Monthly (Jan—Dec):			
pH: <u>8 68</u> pH units 1	8·70 E	C: 4396 µS/cm	Water Temp: 23,9°C
DO: <u>280</u> %	S Salinite2	y: <u>2-4</u> ppt	

Photos: Soceanward X Landward	Start Time: 1336 End Time: 1445
Start Latitude: 34-27588	Start Longitude: -119 . 30910
End Latitude: 34 - 27563	End Longitude: -119-30928
PVC Latitude:	PVC Longitude:

Water Samples Collected (check box)
[Collect at Floating Macroalgae Quadrat 1, Transect 1]

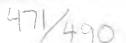
Monthly Water (Jan—Dec):

Nitrogen, total and dissolved: Phosphorus, total and dissolved: Nitrate + Nitrite as Nitrogen:

Dry Season Algae (May—Sep):

Chlorophyll a (phytoplankton): Volume filtered per sample: 500

1				FLOATING MACROALGAE										
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0.6	3.9	5.6	6-1	9.6	11.7	13	22-1	23.7	29.9				
Water Depth (must be ≤ 0.3 m)											0-3			
<b>Condition</b> [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh 36 Int\2 Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	49	48	47	43	40	49	48	49	49	49	48	49	49	49
No. Crosshairs with Macroalgae Absent	0	1	2	6	9	0	1	0	0	0	1	Ō	0	0
Crosshair Total (must equal 49)	49	_								->	49			





# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2

**TRANSECT 2** 

Photos: SOceanward SLandv	vard					Start Time: 1352 End Time: 1402									
Start Latitude: 34.27615						Start Longitude: -119 · 30 907									
End Latitude: 34 - 27638						End Longitu	de: –	119-3	1000						
PVC Latitude:						PVC Longitu	ıde:								
				MAC	ROALGA	AE—LAND BA	ASED				FL	OATING N	ACROALG	AE	
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4	
Distance (m)	6.6	3.9	5.6	6-1	9.6	s 11.7	13	22-1	23.7	29.9					
Water Depth (must be ≤ 0.3 m)											0.3		Paner		
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsb Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	
No. Crosshairs with Macroalgae Present	45	49	40	48	48	49	45	29	49	49	48	43	27	21	
No. Crosshairs with Macroalgae Absent	A A	0	<b>(</b> )	1	Mert	0	4	20	0	Sand Sand	1	6	72	28	
Crosshair Total (must equal 49)	49-									-7	49				

TRANSECT 3	41/490	139/198
Photos: Soceanward Landward	Start Time: 1404	End Time: 1412
Start Latitude: 34-27686	Start Longitude: -119- 35885	5
End Latitude: 34 - 276 56	End Longitude: 19- 30885	5
PVC Latitude:	PVC Longitude:	
		FLOATING MACROAL CAE

PVC Latitude:					P	C Longiti	ide:										
		MACROALGAE—LAND BASED										FLOATING MACROALGAE					
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4			
Distance (m)	0-6	3.9	5.6	6-1	9.6	11.7	13	22.1	23.7	29-9							
Water Depth (must be ≤ 0.3 m)										les.	4.3						
<b>Condition</b> [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh () Int 3 Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh & Int   Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh † 2 Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd			
No. Crosshairs with Macroalgae Present	49	49	49	49	49	49	48	49	49	49	49	49	47	4			
No. Crosshairs with Macroalgae Absent		0	0			0	1	67	0	(3)	0	0	Zi	2			
Crosshair Total (must equal 49)	49							*		->	149						

Discharge Measurement

Event ID (Month Year): Do 2010		1st	Measuremer	nt = left bank	(looking downstream)
Site ID: TMOL-RI	Ve	locity Area M	lethod (pref	erred)	Buoy (Use only if velo
Date/Time: 06/13/19 1145  Crew Members: KH TP AW BT	No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)	Distance (ft)
Latitude/Longitude: 34-28016 -119-3-836	1	14	A	A	Float Time (sec)
Flow (circle one): Flowing / Ponded / Dry Wind Strength:	2	5	0.4	000	Float Re
Calm Light Breeze / Moderate Breeze / Strong Breeze / Windy		1		76.0	
Wind Direction: Blowing (circle one) From / To	3	6	0.6	1.09	
Photos (check):   Upstream   Downstream	4	7	0	0	Width
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.):	5	8	0	0	Depth 1
	6	8.5	1.3	0.51	Depth 2
<del></del>	7	10.5	1.4	1.20	Depth 3
	8	12.5	1.45	1.13	Depth 4
January—December Monthly In Situ Measurements:	9	14.5	1.45	1.14	Depth 5
pH:	10	16.5	1.45	1.13	May—September: A Reach Length (150 r
DO: 0 - 0% Salinity: 0' - 0 ppt	11	18.5	1.35	1.11	if wetted width > 10
Water Temp: 21.2 °C	12	20.5	1.1	0.91	Collection
Flow (from discharge measurement): 20-3 cfs	13	22.5	1.4	0.28	(sum # transe
	14	24.0	1.4	0.03	Rubber Delimiter (A
Samples Collected (check box)	15	25.3	A	1	PVC Delimiter (Area
January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16				Syringe Scrubber (A
Nitrogen (unfiltered):	17				Other (Area=
Dissolved Phosphorus and Nitrogen (field filtered): 🥦	18				Number of Transect
May—September Dry Season Monthly Algae:	19				Composite Volume (
Chlorophyll a (filters—algae):	20				Chlorophyll a Volum
					use GF/F filter, 25 n

### **Buoyant Object Method** Use only if velocity area method not possible) Float 1 Float 2 Float 3 stance (ft) t Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5

May—September: Algae Collection for Ch Reach Length (150 m if wetted width $\leq$ 10 if wetted width $>$ 10 m):	
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	0
PVC Delimiter (Area=12.6cm²)	X9
Syringe Scrubber (Area=5.3cm²)	2
Other (Area=	
Number of Transects Sampled (0-11)	Administration of the control of the
Composite Volume (mL)	688
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

		Macroalgae	Presence/Abs	ence (P/A) ai	nd Water Depti	(mm/ft/in)		Photo (✓ when Taken)			
Transect	Wetted Width (ft)			Center Right Center Right Bank		Center Left	Center Upstream	Center Right			
A	1.5	218	69p	79 P	78P	IOA	4	0	0	0	/
АВ	6	37P	84P	85p	979	OA					
В	5.6	OA	748	84P	1048	OP	12	8	4	0	
ВС	5	709	708	66P	750	00		MAIL		4	
С	5-3	5P	55p	65R	839	OA	12	6	2	4	
CD	6	20A	52P	63P	63P	OP					
D	5	179	52P	58P	58P	65P	3	2	8	0	
DE	5	20A	338	489	358	ISP					
E	4-7	OA	379	36P	37P	109	17	13	8	16	
EF	5	00	208	45P	450	25p					
F	4	00	350	34P	220	OP	4	0	6	0	
FG	5	50P	109P	986	858	OP					
G	4	00	88	889	549	OA	14	5	1	4	
GH	4.5	0P	690	908	68	399				"	
H	4.5	OP	109	ITP	OA	OA	(7	17	17	17	
н	2-7	OA	218	249	68	09					
	2.8	(AO)	28P	460	Li bol P	OP	17	4	17	8	
IJ	3.25	OA	88	219	219	OP					
J	2-7	OP	35p	35P	359	OP	7	3	10	5	
JK	6.2	OA	558	68A	GIA	OA					
К	0	30	650	818	900	OP	8	8	9	9	/

Particl channel

Donnat chan

15 too s... if

88/105

Event ID (Month Year): JUNE 2019		1st		scharge Meas nt = left bank	surement : (looking downstream	)			
Site ID: R2	v	elocity Area N	lethod (pref	erred)	Buoyant Object Method (Use only if velocity area method not possible)				
Date/Time:6/13/19092.0 Crew Members:KH, JP AW		Distance		Velocity	(osciny ii vei	Float 1	Float 2	Float 3	
	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)				
Latitude/Longitude: 34.35937 - 119.29725	-		D	1	Float Time (sec)				
Flow (circle one): Flowing Ponded / Dry	1	12.5	D	-6			C +: 461		
Wind Strength:	2	14,0	11.5	0.10	Float K	each Cross	Section (ft)		
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3	6.0	107	0.08		Upper Section	Middle Section	Lower Section	
Photos (check): Upstream Downstream	4	-	2.25	0.39	Width	Section	Section	Section	
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	-	8.0		h .					
discharge comments, etc.) :	5	10.0	204	0.66	Depth 1				
	6	12.0	201.	0.92	Depth 2				
	7	140	1.8	1 00	Depth 3				
	8	16.0		105	Depth 4				
		-	1.4	1.05	Depth 5				
January—December Monthly In Situ Measurements:	9	18.0	1.4	0.45					
pH: 3-06 pH units EC: 955 μS/cm	10	20.0	1 8	0.59	May—September:				
DO: <u>94.0</u> % Salinity: <u>0.5</u> ppt	11	22.0	1.0	0.26	Reach Length (150 if wetted width > 10			0 m; 250 r	
Water Temp: 19 - 60 °C	12	24.0		0.22				1	
Flow (from discharge measurement): 20-5 cfs	-			V 3 44		on Device	امماد	Quantit	
	13	26.0	0.0	0.0	(sum # transe				
	14				Rubber Delimiter (A		n-)		
Samples Collected (check box)	15				PVC Delimiter (Area	=12.6cm <sup>2</sup> )		7	
January—December Monthly Water:	16				Syringe Scrubber (A	rea=5.3cm	²)	3	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):	17				Other (Area=		)		
Dissolved Phosphorus and Nitrogen (field filtered): 🔀				-	Number of Transect	s Sampled	(0-11)	11	
′	18						(0 11)		
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		5	
Chlorophyll a (filters—algae):	20				Chlorophyll a Volum			25	

		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)					Photo (✓ when Taken)				
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	6.7	(OA)	37P	409	479	(AO)	Constitution of the Consti	4	14	2	/
AB	5	@ASP	30 P	508	56P	OP					
В	5,5	OP	118	55	50P	38439	6	2	14	3	
ВС	3-8	(OA)	50 P	500	65P	OP				7	
С	4	OP	OP	52P	63P	180	15	10	3	4	
CD	5	(OA)	32P	31P	42P	230					
D	6	HA	366	42P	518	OP	17	17	11	15	
DE	11	(AO)	30P	400	15P	(OA)	-				
E	8.5	OA	54P	70P	709	OA	17	4	4	6	Later .
EF	8	OA	57P	728	778	OP					
F	5.5	OA	59P	69P	67P	00	9	6	7	3	/
FG	7	(OA)	(45A)	728	55P	OA					
G	8	(OA)	TDRY	49 6	450	OP	13	10	7	4	
GH	8	(OA)	56	OP	45P	30P				400	
. н-	8.5	INACCOS	(5A)	37P	399	(QA)	7	6	2	3	
н	6.5	(AO)	20	26P	139	50					
1	9.5	00	30₽	200	32P	OP	12	0	0	0	
IJ	19.5	159	248	319	248	OA					
J	13	CAD	210	468	20P	5P	11	\$1	O		
JK	13-5	00	369	108	(27A)	20					
К	160	OA	(41A)	(HOA	MIA	OA	0	0	7	2	/

				scharge Meas				
Event ID (Month Year): NNE 2019		1st	Measureme	nt = left bank	(looking downstream	)		
Site ID: R3 C	V	elocity Area N	lethod (pref	ferred)	<b>Buo</b> y (Use only if vel	/ant Object		ossible)
Crew Members: KH JP AW	No.	Distance from Left	Depth (ft)	Velocity		Float 1	Float 2	Float 3
1 = 7	No.	Bank (ft)	Depth (it)	(ft/sec)	Distance (ft)			
Latitude/Longitude: 34.54584 - 119.29978	1		Or	N	Float Time (sec)			
Flow (circle one): Flowing Ponded / Dry		3.5	0	0	Florida	1.0	0 11 101	
Wind Strength:	2	4.5	0.5	-0.03	Float R	each Cross	Section (ft)	
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy	3	5.5	1.35	0.79		Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To	-		-	1.5		Section	Section	Section
Photos (check): Upstream Downstream  Notes (e.g. homeless, wildlife, horses, swimming/recreation,	4	6.5	103	1.05	Width			
discharge comments, etc.):	5	7.5	104	1.95	Depth 1			
	6	8.5	104	1.99	Depth 2			
	7	9.5		2.04	Depth 3			
	-	1	1	-	Depth 4			
	8	10.5	101	2.10	Depth 5			
January—December Monthly In Situ Measurements:	9	11.5	0.95	2.53	Бериго			
pH: $9.00$ pH units EC: $971$ µS/cm	10	12.5	0.65	2.90	May—September:	Algae Colle	ction for C	hlorophyll
DO: 10.35 mg/L SC: 1,020 μS/cm	11	13.5			Reach Length (150			0 m; 250 m
DO: 122 - 4 % Salinity: 0 . 5 ppt			0.7	0.64	if wetted width > 10	) m): <u>F</u>	00	-
Water Temp: 22.5°C Flow (from discharge measurement): 20.0 cfs	12	14.5	0.	1.68	Collecti	on Device		Quantity
riow (from discharge measurement):crs	13	13.5	0.6	0.81	(sum # transe	ects per De	vice)	
	14	16.5	0.25	0.01	Rubber Delimiter (A	rea=12.6cm	m²)	2
Samples Collected (check box)	15	18.5	Ø	Ø	PVC Delimiter (Area	=12.6cm <sup>2</sup> )		8
January—December Monthly Water:		1010	20	X	Syringe Scrubber (A	roo_E 2cm	2)	1
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as	16					rea=5.3¢m		w L
Nitrogen (unfiltered):	17				Other (Area=		)	
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transect	s Sampled	(0-11)	11
May—September Dry Season Monthly Algae:	19	1			Composite Volume	(mL)		440
Chlorophyll a (filters—algae);	20				Chlorophyll a Volum			G
					(use GF/F filter, 25 r	nL preferre	d volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)
Site: K3 Date: 6/12/19 Crew: KH TP

		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depth	n (mm/ft/in)	,		eter (0-17) vered dots		Photo (✓ when Taken)
	Wetted M	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	9	OP	25 P	35P	430	GA	6	2	13	2	/
AB	11	OA	15P	400	209	(AO)					
В	9	OA	25 0	35p	30P	OA	11	2	12	2	
ВС	10.5	OA	300	308	229	200					
С	12.5	OA	318	29 P	348	OP	6	1	14	5	
CD	11	OA	5p	460	469	OA					
D	10	OAD	230	63P	61P	OA	8	0	15	2	
DE	9	OA	(8A)	41P	64P	OP					- 11
E	9	OA	248	388	60P	559	10		12	10	
EF	8	OA	408	489	54P	OA					
F	7	OA	400	69P	639	OP	10	4	12		/
FG	6	30	50₽	498	(62A)	OA					
G	6	6A	100	52P	54P	OP	8	4	14	4	
GH	5	OP	00	509	279	OA					
Н	5	5A	500	£39	509	109	6	10	17	8	
Н	4-8	OP	25P	40P	40P	09					
t	4.7	INACESI	29P	45P	409	229	11	7	17	6	
IJ	3-4	INACCESS	258	57P	34A	30A					
J	5	59	469	26P	26P	HA	14	6	16	10	
JK	5	00	228	40P	356	OA					
K	7.5	09	20	33 P	33P	79	15	2	11	5	/

<b>Event ID (Mon</b>	th Year):	JUNE 20	919
Site ID:	RY		
Date/Time:	6/12/19	(	0755
Crew Members:	K4, 59	P, AW	
Latitude/Longitu	de: 34-37	997 -11	9.30861
Flow (circle one):	Flowing / Po	nded / Dry	
Wind Strength:			
Calmy Light Breeze	/ Moderate Bree	ze / Strong Br	eeze / Windy
Wind Direction: E	Blowing (circle	one) From / <sup>-</sup>	Го
Photos (check):	□ Upstream	□ Downst	ream
Notes (e.g. home	less, wildlife, h	orses, swimr	ming/recreation,
discharge comme	ents, etc.) : <u>B</u>		

<u> January — December Monthly in Situ</u> Measurements:
pH: 7·37 pH units EC: 877 μS/cm DO: 487 mg/L SC: 974 μS/cm DO: 76.6 % Salinity: 0-5 ppt
DO: <u>W.B7</u> mg/L SC: <u>974</u> μS/cm
DO: <u>70.6</u> % Salinity: <u>0-5</u> ppt
Water Temp: 19.7 °C
Flow (from discharge measurement): 140 cfs

# Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered): May—September Dry Season Monthly Algae: Chlorophyll a (filters—algae):

### Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	elocity Area N	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	R	4	8
2	13	0.4	0.02
3	15	0.5	0.07
4	17	0.65	0.06
5	19	0.55	0.07
6	21	0.45	0.07
7	23	0.45	0.04
8	25	F.0	0.35
9	27	0.5	0.19
10	29	0.7	0.87
11	31	F.0	1.52
12	33	0.7	1.91
13	35	0.0	1.40
14	37	0.6	0.44
15	39	0.5	0.84
16	141	0.6	1.16
17	43	0.4	0.70
18	45	F.O	0.92
19	47	0.2	106
20	49	1.3	0.28
2)	49.7	1.4	0.33

<b>Buoy</b> (Use only if vel	<b>/ant Object</b> ocity area m		ossible)
	Float 2	Float 3	
Distance (ft)			
Float Time (sec)			
Float R	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection for Chlorophyll a
Reach Length (150 m if wetted width ≤ 10 m; 250 m
if wetted width > 10 m):

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	5
PVC Delimiter (Area=12.6cm²)	6
Syringe Scrubber (Area=5.3cm²)	0
Other (Area= )	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	380
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)				Photo (✓ when Taken)					
	Wetted ⋈ Width (ft∤)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	10	100	299	22 P	32P	8P	Ø17	152	13	0	/
АВ	912	(2A)	249	26P	326	OA					
В	14/	(OA)	15P	306	52P	OA	11	1	9	1	
ВС	12	OP	140	348	498	2919				,	
С	11	OA	10P	398	50P	OP	6	4	8	1	
CD	11	(OA)	248	38P	199	20A)	4				
D	9	00	27P	53P	57P	OA	5	10	13	2	č = -
DE	8	(OA)	36 P	550	748	8A					
E	8	OA	450	30 P	408	OP	16		9	14	
EF	5	40P	57P	36P	1819	OP					
F	7	69	109	208	109	OP	2	3	5	6	
FG	9	OP	20	159	298	OP				4	
G	10	00	130	200	279	OP	8	3	1	0	
GH	10	00	179	16P	25P	OP					
Н	10	OP	386	OP	228	45P	16	4	2	0	
НІ	11	90	16P	IIP	15 P	OP					
1	10	00	298	24P	MP	OP	5	4	1	2	
IJ	9	09	349	39P	38P	OP					
J	8-5	6A)	34P	409	34P	OP	16	1	0	0	
JK	9	OP	259	29 P	159	OP					
К	7.5	of	249	309	404	(OA)	9	0	2	17	

Ventura River	rigac
Event ID (Month Year): JUNE 2019	-
Site ID:	
Date/Time: 6/12/19 10:00	
Crew Members: KH JP, AW	
Latitude/Longitude: 34 · 38081 -119 · 35735	
Flow (circle one): Flowing / Ponded / Dry	
Wind Strength:	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Wind	ły
Wind Direction: Blowing (circle one) From / To	
Photos (check):   Upstream   Downstream	
Notes (e.g. homeless, wildlife, horses, swimming/recre	ation,
discharge comments, etc.) : Field dups for	
chemistry and chlorophyll q	
January—December Monthly In Situ Measurements:	
pH: 1-79 pH units EC: 1303 μS/cm	
DO: 1 0 + mg/L SC: 14 0 + µS/cm	
DO: 110 5 % Salinity: 0 1 ppt	
Water Temp: 2\.\ °C	
Flow (from discharge measurement):cfs	

# Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered): May—September Dry Season Monthly Algae: Chlorophyll a (filters—algae):

### Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	Velocity Area Method (preferred)							
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)					
1	3.5	000	0					
2	6.0	0.70	0					
3	7.5	0-10	0.12					
4	9.0	0.50	0.17					
5	10.5	0.45	0.26					
6	12.0	0.35	0.35					
7	13.5	0-40	0.21					
8	15.0	0.40	0.21					
9	16.5	0.30	0.17					
10	181	0	0					
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

<b>Buoy</b> (Use only if vel	ant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float R	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			100
Depth 2			
Depth 3			
Depth 4	)		
Depth 5			

ı	May—September: Algae Collection for Chlorophyll a
١	Reach Length (150 m if wetted width ≤ 10 m; 250 m
	if wetted width > 10 m):

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	10
Syringe Scrubber (Area=5.3cm²)	0
Other (Area= )	
Number of Transects Sampled (0-11)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Composite Volume (mL)	408
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Site: SA Date: 6/12/19 Crew: KH, JP

		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depti	(mm/ft/in)	Densiometer (0-17) Count covered dots				Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	6.5	of	20A	GA	40	OA	17	17	17	(7	/
AB	4	(HA)	(15A)	95A	248	OA					
В	5	OA	45A	478	TP	00	17	17	17	17	
ВС	2.9	OA	15P	33 P	109	OA					
С	4.75	OP	129	56	50	OA	IT	12	14	15	
CD	5,8	CAFT	100	5P_	70	OA					
D	8.5	(OA)	109	PRY	30	OA		14	10	N.	
DE	8	OP	59	00	78	OA					
E	6.2	100	100	160	159	OA	9	0	10	-1	
EF	6	OA	189	150	25P	90					
F	7	09	130	128	169	AO	3	5	2		/
FG	9	OP	109	99	100	OP					
G	8	OA	148	109	100	OP	24	0	XI	8	
GH	9	(OA)	168	15 P	5P	00					
Н	6	OP	250	15 P	109	OP	0	3	11	4	
н	8	208	100	159	15P	OP					
1	6	OP	59	NP	24P	OA	1	13	14		
IJ	6	10A	15P	178	200	OA					
J	6	OP	208	200	249	GA	3	14	16	8	
JK	7	OP	89	100	168	OA					
К	5	OP	59	4P	15P	OA	0	8		15)	/

Event ID (Month Year): UNE 2019	AL.	1st	Measuremer	nt = left bank
Site ID: MDL-CL	Velocity Area Method (preferred)			
Date/Time: 6/13/19 6745  Crew Members: 16H, JP, AW	No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
Latitude/Longitude: 34.34.208 119.28637 Flow (circle one): Flowing) Ponded / Dry	1	2.5	0	A
Wind Strength:	2	3.0	0.3	-0.02
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy				-0.03
Wind Direction: Blowing (circle one) From / To	3	3.5	0.4	0.02
Photos (check): Upstream Downstream	4	4.0	0,5	0.00
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :	5	4.5	0.4	0.35
	6	5.0	0.4	0.21
	7	5.5	0.4	0.13
	8	(e) D	0.3	0.00
January—December Monthly In Situ Measurements:	9	6.5	0.3	0.07
pH: <u>6.05</u> pH units EC: <u>3.322</u> μS/cm	10	7.0	0.2	0.03
DO: 0 5 mg/L SC: 3 3 5 μS/cm	11	9.0	0.0	
DO: <u>역3、</u> % Salinity: <u>2 0</u> ppt Water Temp: <u>14 0</u> °C		110	0,0	0.00
Flow (from discharge measurement): 5-16cfs	12			
	13			
	14			
Samples Collected (check box) January—December Monthly Water:	15			
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16			
Nitrogen (unfiltered):	17			
Dissolved Phosphorus and Nitrogen (field filtered):	18			
May—September Dry Season Monthly Algae:	19			
Chlorophyll a (filters—algae):	-			
/	20			

ing downstream)

<b>Buoyant Object Method</b> (Use only if velocity area method not possible)						
	Float 1	Float 2	Float 3			
Distance (ft)						
Float Time (sec)						
Float R	each Cross	Section (ft)				
	Upper Section	Middle Section	Lower Section			
Width						
Depth 1						
Depth 2						
Depth 3						
Depth 4			- 1			
Depth 5						

y-September: Algae Collection for Chlorophyll a ach Length (150 m if wetted width ≤ 10 m; 250 m etted width > 10 m): \_

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	3
PVC Delimiter (Area=12.6cm²)	8
Syringe Scrubber (Area=5.3cm²)	0
Other (Area=	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	572
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Site: CL Date: 6/13/19 Crew: KH, JP

		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depth	n (mm/ft/in)		Photo (✓ when Taken)			
Transcort	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	3-8	049	50	50	99	OP	0	0	1	1	/
AB	3.8	(OA)	5p	5P	IP	OP					
В	1.5	OP	12P	248	198	00	1	0	3	0	
ВС	2-1	OP	18	30	5P	OP					
С	3.0	08	58	DRY	12P	OP	0	0	0	0	
CD	4-3	OP	IP	48	Dexte	OP					
D	3-15	OP	OP	40	70	OP	0	0	2	0	
DE	3.8	OP	OP	DRX	10 P	08					
Ε	3.7	90	2A	DRY	5P	00	3	0	0	0	
EF	3.8	OP	00	120	OP	OP					
F	4.9	OP	IP	59	OP	OP	0	0	0	0	/
FG	5.4	3P	OP	6P	40	OP					
G	5.1	OP	5P	89	18	OP	0	1		2	
GH	4.4	OP	6A	50	10	00					
Н	2-4	OA	4A	8A	6A	00	2	0	1		
н	3.0	(OA)	SP	5A	OP	OP				4	
1	6.35	00	4A	DRY	DRY	00	2	0	0	0	
IJ	1.9	09	148	119_	119	00					
J	4.7	OP	00	DRY	DRY	OP	0	0	0	0	
JK	1-2	OP	186	15P	9A	00					
K	2-05	90	TP	84	49	OP	10	4	0	3	/

## **Ventura River Algae TMDL Event Details**

EVENT DETAILS	
Event ID (Month Year): JULY 2019  Crew Members: K. HAHS M. CAPCAP J MAN  Weather (circle): Clear Partly Cloudy / Overcast / Showers / Rain / O	Date: 7/10 + 11 / 2019
Crew Members: K. HAHS M. CAPCAP J. MAN	IN W.B. (AREY OBS. PHOTOS
Weather (circle): Clear Partly Cloudy / Overcast / Showers / Rain / O	Other
Event Type (check): \times Dry (<0.1" rain per day for the preceding to	hree days)
□ Wet (days with ≥0.1" rain and the three da	ays following)
Notes: Y51 85 # 03D0379	
Beckner 410 # 130240875	
OBSERVATION SITES (RIVER FLOW) 7/10/2019 V	U.B. CAREY
Ventura River at Highway 150 (Baldwin Road)	
Flow Status: Dry / Ponded / Flowing (Estimated Flow: 10 cfs)	Photos Taken: Upstream / Downstream
Notes:	
Ventura River at Santa Ana Blvd	
Flow Status: Dry / Ponded / Flowing (Estimated Flow: 10 cfs)	Photos Taken: Upstream / Downstream
Notes:	
Ventura River at Casitas Vista Road	
Flow Status: Dry / Ponded / Flowing (Estimated Flow: 15 cfs)	Photos Taken: Upstream / Downstream
Notes:	And the state of t
Additional Observation Site:	
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Notes:	
JNSAMPLED TMDL SITES	
Site ID: Time:	Photos Taken: Upstream / Downstream
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	
Reason not sampled (if flowing):	
Notes:	
Site ID: Time:	Photos Tokon Hastroom / Downston
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Reason not sampled (if flowing):	
Notes:	
Site ID: Time:	Photos Taken: Upstream / Downstream
<b>low Status</b> : Dry / Ponded / Flowing (Estimated Flow: cfs)	
Reason not sampled (if flowing):	
Notes:	
Site ID: Time:	Photos Takon Hastroom / Dawnstoom
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Reason not sampled (if flowing):	
Notes:	

## Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

#### Ventura River Algae TMDL—Estuary Details

Date: 7/4/19 1225
nlet (circle one): Open / Restricted / Closed Closed west, spen restricted
Low Tide: 10:53 Time of High Tide: 17:39
rong Wind Wind Direction: Blowing From To
an westend hermologid lausting motor to backup to
comorets in area ~ 100 Fast and grant orean.
1

## **TRANSECT 1**

Monthly (Jan-Dec):		
pH: 842 pH units	EC: 2740 μS/cm	Water Temp: ☑ ₹
DO: <u>/ 4.9</u> mg/L	SC: 2810 μS/cm	
DO: 178.2%	Salinity: 1.50 ppt	

Photos: 🗹 Oceanward 🗗 Landward	Start Time: 1242 End Time: 1247				
Start Latitude: 34-27586	Start Longitude: -1(9 - 30956				
End Latitude: 34-27608	End Longitude: -1,9,30945				
PVC Latitude:	PVC Longitude:				

Water Samples Collected (check box)								
[Collect at Floating Macroalgae Quadrat 1, Transect 1]								
Monthly Water (Jan—Dec):								
<b>Š</b>								
×								
*								

	MACROALGAE—LAND BASED									FLOATING MACROALGAE				
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	4.7	8.4	9.8	14.7	16-2	17.6	26	27-7	28-7	29.8				
Water Depth (must be ≤ 0.3 m)											0.3			
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Ersb Int Des Dd	Int Des Dd	Ersk Int Des Dd	Frsh Int Des	Frsh Int Des Dd	Frsb Int Des Dd	Frsh 7 Int Des Dd 🖁	Frsh4 Int Des Dd 6	Frsh 4 Int Des Dd 4	Frsh 3 Int Des Dd 4	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	donate	3	4	49	7	6	15	10	13	7	0	0	0	0
No. Crosshairs with Macroalgae Absent	1													
Crosshair Total (must equal 49)	49									·	49			





## Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2

Ventura River Algae TMDL— Estuary Tra	ansect Me	asureme	nts Dat	e:	(11/1)	9	Crew	/:\	M HZ	CIM				
TRANSECT 2														
Photos: Coceanward Landy	ward					Start Time:	١	305		End	d Time: 🚶	310		
Start Latitude: 34.27576						Start Longitude: -119 - 30914								
End Latitude: 34 · 2759°						End Longit		-119.		19				
PVC Latitude:						PVC Longit								
				MACE	ROALG	AE—LAND B	ASED				FI	OATING N	MACROALG	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	4-7	8.4	9.8	14-7	16.	2 17.6	26	27.7	28.7	29.8				
Water Depth (must be ≤ 0.3 m)											0.3			->
<b>Condition</b> [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Ersh Int Des Dd	Ersh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh 5 Int 8 Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	26	36	31	9	38	13	17	2.2	0	5	0	0	25	36
No. Crosshairs with Macroalgae Absent														
Crosshair Total (must equal 49)	49					7				- Carrier - Carr	49	_		The same of
TRANSECT 3					19	7/490	22 May					6	1/101	0
Photos: Coceanward Land	ward					Start Time:	133	32		End	d Time: {	338		
Start Latitude: 34 . 2758	9					Start Longi	tude: -	- 119.	3070	18				
End Latitude: 34 . 275						End Longit	ude: -	-119.	3070	18				
PVC Latitude:						PVC Longit	ude:							
	1			MACI	ROALG	AE—LAND B	ASED				FI	LOATING I	MACROALG	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	4.7	Bold	9.8	14.7	16-	2 17-6	26	27.7	28.7	29.8				
Water Depth (must be ≤ 0.3 m)										V (	0.3			-
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsb Int Des Dd	Int Des Dd	Int 🚜	Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	2417	Der 2	0	1	Bon	ONR	8	0	0	3	0	0		
No. Crosshairs with Macroalgae Absent													1	
Crosshair Total (must equal 49)	40	-						W 1000		*7	49			-/

5/490

3/196

Event ID (Month Year):UL9 2019
Site ID:R
Date/Time: _ 7/11/19 1020
Crew Members: KH Mr. JM
Latitude/Longitude: 34 28046 -119 30853
Flow (circle one): Flowing) Ponded / Dry
Wind Strength:
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check):   Upstream   Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation
discharge comments, etc.): Moved Avaslvean
due to ocean Potherio H-Kon
great well inorross to do munt channel water loved too high and overhead veg tool
J J

37 2 46	nits EC:_		leasurements: uS/cm
DO: 8.38 mg/	SC: _	1236	μS/cm
DO: <u>93.3</u> %	Salinity:	0.6	ppt
Water Temp: 20	.3 °c		
Flow (from discharg	ge measurei	ment):	8-20 cfs

Samples Collected (check box)	
January—December Monthly Water:	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitr	rite as
Nitrogen (unfiltered):	ÞK.
Dissolved Phosphorus and Nitrogen (field filtered):	头
May—September Dry Season Monthly Algae:	
Chlorophyll a (filters—algae):	

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	Velocity Area Method (preferred)									
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)							
1	4.00	0	0							
2	5.00	0,40	0,74							
3	5.80	0.40	1.06							
4	6.00	0	0							
5	7.90	0	0							
6	8.00	1.00	0,40							
7	10.00	1.30	1.09							
8	12,00	1.20	1.15							
9	14.00	1.40	1.00							
10	16.00	1.25	1.07							
11	18.00	1.10	1.02							
12	20.00	1.20	0.99							
13	22.00	1.30	0.62							
14	24.00	0	0							
15										
16										
17										
18										
19										
20										

Buoy (Use only if vel	<b>/ant Object</b> ocity area m		ossible)					
Float 1 Float 2 Float 3								
Distance (ft)								
Float Time (sec)								
Float R	each Cross	Section (ft)						
Upper Middle Lower Section Section Section								
Width								
Depth 1								
Depth 2		,						
Depth 3	Depth 3							
Depth 4								
Depth 5								

May—September: Algae Collection for Chlorophyll a
Reach Length (150 m if wetted width ≤ 10 m; 250 m
if wetted width > 10 m):

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	7
PVC Delimiter (Area=12.6cm²)	4
Syringe Scrubber (Area=5.3cm²)	Ø
Other (Area=	
Number of Transects Sampled (0-11)	1)
Composite Volume (mL)	452
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Date:

		Macroalgae	Presence/Abs	sence (P/A) a	nd Water Depth	(mm/ft/in)	Densiometer (0-17)  Count covered dots				Photo (✓ when Taken)
Transect	Wetted */ Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	6-3	AG	65 A	(73 P)	(87P)	(850)	16	n n n n n n n n n n n n n n n n n n n	7	8	/
АВ	6	A.6	60A	75A	87A	1004					
В	6	35/4	SIA	(69P)	(94P)	08	10		i	8	
ВС	4.75	OA	(25P)	TIA	70A	(749)					
C	4.5	OA	HAA	55A	(47P)	(50P)	16	1		is )	
CD	4.8	OA	(55P)	(50P)	(30P)	(5P)					- F
D	4-8	OA	214	350	(43P)	(OP)	23416	16	12		
DE	5	(00)	26A	(34P)	132A	(OP)					
E	4-6	10A	35A	(37P)	30A	(108)	10	0	3	$\circ$	
- EF	4.8	OA	(105P)	(85p)	18 78 P	OP					· · · · · · · · · · · · · · · · · · ·
F	4-5	(00)	(350)	92A	65A	OP	9	43	11	17	/
FG	£4	AD	37A	70 A	55A	42A					
G	4	OA	69A	80A	58A			4	7	2	
GH	2-85	OA	37A	60 A	48A	21A				*	
н	3.45	OA	25A	55A	54A	30 A	(")	and the same of th	450A	12	
н	2-3	ŌΑ	64 A	65A	6BA	3A					
<sub>2</sub> I	3-3	Inaccess	35A	15A	HOA	23A	IT	IT	17	17	
IJ	204	(OP)	HOA	35A	44A	30A					
J	2.9	AO	15A	27A	35A	45A	17	17	17	17	
JK	J . 1.	OA	40A	-35A	35A	25A					
K	1-6	15A	30 A	35 A	25 A	1151	17	17	17	17	

	onth Year):
	R2
	7/11/19 0750
Crew Member	s: Kn WC 2W
Latitude/Longi	itude: 34-33937 - 10-79125
Flow (circle on Wind Strength	e): Flowing / Ponded / Dry :
Calm Light Bree	eze / Moderate Breeze / Strong Breeze / Windy
Wind Direction	n: Blowing (circle one) From / To
Photos (check)	: 🗆 Upstream 🗆 Downstream
Notes (e.g. hor	meless, wildlife, horses, swimming/recreation,
in rest b	ments, etc.): New arrangement going established comp. or cuposts supported and interested in what we were
January—Dece	ember Monthly In Situ Measurements:
-T -C	pH units EC: <u>942</u> μS/cm
DO: 7-85	mg/L SC: <u>1061</u> μS/cm
DO: \$5.2	% Salinity: 0.5 ppt
Water Temp: _	/9-1°c
Flow (from disc	charge measurement): cfs
Samples Collec	ted (check box)
	ember Monthly Water:
	us , Total Nitrogen, and Nitrate + Nitrite as
Nitrogen (unfilt	•
Dissolved Phos	phorus and Nitrogen (field filtered): प्
Man Control	ber Dry Season Monthly Algae:
iviay—septemb	, color many , agae.

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	Velocity Area Method (preferred)								
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)						
1	2.00	0	0						
2	4.00	1.40	0.12						
3	6,00	1.40	0.25						
4	8.00	1.90	0.34						
5	10.00	2.40	0.65						
6	12.00	1.90	0.84						
7	14.00	1.60	1.04						
8	16,00	1.20	1.05						
9	18.00	1-10	0.78						
10	20.60	0.90	0.40						
11	22.00	0.90	0.24						
12	24.00	0.90	0,01						
13	25.30	0	0						
14									
15									
16									
17									
18									
19									
20									

Buoyant Object Method (Use only if velocity area method not possible)								
Float 1 Float 2 Float 3								
Distance (ft)								
Float Time (sec)								
Float Reach Cross Section (ft)								
Upper Middle Low Section Section Secti								
Width								
Depth 1								
Depth 2								
Depth 3								
Depth 4								
Depth 5								

May—September: Algae Collection for Chlorophyll a
Reach Length (150 m if wetted width ≤ 10 m; 250 m
if wetted width > 10 m): \_\_\_\_\_

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	3
PVC Delimiter (Area=12.6cm²)	8
Syringe Scrubber (Area=5.3cm²)	Ø
Other (Area=	
Number of Transects Sampled (0-11)	n
Composite Volume (mL)	642
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Site: R2 Date: 7/11/19 Crew: KH MC

0		Macroalgae	Presence/Abs	ence (P/A) aı	nd Water Depth	n (mm/ft/in)	Densiometer (0-17)  Count covered dots				Photo (✓ when Taken)
Transect	Wetted <sup>△</sup> Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	7	OA	32P	360	598	(OA)	13	11	17	4	-V
AB	6.5	00	120	65P	55 P	00					
В	5.2	OA	200	486	55P	15P	12	10	17	1 .	
ВС	4.4	OA	10	77P	53e	476					
С	5-7	OP	256	288	300	128	17	17	8	16	
CD	5	roA )	180	33P	45P	179					
D	5	(A)	42.P	36P	339	40	17	1-7	17	17	1
DE	9	OA	256	786	70	OP					
E	9	(OA)	708	66P	59 P	150	17	-7	16	[4]	
EF	6	COA	669	66 P	30 P	748					
F	8-5	50P	63P	56P	478	100	15	5	10	280045-)	/
FG	8	OP	(65A)	(77A)	62P	IOP		lei			
G	8	(AO)	370	56P	42P	16	17	5	17	9	
GH	75	INACCESS	28	244	350	18					
Н	-7	OP	20	DRY	W 4456P	26P	17	17	17	17	
, HI	6.5	(OA)	ISP	32P	319	(OA)					
.1	7	CHOA	269	230	239	OP		17	12.	13	
IJ	7	OA	50P	398	(26A)	OP					
J	7-5	(0A)	(60A)	(49A)	(90A	OP	17	17		17	
JK	7	(6A)	(33A)	HSP	42P	〇塩户					
К	6	(OA)	(34A)	458	(39A)	90	17	1-1	1	17	/

7/103

Discharge Measurement

Event ID (M	lonth Year): JULY 2019
Site ID:	eth .
	7/10/19 11:00
Crew Membe	rs: KH JM MC
Latitude/Long	itude: 34-34584 -19-29978
Flow (circle o	ne): Flowing / Ponded / Dry
Wind Strengt	
	eeze / Moderate Breeze / Strong Breeze / Windy
	n: Blowing (circle one) From / To
	:):     Downstream   Downstream
	meless, wildlife, horses, swimming/recreation,
discharge con	nments, etc.) :
January—Dec	ember Monthly In Situ Measurements:  pH units EC: 932 μS/cm  mg/L SC: 1044 μS/cm
January—Dec pH: 8.08 DO: 9.32 DO: /01.5	member Monthly In Situ Measurements:  pH units EC: 932 μS/cm  mg/L SC: 1044 μS/cm  % Salinity: 0.50 ppt
pH: <u>8.08</u> DO: <u>9.32</u> DO: <u>101.5</u>	pH units EC: <u>932</u> μS/cm mg/L SC: <u>1044</u> μS/cm % Salinity: <u>0.50</u> ppt
pH: <u>8.08</u> DO: <u>9.32</u> DO: <u>101.5</u> Water Temp:	pH units EC: <u>932</u> μS/cm mg/L SC: <u>1044</u> μS/cm % Salinity: <u>0.50</u> ppt
pH: <u>8.08</u> DO: <u>9.32</u> DO: <u>101.5</u> Water Temp:	pH units EC: <u>932</u> μS/cm mg/L SC: <u>1044</u> μS/cm % Salinity: <u>0.50</u> ppt 19.4 °C
pH: 8.08 DO: 9.32 DO: 101.5 Water Temp: Flow (from dis	pH units EC: <u>932</u> μS/cm mg/L SC: <u>1044</u> μS/cm % Salinity: <u>0.50</u> ppt 19.4 °C
pH: 8.08 DO: 9.32 DO: 101.5 Water Temp: Flow (from dis	pH units EC: 932 μS/cm mg/L SC: 1044 μS/cm % Salinity: 0.50 ppt 19.4 °C scharge measurement): 653 cfs
pH: 8.08 DO: 9.32 DO: 101.5 Water Temp: Flow (from dis	pH units EC: 932 μS/cm mg/L SC: 1044 μS/cm % Salinity: 0.50 ppt 19.4 °C scharge measurement): 653 cfs
pH: 8.08 DO: 701.5 Water Temp: Flow (from dis  Samples Colle January—Dec Total Phospho	pH units EC: 932 μS/cm mg/L SC: 1044 μS/cm % Salinity: 0.50 ppt 19.4 °C scharge measurement): cfs  cted (check box) ember Monthly Water: rus , Total Nitrogen, and Nitrate + Nitrite as
pH: 8.08 DO: 701.5 Water Temp: Flow (from dis Samples Colle January—Dec Total Phospho Nitrogen (unfi	pH units EC: 932 μS/cm  mg/L SC: 1044 μS/cm  % Salinity: 0.50 ppt  19.4 °C  scharge measurement):cfs  cted (check box)  ember Monthly Water:  rus , Total Nitrogen, and Nitrate + Nitrite as
pH: 8.08 DO: 70.5 Water Temp: Flow (from dis Samples Colle January—Dec Total Phospholitrogen (unfi	pH units EC: 932 μS/cm  mg/L SC: 1044 μS/cm  % Salinity: 0.50 ppt  19.4 °C  scharge measurement): cfs  cted (check box)  ember Monthly Water:  rus , Total Nitrogen, and Nitrate + Nitrite as litered):

	1st		nt = left bank		king downstrean	n)
Ve	elocity Area N	lethod (pref	erred)		Buc (Use only if ve	
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)		Distance (ft)	I
1	4.0	0	0	П	Float Time (sec)	
2	45	0.40	0.07	11	Float	Re
3	5.5	1,30	0.80	П		1
4	6.5	1.20	1.75	11	Width	
5	7,5	1.20	1-84	П	Depth 1	
6	8.5	1.20	2,10	П	Depth 2	
7	9.5	1.)0	2.61	П	Depth 3	1
8	10.5	1.10	2.43	Н	Depth 4	+
9	11.5	0.95	1.24	<u> </u>	Depth 5	_
10	12.5	0.90	2.09		lay—September	
11	13.5	0.80	1.39		each Length (150 wetted width > 1	
12	14.5	0.50	0.42	lt	Collec	tio
13	15.5	0.50	-0.07	L	(sum # trans	sec
14	16.5	0.30	0.75	R	ubber Delimiter (	Ar
15	17.2	0	0	P	VC Delimiter (Are	a=
16				S	ringe Scrubber (	Are
17				0	ther (Area=	
18				N	umber of Transe	cts
19				C	omposite Volume	• (r
20				CI	hlorophyll <i>a</i> Volu	me

<b>Buoy</b> (Use only if vel	vant Object ocity area m		ossible)					
Float 1 Float 2 Float 3								
Distance (ft)								
Float Time (sec)								
Float Ro	each Cross	Section (ft	)					
Upper Middle Lower Section Section Section								
Width								
Depth 1								
Depth 2								
Depth 3								
Depth 4								
Depth 5								

<u>May—September: Algae Collection for Chlorophyll a</u> <b>Reach Length (</b> 150 m if wetted width ≤ 10 m; 250 m
Reach Length (150 m if wetted width ≤ 10 m; 250 m
if wetted width > 10 m):

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	4
PVC Delimiter (Area=12.6cm²)	7
Syringe Scrubber (Area=5.3cm²)	9
Other (Area= )	
Number of Transects Sampled (0-11)	N
Composite Volume (mL)	520
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)
Site: R3 Date: 7/10/19 Crew: KH MC

		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)  Densiometer (0-17)  Count covered dots						Photo (✓ when Taken)			
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	10	OP	120	35P	35P	OP	10	5	14	2	<b>/</b>
АВ	9	(OA)	25P	350	27 P	OP					
В	9,5	08	28 P	218	179	OP	8	7	11	2	
ВС	11.5	COA	36 P	179	25 9	00					
С	12	OA	(26A)	30P	35°	00	5	6	17	15	
CD	11	(OA)	248	450	378	00					
D	9	OA	90	586	629	OP	9	5	17	2	
DE	9	(20A	200	HIP	45P	OP					
E	12.5	90	298	330	488	489	4	6	15		
EF	6.5	(6A)	33 P	548	578	129					
F	5-7	38	32P	518	408	20P	10	10	17	7	/
FG	6	AO	100	HOP	459	45P					
G	5	3ρ	HOP	479	598	50	10	17	17	6	
GH	5.5	(20A)	50P	58P	H2P	19					
Н	4	TA	36P	409	458	IP	9	9	12	4	
н	4.7	(IOA)	118	409	30P	OP					
I	4.5	6P	22P	30P	401	25P	7	15	7	4	
IJ	5	00	209	60	379	5P					
J	7	OP	16P	258	35p	OP	9	5	10	13	
ήK	7	68	18P	318	270	OP				-	
К	9	OP	210	450	268	58	10	8	7	7	

Site ID: Ru	
Date/Time: 7/10/19 0755	
Crew Members: SH MC TM	-
Latitude/Longitude: 34-37997 - 119-3-861	
Flow (circle one): Flowing / Ponded / Dry Wind Strength:	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	
Wind Direction: Blowing (circle one) From / To	
Photos (check): Upstream Downstream	
Notes (e.g. homeless, wildlife, horses, swimming/recreation)	on,
discharge comments, etc.):	_
	_
	_
(	_
January—December Monthly In Situ Measurements:   pH:	
	_
	-
Samples Collected (check box)	
January—December Monthly Water:	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	
Nitrogen (unfiltered):	
Dissolved Phosphorus and Nitrogen (field filtered):	
May—September Dry Season Monthly Algae:	
Chlorophyll a (filters—algae):	

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	16.00	0.20	0.0
2	17.00	0,20	-0.09
3	19.00	0.60	-0.01
4	21.00	0,40	0.10
5	23.00	0.20	0.84
6	25.00	0.30	1.13
7	27.00	0.40	1,67
8	29.00	0.70	1.05
9	31.00	0.60	1.33
10	33,00	0,70	0.33
11	35.00	0.60	0,58
12	37.00	0.30	1.23
13	39.00	0.40	1.4.4
14	41.00	0.60	0,35
15	43.00	0.50	1.80
16	45.00	0.50	1.33
17	47.00	0.60	1.18
18	49.00	0.20	1.19
19	51.00	0.40	0.07
20	53.00	0.60	2.10

<b>Buoy</b> (Use only if velo	vant Object ocity area m		ossible)						
Float 1 Float 2 Float 3									
Distance (ft)									
Float Time (sec)									
Float Ro	each Cross	Section (ft)							
Upper Middle Lower Section Section Section									
Width									
Depth 1									
Depth 2			(2)						
Depth 3									
Depth 4									
Depth 5									

May—September: Algae Collection for Chlorophyll a
Reach Length (150 m if wetted width ≤ 10 m; 250 m
if wetted width > 10 m): \_\_\_\_

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	4
PVC Delimiter (Area=12.6cm²)	7
Syringe Scrubber (Area=5.3cm²)	5
Other (Area= )	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	446
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	2.5

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Date: 7/10/19 Crew: KH MC Photo Densiometer (0-17) Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in) (✓ when Taken) Count covered dots Center Upstream/ Center Wetted Center **Right Center** Right Bank | Center Left **Left Bank Left Center** Center Transect **Downstream** Width (ft) Upstream Right **Downstream** 10 OP 250 29P 170 Α OP 160 32P OP OP 190 AB 10P 440 00 12 HOP В 13.5 OP 11.5 HIP 43P OP BC OP 10P 8.5 OA 86 55P OP C 5P 578 OA 268 OA CD OA 45P 10 190 470 D 8 00 76P OA 61P 468 DE 400 15 440 OP 15 OP 58P Ε 30P 00 50P 50P OA EF OA 80 OP 250 25P F 310 OP 9 0 20P 00 FG OP 9 25P 180 G 00 12.0 240 OP 9.5 15P 20P OP GH 15P 200 278 9 OP 22P Н 100 HI OP 10.5 141 OA 40 1 OP 35P 23P IJ OP 308 M 248 200 OP 9.5 J 30P 318 OP 09 23 P JK 26P TOA 240 148 OP K

95/05

Discharge Measurement

	Month Year): VULY 2019
Site ID:	5A
Date/Time	5A e: 7110/19 0935
Crew Memb	pers: KU MC TM
Latitude/Lo	ngitude: 34-38081 -119-36735
Flow (circle	one): Flowing/Ponded/Dry
Wind Streng	gth:
	Breeze / Moderate Breeze / Strong Breeze / Windy
	ion: Blowing (circle one) From / To
	ck): 🗆 Upstream 🗆 Downstream
	nomeless, wildlife, horses, swimming/recreation,
discharge co	omments, etc.) :
-	
	ecember Monthly In Situ Measurements:
pH: 7.84	PH units EC: 1327 μS/cm
DO: 9.7	7 mg/L SC: <u>1474</u> μS/cm
DO: 106+5	% Salinity: 0.70 ppt
Water Temp	: <u>19.7</u> °c
Flow (from o	lischarge measurement):cfs
Samples Col	lected (check box)
_	ecember Monthly Water:
Total Phosph	norus, Total Nitrogen, and Nitrate + Nitrite as
Nitrogen (un	filtered):
Dissolved Ph	osphorus and Nitrogen (field filtered):
May—Septe	mber Dry Season Monthly Algae:
	mber Dry Season Monthly Algae:  (filters—algae):

	1st I	Measureme	nt = left bank	(looking downstream)
Ve	locity Area N	lethod (pref	erred)	<b>Buoy</b> a (Use only if velo
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)	Distance (ft)
1	3.5	0	0	Float Time (sec)
2	5,0	0.30	0.07	Float Re
3	6.0	0.60	0.09	
4	7.0	0.50	0.14	Width
5	8.0	0.65	0.23	Depth 1
6	9.0	0.60	0.36	Depth 2
7	10.0	0.60	0.20	Depth 3
8	11.0	0.50	0.06	Depth 4
9	12.0	0.50	-0.01	Depth 5
10	14.)	0	0	May—September: A
11				Reach Length (150 n if wetted width > 10
12				Collection
13				(sum # transe
14				Rubber Delimiter (Ar
15				PVC Delimiter (Area=
16				Syringe Scrubber (Ar
17				Other (Area=
18				Number of Transects
19				Composite Volume (
20	- ec	1		Chlorophyll <i>a</i> Volume

<b>Buoy</b> (Use only if velo	rant Object ocity area m		ossible)				
	Float 1 Float 2						
Distance (ft)							
Float Time (sec)							
Float Ro	each Cross	Section (ft	)				
	Upper Section	Middle Section	Lower Section				
Width							
Depth 1							
Depth 2							
Depth 3							
Depth 4							
Depth 5							

Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m):								
Collection Device (sum # transects per Device)	Quantity							
Rubber Delimiter (Area=12.6cm²)	Ø							
PVC Delimiter (Area=12.6cm²)	N							
Syringe Scrubber (Area=5.3cm²)	Ø							
Other (Area= )								
Number of Transects Sampled (0-11)	11							
Composite Volume (mL)	525							
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25							

May—September: Algae Collection for Chlorophyll a

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 SA
 Date:
 7 10 / 9
 Crew:
 KH
 ✓

		Macroalgae	Presence/Abs	ence (P/A) aı	nd Water Depth	(mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted M Width (50)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	5	OP	15P	(15A)	6P	(OA)	The state of the s	17	17	17	. /
АВ	5	OP	436	549	(26A)	OA					
В	3-25	00	25P	278	219	(OA)		17	10	17	
ВС	4-1	OP	5p	179	DRY	OP					
С	6-8	IP	248	DRY	(0A)	OP	17	17	17	17	
CD	8.5	OP	50	OA	60	OP				· ·	
D	6	OP	100	100	100	OP	6	5	3	7	
DE	5	OP	5P	109	5P	00					
E	5	OP	59	38	88	OP	Section of the sectio	4		3	
EF	8	OP	5p	5P	58	OP				·	لتودد
F	8	00	100	5 P	20	(OA)		8		9	/
FG	7	OP	12.P	86	69	OP					
G	6	6 P	15P	108	88	90	0	3	7	5	
GH	8	25P	40P	78	59	(20A					
н	6	19	IP	5P	220	00	0	15	13	3	
н	5	OP	SP	108	140	OP					
1	5.3	18.	108	15P	1919	OP	14	17	1	8	1
IJ	5-5	00	SP	5P	168	OP					
J	5	OP	HP	30	158	08	0	7	4	8	
JK	5	OP	5P	80	88	OP					-
К	7	OP	70	180	20P	OP	5	0	10	17	/

Event ID (Month Year): 209		1st		charge Mea nt = left bank	surement (looking downstream)
	Ve	elocity Area N	Buoy (Use only if vel		
Site ID: C_L  Date/Time: 7/10/19	No.	Distance from Left	Depth (ft)	Velocity (ft/sec)	Distance (ft)
Latitude/Longitude: 39 - 34208 - 119 - 2863 7	1	Bank (ft)	0	ю	Float Time (sec)
Flow (circle one): Flowing / Ponded / Dry Wind Strength:	2	9.60	0.20	0.2/	Float Re
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3		0.20	0,80	
Photos (check): 🗆 Upstream 🗆 Downstream	4	10.70	0.20	0.37	Width
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :	5	11,00	0.20	-0.02	Depth 1
discharge comments, etc.;	6	-	0.20		Depth 2
	7	11.60	0	0	Depth 3
	8				Depth 4
January - December Monthly In Sity Measurements	9				Depth 5
DO: /3 7.9 mg/L SC: 3798 μS/cm					May—September: A
DO: 15.07% Salinity: 2.00 ppt	11				if wetted width > 10
Water Temp:	12				Collection
riow (Holli discharge measurement):crs	13				(sum # transe
	14		1		Rubber Delimiter (A
Samples Collected (check box)	15				PVC Delimiter (Area
January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16				Syringe Scrubber (Ar
Nitrogen (unfiltered):	17				Other (Area=
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transects
May—September Dry Season Monthly Algae:	19				Composite Volume (

20

Chlorophyll a (filters—algae):

<b>Buoy</b> (Use only if vel	vant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Ro	each Cross	Section (ft	
	Upper Section	Lower Section	
Width	1		
Depth 1	-		
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection	for Chlorophyll a
Reach Length (150 m if wetted wid	
if wetted width > 10 m):	1
Collection Device	Quantity

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	3
PVC Delimiter (Area=12.6cm²)	8
Syringe Scrubber (Area=5.3cm²)	0
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	399
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	3

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Site:	CL	Date:	7/10/19	Crew:	KH MC	

		Macroalgae	Presence/Abs	ence (P/A) aı	nd Water Depth	(mm/ft/in)	>	Photo (√ when Taken)				
Transect	Wetted W Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream	
Α	3-7	OP	7010	00	00	OP	0	0	0	0	/	
AB	2-2	00	120	6P	2P	OP						
В	1.5	OP	120	20P	278	25P	7	7	4	+		
ВС	2.5	00	30	00	40	OP						
С	Ц	00	DRY	DRY	90	108	0	0	0	1		
CD	42	90	30	39	6P	50						
D	1-5	OP	78	78	40	00	0	2	-			
DE	1-1	OP	28	6P	49	90						
E	2.3	08	80	30	18	OP	0	4	8	6		
EF	1.3	<b>O</b> P	650	4959	489	OP						
F	3-3	00	00	40	5 P	00	0	O	0	0	1	
FG	4	OP	90	19	20	08						
G	3.6	00	48	40	2P	OP	0	3	5	0		
GH	2.4	OA	60	59	20	OP				=		
Н	2-75	00	56	50	00	00	- (	0	0			
н	1-5	18	109	78	68	00						
1	2.4	(IA)	5P	108	5P	OP	2	0	0	0		
IJ	1.6	00	128	116	99	OP						
J	104	08	108	130	90	90	M	6	2	8		
JK	2.05	00	2	5p	40	00						
K	4.9	00	50	DR71	[DRY]	00	7	0	0		/	

## **Ventura River Algae TMDL Event Details**

EVENT DETAILS		4
Event ID (Month Year):	UST 2019	Date: 8/14+15/2019
Crew Members: K. +\AHS	M. CAPCAP A. WALLENG	REN (8)14/19)
Weather (circle): Clear / Partly Clo	oudy / Overcast / Showers / Rain /	Other Marine kyer new Thebeach
Event Type (check): >Dry (	<0.1" rain per day for the preceding	three days) Ucleared b sunny in long
The state of the s	days with ≥0.1" rain and the three d	ays following)
Notes: Becking 410 # 13	10240875 YSI 85	03D0379
¥	CHAHS J. FORREST, B.	JONES (8/15/19)
OBSERVATION SITES (RIVER FLO	DW) 8/14/19 h	JBC
Ventura River at Highway 150 (	Baldwin Road)	
Flow Status: Dry / Ponded / Flowing Notes:	ing (Estimated Flow:4 cfs)	Photos Taken: Upstream / Downstream
Ventura River at Santa Ana Blvd Flow Status: Dry / Ponded / Flow Notes:	ng (Estimated Flow: <u><b>0· 5</b></u> cfs)	Photos Taken: Upstream / Downstream
Ventura River at Casitas Vista R Flow Status: Dry / Ponded / Flowi Notes:	oad ina (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Additional Observation Site:	ng (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
UNSAMPLED TMDL SITES  Site ID: Flow Status (Dry)/ Ponded / Flowing  Reason not sampled (if flowing):		
Notes:		
Site ID:	Time	Photos Taken: Upstream / Downstream
Site ID: Flow Status: Dry / Ponded / Flowin	ng (Estimated Flow: cfs)	Pilotos rakeni. Opstream / Downstream
Reason not sampled (if flowing):		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status: Dry / Ponded / Flowin Reason not sampled (if flowing):	ng (Estimated Flow: cfs)	Thotas raken. Opstream / Downstream
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status: Dry / Ponded / Flowin	ng (Estimated Flow: cfs)	Photos Taken: Opstream / Downstream
Notes:		

## Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

#### Ventura River Algae TMDL—Estuary Details

Date:	8/14	119	1340		
Ocean Inlet (circle	one): Open /	Restricted /	Closed	,	
Time of Low Tide:	1825	Time of High	h Tide: 1025	5	
weg N50 most	Hymuls .	Bernoma	post and . W	iest and closed	
VF end	20	18			
	Ocean Inlet (circle Time of Low Tide:	Ocean Inlet (circle one): Open / Time of Low Tide:	Ocean Inlet (circle one): Open / Restricted / Time of Low Tide: Time of Hig ndy / Strong Wind \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Ocean Inlet (circle one): Open / Restricted / Closed  Time of Low Tide: Time of High Tide: So	Ocean Inlet (circle one): Open / Restricted / Closed  Time of Low Tide: Time of High Tide:  ndy / Strong Wind 1530 Wind Direction: Blowing From / To

## **TRANSECT 1**

Monthly (Jan-Dec):		
Monthly (Jan—Dec): oH: <u>3-62</u> pH units <sup>©</sup> 4-62	EC: <u>9830</u> μS/cm	Water Temp: 24-4 °C
00: <u>14 9 </u> mg/L	SC: 9940 μS/cm	
00: <u>181 - 2</u> % Sa	linity: 5-6 ppt	

Photos: 🕉 Oceanward 🔌 Landward	Start Time: 1345 End Time: 1354
Start Latitude: 34 27542	Start Longitude: -119 - 30747
End Latitude: 3M - 27520	End Longitude: -119 • 30765
PVC Latitude:	PVC Longitude:

Water Samples Collected (check box)							
[Collect at Floating Macroalgae Q	uadrat 1, Transect 1]						
Monthly Water (Jan—Dec):							
Nitrogen, total and dissolved:	) <b>z</b> i						
Phosphorus, total and dissolved:	<b>≥</b>						
Nitrate + Nitrite as Nitrogen:	<b>%</b>						
Dry Season Algae (May—Sep):							
Chlorophyll a (phytoplankton):	<b>`</b> 1₽¢						
Volume filtered per sample:							

	MACROALGAE—LAND BASED						FLOATING MACROALGAE							
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	5-4	6.9	9.6	12-3	17.3	18.2	20.3	22.4	23.9	28.6				
Water Depth (must be ≤ 0.3 m)											0-3			( Made Const.)
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh 5 Int 3 Des Dd	Frsh & Int © Des Dd	Frsh 2 Int 2 Des Dd	Frsh 🕏 Int Des Dd	Frsh (4) Int 3 Des Dd	Frsh <sup>©</sup> Int Des Dd	Frsh\2 Int 2 Des Dd	Frsh 19 Int Des Dd	Frsh   4 Int Des Dd	Frsh 🗀 Int   Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	39	160	4	2	17	10	14	19	14	7	4	5	0	
No. Crosshairs with Macroalgae Absent														
Crosshair Total (must equal 49)	49	The Charles of Green and							- 31/		401	Annual State of Control of Contro		





## Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2

Ventura River Algae TMDL— Estuary Tra	nsect Me	asureme	<u>nts</u> Dat	e:8/	4/19		Crew	: KI	1 MC	AW				
	cest e	W.												
Photos: → Oceanward → Landv					S	tart Time:	145	7		End	Time: 14	118		
Start Latitude: 34-27 58	8				s	tart Longit	ude:	-119.	3090	24				
End Latitude: 34 - 2750					E	nd Longitu	ıde:	-119.	3092	3				
PVC Latitude:					P	VC Longitu	ıde:							
				MACE	ROALGA	E—LAND B	ASED				FL	OATING N	ACROALG	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	5-4	6.9	9.6	12-3	17.3	18.2	20.3	22.4	23.9	28%				
Water Depth (must be ≤ 0.3 m)						las V								
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh 📆 Int : Des Dd	Frsh 47 Int Des Dd	Frsh 🗽 Int Des Dd	Frsh33 Int 14 Des Dd 2	Frsh 4 Int Des Dd	Frsh <sup>t</sup> Int Des Dd	Frsh 24 Int Des Dd	Frsh A	Frsh 25 Int 24 Des Dd	Frsh 3: Int  % Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh () Int ( <u>)</u> Des Dd	Frsh Int 3 Des Dd
No. Crosshairs with Macroalgae Present	40	47	48	49	48	47	24	No	49	49	49	49	5 4 5 4	49
No. Crosshairs with Macroalgae Absent														
Crosshair Total (must equal 49)	49									Çususum	49			- >
TRANSECT 3								417/	190				196	
Photos: Coceanward Scland	ward				S	tart Time:	149	21		End	l Time:	427		
Start Latitude: 34-27579					S	tart Longi	tude: -	-119:3	0943					
End Latitude: 34 · 27606					E	nd Longitu	ude: -	- 119.3	1-1008	8				
PVC Latitude:					F	VC Longit	ude:							
				MACI	ROALGA	E—LAND B	ASED				FI	OATING N	ACROALG	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	5.4	6.9	9-6	12.3	17-3	18.2	20.3	22-4	23.9	28.6				
Water Depth (must be ≤ 0.3 m)												/		
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	3 Frsh Int 1 Des Dd	Frsh H Int Des Dd	Frsh Int Des Dd	Frsh 6 Int Des Dd	Frsh 3' Int Des 4 Dd	Int Des	Frsh 2 Int Des Dd	Frsh47 Int Des ( Dd	Frsh 🖔 Int Des Dd	Frsh 4.7 Int Des 2 Dd	Frsh \ Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	13	400	与	6	32	26	2	48	46	49	1	0	0	0
No. Crosshairs with Macroalgae Absent														
Crosshair Total (must equal 49)	49							2		-37	49	Constitution of their constitution of		7

229490



Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year):_	AUG 2019
Site ID:	21
Date/Time: 8/15/19	1040
Crew Members:k TF	65
Latitude/Longitude: 34 22	
Flow (circle one): Flowing	Ponded / Dry
Wind Strength:	
Calm / Light Breeze / Moderate B	and the second s
Wind Direction: Blowing (circ	
Photos (check):   Upstream	
	, horses, swimming/recreation,
discharge comments, etc.) :	Atsort ~ 4 miles of
	or /books/ clothes now
A on bod trail of	Toilet drail also used
17 875	
January—December Monthly	In Situ Measurements:
pH: 8-09 pH units EC:	196 µS/cm
pH: <u>8-09</u> pH units EC: DO: <u>7-96</u> mg/L SC:	
DO: 7-96 mg/L SC:	1300 µS/cm
DO: <u>7.96</u> mg/L SC: DO: <u>88.8</u> % Salinity:	1300 µS/cm
DO: 7.96 mg/L SC: DO: 888 % Salinity: Water Temp: 20-8 °C	1300 μs/cm 0-7 ppt
DO: <u>7.96</u> mg/L SC: DO: <u>88.8</u> % Salinity:	1300 μs/cm 0-7 ppt
DO: 7.96 mg/L SC: DO: 888 % Salinity: Water Temp: 20-8 °C	1300 μs/cm 0-7 ppt
DO: <u>7・96</u> mg/L SC: DO: <u>88・8</u> % Salinity: Water Temp: <u>20・8</u> °C Flow (from discharge measure	1300 μS/cm 0-7 ppt ment): 11-8 cfs
DO: 7.96 mg/L SC: DO: 88.8 % Salinity: Water Temp: 20-8 °C Flow (from discharge measure	1300 μS/cm 0>7 ppt ment): 11 8 cfs
DO: 7.96 mg/L SC: DO: 88.8 % Salinity: Water Temp: 20-8 °C Flow (from discharge measure  Samples Collected (check box January—December Monthly)	1300 μS/cm 0-7 ppt ment): 11-8 cfs  Water:
DO: 7.96 mg/L SC: DO: 88.8 % Salinity: Water Temp: 20-8 °C Flow (from discharge measure	μS/cm  7 ppt ment): 18 cfs  Water: gen, and Nitrate + Nitrite as
DO: 7.96 mg/L SC: DO: 588 % Salinity: Water Temp: 20-8 °C Flow (from discharge measure  Samples Collected (check box January—December Monthly Total Phosphorus , Total Nitrogen (unfiltered):	μS/cm  7 ppt ment): 18 cfs  Water: gen, and Nitrate + Nitrite as
DO: 7.96 mg/L SC: DO: 58.8 % Salinity: Water Temp: 20.8 °C Flow (from discharge measure  Samples Collected (check box January—December Monthly Total Phosphorus , Total Nitro	μS/cm  7 ppt ment): 18 cfs  Water: gen, and Nitrate + Nitrite as
DO: 7.96 mg/L SC: DO: 588 % Salinity: Water Temp: 20-8 °C Flow (from discharge measure  Samples Collected (check box January—December Monthly Total Phosphorus , Total Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen	μS/cm  7 ppt ment): 18 cfs  Water: gen, and Nitrate + Nitrite as rogen (field filtered):
DO: 7.96 mg/L SC: DO: 588 % Salinity: Water Temp: 20-8 °C Flow (from discharge measure  Samples Collected (check box January—December Monthly Total Phosphorus , Total Nitrogen (unfiltered):	μS/cm  7 ppt ment): 18 cfs  Water: gen, and Nitrate + Nitrite as rogen (field filtered):

	-		
Vel	ocity Area M	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	4.5	0	$\Theta$
2	5.5	0.4	0.27
3	0.0	0.4	0.6
4	6.2	0	0
5	8.3	0	0
6	9.0	1.0	1.42
7	11.0	1.1	058
8	13.0	1.9	0.94
9	15.0	6.1	18.0
10	17.0	1.1	1.08
11	19.0	1.0	0.75
12	21.0	1:3	0.53
13	23.0	1.25	0.16
14	25.0	0	0
15			
16			
17			
18			
19			
20			

<b>Buoy</b> (Use only if velo	rant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Ro	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1	-		
Depth 2			
Depth 3			
Depth 4		1	1000
Depth 5			

May—September: Algae Collection for Chlorophyll a					
Reach Length (150 m if wetted width ≤ 10 m; 250 m					
if wetted width > 10 m):					

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	0
PVC Delimiter (Area=12.6cm²)	3
Syringe Scrubber (Area=5.3cm²)	8
Other (Area= )	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	592
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Site: \_\_\_\_\_\_ Date: \_\_\_\_\_ S/15/19 \_\_\_\_ Crew: \_\_\_\_\_ SH\_JF\_65

		Macroalgae	croalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)  Densiometer (0-17)  Count covered dots					Photo (✓ when Taken)			
Transect	Wetted ~ Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
ÄA	4.75	OA	(24p)	70A	66A	8A	1	5	6	0	
AB	4-7	OA	41A	54A	50A	OA					
В	5.15	OA	45A	54A	(17P)	IIA	17	1 77	17	17	
ВС	4-8	OA	HOA	42A	4 23 A	(5P)					
С	6.5	OA	(33P)	BIA	5432P	(30)	5	. \	4	0	
CD	S	IOA	32A	132A	34A	4A					
D	5	60 A	82A	85A	64A	2A	9	3	8	1	
DE	5	OA	80 A	70A	(61P)	27A				¥	_ *
Ε	404	OA	51A	65 A	55A	6A	13	3	3		
EF	3.75	DA	65 A	76A	(45P)	34 A					
F	3	23 A	57A	(65P)	66 A	(2P)	41	2	0	L	1
FG	2-25	14A	in in A	(474)	(43P)	16A					3
G	2-35	HOA	70 A	65A	(50P)	6 A	Tillman	1-1	1	16	
GH	109	OA	40A	OA	20A	TA					
н	3	20 A	HOA	47A	A Section 2	(368)	36	16	1	17	
н	2-55	OA	HOA	28 A	(35 P)	30 A					
1,	2	(TOP)	USA	36 A	25A	20 P	17	1 7	10	14	
IJ	2	OA	55A	45A	18A	138A					
J	8.5	IOA	344	(52P)	(65P)	(79)	a	12 4 4 12 4	16	9	
JK	Clath	OA	4111	80A	(998)	INACCES				1	
K	8	OA	48 A	103A	1000	EE6		1 2000	17	16	V

Discharge Measurement

Event I	D (Month Year): ANG 2019
Site ID:	R2
Date/T	ime: 8/15/19 0920
	embers: KH JF MA RT
Latitude,	/Longitude: 34-33937 -119-29725
Flow (cir	cle one): Flowing / Ponded / Dry
Wind Str	ength:
V X	ht Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Dir	rection: Blowing (circle one) From / To
_	check):   Upstream   Downstream
	.g. homeless, wildlife, horses, swimming/recreation,
discharg	e comments, etc.) :
January-	December Monthly In Situ Measurements:
	-SH pH units EC: 1022 μS/cm
DO: 8.	95 mg/L SC: 1195 μS/cm
	7 % Salinity: D. o ppt
	emp: 20,2°C 3/3
	om discharge measurement):cfs
FIOW (fro	• · · · · · · · · · · · · · · · · · · ·
riow (fro	
riow (fro	
	Collected (check box)
Samples	Collected (check box)  December Monthly Water:
<u>Samples</u> January-	- December Monthly Water:
Samples January- Total Pho	December Monthly Water: Osphorus, Total Nitrogen, and Nitrate + Nitrite as
Samples January- Total Pho	December Monthly Water: Osphorus , Total Nitrogen, and Nitrate + Nitrite as (unfiltered):
Samples January- Total Pho	December Monthly Water: Osphorus, Total Nitrogen, and Nitrate + Nitrite as
Samples January- Total Pho Nitrogen Dissolved	December Monthly Water: Osphorus , Total Nitrogen, and Nitrate + Nitrite as (unfiltered): December Monthly Water: December Mon
Samples January- Total Pho Nitrogen Dissolved May—Se	December Monthly Water: Osphorus , Total Nitrogen, and Nitrate + Nitrite as (unfiltered):

	1st (		nt = left bank		oking downstream	ո)
Ve	locity Area M	lethod (pref	erred)		Buo (Use only if ve	-
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)		Distance (ft)	I
1	3.0	A	9		Float Time (sec)	
2	3.5	1.0	0		Float I	Rea
3	5.0	1.5	0.00			
4	7.0	1.5	0.13		Width	
5	9.0	2.1	0.26	i	Depth 1	
6	11.0	2.3	0.44		Depth 2	
7	13.0	1.9	0.90		Depth 3	1
8	15.0	1.45	0,75		Depth 4	+
9	0.F1	1.05	0.50		Depth 5	1
10	[9.5]	1.05	0.52		May—September	
11	21.0	0.9	0.56		Reach Length (150 f wetted width > 1	
12	23.0	0.8	0.31	lt	Collec	tio
13	35.0	0.10	-0.04	IL	(sum # trans	sec
14	26.1	D	0	F	Rubber Delimiter (	Ar
15				P	VC Delimiter (Are	ea=
16				s	yringe Scrubber (	Ar
17				d	Other (Area=	
18					lumber of Transe	cts
19					Composite Volume	e (r
20					Chlorophyll <i>a</i> Volu	me

<b>Buoy</b> (Use only if velo	ant Object		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Ro	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width	už:		
Depth 1			
Depth 2			
Depth 3	l V		
Depth 4			
Depth 5			

May—September: Algae Collection	for Chlorophyll a					
Reach Length (150 m if wetted width ≤ 10 m; 250 m						
if wetted width > 10 m):						

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	2
PVC Delimiter (Area=12.6cm²)	.3
Syringe Scrubber (Area=5.3cm²)	6
Other (Area=	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	556
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Site: R2 Date: 8/15/19 Crew: KH JF, BJ

		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)				Densiometer (0-17)  Count covered dots				Photo (✓ when Taken)	
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	
Α	6	OA	35A	(200)	50A	OA	6	14	17	6	/
AB	5	OA	30A	45A	HPA	OA					
В	5.25	OA.	5 A	48A	SIA	15A	7	6	17	8	
ВС	3.1	OA	24A	57A	46A	ЗА					
С	L	IA	(OP)	(00)	44A	29A	1 7	16	L.J	14	
CD	5, 1	04	30A	19A	45A	20A					
D	5	OA	30 A	(16P)	(320)	6A	17	9	6	16	
DE	8	OA	30A	8A	(268)	30					
E	10.2	OA	58A	(BP)	(15 AP)	(2P)	16	8	3	10	
EF	8	OA	62A	72 A	420	OA					
F	8	OA	6IA	57 A	(469)	OA	16	2	6	5	1
FG	6.5	OA	43 A	69A	69A	6A					
G	7.5	OA	36.A	(56P)	HYA	(3P)	11	7	10	4	
GH	6.8	INACCESS	_25A	HOA	(16P)	(OP)					
Н	8	MALLES	DRY	OA	(299)	(ZP)	17	1-7	10	16	
-HI	7	7A	24A	31A	34A	OA					
11	6.5	OA	MA	(15P)	24A	(OP)	17	17	17	16	
IJ	6.25	5A	45A	25 A	(47P)	35 A					
J	6.5	GA	45A	444	68A	(HP)	17	17	17	17	
JK	6-5	AO	30 A	30A	42A	OA					
К	5.5	OA	31A	37A	37A	OA .	D	17	17	47	1

105000

Pork or yourd

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): AUG 2019
Site ID: R3
Date/Time: 8/H/9 1130
Crew Members: KH MC AW
Latitude/Longitude: 34-34584 - 119-29978
Flow (circle one): Flowing Ponded / Dry
Wind Strength:
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From To
Photos (check): □ Upstream □ Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.):
January—December Monthly In Situ Measurements:
pH: <u>8-32</u> pH units EC: <u>963</u> μS/cm
pH: <u>8-32</u> pH units EC: <u>963</u> μS/cm DO: <u>9-45</u> mg/L SC: <u>1056</u> μS/cm
pH: <u>8-32</u> pH units EC: <u>963</u> μS/cm DO: <u>9-45</u> mg/L SC: <u>1056</u> μS/cm DO: <u>105-7</u> % Salinity: <u>0-5</u> ppt
pH: <u>8-32</u> pH units EC: <u>963</u> μS/cm DO: <u>9-45</u> mg/L SC: <u>1056</u> μS/cm DO: <u>105-7</u> % Salinity: <u>0-5</u> ppt Water Temp: <u>20-4</u> °C
pH: <u>8-32</u> pH units EC: <u>963</u> μS/cm DO: <u>9-45</u> mg/L SC: <u>1056</u> μS/cm DO: <u>105-7</u> % Salinity: <u>0-5</u> ppt
pH: <u>8-32</u> pH units EC: <u>963</u> μS/cm DO: <u>9-45</u> mg/L SC: <u>1056</u> μS/cm DO: <u>105-7</u> % Salinity: <u>0-5</u> ppt Water Temp: <u>20-4</u> °C
pH: 8-32 pH units EC: 963 µS/cm DO: 9-45 mg/L SC: 1056 µS/cm DO: 105-7 % Salinity: 0.5 ppt Water Temp: 20.4 °C Flow (from discharge measurement): 12 cfs
pH: 8-32 pH units EC: 963 µS/cm DO: 9-45 mg/L SC: 1056 µS/cm DO: 105-7 % Salinity: 0.5 ppt Water Temp: 20.4 °C Flow (from discharge measurement): 12 cfs  Samples Collected (check box)
pH: 8-32 pH units EC: 963 µS/cm DO: 9-45 mg/L SC: 1056 µS/cm DO: 105-7 % Salinity: 0.5 ppt Water Temp: 10.4 °C Flow (from discharge measurement): 12 cfs  Samples Collected (check box) January—December Monthly Water:
pH: 8-32 pH units EC: 963 µS/cm DO: 9-45 mg/L SC: 1056 µS/cm DO: 105-7 % Salinity: 0.5 ppt Water Temp: 20.4 °C Flow (from discharge measurement): 12 cfs  Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
pH: 8-32 pH units EC: 963 µS/cm DO: 9-45 mg/L SC: 1056 µS/cm DO: 105-7 % Salinity: 0.5 ppt Water Temp: 10.4 °C Flow (from discharge measurement): 12 cfs  Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):
pH: 8-32 pH units EC: 963 µS/cm DO: 9-45 mg/L SC: 1056 µS/cm DO: 105-7 % Salinity: 0.5 ppt Water Temp: 20.4 °C Flow (from discharge measurement): 12 cfs  Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
pH: 8-32 pH units EC: 963 µS/cm DO: 9-45 mg/L SC: 1056 µS/cm DO: 105-7 % Salinity: 0.5 ppt Water Temp: 20.4 °C Flow (from discharge measurement): 12 cfs  Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): 5 Dissolved Phosphorus and Nitrogen (field filtered): 5
pH: 8-32 pH units EC: 963 µS/cm DO: 9-45 mg/L SC: 1056 µS/cm DO: 105-7 % Salinity: 0.5 ppt Water Temp: 10 4 °C Flow (from discharge measurement): 12 cfs  Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): 15 Dissolved Phosphorus and Nitrogen (field filtered): 15  May—September Dry Season Monthly Algae:
pH: 8-32 pH units EC: 963 µS/cm DO: 9-45 mg/L SC: 1056 µS/cm DO: 105-7 % Salinity: 0.5 ppt Water Temp: 10.4 °C Flow (from discharge measurement): 12 cfs  Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): 15 Dissolved Phosphorus and Nitrogen (field filtered): 15

Vel	ocity Area M	ethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	5.5	-D -	0
2	6.5	0.9	-0-10
3	7.5	101	0.53
4	8.5	1.	1.62
5	9.5	1.0	1.89
6	10.5	1.6	1.73
7	11.5	0.9	2.10
8	12.5	0.9	1.10
9	13.5	0.65	1.86
10	Tong of	0.	1067
11	15.5	0.35	1.13
12	16.5	0.3	1.58
13	18.7	0	-0
14			
15			
16			
17			
18			
19			
20			

<b>Buoy</b> (Use only if velo	ant Object ocity area m		ossible)							
	Float 1 Float 2 Float 3									
Distance (ft)										
Float Time (sec)										
Float Ro	each Cross	Section (ft								
	Upper Section	Middle Section	Lower Section							
Width										
Depth 1										
Depth 2										
Depth 3										
Depth 4										
Depth 5										

May-September: Algae (	Collection for Chlorophyll a
Reach Length (150 m if we	etted width ≤ 10 m; 250 m
if wetted width > 10 m):	150

	0
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	4
PVC Delimiter (Area=12.6cm <sup>2</sup> )	3
Syringe Scrubber (Area=5.3cm²)	4
Other (Area= )	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	429
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in).					Densiometer (0-17)  Count covered dots				Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	
Α	6.5	OP	199	300	(35A)	(8A)	6	4	messing	0	/
АВ	11	OA	168	310	(20A)	(5A)					
В	9.5	OA	(19A)	230	(21A)	SA	9,5	46	7		
ВС	1107	(0A)	(23 A)	(6A)	(AID)	(5A)					
С		OA	25A	(22A)	(22A)	00	NR	NR-	NR	NR -	1
CD	9	OA	(24A)	(HIA)	(35A)	(12A)					
D	8.7	(OA)	80	(54A)	(60A)	20	8	4	1 hard		
DE	7.4	(A)	150	340	42A	(IOA)		10			
E	8	(OA)	240	38A	400	(42A)	2	4	9	0	
EF	7	90	(25A)	(48A)	47P	39					7.5-
F	6-35	(IOA)	27A	38A	(40A)	15A	8	8	1 27	5	
FG	5-85	00	20	250	(30 A)	SAT					
G	4-9	(OA)	(35A)	30 A	30P	(40A)	14	9	and red	15	
GH	1	(OA)	(TOA)	(20A)	17A	(OA)					
- Н	407	(AO)	(35 A)	(30A)	(31A)	20	14	3,12	17		
HI	3-9	(AP)	446	408	20A	(OA)					
11	5-5	00	180	280	300	(12A)	17	7	12	500	
IJ	7.5	OP	(24A)	450	(25K)	(20A)					
J	7-5	90	170	328	35P	5A	12		9	9	
JK	7	00	190	35P	138	OP					
К	6.5	231	CHA	25P	35A	AG	6	7	17	9	/

39/105

Event ID	(Month Year): Auc 2তাপ
	TMOL-R4
	e: 8/14/19 0900
	bers: ICH MC AW
Latitude/Lo	ongitude: 34-37997 -119-30861
Flow (circle	one): Flowing / Ponded / Dry
Wind Stren	gth:
Calm Light	Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direct	tion: Blowing (circle one) From / To
Photos (che	eck): 🗆 Upstream 🗆 Downstream
Notes (e.g.	homeless, wildlife, horses, swimming/recreation,
	omments, etc.) :
pH: 7-39 DO: DO: DO: Water Temp	pH units EC: μS/cm mg/L SC: μS/cm mg/S Salinity: ppt c:°C discharge measurement): 7.5 cfs
Samples Co	llected (check box)
January—D	ecember Monthly Water:
	horus , Total Nitrogen, and Nitrate + Nitrite as
	, , , , , , , , , , , , , , , , , , , ,
Total Phosp Nitrogen (ui	مثالا معملاً ،
Total Phosp Nitrogen (ui Dissolved Ph	nfiltered):

#### **Discharge Measurement**

1st Measurement = left bank (looking downstream)

Ve	locity Area M	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	15.0	0	Ð
2	16.0	0.26	0.02
3	18.0	0.35	0.34
4	20.0	0.25	0.33
5	23.0	0.20	0.45
6	26.0	0.35	0.59
7	29.0	0.30	0.99
8	32.0	0.60	0.97
9	35.0	0.20	14.0
10	38.0	0.46	0.60
11	41.0	0.35	0.55
12	44.0	0.40	0.78
13	47.0	0.40	0.23
14	50.0	0.15	0.33
15	53.0	0	0
16			
17			
18			
19			
20			

Buoy (Use only if vel	ant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			1
Float Time (sec)			
Float Ro	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width	/		
Depth 1	/		
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection for Chlorophyll a
Reach Length (150 m if wetted width ≤ 10 m; 250 m
if wetted width > 10 m): 150

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	0
PVC Delimiter (Area=12.6cm²)	1
Syringe Scrubber (Area=5.3cm²)	4
Other (Area= )	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	404
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Site: \_\_ RM \_\_\_ Date: RIH 19 \_\_\_ Crew: KH, MC

		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)					Densiometer (0-17) Count covered dots				Photo (✓ when Taken)
Transect	Wetted ( Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	
Α	9	177	20P	13 A	178	38	1-4	Í	Ø7	0	
АВ	11-5	29	120	140	(31A)	(2A)					
В	12-5	OP	100	190	39A	(5A)	8	0	6	5	
ВС	11.5	00	20	24P	(39A)	(5A)					
С	9	(GA)	OP	39A)	(35A)	(2A)	8	0			
CD	11-2	(OA)	OP	342	55A	MOA)					
D	8	00	169	50P	38p	(AP)	8	17	8	_ 0	
DE	8-5	(OA)	248	420	(51A)	(40A)				·	
E	6,8	OP	429	60P	690	200	1-7	- 8	16	17	
EF	6	OP	50P	T DR-1	25P	(8A)					
F	3-3	(20A)	56P	350	208	(8A)	17	17	1	8	V
FG	8	OP	30	130	239	248					
G	11	00	86	140	240	30	12	1	2	0	
GH	9.5	OP	40	110	168	100				7	
Н	10	(6A)	250	(13A)	CALL	50	14	0	0	3	
н	10-5	(AO)	248	(5A)	40	(A)					
1	9.5	OP	201	300	200	00	8	3	0	1	
IJ	8	08	24P	(YA)	23P	(5A)					
J	85	00	15.0	(15A)	23 P	(5A)	steer may	0	4	4	
JK	7-5	OP	218	100	118	IP					
К	10	(A6)	: 248	IOP	150	(OA)	0	0	0	0	1

Event ID (	Month Year): AUG 2019
Site ID:	SA
Date/Time	e:8/14/19 0930
Crew Memb	bers: KH MC AW
 Latitude/Lo	ongitude: 34-38081 -119-30-735
Flow (circle Wind Streng	one): Flowing / Ponded / Dry gth:
Calm / Light B	Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direct	tion: Blowing (circle one) From / To
Photos (che	eck):   Upstream   Downstream
Notes (e.g. l	homeless, wildlife, horses, swimming/recreation,
discharge co	omments, etc.) :
pH: 1 3 DO: 2 9 DO: 2 0 1	pH units EC: μS/cm mg/L SC: μS/cm % Salinity: ppt c: μS/cm
Flow (from o	discharge measurement):
	llected (check box)
Samples Col	llected (check box) ecember Monthly Water:
Samples Col January—De	ecember Monthly Water:
Samples Col January—De Total Phosph	ecember Monthly Water: horus, Total Nitrogen, and Nitrate + Nitrite as
Samples Col January—De Total Phosph Nitrogen (ur	ecember Monthly Water: horus , Total Nitrogen, and Nitrate + Nitrite as
Samples Col January — De Total Phosph Nitrogen (un Dissolved Ph	horus , Total Nitrogen, and Nitrate + Nitrite as infiltered):

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	elocity Area M	lethod (pref	erred)		
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)		
1	4	0	0		
2	4.5	0.4	-0.03		
3	5	0.3	-0.05		
4	6	0.35	-0.01		
5	7	0.4	0		
6	8	0.4	0		
7	9	0.5	0		
8	10	0.5	-0.03		
9	11.5	0	0		
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Buoy (Use only if vel	ant Object ocity area m		ossible)		
	Float 1	Float 2	Float 3		
Distance (ft)					
Float Time (sec)					
Float R	each Cross	Section (ft			
	Upper Section	Middle Section	Lower Section		
Width					
Depth 1					
Depth 2					
Depth 3					
Depth 4		4			
Depth 5					

May—September: Algae Collection for Chlorophyll a
Reach Length (150 m if wetted width ≤ 10 m; 250 m
if wetted width > 10 m): \_\_\_\_\_

1		
	Collection Device (sum # transects per Device)	Quantity
١	Rubber Delimiter (Area=12.6cm²)	4
١	PVC Delimiter (Area=12.6cm²)	7
١	Syringe Scrubber (Area=5.3cm²)	0
١	Other (Area= )	
ı	Number of Transects Sampled (0-11)	1
ĺ	Composite Volume (mL)	398
	Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Site:	STPTT SA	Date:	8/14/19	Crew:	KH ME AW	

		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depti		Photo (✓ when Taken)				
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
- A	4.15	GA	(6A)	(22A)	(25A)	(12A)	17	17	17	17	. 🗸
АВ	3.5	(OA)	IOP	(21A)	218	09					
В	1	(6A)	(TOA)	(6A)	OP	(2A)	17	17	17	17	
ВС	2-45	OA	(TA)	120	99	OP					
С	1.5	(A)	(4A)	30	00	OP	17	16	17	14	
CD	5.5	OP	140	08	(OA)	00					
D	6	OP	20	10	5P	OA	3	0	2	Personal	
DE	6.5	(OA)	18	10	IP	COA				4	
E	7	OP	50	20	18	OP	1.	16	17	7	
EF	6	SP	38	49	2P	00				-	
F	6	(OA)	40	40	40	OP	0	2	7	G	V
FG	5.5	(OA)	558	120	20	00					
G	Sen and	10	OP	90	168	OP_	0	16	15	0	
GH	45	OP	40	6P	128	OA					
н	5	(AO)	28	100	108	(A)		17		15	
н	5	19	TORY	00	119	00					
1	2.55	00	00	ZP	150	09	٥	9	8	8	
IJ	a produce and a	00	58	58	49	OR					
J	4.05	90	50	159	198	(OA)	5	0	5		
JK	4	OP	50	ISP	6P	100					- 10
K	3-3	100	108	138	58	09	0	0	30	6	$\checkmark$

## **Ventura River Algae TMDL Event Details**

EVENT DETAILS	
Event ID (Month Year): SEPTEMBER 2019	Date: 9/9/19 + 9/11/19
Crew Members: K. HAHS 8. JONES A. WALLENGRE	N(9/9/19) BJONES (9/11/19)
Weather (circle): Cleary Partly Cloudy / Overcast / Showers / Rain /	Other 5. Palasik
Event Type (check): >Dry (<0.1" rain per day for the preceding	three days)
□ Wet (days with ≥0.1" rain and the three o	days following)
Notes: VSI 85 #03D0379 Beckman 410# 1302510875	
DECIMENTING 130 2108 10	
OBSERVATION SITES (RIVER FLOW)	9/9/19
Ventura River at Highway 150 (Baldwin Road)	
Flow Status: Dry / Ponded Flowing (Estimated Flow: 3-4 cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Santa Ana Blvd Flow Status Dry Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Casitas Vista Road  Flow Status: Dry / Ponded Flowing (Estimated Flow: 5-6 cfs)  Notes: Mainly 2007 Code	Photos Taken: Upstream / Downstream
Additional Observation Site: cfs) Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
LINICARADI ED TRADI CITEC	La
UNSAMPLED TMDL SITES	9/11/19
Site ID: Time: 0825	_ Photos Taken: Upstream / Downstream
Site ID: Time: CS25 Flow Status : cfs) Reason not sampled (if flowing): cfs)	
Notes:	
Site ID: Time: cfs) Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	_ Photos Taken: Upstream / Downstream
Reason not sampled (if flowing):	
Notes:	
Site ID: Time:	Photos Taken: Upstream / Downstream
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Reason not sampled (if flowing): Notes:	
Site ID.	Photos Tologo Uniters ( Second
Site ID: Time: cfs) Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Reason not sampled (if flowing):	
Notes:	

### Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

#### Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est			
Event ID (Month Year): SEPTEMBER 2019	Date:	99/19	1320
Crew Members: KH AW SP	7'		
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle	e one): Open ( F	testricted Closed
Direction of Tide: Ebb / Flood / Slack / N/A	Time of Low Tide	1340 7	ime of High Tide: 0833/1930
Vind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze /	Windy / Strong Wind	l v	Vind Direction: Blowing From 1/To
lotes (e.g. homeless, wildlife, dogs, swimming/recreation): 🔄 🔌 ১৯৯১	-shape as Aug 19	9 Paddie boo	de 2 to estray 2/code fishing.
1005 of gulls in air + on water. Transects 1+2 were or	est (cloud) and of	festicy. Te	used 3 areast (restricted) and.)
Bern open at east end along no rap.	· ·	-	, ,

# TRANSECT 1

In Situ Measurements (Measure a		adrat 1, Transect 1)
Monthly (Jan—Dec): 23 8 2 2 2 2 2 3 2 3 2 3 2 3 2 3 2 3 2	EC: 2950 μS/cm	Water Temp: 22-9 °C
		c
DO: 120 6 % Sali	nity: <u>\ \ 5</u> ppt	

Photos: StOceanward Standward	Start Time: 1320 End Time:  328						
Start Latitude: 34.27592	Start Longitude: -119 • 30902						
End Latitude: 34 - 27571	End Longitude: -119.33 30920						
PVC Latitude:	PVC Longitude:						

<b>Water Samples Collected (check</b>	box)
[Collect at Floating Macroalgae C	Quadrat 1, Transect 1]
Monthly Water (Jan—Dec):	
Nitrogen, total and dissolved:	-0-
Phosphorus, total and dissolved:	Se.
Nitrate + Nitrite as Nitrogen:	9
Dry Season Algae (May—Sep):	
Chlorophyll a (phytoplankton):	
Volume filtered per sample:	

	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0.7	7.1	8.9	13.3	17.4	20.7	23 8	25.3	26.7	28.2				
Water Depth (must be ≤ 0.3 m)											0-3			
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int 6 Des Dd	Frsh Int <b>\$</b> Des Dd	Frsh An Int Des Dd	Frsh 17 Int Des Dd	Frsh <b>4</b> Int <b>5</b> Des Dd 3	Frsh 38 Int <b>5</b> Des Dd <b>6</b>	Frsh Int) O Des Dd	Frsh33 Int <b>16</b> Des Dd	Frsh 39 Int 8 Des Dd	Frsh 77 Int 22 Des Dd	Frsh 49 Int Des Dd	Frsh 19 Int Des Dd	Frsh Int Des Dd	Frsh Int Des
No. Crosshairs with Macroalgae Present	49	49	49	49	49	49	49	49	47	49	49	49	49	40
No. Crosshairs with Macroalgae Absent	0								WAY WIN	- DES	0		- 1	
Crosshair Total (must equal 49)	119						-			700	49			





## Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2

/entura River Algae TMDL— Estuary Tra	nsect Mea	suremer	its_Date		19/1	1	_ crew.	KH	1				(	JEST
TRANSECT 2 Photos:	ard				19	Start Time:	134	19		End	Time:	355	-	
11 2500	-													
	_	Start Longitude: —119-30946  End Longitude: —119-30944												
End Latitude: 34 - 2760		PVC Longitu		114.	307	74								
PVC Latitude:	_	_	_				FIC	DATING MA	CROALGA	Æ				
		- 1			_	AE—LAND BA		. 1	9	10	FLOATING MACROALGAE  1 2 3			4
Quadrat	1	2	3	4	5	6	7	8			-	-		-
Distance (m)	0-7	7-1	8.9	13.3	17.4	20.7	23.8	25-3	26.7	28.2	- 2			
Water Depth (must be ≤ 0.3 m)								- 0	£. A		03			- 140
Condition	Frsh 🦠	Frsh \	Frsh	Frsh38	Frsh Int		Frsh 5	Frsh23	Frsh 42 Int	Frsh30	Frsh Int	Frsh Int	Frsh\49	Frsh49 Int
[Frsh=Fresh, Int=Intermediate,	Int Des	Int Des	Int Des	Int <u>2</u> Des	Des	Des	Des	Des	Des	Des	Des	Des	Des Dd	Des Dd
Des=Dessicated, Dd=Dead]	Dd	Dd	Dd	Dd	Dd	Dd	Dd	Dd	Dd	Dd	Dd	Dd	49	401
No. Crosshairs with Macroalgae Present	0	4		39	49	49	48	47	42	46	0	0	47	79
No. Crosshairs with Macroalgae Absent			-			9								
Crosshair Total (must equal 49)	49		The state of the s								49	And the second second		7
TRANSECT 3						Start Time:	25/4	90		End		98/19	6	EAS
Photos: Oceanward Landv					_		-		7			101		
Start Latitude: 34-27538					_	Start Longit		-119.					_	-
End Latitude: 34-27514						End Longitu		119.3	016					
PVC Latitude:						PVC Longit					F14	DATING MA	ACDONIC	\ C
				MAC		AE—LAND B	r -							4
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0-7	7.1	8-9	13.3	17.6	1 20.7	23 8	25 3	26.7	28.2				
Water Depth (must be ≤ 0.3 m)					-						03	, j-m		7
Condition	Frsh36	Frsh\2	Frsh 8	Frsh 14		- 1	Frsh3	Frsh \	Frsh 10	Frsh 8	Frsh48	Frsh 🛂	Frsh   Int	Frsh I Int
[Frsh=Fresh, Int=Intermediate,	Int ►↓ Des	Int 3 Des	Int 5 Des	Int <b>?</b> Des	Int Des		Int 2 Des	Des	Des	Des	Des	Des	Des	Des
Des=Dessicated, Dd=Dead]	Dd	Dd	Dd	Dd	Dd	Dd \	Dd	Dd 2	Dd	Dd	Dd	Dd	Dd	Dd
No. Crosshairs with Macroalgae Present	40	15	13	22	2	1 1	5	3	10	8	48	47	1	- 1
No. Crosshairs with Macroalgae Absent						W/LEU					-			_
Crosshair Total (must equal 49)	49				-					>	49			7

138/490

97/196

Event ID (Month Year): 5677 2619		1st I		charge Meas nt = left bank	(looking downstream)
Site ID:	Ve	locity Area M	lethod (pref	erred)	<b>Buoy</b> (Use only if velo
Date/Time: 9/11/19 1050 Crew Members: 15/15/	No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)	Distance (ft)
Latitude/Longitude: 34 - 28046 - 119 - 30853 Flow (circle one): Flowing/ Ponded / Dry	1	4.5	8	0	Float Time (sec)
Wind Strength:	2	5.0	0.4	0.31	Float R
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3	7.0	0	0	
Photos (check):   Upstream   Downstream	4	9.6	0	0	Width
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.):	5	9.8	1.0	0.39	Depth 1
in i.v.	6	10.0	1.1	0.46	Depth 2
	7	11.0	1.2	0.51	Depth 3
	8	13.0	1.1	0.73	Depth 4
January—December Monthly In Situ Measurements:	9	14.5	1.3	0.66	Depth 5
pH: <u>8.30</u> pH units EC: <u>1171</u> μS/cm DO: <u>8.00</u> mg/L SC: <u>1285</u> μS/cm	10	16.0	1.3	0.54	May—September: Reach Length (150
DO: 88.9 % Salinity: 0.6 ppt	11	17.5	1.2	0.65	if wetted width > 10
Water Temp:°C Flow (from discharge measurement):cfs	12	19.0	1.	D.49	Collecti
riow (nom discharge measurement)crs	13	20.5	1.1	0.43	(sum # transe
	14	22.0	1.25	0.26	Rubber Delimiter (A
Samples Collected (check box)	15	23.5	1.25	0.15	PVC Delimiter (Area
January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16	25.2	Ф	A	Syringe Scrubber (A
Nitrogen (unfiltered):	17		1 2 4		Other (Area=
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transect
May—September Dry Season Monthly Algae:	19				Composite Volume
Chlorophyll a (filters—algae):	20				Chlorophyll <i>a</i> Volum (use GF/F filter, 25 r

<b>Buoy</b> (Use only if velo	rant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Ro	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection for Chlorophyll a  Reach Length (150 m if wetted width ≤ 10 m; 250 m						
if wetted width > 10 m):	2 10 111, 230 111					
Collection Device	Quantity					

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	4
PVC Delimiter (Area=12.6cm²)	2
Syringe Scrubber (Area=5.3cm²)	5
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	526
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

		Macroalgae	Presence/Abs	ence (P/A) ar	nd Water Depth	n (mm/ft/in)		Photo (✓ when Taken)			
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	4.9	45 A	60A	70A	TIA	1684	4	2	4	1	/
АВ	4-6	ÖA	48A	49A	51A	οΑ					
В	5-2	35 A	40A	22A	34A	OA	17	17	7	17	
ВС	4.7	OA	45A	50A	294	20A					
С	3.6	OA	34A	32A	19A	OA	17	11	7	15	
CD	3-53	OA	25A	25A	36A	OA					
D	4.8	OA	10A	35A	35A	OA	10	2	5	5	
DE	4.25	24A	31A	29 A	38/A	OA	1				
E	6	OA	72A	66A	63A	OA	11	0	5	0	
EF	5-7	OA	90A	91A	75A	OA					
F	4.5	OA	85A	79A	65A	OA	-	6	12	2	V
FG	4-5	OA	45A	TIA	61 A	OA					
G	45	OA	50A	61A	571	OA	13	3	7	4	
GH	4.15	IDA	76A	78A	53A	37A					
Н	3,85	OA	85A	67A	53A	45A	16	2	8	2	
н	3-1	GA	51A	52A	44A	OA					
1	3-1	OA	27A	37A	36A	OA	17	17	17	15	
IJ	2-5	20A	65A	61 A	47A	3 A					
J	2-75	OA	52A	H3A-	48/A	OA	17			17	
JK	3-15	TA	27A	16A	IIA	OA				4	
K	2-65	23A	38A	32A	23A,	OA	and a control	1 000	(7	17	/

Event ID (Month Year):_	SEPT 2019
Site ID:	R2
Date/Time: 9/11/19	0845
Crew Members: KH	
Latitude/Longitude:	5957 -119- 297725
Flow (circle one): Flowing	Ponded / Dry
Wind Strength:	
Calm ) Light Breeze / Moderate E	
Wind Direction: Blowing (circ	
Photos (check):   Upstream	
	e, horses, swimming/recreation
	Homeless company
OF WE-BH	
January-December Monthly	In Situ Measurements:
January—December Monthly pH: 8.08 pH units EC:	
pH: 9.08 pH units EC:	996 μS/cm
pH: 9.08 pH units EC:	<u>496</u> μS/cm 1113 μS/cm
pH: $\frac{6.08}{0.00}$ pH units EC: DO: $\frac{6.12}{0.00}$ mg/L SC: DO: $\frac{89.0}{0.00}$ % Salinity: Water Temp: $\frac{19.5}{0.00}$ °C	μS/cm 1113 μS/cm 0. (μ) ppt
pH: 9.00 pH units EC: DO: 9.10 mg/L SC: DO: 89.0 % Salinity: Water Temp: 19.5 °C	μS/cm 1113 μS/cm 0. (μ) ppt
pH: $\frac{6.08}{0.00}$ pH units EC: DO: $\frac{6.12}{0.00}$ mg/L SC: DO: $\frac{89.0}{0.00}$ % Salinity: Water Temp: $\frac{19.5}{0.00}$ °C	μS/cm 1113 μS/cm 0. (μ) ppt
pH: $9.09$ pH units EC: DO: $9.12$ mg/L SC: DO: $89.0$ % Salinity:	μS/cm 1113 μS/cm 0 · (p ppt
pH: $\frac{6.08}{0.00}$ pH units EC: DO: $\frac{6.12}{0.00}$ mg/L SC: DO: $\frac{89.0}{0.00}$ % Salinity: Water Temp: $\frac{19.5}{0.00}$ °C	μS/cm μS/cm Ο φ ppt ement): 9 85 cfs
pH: 00 pH units EC: DO: 010 mg/L SC: DO: 89.0 % Salinity: Water Temp: 19.5 °C Flow (from discharge measure  Samples Collected (check box January—December Monthly	μS/cm μS/cm Ο ι μS/cm Ο ι μs/cm O ι μs/cm o cfs
pH: 900 pH units EC: DO: 910 mg/L SC: DO: 890 % Salinity: Water Temp: 19.5 °C Flow (from discharge measure	μS/cm μS/cm Ο ι μS/cm Ο ι μs/cm O ι μs/cm o cfs
pH: 900 pH units EC: DO: 910 mg/L SC: DO: 89.0 % Salinity: Water Temp: 19.5 °C Flow (from discharge measure  Samples Collected (check box January—December Monthly Total Phosphorus , Total Nitro	μS/cm μS/cm Ο ι μS/cm Ο ι μs/cm O ι μs/cm o cfs
pH: 00 pH units EC: DO: 010 mg/L SC: DO: 89.0 % Salinity: Water Temp: 19.5 °C Flow (from discharge measure  Samples Collected (check box January—December Monthly	μS/cm μS/cm Ο · Lo ppt ement): 9 · 95 cfs () () () () () () () () () () () () ()
pH: 900 pH units EC: DO: 910 mg/L SC: DO: 89.0 % Salinity: Water Temp: 19.5 °C Flow (from discharge measure  Samples Collected (check box January—December Monthly Total Phosphorus , Total Nitro Nitrogen (unfiltered):	μS/cm μS/cm Ο · (σ) ppt ement):

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Vel	ocity Area M	ethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	3	0	4
2	4.5	1.4	-0.05
3	6.0	1.4	0.07
4	7.5	9.0	0.06
5	9.0	2.0	0.19
6	10.5	2.4	0.39
7	12.0	1.8	0.54
8	13.5	1.6	0.71
9	15.0	1.45	0.57
10	16.5	1.1	0.52
11	18.0	1.	0.66
12	19.5	0.9	0.44
13	21.0	0.8	0.40
14	22.5	0.8	0.17
15	24.0	0.8	0.02
16	26.0	0	$\Theta$
17			
18			
19			
20			

<b>Buoy</b> (Use only if velo	ant Object ocity area m		ossible)							
	Float 1 Float 2 Float 2									
Distance (ft)	J	,	/							
Float Time (sec)		/								
Float Ro	each Cross	Section (ft)								
	Upper Section	Middle Section	Lower Section							
Width	1.									
Depth 1	/									
Depth 2										
Depth 3	= -									
Depth 4										
Depth 5										

May—September: Algae Collection for Chlorophyll a
Reach Length (150 m if wetted width ≤ 10 m; 250 m
if wetted width > 10 m): \_\_\_\_\_

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	4
PVC Delimiter (Area=12.6cm <sup>2</sup> )	5
Syringe Scrubber (Area=5.3cm²)	a
Other (Area=	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	434
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	95

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Site: R2 Date: 9/11/19 Crew: KH, BJ, SP

- /9		Macroalgae	Presence/Abs	ence (P/A) aı	nd Water Depth	(mm/ft/in)		Photo (✓ when Taken)			
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	6.5	OA	20A	53A	53A	O,A	5	12	- 11	6	<b>V</b>
AB	4	HA	30A	50A	46A	OA					
В	5.5	OA	17A	38 A	43A	OA	9	8	17	6	
ВС	4.2	OA	35 A	52A	HIA	OA					
С	3.2	OA	DRY	40A	33A	OA	17	13	15	16	
CD	4.5	OA	(OP)	54A	33A	OA					
D	5.5	5A	10A	30A	(OP)	OA	17	12	10	14	
DE	7.0	OA	2A	31A	OA	OA				(	
Ε ,	7-5	OA	20 A	26A	24A	OA	17	9	17	17	
EF	10.0	OA	57A	ТОА	20A.	OA					
F	6.5	2A	64A	67A	64A	2A	17	4	5	3	/
FG	7	10A	75A	69A	83A	OA					
G	8.5	OA	64A	64A	28A	OA	5	4	10	0	
GH	8.5	OA	66A	81A	42A	(OP)					
Н	7	OA	25A	60 A	31A	OA	3	1 .	7	4	
н	7	OA	50A	49A	36A	AO					
	8.5	AO	OA	42A	5A	OA .	17	6	9	14	
IJ	5-5	0A	LIA.	28A	39A	OA					
J	7	3A	1919	32 A	29 A	OA	3	1	1	4	
JK	7	3A	15A	OA	22A	OA					
K	7	AG	4914	19A	12A	OA	4	8	8	5	~

5807 2010		1ct		charge Meas	surement (looking downstream		7		
Event ID (Month Year): SQPT 2019 Site ID: R3	Ve	elocity Area N			Buo	Buoyant Object Method (Use only if velocity area method not p			
Date/Time: 9919 1105 Crew Members: KH AW 59		Distance		Velocity	(Use only if vei	Float 1	Float 2	Float 3	
	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)	110011	Hourz	Hours	
Latitude/Longitude: 34.34584 - 119 - 29978	1	3 8	0	0	Float Time (sec)				
Flow (circle one): Flowing Ponded / Dry		-			Float R	each Cross	Section (ft	)	
Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	2	5.0	0.5	-0.07			Middle	Lower	
Wind Direction: Blowing (circle one) From / To	3	7	1-15	0-2	M — . —	Upper Section	Section	Section	
Photos (check): □ Upstream □ Downstream	4	8	1-0	1-17	Width				
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :	5	9	1-16	1.37	Depth 1				
uischarge comments, etc.) :	6	10	1-15	1.55	Depth 2				
7	7		0.8	1-67	Depth 3				
		11			Depth 4				
	8	12	0-65	1.68	Depth 5				
January—December Monthly In Situ Measurements:	9	13	0.30	1.77					
pH: 8.04 pH units EC: 945 μS/cm DO: 10.3 mg/L SC: 1.049μS/cm	10	14	0.50	0.43	May—September:				
DO: 10 - 5 mg/L Sc: 1, 0 4 4μs/cm DO: 15 - 1 % Salinity: 0 - 5 ppt	11	15	0.25	1.12	Reach Length (150 if wetted width > 10				
Water Town Q 9 oc	12	17	4	0		on Device		Quantity	
Flow (from discharge measurement): 634 cfs	13			- 0	(sum # trans		vice)	Quantity	
	14				Rubber Delimiter (A			3	
Samples Collected (check box)		1	12		PVC Delimiter (Area	-12 6cm <sup>2</sup> \		3	
January—December Monthly Water:	15							1	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16				Syringe Scrubber (A	rea=5.3cm	<sup>2</sup> )	5	
Nitrogen (unfiltered):	17			= 7	Other (Area=		)		
Dissolved Phosphorus and Nitrogen (field filtered):	18		10		Number of Transec	s Sampled	(0-11)	11	
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		477	
Chlorophyll a (filters—algae):	20				Chlorophyll <i>a</i> Volun	ne		100	
					(use GF/F filter, 25		ed volume)	122	

<b>Buoy</b> (Use only if velo	ant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Ro	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	m; 250 m
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	3
PVC Delimiter (Area=12.6cm²)	3
Syringe Scrubber (Area=5.3cm²)	5
Other (Area= )	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	477
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)
Site: R3 Date: 9999 Crew: KH AV

		Macroalgae	Presence/Abs	sence (P/A) ar	nd Water Depth	(mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	7 ,	60	(14P)	32A	20A	OA	2		3	0	/
AB	8-5	OA	19A	(23P)	2:0A	OA					
В	10	OA	25A	20A	8A	OA	3		8	2	
ВС	10	OA	24 A	20 A	18A	(OP)					
С	9	OA	21A	284	2814	OA	1	2	12	3	
CD	9.5	OA	(248)	46A	47A	(OP)					
D	7	5A	19A	33A	44A	OA		0	9	5	
DE	7	OA	26A	26A	34A	(00)				4	
E	6-5	(OP)	30A	5130-A	53A	OP	3	4	6	2	
EF	5	20 A	39A	3A	40A	OA					
F	4.5	6A	60	39A	(189)	OA	6	4	5	4	/
FG	4.7	2A	31A	42A	39A	IA					
G	7-1	OA	OA	10 A	HA	OA	17	17	17	17	
GH	3.5	OA	25 A	34A	30A	(OP)				,	
. н	4.25	IQA	25 A	16A	30A	OA	15	6	17	12	
н	5	(OP)	22A	21A	340)	OA					
1	6	OA	16A	33A	6A	AO	5	2	3	6	
IJ	6.5	OA	24A	(35P)	18A	OA					1
J	7	OA	13A	(33P)	(200)	(OP)	2	3	6		
JK	5	(BP)	26A	(88)	35A	OA					
K	7	(OP)	DRY	33A	ALI	OA	0	2	6	5	/

Event ID (Month Year):	SEPT 2019
Site ID:	RY
Date/Time:	0840
Crew Members: KH AW	59
Latitude/Longitude: 34-3799	7-119-30861
Flow (circle one): Flowing / Pond	ed / Dry
Wind Strength:	
Calmy Light Breeze / Moderate Breeze	/ Strong Breeze / Windy
Wind Direction: Blowing (circle on	e) From / To
Photos (check): Supstream	<b>□</b> Downstream
Notes (e.g. homeless, wildlife, hor	
discharge comments, etc.):	

0: 6.24 mg/L	sc: 1,015 µS/cm
	por citi
10: 67.9% S	alinity: 0 +5 ppt
Vater Temp: 19.5	1°C

trate + Nitrite as
Þ.
filtered):
gae:
<b>T</b> X

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	locity Area M	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	19.3	0.4	-0.06
2	21.0	0.6	0.32
3	23.0	0.3	0.37
4	25.0	0.2	0.72
5	27.0	0.2	0.28
6	29.0	0.4	1.22
7	31.0	0.3	0.76
8	33.0	0.35	1.21
9	35.0	0 35	0.72
10	37.0	0.40	0.46
11	39.0	0.40	0.73
12	41.0	0.50	0.99
13	43.0	0.40	0.82
14	45.0	0.20	0.97
15	47.0	0.20	0.47
16	49.0	0.20	-0.13
17	51.0	0.20	-0.11
18	540	0.20	0.21
19	56.0	0.20	0.27
20	58.0	D	0

<b>Buoy</b> (Use only if velo	rant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)		L - V	
Float Ro	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

	May—September: Algae Collection for Chlorophyll a
ı	Reach Length (150 m if wetted width ≤ 10 m; 250 m
	if wetted width > 10 m):

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	7
PVC Delimiter (Area=12.6cm²)	8
Syringe Scrubber (Area=5.3cm²)	4
Other (Area= )	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	432
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

		Macroalgae	Presence/Abs	ence (P/A) ai	nd Water Depth	(mm/ft/in)			eter (0-17) vered dots	E	Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	10-0	2P	20P	150	(204 A)	(A)	3	2		1	
АВ	10.75	OP	140	1819	16P	(A)					
В	7	- OP	(IOA)	(36A)	37P	(6A)	6	0	8	7	
ВС	11	(0A)	90	264	45P	0					
С	8.5	OP	100	27A	55P	(OA)	1	2	3	0	
CD	8	09	15p	(40A)	39R	OA					
D	7	(6A)	24P	710	36A)	OA)	12	9	11	17	
DE	3.8	209	23 P	OP	(46A)	(OA)					
E	6	OP.	120	220	80	OP	0		0	2	
EF	9	OP	158	(T6A)	199	18					
F	10.5	00	89	120	15P	(DA)	6	0	0	0	. /
FG	8.5	(2A)	88	69	140	OP					
G	8.5	100	26P	170	13P	OP	0	2	0	1	
GH	7.5	(8A)	200	129	(35A)	28					
Н	7.5	00	84	(16A)	120	op	0	0	0		
н	9.5	40	90	148	(NOA)	(OA)					
ı	6	09	35P	229	1810	90	0	0	0	0	
IJ	8	(6A)	268	26P	(AII)	08					
J	8	OP	DRY	68	23-9	2P	2	0	3		
JK	7	(6A)	189	(36A)	198	(A)					
K	6.5	(OA)	(24 A)	209	289	20	0	9	2	0	/

73/04

Event ID (Month Year):	SFPT 2019
Site ID:	SA
Date/Time: 9/9/19	1010
Crew Members: KH AW	,58
Latitude/Longitude: 34 380	81 -119-30735
Flow (circle one): Flowing ( Por	nded ) Dry
Wind Strength:	
Calm Light Breeze / Moderate Bree	ze / Strong Breeze / Windy
Wind Direction: Blowing (circle of	one) From / To
Photos (check):   Upstream	□ Downstream
Notes (e.g. homeless, wildlife, ho	orses, swimming/recreation,
discharge comments, etc.) :	
Dry above C	
Janvier fed	- nonded.
A-80	No algoe colored

January—December Monthly In Situ Measurements:
pH: 7 10 pH units EC: 89 μS/cm
DO: 1-55 mg/L SC: 1046 µS/cm
DO: 16-9 % Salinity: 5-5 ppt
Water Temp: 17-7 °C
Flow (from discharge measurement): 40.0 cfs
1

Samples Collected (check box)	
January—December Monthly Wate	r:
Total Phosphorus , Total Nitrogen, a	nd Nitrate + Nitrite as
Nitrogen (unfiltered):	<b>X</b>
Dissolved Phosphorus and Nitrogen	(field filtered):
May—September Dry Season Mont	hiy Algae:
Chlorophyll a (filters—algae):	MA

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	locity Area N	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	2.5		(0.01
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17		1	
18			
19			
20			

<b>Buoy</b> (Use only if velo	rant Object ocity area m		ossible)
	Float 1	Float	Float 3
Distance (ft)			
Float Time (sec)			
Float Re	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth/2			
Depth 3			
Depth 4			
Depth 5			

Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	m; 250 m
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	

Composite Volume (mL)

(use GF/F filter, 25 mL preferred volume)

Chlorophyll a Volume

May-September: Algae Collection for Chlorophyll a

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

sciicara inisci riigac	THIRE IT ALL DECET THE CASAL CHILDREN	Personal services	
Site:	Date:	Crew:	

		Macroalgae	Presence/Abs	and Water Depth	(mm/ft/in)		Photo (✓ when Taken)				
Transect Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream	
A											
AB											
В											
вс											
С											
CD											
D											
DE											
E											
EF											
F								1			
FG											
G											
GH											
Н											
НІ											
1											
IJ											
J											
JK											
K											

# **Ventura River Algae TMDL Event Details**

	Luck a
Event ID (Month Year): OCTOBER 2019	Date: 10/14/19
Crew Members: K.HAHS, L. MEEKER	
Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / (	
Event Type (check):    ©Dry (<0.1" rain per day for the preceding	• •
□ Wet (days with ≥0.1" rain and the three d	ays following)
Notes:	
Beckman 410 # 130244875 1300	240875
ODSERVATION SITES (OUTER TO COM	
OBSERVATION SITES (RIVER FLOW) W.B. CAREY	19/17/19
Ventura River at Highway 150 (Baldwin Road) Flow Status: Dry / Ponded (Flowing (Estimated Flow: 1.5 cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Santa Ana Blvd Flow Status (Dry) Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Casitas Vista Road Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstreem / Downstream
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Notes: UNSAMPLED TMDL SITES	Photos Taken: Upstream / Downstream
Notes: cfs)	Photos Taken: Upstream / Downstream
Notes:cfs)	Photos Taken: Upstream / Downstream
Notes: cfs)	Photos Taken: Upstream / Downstream
Notes:cfs)	Photos Taken: Upstream / Downstream  Photos Taken: Upstream / Downstream
Notes:cfs)	Photos Taken: Upstream / Downstream  Photos Taken: Upstream / Downstream
Notes:cfs)	Photos Taken: Upstream / Downstream  Photos Taken: Upstream / Downstream
Notes:cfs)  Notes:cfs)  Notes:cfs)  Notes:cfs)  Notes:cfs)  Notes:cfs)  Ime:cfs)  Ime:cfs)	Photos Taken: Upstream / Downstream  Photos Taken: Upstream / Downstream  Photos Taken: Upstream / Downstream
Additional Observation Site:  Flow Status: Dry / Ponded / Flowing (Estimated Flow:cfs)  Notes:  JNSAMPLED TMDL SITES  ite ID:	Photos Taken: Upstream / Downstream  Photos Taken: Upstream / Downstream  Photos Taken: Upstream / Downstream

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 1

# Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est  Event ID (Month Year): 07 2019 Dat  Crew Members: 44 LM	te/Time: 10/14/19 1515
	Circle one): Open Restricted / Closed  Tide: Time of High Tide:  Wind Wind Direction: Blowing From To
Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)  Nonthly (Jan—Dec):  H: 4 2 pH units 8 EC: 155 4 μS/cm Water Temp: 100 μS/cm  O: 100 μS/cm 2005  Salinity: 100 ppt 100 3	Water Samples Collected (check box)  [Collect at Floating Macroalgae Quadrat 1, Transect 1]  Monthly Water (Jan—Dec):  Nitrogen, total and dissolved:
	Phosphorus, total and dissolved:

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): 2019		1301	Wiedsurchiene – leit bank (looking deutstallen)							
Site ID:	Ve	locity Area N	lethod (pref	erred)	Buoyant Object Method (Use only if velocity area method not possible)					
Date/Time: 10/14/19 1330		Distance		Velocity		Float 1	Float 2	Float 3		
Crew Members: KH LM	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)					
Latitude/Longitude: 34 28 194 - 119 - 30 906	1	5	50	6	Float Time (sec)					
Flow (circle one): Flowing / Ponded / Dry	-	3			Float R	each Cross	Section (ft)			
Wind Strength:	2	1	0.25	-0.07		Upper	Middle	Lower		
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	3	9	125	0.18		Section	Section	Section		
Wind Direction: Blowing (circle one) From / To  Photos (check): Dupstream Downstream	4	11	1.2	0.37	Width	/				
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	13		0.48	Depth 1	/				
discharge comments, etc.) :				100	Depth 2					
	6	15	1.2	0.51	Depth/3					
	7	17	0.1	0.43	Depth 4					
	8	19	1.3	0.40	Depth 5					
January—December Monthly In Situ Measurements:	9	71	7.1	0.55						
pH: <u>4 40</u> pH units EC: 1143 μS/cm	10	73	don		May—September: Reach Length (150					
DO:mg/L SC:3.55 μS/cm	11	25	0.5	0.3	if wetted width > 1					
DO:	12	26,6	0	0	Collect	ion Device	/	Quantity		
Flow (from discharge measurement): 8 6 cfs	-	20,0		C	(sum # trans					
	13	-			Rubber Delimiter (	Area=12.60	m²)			
	14				PVC Delimiter (Are	a=12.6cm <sup>2</sup>				
Samples Collected (check box)	15					1				
January—December Monthly Water:	16				Syringe Scrubber (	Area=5.3cm	1")			
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):	17				Other (Area=		)			
Dissolved Phosphorus and Nitrogen (field filtered):	-				Number of Transec	ts Sample	l (0-11)			
( ÷ )	18				Composite Volume	(mL)				
May—September Dry Season Monthly Algae:	19							N. Comment		
Chlorophyll <i>a</i> (filters—algae):		-	-	-	Chlorophyll a Volu			1/1/		

# Ventura River Algae TMDL: River Site Field Data Sheet (Reaches 1—4)

					ischarge Measuremen					
Event ID (Month Year): OCT 2019 Site ID: 22					ent = left bank (looking downstream)  Buoyant Object Method  (Use only if velocity area method not possible)					
Date/Time: 10/14/19 12/10	Ve	elocity Area N	lethod (pref	erred)						
Crew Members: KH LM		Distance		Velocity		Float 1	Float 2	Float 3		
14.2201 = 116 t==0.5	No.	from Left	Depth (ft)	(ft/sec)	Distance (ft)		/			
Latitude/Longitude: 34. 33937 - 119. 29725		Bank (ft)			Float Time (sec)	1	1			
Flow (circle one): Flowing / Ponded / Dry Wind Strength:	1	3.10	0	0	Float Reach Cross Section (ft)					
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	2	45.0	60.	-0.03		Upper /	Middle	Lower		
Wind Direction: Blowing (circle one) From / To	3	7	80	0.01		Section	Section	Section		
Photos (check): Upstream Downstream	4	9		-	Width	/				
Notes (e.g. homeless, wildlife, horses, swimming/recreation,			80	0.21	Depth 1	/				
discharge comments, etc.) :	5	111	1.0	0.41	Depth 2					
	6	13	LO	0.42	Depth 3					
	7	15	15	0.22	Depth 4					
	8	11	18	A-64	Depth 5					
January—December Monthly In Situ Measurements:	9/	719	-21	0.45						
pH: <u>98.3</u> pH units EC: <u>1017</u> μS/cm	10	7			May—September: /			7		
DO: <u>10.04</u> mg/L SC: <u>16/</u> μS/cm	1	2	19	0.77	Reach Length (150 r if wetted width > 10			m, 250 m		
DO: <u>101.6</u> % Salinity: <u>0 6</u> ppt	11	719	2.1	0.24	ii wetted widtii > 10	m);	/			
Water Temp: 125 °C	12	217	18	0.54		on Device	./	Quantity		
Flow (from discharge measurement): 6.68 cfs	13	23	年1.4	0.59	(sum # transe	/				
	14	25	1.8	0.0	Rubber Delimiter (A		1")			
Samples Collected (check box)	15	27	0	3	PVC Delimiter (Area	=1/2.6cm <sup>2</sup> )		10		
January—December Monthly Water:	16	6. 1			Syringe Scrubber (A	ea=5.3cm <sup>2</sup>	)			
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):	-			100	Other (Area=		)			
Dissolved Phosphorus and Nitrogen (field filtered):	17				Number of Transect	Sampled (	0-11)			
	18			4	Composite Volume (					
May—September Dry Season Monthly Algae:	19				Chiorophyli a Volum					
Chlorophyll <i>a</i> (filters—algae):	20				(use GF/F filter, 25 n		d volume)			

## Ventura River Algae TMDL: River Site Field Data Sheet (Reaches 1—4)

17

18

19

20

#### Event ID (Month Year): Site ID: **Velocity Area Method (preferred)** Date/Time: 10/14/19 1040 Distance Crew Members: \_\_ KH LM Depth (ft) from Left No. Bank (ft) Latitude/Longitude: 34.34536 3.2 Flow (circle one): Flowing / Ponded / Dry 1 Wind Strength: U 2 Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy 10 Wind Direction: Blowing (circle one) From / To 3 Photos (check): Dupstream Downstream 10 Notes (e.g. homeless, wildlife, horses, swimming/recreation, 5 discharge comments, etc.) :\_\_\_ 7 9 January—December Monthly In Situ Measurements: pH: 8, 27 pH units EC: 865 μS/cm 10 SC: 1043 μS/cm DO: 9.46 mg/L 11 DO: 96.2 % Salinity: 0.5 ppt Water Temp: 16.0°C 12 Flow (from discharge measurement): 12 41 cfs 13 14 Samples Collected (check box) 15 January—December Monthly Water: 16

Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as

Dissolved Phosphorus and Nitrogen (field filtered):

May—September Dry Season Monthly Algae:

Nitrogen (unfiltered):

Chlorophyll a (filters—algae):

<b>Buoy</b> (Use only if velo	ant Object		ossible)
	Float 1	Float 2	Float 3
Distance (ft)		/	
Float Time (sec)		/	
Float Re	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			-
Depth 4			
Depth 5			

**Discharge Measurement** 1st Measurement = left bank (looking downstream)

Velocity

(ft/sec)

-0.04

1.18

,46

.58

25

١	Depth 3	- 44		
I	Depth 4	-10		
	Depth 5			
^	May—September: Alga	e Collection	for Chlo	rophyll a
	Reach Length (150 m if			
if	f wetted width > 10 m)			_
V	Collection I	Device	/	Quantity
	(sum # transects	per Device)		
F	Rubber Delimiter (Area	=12.6cm <sup>2</sup> )		
F	PVC Delimiter (Area=12	2.6cm <sup>2</sup> )		
5	Syringe Scrubber (Area:	=5.3cm <sup>2</sup> )		
0	Other (Area=	)		
ľ	Number of Transects Sa	ampled (0-1	1)	
0	Composite Volume (ml	-)		
	Chlorophyll a Volume use GF/F filter, 25 mL	preferred vo	lume)	

# Ventura River Algae TMDL: <u>River Site Field Data Sheet</u> (Reaches 1—4)

Event ID (Month Year): 0 2019			<b>1</b> s		ent = left bank (looking		ım)	
Site ID: RY Date/Time: 10/14/19 0910	Ve	elocity Area N	/lethod (pref	erred)	<b>Buo</b> v (Use only if ve	/ant Object ocity area m		ossible)
Crew Members: KH	No.	Distance from Left	Donath (ft)	Velocity		Float 1	Float 2	Float 3
24.27097 210.220/1	NO.	Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)			
Latitude/Longitude: 34.37997 -119.30861				, ,	Float Time (sec)		/	
Flow (circle one): Flowing / Ponded / Dry Wind Strength:	1	4.0	0.0	Ø	Float R	each Cross	Section (ft	)
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	2	6.0	0.4	0.07	F	Upper /	Middle	Lower
Wind Direction: Blowing (circle one) From / To	3	8.0	0.4	0.73		Section	Section	Section
Photos (check): Downstream	4	15	0,2	0.9	Width	/		
Notes (e.g. homeless, wildlife, horses, swimming/recreation,		_			Depth 1	/		
discharge comments, etc.) :	5	12	0.35	00	Depth 2			
	6	14	0.4	1.16	Depth 3			
	7	16	6.3	-6.09	Depth 4			
	8	18	0.3	0.74	Depth 5	1		
January—December Monthly In Situ Measurements:	9	20	MU	0,56				
pH: $7.40$ pH units EC: $856$ $\mu$ S/cm	10	7.2	04	0.65	May—September: Reach Length (150			
DO: <u>69.3</u> mg/t) SC: <u>986</u> μS/cm DO: <u>6.54</u> % Salinity: <u>0.5</u> ppt	11	74	0.35	0.48	if wetted width > 10			7111, 250 M
Water Temp: 18, °C	12	76	0.30	0.80	Collecti	on Device		Quantity
Flow (from discharge measurement): 517 cfs	13	28	0.25	_	(sum # transe	ects per De	vice)	
	14			0.34	Rubber Delimiter (A	rea=12.6cm	n²)	
Samples Collected (check box)	-	30	0.4	0.74	PVC Delimiter (Area	=12.6cm²)	(4)	
January—December Monthly Water:	15	32	0.3	6.28	Syringe Scrubber (A	rea=5.3cm²	)	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16	34	0.2 .	-0.12	Other (Area=		)	
Nitrogen (unfiltered):	17	37.3	0.15	0.31	Number of Transect	c Campled	(0.11)	
Dissolved Phosphorus and Nitrogen (field filtered):	18	42.5	0	0	1		(O-TT)	
May—September Dry Season Monthly Algae:	19				Composite Volume			
Chlorophyll <i>a</i> (filters—algae): □	20				Chlorophyll <i>a</i> Volum (use GF/F filter, 25 r		d volume)	-

# Ventura River Algae TMDL: <u>River Site Field Data Sheet</u> (Reaches 1—4)

Discharge	Measurement
nent = left	hank (looking d

Event ID (Month Year): Oct 2019			1st	Measuremer	nt = left bank (looking	downstrea	ım)	
Site ID: San Antonio SA	Ve	locity Area M	lethod (pref	erred)	<b>Buoy</b> (Use only if velo	ant Object		ossible)
Date/Time: 10-14-19 1000 Crew Members: LM KH		Distance		Velocity		Float 1	Float 2	Float 3
	No.	from Left	Depth (ft)	(ft/sec)	Distance (ft)			/
Latitude/Longitude: 34.38081 - 119-30735		Bank (ft)	-		Float Time (sec)			
Flow (circle one): Flowing / Ponded / Dry	1				Float R	each Cross	Section (ft)	
Wind Strength:	2					Upper	Middle	Lower
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3			/	•	Section	Section	Section
Photos (check): Downstream			1		Width	/		
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	4		1		Depth 1	1		
discharge comments, etc.) :	5				Depth 2	1		
	6				Depth 3			
	7		1		-			
· · · · · · · · · · · · · · · · · · ·	-		-		Depth 4			
	8				Depth 5			
January—December Monthly In Situ Measurements:	9		/		May-September:	Algae Colle	ection for C	hlorophyll
pH: 7.23 pH units EC: 812 μS/cm	10				Reach Length (150			
DO: 1-39 mg/L SC: 1019 µS/cm	- 44	1	f		if wetted width > 10			1
DO: 13-7 % Salinity: 0-5 ppt	11	1						Quantity
Water Temp: 14-4 °C	12				(sum # trans	on Device	vice)	Quantity
Flow (from discharge measurement): 4000 cfs	13	1				_	*	
	14	1			Rubber Delimiter (A	Area=12.60	m)	
		1			PVC Delimiter (Area	a=12.6cm <sup>2</sup> )	/	
Samples Collected (check box)	15	/			Syringe Scrubber (A	rea=5.3cm	( <sup>2</sup> )	
January—December Monthly Water:	16				Other (Area=	-/		
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):	17	1				/		
Dissolved Phosphorus and Nitrogen (field filtered):		1			Number of Transec	ts Sampleo	l (0-11)	
Sisserial and sing sing sing sing sing sing sing sing	18				Composite Volume	(mL)		
May—September Dry Season Monthly Algae:	19 /				Chlorophyll a Volum	me		
Chlorophyll a (filters—algae): □	20	12			(use GF/F filter, 25		ا مطیامانی ام	

# **Ventura River Algae TMDL Event Details**

EVENT DETAILS	1.01
Event ID (Month Year): NOVEMBER 2019	Date: 11/6/19
Crew Members: K. HAHS, L. MEEKER	
Weather (circle) Clear / Partly Cloudy / Overcast / Showers / Rain / O	
Event Type (check): Dry (<0.1" rain per day for the preceding t	hree days)
Wet (days with ≥0.1" rain and the three da   Notes : YSI 85 # 16341139 630 6379     Bertum 410 # 110341139	ys following)
OBSERVATION SITES (RIVER FLOW) W.B. (AREY	
Ventura River at Highway 150 (Baldwin Road) Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Santa Ana Blvd Flow Status Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Casitas Vista Road Flow Status: Dry / Ponded Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
Additional Observation Site: cfs) Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
UNSAMPLED TMDL SITES	
Site ID: Time: o830  Flow Status : Ory/ Ponded / Flowing (Estimated Flow: cfs)  Reason not sampled (if flowing): Notes:	Photos Taken: Upstream / Downstream
Site ID: Time: cfs)  Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)  Reason not sampled (if flowing): Notes:	
Notes:	
Site ID: Time: cfs) Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Reason not sampled (if flowing): Notes:	
Site ID: Time: cfs) Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs) Reason not sampled (if flowing):	Photos Taken: Upstream / Downstream
Notes:	

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 1

Site ID: TMDL-Est	
Event ID (Month Year): NOV 2019	Date/Time:
Crew Members: KH	
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle one): Open Restricted / Closed
Direction of Tide: Ebb / Flood / Slack / N/A	Time of Low Tide: 1214 Time of High Tide: 17:37
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze /	Windy / Strong Wind Wind Direction: Blowing From / To
Notes (e.g. homeless, wildlife, dogs, swimming/recreation):	
In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transe	water Samples Collected (check box)
Monthly (Jan—Dec):	[Collect at Floating Macroalgae Quadrat 1, Transect 1]
9111	le d
pH:pH units EC:uS/cm Water Temp:	O Monthly Water (Jan—Dec):
pH: <u>8 41</u> pH units EC: <u>12 10</u> μS/cm Water Temp: DO: <u>13 - 36</u> mg/L SC: <u>12 90</u> μS/cm	
	Monthly Water (Jan—Dec):  Nitrogen, total and dissolved:  Phosphorus, total and dissolved:

Photos: Coceanward Landward	
Sample Latitude: 34.2753	
Sample Longitude - 119-30-76	

Francis (March Variety Movi 2 a.1.9)		1st		nt = left bank	urement (looking downstream)	)		
Event ID (Month Year): NOV 2019  Site ID: 81  Date/Time: 11/6/19 1345	V€	elocity Area M				ant Object		assible) (
Date/Time:	V.	Distance		Velocity	(Use only it ver	Float 1	Float 2	Float 3
Crew Members:	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)			
Latitude/Longitude: 34 28194 -119 35906	1	24.5		$\cap$	Float Time (sec)			
Flow (circle one): Flowing / Ponded / Dry	_				Float R	each Cross	Section (ft)	
Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	2	23	0,4	0 08		Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To	3	21	1.3	0.23		Section	Section	Section
Photos (check): >Upstream	4	7/9	1.0	0.39	Width			
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	17	1211		Depth 1			
discharge comments, etc.): worker	6	15	1.3	0.53	Depth 2			
	7		1.4		Depth 3			
		13		0.46	Depth 4			
	8	[ ]	1.25	0.36	Depth 5			
January—December Monthly In Situ Measurements:	9	9	1, 1,	6.39				
pH: <u>%· Z4</u> pH units EC: <u>1086</u> μS/cm	10 /	75.5	0.4	0.29	May—September:			/
DO: 10.02 mg/L SC: 13.39 μS/cm DO: 3100 3 Salinity: 0.7 ppt	11	3.8	0	0	Reach Length (150 if wetted width > 10		J.	J∕m; 250 m
Water Temp: 15.1 °C	12				Collecti	ion Device	1	Quantity
Flow (from discharge measurement): 7.04cfs	13	7.5	10	0.21	(sum # trans		vice)	- Quarter
	14		.5 di		Rubber Delimiter (A		n²)	
Samples Collected (check box)	15	0.3-1	1.3 01	Ü	PVC Delimiter (Area	=12.6cm²)		
January—December Monthly Water:		-			Syringe Scrubber (A	rea=5.3cm	2)	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,	
Nitrogen (unfiltered):	17				Other (Area=		)	
Dissolved Phosphorus and Nitrogen (field filtered): 🚭	18				Number of Transec	ts Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		
Chlorophyll <i>a</i> (filters—algae):	20				Chlorophyll a Volun			
					(use GF/F filter, 25	mL preferre	ed volume)	1

## Ventura River Algae TMDL: River Site Field Data Sheet (Reaches 1—4)

Event ID (Month Year): NOV 2019			<b>1</b> st		ischarge Measuremen ent = left bank (looking		ım)	
Site ID:	Ve	locity Area N	lethod (pref	erred)	<b>Buoy</b> (Use only if vel	ant Object		ossible)
Crew Members:		Distance		I		Float 1	Float 2	Float 3
Crew Members:	No.	from Left	Depth (ft)	Velocity (ft/sec)	Distance (ft)			
Latitude/Longitude: 34.33937 - 119-29725		Bank (ft)		(rt/set)	Float Time (sec)			
Flow (circle one): Flowing / Ponded / Dry	1	5.1	0	Ô		aach Cross	Section (ft)	
Wind Strength:	2	6.0	75	-0.02	Float N		/	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy		1				Upper Section	Middle Section	Lower Section
Wind Direction: Blowing (circle one) From / To Photos (check): \(\time\)Upstream \(\time\)Downstream	3	8.0	800	0.09	Width	/	000000	50000
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	4	10.0	0.8	0.46		1		-
discharge comments, etc.) :	5	120	1.7	0.41	Depth 1	1	-	
	6				Depth 2			
	-	14.0	1,2	0.52	Depth 3			
	7	16	1.2	0.6	Depth 4			
	8	18	1.6	0.44	Depth 5			
January—December Monthly In Situ Measurements:	9	20	2.2	6.28	May Cantambay	Al-es Calla	ation for Cl	alazaabudi.
pH: 8 13 pH units EC: 960 μS/cm	10	22	7.0	0.66	May—September: Reach Length (150			
DO: 10.56mg/L SC: 11.5 μS/cm	11		1.4	0.07	if wetted width > 10			/
DO: 111.4 % Salinity: 0.6 ppt		24	1		Collecti	on Device	-/	Quantity
Water Temp:	12	26	1.2	-0.05	(sum # trans		vice)	Quantity
riow (from discharge measurement) cis	13	27.5	0	0	Rubber Delimiter (A		-1	-
	14		THE L		PVC Delimiter (Area		/	
Samples Collected (check box)	15						/	
January—December Monthly Water:	16	1			Syringe Scrubber (A	rea=5.3cm	<sup>2</sup> )	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	10				Other (Area=	/	)	
Nitrogen (unfiltered):	17				Number of Transec	ts Sampled	(0-11)	
Dissolved Phosphorus and Nitrogen (field filtered): 💢	18					<del>/</del>	(0 11)	
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		
Chlorophyll <i>a</i> (filters—algae):	20		V		Chlorophyll a Volun			
					(use GF/F filter, 25	mL preterre	ed volume)	

# Ventura River Algae TMDL: River Site Field Data Sheet (Reaches 1—4)

Event ID (Month Year): NOV 2019		- 7	<b>1</b> st		scharge Measuremen nt = left bank (looking		ım)	
Site ID: R3	Ve	locity Area M	lethod (pref	erred)	<b>Buoy</b> (Use only if vel	vant Object		osșible)
Date/Time: 11/6/19 11/0 Crew Members: KALM		Distance				Float 1	Float 2/	Float 3
Crew Weimbers:	No.	from Left	Depth (ft)	Velocity (ft/sec)	Distance (ft)			
Latitude/Longitude: 34-34536 -119-2992.7		Bank (ft)		(ity see)	Float Time (sec)			
Flow (cirde one): Flowing / Ponded / Dry	1	4.0	0	0	Float R	each Cross	Section (ft)	
Wind Strength:	2	50	0.6	-0.01		Upper /	Middle	Lower
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3	- A	1.0		1	Section	Section	Section
Photos (check): Department Downstream	_	6.0		0.34	Width	/		1001
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	4	1.0	1.0	1.43	Depth 1	1		
discharge comments, etc.) :	5	8.0	0.9	1.15	Depth 2	1		
	6	90	0.9	0.92	Depth 3			
-	7	10	0.7	1.40	Depth/4			
	8	111	0.5	117	Depth 5			
V - V - S - S - V - W - W - W - W - W - W - W - W - W	9	12-5	0.3	1.47	9			
<u>January—December Monthly In Situ Measurements:</u> pH: <u>8.07</u> pH units EC: <u>252</u> μS/cm			1		May—September:			
DO: 10 7 mg/L SC: 10 3 4 μS/cm	10	15	0 15	0.51	Reach Length (150			m; 250 m
DO: 107.5 % Salinity: 0.5 ppt	11	15.4	0	0	if wetted width > 10	J 111).		
Water Temp: \5 · 8 °C	12					ion Device	1	Quantity
Flow (from discharge measurement): 6-3 cfs	13				(sum # trans		. /	
	14				Rubber Delimiter (A	\rea=12.6ci	m²)/	
					PVC Delimiter (Area	a=12.6cm <sup>2</sup> /		
Samples Collected (check box) January—December Monthly Water:	15				Syringe Scrubber (A	rea=5.3cm	<sup>2</sup> )	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16		1		Other (Area=	/	)	
Nitrogen (unfiltered):	17			1			(0.44)	
Dissolved Phosphorus and Nitrogen (field filtered): 뉰	18				Number of Transec		(U-11)	
					Composite Volume	(mL)		
May—September Dry Season Monthly Algae:	19			/	Chlorophyll a Volur			
Chlorophyll a (filters—algae):	20	-			(use GF/F filter, 25	mL preferre	ed volume)	

Event ID (Month Year):	NOV 2019
Site ID: R4	
Date/Time: 11/6/19	0900
Crew Members: KH L/	W -
Latitude/Longitude: 34-379	197 -119-30861
Flow (circle one): Flowing/ Po	
	The state of the s
Wind Strength:	
Wind Strength: Calm / Light Breeze / Moderate Bree	eze / Strong Breeze / Windy
Calm Light Breeze / Moderate Bree	one) From / To
Calm Light Breeze / Moderate Bree Wind Direction: Blowing (circle	one) From / To
Wind Direction: Blowing (circle Photos (check): \( \text{Discrete} \text{Upstream} \)	one) From / To
Wind Direction: Blowing (circle of Photos (check): A Upstream Notes (e.g. homeless, wildlife, h	one) From / To
Wind Direction: Blowing (circle of Photos (check): A Upstream Notes (e.g. homeless, wildlife, h	one) From / To
Wind Direction: Blowing (circle of Photos (check): A Upstream Notes (e.g. homeless, wildlife, h	one) From / To

	Measurements:
pH: pH units EC:	μS/cm
DO: 7.47 mg/L SC: 919	μS/cm
DO: <u>97.0</u> % Salinity: <u>0.5</u>	ppt
Water Temp: <u>18.0</u> ℃	1, 0
Flow (from discharge measurement)	): <u>7 · 5</u> cfs

Samples Collected (check box)	
Total Phosphorus , Total Nitrogen, and Nitrate + Ni Nitrogen (unfiltered):	itrite as
Dissolved Phosphorus and Nitrogen (field filtered):	9
Chlorophyll <i>a</i> (filters—algae):	

Discharge Measurement
1st Measurement = left bank (looking downstream)

Velocity Area Method (preferred)								
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)					
1	4.0	0	0					
2	5.0	0.4	0.16					
3	7.0	0.2	0.6					
4	9.0	0.15	0.67					
5	11.0	0.2	0.78					
6	13	0.2	0.81					
7	15	0.25	0.93					
8	17	0.20	0,42					
9	19	0-3	0.73					
10	21	0.3	0-35					
11	23	P:0	0-97					
12	25	0.2	0-81					
13	27	0.4	0-48					
14	29	0-2	0-65					
15	31	0-15	0.13					
16	34	0	0					
17								
18								
19								
20	-							

Buoy (Use only if vel	ant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)		/	
Float Time (sec)		/	
Float R	each Cross	Section (ft	)
	Upper Section	Middle Section	Lower Section
Width	/		
Depth 1			
Depth 2			
Depth 3			
Depth 4			
/Depth 5			

tion for Chlorophyll  Reach Length (150 m if wetted width $\leq$ 10 m; 250 m if wetted width > 10 m):					
Collection Device (sum # transects per Device)	Quantity				
Rubber Delimiter (Area=12.6cm²)					
PVC Delimiter (Area=12.6cm²)					
Syringe Scrubber (Area 5.3cm²)					
Other (Area= )					
Number of Transects Sampled (0-11)					
Composite Volume (mL)					
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)					

# Ventura River Algae TMDL: River Site

	Discharge Measurement  1st Measurement = left bank (looking downstream)							
Event ID (Month Year): Nov 2019			1st	Measureme	nt = left bank (looking	downstrea	im)	
Site ID: SA O930 Date/Time: \	Velocity Area Method (preferred)				Buoyant Object Method (Use only if velocity area method not possible)			
Date/Time: 11/6/19	-	1			(Ose only if ver			
Crew Members: KH LM		Distance	D 41- (61)	Velocity		Float 1	Float 2	Float 3
al appel	No.	from Left	Depth (ft)	(ft/sec)	Distance (ft)			
Latitude/Longitude: 34 3808 -119 - 30 735		Bank (ft)			Float Time (sec)			
Flow (circle one): Flowing (Ponded) Dry	1			Float R	each Cross	Section (ft)		
Wind Strength:	2					Upper	Middle	Lower
Calm Light Breeze / Moderate Breeze / Strong Breeze / Windy		-		/		Section	Section	Section
Wind Direction: Blowing (circle one) From / To  Photos (check): Downstream  Downstream	3				Width	1		
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	4		/			-		
discharge comments, etc.): Swing Red No Man	5		1		Depth 1	/		
whe pand.	-	-	-		Depth 2	1		
	6				Depth 3	7		
	7				Depth 4			
	8		/		Depth 5			
			/					
Measurements:	9	-	/				tion for C	hlorophyll
pH: <u>7-22</u> pH units EC: <u>723</u> μS/cm	10	/			Reach Length (150	m if wette	d width ≤ 1	0 m; 250 m
DO: <u>2-06</u> mg/L SC: <u>1007</u> μS/cm	11				if wetted width > 10	0 m):	,	
DO: 19-7 % Salinity: 0-5 ppt		-			Collecti	on Device	/	Quantity
Water Temp: 13.7 °C	12				(sum # trans		vicel	Quantity
Flow (from discharge measurement): <a>©</a> cfs	13				Rubber Delimiter (A			+
	14							
	_	1			PVC Delimiter (Area=12.6cm <sup>2</sup> )			
Samples Collected (check box)	15	/			Syringe Scrubber (A	rea=5.3cm	<sup>2</sup> )	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16	/			Other (Area=/		``	
Nitrogen (unfiltered):  प्र	17 /	1			Other (Area)			
Dissolved Phosphorus and Nitrogen (field filtered):	18/				Number of Transec	ts Sampled	(0-11)	
, , , , ,	-				Composite Volume	(mL)		
Chlorophyll <i>a</i> (filters—algae):	19 20				Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)			

# **Ventura River Algae TMDL Event Details**

EVENT DETAILS	
Event ID (Month Year): DECEMBER 2019	Date: 12/19/19
Crew Members: A. WALLENGREN B. TONS 5 PALAS	K
Weather (circle) Clear Partly Cloudy / Overcast / Showers / Rain / O	Other
Event Type (check): Dry (<0.1" rain per day for the preceding t	hree days)
□ Wet (days with ≥0.1" rain and the three days	ays following)
Notes :	
OBSERVATION SITES (RIVER FLOW)	1 WBC
	1 1000
Ventura River at Highway 150 (Baldwin Road) Flow Status: Dry / Ponded / Flowing (Estimated Flow: 13 cfs)	Photos Tologo Hasters of Co.
Notes:	Photos Taken: Opstream / Downstream
Ventura River at Santa Ana Blvd	
Flow Status: Dry / Ponded Flowing (Estimated Flow: 3 cfs)	Photos Taken: Upstream / Downstream
Notes:	
Montage Birgs at Carlo Mr. B. d	
Ventura River at Casitas Vista Road  Flow Status: Dry / Ponder / Flowing (Estimated Flow: cfs)	Photos Tolono Harley (2)
Notes: No faw west box.	Photos Taken: Upstream / Downstream
	22
Additional Observation Site:	
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Notes:	
JNSAMPLED TMDL SITES	
iite ID: Time:	Shate 7.1
Flow Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Reason not sampled (if flowing):	
lotes:	
ite ID: Time: cfs)  low Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Reason not sampled (if flowing):	
lotes:	
ite ID: Time:	Photos Taken: Upstream / Downstream
low Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	
eason not sampled (if flowing):lotes:	
	-
ite ID: Time:	Photos Taken: Upstream / Downstream
low Status: Dry / Ponded / Flowing (Estimated Flow: cfs)	
eason not sampled (if flowing):	
otes:	

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 1

#### Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est Event ID (Month Year):	Date/Time: 12/19/19 13:01
Crew Members: SP 9 W	
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle one): Open / Restricted / Closed
Direction of Tide: Ebb / Flood / Slack / N/A	Time of Low Tide: 10.13 am Time of High Tide: 15.30
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze	
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): Sea 901	

In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)  Monthly (Jan—Dec):  pH:					
Photos:   Oceanward   Landward					
Sample Latitude: 34° 16' 31.3'	34 27536				
Sample Longitude 1/9°19, 27.01	-119.30750				

[Collect at Floating Macroalgae Quadrat 1, Transect 1]  Monthly Water (Jan—Dec):  Nitrogen, total and dissolved:  Phosphorus, total and dissolved:  Nitrate + Nitrite as Nitrogen:	Water Samples Collected (check	
Nitrogen, total and dissolved:	[Collect at Floating Macroalgae C	uadrat 1, Transect 1]
Phosphorus, total and dissolved:	Monthly Water (Jan—Dec):	
,	Nitrogen, total and dissolved:	
Nitrate + Nitrite as Nitrogen:	Phosphorus, total and dissolved:	×
	Nitrate + Nitrite as Nitrogen:	val

#### Discharge Measurement

Event ID (Month Year): 12 10	1st Measurement = left bank (looking downstream)								
Site ID: TMDI - CI-	Ve	Velocity Area Method (preferred)			Buoyant Object Method (Use only if velocity area method not possible)				
Date/Time: 2 9 9 5 5 5 Crew Members:		Distance	cm	Velocity		Float 1	Float 2	Float 3	
34.342083 -119.28659	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)				
Latitude/Longitude:	1		10	D	Float Time (sec)		1		
Flow (circle one): Flowing / Ponded / Dry Wind Strength:		0 2	2.	N N 2	Float R	Float Reach Cross Section (ft)			
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	2	0.2	13	0.03		Upper	Middle	Lower	
Wind Direction: Blowing (circle one) From / To	3	10.4	5	0.153		Section	Section	Section	
Photos (check): d Upstream d Downstream	4	10.7	4	-0.014	Width				
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	0.9	U	0.01	Depth 1				
discharge comments, etc.) :	6		Ty -		Depth 2				
CATTONIA TERCET	-	161		0.010	Depth 3				
	7	1.3	2	8	Depth 4				
	8				Depth 5				
January—December Monthly In Situ Measurements:	9	-26				13 2 10 10 10			
pH:pH units EC:μS/cm	10			45-1	May—September:			/	
DO:mg/L SC:μS/cm	11				Reach Length (150 if wetted width > 1		and the second second	J m; 250 m	
DO:% Salinity: $\frac{7 \cdot 39}{2}$ ppt	- 41	/		-				V	
Water Temp:°C Flow (from discharge measurement): 0-65 cfs	12	1						Quantity	
Flow (Horn discharge measurement).	13				(sum # transects per Device)				
	14				Rubber Delimiter (A	Arèa=12.6c	m²) /		
Samples Collected (check box)	15			4	PVC Delimiter (Area	a=12.6cm <sup>2</sup> )			
January—December Monthly Water:	16				Syringe Scrubber (A	rea=5.3cm	2)		
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as					Other (Area=	/			
Nitrogen (unfiltered):  Dissolved Phosphorus and Nitrogen (field filtered):	17				Number of Transects Sampled (0-11)				
Dissolved Phosphorus and Nitrogen (field flittered):	18					/	(0-11)		
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)			
Chlorophyll a (filters—algae):	20				Chlorophyll a Volur		•		
		-			(use GF/F filter, 25	mL preferr	ed volume)		

Event ID (Month Year): 1219		1st	Measuremen	nt = left bank	(looking downstream)
Site ID: TMDL - R 1		locity Area N	Buo		
Date/Time: 12 19 11 15 15 15 15 15 15 15 15 15 15 15 15	No.	Distance from Left	Depth (ft)	Velocity (ft/sec)	(Use only if velo
Latitude/Longitude: 34 59 6 -19 10 32.0		Bank (ft)	100	1	Float Time (sec)
Flow (circle one): Flowing / Ponded / Dry	1	Ust	V	No. of the last of	
Wind Strength:	2	1.1	3	0.009	Float Re
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3	1.7	74	0.108	
Photos (check): Upstream Downstream	4	22	7/2	0 177	Width
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	77	20	Vo! ++	Depth 1
discharge comments, etc.) : \hbox\delta \left\ \left\ \delta \del	5	10	3()	U0124	
	6	3.2	35	0.228	Depth 2
	7	3.7	34	0.236	Depth 3
	8	4.2	27	6.277	Depth 4
January—December Monthly in Situ Measurements:	9	14.7	75	0.251	Depth 5
pH: pH units EC: µS/cm	10	1 1	210		May—September: A
DO: 15 03 mg/L SC: 15 9 μS/cm	10	5.2	20	0.215	Reach Length (150 n
DO: 🔼 ⊱ % Salinity: 🔼 🛨 ppt	11	5	20	0.155	if wetted width > 10
Water Temp: <u>10-5</u> °C Flow (from discharge measurement): <b>7</b> cfs	12	6.0	8	0	Collection
Flow (from discharge measurement): cfs	13				(sum # transe
	14				Rubber Delimiter (Ar
Samples Collected (check box)	15				PVC Delimiter (Area
January—December Monthly Water:	16				Syringe Scrubber (Ar
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):					Other (Area=
Dissolved Phosphorus and Nitrogen (field filtered):	17			-	Number of Transects
May—September Dry Season Monthly Algae:	19				Composite Volume &
Chlorophyll a (filters—algae):					/
	20				Chlorophyll <i>a</i> Volum (use GF/F filter, 25 m

<b>Buoy</b> (Use only if velo	rant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Re	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May Santambay Alasa Callastias for Ch	م الدياسية
May—September: Algae Collection for Cl Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	T.
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): 219		
Site ID: TMDL-22	Ve	locity Are
Date/Time: 12 19 19 10 05 Crew Members: 85, 39 04 05 34,33939 -119.29722	No.	Distan from L Bank
Latitude/Longitude: Flow (circle one): Flowing / Ponded / Dry	1	Dr.
Wind Strength:	2	10.9
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	3	1.3
Wind Direction: Blowing (circle one) From / To Photos (check): Upstream Downstream	4	1.8
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	2.2
discharge comments, etc.) :	6	2.9
	7	3.2
	8	3.
January—December Monthly In Situ Measurements:	9	402
pH: pH units EC: 1212 μS/cm	10	4.9
DO: Mg/L SC: μS/cm DO: Mg/L SC: μS/cm	11	5.
Water Temp: 2 • 4 °C	12	5.9
Flow (from discharge measurement): 9-2 cfs	13	10.3
	14	6.9
Samples Collected (check box)	15	7.1
January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16	
Nitrogen (unfiltered):	17	
Dissolved Phosphorus and Nitrogen (field filtered):	18	
May—September Dry Season Monthly Algae:	19	
Chlorophyll a (filters algae):	20	

	1st l	Measuremer	nt = left bank	(looking downstrea	im)
Ve	locity Area M	lethod (pref		u <b>oyant Obje</b> velocity area	
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)	Distance (ft)	Float 1
1	23	-8	-6	Float Time (se	c)
2	19	43	0 04	Floa	t Reach Cro
3	1.3	49	0.010		Upper Section
4	1.80	61	0.028	Width	
5	2.3	(02)	n nez	Depth 1	
6	78	57	0.13	Depth 2	14:
7	2 2	SE	4191	Depth 3	
_	000	20	0 2 (11)	Depth 4	
8	5.0	51	0.299	Depth 5	
9	4.5	3+	0.191		
10	4.0	34	0.209	May—September Reach Length (1	
11	5.3	29	0.122	if wetted width	
12	5.9	25	0.110	Colle	ection Devic
13	10.3	21	0.023	(sum # tra	insects per l
14	6.9	21	-1015	Rubber Delimite	r (Area=12.6
15	7.1	+	-0	PVC Delimiter (A	rea=12.6cm
16				Syringe Scrubbe	г (Area=5 3c
		_		0.1 (1	/

<b>Buoy</b> (Use only if velo	ant Object		ossible)			
Float 1 Float 2 Float 3						
Distance (ft)						
Float Time (sec)						
Float Ro	each Cross	Section (ft)				
	Upper Section	Middle Section	Lower Section			
Width						
Depth 1						
Depth 2						
Depth 3						
Depth 4						
Depth 5						

Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5,3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

Discharge Measurement

Event ID (Month Year):1219	
Site ID:	
Date/Time: 12119119 10:12	
Crew Members: 851 SP GA	
34.34539 -119.299	17
Latitude/Longitude:34°20'43.4" -1199	757.8
Flow (circle one): Flowing / Ponded / Dry	
Wind Strength:	
Calm / Light Breeze / Moderate Breeze / Strong Breeze /	Windy
Wind Direction: Blowing (circle one) From / To	H
Photos (check): DUpstream Downstream	
Notes (e.g. homeless, wildlife, horses, swimming/	recreation,
discharge comments, etc.) :	
January—December Monthly In Situ Measuremer	nts:
January—December Monthly In Situ Measuremer pH: 100 pH units > EC: 1131 uS/cm	nts:
pH: $\frac{9.00}{}$ pH units $\rightarrow$ EC: $\frac{1139}{}$ $\mu$ S/cm	nts:
pH: 139 μS/cm DO: 14 92 mg/L SC: 139 μS/cm	nts:
pH: 9 0 pH units DEC: 1\39 μS/cm DO: 14 42 mg/L SC: NIA μS/cm DO: NIA % Salinity: 0+5 ppt Water Temp: 10 9 °C	nts:
pH: 9 0 pH units DEC: 1\39 μS/cm DO: 14 42 mg/L SC: NIA μS/cm DO: NIA % Salinity: 0+5 ppt Water Temp: 10 9 °C	nts:
pH: 0 0 pH units DC: 1\39 μS/cm pC: NIA μS/cm ppt	nts:
pH: 9 0 pH units DEC: 1\39 μS/cm DO: 14 42 mg/L SC: NIA μS/cm DO: NIA % Salinity: 0+5 ppt Water Temp: 10 9 °C	nts:
pH: 9 0 pH units DEC: 1\39 μS/cm DO: 14 42 mg/L SC: NIA μS/cm DO: NIA % Salinity: 0+5 ppt Water Temp: 10 9 °C	nts:
pH: 100 pH units pEC: 1139 µS/cm DO: 14 92 mg/L SC: NIA µS/cm DO: NIB % Salinity: 0+54 ppt Water Temp: 10 9 °C Flow (from discharge measurement): 8 6 cf	nts:
pH: Poly pH units pEC: 139 µS/cm DO: 19 92 mg/L SC: NA µS/cm DO: NA Salinity: Da 52 ppt Water Temp: 10 9 °C Flow (from discharge measurement): 8 6 cf	rs
pH: 900 pH units pEC: 1139 µS/cm DO: 11  % SC: NA µS/cm DO: 15  ppt Water Temp: 10 9 °C Flow (from discharge measurement): 8 6 cf  Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Ni	rs
pH: 900 pH units pEC: 1139 µS/cm DO: 14 92 mg/L SC: NA µS/cm DO: 15 ppt Water Temp: 10 9 °C Flow (from discharge measurement): 8 6 cf  Samples Collected (check box)  January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Ni Nitrogen (unfiltered):	trite as
pH: 100 pH units pEC: 1139 µS/cm DO: 14 92 mg/L SC: NA µS/cm DO: NA Salinity: 150 ppt Water Temp: 10 97 °C Flow (from discharge measurement): 8 6 cf  Samples Collected (check box)  January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Ni Nitrogen (unfiltered):	trite as
pH: 100 pH units pEC: 1139 µS/cm DO: 14 92 mg/L SC: NIA µS/cm DO: 18 % Salinity: 0+54 ppt Water Temp: 10 9 °C Flow (from discharge measurement): 8 6 cf  Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Ni	trite as
pH: PH units pH units pH units pH units pD: PH units pH units pD: PH units ppt ph pt ppt ppt ppt ppt ppt ppt ppt p	trite as

Ve	elocity Area M	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	0.0	0	4
2	1	15	0.186
3	1.25	33	0.320
4	1.5	32	0.371
5	1.75	35	0.351
6	2.0	29	0.416
7	2.25	30	1.489
8	2.5	26	j.452
9	2,75	24	0.396
10	3.0	11	0.304
11	3.25	15	0.180
12	3.5	13	0.244
13	4.0	4	8
14			
15			
16			
17			
18			
19			
20			

ea M	ethod (pref	erred)		Buoyant Object Method (Use only if velocity area method not possible)				
nce	cm Danah (64)	Velocity	a de la composición dela composición de la composición dela composición de la composición de la composición dela composición dela composición de la composición de la composición dela composición de la composición dela composición dela composición	Float 1	Float 2	Float 3		
eft (ft)	Depth (ft)	(ft/sec)	Distance (ft)					
2	4	4	Float Time (sec)					
	15	0 186	Float Ro	each Cross	Section (ft)			
5	33	0.320		Upper Section	Middle Section	Lower Section		
	32	0.37	Width					
5	35	0,351	Depth 1		+	N =		
	29	0.416	Depth 2					
5	20	1 URG	Depth 3					
$\overline{}$	2/0	0.457	Depth 4					
2	20	UOTUL	Depth 5					

Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	7
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5,3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (m)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

Site:		Da	ate:		Crew:			-			
		Macroalgae	Presence/Abs	ence (P/A) a	ınd Water Deptl	n (mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken
Transect	Wetted Width (ft)	Less Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	1	-									
АВ	7		1		×		() - ()				
В											
ВС				1			1				
С						-					
CD											
D											
DE				39				TO PULL	DE L		
E											
EF											
F											
FG		/							4		
G							, T				
GH											
н											
НІ	/								-		باوسيا
- 1											10
IJ											اللحت
1/											
JK											- 1 - 1
k											

### **Event ID (Month Year):** Site ID: Date/Time: **Crew Members:** Latitude/Longitude: Flow (circle one): Flowing / Ponded / Dry Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To Photos (check): Upstream Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): January—December Monthly In Situ Measurements: pH units EC: 10+ μS/cm DO: 9 70 mg/L SC: PH μS/cm DO: 17 % Salinity: 0.53

Samples Collected (check box)

January—December Monthly Water:

Chlorophyll a (filters-algae):

Nitrogen (unfiltered):

Flow (from discharge measurement):

Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as

Dissolved Phosphorus and Nitrogen (field filtered):

May-September Dry Season Monthly Algae:

Discharge	Measurement
-----------	-------------

1st Measurement = left bank (looking downstream)

No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	P	0	4
2	1	9	0.001
3	2	9	0.114
4	3	10	0.029
-5	7	12	0.24
6	5	13	0.255
7	6	10	0170
8	17		0.20
9	9	12	0.240
10	9	8	0.147
11	10		0.091
12	10.9	12	0.140
13	11.5	0	D
14			
15			
16			
17			
18			
19			
20			

Buoy (Use only if velo	rant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Ro	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			>
Depth 2			
Depth 3			
Depth 4			
Depth 5			

if wetted width > 10 m):	m; 250 m
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

May-September: Algae Collection for Chlorophyll a

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

						cm					DI
10.		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depti	(mm/ft/in)		Count co	eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α			1								
AB											)
В											/
ВС											
С											
CD											
D											
DE											
E					/						
EF											
F											
FG											
G										1	
GH		,									
Н		/									
н											
I											
IJ											
J											
JK											

# Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 1 of Discharge Measurement

Latitude/Longitude: Flow (circle one): Flowing / Ponded / Dry Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To Photos (check): Upstream Downstream Notes (e.g. homeless, wildlife, horses, swimming/recreation,	Do. fr B	Pistance rom Left ank (M)	Depth (ft)	Velocity (ft/sec)	(Use only if vel  Distance (ft)  Float Time (sec)	Float 1		Float 3
Crew Members:  34-380  Latitude/Longitude:  Flow (circle one): Flowing / Ponded / Dry  Wind Strength:  Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy  Wind Direction: Blowing (circle one) From / To  Photos (check): Upstream Downstream  Notes (e.g. homeless, wildlife, horses, swimming/recreation,	10. fr B 11 22 33 44	om Left			Distance (ft) Float Time (sec) Float R	Float 1 each Cross Upper	Float 2 Section (ft) Middle	Float 3
Latitude/Longitude:  Flow (circle one): Flowing / Ponded / Dry  Wind Strength:  Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy  Wind Direction: Blowing (circle one) From / To  Photos (check): Upstream Downstream  Notes (e.g. homeless, wildlife, horses, swimming/recreation,	B 1 2 3 4 5		<b>Берин ус.</b>	(it/sec)	Float Time (sec)	Upper	Middle	Lower
Flow (circle one): Flowing / Ponded / Dry Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To Photos (check): Upstream Downstream Notes (e.g. homeless, wildlife, horses, swimming/recreation,	1 2 3 4				Float R	Upper	Middle	Lower
Wind Strength:  Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy  Wind Direction: Blowing (circle one) From / To  Photos (check): Upstream Downstream  Notes (e.g. homeless, wildlife, horses, swimming/recreation,	2 3 4 5				Float R	Upper	Middle	Lower
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy  Wind Direction: Blowing (circle one) From / To  Photos (check): Upstream Downstream  Notes (e.g. homeless, wildlife, horses, swimming/recreation,	3 4 5					Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To Photos (check): Upstream Downstream Notes (e.g. homeless, wildlife, horses, swimming/recreation,	4				Midth			
Photos (check): Upstream J Downstream  Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5				Width	Section	Section	
	_				T WILLIAM			
	5		) )		Depth 1		-	
discharge comments, etc.) :6					Depth 2			
7					Depth 3			
	_				Depth 4			
8	5				Depth 5			
January—December Monthly In Situ Measurements: 9	9	-						
pH: $\mu$ S/cm pH units	0				May—September:			-
DO: MM / Mg/L YSC: MJ / MS/cm  DO: MM / Salinity: MJ / ppt	1			7	Reach Length (150			m; 250 m
Water Town 20	-			/	if wetted width > 10	m):		1
Flow (from discharge measurement): cfs	2				Collection Device (sum # transects per Device)			Quantity
13	3							
14	4				Rubber Delimiter (A	rea=12.6cn	n²) /	
Samples Collected (check box)	5				PVC Delimiter (Area	=12.6cm <sup>2</sup> )		
January—December Monthly Water:	6				Syringe Scrubber (A	rea=5.3cm²	·)	
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):	,				Other (Area=		)	
Dissolved Phosphorus and Nitrogen (field filtered):					Number of Transact	, Committee	(0.4)	
18	8				Number of Transect		(0-11)	
May—September Dry Season Monthly Algae: 19	9				Composite Volume	(mL)		
Chlorophyll a (filters—algae):	0		4		Chlorophyll a Volum (use GF/F filter, 25 n			

Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

Date: \_\_\_\_\_ Crew: \_\_\_\_\_ Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in) Densiometer (0-17) **Photo** (✓ when Taken) Count covered dots Upstream/ Center Center Center Wetted/Y Right Bank | Center Left Right Center Left Bank **Left Center** Center Transect Upstream Right Downstream **Downstream** Width (ft) Α AB В BC C CD D DE Ε EF F FG G GH Н н 1 IJ J JK Κ

#### **Discharge Measurement**

left bank (looking downstream)

Event ID (Month Year): Teb 2000	-	1st N	Measuremer	nt = left bar
Site ID: TMDL-CL	Ve	locity Area M	ethod (pref	erred)
Date/Time: 2/12/2020 0750 Crew Members: 57, SP, DY	No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
Latitude/Longitude: 34.34つか、- 119.28640 Flow (circle one): (Flowing) Ponded / Dry	1	Ocm	0	0
Wind Strength:	2	15cm	7	0.001
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3	30cm	7	0.003
Photos (check): \(\sqrt{Upstream}\rightarrow	4	45cm	6	0.021
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :	5	60cm	6	0.09
	6	75cm	5	0.133
	7	90cm	5	-0.01
	8	110 m	O	0
January—December Monthly In Situ Measurements:	9			
pH: <u>\$27</u> pH units EC: <u>N/A</u> μS/cm	10			
DO: <u>16.77</u> mg/L SC: <u>432.6</u> μS/cm DO: <u>M/A</u> % Salinity: <u>7.29</u> ppt	11			
Water Temp:°C	12			
Flow (from discharge measurement): cfs	13			
	14			
Samples Collected (check box)	15			
January—December Monthly Water: Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as	16			
Nitrogen (unfiltered):	17			
Dissolved Phosphorus and Nitrogen (field filtered):	18			
May—September Dry Season Monthly Algae:	19			
Chlorophyll a (filters—algae):	20			

<b>Buoy</b> (Use only if velo	ant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			/
Float Time (sec)		/	
Float Re	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4	V-		
Depth/5			

Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	) m; 250 m
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

May—September: Algae Collection for Chlorophyll a

Event ID (Month Year):	Feb 2000
Site ID: TMDL-R4	
Date/Time: 02/12/202	0 0835
Crew Members: 35 SP,	DY
Latitude/Longitude:	1980, -119.30846
Flow (circle one): Flowing / F	onded / Dry
Wind Strength:	
Calm / Light Breeze / Moderate Br	eeze / Strong Breeze / Windy
Wind Direction: Blowing (circle	e one) From / To
Photos (check): QUpstream	🕱 Downstream
Notes (e.g. homeless, wildlife,	horses, swimming/recreation
discharge comments, etc.) :	

pH:pH units	EC: NA	_μS/cm	
DO:mg/L	SC: 1071	_μS/cm	
DO: N/A % Sa Water Temp: 14.2	llinity: <u>0.53</u> _°C	_ppt	
Flow (from discharge m	neasurement):		cfs

# Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered): May—September Dry Season Monthly Algae: Chlorophyll a (filters—algae):

#### **Discharge Measurement**

1st Measurement = left bank (looking downstream)

Velocity Area Method (preferred)						
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)			
1	0 cm	0	0			
2	50 cm	15	0.149			
3	100 cm	2.2	0.29			
4	150 cm	2.0	0.304			
5	200cm	20	0.765			
6	250cm	2.0	0.30			
7	300cm	17	0.417			
8	350 cm	71	0.301			
9	400cm	16	6.280			
10	450cm	16	0.251			
11	500cm	I	0.274			
12	550 cm	15	0.258			
13	600 cm	12	0,154			
14	650cm	9	0.085			
15	700cm		0.083			
16	750 cm	9	0.111			
17	800cm	8	0.048			
18	900 cm	3	0.387			
19	950cm	5	0.147			
20	1000cm	13	-0.004			
21	1050cm	2-1	0.017			
22	1150cm 1250cm	0.	0.004			

Buoy (Use only if velo	ant Object ocity area m		ossible
	Float 1	Float 2	Float 3
Distance (ft)		/.	
Float Time (sec)			
Float Re	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width	/		
Depth 1			
Depth/2			
Depth 3		Jerra	1
Depth 4			1
Depth 5			

May-September: Algae Collection for Ch	lorophyll a
Reach Length (150 m if wetted width ≤ 10	m; 250 m
if wetted width > 10 m):	
Collection Device	Quantity
(sum # transects per Device)	
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume	
/use GF/F filter, 25 mL preferred volume)	

vent ID (Month Year): LCD 2020
ite ID: TMDL-SA
Date/Time: 02/12/1020 0900
rew Members: RTSP, DY
atitude/Longitude: 34.38077, -19.3677
low (circle one): Flowing/ Ponded / Dry
Vind Strength:
alm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Vind Direction: Blowing (circle one) From / To
hotos (check): 🗸 Upstream 💆 Downstream
lotes (e.g. homeless, wildlife, horses, swimming/recreation
ischarge comments, etc.): Shear around the burks

January—December Monthly In Situ Measurem	nents:
pH: 198 pH units EC: N A μS/cm	
DO: 14.15 mg/L SC: 1631 μS/cm	
DO: MA Salinity: 0.83 ppt	
Water Temp: <u>ी, ने</u> °C	
Flow (from discharge measurement):	_ cfs

Samples Collected (check box)	
January—December Monthly Water:	
Total Phosphorus , Total Nitrogen, and Ni	trate + Nitrite as
Nitrogen (unfiltered):	) <u>T</u>
Dissolved Phosphorus and Nitrogen (field	filtered): 🔀
May—September Dry Season Monthly A	lgae:
Chlorophyll a (filters—algae):	Ma/A

#### **Discharge Measurement**

1st Measurement = left bank (looking downstream)

Vel	ocity Area M	ethod (pref	erred)
No.	Distance from Left Bank (ft)	Cm Depth (ft)	Velocity (ft/sec)
1	Ocm	0	0
2	40cm	8	-0.003
3	80 cm	10	0.014
4	120 cm	1	0.010
5	160 cm	18	0.009
6	7.00 Cin	17	0.029
7	240cm	2:1	0.021
8	280cm	21	0.026
9	320cm	2.4	0.916
10	360 cm	29	0.011
11	400 cm	40	0.003
12	440cm	54	0.003
13	480cm	37	-0.005
14	580cm	0	0
15			
16			
17			
18			
19			
20			

Buoy (Use only if velo	ant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			/
Float Time (sec)		/	
Float Re	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			1
Depth 4			
Depth 5			1

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	7
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	1

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year):				,
Site ID: TMDL- R3	Ve	elocity Area M	lethod (pref	erred)
Crew Members: BS, SP, DY	No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
	1	Ocm	0	0
Wind Strength:	2	25cm	C	0.128
	3	50cm	23	0.188
Photos (check): Upstream Downstream	4	75 cm	35	0.302
Date/Time:	5	100cm	39	0.46
	6	125 cm	39	0.499
	7	150cm	35	1.581
	8	175 cm	33	0.654
	9	707em	32	0.691
The state of the s	10	125cm	31	0.411
DO: MA % Salinity: 10.57 ppt	11	250 cm	23	0.37
	12	275cm	23	0.657
riow (noni discharge measurement) cis	13	300cm	17	0.103
	14	325cm	10	0.030
The Control of the Co	15	Ssum	9	0.14
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16	380m	0	0
Nitrogen (unfiltered):	17			

18

19

20

Dissolved Phosphorus and Nitrogen (field filtered): 🔀

May—September Dry Season Monthly Algae:

Chlorophyll a (filters—algae):

Buoy (Use only if velo	ant Object ocity area m		ossible)	
	Float 1	Float 2	Float 3	
Distance (ft)				
Float Time (sec)	Lead		1	
Float R	ach Cross	Section (ft)	/	
	Upper Section	Middle Section	Lower Section	
Width	X			
Depth 1				
Depth 2	/			
Depth 3				
Depth 4				
Depth 5				

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area 5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

Discharge Measurement

Event ID (Month Year): The 2020	1st Measurement = left bank (looking downstream)							
Site ID: TMDL- R2	Velocity Area Method (preferred)				<b>Buoyant Object Method</b> (Use only if velocity area method not possible)			
Crew Members: BTSP, DY	No.	Distance from Left	Depth (ft)	Velocity	1	Float 1	Float 2/	Float 3
	140.	Bank (ft)	CIV)	(ft/sec)	Distance (ft)			
Latitude/Longitude: 34.3399321-119.39727	1		2	A	Float Time (sec)			
Flow (circle one): Flowing / Ponded / Dry	-		10		Float R	each Cross	Section (ft)	
Wind Strength:  (calm) Light Breeze / Moderate Breeze / Strong Breeze / Windy	2	50	140	0.091		Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To	3	100	42	0.24		Section	Section	Section
Photos (check): Downstream	4	150	410	0.163	Width			
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	900	/1 ;	0.212	Depth 1			
discharge comments, etc.):	6		40		Depth 2	/		
	-	250	1 "	0.006	Depth 3			
	7	300	39	0.331	Depth 4			
	8	3-0	55	0.179	Depth 5			
January—December Monthly In Situ Measurements:	9	400	104	0.174				
pH: 5 pH units EC: N A μS/cm	10	450	80	().050	May—September:			
DO: 13.40 mg/L SC: 1180 μS/cm	11	500	61		Reach Length (150 m if wetted width ≤ 10 m if wetted width > 10 m):			0 m; 250 m
DO:% Salinity:ppt				0.033	ii wetted widtii > 10	J III):		-
Water Temp:°C Flow (from discharge measurement): cfs	12	550	59	0.014	(sum # transects per Device)			Quantity
riow (from discharge measurement) cis	13	(000)	51	10.012				
		650	40	-0.017	Rubber Delimiter (A	Area=12.6ci	79/1	
Samples Collected (check box)	15	700	A	Ω	PVC Delimiter (Area	a=12.6cm²)		
January—December Monthly Water:	16	100			Syringe Scrubber (A	rea=5.3cm	×),	,
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	-		-		Other (Area=  Number of Transects Sampled (0-11)			
Nitrogen (unfiltered):  Dissolved Phosphorus and Nitrogen (field filtered):	17							-
	18							
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volur			1

Event ID (Month Year): Wo #
Site ID: TMDL- RI
Date/Time: 02/12/2020 \\30
Crew Members: BJ, SP, DY
atitude/Longitude: 34.281881-119.30903
Flow (circle one): Flowing / Ponded / Dry
Wind Strength:
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recrea
discharge comments, etc.) :

January—December Monthly In Situ Measuren	nents:
pH: 6.5 pH units EC: NIA μS/cm	
DO: 14.14 mg/L SC: 13.77 μS/cm	
DO:% Salinity:O\varphi^Q_ ppt	
Water Temp: <u>13-3</u> °C	
Flow (from discharge measurement):	_ cfs

# Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered): May—September Dry Season Monthly Algae:

# May—September Dry Season Monthly Algae: Chlorophyll a (filters—algae):

### **Discharge Measurement**

1st Measurement = left bank (looking downstream)

Vel	ocity Area M	ethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	A	$\Theta$	0
2	50	77	0.249
3	601	27	0.289
4	150	30	0.366
5	200	33	0.368
6	250	30	0.355
7	300	38	0.340
8	350	38	0.116
9	400	32	0.215
10	480	10	0.178
11	560	0	()
12			
13			
14			
15			
16			
17			
18			
19			
20			

<b>Buoy</b> (Use only if velo	ant Object ocity area me		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Ro	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width	X		
Depth 1			
Depth 2	/		
Depth 3	/		
Depth 4		1	
Depth 5	11 17		

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5,8cm²)	7
Other (Area=	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	1

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 1

# Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est  Event ID (Month Year): Feb 200  Crew Members: B5, SP, DY	0	Date/Time:	02/12/2020 205
Weather (circle one): Clear Partly Cloudy / O			: Open / Restricted / Closed Eastopen ) West close
Direction of Tide: (Ebb) Flood / Slack / N/A			123 Time of High Tide: 11:15
Wind Strength: Calm (Slight Breeze) Moder	ate Breeze / Strong Breeze / Win	dy / Strong Wind	Wind Direction: Blowing From / To
Notes (e.g. homeless, wildlife, dogs, swimming	/recreation):		
In Situ Measurements (Measure at Floating M Monthly (Jan—Dec):  pH: \$15 pH units EC: NA  DO: 1311 mg/L SC: 1494  DO: NA % Salinity: 11.13	μS/cm Water Temp: <u>  [   </u> μS/cm		Water Samples Collected (check box)  [Collect at Floating Macroalgae Quadrat 1, Transect 1]  Monthly Water (Jan—Dec):  Nitrogen, total and dissolved:  Phosphorus, total and dissolved:  Nitrate + Nitrite as Nitrogen:
Photos: Oceanward Landward			7
Sample Latitude:	34.27516		1
Sample Longitude	-119.36762		11

Event ID (Month Year): March	1030
Site ID: TMOL-CL	· ·
Date/Time: 3 19 12000 07	147
Crew Members: 27 57 DY	
Latitude/Longitude: 34.34202	119.28643
Flow (circle one): Flowing / Ponded / Dry	
Wind Strength:	
Calm / Light Breeze / Moderate Breeze / Strong Bre	eeze / Windy
Wind Direction: Blowing (circle one) From / 7	o
Photos (check): Upstream Downstr	
Notes (e.g. homeless, wildlife, horses, swimn	ning/recreation
discharge comments, etc.):	
January—December Monthly In Situ Measure	ements:
pH: S pH units EC: μS/cn	1
	1
pH: S pH units EC: μS/cn	1
pH: <u>\$ 123 p</u> H units EC: μS/cm DO: <u>14.13 mg/L</u> SC: <u>4350 μ</u> S/cm	1
pH: $\frac{S + 2}{S}$ pH units EC: $\mu$ S/cm DO: $\frac{14.13}{M}$ mg/L SC: $\frac{435}{M}$ $\mu$ S/cm DO: $\frac{14.13}{M}$ % Salinity: $\frac{2.32}{M}$ ppt	ו
pH: $\frac{1}{3}$ pH units EC: $\frac{1}{4}$ $\mu$ S/cm DO: $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{$	ו
pH: $\frac{1}{3}$ pH units EC: $\frac{1}{4}$ $\mu$ S/cm DO: $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{$	1
pH: $\frac{1}{3}$ pH units EC: $\frac{1}{4}$ $\mu$ S/cm DO: $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{$	1
pH: \$\partial \partial \	1
pH: pH units EC: ps/cm DO: ph/mg/L SC: ps/cm DO: ps/mg/L SC: ps/cm DO: ppt water Temp: ppt Water Temp: pr/mg/c Flow (from discharge measurement):  Samples Collected (check box) January—December Monthly Water:	n cfs
pH: \$\frac{1}{2} \text{pH units} \text{EC: } \( \psi \text{µS/cm} \) DO: \$\frac{1}{2} \text{Ng/L} \text{ SC: } \( \frac{4}{2} \frac{5}{2} \text{µS/cm} \) DO: \$\sigma \text{8 Salinity: } \( \frac{2}{2} \frac{3}{2} \text{ ppt} \) Water Temp: \$\frac{1}{2} \text{N} \sigma^c C  Flow (from discharge measurement): \$\sigma \text{Samples Collected (check box)}\$	n cfs
pH: pH units EC: µS/cm DO: NM Mg/L SC: 4350 µS/cm DO: MM Salinity: DO: ppt Water Temp: 1.0 °C Flow (from discharge measurement):	cfs + Nitrite as
pH:pH units EC:µS/cm DO: mg/L SC:µS/cm DO: % Salinity:ppt Water Temp: °C Flow (from discharge measurement):  Samples Collected (check box)  January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate Nitrogen (unfiltered):	cfs + Nitrite as
pH:pH units EC:µS/cm DO:mg/L SC:µS/cm DO:% Salinity:ppt Water Temp:°C Flow (from discharge measurement):  Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered)	cfs + Nitrite as

## Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	locity Area M	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	(A)	0	
2	015	.13	0.136
3	0.3	4	0.040
4	0.45	3	0.045
5	0.6	· OH5	140.0
6	0.75	.05	0.197
7	0,9	,05	0.113
8	1.05	+U»	0.565
9	1.2	.08	0.516
10	1.35	9	0.410
11	1.5	108	0.387
12	1.65	- 15	0.118
13	1.8	0	0
14			
15			
16			
17			
18			
19			
20			

<b>Buoy</b> (Use only if vel	<b>/ant Object</b> ocity area m		ossible)
1 1	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)	1	1	
Float Ro	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width	-		
Depth 1	1		
Depth 2	1	1	
Depth 3			
Depth 4			
Depth 5			

	1
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	AA
Syringe Scrubber (Area=5.3cm²)	4+
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

### Discharge Measurement

Event ID (Month Year): March 2020		1st	Measuremer	nt = left bank (	(looking downstream)					
Site ID: MOLR4	Ve	locity Area M	lethod (pref	erred)		Buoyant Object Method (Use only if velocity area method not possible)				
Date/Time: 319120 935		Distance	M.	Velocity	(000 0111)	Float 1	Float 2	Float 3		
Crew Members:	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)	17.21				
Latitude/Longitude: 34.37984, -19.30849	1	- Dank (197)	f <sub>N</sub>	0	Float Time (sec)					
Flow (circle one): Flowing / Ponded / Dry	_	10	10	A 0 . 0	Float R	each Cross	Section (ft)			
Wind Strength:	2	1.0	.28	0.309			Middle	Lower		
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	3	3.0	(3)	0.512		Upper Section	Section	Section		
Wind Direction: Blowing (circle one) From / To  Photos (check): UpstreamDownstream	4	3.0	138	18010	Width	1				
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	40	.26	0.479	Depth 1	1		5		
discharge comments, etc.) :					Depth 2	1				
	6	50	3	0,427	Depth 3					
	7	10.0	.28	0.309	Depth 4					
	8		133	0.351	Depth 5					
January—December Monthly In Situ Measurements:	9	8.0	,35	0,212						
pH: 7.721 pH units EC: µS/cm	10	9-0	007	0,409	May—September: Algae Collection for Chloroph					
DO: <u>16, 51</u> mg/L SC: <u>73.7</u> μS/cm	11	10.0	133	nhat	Reach Length (150 if wetted width > 10			0 m; 250 m		
DO:% Salinity: <u>0 .46</u> ppt Water Temp:		100	115	(1)(3)			/			
Flow (from discharge measurement): cfs	12	11.0	1,40	0.134		ion Device	udaal .	Quantity		
The state of the s	13	12.0	120	0.234	(sum # trans Rubber Delimiter (A	-		1		
	14	3.0	0 7	0.060		/	1			
Samples Collected (check box)	15	13.7	( <del>-</del>	0	PVC Delimiter (Area	a=12.6cm²)	1			
January—December Monthly Water:	16				Syringe Scrubber (A	rea=5.3cm	2)			
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as  Nitrogen (unfiltered):	17			1	Other (Area=		)			
Dissolved Phosphorus and Nitrogen (field filtered):					Number of Transec	ts Sampled	(0-11)			
	18				Composite Volume		-			
May—September Dry Season Monthly Algae:	19									
Chlorophyll a (filters—algae):	20				Chlorophyll <i>a</i> Volur (use GF/F filter, 25		ed volume)			

## Discharge Measurement

Event ID (Month Year): May th 2020	1st Measurement = left bank (looking downstream)							
Site ID: TWDL-SA	Ve	elocity Area M	1ethod (pref	erred)	Buo (Use only if ve	yant Object ocity area m		ossible
_ =====		Distance	W	Velocity		Float 1	Float 2	Float 3
Crew Members: KT SP DY	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)		/	1
Latitude/Longitude: 34.38074, - 119.30739	1	Dank yie,	0	0	Float Time (sec)		/	
Flow (circle one): Flowing / Ponded / Dry	-	1	10	U	Float R	each Cross	Section (ft	3
Wind Strength:	2	-45	.18	70.03			Middle	Lower
(alm) / Light Breeze / Moderate Breeze / Strong Breeze / Windy  Wind Direction: Blowing (circle one) From / To	3	1.0	, 24	0.08		Upper Section	Section	Section
Photos (check): Upstream Downstream	4	1.5	1.32	0.033	Width			
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	2.0	138	17.032	Depth 1			
discharge comments, etc.) :	6	2.5			Depth/2			
			.47	0.007	Depth 3			
	7	3.0	.56	D. 1991	Depth 4			N.
	8	95	157	n.Ololo	Depth 5			
January—December Monthly In Situ Measurements:	9	4.0	134	0.041				
pH: 7.94 pH units EC:µS/em-	10	45	•50	0.021	May—September:			
DO: <u>17.11</u> mg/L SC: <u>16.07</u> μS/cm		1		COUL	Reach Length (150			0 m; 250 r
<del>DO:%</del> Salinity:ppt	11	5.0	043	17.019	if wetted width > 1	0 m):		1
Water Temp: 17.0 °C	12	15.5	044	0.009	Collect	on Device	/	Quanti
Flow (from discharge measurement):/ cfs	13	6.0	.37	0.007	(sum # trans	ects per De	vice)	
	14	6.5	.31	0.003	Rubber Delimiter (A	Area=12.6ci	m²)/	
Samples Collected (check box)	15	7.0	.08	-0.005	PVC Delimiter (Area	=12.6cm		
January—December Monthly Water:	16	75	.09	-0 nh7	Syringe Scrubber (A	rea=5.3cm	2)	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as		10.0		UNGUT	Other (Area=	1	1	
Nitrogen (unfiltered):	17	8.0	0	8			(0.44)	
Dissolved Phosphorus and Nitrogen (field filtered): 🗹	18				Number of Transec		(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll <i>a</i> Volur			
			-		(use GF/F filter, 25	mL preferre	ed volume)	

vent ID (Month Year): Mark Andrews	
ite ID: TMDL-R3	
ate/Time: <u>03/19/2020</u> 1020	
rew Members: BJ SP DY	
ntitude/Longitude: 4-34554, -119.39930	1
ow (circle one): Flowing / Ponded / Dry	
find Strength:	
lm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy	
find Direction: Blowing (circle one) From / To//Y	
notos (check): 🗹 Upstream 💢 Downstream	
	n.
otes (e.g. homeless, wildlife, horses, swimming/recreation	

January—December Monthly In Situ Measurements:
pH: 8 γ β pH units EC: μS/cm
DO: 12.72 mg/L SC: 1020 μS/cm
DO: % Salinity: 0.51 ppt
Water Temp: <u>\\ .                                 </u>
Flow (from discharge measurement): cfs
,

# Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered): May—September Dry Season Monthly Algae: Chlorophyll a (filters—algae):

### Discharge Measurement

1st Measurement = left bank (looking downstream)

Vel	Velocity Area Method (preferred)								
No.	Distance from Left Bank (な)	Depth (ft)	Velocity (ft/sec)						
1		0	4						
2	0.75	7	0.185						
3	1.5	-13	0.539						
4	225	110	0.801						
5	3.0	$\setminus C_1$	0.981						
6	3,75	27	1,000						
7	4.5	34	0573						
8	5.25	38	0.737						
9	(0.0)	40	0.026						
₹10	10.75	40	0:401						
<b>¥11</b>	7 50	.48	0.332						
<b>F</b> 12	8,25	62	0.26						
<b>13</b>	9.0	50	841.0						
<b>₹ 14</b>	9.10	0	B						
15									
16									
17	4-								
18									
19									
20									

<b>Buoy</b> (Use only if velo	rant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)	1	1	/
Float R	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width	1		
Depth 1	1		
Depth 2			
Depth 3			
Depth 4			
Depth 5			

Reach Length (150 m if wetted width $\leq$ 10 if wetted width > 10 m):	m; 250 m
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area=	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

May-September: Algae Collection for Chlorophyll a

. 1 .				scharge Meas				
Event ID (Month Year): Words 2000		1st /	Measuremer	nt = left bank	k (looking downstream)	·		
Site ID: TMDL-RA	Ve	elocity Area M	Method (pre	ferred)	Buoy	ant Object	t Method /	1
Date/Time: 05/19/20 . 1108		Distance	T		(Use only if vel	ocity area m	ethod not p	ossible)
Crew Members: 157 DY	No.	from Left	Depth (ft)	Velocity	1	Float 1	Float 2	Float 3
AN 0000 110 0000		Bank (ff)	J.,	(ft/sec)	Distance (ft)		/	
Latitude/Longitude: 34.339310 - 119.29730	1	1	IA	-65	Float Time (sec)		/	
Flow (circle one): Flowing / Ponded / Dry Wind Strength:	_	1				- Centre	Section (ft)	
Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	2	15	.21	0.1046	Float m	V		
Wind Direction: Blowing (circle one) From / To	3	1.0	JoD.	0.188		Upper Section	Middle Section	Lower
Photos (check): Dupstream Downstream	4	115	.58	1011	Variadely.	Section	Section	Section
Notes (e.g. homeless, wildlife, horses, swimming/recreation,		100	XC.	0.194	Width			
discharge comments, etc.):	5	Q. U	154	0.218	Depth 1			
discharge comments, etc.):	6	2.5	.56	1.195	Depth 2			
	7	3,0	2	1,200	Depth 3			
			+ +	UVIT	Depth 4			
	8	3.5	173	0.435	Depth 5			
January—December Monthly In Situ Measurements:	9	40	193	0.467	Бериго			
pH: 8 pH units EC: μS/cm	10	AS	190	0.542	May—September: Algae Collection for Chloro			
DO:mg/L SC: \\		1,0	1 01	01313	Reach Length (150 r			
DO: 12 74% Salinity: 0.52 ppt	11	50	7-8	0.415	if wetted width > 10			
Water Temp: 18.4 °C	12	5.5	,79	0,239	Collection Device Ou			
Flow (from discharge measurement): cfs	13	6.0	77	0.147	(sum #transects per Device)			Quantity
	14	105	1 1	0	Rubber Delimiter (Ar			/
Samples Collected (check box)	15	137		0.017	PVC Delimiter (Area	-		
January—December Monthly Water:	15	1.0	1 N	-0.005	Exercise Services			
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16	7.5	115	-0.021	Syringe Scrubber (Ar	ea=5.3cm <sup>e</sup>		11 = 1
Nitrogen (unfiltered):	17	7.7	0	4	Other (Area=	/	)	
Dissolved Phosphorus and Nitrogen (field filtered):	18	,			Number of Transects	Sampled (	(0-11)	1
May—September Dry Season Monthly Algae:	19				Composite Volume (	mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	V		
, tiv	20				(use GF/F filter, 25 m		d volume)	

## Discharge Measurement

Event ID (Month Year): March 2000		1st l	Measuremen	nt = left bank (	looking downstream)			
Site ID: TMDL-R	Ve	locity Area M	lethod (pref	erred)	Buoyant Object Method (Use only if velocity area method not possible)			
Date/Time: <u>03/19/3030</u> 1335	No.	Distance from Left	Depth (ft)	Velocity		Float 1	Float 2	Float 3
	ığο.	Bank (ft)	Deptii (it)	(ft/sec)	Distance (ft)		)	
Latitude/Longitude: 34.38179 119.30908	1	1	(A)	17	Float Time (sec)			
Flow (circle one): Flowing / Ponded / Dry		1	17	17 100	Float Re	Float Reach Cross Section (ft)		
Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	2	(1)	,13	M. 61		Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To	3	1.0	1.30	0186		Section	Section	Section
Photos (check): Upstream Downstream	4	15	(00)	0.323	Width	/	1	
Notes (e.g. homeless) wildlife, horses, swimming/recreation,	5	2.0	40	0.431	Depth 1			
discharge comments, etc.):	_	1	1 1 1		Depth 2	/		
camps under bridge	6	-	.51	0.579	Depth 3	1	1	
	7	3.0	154	410.0	Depth 4	/		
	8	135	57	0.585	1			
December 1 Situ Managements	9_/	40	57	0.560	Depth 5			
January—December Monthly In Situ Measurements:  pH: 9.37 pH units EC: µS/cm	1				May-September: Algae Collection for Chlorophyll			
DO: 12.58 mg/L SC: 1335 µS/cm	10	45	100	1.622	Reach Length (150 m if wetted width ≤ 10 m; 250			0 m; 250 m
DO: % Salinity: 0.61 ppt	11	50	1.49	D. bila	if wetted width > 1	D m):		
Water Temp: 13.3 °C	12	5.5	,54	0.501	Collect	ion Device		Quantity
Flow (from discharge measurement): cfs	13	6.0	9	0.650	(sum # trans	ects per De	evice)	
	14	6.5	00	0,347	Rubber Delimiter (A	Area=12.6c	ph²)	
Samples Collected (check box)	-		100		PVC Delimiter (Area	a=12.6cm	(	
January—December Monthly Water:	15	7.0	,14	10.128	Curingo Corubbor //	Vran=1 200	2)	
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as	16	7.25	0	M	Syringe Scrubber (/	Area=p.3cm	1)	
Nitrogen (unfiltered):	17				Other (Area=		) /	11
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transec	ts Sampled	(0-11)	N.
May Contomber Dry Sesson Monthly Algae	19				Composite Volume (mL)			
May—September Dry Season Monthly Algae: Chlorophyll α (filters—algae):					Chlorophyll a Volu	me		1
N N	20				(use GF/F filter, 25 mL preferred volume)			

# Ventura River Algae TMDL Field Ta Sheet (Estuary) - Page 1 of 1

# Ventura River Algae TMDL—Estuary Details

Sample Longitude - 14.307-50

Site ID: TMDL-Est  Event ID (Month Year): Nov Control Crew Members: SP, DY	Date/Time: 3/19/2020 1300
Weather (circle one): Clear Partly Cloudy Overcast / Rainy / Foggy Ocea	n Inlet (circle one): Open Restricted / Closed
	of Low Tide:Time of High Tide:
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Windy /	Strong Wind Wind Direction: Blowing From / To
In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)	Water Samples Collected (check box)
Monthly (Jan—Dec):	[Collect at Floating Macroalgae Quadrat 1, Transect 1]
pH: <u>ξ.2Z.pH</u> units <u>EC: μS/cm</u> Water Temp: <u></u> 5.Z	°C
DO: <u>12.00</u> mg/L SC: <u>1345</u> μS/cm	Nitrogen, total and dissolved:
Salinity: 0.68 ppt	Phosphorus, total and dissolved:
	Nitrate + Nitrite as Nitrogen:
Photos: Coceanward Candward	
Sample Latitude: 01/ 17 6 77	

		1ct		charge Meas	surement (looking downstream)			
Event ID (Month Year):		150	ivieasui ei ilei	it – ieit balik	(looking downstream			
Site ID:	Ve	locity Area N	lethod (pref	erred)	Buoyant Object Method (Use only if velocity area method not possible)			
Date/Time:		Distance		Velocity	(Ose Offiy II Ver	Float 1	Float 2	Float 3
Crew Members:	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)			
Latitude/Longitude:		Dank (it)			Float Time (sec)			
Flow (circle one): Flowing / Ponded / Dry	1					anah Guasa	Castian (ft)	
Wind Strength:	2				Float K	each Cross	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy  Wind Direction: Blowing (circle one) From / To	3					Upper Section	Middle Section	Lower Section
Photos (check):   Upstream   Downstream	4				Width			- Cotton
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5				Depth 1			
discharge comments, etc.):					Depth 2			
	6				Depth 3			
	7				Depth 4			
	8				Depth 5			-
January—December Monthly In Situ Measurements:	9				Беригэ			
pH: pH units EC: μS/cm	10				May—September:	Algae Colle	ction for Cl	nlorophyll <i>a</i>
DO: mg/L SC: μS/cm	11				Reach Length (150			
DO: % Salinity: ppt	11				if wetted width > 10	0 m);		
Water Temp:°C	12				Collection Device Qu (sum # transects per Device)			Quantity
Flow (from discharge measurement): cfs	13							
	14				Rubber Delimiter (A	rea=12.6cr	n²)	
Samples Collected (check box)	15				PVC Delimiter (Area	=12.6cm²)		
January—December Monthly Water:	16				Syringe Scrubber (A	rea=5.3cm	<sup>2</sup> )	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as					Other (Area=		)	
Nitrogen (unfiltered):   Dissolved Phosphorus and Nitrogen (field filtered):	17						,	
bissoved i nosphorus and Murogen (neid intered).	18				Number of Transec	ts Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll <i>a</i> Volun	ne		
					(use GF/F filter, 25	mL preferre	ed volume)	

## Discharge Measurement

Event ID (Month Year): Accided to the second	1st Measurement = left bank (looking downstream)							
Site ID: TMDL-CL	Ve	locity Area N	lethod (pref	erred)	<b>Buo</b> y (Use only if vel	ant Object		ossible)
Date/Time: 4/15/2020 6745		Distance	Cn.	Velocity		Float 1	Float 2	Float 3
Crew Members: SP BT DY	No.	from Left Bank (jt)	Depth (ft)	(ft/sec)	Distance (ft)		/	
Latitude/Longitude: 34.34202 119.27042	1	A _	6	7	Float Time (sec)			
Flow (circle one): Flowing / Ponded / Dry			1	72	Float Reach Cross Section (ft)			
Wind Strength:	2	e [5]	3	10109		Upper	Middle	Lower
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3	0 30	5	0.044		Section	Section	Section
Photos (check): Dupstream Downstream	4	.45	10	0.028	Width	1		
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	(00)	Ğ	0 975	Depth 1	1		
discharge comments, etc.):	6		5	n 10.1	Depth 2	/		
		.75	-	D. 111	Depth 3			
	7	090		0.363	Depth 4			
	8	1,05	10	0.160	Depth 5			
January—December Monthly In Situ Measurements:	9	1.20	8	0.044				
pH: Δ.V. pH units EC: μS/cm	10	1.35	1/2	0.21	May—September: Algae Collection for Chloropl Reach Length (150 m if wetted width ≤ 10 m; 25 if wetted width > 10 m):			
DO: 13 71 mg/L SC: 4193 μS/cm	11	1.50	4	- 400				
DO: % Salinity: ppt			1	0.031	if wetted width > 10	) m):		_
Water Temp:°C Flow (from discharge measurement): cfs	12	1.60		-		on Device	/	Quantity
riow (from discharge measurement):cis	13				(sum # trans		-/-	1
	14				Rubber Delimiter (A	rea=12.6cr	m²)/	
Samples Collected (check box)	15				PVC Delimiter (Area	=12.6cm <sup>2</sup> )		
January—December Monthly Water:	16				Syringe Scrubber (A	rea=5.3cm	<sup>2</sup> )	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as					Other (Area=	/	1	
Nitrogen (unfiltered):	17					1		
Dissolved Phosphorus and Nitrogen (field filtered): 🔟	18			1 _ 0 -	Number of Transec	ts/Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volun	ne		
					(use GF/F filter, 25 mL preferred volume)			

# Ventura River Algae TMDL Field ta Sheet (Estuary) - Page 1 of 1

# Ventura River Algae TMDL—Estuary Details

Sample Longitude - 19.30750

Site ID: TMDL-Est  Event ID (Month Year): A DO DO Crew Members: D SP DY	Date/Time: 04/15/2020 12/40
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy Oce	ean Inlet (circle one): Open / Restricted / Closed
Direction of Tide: Ebb / Flood / Slack / N/A Tim Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Windy	e of Low Tide: 1151 Time of High Tide:
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Windy	/ Strong Wind Wind Direction: Blowing From / To
Notes (e.g. homeless, wildlife, dogs, swimming/recreation):	
In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)	Water Samples Collected (check box)
Monthly (Jan—Dec):	[Collect at Floating Macroalgae Quadrat 1, Transect 1]
pH: $\frac{8.75}{}$ pH units EC: $\underline{\hspace{1cm}}$ µS/cm Water Temp: $\underline{\hspace{1cm}}$ $\underline{\hspace{1cm}}$ $\underline{\hspace{1cm}}$ $\underline{\hspace{1cm}}$ EC:	<u>D</u> °C   Monthly Water (Jan—Dec):
OO: 10.84 mg/L SC: 1262 μS/cm	Nitrogen, total and dissolved:
00:% Salinity: <u>0,63</u> ppt	Phosphorus, total and dissolved:
	Nitrate + Nitrite as Nitrogen:
Photos: 🗹 Oceanward 💆 Landward	
Sample Latitude: 34, 27543	

Event ID (Month Year): Apr. \ 2020
Site ID: TMOL-RI
Date/Time: 04/15/2020 1120
Crew Members: DI SP DY
Latitude/Longitude: 34.28190 1-119.30905
Flow (circle one): Flowing / Ponded / Dry
Wind Strength:
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.):
many homeless under bridge

pH: 8.29 pH units	EC: 14	_ μS/cm	
DO: 105 mg/L	sc: 1185	_μS/cm	
DO: <u>NIA</u> % Sa	alinity: 0.5%	_ppt	
Water Temp: 11.8	_°C		
Flow (from discharge n	neasurement):		_cfs

# Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered): May—September Dry Season Monthly Algae: Chlorophyll a (filters—algae):

## Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	locity Area M	ethod (pref	erred)
No.	Distance from Left Bank (30)	Depth (ft)	Velocity (*/sec)
1	0	0	0
2	0.75	19	0.235
3	1.50	50	0.264
4	2.25	56	0.45%
5	3.0	55	0.575
6	3,75	6	0,729
7	4.50	63	0.582
8	5,25	53	0.729
9	5.45	52	0.762
10	6.00	33	0.647
11	6.75	0	4
12			
13			
14			
15			
16			
17			
18			<u> </u>
19			
20			

Buoy Wse only if velo	ant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)		/	
Float Time (sec)			
Float Re	each Cross	Section (ft	)
	Upper Section	Middle Section	Lower Section
Width			
Depth 1		1	
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	ļ.
PVC Delimiter (Area=12.0cm²)	
Syringe Scrubber (Area=5.3cm²)	-
Other (Area=	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	1

Event ID (Month Year): Aor 1 7000	_
Site ID: TMOL-RA	
Date/Time: 04 15 2000 1030	╟
Crew Members: 90 80 0V	ш
	ш
Latitude/Longitude: 34.33940, -119.29120	ŀ
Flow (circle one): Flowing / Ponded / Dry	L
Wind Strength:	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	ı
Wind Direction: Blowing (circle one) From / To	L
Photos (check): Upstream Downstream	
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	
discharge comments, etc.): Now VSE UNSTERM	-
	-
	ŀ
January—December Monthly In Situ Measurements:	L
pH:μS/cm	П
DO: 1162 mg/L SC: 1077 μS/cm	ı
DO:% Salinity: <u>0.54</u> ppt	H
Water Temp: 15.5 °C	
Flow (from discharge measurement): cfs	
	ı
Samples Collected (check box)	1
January—December Monthly Water:	H
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	
Nitrogen (unfiltered):	
Dissolved Phosphorus and Nitrogen (field filtered):	-
	L
May—September Dry Season Monthly Algae:	
Chlorophyll a (filters—algae):	

## Discharge Measurement

1st Measurement = left bank (looking downstream)

Vel	Velocity Area Method (preferred)					
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (#/sec)			
1	0	0	0			
2	0.75	50	0.024			
3	1.50	56	0.156			
4	2.35	56	0.226			
5	30	57	0.468			
6	3,75	70	0.523			
7	4.50	93	0.517			
8	5.55	83	0.384			
9	(1)	80	0,182			
10	10.75	54	0.034			
11	7.50	0	0			
12						
13						
14						
15						
16						
17						
18						
19			=			
20						

Buoy (Use only if velo	ant Object ocity area me		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			/
Float Time (sec)		/	
Float R	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1 /			
Depth 2		-	
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	7
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area=	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

Discharge Measurement

Site ID:	onth Year): April 3620
Date/Time:	
Crew Members	The second secon
Latitude/Longit	tude: 34.34547,-119.29932
	e): Flowing / Ponded / Dry
Wind Strength:	
Calm / Light Bree	ze / Moderate Breeze / Strong Breeze / Windy
Wind Direction	: Blowing (circle one) From / To
Photos (check):	: Dupstream Downstream
Notes (e.g. hon	neless, wildlife, horses, swimming/recreation,
discharge comr	ments, etc.) :
January Dece	mber Monthly <i>In Situ</i> Measurements:
	mber Monthly In Situ Measurements:
pH: 8.19 p	oH units EC: μS/cm
pH: <u>8 : 19</u> p DO: <u>11 :58</u> r	oH units EC: μS/cm mg/L SC: 1043 μS/cm
pH: <u>8 , 19</u> p DO: <u>11 , 58</u> r DO:	pH units EC: μS/cm mg/L SC: 1047 μS/cm % Salinity: 1252 ppt
pH: <u>8   19</u> p DO: <u>11   58</u> r DO: 9 Water Temp: _	pH units EC: μS/cm mg/L SC: 1043 μS/cm % Salinity:52 ppt 14.8 °C
pH: <u>8   19</u> p DO: <u>11   58</u> r DO:9 Water Temp: _	pH units EC: μS/cm mg/L SC: 1047 μS/cm % Salinity: 1252 ppt
pH: <u>8 · 19</u> p DO: <u>11 · 58</u> r DO: 9 Water Temp: _	pH units EC: μS/cm mg/L SC: 1043 μS/cm % Salinity:52 ppt 14.8 °C
pH: 8 · 19 p DO: 11 · 58 r DO:9 Water Temp: _ Flow (from disc	pH units EC: μS/cm mg/L SC: 1043 μS/cm % Salinity:52 ppt 14.8 °C
pH: 8 · 19 p DO: 11 · 58 r DO: 9 Water Temp: Flow (from disc  Samples Collect January—Dece	pH units EC: μS/cm mg/L SC: μS/cm % Salinity: ppt cfs harge measurement): cfs  ted (check box) mber Monthly Water:
pH: 8 1 9 p DO: 11 58 r DO: 9 Water Temp: 9 Flow (from disc  Samples Collect January—Dece	when the second process of the second proces
pH: 8 1 9 p DO: 11 58 r DO:	ted (check box) mber Monthly Water: us , Total Nitrogen, and Nitrate + Nitrite as ered):
pH: 8 19 p DO: 11 58 r DO:	when the second process of the second proces
pH: 8 1 9 p DO: 1 58 r DO:	ted (check box) mber Monthly Water: us , Total Nitrogen, and Nitrate + Nitrite as ered):

	1st N		nt = left bank		king downstrean	n)
Vel	Velocity Area Method (preferred)				Buc (Use only if ve	
No.	Distance from Left Bank (#t)	Depth (煮)	Velocity (ft/sec)		Distance (ft)	I
1	0	0	0		Float Time (sec)	
2	0.75	63	0.242		Float	Rea
3	1.50	100	0.383			1
4	2.25	58	0,657		Width	1
5	3.0	53	0.691		Depth 1	I
6	3.75	52	0.935		Depth 2	
7	4.50	44	0.852		Depth 3	1
8	5.25	28	0.918	П	Depth 4 Depth 5	+
9	6.0	14	1.140	닏	Depth 5	1
10	6.75	6	0.642		May—September Leach Length (150	
11	750	3	0,255		wetted width > 1	
12	8,25	6	P10.0	lt	Collec	— tio
13	8.5	A	4		(sum # tran	
14				R	ubber Delimiter	Ar
15				Р	VC Delimiter (Are	:a=
16				s	yringe Scrubber (	Are
17				c	ther (Area=	
18				N	lumber of Transe	cts
19				c	omposite Volume	<b>∌</b> (r
20				С	hlorophyll <i>a</i> Volu	me

<b>Buoy</b> (Use only if velo	ant Object ocity area m		ossible) ′
1	Float 1	Float 2	Float 3
Distance (ft)		1	
Floar Time (sec)		/	
Float Re	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width	1		
Depth 1		1	
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	96.00
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3m²)	
Other (Area=	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	/

Event ID (Month Year):		13t	Measure <b>me</b> r	nt = left bank	(looking downstream)			
Site ID: TMDL-R4	Ve	locity Area M	lethod (pref	erred)	<b>Buoy</b> (Use only if velo	ant Object		ossible)
Date/Time: 4/15/2000 0828		Distance	Q:	Velocity			Float 2	Float 3
Crew Members:	No.	from Left Bank (#1)	Depth (ft)	(ft/sec)	Distance (ft)			
Latitude/Longitude: 34,37980, -119,30849	1		0	7	Float Time (sec)			
Flow (circle one): Flowing / Ponded / Dry		(-1-)	+)	T	Float Reach Cross Section (ft)			
Wind Strength:	2	10,75	43	10.044	T TOUCH		1	-
Calm Light Breeze / Moderate Breeze / Strong Breeze / Windy	3	1.50	54	D. 15/0		Upper Section	Middle Section	Lower Section
Wind Direction: Blowing (circle one) From / To		1.00	1-7	17 1911-	AAP IN	Jeetion	Jeet. o	Jeetion.
Photos (check): Upstream Downstream	4	9:92	6+	1),510	Width	/		
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5	3.0	04	MINITO	Depth 1			
discharge comments, etc.) :	6	3,75	Ala	0.585	Depth 2			
	-	1 A GO	60	A 40 1	Depth 3			
	7	1700	200	111100	Depth 4			
	8	5.25	40	0.326	Depth 5			
January—December Monthly In Situ Measurements:	9	(0.0)	31	0.193				
pH: 8.00 pH units EC: μS/cm	10	10.75	23	Dinel	May—September:			
DO: 12.04 mg/L SC: 35 μS/cm	- 44	7.50	21	n 5/5	Reach Length (150			0 m; 250 n
DO:% Salinity: _O.47_ ppt	11	1100	24	U.U.V	if wetted width > 10	) m):		
Water Temp: 14·2 °C	12	8.25	40	0.084	Collecti	on Device		Quantit
Flow (from discharge measurement): cfs	13	9.00	20	0.068	(sum # trans	ects per De	evice)	
	14	9.35	15	0.05)	Rubber Delimiter (A	\rea=12.6c	m²)	
Samples Collected (check box)	15	1050	110	0.037	PVC Delimiter (Area	=12.6cm <sup>2</sup> )		
January—December Monthly Water:		1 25	110	17.0	Syringe Scrubber (A	rea=5.3cm	38	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16	11160	10	0.064	Other (Area=	-/	1	
Nitrogen (unfiltered):	17	13 00	9	17.035		/		
Dissolved Phosphorus and Nitrogen (field filtered):	18	12.95	0	0	Number of Transec	ts Sampled	l (0- <b>11</b> )	
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volur	ne		
					(use GF/F filter, 25		ed volume)	

	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			scharge Meas				
Event ID (Month Year): Apr 3030		1st	Measuremer	nt = left bank	(looking downstream)			
Site ID: TMOL-SA	Velocity Area Method (preferred)				ant Object			
Date/Time: 04 15 3020 0855	77.7	Distance	Ch		(Use only if vel	-		
Crew Members:	No.	from Left	Depth (ft)	Velocity (ft/sec)	- Maria	Float 1	Float 2	Float 3
Latitude/Longitude: 34, 385 7 2, -112, 30 7 40		Bank (1)		(it/sec)	Distance (ft)		/	
Flow (circle one): Flowing / Ponded / Dry	1	1)	1	A	Float Time (sec)			
Wind Strength:	2	0 00	2	0.00	Float R	each Cross	Section (ft	
Çalm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy		075	50	-0.00L	(4) The state of t	Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To	3	1150	34	0.009		Section	Section	Section
Photos (check): Dupstream Downstream	4	12.25	32	0.128	Width /			
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	5		36		Depth 1			
discharge comments, etc.) :	_	30	50	0.301	Dépth 2			
<del></del>	6	375	3+	0.279		1		
	7	450	44	0.191	Depth 3			
-	8		510	2	Depth 4			
		5.35	JU	Disc	Depth 5			
January—December Monthly In Situ Measurements:	9	60	51	0.035				
pH:pH units EC:μS/cm	10	1675	73	-0,005	May—September:			
DO: <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	11	7.50	11	0.000	Reach Length (150 if wetted width > 10			0 m; 250 m
Water Temp:°C	40		-		ii wetted widtii > 10	111).	-/	_
Flow (from discharge measurement): cfs	12	8:35	D	0		on Device		Quantity
rosii (irosii disaria) —eis	13				(sum # transe	cts per De	vjce)	
	14				Rubber Delimiter (A	rea=12.8cı	m²)	
Samples Collected (check box)	15				PVC Delimiter (Area	=12.6cm²)		
January—December Monthly Water:					Syringe Scrubber (A	rea=5 3cm	<sup>2</sup> )	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16				/	- J.Jem	<u>'</u>	-
Nitrogen (unfiltered):	17				Other (Area= /			
Dissolved Phosphorus and Nitrogen (field filtered): 🗅	18				Number of Transect	s Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volum	ne .		
ie II.					(use GF/F filter, 25 r		ed volume)	
						1		

	O (Month Year): Jan 2020
	TMDL-CL
Date/Ti	me: 1-15 20 0745
	embers: Koin Wishington, Bijanch
	es, princelle Vaconelli
	(Longitude: 34,34204) - 119,28643
	cle one): Flowing / Ponded / Dry
Wind Str	
1	ht Breeze / Moderate Breeze / Strong Breeze / Windy ection: Blowing (circle one) From / To
	check): Downstream
	g. homeless, wildlife, horses, swimming/recreation,
	deer downstream
DRGOL	all goons hearing
	December Monthly In Situ Measurements:
	DH units EC: N/Ω μS/cm
	$\frac{84}{\text{mg/L}}$ sc: $\frac{4388}{333}$ µS/cm
	Salinity: 2.31 ppt
	emp: or
Flow (fro	m discharge measurement): cfs
<u>Samples</u>	Collected (check box)
January-	-December Monthly Water:
	osphorus, Total Nitrogen, and Nitrate + Nitrite as
	(unfiltered):
Nitrogen	Phosphorus and Nitrogen (field filtered):
Nitrogen Dissolved	

Discharge Measurement

1st Measurement = left bank (looking downstream)

Ve	Velocity Area Method (preferred)					
No.	Distance from Left Bank (%)	Depth (ft)	Velocity (st/sec)			
1	,0,	0	0			
2	120	10	008			
3	40	9	0.013			
4	60	9	0.008			
5	80	7	0.112			
6	100	6	0.181			
7	120	5	0.62			
8	140	0	0			
9						
10						
11						
12	10 0 0					
13						
14			1-71			
15						
16						
17						
18						
19						
20						

<b>Buoy</b> (Use only if vel	ant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)		/	
Float Time (sec)			
Float R	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width	/		
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	/
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

**Discharge Measurement** 

0.490

NA

Event ID (Mor	nth Year): 10000
Site ID: TN	
Date/Time: _	1-15-19 0854
Crew Members:	
Latitude/Longitu	de: 34, 37 984, -119, 3085
	: Flowing / Ponded / Dry
Wind Strength:	
	e / Moderate Breeze / Strong Breeze / Windy
Wind Direction:	Blowing (circle one) From / To 🚈 - 🗥
Photos (check):	Upstream Downstream
Notes (e.g. home	eless, wildlife, horses, swimming/recreation
	eless, wildlife, horses, swimming/recreation
	eless, wildlife, horses, swimming/recreation ents, etc.):
discharge comm	ents, etc.) :
discharge commo	ents, etc.) :
January—Decem	ber Monthly In Situ Measurements:  Junits EC: NA µS/cm
January—DecempH: 1.64 pH	ber Monthly In Situ Measurements:  I units EC: μS/cm g/L SC: μS/cm
January—DecempH: 1.64 pH	ber Monthly In Situ Measurements:  Junits EC: NA µS/cm
January—DecempH: 1.64 pH	sents, etc.):
January—DecempH: 1.64 pH DO: 10,01 m DO: NA % Water Temp: 16	sents, etc.):

Samples Collected (check box)

Chlorophyll a (filters-algae):

Nitrogen (unfiltered):

January-December Monthly Water:

Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as

Dissolved Phosphorus and Nitrogen (field filtered):

May—September Dry Season Monthly Algae:

### 1st Measurement = left bank (looking downstream) **Velocity Area Method (preferred)** Distance Depth (ft) Velocity from Left No. (ft/sec) Bank (ft) 6 NIA 1 0.5 28 0.147 2 1.0 31 0.293 3 34 4 1.5 0-410 31 0.363 2.0 5 31 0.366 6 2.5 3.0 0.357 7 3.5 26 8 0,297 20 9 4.0 0.314 4.5 22 10 0.258 5,0 3 11 0.244 5.5 0.182 12 0.132 13 6.0 6.5 14 0 0-111 7.0 0.130 15 10 -7,5 0.190 16

8.0

8.5

8.8

5

17

18

19

20

Buoy (Use only if velo	ant Object ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Ro	each Cross	Section (ft	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm <sup>2</sup> )	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

Event ID (Month Year): Jan aoるし	
Site ID: TMOL-SA	
Date/Time: 1-15-19 , 0915	
Crew Members: KW. BJ. DY	= 1
	_
Latitude/Longitude: 34, 38075, -1 19, 30-	+32
Flow (circle one): Flowing / Ponded / Dry	
Wind Strength:	
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Win	
Wind Direction: Blowing (circle one) From / To	1,00
Photos (check): Upstream Downstream  Notes (e.g. homeless, wildlife, horses, swimming/recr	eation
discharge comments, etc.):	eation,
uischarge comments, etc./	
January—December Monthly In Situ Measurements:	
pH: 3 09 pH units EC: NA μS/cm	
DO: 14,42 mg/L SC: 1614 μS/cm	
DO: <u>N/A</u> % Salinity: <u>0.82</u> ppt	
Water Temp: 10.0 °C	- 4
Flow (from discharge measurement): cfs	
	_
Samples Collected (check box)	
January—December Monthly Water:	10
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite	as
Nitrogen (unfiltered):	
Dissolved Phosphorus and Nitrogeo (field filtered):	\
May—September Dry Season Monthly Algae:	
Chlorophyll a (filters—algae):	

## Discharge Measurement

1st Measurement = left bank (looking downstream)

Vel	Velocity Area Method (preferred)					
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)			
1	0	0	NFA			
2	0.5	17	-0.002			
3	1.0	17	0.003			
4	1.5	18	0.010			
5	2.0	20	0.009			
6	2.5	20	0.020			
7	3.0	20	0.020			
8	3.5	19	0.032			
9	4.0	23	0.032			
10	4.5	34	0.027			
11	5.0	27	0.020			
12	5.5	45	0.007			
13	6:0	35	0.009			
14	6.5	15	-0.008			
15	7.0	0	AIM			
16						
17						
18						
19						
20						

<b>Buoyant Object Method</b> (Use only if velocity area method not possible)						
	Float 1	Float 2	Float 3			
Distance (ft)						
Float Time (sec)						
Float Re	each Cross	Section (ft)				
	Upper Middle Lower Section Section Section					
Width						
Depth 1						
Depth 2						
Depth 3						
Depth 4						
Depth 5						

May—September: Algae Collection for Cl Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	/
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	1

## **Discharge Measurement**

= left bank (looking downstream)

Event ID (Month Year): 1st Measurement			nt = left ban	
Site ID: TMOL - R3	Ve	locity Area M	lethod (pref	erred)
Date/Time: 15/20 1014  Crew Members: KW & DY	No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
Latitude/Longitude: 34,345 41, -119,29935 Flow (circle one): Flowing & Ponded / Dry	1	0	0	NIA
Wind Strength:	2	0.4	29	-0.008
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3	0.8	39	0,156
Photos (check): Upstream Downstream	4	1.2	43	0.484
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.):	5	1.6	38	0.729
discharge comments, etc.)	6	2.0	37	0.754
	7	7.4	36	0.544
	8	2.8	27	0.532
January—December Monthly In Situ Measurements:	9	3.2	17	0.390
pH: 8/12 pH units EC: NA μS/cm	10	3.6	15	0.664
DO: $\frac{1.31}{9}$ mg/L SC: $\frac{120}{9}$ µS/cm DO: $\frac{516}{9}$ % Salinity: $0.50$ ppt	11	4.0	11	0.138
Water Temp: 11.4 °C	12	4.4	0	NA
Flow (from discharge measurement): cfs	13			
	14			
Samples Collected (check box)	15			
January—December Monthly Water: Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as	16			
Nitrogen (unfiltered):	17	4		
Dissolved Phosphorus and Nitrogen (field filtered):	18			
May—September Dry Season Monthly Algae:	19			
C <del>hlorophyll a (filters – algae)</del> :	20			

Buoyant Object Method (Use only if velocity area method not possible)					
	Float 1 Float 2 Float 3				
Distance (ft)					
Float Time (sec)					
Float Ro	each Cross	Section (ft)			
	Upper Section	Middle Section	Lower Section		
Width					
Depth 1					
Depth 2					
Depth 3					
Depth 4					
Depth 5					

Reach Length (150 m if wetted width ≤ 10	
if wetted width > 10 m):	/
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

Event ID (Month Year): 200 2020
Site ID: TMOL-RZ
Date/Time:
Crew Members: KW, BJ, WY
Latitude/Longitude: 34.3394 -119.29727
Flow (circle one): Flowing / Ponded / Dry
Wind Strength:
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.) :
Homeless & 100 ft from stream
(past left Bonk)

January—December Monthly In Situ Meas	surements:
pH: 9.19 pH units EC: MA μS	/cm
DO: 12 10 mg/L SC: 1128 μS	/cm
DO: N 19 % Salinity: U.SU pp	t
Water Temp:°C	
Flow (from discharge measurement):	cfs

Samples Collected (check box)	
January—December Monthly Water:	
Total Phosphorus , Total Nitrogen, and	Nitrate + Nitrite as
Nitrogen (unfiltered):	130
Dissolved Phosphorus and Nitrogen (fi	ield filtered):
May—September Dry Season Monthl	y Algae:
Chlorophyll a (filters—algae):	

## Discharge Measurement

1st Measurement = left bank (looking downstream)

Velocity Area Method (preferred)			
No.	Distance from Left Bank (1947	Depth (ft)	Velocity (ft/sec)
1	0	0	NIA
2	0.4	37	0.030
3	0.8	45	0.154
4	1.2	52	0.189
5	1,6	53	0.203
6	2.0	44	0.222
7	2.4	44	0.239
8	2.8	42	0.357
9	3.2	45	0.326
10	3.6	55	0.266
11	4.0	76	0.168
12	4.4	74	0.118
13	4.8	66	0.034
14	5.2	51	-0.008
15	5.6	46	-0.030
16	6.0	30	-0.018
17	6.2	D	NA
18			
19			
20			

Buoyant Object Method (Use only if velocity area method not possible)				
Float 1 Float 2 Float 3				
Distance (ft)				
Float Time (sec)				
Float Ro	each Cross	Section (ft)		
	Upper Section	Middle Section	Lower Section	
Width				
Depth 1				
Depth 2				
Depth 3				
Depth 4				
Depth 5				

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area= )	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	1

May-September: Algae Collection for Chlorophyll a

Event ID (Month Year):	
Site ID: TMQU-RI	
Date/Time: 1/15 19 1200	
Crew Members: KW 6J DY	
Latitude/Longitude: 34. 25 269, -119, 305 8	36
Flow (circle one): Flowing / Ponded / Dry	
Wind Strength:	
Calm (Light Breeze / Moderate Breeze / Strong Breeze / Win	dy
Wind Direction: Blowing (circle one) From / To	
Photos (check): Upstream Downstream	
Notes (e.g. homeless, wildlife, horses, swimming/recr	eation,
discharge comments, etc.) :	_
Homologs encomprised ander	
bridges	
January—December Monthly In Situ Measurements:	
pH: <u>8.26</u> pH units EC: <u>N   Α</u> μS/cm	
DO: <u>1327</u> μS/cm	
DO: <u>N A </u> % Salinity: <u>0.67</u> ppt	
Water Temp: 11,8°C	
Flow (from discharge measurement): cfs	
Samples Collected (check box)	
Samples Collected (check box) January—December Monthly Water:	4
<del></del>	e/aş
January—December Monthly Water:	as
January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite	e/as
January—December Monthly Water: Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite Nitrogen (unfiltered):	elas

# Discharge Measurement

1st Measurement = left bank (looking downstream)

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	0 "	0	NIA
2	0,4	26	0.384
3	0.8	34	0.373
4	1.2	31	0.403
5	1.6	32	0.403
6	7.0	37	0.415
7	2.4	42	0.401
8	2.8	41	0.417
9	3.2	40	0.257
10	3.6	31	0.362
11	4.0	33	0.284
12	4.7	13	0.303
13	5.1	0	NA
14			
15			
16			
17			
18			
19			
20			

<b>Buoy</b> (Use only if velo	ant Object ocity area m		ossible)						
	Float 1	Float 2	Float 3						
Distance (ft)									
Float Time (sec)									
Float Re	each Cross	Section (ft)							
Upper Middle Lower Section Section Section									
Width									
Depth 1									
Depth 2									
Depth 3									
Depth 4									
Depth 5									

May—September: Algae Collection for Ch Reach Length (150 m if wetted width ≤ 10 if wetted width > 10 m):	
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm²)	
PVC Delimiter (Area=12.6cm²)	
Syringe Scrubber (Area=5.3cm²)	
Other (Area=	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	1
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	1

# Ventura River Algae TMDL Field : a Sheet (Estuary) - Page 1 of 1

## Ventura River Algae TMDL—Estuary Details

1.70	15000
Date/Time:	1248
	VI.
Time of Low Tide: $19.04$ Time of High Tide: $12$	01/4/
ndy / Strong Wind Wind Direction: Blowing	From/To
in middle of lestrary	-
0	
r	Ocean Inlet (circle one) Open / Restricted / Closed Time of Low Tide: 19:04 Time of High Tide: 12  ndy / Strong Wind Wind Direction: Blowing  www.madde.of.economy

H: pH units	
Photos: Oceanward Landward	
Sample Latitude: 34 27536	
Sample Longitude - 1930752	

Water Samples Collected (check box)
[Collect at Floating Macroalgae Quadrat 1, Transect 1]

Monthly Water (Jan—Dec):

Nitrogen, total and dissolved:

Phosphorus, total and dissolved:

Nitrate + Nitrite as Nitrogen:

\* East side of estrey - Bern open wish side of estrey - Bern closed

# APPENDIX F. CHAIN OF CUSTODIES AND LABORATORY REPORTS



# Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients TMDL (VR Algae TMDL)

Comprehensive Monitoring Program

9E10050

CHAIN-OF-CUSTO	DY RECORD						1	OF	1
CLIENT: Ventura Co	ounty Watershed P	<del>-</del> _	Vlaste	Agr	eeme	ent WEC	KLABORA	TOFY19MA01,	Project P604055
SAMPLING EVENT:		17, 2019							
SAMPLING DATE:		+8/2019							<del> </del>
SAMPLERS:	K. MAHS E.	LOMELI				<del></del>			
GRAB SAMPLES	<u> </u>		1		1 1		<del> </del>	│ ** FIELD FILTE	=RED
SAMPLE ID	DATE	E/TIME	Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen			NOTES	
TMDL-Est	•	13:15	T					HOLES	
	5/8/19		X	X	X				
TMDL-R1	ļ .	11:00	X	X	Х		-		
TMDL-R2	¥ ,	07:50	X	X	Х				.*
TMDL-R3	5/97/19	12:00	X	X	X			•	
TMDL-R4	da	07:50	Х	X	х				
TMDL-CL	1	14:20	х	X	х				
TMDL-SA	5/7/19	10:10	x	х	X				
<del>TMDL FD</del>			ж.	х	<b>-</b> *		( <del>Note</del>	which site).	
Signature: W.B. C	wrlh_	<del>-</del> .	Signa	ature:	4				
Print Name: W.B.	CAREY	-	Print	Name	e: <i>1</i> /	FLIN	. بر) د		
Affiliation: VCWP			Affilia	ation:	し	1 & CK			
	<del></del>					ived: <u>5</u> /	10/19	11.30	
Date/Time Relinquished:	5-10-19/113	<u> </u>	Date	/Time	Relina	quished:			
Signature:			Signa	ature:			Jaman	mor	
Print Name: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			Print	Name	e:		Jame Go	5m62	
Affiliation: WECL  Date/Time Received: 5/1	v.			ation:			Jack (a)	<u>^  3                                   </u>	
		<u> </u>			Recei		5	liplia isis	•
Date/Time Relinquished:	5/10/19 251	<u> </u>	Date	rime	Keling	quished:			
Miscellaneous Notes (Hazaro	dous Materials, Quick to	um-around time, etc.):		Disse	olved s	samples we	ere field filtere	1.3°C	4013)
									1



**FINAL REPORT** 

**Work Orders:** 9E10050 **Report Date:** 6/13/2019

**Received Date:** 5/10/2019

Turnaround Time: Normal

**Phones:** (805) 658-4375

Fax: (805) 654-3350

P.O. #: WECKLABORATOFY1

9MA01

Client: Ventura County Watershed Protection District

Billing Code:

800 South Victoria Avenue

Project: TMDL Study May 2019 P6040555

Ventura, CA 93009

Attn: Kelly Hahs

EPA-UCMR #CA00211 • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 •

NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAOMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 5/10/19 with the Chain-of-Custody document. The samples were received in good condition, at 1.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee

Operations Manager/Senior PM











FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 **Project Number:** TMDL Study May 2019 P6040555

**Reported:** 06/13/2019 09:55

**Project Manager:** Kelly Hahs



## Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K. Hahs, E. Lomeli	9E10050-01	Water	05/08/19 13:15	
TMDL-R1	K. Hahs, E. Lomeli	9E10050-02	Water	05/08/19 11:00	
TMDL-R2	K. Hahs, E. Lomeli	9E10050-03	Water	05/08/19 07:50	
TMDL-R3	K. Hahs, E. Lomeli	9E10050-04	Water	05/07/19 12:00	
TMDL-R4	K. Hahs, E. Lomeli	9E10050-05	Water	05/07/19 07:50	
TMDL-CL	K. Hahs, E. Lomeli	9E10050-06	Water	05/07/19 14:20	
TMDL-SA	K. Hahs, E. Lomeli	9E10050-07	Water	05/07/19 10:10	



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Project Number: TMDL Study May 2019 P6040555

Reported: 06/13/2019 09:55

Project Manager: Kelly Hahs

	Sa

Sample:	TMDL-Est					Sam	pled: 05/	'08/19 13:15 by K. Hah	is, E. Lome
	9E10050-01 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
onventional	Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
	* DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/16/19 16:55		Analyst: mcs	
METHOD ***  Dissolved	* d Nitrogen		1,3		0.20	mg/l	1x1	05/28/19 16:24	
	-								
Method: _Va Nitrogen,		Batch ID: [CALC]	Instr: [CALC]		0.20	5/16/19 16:55 mg/l	1x1	<b>Analyst:</b> mcs 05/28/19 16:24	
Mitrogen,	, IOlai		1.0		0.20	mg/i	17.1	03/20/19 10.24	
Method: EP.	A 351.2	Batch ID: W9E0758	Instr: AA06	0.050	•	5/14/19 12:30	4.4	Analyst: mcs	
TKN			0.26	0.050	0.10	mg/l	1x1	05/21/19 15:36	
Method: EP	A 351.2	Batch ID: W9E0759	Instr: AA06		•	5/14/19 12:33		Analyst: mcs	
TKN, Soli	uble		0.12	0.050	0.10	mg/l	1x1	05/21/19 15:36	
Method: EP	A 353.2	Batch ID: W9E0929	Instr: AA01		Prepared: 0	5/16/19 16:55		Analyst: ymt	
NO2+NO3	3 as N		1.2	0.083	0.20	mg/l	1x1	05/28/19 16:24	
Method: EP.	A 365.1	Batch ID: W9E1043	Instr: AA01		Prepared: 0	5/20/19 10:06		Analyst: ymt	
Phospho	rus as P, Total		0.13	0.0014	0.010	mg/l	1x1	05/30/19 15:23	
letals by EPA	A 200 Series Methods								
Method: EP		Batch ID: W9F0285	Instr: ICP03		Prenared: 0	6/06/19 11:24		Analyst: mtt	
•	rus, Dissolved		0.028	0.012	0.020	mg/l	1x1 pled: 05/	06/11/19 12:49 /08/19 11:00 by K. Hah	ns, E. Lome
Sample:			0.028		0.020	mg/l Sam	pled: 05/	06/11/19 12:49 /08/19 11:00 by K. Hah	
Sample:	TMDL-R1 9E10050-02 (Water)	by APHA/EPA/ASTM Methods		0.012	-	mg/l		06/11/19 12:49	
Sample:  Analyte onventional	TMDL-R1 9E10050-02 (Water) Chemistry/Physical Parameters		Result		0.020 MRL	mg/l Sam Units	pled: 05/	06/11/19 12:49 /08/19 11:00 by K. Hah	
Sample:  Analyte onventional Method: ***	TMDL-R1 9E10050-02 (Water)  Chemistry/Physical Parameters * DEFAULT SPECIFIC	by APHA/EPA/ASTM Methods Batch ID: [CALC]	0.028		0.020 MRL	mg/l Sam	pled: 05/	06/11/19 12:49 /08/19 11:00 by K. Hah	
Sample:  Analyte conventional Method: *** METHOD ***	TMDL-R1 9E10050-02 (Water)  Chemistry/Physical Parameters * DEFAULT SPECIFIC	Batch ID: [CALC]	Result		0.020 MRL	mg/l Sam Units	pled: 05/	06/11/19 12:49 /08/19 11:00 by K. Hah	
Analyte conventional Method: *** METHOD *** Dissolved	TMDL-R1 9E10050-02 (Water)  Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen	Batch ID: [CALC]	Result Instr: [CALC]		0.020  MRL  Prepared: 0.000	mg/l Sam <b>Units</b> 5/16/19 16:55	pled: 05/	06/11/19 12:49  /08/19 11:00 by K. Hah  Analyzed  Analyst: mcs  05/28/19 16:25	
Analyte conventional Method: *** METHOD *** Dissolved	TMDL-R1 9E10050-02 (Water)  Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen	Batch ID: [CALC]	Result Instr: [CALC]		0.020  MRL  Prepared: 0.000	mg/l Sam Units 5/16/19 16:55 mg/l	pled: 05/	06/11/19 12:49  08/19 11:00 by K. Hah  Analyzed  Analyst: mcs	
Analyte conventional Method: *** METHOD *** Dissolved Method: _V. Nitrogen,	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  arious , Total	Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  1.4  Instr: [CALC]  1.5		0.020  MRL  Prepared: 0. 0.20  Prepared: 0. 0.20	mg/l Sam Units 5/16/19 16:55 mg/l 5/16/19 16:55 mg/l	pled: 05,	06/11/19 12:49  08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25	
Analyte conventional Method: *** METHOD *** Dissolved Method: _V.	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  arious , Total	Batch ID: [CALC]	Result  Instr: [CALC]  1.4  Instr: [CALC]		0.020  MRL  Prepared: 0. 0.20  Prepared: 0. 0.20	mg/l Sam Units 5/16/19 16:55 mg/l 5/16/19 16:55	pled: 05,	06/11/19 12:49  /08/19 11:00 by K. Hah  Analyzed  Analyst: mcs  05/28/19 16:25  Analyst: mcs	
Analyte  Dissolved  Method: _V  Dissolved  Method: _V  Nitrogen,  Method: EP	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  arrious , Total	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758	Result  Instr: [CALC]  1.4  Instr: [CALC]  1.5  Instr: AA06  0.065	MDL	0.020  MRL  Prepared: 0. 0.20  Prepared: 0. 0.20  Prepared: 0. 0.10	mg/l Sam Units 5/16/19 16:55 mg/l 5/16/19 16:55 mg/l 5/14/19 12:30 mg/l	pled: 05/ <b>Dil</b> 1x1  1x1	06/11/19 12:49  08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 15:36	
Analyte  Dissolved  Method: _V  Dissolved  Method: _V  Nitrogen,  Method: EP	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  arious Total A 351.2	Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  1.4  Instr: [CALC]  1.5  Instr: AA06	MDL	0.020  MRL  Prepared: 0. 0.20  Prepared: 0. 0.20  Prepared: 0. 0.10	mg/l  Sam  Units  5/16/19 16:55  mg/l  5/16/19 16:55  mg/l  5/14/19 12:30	pled: 05/ <b>Dil</b> 1x1  1x1	06/11/19 12:49  08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25  Analyst: mcs	
Analyte  Onventional  Method: ***  Dissolved  Method: _V.  Nitrogen,  Method: EP.  TKN  Method: EP.  TKN, Solu	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  farious Total A 351.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758  Batch ID: W9E0759	Result   Instr: [CALC]   1.4   Instr: [CALC]   1.5   Instr: AA06   0.065   Instr: AA06   ND	MDL 0.050	0.020  MRL  Prepared: 0.0.20  Prepared: 0.0.20  Prepared: 0.0.10  Prepared: 0.0.10	mg/l  Sam  Units  5/16/19 16:55  mg/l  5/16/19 16:55  mg/l  5/14/19 12:30  mg/l  5/14/19 12:33  mg/l	Dil  1x1  1x1  1x1	06/11/19 12:49  08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36	
Analyte conventional Method: *** METHOD *** Dissolved Method: _V. Nitrogen, Method: EP. TKN Method: EP. TKN, Solu Method: EP.	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  arrious Total  A 351.2  A 351.2  A 353.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758	Result  Instr: [CALC]  1.4  Instr: [CALC]  1.5  Instr: AA06  0.065  Instr: AA06  ND  Instr: AA01	MDL 0.050 0.050	0.020  MRL  Prepared: 0. 0.20  Prepared: 0. 0.10  Prepared: 0. 0.10  Prepared: 0. 0.10	mg/l  Sam  Units  5/16/19 16:55  mg/l  5/16/19 16:55  mg/l  5/14/19 12:30  mg/l  5/14/19 12:33  mg/l  5/16/19 16:55	Dil  1x1  1x1  1x1  1x1	06/11/19 12:49  08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt	
Analyte conventional Method: *** Dissolved Method: _V. Nitrogen, Method: EP. TKN Method: EP. TKN, Solu Method: EP. NO2+NO3	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  Ya 351.2  YA 351.2  YA 353.2  YA 353.2  YA 353.2  YA 353.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758  Batch ID: W9E0759	Result  Instr: [CALC]  1.4  Instr: [CALC]  1.5  Instr: AA06  ND  Instr: AA01  1.4	MDL 0.050	0.020  MRL  Prepared: 0.0.20  Prepared: 0.0.20  Prepared: 0.0.10  Prepared: 0.0.10  Prepared: 0.0.20	mg/l  Sam  Units  5/16/19 16:55  mg/l  5/16/19 12:30  mg/l  5/14/19 12:33  mg/l  5/16/19 16:55  mg/l	Dil  1x1  1x1  1x1	06/11/19 12:49  /08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt 05/28/19 16:25	
Analyte onventional Method: *** METHOD *** Dissolved Method: _V. Nitrogen, Method: EP. TKN Method: EP. TKN, Solu Method: EP. NO2+NO3 Method: EP.	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  farious 1, Total  A 351.2  A 351.2  A 353.2  3 as N  A 365.1	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758  Batch ID: W9E0759	Result  Instr: [CALC]  1.4  Instr: [CALC]  1.5  Instr: AA06  ND  Instr: AA01  1.4  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 0.0.20  Prepared: 0.0.10  Prepared: 0.0.10  Prepared: 0.0.20  Prepared: 0.0.20  Prepared: 0.0.20  Prepared: 0.0.20	mg/l  Sam  Units  5/16/19 16:55  mg/l  5/16/19 16:55  mg/l  5/14/19 12:30  mg/l  5/14/19 12:33  mg/l  5/16/19 16:55  mg/l  5/20/19 10:06	pled: 05/  Dil  1x1  1x1  1x1  1x1  1x1	06/11/19 12:49  /08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt 05/28/19 16:25  Analyst: ymt	
Analyte onventional Method: *** METHOD *** Dissolved Method: EP. TKN Method: EP. TKN, Solu Method: EP. NO2+NO3 Method: EP. NO2+NO3	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  Ya 351.2  YA 351.2  YA 353.2  YA 353.2  YA 353.2  YA 353.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758  Batch ID: W9E0759	Result  Instr: [CALC]  1.4  Instr: [CALC]  1.5  Instr: AA06  ND  Instr: AA01  1.4	MDL 0.050 0.050	0.020  MRL  Prepared: 0.0.20  Prepared: 0.0.20  Prepared: 0.0.10  Prepared: 0.0.10  Prepared: 0.0.20	mg/l  Sam  Units  5/16/19 16:55  mg/l  5/16/19 12:30  mg/l  5/14/19 12:33  mg/l  5/16/19 16:55  mg/l	Dil  1x1  1x1  1x1  1x1	06/11/19 12:49  /08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt 05/28/19 16:25	Qualifid
Analyte conventional Method: *** METHOD *** Dissolved Method: _V. Nitrogen, Method: EP. TKN Method: EP. TKN, Solu Method: EP. NO2+NO3 Method: EP. NO2+NO3	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  farious 1, Total  A 351.2  A 351.2  A 353.2  3 as N  A 365.1	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758  Batch ID: W9E0759	Result  Instr: [CALC]  1.4  Instr: [CALC]  1.5  Instr: AA06  ND  Instr: AA01  1.4  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 0.0.20  Prepared: 0.0.10  Prepared: 0.0.10  Prepared: 0.0.20  Prepared: 0.0.20  Prepared: 0.0.20  Prepared: 0.0.20	mg/l  Sam  Units  5/16/19 16:55  mg/l  5/16/19 16:55  mg/l  5/14/19 12:30  mg/l  5/14/19 12:33  mg/l  5/16/19 16:55  mg/l  5/20/19 10:06	pled: 05/  Dil  1x1  1x1  1x1  1x1  1x1	06/11/19 12:49  /08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt 05/28/19 16:25  Analyst: ymt	Qualifie
Analyte Conventional Method: *** METHOD *** Dissolved Method: _V. Nitrogen, Method: EP. TKN Method: EP. TKN, Solu Method: EP. NO2+NO3 Method: EP. NO2+NO3	TMDL-R1 9E10050-02 (Water)  I Chemistry/Physical Parameters * DEFAULT SPECIFIC * d Nitrogen  arious , Total  A 351.2  A 351.2  A 353.2  3 as N  A 365.1  rus as P, Total  A 200 Series Methods	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758  Batch ID: W9E0759	Result  Instr: [CALC]  1.4  Instr: [CALC]  1.5  Instr: AA06  ND  Instr: AA01  1.4  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 0.0.20  Prepared: 0.0.10  Prepared: 0.0.10  Prepared: 0.0.20  Prepared: 0.0.10  Prepared: 0.0.10  O.20  Prepared: 0.0.10	mg/l  Sam  Units  5/16/19 16:55  mg/l  5/16/19 16:55  mg/l  5/14/19 12:30  mg/l  5/14/19 12:33  mg/l  5/16/19 16:55  mg/l  5/20/19 10:06	pled: 05/  Dil  1x1  1x1  1x1  1x1  1x1	06/11/19 12:49  /08/19 11:00 by K. Hah  Analyzed  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/28/19 16:25  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt 05/28/19 16:25  Analyst: ymt	Qualific



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

**Project Number:** TMDL Study May 2019 P6040555

Reported: 06/13/2019 09:55

(Continued)

Project Manager: Kelly Hahs

Sample Results

/ NAM								
Sample: TMDL-R2					Sam	pled: 05	5/08/19 7:50 by K. Ha	hs, E. Lomel
9E10050-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 05	5/16/19 16:55		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		2.0		0.20	mg/l	1x1	05/28/19 16:27	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 05	5/16/19 16:55		Analyst: mcs	
Nitrogen, Total		2.0		0.20	mg/l	1x1	05/28/19 16:27	
Method: EPA 351.2	<b>Batch ID:</b> W9E0758	Instr: AA06		Prepared: 05	5/14/19 12:30		Analyst: mcs	
TKN		0.17	0.050	0.10	mg/l	1x1	05/21/19 15:36	
Method: EPA 351.2	<b>Batch ID:</b> W9E0759	Instr: AA06		Propared: 05	5/14/19 12:33		Analyst: mcs	
TKN, Soluble	<b>Datch 1D.</b> W9E0733	0.10	0.050	0.10	mg/l	1x1	05/21/19 15:36	
·					-			
Method: EPA 353.2	<b>Batch ID:</b> W9E0929	Instr: AA01	0.002	•	5/16/19 16:55	1,,1	Analyst: ymt	
NO2+NO3 as N		1.8	0.083	0.20	mg/l	1x1	05/28/19 16:27	
Method: EPA 365.1	<b>Batch ID:</b> W9E1043	Instr: AA01		•	5/20/19 10:06		Analyst: ymt	
Phosphorus as P, Total		0.044	0.0014	0.010	mg/l	1x1	05/30/19 15:25	
latala hy EDA 200 Carios Mathada								
ietais by EPA 200 Series Methods								
Method: EPA 200.7	<b>Batch ID:</b> W9F0285	Instr: ICP03		Prepared: 06	5/06/19 11:24		Analyst: mtt	
Method: EPA 200.7 Phosphorus, Dissolved Sample: TMDL-R3	Batch ID: W9F0285	Instr: ICP03 0.049	0.012	<b>Prepared:</b> 06 0.020	mg/l	1x1 pled: 05,	<b>Analyst:</b> mtt 06/11/19 12:55 /07/19 12:00 by K. Ha	hs, E. Lome
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)	Batch ID: W9F0285	0.049		0.020	mg/l Sam	pled: 05,	06/11/19 12:55 /07/19 12:00 by K. Ha	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte		0.049	0.012	-	mg/l		06/11/19 12:55	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte onventional Chemistry/Physical Parameter	ers by APHA/EPA/ASTM Methods	0.049 Result	MDL	0.020 MRL	mg/l Sam Units	pled: 05,	06/11/19 12:55 /07/19 12:00 by K. Ha Analyzed	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte		0.049	MDL	0.020 MRL	mg/l Sam	pled: 05,	06/11/19 12:55 /07/19 12:00 by K. Ha	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC	ers by APHA/EPA/ASTM Methods	0.049 Result	MDL	0.020 MRL	mg/l Sam Units	pled: 05,	06/11/19 12:55 /07/19 12:00 by K. Ha Analyzed	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 05	mg/l Sam Units 6/16/19 16:55 mg/l	pled: 05,	06/11/19 12:55 /07/19 12:00 by K. Ha Analyzed Analyst: mcs 05/28/19 16:15	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD ***	ers by APHA/EPA/ASTM Methods	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 05	mg/l Sam <b>Units</b> 6/16/19 16:55	pled: 05,	06/11/19 12:55 /07/19 12:00 by K. Ha Analyzed Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  1.6  Instr: [CALC]  1.7  1.6	MDL	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.20	mg/l Sam Units 6/16/19 16:55 mg/l 6/16/19 16:55 mg/l	pled: 05,	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  1.6  Instr: [CALC]  1.6  Instr: AA06	MDL	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.20  Prepared: 05	mg/l  Sam  Units  6/16/19 16:55  mg/l  6/16/19 16:55  mg/l  6/14/19 12:30	pled: 05,  Dil  1x1	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  1.6  Instr: [CALC]  1.7  1.6	MDL	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.20	mg/l Sam Units 6/16/19 16:55 mg/l 6/16/19 16:55 mg/l	pled: 05,	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  Instr: [CALC]  Instr: AA06  Instr: AA06  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.20  Prepared: 05 0.10  Prepared: 05	mg/l  Sam  Units  6/16/19 16:55  mg/l  6/16/19 16:55  mg/l  6/14/19 12:30  mg/l	pled: 05,  Dil  1x1  1x1  1x1	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/21/19 15:36  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9E0758	Result  Instr: [CALC]  Instr: [CALC]  Instr: AA06  Instr: AA06	MDL	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.20  Prepared: 05 0.10	mg/l Sam Units 6/16/19 16:55 mg/l 6/16/19 16:55 mg/l 6/14/19 12:30 mg/l	pled: 05,  Dil  1x1	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9E0758	Result  Instr: [CALC]  Instr: [CALC]  Instr: AA06  Instr: AA06  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.20  Prepared: 05 0.10  Prepared: 05 0.10	mg/l  Sam  Units  6/16/19 16:55  mg/l  6/16/19 16:55  mg/l  6/14/19 12:30  mg/l	pled: 05,  Dil  1x1  1x1  1x1	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/21/19 15:36  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758  Batch ID: W9E0759	Result  Instr: [CALC]  1.6  Instr: [CALC]  1.6  Instr: AA06  Instr: AA06  ND  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.20  Prepared: 05 0.10  Prepared: 05 0.10	mg/l  Sam  Units  6/16/19 16:55  mg/l  6/16/19 16:55  mg/l  6/14/19 12:30  mg/l  6/14/19 12:33  mg/l	pled: 05,  Dil  1x1  1x1  1x1	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9E0758  Batch ID: W9E0759	Result  Instr: [CALC]  Instr: [CALC]  Instr: AA06  Instr: AA06  Instr: AA06  Instr: AA06  Instr: AA06	MDL 0.050 0.050	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.10  Prepared: 05 0.10  Prepared: 05 0.20	mg/l  Sam  Units  6/16/19 16:55  mg/l  6/16/19 16:55  mg/l  6/14/19 12:30  mg/l  6/14/19 12:33  mg/l  6/16/19 16:55	pled: 05,  Dil  1x1  1x1  1x1  1x1	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2     TKN, Soluble  Method: EPA 353.2     NO2+NO3 as N	Batch ID: (CALC)  Batch ID: (CALC)  Batch ID: W9E0758  Batch ID: W9E0759  Batch ID: W9E0929	Result  Instr: [CALC]  1.6  Instr: [CALC]  1.6  Instr: AA06  ND  Instr: AA01  1.6	MDL 0.050 0.050	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.10  Prepared: 05 0.10  Prepared: 05 0.20	mg/l  Sam  Units  6/16/19 16:55  mg/l  6/14/19 12:30  mg/l  6/14/19 12:33  mg/l  6/16/19 16:55  mg/l	pled: 05,  Dil  1x1  1x1  1x1  1x1	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt 05/28/19 16:15	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1 Phosphorus as P, Total	Batch ID: (CALC)  Batch ID: (CALC)  Batch ID: W9E0758  Batch ID: W9E0759  Batch ID: W9E0929	Result  Instr: [CALC]  1.6  Instr: AA06  Instr: AA06  Instr: AA06  Instr: AA01  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.10  Prepared: 05 0.10  Prepared: 05 0.20  Prepared: 05 0.70	mg/l  Sam  Units  6/16/19 16:55  mg/l  6/16/19 12:30  mg/l  6/14/19 12:33  mg/l  6/16/19 16:55  mg/l  6/16/19 16:55  mg/l	pled: 05,  Dil  1x1  1x1  1x1  1x1  1x1	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt 05/28/19 16:15  Analyst: ymt 05/28/19 16:15  Analyst: ymt	
Phosphorus, Dissolved  Sample: TMDL-R3 9E10050-04 (Water)  Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN Method: EPA 351.2     TKN, Soluble  Method: EPA 353.2     NO2+NO3 as N  Method: EPA 365.1	Batch ID: (CALC)  Batch ID: (CALC)  Batch ID: W9E0758  Batch ID: W9E0759  Batch ID: W9E0929	Result  Instr: [CALC]  1.6  Instr: AA06  Instr: AA06  Instr: AA06  Instr: AA01  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 05 0.20  Prepared: 05 0.10  Prepared: 05 0.10  Prepared: 05 0.20  Prepared: 05 0.20  Prepared: 05 0.20	mg/l  Sam  Units  6/16/19 16:55  mg/l  6/16/19 12:30  mg/l  6/14/19 12:33  mg/l  6/16/19 16:55  mg/l  6/16/19 16:55  mg/l	pled: 05,  Dil  1x1  1x1  1x1  1x1  1x1	06/11/19 12:55  /07/19 12:00 by K. Ha  Analyzed  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/28/19 16:15  Analyst: mcs 05/21/19 15:36  Analyst: mcs 05/21/19 15:36  Analyst: ymt 05/28/19 16:15  Analyst: ymt 05/28/19 16:15  Analyst: ymt	hs, E. Lomel



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue

Project Number: TMDL Study May 2019 P6040555

**Reported:** 06/13/2019 09:55

(Continued)

Ventura, CA 93009

Project Manager: Kelly Hahs

Sample Results

AVA	mpro i todano							(0	ontinaca
Sample:	TMDL-R4					San	npled: 05	/07/19 7:50 by K. Hal	ns, E. Lome
	9E10050-05 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
nventional C	hemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: *** [	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/16/19 16:55		Analyst: mcs	
METHOD ***									
Dissolved I	Nitrogen		1.8		0.20	mg/l	1x1	05/28/19 16:19	
Method: _Vari	ious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/16/19 16:55		Analyst: mcs	
Nitrogen, T	otal		1.8		0.20	mg/l	1x1	05/28/19 16:19	
Method: EPA	351.2	Batch ID: W9E0758	Instr: AA06		Prepared: 0	5/14/19 12:30		Analyst: mcs	
TKN			ND	0.050	0.10	mg/l	1x1	05/21/19 15:36	
Method: EPA	351.2	<b>Batch ID:</b> W9E0759	Instr: AA06		Prepared: 0	5/14/19 12:33		Analyst: mcs	
TKN, Solub			ND	0.050	0.10	mg/l	1x1	05/21/19 15:36	
Madhad EDA	252.2	B-4-1-1D W050000	L A A O 1		B 1 0	F /1 C /1 O 1 C F F		A contract contract	
Method: EPA :		<b>Batch ID:</b> W9E0929	Instr: AA01	0.083	0.20	5/16/19 16:55 mg/l	1x1	<b>Analyst:</b> ymt 05/28/19 16:19	
1102-1100	u3 14		1.0	0.000	0.20	1119/1	IXI		
Method: EPA		Batch ID: W9E1043	Instr: AA01	0.0044	-	5/20/19 10:06	44	Analyst: ymt	
Phosphoru	s as P, Total		0.0054	0.0014	0.010	mg/l	1x1	05/30/19 15:19	
etals by EPA ?	200 Series Methods								
Method: EPA	200.7	Batch ID: W9F0285	Instr: ICP03		Prepared: 0	6/06/19 11:24		Analyst: mtt	
Phosphoru	s, Dissolved		0.012	0.012	0.020	mg/l	1x1	06/11/19 13:01	
	9E10050-06 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional C	hemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/16/19 16:55		Analyst: mcs	
METHOD ***  Dissolved I	Nitrogen		0.34		0.20	mg/l	1x1	05/28/19 16:28	
	_					-			
Method: _Vari		Batch ID: [CALC]	Instr: [CALC]		<b>Prepared:</b> 0.20	5/16/19 16:55	1x1	<b>Analyst:</b> mcs 05/28/19 16:28	
Nitrogen, T	Otal		0.41		0.20	mg/l	IXI	03/20/19 10.20	
Method: EPA	351.2	<b>Batch ID:</b> W9E0758	Instr: AA06		-	5/14/19 12:30		Analyst: mcs	
TKN			0.41	0.050	0.10	mg/l	1x1	05/21/19 15:36	
Method: EPA	351.2	Batch ID: W9E0759	Instr: AA06		Prepared: 0	5/14/19 12:33		Analyst: mcs	
TKN, Solub	ole		0.34	0.050	0.10	mg/l	1x1	05/21/19 15:36	
Method: EPA	353.2	Batch ID: W9E0929	Instr: AA01		Prepared: 0	5/16/19 16:55		Analyst: ymt	
NO2+NO3	as N		ND	0.083	0.20	mg/l	1x1	05/28/19 16:28	
Method: EPA	365.1	<b>Batch ID:</b> W9E1043	Instr: AA01		Prepared: 0	5/20/19 10:06		Analyst: ymt	
	s as P, Total		0.0076	0.0014	0.010	mg/l	1x1	05/30/19 15:28	
-	·								
etals by EPA 2	200 Series Methods								
Method: EPA	200.7	<b>Batch ID:</b> W9F0285	Instr: ICP03		Prepared: 0	6/06/19 11:24		Analyst: mtt	



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 **Project Number:** TMDL Study May 2019 P6040555

**Reported:** 06/13/2019 09:55

Project Manager: Kelly Hahs

Sample Results

(Continued)

Sample:	TMDL-SA					Sam	pled: 05/	07/19 10:10 by K. Hah	ıs, E. Lomeli
Ç	9E10050-07 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Che	mistry/Physical Parameters b	oy APHA/EPA/ASTM Methods							
Method: *** DEF	FAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/16/19 16:55		Analyst: mcs	
Dissolved Nit	rogen		1.3		0.20	mg/l	1x1	05/28/19 16:29	
Method: _Variou	ıs	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/16/19 16:55		Analyst: mcs	
Nitrogen, Tota	al		1.4		0.20	mg/l	1x1	05/28/19 16:29	
Method: EPA 35	1.2	Batch ID: W9E0758	Instr: AA06		Prepared: 0	5/14/19 12:30		Analyst: mcs	
TKN			0.21	0.050	0.10	mg/l	1x1	05/21/19 15:36	
Method: EPA 35	1.2	Batch ID: W9E0759	Instr: AA06		Prepared: 0	5/14/19 12:33		Analyst: mcs	
TKN, Soluble			0.090	0.050	0.10	mg/l	1x1	05/21/19 15:36	J
Method: EPA 35	3.2	Batch ID: W9E0929	Instr: AA01		Prepared: 0	5/16/19 16:55		Analyst: ymt	
NO2+NO3 as	N		1.2	0.083	0.20	mg/l	1x1	05/28/19 16:29	
Method: EPA 36	5.1	Batch ID: W9E1043	Instr: AA01		Prepared: 0	5/20/19 10:06		Analyst: ymt	
Phosphorus a	as P, Total		0.012	0.0014	0.010	mg/l	1x1	05/30/19 15:29	
Metals by EPA 20	0 Series Methods								
Method: EPA 20	0.7	Batch ID: W9F0285	Instr: ICP03		Prepared: 0	6/06/19 11:24		Analyst: mtt	
Phosphorus, I	Dissolved		ND	0.012	0.020	mg/l	1x1	06/11/19 13:06	



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue

Project Number: TMDL Study May 2019 P6040555

Reported: 06/13/2019 09:55

Ventura, CA 93009

Project Manager: Kelly Hahs



# Quality Control Results

Conventional Chemistry/Physical Parameters by API	HA/EPA/AST	M Methods	5								
					Spike	Source		%REC		RPD	
Analyte atch: W9E0758 - EPA 351.2	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
				_	1.05/44/4		05 (04 (40				
Blank (W9E0758-BLK1) TKN	ND	0.050	0.10	mg/l	pared: 05/14/1	9 Anaiyzed:	05/21/19				
1.55 (110.55.75) 2.51				-		0. 4	05 (24 (40				
LCS (W9E0758-BS1) TKN	0.923	0.050	0.10	mg/l	pared: <b>05/14/1</b> 1.00	9 Anaiyzed:	92	90-110			
Markin Cailes (MOFO7FO MC1)	S	E10050-03		Dura	d- OF /1 4 /1	0. 4	05 /21 /10				
Matrix Spike (W9E0758-MS1) TKN		0.050	0.10	mg/l	pared: <b>05/14/1</b> 1.00	0.168	110	90-110			
Matrix Spika Dup (MOE0759 MSD1)	Source: 0	E10050-03		Dro	pared: 05/14/1	0 Analyzadi	0E /21 /10				
Matrix Spike Dup (W9E0758-MSD1) TKN		0.050	0.10	mg/l	1.00	0.168	101	90-110	8	10	
atch: W9E0759 - EPA 351.2											
				Dwa	marad: 05/14/1	0 Amalumada	05 /21 /10				
Blank (W9E0759-BLK1) TKN, Soluble	ND	0.050	0.10	mg/l	pared: 05/14/1	9 Analyzeu:	05/21/19				
LCS (W9E0759-BS1)				Dro	pared: 05/14/1	0 Analyzadi	0E /21 /10				
TKN, Soluble	0.952	0.050	0.10	mg/l	1.00	9 Allalyzeu.	95	90-110			
Matrix Spike (W9E0759-MS1)	Source: 0	E10050-03		Dro	pared: 05/14/1	0 Analyzod	05/21/10				
TKN, Soluble		0.050	0.10	mg/l	1.00	0.101	89	90-110			MS-0
Matrix Spike Dup (W9E0759-MSD1)	Source: 9	E10050-03		Pro	pared: 05/14/1	9 Analyzod	05/21/19				
TKN, Soluble		0.050	0.10	mg/l	1.00	0.101	98	90-110	9	10	
atch: W9E0929 - EPA 353.2											
Blank (W9E0929-BLK1)				Dro	pared: 05/16/1	0 Analyzadi	NE /20 /10				
NO2+NO3 as N	ND	0.083	0.20	mg/l	pareu. 03/10/1	5 Allalyzeu.	03/20/13				
LCS (W9E0929-BS1)				Pro	pared: 05/16/1	9 Analyzod	05/28/19				
NO2+NO3 as N	1.04	0.083	0.20	mg/l	1.00	o manyzea.		90-110			
Matrix Spike (W9E0929-MS1)	Source: 9	E10050-04		Pre	pared: 05/16/1	9 Analyzed:	05/28/19				
NO2+NO3 as N		0.083	0.20	mg/l	2.00	1.65	103	90-110			
Matrix Spike (W9E0929-MS2)	Source: 9	E10050-05		Pre	pared: 05/16/1	9 Analyzed:	05/28/19				
NO2+NO3 as N	3.83	0.083	0.20	mg/l	2.00	1.75		90-110			
Matrix Spike Dup (W9E0929-MSD1)	Source: 9	E10050-04		Pre	pared: 05/16/1	9 Analyzed:	05/28/19				
NO2+NO3 as N	3.70	0.083	0.20	mg/l	2.00	1.65	102	90-110	0.3	20	
Matrix Spike Dup (W9E0929-MSD2)	Source: 9	E10050-05		Pre	pared: 05/16/1	9 Analyzed:	05/28/19				
NO2+NO3 as N	3.84	0.083	0.20	mg/l	2.00	1.75	104	90-110	0.3	20	
atch: W9E1043 - EPA 365.1											
Blank (W9E1043-BLK1)				Pre	pared: 05/20/1	9 Analyzed:	05/30/19				
Phosphorus as P, Total	ND	0.0014	0.010	mg/l	pu. cu. co, zo, .		00,00, 10				
LCS (W9E1043-BS1)				Pre	pared: 05/20/1	9 Analyzed:	05/30/19				
Phosphorus as P, Total	- 0.0500	0.0014	0.010	mg/l	0.0500	,	100	90-110			
Matrix Spike (W9E1043-MS1)	Source: 9	E10050-02		Pre	pared: 05/20/1	9 Analyzed:	05/30/19				
Phosphorus as P, Total	- 0.0735		0.010	mg/l	0.0500	0.0221	103	90-110			
Matrix Spike (W9E1043-MS2)	Source: 9	E10050-05		Pre	pared: 05/20/1	9 Analyzed:	05/30/19				
		0.0014	0.010	mg/l	0.0500	0.00545	103	90-110			



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Project Number: TMDL Study May 2019 P6040555

**Reported:** 06/13/2019 09:55

Ventura, CA 93009

Project Manager: Kelly Hahs

1	/	N	/		(
				7	'

# **Quality Control Results**

(Continued)

	PA/AST	M Methods	(Continue	d)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W9E1043 - EPA 365.1 (Continued)											
Matrix Spike (W9E1043-MS2)	ource: 9	E10050-05		Pre	pared: 05/20/1	9 Analyzed:	05/30/1	9			
Matrix Spike Dup (W9E1043-MSD1) Sc	Source: 9E10050-02			Pre	Prepared: 05/20/19 Analyzed: 05/30/19						
Phosphorus as P, Total	.0740	0.0014	0.010	mg/l	0.0500	0.0221	104	90-110	0.7	20	
Matrix Spike Dup (W9E1043-MSD2) Sc	Source: 9E10050-05				Prepared: 05/20/19 Analyzed: 05/30/19						
Phosphorus as P, Total 0	.0560	0.0014	0.010	mg/l	0.0500	0.00545	101	90-110	2	20	
Metals by FPA 200 Series Methods											
Metals by EPA 200 Series Methods					Spike	Source		%REC		RPD	
·	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifie
Analyte	Result	MDL	MRL	Units	•		%REC		RPD		Qualifier
Analyte	Result	MDL	MRL		•	Result		Limits	RPD		Qualifie
Analyte Batch: W9F0285 - EPA 200.7	Result - ND	<b>MDL</b> 0.012	MRL 0.020		Level	Result		Limits	RPD		Qualifie
Analyte Batch: W9F0285 - EPA 200.7 Blank (W9F0285-BLK1)				<b>Pre</b> mg/l	Level	Result  9 Analyzed:	06/11/1!	Limits	RPD		Qualifier
Analyte Batch: W9F0285 - EPA 200.7 Blank (W9F0285-BLK1) Phosphorus, Dissolved				<b>Pre</b> mg/l	Level pared: 06/06/1	Result  9 Analyzed:	06/11/1!	Limits	RPD		Qualifie
Analyte Batch: W9F0285 - EPA 200.7  Blank (W9F0285-BLK1) Phosphorus, Dissolved  LCS (W9F0285-BS1) Phosphorus, Dissolved	- ND	0.012	0.020	Pre mg/l Pre mg/l	Level pared: 06/06/1	Result  9 Analyzed:  9 Analyzed:	<b>06/11/1</b> 9 <b>06/11/1</b> 9 102	Limits 9 9 85-115	RPD		Qualifie
Analyte Batch: W9F0285 - EPA 200.7  Blank (W9F0285-BLK1) Phosphorus, Dissolved  LCS (W9F0285-BS1) Phosphorus, Dissolved	1.02 <b>Durce: 9</b>	0.012	0.020	Pre mg/l Pre mg/l	Level pared: 06/06/1 pared: 06/06/1 1.00	Result  9 Analyzed:  9 Analyzed:	<b>06/11/1</b> 9 <b>06/11/1</b> 9 102	Limits 9 9 85-115	RPD		Qualifier
Analyte Batch: W9F0285 - EPA 200.7  Blank (W9F0285-BLK1)     Phosphorus, Dissolved  LCS (W9F0285-BS1)     Phosphorus, Dissolved  Matrix Spike (W9F0285-MS1)     Phosphorus, Dissolved	1.02 <b>Durce: 9</b>	0.012 0.012 <b>E10050-01</b>	0.020	Pre mg/l Pre mg/l Pre mg/l	Level pared: 06/06/1 pared: 06/06/1 1.00 pared: 06/06/1	Result  9 Analyzed:  9 Analyzed:  0.0280	06/11/19 06/11/19 102 06/11/19 112	Limits  9  85-115  9  70-130	RPD		Qualifier



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study May 2019 P6040555

**Reported:** 06/13/2019 09:55

**Project Manager:** Kelly Hahs



## **Notes and Definitions**

J	Estimated conc. detected <mrl and="">MDL.</mrl>
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
% Rec	Percent Recovery
Dil	Dilution
dry	Sample results reported on a dry weight basis
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
MRL ND	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)  NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or
ND	above the MDL.
NR 	Not Reportable
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal

standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB)

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.



July 17<sup>th</sup>, 2019

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aguatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in Standard Methods for the Examination of Water and Wastewater (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Karin Wisenbaker Senior Biologist (805) 643-5621 ex.17 **Client: Ventura Country Watershed Protection District** 

**Project: Ventura River Algae TMDL** 



#### Chlorophyll a results from May 7th & 8th, 2019

Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	28	ug/cm2
TMDL-R2	1	11	7	ug/cm2
TMDL-R3	1	11	7.7	ug/cm2
TMDL-R4	1	11	10	ug/cm2
TMDL-CL	1	11	2.8	ug/cm2
TMDL-SA	1	11	12	ug/cm2
TMDL-Est	1	NA	22	ug/L

Ct stody

From: Aquatic Bioassay and Consulting La 29 N. Olive St. Ventura, CA 930	abs,	Phone: Fax: Project ID:	(805) 6			То:	Company: Address: Phone:	Aquatic Bioassay and Consulting Labs 29 N. Olive St. Ventura, CA 93001		
		L-Women's				CHIEF CONTRACTOR		ANALYSIS		
Sample I.D. No.	Sample Date	Time	Matrix	COMASSIC Volume/ No.	Reps	Chi-a				VCF 0519.
TMDZ R-4	5.7.19	0750	FN	Whillbak		X	a	Company and the plant of the second		041
Thoras SA	5.7.19	1010	-	whirlpall		X				042
TMOL SA TMOL R-3	5.7.19	1200	-	whillpak		X				073
TMOL CL	5.7.19	1420		Whilpark		X				074
						-				
100000000000000000000000000000000000000		-								
	1									
		1				-				
Special Instructions:	A CONTRACTOR OF THE PARTY OF TH	Jan 2000		and the state of t	-		James - Scaleman	- James contract contract		weganish a second
RELINQUISHED BY:	DATE: TIME:	RECEIVED		DATE: TIM		RELIN	IQUISHED BY:	DATE: TIME: RECEIV	/ED BY: DA	TE: TIME:

Ch stody

From: Aquatic Bioassay and Consulting L 29 N. Olive St. Ventura, CA 930	abs.	Phone: Fax: Project ID:	(805)6			То:	Company: Address: Phone:	Aquatic Bioassay and Consulting Labs. 29 N. Olive St. Ventura, CA 93001		
pulse and the same of the same	A-p				*****			ANALYSIS		
Sample I.D. No.	Sample Date	Time	Matrix	COMPOSERC Volume/ No.	Reps	ta .				VCT
		00-44-00-7-04-04-04-04-04-04-04-04-04-04-04-04-04-		On all columns in the last		Ch.	to the same walls			0519.
tMPL 8-2	05/08/19	750	FW	whinpak		X				570
TMDL R-1	05/09/19	1100	FN	whinpak		X				093
TMDL EST	02/08/19	1315	FW	whirlpan						- (1
			-			-				-
						-				+
						-				
	1						<del>  </del>			
Special Instructions:		11		han com an anni anni an an	00214442000486	Committee	Mark Bases Security of the School of Security	na man Banan III. In Anni (Albania Medi Vande Bana) (An An A		
RELINQUISHED BY:	DATE: TIMES 5/00/19 1530	RECEIVE	SIRK:	DATE: TIM		RELIN	IQUISHED BY:	DATE: TIME: RECEN	/ED BY: DATE	E: TIME:



# Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients TMDL (VR Algae TMDL)

Comprehensive Monitoring Program

CHAIN-OF-CUSTO	DY RECORD							10	F	1	
CLIENT: Ventura Co	unty Watershed Pro	otection District (M	aster	Agre	eeme	nt W	ECKL	ABORATOFY	19MA01, Pro	ject P604055	5)
SAMPLING EVENT:	<i></i>	2019									
SAMPLING DATE:	6/12/19	19 + 6/	3/	19							
SAMPLERS:	K.HAHS						•				
GRAB SAMPLES											
SAMPLE ID	DATE	TIME	Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen			** FIE	ED FILTERE		
TMDL-Est	6/13/19	13:30	x	X	X						
TMDL-R1	6/13/19		X	X	X		$\dashv$				
TMDL-R2	6/13/19	09:20	x	X	X						
TMDL-R3			<b></b>				+				
	6/12/19	12:45	X	X	X				<del>-</del> ·		
TMDL-R4	6/12/19	07: <i>5</i> 5	X	X	X						
TMDL-CL	6/13/19	07:45	X	X	X						
TMDL-SA	6/12/19	10:00	X	X	X						
TMDL-FD	6/12/19	10:00	Х	Х	Х		_	(Note which	site)		
Print Name: Emil Affiliation: VC Date/Time Received: Date/Time Relinquished:	ly honnels illy comeli illy pomeli illy pomeli collection 11:4	5	Print Affilia Date Date	/Time	Recei	ved:	_	@[18/19	<u></u>		
Signature:			+	ature:			Cum	W/WW/			
Print Name:	lee Navan	<i>D</i>	+	Name	e: ———	2		AIME GOME!			
Affiliation: Mace	College S		-	ation:					1620		
Date/Time Received:  Date/Time Relinquished:	4/18/19 3	<del>3</del> 0			Recei	ved: quishe	d	Celiblia	15:30		
Miscellaneous Notes (Hazard	lous Materials, Quick tur	n-around time, etc.):	12410					field filtered	1.0.0	Folk	



**FINAL REPORT** 

Work Orders: 9F18069 7/22/2019 **Report Date:** 

> 6/18/2019 **Received Date:**

**Turnaround Time:** Normal

> (805) 658-4375 **Phones:**

(805) 654-3350

WECKLABORATOFY1 P.O. #:

9MA01

**Billing Code:** 

Attn: Kelly Hahs

Client: Ventura County Watershed Protection District

800 South Victoria Avenue

Project: TMDL Study June 2019 P6040555

Ventura, CA 93009

ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAOMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 6/18/19 with the Chain-of-Custody document. The samples were received in good condition, at 1.8 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee

Operations Manager/Senior PM











FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study June 2019 P6040555

**Reported:** 07/22/2019 08:32

Project Manager: Kelly Hahs

XX

#### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K. Hahs, J Perez	9F18069-01	Water	06/13/19 13:30	
TMDL-R1	K. Hahs, J Perez	9F18069-02	Water	06/13/19 11:45	
TMDL-R2	K. Hahs, J Perez	9F18069-03	Water	06/13/19 09:20	
TMDL-R3	K. Hahs, J Perez	9F18069-04	Water	06/12/19 12:45	
TMDL-R4	K. Hahs, J Perez	9F18069-05	Water	06/12/19 07:55	
TMDL-CL	K. Hahs, J Perez	9F18069-06	Water	06/13/19 07:45	
TMDL-SA	K. Hahs, J Perez	9F18069-07	Water	06/12/19 10:00	
TMDL-FD	K. Hahs, J Perez	9F18069-08	Water	06/12/19 10:00	



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study June 2019 P6040555

**Reported:** 07/22/2019 08:32

Project Manager: Kelly Hahs

XX	Sample	Results
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Sample: TMDL-Est					Sa	mpled: (	06/13/19 13:30 by K. H	lahs, J Pere
9F18069-01 (Water)					34		, _, _,	,
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Paramete	rs by APHA/EPA/ASTM Methods						. ,	
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	/21/19 15:38		Analyst: mcs	
METHOD ***				·			·	
Dissolved Nitrogen		0.86		0.20	mg/l	1x1	06/26/19 16:12	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	/21/19 15:35		Analyst: mcs	
Nitrogen, Total		1.0		0.20	mg/l	1x1	07/03/19 13:17	
Method: EPA 351.2	Batch ID: W9F1205	Instr: AA06		Prepared: 06	/21/19 15:35		Analyst: mcs	
TKN		0.30	0.050	0.10	mg/l	1x1	07/03/19 13:17	
Method: EPA 351.2	Batch ID: W9F1206	Instr: AA06		Prepared: 06	/21/19 15:38		Analyst: mcs	
TKN, Soluble		0.16	0.050	0.10	mg/l	1x1	06/26/19 16:12	
Method: EPA 353.2	Batch ID: W9F1136	Instr: AA01		Prepared: 06	/20/19 14:32		Analyst: ymt	
NO2+NO3 as N		0.70	0.083	0.20	mg/l	1x1	06/26/19 12:11	
Method: EPA 365.1	<b>Batch ID:</b> W9F1145	Instr: AA01		Prepared: 06	/20/19 16:13		Analyst: ymt	
Phosphorus as P, Total		0.016	0.0014	0.010	mg/l	1x1	07/03/19 13:56	
Metals by EPA 200 Series Methods								
netals by EFA 200 Series Wellious								
Method: EPA 200.7	Batch ID: W9F1324	Instr: ICP03		Prepared: 06	/25/19 09:43		Analyst: mtt	
Method: EPA 200.7 Phosphorus, Dissolved	<b>Batch ID:</b> W9F1324	Instr: ICP03	0.012	<b>Prepared:</b> 06 0.020	mg/l	1x1	07/02/19 18:45	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)	<b>Batch ID:</b> W9F1324	0.027		0.020	mg/l Sa	mpled: (	07/02/19 18:45 06/13/19 11:45 by K. H	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte			0.012	-	mg/l		07/02/19 18:45	lahs, J Pere. Qualifie
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte onventional Chemistry/Physical Paramete	rs by APHA/EPA/ASTM Methods	Result		0.020	mg/l Sa Units	mpled: (	07/02/19 18:45 06/13/19 11:45 by K. H Analyzed	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC		0.027		0.020	mg/l Sa Units	mpled: (	07/02/19 18:45 06/13/19 11:45 by K. H	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte onventional Chemistry/Physical Paramete	rs by APHA/EPA/ASTM Methods	Result		0.020	mg/l Sa Units	mpled: (	07/02/19 18:45 06/13/19 11:45 by K. H Analyzed	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD ***	rs by APHA/EPA/ASTM Methods	Result Instr: [CALC]		0.020  MRL  Prepared: 06	mg/l Sa Units /21/19 15:38 mg/l	mpled: (	07/02/19 18:45 06/13/19 11:45 by K. H Analyzed Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	rs by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  1.1		0.020  MRL  Prepared: 06	mg/l Sa Units /21/19 15:38 mg/l	mpled: (	07/02/19 18:45 06/13/19 11:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various	rs by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  1.1  Instr: [CALC]		0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20	mg/l Sa Units /21/19 15:38 mg/l /21/19 15:35 mg/l	mpled: (  Dil  1x1	07/02/19 18:45 06/13/19 11:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.4  Instr: AA06		MRL Prepared: 06 0.20 Prepared: 06	mg/l Sa Units /21/19 15:38 mg/l /21/19 15:35 mg/l	mpled: (  Dil  1x1	07/02/19 18:45 06/13/19 11:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte onventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.4  Instr: AA06  0.27	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10	mg/l Sa Units /21/19 15:38 mg/l /21/19 15:35 mg/l /21/19 15:35 mg/l	mpled: (	07/02/19 18:45  06/13/19 11:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte conventional Chemistry/Physical Paramete Method: **** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2	rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.4  Instr: AA06  0.27  Instr: AA06	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06	mg/l Sa Units /21/19 15:38 mg/l /21/19 15:35 mg/l /21/19 15:35 mg/l	mpled: (	07/02/19 18:45 06/13/19 11:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.4  Instr: AA06  0.27  Instr: AA06  ND	<b>MDL</b> 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Sa  Units  /21/19 15:38  mg/l  /21/19 15:35  mg/l  /21/19 15:35  mg/l  /21/19 15:38  mg/l	mpled: (  Dil  1x1  1x1  1x1	07/02/19 18:45  06/13/19 11:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.4  Instr: AA06  0.27  Instr: AA06	<b>MDL</b> 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06	mg/l  Sa  Units  /21/19 15:38  mg/l  /21/19 15:35  mg/l  /21/19 15:35  mg/l  /21/19 15:38  mg/l	mpled: (  Dil  1x1  1x1  1x1	07/02/19 18:45  06/13/19 11:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9F18069-02 (Water)  Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2     TKN, Soluble  Method: EPA 353.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.4  Instr: AA06  0.27  Instr: AA06  ND  Instr: AA01	<b>MDL</b> 0.050 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Sa  Units  /21/19 15:38  mg/l /21/19 15:35  mg/l /21/19 15:35  mg/l /21/19 15:38  mg/l /20/19 14:32  mg/l	mpled: 0  Dil  1x1  1x1  1x1  1x1	07/02/19 18:45  06/13/19 11:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12  Analyst: mcs 06/26/19 16:12  Analyst: ymt	

Method: EPA 200.7

Phosphorus, Dissolved

Analyst: mtt

1x1

07/02/19 18:48

0.012

Prepared: 06/25/19 09:43

mg/l

0.020

Instr: ICP03

0.043

Batch ID: W9F1324



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 **Project Number:** TMDL Study June 2019 P6040555

**Reported:** 07/22/2019 08:32

**Project Manager:** Kelly Hahs

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#### Sample Results

Cample Results								
Sample: TMDL-R2					S	ampled:	06/13/19 9:20 by K. F	Hahs, J Pere
9F18069-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
onventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	5/21/19 15:38		Analyst: mcs	
Dissolved Nitrogen		1.6		0.20	mg/l	1x1	06/26/19 16:12	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	5/21/19 15:35		Analyst: mcs	
Nitrogen, Total		1.6		0.20	mg/l	1x1	07/03/19 13:17	
Method: EPA 351.2	Batch ID: W9F1205	Instr: AA06		Prepared: 06	5/21/19 15:35		Analyst: mcs	
TKN		ND	0.050	0.10	mg/l	1x1	07/03/19 13:17	
Method: EPA 351.2	Batch ID: W9F1206	Instr: AA06		Prepared: 06	5/21/19 15:38		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	06/26/19 16:12	
Method: EPA 353.2	Batch ID: W9F1136	Instr: AA01		Prepared: 06	5/20/19 14:32		Analyst: ymt	
NO2+NO3 as N		1.6	0.083	0.20	mg/l	1x1	06/26/19 12:24	
Method: EPA 365.1	Batch ID: W9F1145	Instr: AA01		Prepared: 06	5/20/19 16:13		Analyst: ymt	
Phosphorus as P, Total		0.041	0.0014	0.010	mg/l	1x1	07/03/19 14:07	
letals by EPA 200 Series Methods								
letals by EPA 200 Series Methods  Method: EPA 200.7	<b>Batch ID:</b> W9F1324	Instr: ICP03		Prepared: 06	5/25/19 09:43		Analyst: mtt	
•	Batch ID: W9F1324	<b>Instr:</b> ICP03	0.012	<b>Prepared:</b> 06 0.020	5/25/19 09:43 mg/l	1x1	<b>Analyst:</b> mtt 07/02/19 18:51	
	<b>Batch ID:</b> W9F1324		0.012	-	mg/l		•	Hahs, J Pere
Method: EPA 200.7 Phosphorus, Dissolved	Batch ID: W9F1324		0.012	-	mg/l		07/02/19 18:51	Hahs, J Pere
Method: EPA 200.7 Phosphorus, Dissolved Sample: TMDL-R3	Batch ID: W9F1324		0.012	-	mg/l		07/02/19 18:51	Hahs, J Pere Qualifie
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte		0.051		0.020	mg/l Sa	ampled: (	07/02/19 18:51 06/12/19 12:45 by K. F	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte onventional Chemistry/Physical Parameters		0.051		0.020 MRL	mg/l Sa	ampled: (	07/02/19 18:51 06/12/19 12:45 by K. F	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC	s by APHA/EPA/ASTM Methods	Result Instr: [CALC]		MRL Prepared: 06	mg/l Sa Units	nmpled: (	07/02/19 18:51 06/12/19 12:45 by K. F Analyzed Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC	s by APHA/EPA/ASTM Methods	Result		0.020 MRL	mg/l Sa Units	ampled: (	07/02/19 18:51 06/12/19 12:45 by K. F Analyzed	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	s by APHA/EPA/ASTM Methods	Result Instr: [CALC]		0.020  MRL  Prepared: 06	mg/l Sa Units 5/21/19 15:38	nmpled: (	07/02/19 18:51  06/12/19 12:45 by K. H  Analyzed  Analyst: mcs  06/26/19 16:12  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]		0.020  MRL  Prepared: 06	mg/l Sa Units 5/21/19 15:38 mg/l	nmpled: (	07/02/19 18:51 06/12/19 12:45 by K. H Analyzed Analyst: mcs 06/26/19 16:12	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  1.5  Instr: [CALC]		MRL Prepared: 06 0.20 Prepared: 06	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l	mpled: ( Dil	07/02/19 18:51  06/12/19 12:45 by K. H  Analyzed  Analyst: mcs  06/26/19 16:12  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  1.5  Instr: [CALC]  1.6		0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l	mpled: ( Dil	07/02/19 18:51  06/12/19 12:45 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  1.5  Instr: [CALC]  1.6  Instr: AA06	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l  5/21/19 15:35  mg/l	nmpled: (	07/02/19 18:51  06/12/19 12:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  Instr: [CALC]  Instr: AA06  Instr: AA06	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l  5/21/19 15:35  mg/l	nmpled: (	07/02/19 18:51  06/12/19 12:45 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  Instr: [CALC]  Instr: AA06  Instr: AA06  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l  5/21/19 15:35  mg/l  5/21/19 15:38	1x1 1x1 1x1	07/02/19 18:51  06/12/19 12:45 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206	Result  Instr: [CALC]  1.5  Instr: [CALC]  1.6  Instr: AA06  0.071  Instr: AA06  ND	MDL 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l  5/21/19 15:35  mg/l  5/21/19 15:38  mg/l	1x1 1x1 1x1	07/02/19 18:51  06/12/19 12:45 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206	Result  Instr: [CALC]  Instr: [CALC]  Instr: AA06  Instr: AA06  Instr: AA06  Instr: AA06  Instr: AA06	MDL 0.050 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Sa  Units  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 15:38  mg/l  6/21/19 15:38  mg/l	1x1 1x1 1x1 1x1	07/02/19 18:51  06/12/19 12:45 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12  Analyst: mrs 06/26/19 16:12  Analyst: ymt	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206  Batch ID: W9F1136	Result  Instr: [CALC]  1.5  Instr: [CALC]  1.6  Instr: AA06  0.071  Instr: AA06  Instr: AA01  1.5	MDL 0.050 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20	mg/l  Sa  Units  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 15:38  mg/l  6/21/19 15:38  mg/l	1x1 1x1 1x1 1x1	07/02/19 18:51  06/12/19 12:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12  Analyst: mcs 06/26/19 16:12  Analyst: ymt 06/26/19 12:25	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte Onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1 Phosphorus as P, Total	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206  Batch ID: W9F1136	Result  Instr: [CALC]  1.5  Instr: [CALC]  1.6  Instr: AA06  0.071  Instr: AA01  1.5  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20  Prepared: 06 0.70  Prepared: 06 0.70  Prepared: 06 0.70	mg/l  Sa  Units  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 14:32  mg/l  6/20/19 16:13	1x1 1x1 1x1 1x1 1x1	07/02/19 18:51  06/12/19 12:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12  Analyst: ymt 06/26/19 12:25  Analyst: ymt	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R3 9F18069-04 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206  Batch ID: W9F1136	Result  Instr: [CALC]  1.5  Instr: [CALC]  1.6  Instr: AA06  0.071  Instr: AA01  1.5  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20  Prepared: 06 0.70  Prepared: 06 0.70  Prepared: 06 0.70	mg/l  Sa  Units  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 15:38  mg/l  6/20/19 14:32  mg/l  6/20/19 16:13  mg/l	1x1 1x1 1x1 1x1 1x1	07/02/19 18:51  06/12/19 12:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12  Analyst: ymt 06/26/19 12:25  Analyst: ymt	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study June 2019 P6040555

**Reported:** 07/22/2019 08:32

Project Manager: Kelly Hahs

#### Sample Results

Sample: TMDL-R4					Si	ampled:	06/12/19 7:55 by K. F	Hahs, J Perez
9F18069-05 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Parameter	rs by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	5/21/19 15:38		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		1.9		0.20	mg/l	1x1	06/26/19 16:12	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	6/21/19 15:35		Analyst: mcs	
Nitrogen, Total		1.9		0.20	mg/l	1x1	07/03/19 13:17	
Method: EPA 351.2	Batch ID: W9F1205	Instr: AA06		Prepared: 06	6/21/19 15:35		Analyst: mcs	
TKN		ND	0.050	0.10	mg/l	1x1	07/03/19 13:17	
Method: EPA 351.2	Batch ID: W9F1206	Instr: AA06		Prepared: 06	6/21/19 15:38		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	06/26/19 16:12	
Method: EPA 353.2	<b>Batch ID:</b> W9F1136	Instr: AA01		Prepared: 06	5/20/19 14:32		Analyst: ymt	
NO2+NO3 as N		1.9	0.083	0.20	mg/l	1x1	06/26/19 12:31	
Mathad. FDA 26F 1	Potch ID: W/051145	Inches AAAA		Dromanada 06	5/20/10 16:12		Amaluate umt	
Method: EPA 365.1  Phosphorus as P, Total	<b>Batch ID:</b> W9F1145	Instr: AA01	0.0014	0.010	5/20/19 16:13 mg/l	1x1	<b>Analyst:</b> ymt 07/03/19 13:54	
• •					9			
letals by EPA 200 Series Methods								
		In at a ICDO2		Duamanada 06	5/25/19 09:43		Analyst: mtt	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9E18069-06 (Water)	Batch ID: W9F1324	Instr: ICP03	0.012	0.020	mg/l	1x1 ampled:	07/02/19 18:57 06/13/19 7:45 by K. H	Hahs, J Pere
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)	Batch ID: W9F1324	ND		0.020	mg/l	ampled:	07/02/19 18:57 06/13/19 7:45 by K. F	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte		ND Result	0.012	-	mg/l		07/02/19 18:57	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte onventional Chemistry/Physical Parameter	rs by APHA/EPA/ASTM Methods	Result	MDL	0.020 MRL	mg/l Si Units	ampled:	07/02/19 18:57 06/13/19 7:45 by K. F Analyzed	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC		ND Result	MDL	0.020 MRL	mg/l	ampled:	07/02/19 18:57 06/13/19 7:45 by K. F	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte onventional Chemistry/Physical Parameter	rs by APHA/EPA/ASTM Methods	Result	MDL	0.020 MRL	mg/l Si Units	ampled:	07/02/19 18:57 06/13/19 7:45 by K. F Analyzed	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	rs by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 06  0.20	mg/l Si Units 5/21/19 15:38 mg/l	ampled:	07/02/19 18:57 06/13/19 7:45 by K. H Analyzed Analyst: mcs 06/26/19 16:12	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD ***	rs by APHA/EPA/ASTM Methods	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 06  0.20	mg/l Sa <b>Units</b> 5/21/19 15:38	ampled:	07/02/19 18:57 06/13/19 7:45 by K. F Analyzed Analyst: mcs	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20	mg/l Si Units 6/21/19 15:38 mg/l 6/21/19 15:35 mg/l	Dil	07/02/19 18:57  06/13/19 7:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2	rs by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06	mg/l  Vnits  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35	Dil  1x1	07/02/19 18:57  06/13/19 7:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	rs by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06  0.45	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10	mg/l  Vnits  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35  mg/l	Dil	07/02/19 18:57  06/13/19 7:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2	rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06  0.45  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06	mg/l  Vnits  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35  mg/l	1x1 1x1 1x1	07/02/19 18:57  06/13/19 7:45 by K. H  Analysed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	rs by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06  0.45	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10	mg/l  Vnits  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35  mg/l	Dil  1x1	07/02/19 18:57  06/13/19 7:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2	rs by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06  0.45  Instr: AA06  1nstr: AA06	MDL 0.050 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Vnits  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l	1x1 1x1 1x1	07/02/19 18:57  06/13/19 7:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12  Analyst: ymt	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	rs by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06  0.45  Instr: AA06  0.46	MDL 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Vnits  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l  5/21/19 15:35  mg/l  6/21/19 15:38  mg/l	1x1 1x1 1x1	07/02/19 18:57  06/13/19 7:45 by K. H  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1	rs by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06  0.45  Instr: AA01  ND  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06	mg/l  Vnits  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 14:32  mg/l  6/20/19 16:13	mpled:  1x1  1x1  1x1  1x1  1x1	07/02/19 18:57  06/13/19 7:45 by K. H.  Analyzed  Analyst: mcs  06/26/19 16:12  Analyst: mcs  07/03/19 13:17  Analyst: mcs  07/03/19 13:17  Analyst: mcs  06/26/19 16:12  Analyst: ymt  06/26/19 12:32  Analyst: ymt	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte  onventional Chemistry/Physical Parameter  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2     TKN, Soluble  Method: EPA 353.2     NO2+NO3 as N	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206  Batch ID: W9F1136	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06  0.45  Instr: AA06  Instr: AA01	MDL 0.050 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20	mg/l  Vnits  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 15:38  mg/l	1x1 1x1 1x1	07/02/19 18:57  06/13/19 7:45 by K. H.  Analyzed  Analyst: mcs  06/26/19 16:12  Analyst: mcs  07/03/19 13:17  Analyst: mcs  07/03/19 13:17  Analyst: mcs  06/26/19 16:12  Analyst: ymt  06/26/19 12:32	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte  conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2  TKN  Method: EPA 351.2  TKN, Soluble  Method: EPA 353.2  NO2+NO3 as N  Method: EPA 365.1  Phosphorus as P, Total	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206  Batch ID: W9F1136	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06  0.45  Instr: AA01  ND  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06	mg/l  Vnits  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 14:32  mg/l  6/20/19 16:13	mpled:  1x1  1x1  1x1  1x1  1x1	07/02/19 18:57  06/13/19 7:45 by K. H.  Analyzed  Analyst: mcs  06/26/19 16:12  Analyst: mcs  07/03/19 13:17  Analyst: mcs  07/03/19 13:17  Analyst: mcs  06/26/19 16:12  Analyst: ymt  06/26/19 12:32  Analyst: ymt	
Phosphorus, Dissolved  Sample: TMDL-CL 9F18069-06 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206  Batch ID: W9F1136	Result  Instr: [CALC]  0.46  Instr: [CALC]  0.45  Instr: AA06  0.45  Instr: AA01  ND  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20  Prepared: 06 0.10	mg/l  Vnits  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 14:32  mg/l  6/20/19 16:13	mpled:  1x1  1x1  1x1  1x1  1x1	07/02/19 18:57  06/13/19 7:45 by K. H.  Analyzed  Analyst: mcs  06/26/19 16:12  Analyst: mcs  07/03/19 13:17  Analyst: mcs  07/03/19 13:17  Analyst: mcs  06/26/19 16:12  Analyst: ymt  06/26/19 12:32  Analyst: ymt	Hahs, J Perez



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Project Number: TMDL Study June 2019 P6040555

Reported: 07/22/2019 08:32

Project Manager: Kelly Hahs

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#### Sample Results

Sample: TMDL-SA					Sa	mpled: (	06/12/19 10:00 by K. H	lahs, J Pere
9F18069-07 (Water)							,	
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
nventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods	i						
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	5/21/19 15:38		Analyst: mcs	
Dissolved Nitrogen		0.68		0.20	mg/l	1x1	06/26/19 16:12	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	5/21/19 15:35		Analyst: mcs	
Nitrogen, Total		0.85		0.20	mg/l	1x1	07/03/19 13:17	
Method: EPA 351.2	Batch ID: W9F1205	Instr: AA06		Prepared: 06	5/21/19 15:35		Analyst: mcs	
TKN		0.22	0.050	0.10	mg/l	1x1	07/03/19 13:17	
Method: EPA 351.2	Batch ID: W9F1206	Instr: AA06		Prepared: 06	5/21/19 15:38		Analyst: mcs	
TKN, Soluble		0.056	0.050	0.10	mg/l	1x1	06/26/19 16:12	
Method: EPA 353.2	Batch ID: W9F1136	Instr: AA01		Prepared: 06	5/20/19 14:32		Analyst: ymt	
NO2+NO3 as N		0.63	0.083	0.20	mg/l	1x1	06/26/19 12:33	
Method: EPA 365.1	Batch ID: W9F1145	Instr: AA01		Prepared: 06	5/20/19 16:13		Analyst: ymt	
Phosphorus as P, Total		0.025	0.0014	0.010	mg/l	1x1	07/03/19 14:03	
etals by EPA 200 Series Methods								
•	<b>Batch ID:</b> W9F1324	Instr: ICP03		Prepared: 06	5/25/19 09:43		Analyst: mtt	
Method: EPA 200.7 Phosphorus, Dissolved	Batch ID: W9F1324	Instr: ICP03	0.012	<b>Prepared:</b> 06 0.020	mg/l	1x1 impled: (	<b>Analyst:</b> mtt 07/02/19 19:03	lahs, J Pere
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)	Batch ID: W9F1324	0.038		0.020	mg/l Sa	ımpled: (	07/02/19 19:03 06/12/19 10:00 by K. F	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte		0.038	0.012	-	mg/l		07/02/19 19:03	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte Doventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods	Result	MDL	0.020 MRL	mg/l Sa Units	ımpled: (	07/02/19 19:03 06/12/19 10:00 by K. F Analyzed	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC		0.038	MDL	0.020	mg/l Sa Units	ımpled: (	07/02/19 19:03 06/12/19 10:00 by K. F	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC	s by APHA/EPA/ASTM Methods	Result	MDL	0.020 MRL	mg/l Sa Units	ımpled: (	07/02/19 19:03 06/12/19 10:00 by K. F Analyzed	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte Doventional Chemistry/Physical Parameters  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]	MDL	MRL Prepared: 06	mg/l Sa Units 5/21/19 15:38 mg/l	mpled: (	07/02/19 19:03 06/12/19 10:00 by K. F Analyzed Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte Doventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	s by APHA/EPA/ASTM Methods	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 06	mg/l Sa Units 5/21/19 15:38 mg/l	mpled: (	07/02/19 19:03 06/12/19 10:00 by K. H Analyzed Analyst: mcs 06/26/19 16:12	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte Doventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC] O.69 Instr: [CALC]	MDL	MRL Prepared: 06 0.20 Prepared: 06	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l	mpled: (  Dil  1x1	07/02/19 19:03 06/12/19 10:00 by K. F Analyzed Analyst: mcs 06/26/19 16:12 Analyst: mcs 07/03/19 13:17	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte Doventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l	mpled: (  Dil  1x1	07/02/19 19:03 06/12/19 10:00 by K. H Analyzed Analyst: mcs 06/26/19 16:12 Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l  5/21/19 15:35  mg/l	mpled: (	07/02/19 19:03 06/12/19 10:00 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: [CALC]	0.038  Result  Instr: [CALC]  0.69  Instr: [CALC]  0.87  Instr: AA06  0.24	MDL	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l  5/21/19 15:35  mg/l	mpled: (	07/02/19 19:03 06/12/19 10:00 by K. F Analyzed Analyst: mcs 06/26/19 16:12 Analyst: mcs 07/03/19 13:17 Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: [CALC]	Result Instr: [CALC] 0.69 Instr: [CALC] 0.87 Instr: AA06 0.24 Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l  5/21/19 15:35  mg/l  5/21/19 15:38	1x1 1x1 1x1	07/02/19 19:03 06/12/19 10:00 by K. F Analyzed Analyst: mcs 06/26/19 16:12 Analyst: mcs 07/03/19 13:17 Analyst: mcs 07/03/19 13:17 Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206	Result Instr: [CALC] 0.69 Instr: [CALC] 0.87 Instr: AA06 0.24 Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Sa  Units  5/21/19 15:38  mg/l  5/21/19 15:35  mg/l  5/21/19 15:35  mg/l  5/21/19 15:38  mg/l	1x1 1x1 1x1	07/02/19 19:03 06/12/19 10:00 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206	Result   Instr: [CALC]   0.69   Instr: [CALC]   0.87   Instr: AA06   0.24   Instr: AA06   0.057   Instr: AA01	MDL 0.050 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.10	mg/l  Sa  Units  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 15:38  mg/l	1x1 1x1 1x1 1x1	07/02/19 19:03 06/12/19 10:00 by K. F Analyzed Analyst: mcs 06/26/19 16:12 Analyst: mcs 07/03/19 13:17 Analyst: mcs 07/03/19 13:17 Analyst: mcs 06/26/19 16:12 Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206  Batch ID: W9F1136	Result   Instr: [CALC]   0.69   Instr: [CALC]   0.87   Instr: AA06   0.24   Instr: AA06   0.057   Instr: AA01   0.63	MDL 0.050 0.050	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20	mg/l  Sa  Units  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 15:38  mg/l	1x1 1x1 1x1 1x1	07/02/19 19:03 06/12/19 10:00 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12  Analyst: ymt 06/26/19 12:34	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-FD 9F18069-08 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1 Phosphorus as P, Total	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206  Batch ID: W9F1136	Result   Instr: [CALC]   0.69   Instr: [CALC]   0.87   Instr: AA06   0.24   Instr: AA06   0.057   Instr: AA01   0.63   Instr: AA01   0.63   Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20  Prepared: 06 0.70  Prepared: 06 0.70  Prepared: 06 0.70	mg/l  Sa  Units  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 14:32  mg/l  6/20/19 14:32	1x1 1x1 1x1 1x1 1x1	07/02/19 19:03 06/12/19 10:00 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12  Analyst: ymt 06/26/19 12:34  Analyst: ymt	
Sample: TMDL-FD 9F18069-08 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2     TKN, Soluble  Method: EPA 353.2     NO2+NO3 as N  Method: EPA 365.1	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9F1205  Batch ID: W9F1206  Batch ID: W9F1136	Result   Instr: [CALC]   0.69   Instr: [CALC]   0.87   Instr: AA06   0.24   Instr: AA06   0.057   Instr: AA01   0.63   Instr: AA01   0.63   Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 06 0.20  Prepared: 06 0.10  Prepared: 06 0.10  Prepared: 06 0.20  Prepared: 06 0.20	mg/l  Sa  Units  5/21/19 15:38  mg/l  6/21/19 15:35  mg/l  6/21/19 15:38  mg/l  6/21/19 14:32  mg/l  6/20/19 14:32	1x1 1x1 1x1 1x1 1x1	07/02/19 19:03 06/12/19 10:00 by K. F  Analyzed  Analyst: mcs 06/26/19 16:12  Analyst: mcs 07/03/19 13:17  Analyst: mcs 07/03/19 13:17  Analyst: mcs 06/26/19 16:12  Analyst: ymt 06/26/19 12:34  Analyst: ymt	dahs, J Pere



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue

Project Number: TMDL Study June 2019 P6040555

Reported: 07/22/2019 08:32

Ventura, CA 93009

Project Manager: Kelly Hahs

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#### Quality Control Results

Conventional Chemistry/Physical Parameters	by APHA/EPA/AST	M Method	S								
Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifie
atch: W9F1136 - EPA 353.2											_
Blank (W9F1136-BLK1)				Prei	pared: 06/20/19	9 Analyzed:	06/26/19				
NO2+NO3 as N	ND	0.083	0.20	mg/l	parca: 00, 20, 1.	7 maryzeu.	00, 20, 15				
				_							
LCS (W9F1136-BS1) NO2+NO3 as N	1 04	0.083	0.20	mg/l	pared: 06/20/19 1.00	Analyzed:	104	90-110			
NOZ.1100 d3 11	1.04	0.000	0.20	1119/1	1.00		104	30-110			
Duplicate (W9F1136-DUP1)		18091-02	0.00		pared: 06/20/19	-	06/26/19			20	
NO2+NO3 as N	· ND	0.083	0.20	mg/l		ND				20	
Matrix Spike (W9F1136-MS1)	Source: 9	F18069-01		Prej	pared: 06/20/1	9 Analyzed:	06/26/19				
NO2+NO3 as N	2.77	0.083	0.20	mg/l	2.00	0.698	104	90-110			
Matrix Spike (W9F1136-MS2)	Source: 9	18069-02		Prei	pared: 06/20/19	9 Analyzed:	06/26/19				
NO2+NO3 as N		0.083	0.20	mg/l	2.00	1.13	103	90-110			
				_	1 00 100 11		06/06/40				
Matrix Spike Dup (W9F1136-MSD1) NO2+NO3 as N		<b>F18069-01</b> 0.083	0.20	mg/l	pared: 06/20/19 2.00	9 <b>Analyzed:</b> 0.698	104	90-110	0	20	
1102 1100 40 11	2.,,	0.000	0.20	1119/1	2.00	0.000	101	00 110	Ü	20	
Matrix Spike Dup (W9F1136-MSD2)		F18069-02	0.00		pared: 06/20/19	-				00	
NO2+NO3 as N	3.18	0.083	0.20	mg/l	2.00	1.13	102	90-110	0.3	20	
atch: W9F1145 - EPA 365.1											
Blank (W9F1145-BLK1)				Prei	pared: 06/20/19	9 Analyzed:	07/03/19				
Phosphorus as P, Total	ND	0.0014	0.010	mg/l	pu. cu. co, 20,	,, <u></u>	01,00,10				
1.55 (1.45-1.45-1.54)				_	1 00 100 11		07/02/40				
LCS (W9F1145-BS1) Phosphorus as P, Total	0.0474	0.0014	0.010	mg/l	pared: 06/20/19 0.0500	9 Analyzed:	95	90-110			
i noophorae as i, rotai	0.0111	0.0011	0.010	1119/1	0.0000		00	00 110			
Matrix Spike (W9F1145-MS1)		F18069-04	0.040		pared: 06/20/19	-					
Phosphorus as P, Total	0.0549	0.0014	0.010	mg/l	0.0500	0.00373	102	90-110			
Matrix Spike (W9F1145-MS2)	Source: 9	F18069-05		Prej	pared: 06/20/1	9 Analyzed:	07/03/19				
Phosphorus as P, Total	0.0542	0.0014	0.010	mg/l	0.0500	0.00434	100	90-110			
Matrix Spike Dup (W9F1145-MSD1)	Source: 9	18069-04		Prei	pared: 06/20/19	9 Analyzed:	07/03/19				
Phosphorus as P, Total			0.010	mg/l	0.0500	0.00373	103	90-110	0.2	20	
				_							
Matrix Spike Dup (W9F1145-MSD2) Phosphorus as P, Total	Source: 91	0 0014	0.010	mg/l	pared: 06/20/19 0.0500	9 Analyzed: 0.00434	96	90-110	3	20	
Theophorae do F, Fotal	0.0021	0.0011	0.010	1119/1	0.0000	0.00101	00	00 110	Ü	20	
atch: W9F1205 - EPA 351.2											
Blank (W9F1205-BLK1)				Prej	pared: 06/21/1	9 Analyzed:	07/03/19				
TKN	ND	0.050	0.10	mg/l							
Blank (W9F1205-BLK2)				Prei	pared: 06/21/19	9 Analyzed:	07/11/19				
TKN	ND	0.050	0.10	mg/l	pu. cu. co,,	,,cu.	0.,,				
1.55 (NATAON DOL)				_	1 00/04/4		07/02/40				
LCS (W9F1205-BS1) TKN	1.01	0.050	0.10	Pre <sub>l</sub> mg/l	pared: 06/21/19 1.00	Analyzed:	<b>07/03/19</b> 101	90-110			
	1.01	0.000	5.10	9/.	1.00		101	00 110			
LCS (W9F1205-BS2)		0.050	0.45		pared: 06/21/19	9 Analyzed:					
TKN	0.962	0.050	0.10	mg/l	1.00		96	90-110			
Matrix Spike (W9F1205-MS1)	Source: 9	18069-04		Prej	pared: 06/21/19	9 Analyzed:	07/03/19				
TKN	1.04	0.050	0.10	mg/l	1.00	0.0714	97	90-110			
Matrix Spike (W9F1205-MS2)	Source: 01	18069-04		Droi	pared: 06/21/19	Analyzed.	07/11/10				
F18069	Jource. J	.0005 04		. 16	purcu. 00/21/1:	- Allaiyzeu.	2.,, 13				Page 7 of



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Project Number: TMDL Study June 2019 P6040555

**Reported:** 07/22/2019 08:32

Ventura, CA 93009

**Project Manager:** Kelly Hahs

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#### Quality Control Results

Conventional Chemistry/Physical Parameters by APHA	/EPA/AST	M Method	s (Continue	d)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
Batch: W9F1205 - EPA 351.2 (Continued)											
Matrix Spike (W9F1205-MS2)	Source: 9	F18069-04		Pre	pared: 06/21/1	9 Analyzed:	07/11/19	9			
TKN	2.02	0.10	0.20	mg/l	2.00	ND	101	90-110			
Matrix Spike Dup (W9F1205-MSD1)	Source: 9	F18069-04		Prej	pared: 06/21/1	9 Analyzed	: 07/03/1	9			
TKN	1.06	0.050	0.10	mg/l	1.00	0.0714	99	90-110	3	10	
Matrix Spike Dup (W9F1205-MSD2)	Source: 9	F18069-04		Prej	pared: 06/21/1	9 Analyzed	: 07/11/1	9			
TKN	1.83	0.10	0.20	mg/l	2.00	ND	91	90-110	10	10	
Batch: W9F1206 - EPA 351.2											
Blank (W9F1206-BLK1)				Pre	pared: 06/21/1	9 Analyzed	: 06/26/1	9			
TKN, Soluble	ND	0.050	0.10	mg/l							
LCS (W9F1206-BS1)				Prej	pared: 06/21/1	9 Analyzed	: 06/26/1	9			
TKN, Soluble	1.01	0.050	0.10	mg/l	1.00		101	90-110			
Matrix Spike (W9F1206-MS1)	Source: 9	F18069-04		Prej	pared: 06/21/1	9 Analyzed	: 06/26/1	9			
TKN, Soluble	0.877	0.050	0.10	mg/l	1.00	ND	88	90-110			MS-0
Matrix Spike Dup (W9F1206-MSD1)	Source: 9	F18069-04		Pre	pared: 06/21/1	9 Analyzed	06/26/19	9			
TKN, Soluble	1.00	0.050	0.10	mg/l	1.00	ND	100	90-110	14	10	R-0
Quality Control Results										(Co	ontinued
Metals by EPA 200 Series Methods											
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
Batch: W9F1324 - EPA 200.7											
Blank (W9F1324-BLK1)				Pre	pared: 06/25/1	9 Analyzed	07/02/1	9			
Phosphorus, Dissolved	ND	0.012	0.020	mg/l							
LCS (W9F1324-BS1)				Prej	pared: 06/25/1	9 Analyzed	07/02/19	9			
Phosphorus, Dissolved	1.02	0.012	0.020	mg/l	1.00		102	85-115			
Matrix Spike (W9F1324-MS1)	Source: 9	F18069-01		Prej	pared: 06/25/1	9 Analyzed	07/02/1	9			
Phosphorus, Dissolved	1.06	0.012	0.020	mg/l	1.00	0.0270	103	70-130			
Matrix Spike Dup (W9F1324-MSD1)	Source: 9	F18069-01		Pre	pared: 06/25/1	9 Analyzed	: 07/02/1	9			
Phosphorus, Dissolved	1.09	0.012	0.020	mg/l	1.00	0.0270	106	70-130	3	30	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study June 2019 P6040555

**Reported:** 07/22/2019 08:32

**Project Manager:** Kelly Hahs



#### **Notes and Definitions**

J	Estimated conc. detected <mrl and="">MDL.</mrl>
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
R-02	The RPD was outside of QC acceptance limits due to possible matrix interference.
% Rec	Percent Recovery
Dil	Dilution
dry	Sample results reported on a dry weight basis
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
MRL ND	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)  NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
NR	Not Reportable
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB)

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.



July 17<sup>th</sup>, 2019

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aguatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in Standard Methods for the Examination of Water and Wastewater (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Karin Wisenbaker Senior Biologist (805) 643-5621 ex.17 **Client: Ventura Country Watershed Protection District** 

**Project: Ventura River Algae TMDL** 



#### Chlorophyll a results from June 12th & 13th, 2019

Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	6.8	ug/cm2
TMDL-R2	1	11	23.0	ug/cm2
TMDL-R3	1	11	2.1	ug/cm2
TMDL-R4	1	11	9.1	ug/cm2
TMDL-CL	1	11	4.5	ug/cm2
TMDL-SA	1	11	19.0	ug/cm2
TMDL-SA	2	11	1.7	ug/cm2
TMDL-Est	1	NA	27	ug/L
TMDL-Est	2	NA	11	ug/L

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From: Aquatic Bioassay and Consulting Lab 29 N. Olive St. Ventura, CA 9300		Phone: Fax: Project ID:	(805) 6		ACHIE MARKE	To:	Company: Address: Phone:	Aquatic Bioassay and Consulting Labs. 29 N. Olive St. Ventura, CA 93001		
Communication of the Communica	y		,		para dia s	2010		ANALYSIS		7
Sample I.D. No.	Sample Date	Time	Matrix	COMPOSITO Volume/ No.	Reps					
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TMDL-RY TMDL-SA TMDL-SADUP TMDL-R3	64/12/19	765		390		X	ter to the second constitution.	CONTRACTOR OF THE PROPERTY OF		-
TMDL-SA	06/12/19	1000		409		X				
TMDL -SADUP	06/12/19	1000		320		X				
TMDL-R3	06/12/19	1245		440		X				
										-
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Cha stody

and Consulting 29 N. Olive St. Ventura, CA 93		Phone: Fax: Project ID:	(805) 6			То:	Company: Address: Phone:	and Co 29 N. C	Bioassay nsulting Labs. Olive St. a, CA 93001		
Sample I.D. No.	Sample Date	Time	Matrix	Composito Volume/ No.	Reps	ď			ANALIOIG		
MAI CI	06/13/19	7:45		572		Chl-a					
MDL-CL MDL-RZ	06/13/19	9:20		574		X		_			
MDL-RI	06/13/19	11:45		688		X					
MDL-EST	06 13 19	1315		1000	1	X					
TMDL -EST	06 13 19	13:15	-	1000	2	X					
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ecial Instructions:	and the survey of the survey o		denouge me	and the same of th	Control of the latest of the l	4	THE RESERVE TO THE PERSON OF T		lay ang managalan da samanasa karasa		
		RECEIVE		DATE: TIM	and the second			escale and the second	TIME: RECEIVE	***************************************	DATE: T



# Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients TMDL (VR Algae TMDL)

9616051

#### Comprehensive Monitoring Program

CLIENT. Mari	ODY RECORD						1OF _	1
CLIENT: Ventura C		otection District (	Maste	r Agı	eemer	nt WECKI	LABORATOFY20M	IA01, Project P60405
AMPLING EVENT: AMPLING DATE:		LY 2019	1					
AMPLERS:	7/10 4 M CARC	11/2019	LIE					
RAB SAMPLES	IN CAPU	AP', K. HA	(1))					
TOTAL OF THE LES			<u> </u>	т-	Т	1 1	** F(F) D	ILTERED
			Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen			
SAMPLE ID	DATE/	TIME	Tota	Diss	Nitra		NOTES	
TMDL-Est	7/19/19	12:25	X	х	x			
TMDL-R1	7/11/19	10:20	x	х	х			
TMDL-R2	7/11/19	07:50	х	х	х			
TMDL-R3	7/10/19	1100	x	Х	х			
TMDL-R4	7/10/19	0755	х	Х	x	+ +		
TMDL-CL	7/10/19	1255	x	Х	X			
TMDL-SA	7/10/19		+			-  -  -		
TMDL-FD	1.71071-	0935	X	X	X	_		
TIVIDETO			<del>-X</del>	X	<del>*</del> _		(Note which site)	
nature: ZMWy No	mels	<u></u>	Signa	ture:				
t Name: Ewill	iomeli		Print I	Name	:			
lation: VC WPt			Affiliat					
e/Time Received:			Date/	Time I	Receive	d:		
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nature:	Olen	1-	Signa	ture:	R	M-		4 6
nt Name: WWW	Shavano	<u> </u>	Print N			Cesta	er Aball	T-02-2
iation: IVel	Letchs		Affiliat	tion:		Ciec	E	10000
e/Time Received: Z	7 // -	00	Date/1	Time F	Received	d: 7	116/14 15	105
e/Time Relinguished:	7/10/16	305	Date/I	Tima E	Relinquis			<del>-</del>



**FINAL REPORT** 

Work Orders: 9G16051 Report Date: 7/29/2019

**Received Date:** 7/16/2019

Turnaround Time: Normal

Phones: (805) 658-4375

Fax: (805) 654-3350

P.O. #: WECKLABORATOFY2

0MA01

Client: Ventura County Watershed Protection District

Billing Code:

800 South Victoria Avenue

Project: TMDL Study July 2019 P6040555

Ventura, CA 93009

Attn: Kelly Hahs

ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 7/16/19 with the Chain-of-Custody document. The samples were received in good condition, at 1.0 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee

Operations Manager/Senior PM











**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue

Project Number: TMDL Study July 2019 P6040555

**Reported:** 07/29/2019 09:27

Ventura, CA 93009

Project Manager: Kelly Hahs



#### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K. Hahs, M. Capcap	9G16051-01	Water	07/11/19 12:25	
TMDL-R1	K. Hahs, M. Capcap	9G16051-02	Water	07/11/19 10:20	
TMDL-R2	K. Hahs, M. Capcap	9G16051-03	Water	07/11/19 07:50	
TMDL-R3	K. Hahs, M. Capcap	9G16051-04	Water	07/10/19 11:00	
TMDL-R4	K. Hahs, M. Capcap	9G16051-05	Water	07/10/19 07:55	
TMDL-CL	K. Hahs, M. Capcap	9G16051-06	Water	07/10/19 12:55	
TMDL-SA	K. Hahs, M. Capcap	9G16051-07	Water	07/10/19 09:35	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study July 2019 P6040555

**Reported:** 07/29/2019 09:27

**Project Manager:** Kelly Hahs

|--|

Sample: TMDL-Est					Samp	ed: 07/1	1/19 12:25 by K. Hahs	, M. Capca
9G16051-01 (Water)					·			
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
nventional Chemistry/Physical Parameter	s by APHA/EPA/ASTM Methods						.,	
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 07	7/18/19 13:34		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		0.64		0.20	mg/l	1x1	07/22/19 12:22	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 07	7/18/19 13:32		Analyst: mcs	
Nitrogen, Total		0.72		0.20	mg/l	1x1	07/22/19 12:22	
Method: EPA 351.2	<b>Batch ID:</b> W9G1015	Instr: AA06		Prepared: 07	7/18/19 13:32		Analyst: mcs	
TKN		0.39	0.050	0.10	mg/l	1x1	07/22/19 12:22	
Method: EPA 351.2	Batch ID: W9G1016	Instr: AA06		Prepared: 07	7/18/19 13:34		Analyst: mcs	
TKN, Soluble		0.32	0.050	0.10	mg/l	1x1	07/22/19 12:22	
Method: EPA 353.2	Batch ID: W9G0940	Instr: AA01		Prepared: 07	7/17/19 16:38		Analyst: sar	
NO2+NO3 as N		0.32	0.083	0.20	mg/l	1x1	07/18/19 13:01	
Method: EPA 365.1	<b>Batch ID:</b> W9G1017	Instr: AA01		Prepared: 07	7/18/19 14:00		Analyst: YMT	
Phosphorus as P, Total		0.043	0.0014	0.010	mg/l	1x1	07/22/19 17:06	
atals by EDA 200 Sarias Mathads								
etals by EPA 200 Series Methods	Batala ID: WOCOOO	In atm ICD02		Duamanada 07	7/10/10 10:42		A a locate most	
Method: EPA 200.7  Phosphorus, Dissolved	<b>Batch ID:</b> W9G0998	Instr: ICP03 0.043	0.012	<b>Prepared:</b> 07 0.020	7/18/19 10:43 mg/l Sampl	1x1 ed: 07/1	<b>Analyst:</b> mtt 07/24/19 14:55 1/19 10:20 by K. Hahs	, M. Capca
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)	<b>Batch ID:</b> W9G0998	0.043		0.020	mg/l Sampl	ed: 07/1	07/24/19 14:55 1/19 10:20 by K. Hahs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte		0.043	0.012	-	mg/l		07/24/19 14:55	, M. Capca Qualifie
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte Doventional Chemistry/Physical Parameter	s by APHA/EPA/ASTM Methods	0.043 Result		0.020	mg/l Sampl Units	ed: 07/1	07/24/19 14:55 1/19 10:20 by K. Hahs Analyzed	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC		0.043		0.020	mg/l Sampl	ed: 07/1	07/24/19 14:55 1/19 10:20 by K. Hahs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC	s by APHA/EPA/ASTM Methods	0.043 Result		0.020	mg/l Sampl Units	ed: 07/1	07/24/19 14:55 1/19 10:20 by K. Hahs Analyzed	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte Dissolved Nitrogen	s by APHA/EPA/ASTM Methods	Result Instr: [CALC]		0.020  MRL  Prepared: 07	mg/l Sampl Units 7/18/19 13:34	ed: 07/1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte Doventional Chemistry/Physical Parameter  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]		0.020  MRL  Prepared: 07	mg/l Sampl Units 7/18/19 13:34 mg/l	ed: 07/1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs  07/22/19 12:22	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte Dissolved Nitrogen  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  1.1  Instr: [CALC]		0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20	mg/l Sampl Units 7/18/19 13:34 mg/l 7/18/19 13:32	ed: 07/1  Dil  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte Dissolved Nitrogen  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.2		0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20	mg/l Sampl Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l	ed: 07/1  Dil  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs  07/22/19 12:22  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	s by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.2  Instr: AA06  0.29	MDL	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10	mg/l Sampl Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:32 mg/l	ed: 07/1  Dil  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte Inventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.2  Instr: AA06	MDL	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10	mg/l Sampl Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:32	ed: 07/1  Dil  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte Inventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.2  Instr: AA06  0.29  Instr: AA06  0.22	MDL 0.050	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.10	mg/l Sampl Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:32 mg/l 7/18/19 13:34 mg/l	ed: 07/1  Dil  1x1  1x1  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs 07/22/19 12:22	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	s by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.2  Instr: AA06  0.29  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.10	mg/l  Vnits  7/18/19 13:34  mg/l  7/18/19 13:32  mg/l  7/18/19 13:32  mg/l  7/18/19 13:34	ed: 07/1  Dil  1x1  1x1  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2     TKN, Soluble  Method: EPA 353.2     NO2+NO3 as N	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940	Result  Instr: [CALC]  1.1 Instr: [CALC]  Instr: AA06  0.29 Instr: AA06  0.22 Instr: AA01 0.88	MDL 0.050 0.050	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.20	mg/l  Sample  Units  7/18/19 13:34  mg/l  7/18/19 13:32  mg/l  7/18/19 13:34  mg/l  7/17/19 16:38  mg/l	ed: 07/1  Dil  1x1  1x1  1x1  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22	
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016	Result  Instr: [CALC]  Instr: [CALC]  Instr: AA06  0.29  Instr: AA06  0.22  Instr: AA01	MDL 0.050 0.050	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.20	mg/l Sampl Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:32 mg/l 7/18/19 13:34 mg/l 7/17/19 16:38	ed: 07/1  Dil  1x1  1x1  1x1  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs 07/22/19 12:22  Analyst: sar	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1 Phosphorus as P, Total	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.2  Instr: AA06  0.29  Instr: AA01  0.88  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.10  Prepared: 07 0.20  Prepared: 07	mg/l Sampl Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:34 mg/l 7/17/19 16:38 mg/l 7/18/19 14:00	ed: 07/1  Dil  1x1  1x1  1x1  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: sar 07/18/19 13:02  Analyst: YMT	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9G16051-02 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 353.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.2  Instr: AA06  0.29  Instr: AA01  0.88  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.10  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.20	mg/l Sampl Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:34 mg/l 7/17/19 16:38 mg/l 7/18/19 14:00	ed: 07/1  Dil  1x1  1x1  1x1  1x1	07/24/19 14:55  1/19 10:20 by K. Hahs  Analyzed  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: sar 07/18/19 13:02  Analyst: YMT	·



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Project Number: TMDL Study July 2019 P6040555

Reported: 07/29/2019 09:27

Project Manager: Kelly Hahs

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#### Sample Results

Sample Results								
Sample: TMDL-R2					Samp	oled: 07/1	11/19 7:50 by K. Hahs	, M. Capca
9G16051-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
onventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods	i						
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 07/	18/19 13:34		Analyst: mcs	
Dissolved Nitrogen		1.3		0.20	mg/l	1x1	07/22/19 12:22	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 07/	18/19 13:32		Analyst: mcs	
Nitrogen, Total		1.3		0.20	mg/l	1x1	07/22/19 12:22	
Method: EPA 351.2	<b>Batch ID:</b> W9G1015	Instr: AA06		Prepared: 07/	18/19 13:32		Analyst: mcs	
TKN		0.074	0.050	0.10	mg/l	1x1	07/22/19 12:22	
Method: EPA 351.2	Batch ID: W9G1016	Instr: AA06		Prepared: 07/	18/19 13:34		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	07/22/19 12:22	
Method: EPA 353.2	<b>Batch ID:</b> W9G0940	Instr: AA01		Prepared: 07/	17/19 16:38		Analyst: sar	
NO2+NO3 as N		1.3	0.083	0.20	mg/l	1x1	07/18/19 13:03	
Method: EPA 365.1	<b>Batch ID:</b> W9G1017	Instr: AA01		Prepared: 07/	18/19 14:00		Analyst: YMT	
Phosphorus as P, Total		0.048	0.0014	0.010	mg/l	1x1	07/22/19 17:09	
letals by EPA 200 Series Methods								
Method: EPA 200.7	Batch ID: W9G0998	Instr: ICP03		Prepared: 07/	18/19 10:43		Analyst: mtt	
Phosphorus, Dissolved		0.057	0.012	0.020	mg/l	1x1	07/24/19 15:01	
Sample: TMDL-R3 9G16051-04 (Water)					Samp	led: 07/1	0/19 11:00 by K. Hahs	s, M. Capca
Analyte		Result	MDL	MRL	Units	Dil		
onventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods	;				DII	Analyzed	Qualifi
Method: *** DEFAULT SPECIFIC METHOD ***						DII	Analyzed	Qualifi
	Batch ID: [CALC]	Instr: [CALC]		Prepared: 07/	18/19 13:34	Dil	Analyzed Analyst: mcs	Qualifi
Dissolved Nitrogen	Batch ID: [CALC]	Instr: [CALC]		<b>Prepared:</b> 07/	18/19 13:34 mg/l	1x1		Qualifi
Dissolved Nitrogen  Method: _Various	Batch ID: [CALC]  Batch ID: [CALC]			·	mg/l		Analyst: mcs	Qualifi
_		1.2		0.20	mg/l		<b>Analyst:</b> mcs 07/22/19 12:22	Qualifi
Method: _Various		1.2 Instr: [CALC]		0.20 <b>Prepared:</b> 07/	mg/l 18/19 13:32 mg/l	1x1	Analyst: mcs 07/22/19 12:22 Analyst: mcs	Qualifi
Method: _Various Nitrogen, Total	Batch ID: [CALC]	Instr: [CALC]	0.050	0.20 Prepared: 07/ 0.20	mg/l 18/19 13:32 mg/l	1x1	Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22	Qualifi
Method: _Various Nitrogen, Total Method: EPA 351.2	Batch ID: [CALC]	Instr: [CALC] 1.2 Instr: AA06	0.050	0.20  Prepared: 07/ 0.20  Prepared: 07/	mg/l 18/19 13:32 mg/l 18/19 13:32 mg/l	1x1 1x1	Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs	Qualifi
Method: _Various Nitrogen, Total  Method: EPA 351.2  TKN	Batch ID: [CALC]  Batch ID: W9G1015	Instr: [CALC] Instr: AA06 ND	0.050 0.050	0.20  Prepared: 07/ 0.20  Prepared: 07/ 0.10	mg/l 18/19 13:32 mg/l 18/19 13:32 mg/l	1x1 1x1	Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22	Qualifi
Method: _Various Nitrogen, Total  Method: EPA 351.2  TKN  Method: EPA 351.2	Batch ID: [CALC]  Batch ID: W9G1015	Instr: [CALC] Instr: AA06 Instr: AA06 Instr: AA06		0.20  Prepared: 07/ 0.20  Prepared: 07/ 0.10  Prepared: 07/	mg/l 18/19 13:32 mg/l 18/19 13:32 mg/l 18/19 13:34 mg/l	1x1 1x1 1x1	Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22 Analyst: mcs	Qualifi
Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016	Instr: [CALC] Instr: AA06 Instr: AA06 Instr: AA06 0.087		0.20  Prepared: 07/ 0.20  Prepared: 07/ 0.10  Prepared: 07/ 0.10	mg/l 18/19 13:32 mg/l 18/19 13:32 mg/l 18/19 13:34 mg/l	1x1 1x1 1x1	Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22	Qualifi
Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2	Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016	Instr: [CALC] Instr: AA06 ND Instr: AA06 0.087 Instr: AA01	0.050	0.20  Prepared: 07/ 0.20  Prepared: 07/ 0.10  Prepared: 07/ 0.10  Prepared: 07/	mg/l 18/19 13:32 mg/l 18/19 13:32 mg/l 18/19 13:34 mg/l 17/19 16:38 mg/l	1x1 1x1 1x1 1x1	Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22 Analyst: mcs 07/22/19 12:22 Analyst: sar	Qualifi
Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N	Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940	Instr: [CALC] Instr: AA06 Instr: AA06 Instr: AA06 Instr: AA01 Instr: AA01 Instr: AA01	0.050	0.20  Prepared: 07/ 0.20  Prepared: 07/ 0.10  Prepared: 07/ 0.10  Prepared: 07/ 0.20	mg/l 18/19 13:32 mg/l 18/19 13:32 mg/l 18/19 13:34 mg/l 17/19 16:38 mg/l	1x1 1x1 1x1 1x1	Analyst: mcs  07/22/19 12:22  Analyst: sar  07/18/19 13:04	Qualifi
Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1 Phosphorus as P, Total	Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940	Instr: [CALC] Instr: AA06 Instr: AA06 Instr: AA01 Instr: AA01 Instr: AA01	0.050	0.20  Prepared: 07/* 0.20  Prepared: 07/* 0.10  Prepared: 07/* 0.10  Prepared: 07/* 0.20  Prepared: 07/*	mg/l 18/19 13:32 mg/l 18/19 13:32 mg/l 18/19 13:34 mg/l 17/19 16:38 mg/l	1x1 1x1 1x1 1x1	Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: sar  07/18/19 13:04  Analyst: YMT	Qualifi
Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1 Phosphorus as P, Total	Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940	Instr: [CALC] Instr: AA06 Instr: AA06 Instr: AA01 Instr: AA01 Instr: AA01	0.050	0.20  Prepared: 07/* 0.20  Prepared: 07/* 0.10  Prepared: 07/* 0.10  Prepared: 07/* 0.20  Prepared: 07/*	mg/l 18/19 13:32 mg/l 18/19 13:32 mg/l 18/19 13:34 mg/l 17/19 16:38 mg/l 18/19 14:00 mg/l	1x1 1x1 1x1 1x1	Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: sar  07/18/19 13:04  Analyst: YMT	Qualifi
Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1 Phosphorus as P, Total  Metals by EPA 200 Series Methods	Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940  Batch ID: W9G1017	Instr: [CALC] Instr: AA06 Instr: AA06 Instr: AA01 Instr: AA01 Instr: AA01 Instr: AA01	0.050	0.20  Prepared: 07/ 0.20  Prepared: 07/ 0.10  Prepared: 07/ 0.10  Prepared: 07/ 0.20  Prepared: 07/ 0.20	mg/l 18/19 13:32 mg/l 18/19 13:32 mg/l 18/19 13:34 mg/l 17/19 16:38 mg/l 18/19 14:00 mg/l	1x1 1x1 1x1 1x1	Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: sar  07/18/19 13:04  Analyst: YMT  07/22/19 17:11	Qualifi



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study July 2019 P6040555

**Reported:** 07/29/2019 09:27

(Continued)

Project Manager: Kelly Hahs

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Sample Results

Sample: TMDL-R4					Samp	oled: 07/1	10/19 7:55 by K. Hah	s, M. Capca
9G16051-05 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
onventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 07	7/18/19 13:34		Analyst: mcs	
Dissolved Nitrogen		1.4		0.20	mg/l	1x1	07/22/19 12:22	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 07	7/18/19 13:32		Analyst: mcs	
Nitrogen, Total		1.4		0.20	mg/l	1x1	07/22/19 12:22	
Method: EPA 351.2	<b>Batch ID:</b> W9G1015	Instr: AA06		Prepared: 07	7/18/19 13:32		Analyst: mcs	
TKN		ND	0.050	0.10	mg/l	1x1	07/22/19 12:22	
Method: EPA 351.2	<b>Batch ID:</b> W9G1016	Instr: AA06		Prepared: 07	7/18/19 13:34		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	07/22/19 12:22	
Method: EPA 353.2	Batch ID: W9G0940	Instr: AA01		Prepared: 07	7/17/19 16:38		Analyst: sar	
NO2+NO3 as N		1.4	0.083	0.20	mg/l	1x1	07/18/19 13:05	
Method: EPA 365.1	<b>Batch ID:</b> W9G1017	Instr: AA01		Prepared: 07	7/18/19 14:00		Analyst: YMT	
Phosphorus as P, Total		0.0064	0.0014	0.010	mg/l	1x1	07/22/19 17:02	
letals by EPA 200 Series Methods								
•	<b>Batch ID:</b> W9G0998	Instr: ICP03		Prepared: 07	7/18/19 10:43		Analyst: mtt	
Method: EPA 200.7 Phosphorus, Dissolved Sample: TMDL-CL	Batch ID: W9G0998	Instr: ICP03	0.012	<b>Prepared:</b> 07 0.020	7/18/19 10:43 mg/l Samp	1x1 led: 07/1	<b>Analyst:</b> mtt 07/24/19 15:07 0/19 12:55 by K. Hah	s, M. Capca
Method: EPA 200.7 Phosphorus, Dissolved	Batch ID: W9G0998		0.012	-	mg/l		07/24/19 15:07	s, M. Capca Qualifi
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte		Result		0.020	mg/l Samp	led: 07/1	07/24/19 15:07 0/19 12:55 by K. Hah	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC		Result		0.020 MRL	mg/l Samp	led: 07/1	07/24/19 15:07 0/19 12:55 by K. Hah	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte onventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods	Result		0.020 MRL	mg/l Samp Units	led: 07/1	07/24/19 15:07 0/19 12:55 by K. Hah: Analyzed	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD ***	s by APHA/EPA/ASTM Methods	Result Instr: [CALC]		0.020  MRL  Prepared: 07	mg/l Samp Units 7/18/19 13:34	Dil	07/24/19 15:07  0/19 12:55 by K. Hahs  Analyzed  Analyst: mcs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]		0.020  MRL  Prepared: 07	mg/l Samp Units 7/18/19 13:34 mg/l	Dil	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs  07/22/19 12:22	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]0.45 Instr: [CALC]		0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32	<b>Dil</b> 1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs  07/22/19 12:22  Analyst: mcs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  0.45  Instr: [CALC]  0.46		0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l	<b>Dil</b> 1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  0.45  Instr: [CALC]  0.46  Instr: AA06	MDL	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:32	Dil  1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  0.45  Instr: [CALC]  0.46  Instr: AA06  0.46	MDL	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:32 mg/l	Dil  1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22  Analyst: mcs  07/22/19 12:22	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  0.45  Instr: [CALC]  0.46  Instr: AA06  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.10	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:32 mg/l 7/18/19 13:34	1x1 1x1 1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs 07/22/19 12:22  Analyst: mcs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016	Result  Instr: [CALC]  0.45  Instr: [CALC]  0.46  Instr: AA06  0.46  Instr: AA06  0.45	MDL 0.050	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.10	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:32 mg/l 7/18/19 13:34 mg/l	1x1 1x1 1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs 07/22/19 12:22	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2     TKN, Soluble  Method: EPA 353.2	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016	Result  Instr: [CALC]  0.45  Instr: [CALC]  0.46  Instr: AA06  0.46  Instr: AA06  1nstr: AA06  1nstr: AA06	MDL 0.050 0.050	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.20	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:34 mg/l 7/18/19 13:34	1x1 1x1 1x1 1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs 07/22/19 12:22	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940	Result  Instr: [CALC]  0.45  Instr: [CALC]  0.46  Instr: AA06  0.45  Instr: AA01  ND	MDL 0.050 0.050	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.20	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:32 mg/l 7/18/19 16:38 mg/l	1x1 1x1 1x1 1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs  07/22/19 12:22	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1 Phosphorus as P, Total	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940	Result  Instr: [CALC]  0.45  Instr: [CALC]  0.46  Instr: AA06  0.45  Instr: AA01  ND  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.10  Prepared: 07 0.20  Prepared: 07	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:34 mg/l 7/17/19 16:38 mg/l 7/18/19 14:00	1x1 1x1 1x1 1x1 1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs  07/22/19 12:22  Analyst: sar  07/18/19 13:06  Analyst: YMT	·
Phosphorus, Dissolved  Sample: TMDL-CL 9G16051-06 (Water)  Analyte Conventional Chemistry/Physical Parameters  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2     TKN, Soluble  Method: EPA 353.2     NO2+NO3 as N  Method: EPA 365.1	Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9G1015  Batch ID: W9G1016  Batch ID: W9G0940	Result  Instr: [CALC]  0.45  Instr: [CALC]  0.46  Instr: AA06  0.45  Instr: AA01  ND  Instr: AA01	0.050 0.050 0.083	0.020  MRL  Prepared: 07 0.20  Prepared: 07 0.10  Prepared: 07 0.10  Prepared: 07 0.20  Prepared: 07 0.20  Prepared: 07 0.20	mg/l Samp Units 7/18/19 13:34 mg/l 7/18/19 13:32 mg/l 7/18/19 13:34 mg/l 7/17/19 16:38 mg/l 7/18/19 14:00	1x1 1x1 1x1 1x1 1x1	07/24/19 15:07  0/19 12:55 by K. Hah:  Analyzed  Analyst: mcs  07/22/19 12:22  Analyst: sar  07/18/19 13:06  Analyst: YMT	·



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study July 2019 P6040555

**Reported:** 07/29/2019 09:27

Project Manager: Kelly Hahs

#### Sample Results

Sample: TMDL-SA				Samp	oled: 07/1	10/19 9:35 by K. Hahs	s, M. Capcar
9G16051-07 (Water)							
Analyte		Result ME	DL MRL	Units	Dil	Analyzed	Qualifie
Conventional Chemistry/Physical Paramet	ers by APHA/EPA/ASTM Methods						
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]	Prepar	<b>ed:</b> 07/18/19 13:34		Analyst: mcs	
Dissolved Nitrogen		0.40	0.20	mg/l	1x1	07/22/19 12:22	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]	Prepar	<b>ed:</b> 07/18/19 13:32		Analyst: mcs	
Nitrogen, Total		0.43	0.20	mg/l	1x1	07/22/19 12:22	
Method: EPA 351.2	Batch ID: W9G1015	Instr: AA06	Prepar	<b>ed:</b> 07/18/19 13:32		Analyst: mcs	
TKN		0.02	50 0.10	mg/l	1x1	07/22/19 12:22	
Method: EPA 351.2	Batch ID: W9G1016	Instr: AA06	Prepar	<b>ed:</b> 07/18/19 13:34		Analyst: mcs	
TKN, Soluble		<b>0.19</b> 0.00	50 0.10	mg/l	1x1	07/22/19 12:22	
Method: EPA 353.2	<b>Batch ID:</b> W9G0940	Instr: AA01	Prepar	<b>ed:</b> 07/17/19 16:38		Analyst: sar	
NO2+NO3 as N		<b>0.21</b> 0.0	83 0.20	mg/l	1x1	07/18/19 13:08	
Method: EPA 365.1	<b>Batch ID:</b> W9G1017	Instr: AA01	Prepar	<b>ed:</b> 07/18/19 14:00		Analyst: YMT	
Phosphorus as P, Total		<b>0.042</b> 0.00	0.010	mg/l	1x1	07/22/19 17:14	
Metals by EPA 200 Series Methods							
Method: EPA 200.7	<b>Batch ID:</b> W9G0998	Instr: ICP03	Prepar	<b>ed:</b> 07/18/19 10:43		Analyst: mtt	
Phosphorus, Dissolved		<b>0.047</b> 0.0	12 0.020	mg/l	1x1	07/24/19 15:13	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Project Number: TMDL Study July 2019 P6040555

**Reported:** 07/29/2019 09:27

Ventura, CA 93009

**Project Manager:** Kelly Hahs



Conventional Chemistry/Physical Parameters by A	PHA/EPA/AST	M Methods									
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
atch: W9G0940 - EPA 353.2											
Blank (W9G0940-BLK1)					Prepared: 07/17/19	Analyzed:	07/18/19				
NO2+NO3 as N	ND	0.083	0.20	mg/l							
LCS (W9G0940-BS1)					Prepared: 07/17/19	Analyzed:	07/18/19				
NO2+NO3 as N	1.01	0.083	0.20	mg/l	1.00		101	90-110			
Matrix Spike (W9G0940-MS1)	Source: 9	G15080-01			Prepared: 07/17/19	Analyzed:	07/18/19				
NO2+NO3 as N	2.19	0.083	0.20	mg/l	2.00	0.116	104	90-110			
Matrix Spike (W9G0940-MS2)	Source: 9	G15080-02			Prepared: 07/17/19	Analyzed: (	07/18/19				
NO2+NO3 as N		0.083	0.20	mg/l	•	2.77		90-110			
Matrix Sailes Dun (MOSOO 40 MSD4)	<b>C</b> 0	C15000 01			D	A a la a al	07/10/10				
Matrix Spike Dup (W9G0940-MSD1) NO2+NO3 as N		<b>G15080-01</b> 0.083	0.20	mg/l	Prepared: 07/17/19 2.00	0.116	104	90-110	0	20	
				Ū							
Matrix Spike Dup (W9G0940-MSD2) NO2+NO3 as N		<b>G15080-02</b> 0.083	0.20	mg/l	Prepared: 07/17/19 2.00	Analyzed: 0	<b>07/18/19</b> 108	90-110	1	20	
1102 1100 d3 11	4.52	0.000	0.20	ilig/i	2.00	2.11	100	30-110		20	
atch: W9G1015 - EPA 351.2											
Blank (W9G1015-BLK1)					Prepared: 07/18/19	Analyzed:	07/22/19				
TKN	ND	0.050	0.10	mg/l							
LCS (W9G1015-BS1)					Prepared: 07/18/19	Analyzed:	07/22/19				
TKN	1.02	0.050	0.10	mg/l	1.00		102	90-110			
Matrix Spike (W9G1015-MS1)	Source: 9	G16051-05			Prepared: 07/18/19	Analyzed: (	07/22/19				
TKN	1.08	0.050	0.10	mg/l	•	NĎ	108	90-110			
Matrix Spike Dup (W9G1015-MSD1)	Source: 9	G16051-05			Prepared: 07/18/19	Analyzed: (	07/22/19				
TKN		0.050	0.10	mg/l	•	ND		90-110	0.2	10	
atch: W9G1016 - EPA 351.2											
Blank (W9G1016-BLK1) TKN, Soluble	ND	0.050	0.10	mg/l	Prepared: 07/18/19	Analyzed: (	07/22/19				
Titit, Colubio		0.000	0.10	mg/i							
LCS (W9G1016-BS1)	4.04	0.050	0.40	/I	Prepared: 07/18/19	Analyzed:					
TKN, Soluble	1.01	0.050	0.10	mg/l	1.00		101	90-110			
Matrix Spike (W9G1016-MS1)		G16051-05			Prepared: 07/18/19	-					
TKN, Soluble	0.954	0.050	0.10	mg/l	1.00	ND	95	90-110			
Matrix Spike Dup (W9G1016-MSD1)	Source: 9	G16051-05			Prepared: 07/18/19	Analyzed:	07/22/19				
TKN, Soluble	0.815	0.050	0.10	mg/l	1.00	ND	82	90-110	16	10	MS-0
atch: W9G1017 - EPA 365.1											
Blank (W9G1017-BLK1)					Prepared: 07/18/19	Analyzed:	07/22/19				
Phosphorus as P, Total	ND	0.0014	0.010	mg/l		. maryzed.	,, 13				
LCS (MOG1017 BS1)					Dropprod: 07/10/10	Analyses de 4	N7/22/10				
LCS (W9G1017-BS1) Phosphorus as P, Total	0.0481	0.0014	0.010	mg/l	Prepared: <b>07/18/19</b> 0.0500	Anaryzea: (	96	90-110			
·				J							
Matrix Spike (W9G1017-MS1) Phosphorus as P, Total	<b>Source: 9</b> 0.0570	<b>G16051-05</b>	0.010	mg/l	Prepared: 07/18/19 0.0500	<b>Analyzed:</b> 0.00637	<b>07/22/19</b> 101	90-110			
	0.0010	3.0017	0.010	9/1	3.3000	3.00001		30 110			
Matrix Spike Dup (W9G1017-MSD1) Phosphorus as P, Total	<b>Source: 9</b> 0.0565	G16051-05	0.040	p	Prepared: 07/18/19	-			0.0	20	
		0.0014	0.010	mg/l	0.0500	0.00637	100	90-110	0.9	20	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue

Project Number: TMDL Study July 2019 P6040555

**Reported:** 07/29/2019 09:27

Ventura, CA 93009 Project Manager: Kelly Hahs

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		Z	'

#### Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/	EPA/AST	M Methods	(Continue	d)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
atch: W9G1017 - EPA 365.1 (Continued)											
Matrix Spike Dup (W9G1017-MSD1)	Source: 9	G16051-05		Prep	oared: 07/18/1	9 Analyzed:	07/22/19	)			
Quality Control Results										(Co	ontinued)
Metals by EPA 200 Series Methods											
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
atch: W9G0998 - EPA 200.7											
Blank (W9G0998-BLK1)				Prep	oared: 07/18/1	9 Analyzed:	07/24/19	)			
Phosphorus, Dissolved	ND	0.012	0.020	mg/l							
LCS (W9G0998-BS1)				Prep	pared: 07/18/1	9 Analyzed:	07/24/19	)			
Phosphorus, Dissolved	0.980	0.012	0.020	mg/l	1.00	•	98	85-115			
Matrix Spike (W9G0998-MS1)	Source: 9	G16051-02		Prep	pared: 07/18/1	9 Analyzed:	07/24/19	)			
Phosphorus, Dissolved	- 1.11	0.012	0.020	mg/l	1.00	0.0790	103	70-130			
Matrix Spike Dup (W9G0998-MSD1)	Source: 9	G16051-02		Prep	pared: 07/18/1	9 Analyzed:	07/24/19	)			
Phosphorus, Dissolved	- 1.12	0.012	0.020	mg/l	1.00	0.0790	104	70-130	0.9	30	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study July 2019 P6040555

**Reported:** 07/29/2019 09:27

**Project Manager:** Kelly Hahs



#### **Notes and Definitions**

J	Estimated conc. detected <mrl and="">MDL.</mrl>
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
% Rec	Percent Recovery
Dil	Dilution
dry	Sample results reported on a dry weight basis
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
MRL ND	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)  NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or
ND	above the MDL.
NR	Not Reportable
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal

standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB)

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.



September 11<sup>th</sup>, 2019

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aquatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in *Standard Methods for the Examination of Water and Wastewater* (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Karin Wisenbaker Senior Biologist

(805) 643-5621 ex.17

**Client: Ventura Country Watershed Protection District** 

**Project: Ventura River Algae TMDL** 



#### Chlorophyll a results from July 10th & 11th, 2019

Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	24.0	ug/cm2
TMDL-R2	1	11	38.0	ug/cm2
TMDL-R3	1	11	14.0	ug/cm2
TMDL-R4	1	11	15.0	ug/cm2
TMDL-CL	1	11	6.4	ug/cm2
TMDL-SA	1	11	18.0	ug/cm2
TMDL-Est	1	NA	3.0	ug/L

Chain stody

rom: Aquatic Bioassay and Consulting L 29 N. Olive St. Ventura, CA 930	abs.	Phone: Fax: Project ID:	(805) 64			То:	Company: Address: Phone:	and Co 29 N. 0	c Bioassay onsulting Labs. Olive St. ra, CA 93001			
		-					NAME OF TAXABLE PARTY.		ANALYSIS			
Sample I.D. No.	Sample Date	Time	Matrix	Composite Volume/ No.	Reps							
				0.		Chl-a						
R-4	7. 10,19	0755		1445		Χ						
R-4 5A R-3 CL R-2	7.10.19	0935		525		X						
R-3		1100		520		X						
CL	7,10,19	1255		399		X						
R-2	7-11-19	0750		643		X						
R-1	7-11-19	1020		452		X						
=8T	7.11-19	125 mg		<b>&gt;</b> /000		X						
pecial Instructions:	in											
ELINOVISHED BY:	DATE: TIME: 7-11-19 1439	RECEIVED	1	DATE: TIM	143)	RELIN	IQUISHED BY	: DATE:	TIME: RECEIV	/ED BY:	DATE:	TII

9421084



# Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients TMDL (VR Algae TMDL)

#### Comprehensive Monitoring Program

CHAIN-OF-CUSTO										1			1	_
	ounty Watershed Pro		1			eem	ent V	VECK	KLAB	ORAT	OFY20N	1A01, F	roject P6	040555
SAMPLING EVENT:			† <u>2</u>	01	9_									_
SAMPLING DATE:	8/14+													
SAMPLERS:	A A	<u>л. САР</u>	CAP	<u>J. F</u>	FOR	RE	<u>57</u>							_
RAB SAMPLES	<u>"</u>			_	_					**	FIELD	=11 TEC	EB	
				Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen							<b>-</b>	
SAMPLE ID	DATE/I	IME		Tota	Sig	불				N	OTES			
TMDL-Est	8/14/19	13.	40	X	x	х				MC				
TMDL-R1	8/15/19	_ 10	40	X	x	х				JF				
TMDL-R2		08	320	х	х	х				JF				
TMDL-R3	8/14/19	1136		х	х	х				ML			· ·	
TMDL-R4	8/14/19	080	i .	х	х	х				WC.				
TMDL-CL				-x-	- <del>X</del> -	-X-				Dr.	2~			
TMDL-SA	8/14/19	093	30	х	х	Х					<del>-</del> /			
TMDL-FD				- <del>X</del> -		-X-				MC.	hich site)		· .	
ignature: KELLY	HAHS				ature:			11/2	11		THEN SILE)	7		
rint Name: W Colly	16-1			Print	Name	: 0	1	11111	2 1	Mas	1/1/2	$\overline{\Sigma}$	·	-
ffiliation:	jewe_D		Ì	Affilia	tion:	ĺ	برجركه	L.	1	13		<del>\</del>		
ate/Time Received:	<u> </u>		<u> </u>	Date/	Time	Recei	ived:	B	122	11:	8 1	347)		
ate/Time Relinquished:	5/2+1/9 / 13	335		Date/	Time .	Reling	uishe /	:d:		<del>&gt;</del>				
ignature:	~	-		Signa	ture:	1	/							
rint Name:	o = NAVONA	)		Print I	Name	:		1/2	In	1 1	avar	 30		
filiation:	P Cels			Affilia	tion:		17	KA.	<u> </u>	<u>- 70</u>	Lac	- F		
ate/Time Received:	8/21/19 3	25		Date/	Time I	Recei	vea	<u> </u>	<u>-</u>	dorl	1G 0	HL	<del>- · · · · · · · · · · · · · · · · · · ·</del>	
ate/Time Relinquished:				Date/	Time I	Relino	quishe	ed:		127	<del>/                                    </del>			
iscellaneous Notes (Hazardi	ous Materials Quick turn-		e, etc.):	-	Disso	lved s	sample	es wen	e field	filtered	_			<del></del>
	M R-S	1-19	18	275		-	F	ou	2					
	al Tandones y von Despo						100	0						



**FINAL REPORT** 

**Work Orders:** 9H21084 **Report Date:** 9/24/2019

Received Date: 8/21/2019

Turnaround Time: Normal

**Phones:** (805) 658-4375

Fax: (805) 654-3350

P.O. #: WECKLABORATOFY2

0MA01

Billing Code:

Project: TMDL Study August 2019 P6040555

Attn: Kelly Hahs

**Client:** Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAOMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 8/21/19 with the Chain-of-Custody document. The samples were received in good condition, at 1.6 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee

Operations Manager/Senior PM











FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study August 2019 P6040555

**Reported:** 09/24/2019 09:19

Project Manager: Kelly Hahs

XX

#### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K. Hahs, M. Capcap	9H21084-01	Water	08/21/19 13:40	
TMDL-R1	K. Hahs, M. Capcap	9H21084-02	Water	08/21/19 10:40	
TMDL-R2	K. Hahs, M. Capcap	9H21084-03	Water	08/21/19 08:20	
TMDL-R3	K. Hahs, M. Capcap	9H21084-04	Water	08/21/19 11:30	
TMDL-R4	K. Hahs, M. Capcap	9H21084-05	Water	08/21/19 08:00	
TMDL-SA	K. Hahs, M. Capcap	9H21084-06	Water	08/21/19 09:30	



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 **Project Number:** TMDL Study August 2019 P6040555

**Reported:** 09/24/2019 09:19

**Project Manager:** Kelly Hahs

Sample: TMDL-Est					Samp	led: 08/2	1/19 13:40 by K. Hahs	s, M. Capca
9H21084-01 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
onventional Chemistry/Physical Paramet	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	9/07/19 15:22		Analyst: mcs	
Dissolved Nitrogen		0.72		0.20	mg/l	1x1	09/12/19 12:17	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	9/07/19 15:27		Analyst: mcs	
Nitrogen, Total		1.0		0.20	mg/l	1x1	09/12/19 12:17	
Method: EPA 351.2	<b>Batch ID:</b> W9l0389	Instr: AA06		Prepared: 09	9/07/19 15:22		Analyst: mcs	
TKN, Soluble		0.31	0.050	0.10	mg/l	1x1	09/12/19 12:17	
Method: EPA 351.2	<b>Batch ID:</b> W9I0390	Instr: AA06		Prepared: 09	9/07/19 15:27		Analyst: mcs	
TKN		0.61	0.050	0.10	mg/l	1x1	09/12/19 12:17	
Method: EPA 353.2	Batch ID: W9H1574	Instr: AA01		Prepared: 08	8/27/19 19:00		Analyst: sar	
NO2+NO3 as N		0.41	0.083	0.20	mg/l	1x1	08/28/19 12:31	
Method: EPA 365.1	Batch ID: W9H1343	Instr: AA01		Prepared: 08	8/23/19 10:26		Analyst: ymt	
Phosphorus as P, Total		0.078	0.0014	0.010	mg/l	1x1	08/30/19 14:04	
letals by EPA 200 Series Methods								
etals by EPA 200 Series Methods Method: EPA 200.7	<b>Batch ID:</b> W9H1429	Instr: ICP03		Prepared: 08	8/26/19 10:14		Analyst: KVM	
•	<b>Batch ID:</b> W9H1429	<b>Instr:</b> ICP03	0.012	<b>Prepared:</b> 08	8/26/19 10:14 mg/l	1x1	<b>Analyst:</b> KVM 09/18/19 13:55	
Method: EPA 200.7 Phosphorus, Dissolved	<b>Batch ID:</b> W9H1429		0.012	•	mg/l		-	s, M. Capca
Method: EPA 200.7 Phosphorus, Dissolved	<b>Batch ID:</b> W9H1429		0.012	•	mg/l		09/18/19 13:55	s, M. Capca
Method: EPA 200.7  Phosphorus, Dissolved  Sample: TMDL-R1	<b>Batch ID:</b> W9H1429		0.012	•	mg/l		09/18/19 13:55	s, M. Capca Qualifi
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte		0.062		0.020	mg/l Sampl	led: 08/2	09/18/19 13:55 1/19 10:40 by K. Hahs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC		0.062	MDL	0.020 MRL	mg/l Sampl	led: 08/2	09/18/19 13:55 1/19 10:40 by K. Hahs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC	ers by APHA/EPA/ASTM Methods	Result	MDL	0.020 MRL	mg/l Sampl Units	led: 08/2	09/18/19 13:55 21/19 10:40 by K. Hahs Analyzed	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte Inventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen	ers by APHA/EPA/ASTM Methods	Result	MDL	0.020  MRL  Prepared: 09	mg/l Sampl Units 9/07/19 15:22	led: 08/2	09/18/19 13:55 21/19 10:40 by K. Hahs Analyzed Analyst: mcs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte Dissolved Nitrogen	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 09	mg/l Sampl Units 9/07/19 15:22 mg/l	led: 08/2	09/18/19 13:55 21/19 10:40 by K. Hahs Analyzed Analyst: mcs 09/12/19 12:17	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte Dissolved Nitrogen  Method:Various Nitrogen, Total	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  1.1  Instr: [CALC]	MDL	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20	mg/l Sampl Units 9/07/19 15:22 mg/l 9/07/19 15:27	Dil 1x1	09/18/19 13:55  21/19 10:40 by K. Hahs  Analyzed  Analyst: mcs  09/12/19 12:17  Analyst: mcs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte  onventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]	Result     Instr: [CALC]     1.1     Instr: [CALC]   1.0	MDL	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20	mg/l Sampl Units  9/07/19 15:22  mg/l 9/07/19 15:27  mg/l	Dil 1x1	09/18/19 13:55 21/19 10:40 by K. Hahs Analyzed Analyst: mcs 09/12/19 12:17 Analyst: mcs 09/12/19 12:17	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte onventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]	Result   Instr: [CALC]   1.1   Instr: [CALC]   1.0   Instr: AA06	MDL	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10	mg/l Sampl Units  9/07/19 15:22 mg/l 9/07/19 15:27 mg/l 9/07/19 15:22	Dil  1x1  1x1	09/18/19 13:55 21/19 10:40 by K. Hahs Analyzed Analyst: mcs 09/12/19 12:17 Analyst: mcs 09/12/19 12:17 Analyst: mcs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte Dissolved Nitrogen  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.0  Instr: AA06  0.24	MDL	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10	mg/l Sampl Units  9/07/19 15:22 mg/l 9/07/19 15:27 mg/l 9/07/19 15:22 mg/l	Dil  1x1  1x1	09/18/19 13:55 21/19 10:40 by K. Hahs Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte onventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble  Method: EPA 351.2 TKN	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.0  Instr: AA06  0.24  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10	mg/l Sampl Units  9/07/19 15:22 mg/l 9/07/19 15:27 mg/l 9/07/19 15:22 mg/l 9/07/19 15:22	Dil  1x1  1x1  1x1	09/18/19 13:55 21/19 10:40 by K. Hahs Analyzed  Analyst: mcs 09/12/19 12:17 Analyst: mcs 09/12/19 12:17 Analyst: mcs 09/12/19 12:17 Analyst: mcs 09/12/19 12:17 Analyst: mcs	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte Dissolved Nitrogen  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble  Method: EPA 351.2	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389  Batch ID: W910390	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.0  Instr: AA06  0.24  Instr: AA06  0.21	MDL 0.050	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10	mg/l  Sampl  Units  9/07/19 15:22  mg/l  9/07/19 15:27  mg/l  9/07/19 15:22  mg/l  9/07/19 15:27  mg/l	Dil  1x1  1x1  1x1	09/18/19 13:55 21/19 10:40 by K. Hahs  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17	·
Method: EPA 200.7 Phosphorus, Dissolved  Sample: TMDL-R1 9H21084-02 (Water)  Analyte onventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble  Method: EPA 351.2 TKN  Method: EPA 353.2	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389  Batch ID: W910390	Result  Instr: [CALC]  1.1  Instr: [CALC]  1.0  Instr: AA06  0.24  Instr: AA06  0.21  Instr: AA01	MDL 0.050 0.050	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 09 0.20	mg/l Sampl Units  9/07/19 15:22 mg/l 9/07/19 15:27 mg/l 9/07/19 15:22 mg/l 9/07/19 15:27 mg/l 8/27/19 19:00	Dil  1x1  1x1  1x1  1x1	09/18/19 13:55 21/19 10:40 by K. Hahs Analyzed  Analyst: mcs 09/12/19 12:17 Analyst: sar	·

Metals by EPA 200 Series Methods

Phosphorus, Dissolved

Method: EPA 200.7

Analyst: KVM

1x1

09/18/19 13:58

0.012

Prepared: 08/26/19 10:14

mg/l

0.020

Instr: ICP03

0.049

Batch ID: W9H1429



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Project Number: TMDL Study August 2019 P6040555

Reported: 09/24/2019 09:19

(Continued)

Project Manager: Kelly Hahs

		7

Sample Results

Sample: TMDL-R2					Samp	led: 08/2	21/19 8:20 by K. Hahs	, M. Capca <sub>l</sub>
9H21084-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
conventional Chemistry/Physical Parameter	rs by APHA/EPA/ASTM Methods	i						
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	9/07/19 15:22		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		1.5		0.20	mg/l	1x1	09/12/19 12:17	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	9/07/19 15:27		Analyst: mcs	
Nitrogen, Total		1.4		0.20	mg/l	1x1	09/12/19 12:17	
Method: EPA 351.2	<b>Batch ID:</b> W9I0389	Instr: AA06		Prepared: 09	9/07/19 15:22		Analyst: mcs	
TKN, Soluble		0.28	0.050	0.10	mg/l	1x1	09/12/19 12:17	
Method: EPA 351.2	Batch ID: W910390	Instr: AA06		Prepared: 09	9/07/19 15:27		Analyst: mcs	
TKN		0.16	0.050	0.10	mg/l	1x1	09/12/19 12:17	
Method: EPA 353.2	<b>Batch ID:</b> W9H1574	Instr: AA01		Prepared: 09	3/27/19 19:00		Analyst: sar	
NO2+NO3 as N	Batcii ib. W9H13/4	1.2	0.083	0.20	mg/l	1x1	08/28/19 12:34	
					-			
Method: EPA 365.1  Phosphorus as P, Total	<b>Batch ID:</b> W9H1343	Instr: AA01	0.0014	<b>Prepared:</b> 08 0.010	3/23/19 10:26	1x1	<b>Analyst:</b> ymt 08/30/19 14:12	
Filosphorus as F, Total		0.093	0.0014	0.010	mg/l	IXI	06/30/19 14.12	
Metals by EPA 200 Series Methods								
Method: EPA 200.7	<b>Batch ID:</b> W9H1429	Instr: ICP03		Prepared: 08	3/26/19 10:14		Analyst: KVM	
Phosphorus, Dissolved		0.090	0.012	0.020	mg/l	1x1	09/18/19 14:00	
9H21084-04 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
Conventional Chemistry/Physical Parameter	rs by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	9/07/19 15:22		Analyst: mcs	
METHOD ***  Dissolved Nitrogen		0.87		0.20	mg/l	1x1	09/12/19 12:17	
-					-			
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		-	9/07/19 15:27	44	Analyst: mcs	
Nitrogen, Total		0.87		0.20	mg/l	1x1	09/12/19 12:17	
Method: EPA 351.2	<b>Batch ID:</b> W9I0389	Instr: AA06		Prepared: 09	9/07/19 15:22		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	09/12/19 12:17	
Method: EPA 351.2	Batch ID: W910390	Instr: AA06		Prepared: 09	9/07/19 15:27		Analyst: mcs	
TKN		ND	0.050	0.10	mg/l	1x1	09/12/19 12:17	
Method: EPA 353.2	<b>Batch ID:</b> W9H1574	Instr: AA01		0.10				
NO2+NO3 as N					3/27/19 19:00		Analyst: sar	
Method: EPA 365.1		0.87	0.083		3/27/19 19:00 mg/l	1x1	<b>Analyst:</b> sar 08/28/19 12:35	
			0.083	<b>Prepared:</b> 08 0.20	mg/l	1x1	08/28/19 12:35	
Priospriorus as P, Total	<b>Batch ID:</b> W9H1343	Instr: AA01	0.083	<b>Prepared:</b> 08 0.20	mg/l 3/23/19 10:26	1x1 1x1	•	
Phosphorus as P, Total				Prepared: 08 0.20 Prepared: 08	mg/l		08/28/19 12:35  Analyst: ymt	
		Instr: AA01		Prepared: 08 0.20 Prepared: 08 0.010	mg/l 3/23/19 10:26 mg/l		08/28/19 12:35  Analyst: ymt	
Metals by EPA 200 Series Methods  Method: EPA 200.7  Phosphorus, Dissolved		Instr: AA01		Prepared: 08 0.20 Prepared: 08 0.010	mg/l 3/23/19 10:26		08/28/19 12:35  Analyst: ymt	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Project Number: TMDL Study August 2019 P6040555

Reported: 09/24/2019 09:19

Project Manager: Kelly Hahs

#### Sample Results

Consider TMDL D4					C	L - L 00 /	21 (10 0:00    /	NA C
Sample: TMDL-R4					Samp	iea: 08/2	21/19 8:00 by K. Hah	s, M. Capca
9H21084-05 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	/07/19 15:22		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		1.3		0.20	mg/l	1x1	09/12/19 12:17	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	/07/19 15:27		Analyst: mcs	
Nitrogen, Total		1.3		0.20	mg/l	1x1	09/12/19 12:17	
Method: EPA 351.2	Batch ID: W910389	Instr: AA06		Prepared: 09	/07/19 15:22		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	09/12/19 12:17	
Method: EPA 351.2	<b>Batch ID:</b> W9I0390	Instr: AA06		Prepared: 09	)/07/19 15:27		Analyst: mcs	
TKN		ND	0.050	0.10	mg/l	1x1	09/12/19 12:17	
Method: EPA 353.2	Batch ID: W9H1574	Instr: AA01		Propared: 00	3/27/19 19:00		Analyst: sar	
NO2+NO3 as N	<b>Battii 1D.</b> W3Fi1374	1.3	0.083	0.20	mg/l	1x1	08/28/19 12:36	
		1.0	0.000		-	17.1		
Method: EPA 365.1	<b>Batch ID:</b> W9H1343	Instr: AA01		Prepared: 08			Analyst: ymt	
Phosphorus as P, Total		0.012	0.0014	0.010	mg/l	1x1	08/30/19 13:50	
letals by EPA 200 Series Methods								
				<b>B</b> 100	1/20/10 10:14		Analyst: KVM	
Method: EPA 200.7	Batch ID: W9H1429	Instr: ICP03		Prepared: 08	1/26/19 10:14		Analyst: NVIVI	
Phosphorus, Dissolved  Sample: TMDL-SA	<b>Batch ID:</b> W9H1429	Instr: ICP03	0.012	0.020	mg/l	1x1 led: 08/2	09/18/19 14:06 21/19 9:30 by K. Hah	s, M. Capca
Phosphorus, Dissolved	<b>Batch ID:</b> W9H1429		0.012	-	mg/l		09/18/19 14:06	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte		ND Result		0.020	mg/l Samp	led: 08/2	09/18/19 14:06 21/19 9:30 by K. Hah	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte	ers by APHA/EPA/ASTM Methods	Result	MDL	0.020 MRL	mg/l Samp Units	led: 08/2	09/18/19 14:06 21/19 9:30 by K. Hah: Analyzed	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte conventional Chemistry/Physical Parameter		ND Result	MDL	0.020	mg/l Samp Units	led: 08/2	09/18/19 14:06 21/19 9:30 by K. Hah	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte  Conventional Chemistry/Physical Parameter  Method: *** DEFAULT SPECIFIC	ers by APHA/EPA/ASTM Methods	Result	MDL	0.020 MRL	mg/l Samp Units	led: 08/2	09/18/19 14:06 21/19 9:30 by K. Hah: Analyzed	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte  Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen	ers by APHA/EPA/ASTM Methods	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 09 0.20	mg/l Samp Units	led: 08/2	09/18/19 14:06 21/19 9:30 by K. Hahs Analyzed Analyst: mcs	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD ***	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.020  MRL  Prepared: 09 0.20	mg/l Samp Units 1/07/19 15:22 mg/l	led: 08/2	09/18/19 14:06 21/19 9:30 by K. Hah: Analyzed Analyst: mcs 09/12/19 12:17	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  0.25  Instr: [CALC]	MDL	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20	mg/l Samp Units  1/07/19 15:22  mg/l 1/07/19 15:27  mg/l	<b>Dil</b>	09/18/19 14:06 21/19 9:30 by K. Hah:  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte  conventional Chemistry/Physical Parameter  Method: *** DEFAULT SPECIFIC  METHOD ***  Dissolved Nitrogen  Method: _Various	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  0.25  Instr: [CALC]	MDL	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09	mg/l Samp Units  1/07/19 15:22 mg/l 1/07/19 15:27 mg/l 1/07/19 15:22	<b>Dil</b>	09/18/19 14:06 21/19 9:30 by K. Hah: Analyzed Analyst: mcs 09/12/19 12:17 Analyst: mcs	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389	Result  Instr: [CALC]  0.25  Instr: [CALC]  0.25  Instr: AA06  ND	MDL	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10	mg/l Samp Units  //07/19 15:22 mg/l //07/19 15:27 mg/l //07/19 15:22 mg/l	Dil 1x1	09/18/19 14:06 21/19 9:30 by K. Hah:  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble  Method: EPA 351.2	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]	Result  Instr: [CALC]  0.25  Instr: [CALC]  0.25  Instr: AA06  ND  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09	mg/l Samp Units  0/07/19 15:22 mg/l 0/07/19 15:27 mg/l 0/07/19 15:22 mg/l	Dil  1x1  1x1  1x1	09/18/19 14:06 21/19 9:30 by K. Hah:  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389	Result  Instr: [CALC]  0.25  Instr: [CALC]  0.25  Instr: AA06  ND	MDL	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10	mg/l Samp Units  //07/19 15:22 mg/l //07/19 15:27 mg/l //07/19 15:22 mg/l	Dil 1x1	09/18/19 14:06 21/19 9:30 by K. Hah:  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble  Method: EPA 351.2 TKN  Method: EPA 353.2	ers by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389	Result  Instr: [CALC]  0.25  Instr: [CALC]  0.25  Instr: AA06  ND  Instr: AA06  ND	MDL 0.050 0.050	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 09 0.10	mg/l  Samp  Units  0/07/19 15:22  mg/l  0/07/19 15:27  mg/l  0/07/19 15:22  mg/l  0/07/19 15:27  mg/l  0/07/19 15:27	Dil  1x1  1x1  1x1  1x1	09/18/19 14:06 21/19 9:30 by K. Hah:  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: sar	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble  Method: EPA 351.2 TKN	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389  Batch ID: W910390	Result  Instr: [CALC]  0.25  Instr: [CALC]  0.25  Instr: AA06  ND  Instr: AA06	MDL 0.050	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10	mg/l Samp Units  0/07/19 15:22 mg/l 0/07/19 15:27 mg/l 0/07/19 15:22 mg/l 0/07/19 15:27 mg/l	Dil  1x1  1x1  1x1	09/18/19 14:06 21/19 9:30 by K. Hah:  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN, Soluble  Method: EPA 351.2 TKN  Method: EPA 353.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389  Batch ID: W910390	Result  Instr: [CALC]  0.25  Instr: [CALC]  0.25  Instr: AA06  ND  Instr: AA06  ND	MDL 0.050 0.050	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 08 0.20	mg/l  Samp  Units  0/07/19 15:22  mg/l  0/07/19 15:27  mg/l  0/07/19 15:22  mg/l  0/07/19 15:27  mg/l  0/07/19 15:27	Dil  1x1  1x1  1x1  1x1	09/18/19 14:06 21/19 9:30 by K. Hah:  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: sar	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte  Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN, Soluble  Method: EPA 351.2     TKN  Method: EPA 353.2     NO2+NO3 as N	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389  Batch ID: W910390  Batch ID: W9H1574	Result  Instr: [CALC]  0.25  Instr: [CALC]  0.25  Instr: AA06  ND  Instr: AA06  ND  Instr: AA01  0.25	MDL 0.050 0.050	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 08 0.20	mg/l Samp Units  0/07/19 15:22 mg/l 0/07/19 15:27 mg/l 0/07/19 15:22 mg/l 0/07/19 15:27 mg/l 0/07/19 15:27 mg/l 0/07/19 15:27	Dil  1x1  1x1  1x1  1x1	09/18/19 14:06  21/19 9:30 by K. Hahs  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: sar 08/28/19 12:37	·
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte  Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD ***  Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN, Soluble  Method: EPA 351.2     TKN  Method: EPA 353.2     NO2+NO3 as N  Method: EPA 365.1     Phosphorus as P, Total	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389  Batch ID: W910390  Batch ID: W9H1574	Result   Instr: [CALC]   0.25   Instr: AA06   ND   Instr: AA01   0.25   Instr: AA01   0.25	0.050 0.050 0.083	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 08 0.20  Prepared: 08 0.20	mg/l Samp Units  0/07/19 15:22 mg/l 0/07/19 15:27 mg/l 0/07/19 15:22 mg/l 0/07/19 15:27 mg/l 0/07/19 15:27 mg/l 0/07/19 15:27	Dil  1x1  1x1  1x1  1x1  1x1	09/18/19 14:06 21/19 9:30 by K. Hah:  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: sar 08/28/19 12:37  Analyst: ymt	
Phosphorus, Dissolved  Sample: TMDL-SA 9H21084-06 (Water)  Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN, Soluble  Method: EPA 351.2     TKN  Method: EPA 353.2     NO2+NO3 as N  Method: EPA 365.1	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W910389  Batch ID: W910390  Batch ID: W9H1574	Result   Instr: [CALC]   0.25   Instr: AA06   ND   Instr: AA01   0.25   Instr: AA01   0.25	0.050 0.050 0.083	0.020  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 08 0.20  Prepared: 08 0.20  Prepared: 08 0.20	mg/l Samp Units  0/07/19 15:22 mg/l 0/07/19 15:27 mg/l 0/07/19 15:22 mg/l 0/07/19 15:27 mg/l 0/07/19 15:27 mg/l 0/07/19 15:27	Dil  1x1  1x1  1x1  1x1  1x1	09/18/19 14:06 21/19 9:30 by K. Hah:  Analyzed  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: mcs 09/12/19 12:17  Analyst: sar 08/28/19 12:37  Analyst: ymt	g, M. Capca



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Project Number: TMDL Study August 2019 P6040555

**Reported:** 09/24/2019 09:19

Ventura, CA 93009

**Project Manager:** Kelly Hahs



Level  ared: 08/23/19 A  ared: 08/23/19 A  0.0500  ared: 08/23/19 A  0.0500  ared: 08/23/19 A  0.0500  ared: 08/23/19 A  0.0500  ared: 08/23/19 A  ared: 08/23/19 A	Analyzed: 08/3  Analyzed: 08/3  1  Analyzed: 08/3  0.0145 9  Analyzed: 08/3  0.0119 1  Analyzed: 08/3  0.0119 1	30/19 105 90-110 30/19 97 90-110 30/19 99 90-110 30/19 103 90-110 30/19 100 90-110	<b>FPD</b> 5	RPD Limit	Qualifie
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ared: <b>09/07/19 A</b> 1.00	•		7	10	
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ared: <b>09/07/19</b> A	-				
a a a a	2.00  red: 08/27/19 / 2.00  red: 08/27/19 / 2.00  red: 09/07/19 / 1.00  red: 09/07/19 / 1.00  red: 09/07/19 / 1.00  red: 09/07/19 / 1.00  red: 09/07/19 / 1.00	2.00 ND  red: 08/27/19 Analyzed: 08/2.00 ND  red: 08/27/19 Analyzed: 08/2.00 ND  red: 09/07/19 Analyzed: 09/1.00 Analyzed: 09/1.00 ND	red: 08/27/19	2.00 ND 98 90-110  red: 08/27/19 Analyzed: 08/28/19 2.00 ND 100 90-110 0  red: 08/27/19 Analyzed: 08/28/19 2.00 ND 98 90-110 0.5  red: 09/07/19 Analyzed: 09/12/19 1.00 90 90-110  red: 09/07/19 Analyzed: 09/12/19 1.00 ND 94 90-110  red: 09/07/19 Analyzed: 09/12/19 1.00 ND 94 90-110  red: 09/07/19 Analyzed: 09/12/19 1.00 ND 94 90-110  red: 09/07/19 Analyzed: 09/12/19 1.00 Analyzed: 09/12/19 1.00 Analyzed: 09/12/19 1.00 Analyzed: 09/12/19  red: 09/07/19 Analyzed: 09/12/19	2.00 ND 98 90-110  red: 08/27/19 Analyzed: 08/28/19 2.00 ND 100 90-110 0 20  red: 08/27/19 Analyzed: 08/28/19 2.00 ND 98 90-110 0.5 20  red: 09/07/19 Analyzed: 09/12/19 1.00 90 90-110  red: 09/07/19 Analyzed: 09/12/19 1.00 ND 94 90-110  red: 09/07/19 Analyzed: 09/12/19 1.00 ND 94 90-110  red: 09/07/19 Analyzed: 09/12/19 1.00 ND 94 90-110  red: 09/07/19 Analyzed: 09/12/19 1.00 ND 100 90-110 7 10  red: 09/07/19 Analyzed: 09/12/19  red: 09/07/19 Analyzed: 09/12/19  Analyzed: 09/12/19  red: 09/07/19 Analyzed: 09/12/19



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Project Number: TMDL Study August 2019 P6040555

**Reported:** 09/24/2019 09:19

Ventura, CA 93009

Project Manager: Kelly Hahs

1	N	/		,
			7	'

Quality	Control	Results
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(Continued)

Conventional Chemistry/Physical Parameters by APHA/	'EPA/AST	M Methods	(Continue	d)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
atch: W9I0390 - EPA 351.2 (Continued)											
LCS (W910390-BS1)				Pre	oared: 09/07/1	9 Analyzed:	09/12/1	•			
Matrix Spike (W9I0390-MS1)	Source: 9	H21084-04		Pre	pared: 09/07/1	9 Analyzed:	09/12/19	•			
TKN	- 1.24	0.050	0.10	mg/l	1.00	ND	124	90-110			MS-01
Matrix Spike Dup (W9I0390-MSD1)	Source: 9	H21084-04		Prej	pared: 09/07/1	9 Analyzed:	09/12/19	•			
TKN	- 1.03	0.050	0.10	mg/l	1.00	ND	103	90-110	18	10	R-02
Quality Control Results  Metals by EPA 200 Series Methods										(C	ontinuec
Metals by EPA 200 Series Methods					Spike	Source	OV DEC	%REC		RPD	
Metals by EPA 200 Series Methods  Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	•	
Metals by EPA 200 Series Methods  Analyte atch: W9H1429 - EPA 200.7	Result	MDL	MRL		Level	Result		Limits	RPD	RPD	
Metals by EPA 200 Series Methods  Analyte atch: W9H1429 - EPA 200.7	<b>Result</b>	<b>MDL</b> 0.012	MRL 0.020		•	Result		Limits	RPD	RPD	
Metals by EPA 200 Series Methods  Analyte Fatch: W9H1429 - EPA 200.7  Blank (W9H1429-BLK1)				<b>Pre</b> mg/l	Level Dared: 08/26/1	Result  9 Analyzed:	09/18/1	Limits	RPD	RPD	
Metals by EPA 200 Series Methods  Analyte atch: W9H1429 - EPA 200.7  Blank (W9H1429-BLK1) Phosphorus, Dissolved  LCS (W9H1429-BS1)				<b>Pre</b> mg/l	Level	Result  9 Analyzed:	09/18/1	Limits	RPD	RPD	
Metals by EPA 200 Series Methods  Analyte atch: W9H1429 - EPA 200.7  Blank (W9H1429-BLK1) Phosphorus, Dissolved  LCS (W9H1429-BS1) Phosphorus, Dissolved	0.993	0.012	0.020	Prej mg/l Prej mg/l	Level  Dared: 08/26/1	Result  9 Analyzed:  9 Analyzed:	<b>09/18/1</b> 9	Limits	RPD	RPD	
Metals by EPA 200 Series Methods  Analyte atch: W9H1429 - EPA 200.7  Blank (W9H1429-BLK1) Phosphorus, Dissolved  LCS (W9H1429-BS1) Phosphorus, Dissolved	0.993 <b>Source: 9</b>	0.012 0.012 <b>H21084-01</b>	0.020	Prej mg/l Prej mg/l	Level Dared: 08/26/1 Dared: 08/26/1	Result  9 Analyzed:  9 Analyzed:	<b>09/18/1</b> 9	Limits	RPD	RPD	
Metals by EPA 200 Series Methods  Analyte Batch: W9H1429 - EPA 200.7  Blank (W9H1429-BLK1) Phosphorus, Dissolved  LCS (W9H1429-BS1) Phosphorus, Dissolved  Matrix Spike (W9H1429-MS1) Phosphorus, Dissolved	0.993 Source: 91	0.012 0.012 <b>H21084-01</b>	0.020	mg/l Prej mg/l Prej mg/l	Level Dared: 08/26/1 Dared: 08/26/1 1.00 Dared: 08/26/1	Pesult  9 Analyzed:  9 Analyzed:  0.0620	09/18/19 09/18/19 99 09/18/19 105	Limits  8 85-115  70-130	RPD	RPD	Qualifie



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study August 2019 P6040555

**Reported:** 09/24/2019 09:19

Project Manager: Kelly Hahs



### Notes and Definitions

R-02	The RPD was outside of QC acceptance limits due to possible matrix interference.
% Rec	Percent Recovery
Dil	Dilution
dry	Sample results reported on a dry weight basis
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
MRL ND	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)  NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or
NR	above the MDL.  Not Reportable
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal

The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.

standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB)

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.



September 11<sup>th</sup>, 2019

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aquatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in *Standard Methods for the Examination of Water and Wastewater* (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Karin Wisenbaker Senior Biologist

(805) 643-5621 ex.17

**Client: Ventura Country Watershed Protection District** 

**Project: Ventura River Algae TMDL** 



### Chlorophyll a results from August 14th & 15th, 2019

Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	8.4	ug/cm2
TMDL-R2	1	11	8.0	ug/cm2
TMDL-R3	1	11	3.8	ug/cm2
TMDL-R4	1	11	4.2	ug/cm2
TMDL-CL	1	0	DRY	ug/cm2
TMDL-SA	1	11	5.2	ug/cm2
TMDL-Est	1	NA	6.0	ug/L

Chain stody

From: Aquatic Bioassay (805) 643-5621 Aquatic Bioassay Phone: To: Company: and Consulting Labs. (805) 643-2930 Address: and Consulting Labs. Fax: Project ID: VCWPD 29 N. Olive St. 29 N. Olive St. Ventura, CA 93001 Algae TMDL Ventura, CA 93001 Phone: **ANALYSIS** Composite Volume/ Sample I.D. No. Matrix Reps Sample Date Time No. Chl-a FW 08/14/19 404 120 800 X SA 3918 X 936 FW X 1130 PW 429 EST FW 340 000,1 X **Special Instructions:** DATE: TIME: 8-14-19 1525 DATE: TIME: RECEIVED BY: RELINQUISHED BY: RELINQUISHED BY: DATE: TIME: RECEIVED BY: DATE: TIME: 08/14/19 1525 /

Chain stody

From:	Aquatic Bioassay and Consulting Lat 29 N. Olive St. Ventura, CA 9300		Phone: Fax: Project ID:	(805) 64 (805) 64 VCWPE Algae T	13-2930 )		То:	Company: Address: Phone:	and Co 29 N. 0	Bioassay onsulting Labs. Dlive St. a, CA 93001			
		·		_				-		ANALYSIS			
,	Sample I.D. No.	Sample Date	Time	Matrix	Composite Volume/ No.	Reps							
							Chl-a						
TMOL	-R2	8-15-19	0820	GSb	1-petri		X						
	DL-RI	8.15.19	1040	592	Intri		+						
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			1	-		1110			-				
	***												
	0												
Specia	al Instructions:												
RELIN	QUISHED BY:	DATE: TIME:	10	/	DATE: TIM		RELIN	IQUISHED E	BY: DATE:	TIME: RECE	IVED BY:	DATE	E: TIME:



# Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients TMDL (VR Algae TMDL)

971115

### Comprehensive Monitoring Program

CHAIN-OF-CUSTO	DDY RECORD								1	OF	,	1
CLIENT: Ventura C	ounty Watershed	Protection District (	Master	r Agr	eem	ent V	VECK	LABC	RATOF	Y20MA	.01, Projed	ct P60405
SAMPLING EVENT:		SEPTEMB	ER	6	<u>20</u>	10						
SAMPLING DATE:	9/9/1	9 + 9/11/19										
SAMPLERS:	Shelly A	blasik										
RAB SAMPLES												-
			Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen						LTERED	
SAMPLE ID	+	E/TIME	Tot	Ş	蓋				МОТ	ES		
TMDL-Est	9/9/19	13:20	X	X	Х							
TMDL-R1	9/11/19	10:50	X	х	х							
TMDL-R2		08:45	x	х	х							
TMDL-R3	9/9/19	11:05	х	х	Х						····	
TMDL-R4	1	<b>08:40</b>	x	х	х					•		
<del>TMDL-CL</del>			<del></del>	-X-	×				DR	·		
TMDL-SA	9/9/19	10:10	x	х	Х			$\top$	Digo			
TMDL-FD-			X.	_х	Y				Vote Whie		<u></u>	
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Signature: QU	<u>ළා</u>		Signa	ature:	$\nearrow$	المسور	myl	1/4	ارتالا/	7/	·	
rint Name:	<b>TELLYHA</b>	<u>ts</u>	Print	Name	<u>.</u> ر	3	Me	mk.	m/1/	4		
	<u>JCWRD</u>		Affilia	ition:	/	Ice.	1/	لمرا	ر ح		-	
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ignature:			Signa	ature:	44	W				16	T-02	 る)
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ffiliation: W単(	LABS		Affilia	tion:		h	JECK	<del>- 1</del>	MBS	<u> </u>		-
ate/Time Received: 9	11/19 1626		Date/	Time	Recei	ved:	$\overline{C}$	1-11	-19	17:	50	
ate/Time Relinquished:	9/11/19 1750	,	Date/	Time	Relin	ruishe	d.			, -		



**FINAL REPORT** 

**Work Orders:** 911115 **Report Date:** 10/25/2019

**Received Date:** 9/11/2019

Turnaround Time: Normal

Phones: (805) 658-4375

Fax: (805) 654-3350

P.O. #: WECKLABORATOFY2

0MA01

Client: Ventura County Watershed Protection District

Billing Code:

800 South Victoria Avenue

Project: TMDL Study September 2019 P6040555

Ventura, CA 93009

Attn: Kelly Hahs

ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 9/11/19 with the Chain-of-Custody document. The samples were received in good condition, at 1.6 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee

Operations Manager/Senior PM











**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study September 2019 P6040555

**Reported:** 10/25/2019 09:00

Project Manager: Kelly Hahs

## XX

### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	Shelby Palasik	9111115-01	Water	09/11/19 13:20	
TMDL-R1	Shelby Palasik	9111115-02	Water	09/11/19 10:50	
TMDL-R2	Shelby Palasik	9111115-03	Water	09/11/19 08:45	
TMDL-R3	Shelby Palasik	9111115-04	Water	09/11/19 11:05	
TMDL-R4	Shelby Palasik	9111115-05	Water	09/11/19 08:40	
TMDL-SA	Shelby Palasik	9111115-06	Water	09/11/19 10:10	



09/27/19 12:40

**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Project Number: TMDL Study September 2019 P6040555

Reported: 10/25/2019 09:00

Project Manager: Kelly Hahs

X	Sample	Results

Phosphorus, Dissolved

March   Sample   March   Sample   Sa	Sample Results								
Manalyse	Sample: TMDL-Est						Sampled:	09/11/19 13:20 by Sh	elby Palasik
Method: FDR ADULT SPECIFIC   Batch ID: [CALC]   Instr. [CAL	9I11115-01 (Water)								
Method: □FECHIC   PRECIPIC   Mark   Propertic   Pro	Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method:   Parameters   Machine   Method:	Conventional Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
Nethod:   Net		Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	/30/19 18:42		Analyst: YMT	
Methods: EPA 351.2			0.74		0.20	mg/l	1x1	10/02/19 16:36	
Method: EPA 35 1.2         Batch ID: W911781         Instr. AAD6 0.79         0.050         0.10         mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	/30/19 18:40		Analyst: YMT	
Method: EPA 351.2         Batch ID: W911782         Instr: AA05         Prepared: 09/30/19 18:42         Analyst: YMT           TKN, Soluble         0.42         0.50         0.10         mg/l         1x1         10/02/19 16:36           Method: EPA 353.2         Batch ID: W910963         Instr: AA01         Prepared: 09/17/19 11:25         Analyst: sar           Method: EPA 355.1         Batch ID: W911016         Instr: AA01         Prepared: 09/17/19 16:46         Analyst: sar           Phosphorus as P, Total         0.10         0.0014         0.010         mg/l         1x1         09/20/19 12:47           Method: EPA 365.1         Batch ID: W911066         Instr: AA01         Prepared: 09/25/19 13:14         Analyst: sar           Phosphorus, Dissolved         0.033         0.0014         0.010         mg/l         1x1         09/20/19 12:47           Sample: TMDL-R1	Nitrogen, Total		1.1		0.20	mg/l	1x1	10/02/19 16:11	
Method. EPA 3512         Batch ID: W911782         Instr. AAO6         Prepared: 09/30/19 18:42         Analyst: YMT         TKN, Soluble         Analyst: PMT         TKN, Soluble         0.42         0.050         0.10         mg/l         1x1         10/02/19 16:36         Committee         Analyst: sar         Method: EPA 3532         Batch ID: W910963         Instr. AAO1         Prepared: 09/17/19 11:25         Analyst: sar         Analyst: sar         Analyst: sar         Method: EPA 365.1         Batch ID: W911016         Instr. AAO1         Prepared: 09/17/19 16:46         Analyst: ymt         Analyst: sar         Analyst: sar         Prepared: 09/17/19 16:46         Analyst: ymt         Analyst: y	Method: EPA 351.2	<b>Batch ID:</b> W9I1781	Instr: AA06		Prepared: 09	/30/19 18:40		Analyst: YMT	
Method: EPA 353.2         Batch ID: W910963         Instr: AA01	TKN		0.79	0.050	0.10	mg/l	1x1	•	
Method: EPA 353.2         Batch ID: W910963         Inst:: AAOI NO2+NO3 as N         Prepared: □9/17/19 11:25         Analyst: sar           Method: EPA 353.2 NO2+NO3 as N         Batch ID: W911016         Inst:: AAOI NO2+NO3 as N         Prepared: □9/17/19 11:46         Analyst: ymt           Method: EPA 365.1 Batch ID: W911016         Inst:: AOI NO2+NO3 as N         Prepared: □9/17/19 16:46         Analyst: ymt           Method: EPA 365.1 Batch ID: W911506         Inst:: AOI NO3 NO2+NO3 NO2+NO	Method: EPA 351.2	<b>Batch ID:</b> W9I1782	Instr: AA06		Prepared: 09	/30/19 18:42		Analyst: YMT	
Method: EPA 365.1   Batch ID: W911016   Instr: AAOI   O.0014   O.010   mg/l   1x1   O9/20/19 17:04     Method: EPA 365.1   Batch ID: W91106   Instr: AAOI   O.010   O.0014   O.010   mg/l   1x1   O9/20/19 12:47     Method: EPA 365.1   Batch ID: W911506   Instr: AAOI   O.010   mg/l   1x1   O9/20/19 12:47     Method: EPA 365.1   Batch ID: W911506   Instr: AAOI   O.010   mg/l   1x1   O9/20/19 12:47     Method: EPA 365.1   Batch ID: W911506   Instr: AAOI   O.010   mg/l   1x1   O9/27/19 12:39     Sample:   TMDL-R1   Sampled: O9/17/19 10:50 by Shelby Palasik   O.010   mg/l   1x1   O9/27/19 12:39     Method: EPA 365.1   Batch ID: CALC   Instr: CALC   Prepared: 09/30/19 18:42   Analyst: YMT     Method: Various   Batch ID: CALC   Instr: CALC   Prepared: 09/30/19 18:42   Analyst: YMT     Mitrogen, Total   O.024   O.036   O.020   mg/l   1x1   10/02/19 16:13     Method: EPA 351.2   Batch ID: W911781   Instr: AAOI   O.024   O.050   O.010   mg/l   1x1   10/02/19 16:38     Method: EPA 351.2   Batch ID: W911782   Instr: AAOI   Prepared: 09/30/19 18:42   Analyst: YMT     TKN, Soluble   O.096   O.050   O.050   O.010   mg/l   1x1   10/02/19 16:38     Method: EPA 351.2   Batch ID: W910863   Instr: AAOI   Prepared: 09/30/19 18:42   Analyst: YMT     TKN, Soluble   O.096   O.050   O.050   O.010   mg/l   1x1   10/02/19 16:38     Method: EPA 351.2   Batch ID: W910863   Instr: AAOI   Prepared: 09/30/19 18:42   Analyst: Sar     Method: EPA 351.2   Batch ID: W910863   Instr: AAOI   Prepared: 09/17/19 11:25   Analyst: Sar     Method: EPA 351.2   Batch ID: W910863   Instr: AAOI   Prepared: 09/17/19 11:25   Analyst: Sar     Method: EPA 351.2   Batch ID: W910863   Instr: AAOI   Prepared: 09/17/19 11:25   Analyst: Sar     Method: EPA 351.2   Batch ID: W910863   Instr: AAOI   Prepared: 09/17/19 11:25   Analyst: Sar     Method: EPA 351.2   Batch ID: W910863   Instr: AAOI   Prepared: 09/17/19 11:25   Analyst: Sar     Method: EPA 351.2   Batch ID: W910863   Instr: AAOI   Prepared: 09/17/19 11:25   Analyst: Sar     Method: EPA 351.2   Batch ID: W9	TKN, Soluble		0.42	0.050	-		1x1	•	
Method: EPA 365.1   Batch ID: W911016   Instr. AAO1   Prepared: 09/17/19 16.46   Analyst: ymt   Prosphorus as P, Total   0.00   mg/l   1x1   09/20/19 17:04	Method: EPA 353.2	Batch ID: W910963	Instr: AA01		Prepared: 09	/17/19 11:25		Analyst: sar	
Phosphorus as P, Total	NO2+NO3 as N		0.32	0.083	0.20	mg/l	1x1	•	
Method: EPA 35.1         Batch ID: W9I1506         Instr: AAO1         Prepared: 09/25/19 13:14         Analyst: sar           Phosphorus, Dissolved         0.033         0.0014         0.010         mg/l         1x1         09/27/19 12:39           Sample:         TMDL-R1         TMDL-R1         Sample: 09/11/19 10:50 by Shelby Palasik           9111115-02 (Water)         TANDL-R1         TWDL-R1         Sample: 09/11/19 10:50 by Shelby Palasik           Analyte         Result MRI-De (Water)         TWDL-SPECIFIC Water)         TWDL-SPECIFIC Batch ID: (CALC)         Instr: (CALC)         Prepared: 09/30/19 18:42         Analyst: YMT           METHOD: "Various Batch ID: (CALC)         Instr: (CALC)         Prepared: 09/30/19 18:42         Analyst: YMT           Method: _Various Water Dissolution         Batch ID: W9I1781         Instr: (CALC)         Prepared: 09/30/19 18:40         Analyst: YMT           Method: EPA 351.2         Batch ID: W9I1782         Instr: AAO6         Prepared: 09/30/19 18:40         Analyst: YMT           TKN, Soluble         0.096         0.050         0.10         mg/l         Analyst: YMT           TKN, Soluble	Method: EPA 365.1	<b>Batch ID:</b> W9I1016	Instr: AA01		Prepared: 09	/17/19 16:46		Analyst: ymt	
Phosphorus, Dissolved   0.033   0.0014   0.010   mg/l   1x1   09/27/19 12:39	Phosphorus as P, Total		0.10	0.0014	0.010	mg/l	1x1	09/20/19 12:47	
No.03   No.01   No.0	Method: EPA 365.1	<b>Batch ID:</b> W9I1506	Instr: AA01		Prepared: 09	/25/19 13:14		Analyst: sar	
Analyte				0.0014	•		1x1	•	
Method: *** DEFAULT SPECIFIC   Batch ID: [CALC]   Instr. [CALC]   Prepared: 09/30/19 18:42   Analyst: YMT	'							•	,
Method: *** DEFAULT SPECIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 09/30/19 18:42         Analyst: YMT           METHOD *** Dissolved Nitrogen         0.79         0.20         mg/l         1x1         10/02/19 16:38           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 09/30/19 18:40         Analyst: YMT           Nitrogen, Total         0.93         0.20         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2         Batch ID: W911781         Instr: AA06         Prepared: 09/30/19 18:40         Analyst: YMT           TKN         0.24         0.050         0.10         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2         Batch ID: W911782         Instr: AA06         Prepared: 09/30/19 18:42         Analyst: YMT           TKN, Soluble         0.096         0.050         0.10         mg/l         1x1         10/02/19 16:38         J           Method: EPA 353.2         Batch ID: W910963         Instr: AA01         Prepared: 09/17/19 11:25         Analyst: ymt           NO2+NO3 as N         0.69         0.083         0.20         mg/l         1x1         09/20/19 17:05           Method: EPA 365.1         Batch ID: W911016         Instr: AA01         Prepared: 09/17/19 16:	•			MDL	MRL	Units	Dil	Analyzed	Qualifier
METHOD ***         Dissolved Nitrogen         0.79         0.20         mg/l         1x1         10/02/19 16:38           Method: _Various Nitrogen, Total         Batch ID: [CALC]         Instr: [CALC]         Prepared: 09/30/19 18:40         Analyst: YMT           Nitrogen, Total         0.93         0.20         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2         Batch ID: W9I1781         Instr: AA06         Prepared: 09/30/19 18:40         Analyst: YMT           TKN         0.24         0.050         0.10         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2         Batch ID: W9I1782         Instr: AA06         Prepared: 09/30/19 18:42         Analyst: YMT           TKN, Soluble         0.096         0.050         0.10         mg/l         1x1         10/02/19 16:38         J           Method: EPA 353.2         Batch ID: W9I0963         Instr: AA01         Prepared: 09/17/19 11:25         Analyst: sar         NO2+NO3 as N         0.69         0.083         0.20         mg/l         1x1         09/20/19 17:05           Method: EPA 365.1         Batch ID: W9I1016         Instr: AA01         Prepared: 09/17/19 16:46         Analyst: ymt           Phosphorus as P, Total         0.059         0.0014         0.010         mg/l	• •	•							
Dissolved Nitrogen         0.79         0.20         mg/l         1x1         10/02/19 16:38           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 09/30/19 18:40         Analyst: YMT           Nitrogen, Total         0.93         0.20         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2         Batch ID: W9I1781         Instr: AA06         Prepared: 09/30/19 18:40         Analyst: YMT           TKN         0.24         0.050         0.10         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2         Batch ID: W9I1782         Instr: AA06         Prepared: 09/30/19 18:42         Analyst: YMT           TKN, Soluble         0.096         0.050         0.10         mg/l         1x1         10/02/19 16:38         J           Method: EPA 353.2         Batch ID: W9I0963         Instr: AA01         Prepared: 09/17/19 11:25         Analyst: sar           NO2+NO3 as N         0.69         0.083         0.20         mg/l         1x1         09/20/19 17:05           Method: EPA 365.1         Batch ID: W9I1016         Instr: AA01         Prepared: 09/17/19 16:46         Analyst: ymt           Phosphorus as P, Total         0.059         0.0014         0.010         mg/l         1x1		Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	/30/19 18:42		Analyst: YM⊺	
Nitrogen, Total         0.93         0.20         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2 TKN         Batch ID: W9I1781 Under EPA 351.2 TKN         Instr: AA06 Under EPA 351.2 Un			0.79		0.20	mg/l	1x1	10/02/19 16:38	
Nitrogen, Total         0.93         0.20         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2 TKN         Batch ID: W9I1781 Under EPA 351.2 TKN         Instr: AA06 Under EPA 351.2 Un	Method: Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	/30/19 18:40		Analyst: YMT	
TKN         0.24         0.050         0.10         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2         Batch ID: W9I1782         Instr: AA06         Prepared: 09/30/19 18:42         Analyst: YMT           TKN, Soluble         0.096         0.050         0.10         mg/l         1x1         10/02/19 16:38         J           Method: EPA 353.2         Batch ID: W9I0963         Instr: AA01         Prepared: 09/17/19 11:25         Analyst: sar           NO2+NO3 as N         0.69         0.083         0.20         mg/l         1x1         09/20/19 17:05           Method: EPA 365.1         Batch ID: W9I1016         Instr: AA01         Prepared: 09/17/19 16:46         Analyst: ymt           Phosphorus as P, Total         0.059         0.0014         0.010         mg/l         1x1         09/20/19 12:49	_				•		1x1	-	
TKN         0.24         0.050         0.10         mg/l         1x1         10/02/19 16:13           Method: EPA 351.2         Batch ID: W9I1782         Instr: AA06         Prepared: 09/30/19 18:42         Analyst: YMT           TKN, Soluble         0.096         0.050         0.10         mg/l         1x1         10/02/19 16:38         J           Method: EPA 353.2         Batch ID: W9I0963         Instr: AA01         Prepared: 09/17/19 11:25         Analyst: sar           NO2+NO3 as N         0.69         0.083         0.20         mg/l         1x1         09/20/19 17:05           Method: EPA 365.1         Batch ID: W9I1016         Instr: AA01         Prepared: 09/17/19 16:46         Analyst: ymt           Phosphorus as P, Total         0.059         0.0014         0.010         mg/l         1x1         09/20/19 12:49	Method: EPA 351.2	Batch ID: W9I1781	Instr: AA06		Prepared: 09	/30/19 18:40		Analyst: YMT	
TKN, Soluble         0.096         0.050         0.10         mg/l         1x1         10/02/19 16:38         J           Method: EPA 353.2         Batch ID: W9l0963         Instr: AA01         Prepared: 09/17/19 11:25         Analyst: sar           NO2+NO3 as N         0.69         0.083         0.20         mg/l         1x1         09/20/19 17:05           Method: EPA 365.1         Batch ID: W9l1016         Instr: AA01         Prepared: 09/17/19 16:46         Analyst: ymt           Phosphorus as P, Total         0.059         0.0014         0.010         mg/l         1x1         09/20/19 12:49				0.050			1x1		
TKN, Soluble         0.096         0.050         0.10         mg/l         1x1         10/02/19 16:38         J           Method: EPA 353.2         Batch ID: W9l0963         Instr: AA01         Prepared: 09/17/19 11:25         Analyst: sar           NO2+NO3 as N         0.69         0.083         0.20         mg/l         1x1         09/20/19 17:05           Method: EPA 365.1         Batch ID: W9l1016         Instr: AA01         Prepared: 09/17/19 16:46         Analyst: ymt           Phosphorus as P, Total         0.059         0.0014         0.010         mg/l         1x1         09/20/19 12:49	Method: EPA 351.2	Batch ID: W911782	Instr: AA06		Prepared: 09	/30/19 18:42		Analyst: YMT	
NO2+NO3 as N         0.69         0.083         0.20         mg/l         1x1         09/20/19 17:05           Method: EPA 365.1         Batch ID: W9I1016         Instr: AA01         Prepared: 09/17/19 16:46         Analyst: ymt           Phosphorus as P, Total         0.059         0.0014         0.010         mg/l         1x1         09/20/19 12:49				0.050	-		1x1	-	J
NO2+NO3 as N         0.69         0.083         0.20         mg/l         1x1         09/20/19 17:05           Method: EPA 365.1         Batch ID: W9I1016         Instr: AA01         Prepared: 09/17/19 16:46         Analyst: ymt           Phosphorus as P, Total         0.059         0.0014         0.010         mg/l         1x1         09/20/19 12:49	Method: EPA 353.2	Batch ID: W910963	Instr: AA01		Prepared: 09	/17/19 11:25		Analyst: sar	
Phosphorus as P, Total         0.059         0.0014         0.010         mg/l         1x1         09/20/19 12:49				0.083	•		1x1	•	
Phosphorus as P, Total         0.059         0.0014         0.010         mg/l         1x1         09/20/19 12:49	Method: EPA 365.1	Batch ID: W9 1016	Instr: AA01		Prepared: 09	/17/19 16:46		Analyst: vmt	
Method: EPA 365.1         Batch ID: W9I1506         Instr: AA01         Prepared: 09/25/19 13:14         Analyst: sar				0.0014	•		1x1	• •	
	Method: EPA 365.1	<b>Batch ID:</b> W9I1506	Instr: AA01		Prepared: 09	/25/19 13:14		Analyst: sar	

0.052

0.0014

0.010

mg/l

1x1



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Project Number: TMDL Study September 2019 P6040555

Reported: 10/25/2019 09:00

Project Manager: Kelly Hahs

Sample Results

(Continued)

Sample: TMDL-R2						Sampled	d: 09/11/19 8:45 by St	nelby Palasik
9I11115-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Parameter	rs by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	9/30/19 18:42		Analyst: YMT	
METHOD ***  Dissolved Nitrogen		1.1		0.20	mg/l	1x1	10/02/19 16:41	
-						17.1		
Method: _Various	Batch ID: [CALC]	Instr: [CALC]			9/30/19 18:40	44	Analyst: YMT	
Nitrogen, Total		1.4		0.20	mg/l	1x1	10/02/19 16:16	
Method: EPA 351.2	<b>Batch ID:</b> W9I1781	Instr: AA06		Prepared: 09	9/30/19 18:40		Analyst: YMT	
TKN		0.31	0.050	0.10	mg/l	1x1	10/02/19 16:16	
Method: EPA 351.2	Batch ID: W911782	Instr: AA06		Prepared: 09	9/30/19 18:42		Analyst: YMT	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	10/02/19 16:41	
Method: EPA 353.2	Batch ID: W910963	Instr: AA01		Prepared: 09	9/17/19 11:25		Analyst: sar	
NO2+NO3 as N		1.1	0.083	0.20	mg/l	1x1	09/20/19 17:06	
Method: EPA 365.1	<b>Batch ID:</b> W9I1016	Instr: AA01		Propared: 0	9/17/19 16:46		Analyst: ymt	
		0.094	0.0014	0.010	mg/l	1x1	09/20/19 12:50	
Phosphorus as P. Total					3			
Phosphorus as P, Total								
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R3	<b>Batch ID:</b> W9I1506	Instr: AA01	0.0014	<b>Prepared:</b> 09 0.010	9/25/19 13:14 mg/l	1x1 Sampled:	<b>Analyst:</b> sar 09/27/19 12:42 : 09/11/19 11:05 by Si	nelby Palasik
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9111115-04 (Water)	<b>Batch ID:</b> W9I1506	0.087		0.010	mg/l	Sampled:	09/27/19 12:42 : 09/11/19 11:05 by SI	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R3		0.087	0.0014 MDL	•	mg/l		09/27/19 12:42	·
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9111115-04 (Water)  Analyte		0.087		0.010 MRL	mg/l Units	Sampled:	09/27/19 12:42 : 09/11/19 11:05 by SI Analyzed	•
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte onventional Chemistry/Physical Parameter	rs by APHA/EPA/ASTM Methods	0.087		0.010 MRL	mg/l	Sampled:	09/27/19 12:42 : 09/11/19 11:05 by SI	,
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9l11115-04 (Water)  Analyte Diventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC	rs by APHA/EPA/ASTM Methods	0.087		0.010 MRL	mg/l Units	Sampled:	09/27/19 12:42 : 09/11/19 11:05 by SI Analyzed	•
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte Doventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD ***	rs by APHA/EPA/ASTM Methods	Result Instr: [CALC]		0.010  MRL  Prepared: 09	mg/l Units 9/30/19 18:42	Sampled:	09/27/19 12:42 : 09/11/19 11:05 by Si Analyzed Analyst: YMT	•
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte  onventional Chemistry/Physical Parameter  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen	rs by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  0.78		0.010  MRL  Prepared: 09	mg/l  Units  9/30/19 18:42  mg/l	Sampled:	09/27/19 12:42 : 09/11/19 11:05 by SI Analyzed Analyst: YMT 10/02/19 16:43	•
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte  onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various	rs by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result  Instr: [CALC]  0.78  Instr: [CALC]		0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20	mg/l  Units  9/30/19 18:42  mg/l  9/30/19 18:40  mg/l	Sampled: Dil	09/27/19 12:42 : 09/11/19 11:05 by SI  Analyzed  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:18	,
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte  onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  0.78  Instr: [CALC]  0.85		0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20	mg/l  Units  9/30/19 18:42  mg/l  9/30/19 18:40	Sampled: Dil	09/27/19 12:42 : 09/11/19 11:05 by SI  Analyzed  Analyst: YMT  10/02/19 16:43  Analyst: YMT	Qualifier
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte  onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2	rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result  Instr: [CALC]  0.78  Instr: [CALC]  0.85  Instr: AA06	MDL	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10	mg/l  Units  9/30/19 18:42  mg/l  9/30/19 18:40  mg/l  9/30/19 18:40  mg/l	Sampled: Dil  1x1  1x1	09/27/19 12:42  : 09/11/19 11:05 by SI  Analyzed  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:18  Analyst: YMT  10/02/19 16:18	Qualifier
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte  onventional Chemistry/Physical Parameter  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2  TKN	rs by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781	Result  Instr: [CALC]  0.78  Instr: [CALC]  0.85  Instr: AA06  0.069	MDL	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10	mg/l  Units  9/30/19 18:42  mg/l  9/30/19 18:40  mg/l  9/30/19 18:40	Sampled: Dil  1x1  1x1	09/27/19 12:42  : 09/11/19 11:05 by SI  Analyzed  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:18  Analyst: YMT	Qualifier
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte  onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2	rs by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781	Result  Instr: [CALC]  0.78  Instr: [CALC]  0.85  Instr: AA06  0.069  Instr: AA06	<b>MDL</b> 0.050	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10	mg/l  Units  9/30/19 18:42  mg/l  9/30/19 18:40  mg/l  9/30/19 18:40  mg/l	Sampled:  1x1  1x1  1x1	09/27/19 12:42  : 09/11/19 11:05 by SI  Analyzed  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:18  Analyst: YMT  10/02/19 16:18  Analyst: YMT  Analyst: YMT  Analyst: YMT  Analyst: YMT  Analyst: YMT	Qualifier
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble	rs by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781  Batch ID: W9I1782	Result  Instr: [CALC]  0.78  Instr: [CALC]  0.85  Instr: AA06  Instr: AA06	<b>MDL</b> 0.050	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10	mg/l  Units  9/30/19 18:42  mg/l  9/30/19 18:40  mg/l  9/30/19 18:40  mg/l  9/30/19 18:42  mg/l	Sampled:  1x1  1x1  1x1	09/27/19 12:42  : 09/11/19 11:05 by Si  Analysed  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:18  Analyst: YMT  10/02/19 16:18  Analyst: YMT  10/02/19 16:43	Qualifie
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2	rs by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781  Batch ID: W9I1782	Result  Instr: [CALC]  0.78  Instr: [CALC]  0.85  Instr: AA06  0.069  Instr: AA06  ND  Instr: AA01	MDL 0.050 0.050	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 09 0.20	mg/l  Units  9/30/19 18:42  mg/l  9/30/19 18:40  mg/l  9/30/19 18:42  mg/l  9/30/19 18:42	1x1 1x1 1x1 1x1	09/27/19 12:42  : 09/11/19 11:05 by SI  Analyzed  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:18  Analyst: YMT  10/02/19 16:18  Analyst: YMT  10/02/19 16:43  Analyst: YMT  Analyst: YMT  Analyst: YMT  Analyst: YMT  Analyst: YMT  Analyst: YMT	Qualifier
Method: EPA 365.1 Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte Donventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N	rs by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781  Batch ID: W9I1782  Batch ID: W9I0963	Result  Instr: [CALC]  0.78  Instr: [CALC]  0.85  Instr: AA06  0.069  Instr: AA06  ND  Instr: AA01  0.78	MDL 0.050 0.050	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 09 0.20	mg/l  Units  9/30/19 18:42  mg/l  9/30/19 18:40  mg/l  9/30/19 18:40  mg/l  9/30/19 18:42  mg/l  9/17/19 11:25  mg/l	1x1 1x1 1x1 1x1	09/27/19 12:42  : 09/11/19 11:05 by SI  Analyzed  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:18  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:43  Analyst: Sar  09/20/19 17:07	nelby Palasik  Qualifier
Method: EPA 365.1  Phosphorus, Dissolved  Sample: TMDL-R3 9I11115-04 (Water)  Analyte  Doventional Chemistry/Physical Parameter  Method: *** DEFAULT SPECIFIC  METHOD ***  Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2  TKN  Method: EPA 351.2  TKN, Soluble  Method: EPA 353.2  NO2+NO3 as N  Method: EPA 365.1	rs by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781  Batch ID: W9I1782  Batch ID: W9I0963	Result  Instr: [CALC]  0.78  Instr: [CALC]  0.85  Instr: AA06  0.069  Instr: AA06  ND  Instr: AA01  0.78  Instr: AA01	0.050 0.050 0.083	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10	mg/l  Units  9/30/19 18:42  mg/l  9/30/19 18:40  mg/l  9/30/19 18:42  mg/l  9/17/19 11:25  mg/l  9/17/19 16:46	1x1 1x1 1x1 1x1 1x1	09/27/19 12:42  : 09/11/19 11:05 by SI  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:18  Analyst: YMT  10/02/19 16:18  Analyst: YMT  10/02/19 16:43  Analyst: YMT  10/02/19 16:43  Analyst: ymT  10/02/19 16:43  Analyst: ymT	Qualifier



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Project Number: TMDL Study September 2019 P6040555

Reported: 10/25/2019 09:00

Project Manager: Kelly Hahs

Sample Results

(Continued)

Sample: TMDL-R4						Sampled	: 09/11/19 8:40 by Sh	nelby Palasik
9I11115-05 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods	•						
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 10	)/07/19 10:10		Analyst: ymt	
Dissolved Nitrogen		1.2		0.20	mg/l	1x1	10/08/19 12:00	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	/30/19 18:40		Analyst: YMT	
Nitrogen, Total		1.4		0.20	mg/l	1x1	10/02/19 16:31	
Method: EPA 351.2	Batch ID: W911781	Instr: AA06		Prepared: 09	/30/19 18:40		Analyst: YMT	
TKN		0.20	0.050	0.10	mg/l	1x1	10/02/19 16:31	
Method: EPA 351.2	<b>Batch ID:</b> W9I1782	Instr: AA06		Prepared: 09	/30/19 18:42		Analyst: YMT	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	10/02/19 16:06	
Method: EPA 353.2	<b>Batch ID:</b> W9I0963	Instr: AA01		Prepared: 09	/17/19 11:25		Analyst: sar	
NO2+NO3 as N		1.2	0.083	0.20	mg/l	1x1	09/20/19 17:08	
Method: EPA 365.1	<b>Batch ID:</b> W9I1016	Instr: AA01		Prepared: 09	/17/19 16:46		Analyst: ymt	
Phosphorus as P, Total		0.0065	0.0014	0.010	mg/l	1x1	09/20/19 12:43	
Method: EPA 365.1	Batch ID: W9I1506	Instr: AA01		Prepared: 09	/25/19 13:14		Analyst: sar	
Phosphorus, Dissolved Sample: TMDL-SA	<b>Batch ID:</b> W9I1506	Instr: AA01	0.0014	<b>Prepared:</b> 09 0.010	mg/l	1x1 Sampled:	<b>Analyst:</b> sar 09/27/19 12:33 09/11/19 10:10 by Sh	
Phosphorus, Dissolved	<b>Batch ID:</b> W9I1506		0.0014	-	mg/l		09/27/19 12:33	nelby Palasik
Phosphorus, Dissolved  Sample: TMDL-SA 9111115-06 (Water)  Analyte		0.0039		0.010	mg/l	Sampled:	09/27/19 12:33 09/11/19 10:10 by Sh	nelby Palasik
Sample: TMDL-SA 9I11115-06 (Water)		0.0039		0.010 MRL	mg/l	Sampled:	09/27/19 12:33 09/11/19 10:10 by Sh	nelby Palasik
Phosphorus, Dissolved  Sample: TMDL-SA 9I11115-06 (Water)  Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD ***	s by APHA/EPA/ASTM Methods	Result Instr: [CALC]		MRL Prepared: 09	mg/l  Units  1/30/19 18:42	Sampled:	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT	nelby Palasil
Phosphorus, Dissolved  Sample: TMDL-SA 9I11115-06 (Water)  Analyte  onventional Chemistry/Physical Parameters  Method: *** DEFAULT SPECIFIC  METHOD ***  Dissolved Nitrogen	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]		0.010  MRL  Prepared: 09 0.20	mg/l  Units  1/30/19 18:42  mg/l	Sampled:	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44	nelby Palasil
Phosphorus, Dissolved  Sample: TMDL-SA 9I11115-06 (Water)  Analyte  onventional Chemistry/Physical Parameters  Method: *** DEFAULT SPECIFIC  METHOD ***  Dissolved Nitrogen  Method: _Various	s by APHA/EPA/ASTM Methods	Result Instr: [CALC]		0.010  MRL  Prepared: 09 0.20	mg/l  Units  1/30/19 18:42  mg/l 1/30/19 18:40	Sampled:	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT	nelby Palasil
Phosphorus, Dissolved  Sample: TMDL-SA 911115-06 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result Instr: [CALC]		0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20	mg/l  Units  1/30/19 18:42  mg/l 1/30/19 18:40  mg/l	Dil	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:19	nelby Palasil
Phosphorus, Dissolved  Sample: TMDL-SA 911115-06 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC] Instr: [CALC]		0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20	mg/l  Units  1/30/19 18:42  mg/l 1/30/19 18:40	Dil	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44  Analyst: YMT	nelby Palasil
Phosphorus, Dissolved  Sample: TMDL-SA 9111115-06 (Water)  Analyte  Dissolved Nitrogen  Method: *** DEFAULT SPECIFIC  METHOD ***  Dissolved Nitrogen  Method: _Various  Nitrogen, Total  Method: EPA 351.2  TKN	s by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781	Result Instr: [CALC]	MDL	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10	mg/l  Units  //30/19 18:42  mg/l  //30/19 18:40  mg/l  //30/19 18:40  mg/l	Dil  1x1  1x1	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:19	nelby Palasi
Phosphorus, Dissolved  Sample: TMDL-SA 9111115-06 (Water)  Analyte  Dissolved Nitrogen  Method: *** DEFAULT SPECIFIC  METHOD ***  Dissolved Nitrogen  Method: _Various  Nitrogen, Total  Method: EPA 351.2  TKN	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10	mg/l  Units  //30/19 18:42  mg/l  //30/19 18:40  mg/l  //30/19 18:40	Dil  1x1  1x1	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:19  Analyst: YMT	nelby Palasi
Phosphorus, Dissolved  Sample: TMDL-SA 911115-06 (Water)  Analyte Dissolved Nitrogen  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2  TKN  Method: EPA 351.2  TKN, Soluble	s by APHA/EPA/ASTM Methods  Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781	Result Instr: [CALC] Instr: [CALC] Instr: AA06 Instr: AA06 Instr: AA06	MDL 0.050	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09	mg/l  Units  //30/19 18:42  mg/l  //30/19 18:40  mg/l  //30/19 18:40  mg/l  //30/19 18:42  mg/l	1x1 1x1 1x1	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:19  Analyst: YMT	nelby Palasi
Phosphorus, Dissolved  Sample: TMDL-SA 9111115-06 (Water)  Analyte  onventional Chemistry/Physical Parameters  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various     Nitrogen, Total  Method: EPA 351.2     TKN  Method: EPA 351.2     TKN, Soluble	s by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781  Batch ID: W9I1782	Result  Instr: [CALC]  0.22  Instr: [CALC]  0.31  Instr: AA06  0.091  Instr: AA06	MDL 0.050	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10	mg/l  Units  //30/19 18:42  mg/l  //30/19 18:40  mg/l  //30/19 18:40  mg/l  //30/19 18:42  mg/l	1x1 1x1 1x1	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:44	nelby Palasi
Phosphorus, Dissolved  Sample: TMDL-SA 9111115-06 (Water)  Analyte  proventional Chemistry/Physical Parameters  Method: *** DEFAULT SPECIFIC  METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N	s by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W9I1781  Batch ID: W9I1782	Result  Instr: [CALC]  0.22  Instr: [CALC]  0.31  Instr: AA06  0.091  Instr: AA06  Instr: AA06	MDL 0.050 0.050	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 09 0.20	mg/l  Units  //30/19 18:42  mg/l  //30/19 18:40  mg/l  //30/19 18:40  mg/l  //30/19 18:42  mg/l  //30/19 18:42	1x1 1x1 1x1 1x1	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:44  Analyst: YMT	nelby Palasil
Phosphorus, Dissolved  Sample: TMDL-SA 9I11115-06 (Water)  Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN  Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N	s by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W911781  Batch ID: W911782  Batch ID: W910963	Result  Instr: [CALC]  0.22  Instr: [CALC]  0.31  Instr: AA06  0.091  Instr: AA06  Instr: AA01  0.22	MDL 0.050 0.050	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 09 0.20	mg/l  Units  1/30/19 18:42  mg/l 1/30/19 18:40  mg/l 1/30/19 18:40  mg/l 1/30/19 18:42  mg/l 1/17/19 11:25  mg/l	1x1 1x1 1x1 1x1	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:44  Analyst: Sar  09/20/19 17:09	elby Palasik
Phosphorus, Dissolved  Sample: TMDL-SA 911115-06 (Water)  Analyte Dissolved Nethod: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various Nitrogen, Total  Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble  Method: EPA 353.2 NO2+NO3 as N  Method: EPA 365.1	s by APHA/EPA/ASTM Methods Batch ID: [CALC]  Batch ID: [CALC]  Batch ID: W911781  Batch ID: W911782  Batch ID: W910963	Result  Instr: [CALC]  0.22  Instr: [CALC]  0.31  Instr: AA06  0.091  Instr: AA01  0.22  Instr: AA01	0.050 0.050 0.083	0.010  MRL  Prepared: 09 0.20  Prepared: 09 0.10  Prepared: 09 0.10  Prepared: 09 0.20  Prepared: 09 0.10	mg/l  Units  //30/19 18:42  mg/l  //30/19 18:40  mg/l  //30/19 18:42  mg/l  //17/19 11:25  mg/l  //17/19 16:46	1x1 1x1 1x1 1x1 1x1	09/27/19 12:33  09/11/19 10:10 by Sh  Analyzed  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:19  Analyst: YMT  10/02/19 16:44  Analyst: YMT  10/02/19 16:44  Analyst: Sar  09/20/19 17:09  Analyst: ymt	nelby Palasik



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Project Number: TMDL Study September 2019 P6040555

**Reported:** 10/25/2019 09:00

Ventura, CA 93009

Project Manager: Kelly Hahs



Conventional Chemistry/Physical Parameters by API	HA/EPA/AS	Method	ls								
Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifie
atch: W910963 - EPA 353.2	Result	WIDL	IVIKL	Omis	Level	Result	70REC	Lillings	KFD	Lilling	Quanne
Blank (W910963-BLK1)				Pre	epared: 09/17/	9 Analyzed	09/20/19				
NO2+NO3 as N	ND	0.050	0.050	mg/l	.parca. 05, 11,	. J. Fillulyzeu.	03,20,13				
LCS (W910963-BS1)				Pre	epared: 09/17/	9 Analyzed:	09/20/19				
NO2+NO3 as N	0.915	0.050	0.050	mg/l	1.00	•	92	90-110			
Matrix Spike (W9I0963-MS1)	Source: 9	111104-01		Pre	epared: 09/17/	9 Analyzed:	09/20/19				
NO2+NO3 as N	1.90	0.050	0.050	mg/l	2.00	ND	95	90-110			
Matrix Spike (W910963-MS2)	Source: 9	111104-05		Pre	epared: 09/17/	9 Analyzed:	09/20/19				
NO2+NO3 as N	1.91	0.050	0.050	mg/l	2.00	ND	96	90-110			
Matrix Spike Dup (W9I0963-MSD1)	Source: 9	111104-01		Pre	epared: 09/17/	9 Analyzed:	09/20/19				
NO2+NO3 as N	1.90	0.050	0.050	mg/l	2.00	ND	95	90-110	0	20	
Matrix Spike Dup (W910963-MSD2)	Source: 9	111104-05		Pre	epared: 09/17/	9 Analyzed:	09/20/19				
NO2+NO3 as N	1.91	0.050	0.050	mg/l	2.00	ND	96	90-110	0	20	
atch: W9I1016 - EPA 365.1											
Blank (W9I1016-BLK1)				Pre	epared: 09/17/	9 Analyzed:	09/20/19				
Phosphorus as P, Total	ND	0.0014	0.010	mg/l							
LCS (W9I1016-BS1)				Pre	epared: 09/17/	9 Analyzed:	09/20/19				
Phosphorus as P, Total	0.0496	0.0014	0.010	mg/l	0.0500		99	90-110			
Matrix Spike (W9I1016-MS1)	Source: 9	111115-05		Pre	pared: 09/17/	9 Analyzed:	09/20/19				
Phosphorus as P, Total	0.0580	0.0014	0.010	mg/l	0.0500	0.00652	103	90-110			
Matrix Spike Dup (W9I1016-MSD1)	Source: 9	111115-05		Pre	epared: 09/17/	9 Analyzed:	09/20/19				
Phosphorus as P, Total	- 0.0582	0.0014	0.010	mg/l	0.0500	0.00652	103	90-110	0.3	20	
atch: W9I1506 - EPA 365.1											
Blank (W9I1506-BLK1)				Pre	epared: 09/25/	9 Analyzed:	09/27/19				
Phosphorus, Dissolved	0.00413	0.0014	0.010	mg/l							
LCS (W9I1506-BS1)				Pre	epared: 09/25/	9 Analyzed:	09/27/19				
Phosphorus, Dissolved	- 0.0507	0.0014	0.010	mg/l	0.0500		101	90-110			
Matrix Spike (W9I1506-MS1)	Source: 9	111115-05		Pre	epared: 09/25/	9 Analyzed:	09/27/19				
Phosphorus, Dissolved	- 0.0586	0.0014	0.010	mg/l	0.0500	0.00389	109	90-110			
Matrix Spike Dup (W9I1506-MSD1)	Source: 9	111115-05		Pre	epared: 09/25/	9 Analyzed:	09/27/19				
Phosphorus, Dissolved	0.0610	0.0014	0.010	mg/l	0.0500	0.00389	114	90-110	4	20	MS-0
atch: W9I1781 - EPA 351.2											
Blank (W9I1781-BLK1)					epared: 09/30/	9 Analyzed:	10/02/19				
TKN	ND	0.050	0.10	mg/l							
LCS (W9I1781-BS1)				Pre	epared: 09/30/	9 Analyzed:	10/02/19				
TKN	0.949	0.050	0.10	mg/l	1.00		95	90-110			
Matrix Spike (W9I1781-MS1)	Source: 9	111115-05		Pre	epared: 09/30/	9 Analyzed:	10/02/19				
TKN	1.21	0.050	0.10	mg/l	1.00	0.197	101	90-110			
Matrix Spike Dup (W9I1781-MSD1)	Source: 9	111115-05		Pre	epared: 09/30/	9 Analyzed:	10/02/19				
TKN	1.10	0.050	0.10	mg/l	1.00	0.197	90	90-110	10	10	



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Project Number: TMDL Study September 2019 P6040555

**Reported:** 10/25/2019 09:00

Ventura, CA 93009

**Project Manager:** Kelly Hahs

### Quality Control Results

(Continued)

Conventional Chemistry/Physical Parameters by	/ APHA/EPA/ASTI	Methods	(Continue	ed)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W9I1781 - EPA 351.2 (Continued)											
Matrix Spike Dup (W9I1781-MSD1)	Source: 91	11115-05		Prep	oared: 09/30/1	9 Analyzed:	10/02/19	•			
Batch: W9I1782 - EPA 351.2											
Blank (W9I1782-BLK1)				Prep	oared: 09/30/1	9 Analyzed:	10/02/19	•			
TKN, Soluble	ND	0.050	0.10	mg/l							
LCS (W9I1782-BS1)				Prep	oared: 09/30/1	9 Analyzed:	10/02/19	•			
TKN, Soluble	0.993	0.050	0.10	mg/l	1.00		99	90-110			
Matrix Spike (W9I1782-MS1)	Source: 91	11115-05		Prep	oared: 09/30/1	9 Analyzed:	10/02/19	•			
TKN, Soluble	1.10	0.050	0.10	mg/l	1.00	ND	110	90-110			
Matrix Spike Dup (W9I1782-MSD1)	Source: 91	11115-05		Prepared: 09/30/19 Analyzed: 10/02/19							
TKN, Soluble	1.10	0.050	0.10	mg/l	1.00	ND	110	90-110	0.1	10	



**FINAL REPORT** 

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009 Project Number: TMDL Study September 2019 P6040555

**Reported:** 10/25/2019 09:00

**Project Manager:** Kelly Hahs



### Notes and Definitions

Estimated conc. detected <MRL and >MDL.

MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
% Rec	Percent Recovery
Dil	Dilution
dry	Sample results reported on a dry weight basis
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
NR	Not Reportable
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal

standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB)

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.



September 26th, 2019

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aquatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in *Standard Methods for the Examination of Water and Wastewater* (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Karin Wisenbaker Senior Biologist

(805) 643-5621 ex.17

**Client: Ventura Country Watershed Protection District** 

**Project: Ventura River Algae TMDL** 



### Chlorophyll a results from September 9th & 11th, 2019

Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	5.6	ug/cm2
TMDL-R2	1	11	14.0	ug/cm2
TMDL-R3	1	11	9.8	ug/cm2
TMDL-R4	1	11	3.3	ug/cm2
TMDL-CL	1	0	DRY	ug/cm2
TMDL-SA	1	0	DRY	ug/cm2
TMDL-Est	1	NA	7.0	ug/L

# /9090구 ⊋ 9 Chain of Custody

From: Aquatic Bioassay

Phone:

(805) 643-5621

To: Company: Silver State Analytical Laboratories

and Consulting Labs.

Fax:

(805) 643-2930

Address:

1135 Financial Blvd

29 N. Olive St.

Project ID: VCWPD TMDL

Reno, NV 89502

									ANALYS	IS
Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Filter Volume (mL)	Composite Volume (mL)	Area (cm²)	Chl-a		
TMDL-R4	9-Sep-19	8:40	FW	1-petri	25	432	109.4	Х		
TMDL-R3	9-Sep-19	11:05	FW	1-petri	25	477	102.1	X		
TMDL-R2	11-Sep-19	8:45	FW	1-petri	25	434	124.0	X		
TMDL-R1	11-Sep-19	10:50	FW	1-petri	25	526	102.1	Х		
TMDL-Est	9-Sep-19	13:20	FW	1-petri	500	1000	N/A	X		
cial Instructions:	Please email rep				com;	No hard copy re	quired			
INQUISHED BY:	DATE: TIME: 12/19 1336	RECEIVED	SSAGI	DATE: TIN	ME: 435	RELINQUISHE	DBY: DATE:	TIME: RE	CEIVED BY	DATE; TII



February 13, 2020

Karin Wisenbaker Aquatic Bioassay & Consulting Laboratories, Inc. 29 N. Olive Street Ventura, CA 93001

Project Name: Ventura River Algae TMDL

Physis Project ID: 2001003-001

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 1/16/2020. A total of 15 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Conventionals
Total Phosphorus by SM 4500-P E
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO2 B
Nitrate as N by SM 4500-NO3 E
Subcontract
Total Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Misty Mercier 714 602-5320 Extension 202

mistymercier@physislabs.com



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### **PROJECT SAMPLE LIST**

Rincon Consultants
Ventura River Algae TMDL

PHYSIS Project ID: 2001003-001 Total Samples: 15

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
70153	TMDL-CL	Total	1/15/2020	7:45	Liquid	Not Specified
70154	TMDL-CL	Field Filtered	1/15/2020	7:45	Liquid	Not Specified
70155	TMDL_R4	Total	1/15/2020	8:54	Liquid	Not Specified
70156	TMDL_R4	Field Filtered	1/15/2020	8:54	Liquid	Not Specified
70157	TMDL_SA	Total	1/15/2020	9:15	Liquid	Not Specified
70158	TMDL_SA	Field Filtered	1/15/2020	9:15	Liquid	Not Specified
70159	TMDL_R3	Total	1/15/2020	10:16	Liquid	Not Specified
70160	TMDL_R3	Field Filtered	1/15/2020	10:16	Liquid	Not Specified
70161	TMDL_R2	Total	1/15/2020	11:07	Liquid	Not Specified
70162	TMDL_R2	Field Filtered	1/15/2020	11:07	Liquid	Not Specified
70163	TMDL_R1	Total	1/15/2020	12:00	Liquid	Not Specified
70164	TMDL_R1	Field Filtered	1/15/2020	12:00	Liquid	Not Specified
70165	TMDL_Est	Total	1/15/2020	12:48	Liquid	Not Specified
70166	TMDL_Est	Field Filtered	1/15/2020	12:48	Liquid	Not Specified
70167	TMDL_FB	Field Filtered	1/15/2020	7:45	Liquid	Not Specified



### **ABBREVIATIONS and ACRONYMS**

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R <sub>2</sub>	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight



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### **QUALITY ASSURANCE SUMMARY**

LABORATORY BATCH: Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

PROCEDURAL BLANK: Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

ACCURACY: Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

BLANK SPIKES: BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

MATRIX SPIKES: MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

CERTIFIED REFERENCE MATERIALS: CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

LABORATORY CONTROL MATERIAL: LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

LABORATORY CONTROL SPIKES: LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

SURROGATES: A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to



the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

HOLDING TIME: Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes.

SAMPLE STORAGE/RETENTION: In order to maintain chemical integrity prior to analysis, all samples submitted to Physis are refrigerated (liquids) or frozen (solids) upon receipt unless otherwise recommended by applicable methods. Solid samples are retained for 1 year from collection while liquid samples are retained until method recommended holding times elapse.

TOTAL/DISSOLVED FRACTION: In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.



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## **PHYSIS QUALIFIER CODES**

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
В	analyte was detected in the procedural blank greater than 10 times the MDL
Е	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
Н	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified accuracy and/or precision acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore accuracy and/or precision acceptance limits do not apply
SL	analyte results were lower than 10 times the MDL, therefore accuracy and/or precision acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore accuracy and/or precision acceptance limits do not apply
Q	analyte was outside the specified QAPP acceptance limits for precision and/or accuracy but within Physis derived acceptance limits, therefore the sample data was reported without further clarification
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

# TERRA REPORTA AURA ENVIRON RES, INC.

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PHYSIS Project ID: 2001003-001 Client: Rincon Consultants

Project: Ventura River Algae TMDL

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			Conve	ention	als						
ANALYTE	Method	Units	RESULT	MDL	RL	Fraction	QA CODE	Batch ID	<b>Date Processed</b>	Date Ana	alyzed
Sample ID: 70153-R1	TMDL-CL Total		Matrix: Liquid	Dilutio	n Factor:	ı San	npled: 15-Ja	n-20 7:45	Received	: 16-Jan-20	)
Total Phosphorus	SM 4500-P E	mg/L	0.0193	0.016	0.02	NA	J	C-47088	21-Jan-20	22-Jan-20	10:00
Sample ID: 70154-R1	TMDL-CL Field Filtered		Matrix: Liquid	Dilutio	n Factor:	ı San	npled: 15-Ja	n-20 7:45	Received	: 16-Jan-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	ND	0.01	0.02	NA		C-47101	17-Jan-20	11-Feb-20	15:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47087	17-Jan-20	17-Jan-20	7:10
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-47090	21-Jan-20	22-Jan-20	12:00
Sample ID: 70155-R1	TMDL_R4 Total		Matrix: Liquid	Dilutio	n Factor:	ı San	npled: 15-Ja	n-20 8:54	Received	: 16-Jan-20	)
Total Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.02	NA		C-47088	21-Jan-20	22-Jan-20	10:00
Sample ID: 70156-R1	TMDL_R4 Field Filtered		Matrix: Liquid	Dilutio	n Factor:	ı San	npled: 15-Ja	n-20 8:54	Received	: 16-Jan-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	1.17	0.01	0.02	NA		C-47101	17-Jan-20	11-Feb-20	15:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47087	17-Jan-20	17-Jan-20	7:10
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-47090	21-Jan-20	22-Jan-20	12:00
Sample ID: 70157-R1	TMDL_SA Total		Matrix: Liquid	Dilutio	n Factor:	ı San	npled: 15-Ja	n-20 9:15	Received	: 16-Jan-20	)
Total Phosphorus	SM 4500-P E	mg/L	0.0523	0.016	0.02	NA		C-47088	21-Jan-20	22-Jan-20	10:00
Sample ID: 70158-R1	TMDL_SA Field Filtered		Matrix: Liquid	Dilutio	n Factor:	ı San	npled: 15-Ja	n-20 9:15	Received	: 16-Jan-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	0.197	0.01	0.02	NA		C-47101	17-Jan-20	11-Feb-20	15:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47087	17-Jan-20	17-Jan-20	7:10
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0489	0.016	0.03	NA		C-47090	21-Jan-20	22-Jan-20	12:00
Sample ID: 70159-R1	TMDL_R3 Total		Matrix: Liquid	Dilutio	n Factor:	ı San	npled: 15-Ja	n-20 10:16	Received	: 16-Jan-20	)
Total Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.02	NA		C-47088	21-Jan-20	22-Jan-20	10:00

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PHYSIS Project ID: 2001003-001 Client: Rincon Consultants

Project: Ventura River Algae TMDL

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innovative solutions	, jor macure										
			Conve	ention	als						
ANALYTE	Method	Units	RESULT	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Ana	alyzed
Sample ID: 70160-R1	TMDL_R3 Field Filtered	M	atrix: Liquid	Dilutio	n Factor:	ı Samı	pled: 15-Ja	n-20 10:10	6 Received	: 16-Jan-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	0.982	0.01	0.02	NA		C-47101	17-Jan-20	11-Feb-20	15:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47087	17-Jan-20	17-Jan-20	7:10
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-47090	21-Jan-20	22-Jan-20	12:00
Sample ID: 70161-R1	TMDL_R2 Total	M	atrix: Liquid	Dilutio	n Factor:	ı Samı	pled: 15-Ja	n-20 11:0	7 Received	: 16-Jan-20	)
Total Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.02	NA		C-47088	21-Jan-20	22-Jan-20	10:00
Sample ID: 70162-R1	TMDL_R2 Field Filtered	M	atrix: Liquid	Dilutio	n Factor:	ı Samı	pled: 15-Ja	n-20 11:0	7 Received	: 16-Jan-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	0.968	0.01	0.02	NA		C-47101	17-Jan-20	11-Feb-20	15:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47087	17-Jan-20	17-Jan-20	7:10
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-47090	21-Jan-20	22-Jan-20	12:00
Sample ID: 70163-R1	TMDL_R1 Total	M	atrix: Liquid	Dilutio	n Factor:	ı Samı	pled: 15-Ja	n-20 12:0	o Received	: 16-Jan-20	)
Total Phosphorus	SM 4500-P E	mg/L	0.0258	0.016	0.02	NA		C-47088	21-Jan-20	22-Jan-20	10:00
Sample ID: 70164-R1	TMDL_R1 Field Filtered	M	atrix: Liquid	Dilutio	n Factor:	ı Samı	pled: 15-Ja	n-20 12:0	o Received	: 16-Jan-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	1.03	0.01	0.02	NA		C-47101	17-Jan-20	11-Feb-20	15:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47087	17-Jan-20	17-Jan-20	7:10
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-47090	21-Jan-20	22-Jan-20	12:00
Sample ID: 70165-R1	TMDL_Est Total	M	atrix: Liquid	Dilutio	n Factor:	ı Samı	pled: 15-Ja	n-20 12:4	8 Received	: 16-Jan-20	)
Total Phosphorus	SM 4500-P E	mg/L	0.033	0.016	0.02	NA		C-47088	21-Jan-20	22-Jan-20	10:00
Sample ID: 70166-R1	TMDL_Est Field Filtered	M	atrix: Liquid	Dilutio	n Factor:	ı Samı	pled: 15-Ja	n-20 12:4	8 Received	: 16-Jan-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	0.929	0.01	0.02	NA		C-47101	17-Jan-20	11-Feb-20	15:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47087	17-Jan-20	17-Jan-20	7:10
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0195	0.016	0.03	NA	J	C-47090	21-Jan-20	22-Jan-20	12:00

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PHYSIS Project ID: 2001003-001 Client: Rincon Consultants

**Project: Ventura River Algae TMDL** 

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### Conventionals

					00				
ANALYTE	Method	Units	RESULT	MDL	RL	Fraction Q	A CODE Batch ID	<b>Date Processed</b>	Date Analyzed
Sample ID: 70167-R1	TMDL_FB Field Filtered		Matrix: Liquid	Dilutio	n Factor:	1 Sampl	ed: 15-Jan-20 7:45	Received	: 16-Jan-20
Nitrate as N	SM 4500-NO3 E	mg/L	ND	0.01	0.02	NA	C-47101	17-Jan-20	11-Feb-20 15:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA	C-47087	17-Jan-20	17-Jan-20 7:10
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA	C-47090	21-Jan-20	22-Jan-20 12:00

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# LITY CONTRO

TRATORIES, INC.

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	1904 E. Wright Circle, Ana	1101111 011 92000	main: (/14)	002 ))20	Tux.	(/14) 602	۱ ۱ ۱ ۱ ۱ ۱	www.pnysisia	abs.com	inro@pnysisiabs.c	20111	CA ELAP #2/6	7
	Convention	nals						Q	UALI	TY CONTR	OL RE	EPORT	
SAMPLE ID		BATCH ID	RESULT	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT		ACCURACY LIMITS	PF %	RECISION LIMITS	QA CODE
Nitrate as N		Method:	SM 4500-NO3 E		Fraction:	NA I	Dilution Fac	ctor: 1	Prepare	ed: 17-Jan-20	Analy	zed: 11-Feb-	20
70152-B1	QAQC Procedural Blank	C-47101	ND	0.01	0.02	mg/L							
70152-BS1	QAQC Procedural Blank	C-47101	0.452	0.01	0.02	mg/L	0.5	0	90	68 - 135% PASS			
70152-BS2	QAQC Procedural Blank	C-47101	0.455	0.01	0.02	mg/L	0.5	0	91	68 - 135% PASS	1	25 PASS	
70154-MS1	TMDL-CL	C-47101	0.481	0.01	0.02	mg/L	0.5	0	96	80 - 120% PASS		25	
70154-MS2	TMDL-CL	C-47101	0.467	0.01	0.02	mg/L	0.5	0	93	80 - 120% PASS	3	25 PASS	
70154-R2	TMDL-CL	C-47101	ND	0.01	0.02	mg/L					0	25 PASS	
Nitrite as N		Method:	SM 4500-NO2 B	3	Fraction:	NA I	Dilution Fac	ctor: 1	Prepare	ed: 17-Jan-20	Analy	zed: 17-Jan-	20
70152-B1	QAQC Procedural Blank	C-47087	ND	0.01	0.02	mg/L							
70152-BS1	QAQC Procedural Blank	C-47087	0.0463	0.01	0.02	mg/L	0.05	0	93	49 - 120% PASS			
70152-BS2	QAQC Procedural Blank	C-47087	0.0467	0.01	0.02	mg/L	0.05	0	93	49 - 120% PASS	0	25 PASS	
70154-MS1	TMDL-CL	C-47087	0.0416	0.01	0.02	mg/L	0.05	0	83	80 - 120% PASS		25	
70154-MS2	TMDL-CL	C-47087	0.0422	0.01	0.02	mg/L	0.05	0	84	80 - 120% PASS	1	25 PASS	
70154-R2	TMDL-CL	C-47087	ND	0.01	0.02	mg/L					0	25 PASS	
Total Dissol	ved Phosphorus	Method:	SM 4500-P E		Fraction:	NA I	Dilution Fac	ctor: 1	Prepare	ed: 21-Jan-20	Analy	zed: 22-Jan	-20
70152-B1	QAQC Procedural Blank	C-47090	ND	0.016	0.03	mg/L							
70152-BS1	QAQC Procedural Blank	C-47090	0.311	0.016	0.03	mg/L	0.3	0	104	86 - 118% PASS			
70152-BS2	QAQC Procedural Blank	C-47090	0.313	0.016	0.03	mg/L	0.3	0	104	86 - 118% PASS	0	25 PASS	
70154-MS1	TMDL-CL	C-47090	0.326	0.016	0.03	mg/L	0.3	0	109	80 - 120% PASS		25	
70154-MS2	TMDL-CL	C-47090	0.327	0.016	0.03	mg/L	0.3	0	109	80 - 120% PASS	0	25 PASS	
70154-R2	TMDL-CL	C-47090	ND	0.016	0.03	mg/L					0	25 PASS	
Total Phosp	horus	Method:	SM 4500-P E		Fraction:	NA I	Dilution Fac	ctor: 1	Prepare	ed: 21-Jan-20	Analy	zed: 22-Jan	-20
70152-B1	QAQC Procedural Blank	C-47088	ND	0.016	0.02	mg/L							
70152-BS1	QAQC Procedural Blank	C-47088	0.313	0.016	0.02	mg/L	0.3	0	104	73 - 131% PASS			
70152-BS2	QAQC Procedural Blank	C-47088	0.304	0.016	0.02	mg/L	0.3	0	101	73 - 131% PASS	3	25 PASS	
70157-MS1	TMDL_SA	C-47088	0.346	0.016	0.02	mg/L	0.3	0.0521	98	80 - 120% PASS		25	
70157-MS2	TMDL_SA	C-47088	0.359	0.016	0.02	mg/L	0.3	0.0521	102	80 - 120% PASS	4	25 PASS	
70157-R2	TMDL_SA	C-47088	0.0518	0.016	0.02	mg/L					1	25 PASS	

**Client: Rincon Consultants** 

# SUBCONTRACT TERRA REPORTA ENVIRON TERRA ENVIRON TERRA REPORTA AURA ENVIRON TERRA ENVIRON TERRA REPORTA AURA ENVIRON TERRA TERRA TERRA REPORTA TERRA TE

Innovative Solutions for Nature



### **Enthalpy Analytical, LLC**

931 W. Barkley Ave - Orange, CA 92868 Tel: (714)771-6900 Fax: (714)538-1209 www.enthalpy.com info-sc@enthalpy.com

Client: PHYSIS Environmental Laboratories, Inc.

Address: 1904 E. Wright Circle Anaheim, CA 92806

Attn: Misty Mercier

Comments: 2001003-001

is an integral part of the final report.



Lab Request: 424291
Report Date: 02/07/2020
Date Received: 01/30/2020
Client ID: 13622

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter

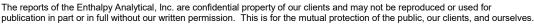
### Sample # **Client Sample ID** 424291-001 TMDL-CL 424291-002 TMDL-CL 424291-003 TMDL R4 424291-004 TMDL R4 424291-005 TMDL SA 424291-006 TMDL SA 424291-007 TMDL R3 424291-008 TMDL R3 424291-009 TMDL R2 424291-010 TMDL R2 424291-011 TMDL R1 424291-012 TMDL R1 424291-013 TMDL Est 424291-014 TMDL Est 424291-015 TMDL FB

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.



Report Review performed by: Lisa Nguyen, PM

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 45 days from date received.





Matrix: Water	Client: PHYSIS E	nviron	mental La	boratories	s, Inc. Co	ollector: Client		
Sampled: 01/15/2020 07:45	Site:							
Sample #: 424291-001	Client Sample #: TMDL-CL				Samp	le Type:		
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By Notes	
Method: EPA 351.2	Prep Method: Method						QCBatchID: QC1214230	
Total Kjeldahl Nitrogen	0.575	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP	
Matrix: Water	Client: PHYSIS E	nviron	mental La	boratories	s, Inc. Co	ollector: Client		
Sampled: 01/15/2020 07:45	Site:							
Sample #: 424291-002	Client Sample #: TMDL-CL				Samp	le Type:		
Notes: FIELD FILTERED								
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By Notes	
Method: EPA 351.2	Prep Method: Method		INIDL	NDL	Office	Trepared	QCBatchID: QC1214230	
Total Kjeldahl Nitrogen	0.624	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP	
Matrix: Water	Client: PHYSIS E	nviron	mental La	poratories	s, Inc. Co	ollector: Client		
Sampled: 01/15/2020 08:54	Site:				Comm	lo Typo:		
Sample #: 424291-003	Client Sample #: TMDL_R4				Samp	le Type:		
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By Notes	
Method: EPA 351.2	Prep Method: Method						QCBatchID: QC1214230	
Total Kjeldahl Nitrogen	0.410	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP	
Matrix: Water	Client: PHYSIS E	nviron	mental La	boratories	s, Inc. Co	ollector: Client		
Sampled: 01/15/2020 08:54	Site:							
Sample #: 424291-004	Client Sample #: TMDL_R4				Samp	le Туре:		
Notes: FIELD FILTERED								
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By Notes	
Method: EPA 351.2	Prep Method: Method						QCBatchID: QC1214230	
Total Kjeldahl Nitrogen	0.358 J	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP J	
Matrix: Water	Client: PHYSIS E	nviron	mental La	boratories	s. Inc. Co	ollector: Client		
Sampled: 01/15/2020 09:15	Site:				,			
Sample #: 424291-005	Client Sample #: TMDL_SA				Samp	le Type:		
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By Notes	
Method: EPA 351.2	Prep Method: Method	וט	IVIDE	NDL	Offics	Trepared	QCBatchID: QC1214230	
Total Kjeldahl Nitrogen	0.400	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP	
	6H / BUN/015 T			h		- 11 1 2 "		
Matrix: Water	Client: PHYSIS E	nviron	mental La	poratories	s, Inc. Co	ollector: Client		
Sampled: 01/15/2020 09:15 Sample #: 424291-006	Site: Client Sample #: TMDL_SA				Sama	le Type:		
	onent Sample #. TNDL_SA				Samp	ie i ype.		
Notes: FIELD FILTERED								
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By Notes	
Method: EPA 351.2	Prep Method: Method		0.050	0.4	m a /l	02/05/20	QCBatchID: QC1214230	
Total Kjeldahl Nitrogen	0.403	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP	
Matrix: Water	Client: PHYSIS E	nviron	mental La	boratories	s, Inc. Co	ollector: Client		
Sampled: 01/15/2020 10:16	Site:							
Sample #: 424291-007	Client Sample #: TMDL_R3				Samp	le Type:		
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By Notes	
Method: EPA 351.2	Prep Method: Method		.,,,,,,,				QCBatchID: QC1214230	
Total Kjeldahl Nitrogen	0.251 J	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP J	

Matrix: Water	Client: PHYSIS E	nviron	mental La	boratories	s, Inc. Co	Ilector: Client		
Sampled: 01/15/2020 10:16	Site:							
Sample #: 424291-008	Client Sample #: TMDL_R3				Sampl	е Туре:		
Notes: FIELD FILTERED								
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By	Notes
Method: EPA 351.2	Prep Method: Method						QCBatchID: QC1	
Total Kjeldahl Nitrogen	0.506	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP	
Matrix: Water	Client: PHYSIS E	nviron	mental La	boratories	s, Inc. Co	llector: Client		
Sampled: 01/15/2020 11:07	Site:							
Sample #: 424291-009	Client Sample #: TMDL_R2				Sampl	е Туре:		
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By	Notes
Method: EPA 351.2	Prep Method: Method					•		1214230
Total Kjeldahl Nitrogen	0.285 J	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP	J
Matrix: Water	Client: PHYSIS E	nviron	mental La	boratories	s, Inc. Co	llector: Client		
Sampled: 01/15/2020 11:07	Site:							
Sample #: 424291-010	Client Sample #: TMDL_R2				Sampl	е Туре:		
Notes: FIELD FILTERED								
Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By	Notes
Method: EPA 351.2	Prep Method: Method						QCBatchID: QC1	1214230
Total Kjeldahl Nitrogen	0.298 J	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP	J
Matrix: Water	Client: PHYSIS E	nviron	mental La	boratories	s, Inc. Co	Ilector: Client		
Matrix: Water Sampled: 01/15/2020 12:00	Client: PHYSIS E Site:	inviron	mental La	boratories	s, Inc. Co	llector: Client		
			mental La	boratories	•	e Type:		
Sampled: 01/15/2020 12:00	Site:		mental La	boratories	•		Analyzed By	Notes
Sampled: 01/15/2020 12:00 Sample #: 424291-011	Site: Client Sample #: TMDL_R1				Sampl	е Туре:	Analyzed By QCBatchID: QC1	
Sampled: 01/15/2020 12:00 Sample #: 424291-011 Analyte	Site: Client Sample #: TMDL_R1  Result				Sampl	е Туре:		
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte  Method: EPA 351.2	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method	DF 1	MDL 0.052	<b>RDL</b> 0.4	Sampl Units mg/L	e Type: Prepared	QCBatchID: QC1	1214231
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte  Method: EPA 351.2  Total Kjeldahl Nitrogen	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J	DF 1	MDL 0.052	<b>RDL</b> 0.4	Sampl Units mg/L	e Type: Prepared 02/05/20	QCBatchID: QC1	1214231
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte  Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J  Client: PHYSIS E	DF 1	MDL 0.052	<b>RDL</b> 0.4	Sampl Units mg/L s, Inc. Co	e Type: Prepared 02/05/20	QCBatchID: QC1	1214231
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte  Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J  Client: PHYSIS E Site:	DF 1	MDL 0.052	<b>RDL</b> 0.4	Sampl Units mg/L s, Inc. Co	Prepared 02/05/20 ellector: Client	QCBatchID: QC1	1214231
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte  Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012  Notes: FIELD FILTERED	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J  Client: PHYSIS E Site: Client Sample #: TMDL_R1	DF 1	MDL 0.052 mental La	RDL 0.4 boratories	Sampl Units mg/L s, Inc. Co	Prepared 02/05/20  ollector: Client e Type:	QCBatchID: QC1 02/06/20 TP	J
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte  Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J  Client: PHYSIS E Site:	DF 1	MDL 0.052	<b>RDL</b> 0.4	Sampl Units mg/L s, Inc. Co	Prepared 02/05/20 ellector: Client	QCBatchID: QC1	J Notes
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte  Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012  Notes: FIELD FILTERED  Analyte	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J  Client: PHYSIS E Site: Client Sample #: TMDL_R1	DF 1	MDL 0.052 mental La	RDL 0.4 boratories	Sampl Units mg/L s, Inc. Co	Prepared 02/05/20  ollector: Client e Type:	QCBatchID: QC1 02/06/20 TP  Analyzed By	J Notes
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012  Notes: FIELD FILTERED  Analyte Method: EPA 351.2	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J  Client: PHYSIS E Site: Client Sample #: TMDL_R1  Result  Prep Method: Method	DF 1 Environ DF	MDL 0.052 mental La MDL 0.052	RDL  0.4  boratories  RDL  0.4	Sampl Units mg/L s, Inc. Co Sampl Units mg/L	Prepared  02/05/20  ollector: Client e Type:  Prepared	QCBatchID: QC1 02/06/20 TP  Analyzed By QCBatchID: QC1	Notes 1214231
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte  Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012  Notes: FIELD FILTERED  Analyte  Method: EPA 351.2  Total Kjeldahl Nitrogen	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J  Client: PHYSIS E Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.369 J	DF 1 Environ DF	MDL 0.052 mental La MDL 0.052	RDL  0.4  boratories  RDL  0.4	Sampl Units mg/L s, Inc. Co Sampl Units mg/L	e Type: Prepared  02/05/20  ollector: Client e Type: Prepared  02/05/20	QCBatchID: QC1 02/06/20 TP  Analyzed By QCBatchID: QC1	Notes 1214231
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte Method: EPA 351.2 Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012 Notes: FIELD FILTERED Analyte Method: EPA 351.2 Total Kjeldahl Nitrogen	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J  Client: PHYSIS E Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.369 J  Client: PHYSIS E	DF 1 Environ 1	MDL 0.052 mental La MDL 0.052	RDL  0.4  boratories  RDL  0.4	Sampl Units mg/L S, Inc. Co Sampl Units mg/L S, Inc. Co	e Type: Prepared  02/05/20  ollector: Client e Type: Prepared  02/05/20	QCBatchID: QC1 02/06/20 TP  Analyzed By QCBatchID: QC1	Notes 1214231
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012  Notes: FIELD FILTERED  Analyte Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:48	Site: Client Sample #: TMDL_R1  Result Prep Method: Method  0.342 J  Client: PHYSIS E Site: Client Sample #: TMDL_R1  Result Prep Method: Method  0.369 J  Client: PHYSIS E Site:	DF 1 Environ 1	MDL 0.052 mental La MDL 0.052	RDL  0.4  boratories  RDL  0.4	Sampl Units mg/L S, Inc. Co Sampl Units mg/L S, Inc. Co	Prepared  02/05/20  ollector: Client e Type:  Prepared  02/05/20  ollector: Client	QCBatchID: QC1 02/06/20 TP  Analyzed By QCBatchID: QC1	Notes 1214231 J
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012  Notes: FIELD FILTERED  Analyte Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:48 Sample #: 424291-013	Site: Client Sample #: TMDL_R1  Result Prep Method: Method  0.342 J  Client: PHYSIS E Site: Client Sample #: TMDL_R1  Result Prep Method: Method  0.369 J  Client: PHYSIS E Site: Client Sample #: TMDL_ES	DF 1 Environ t	MDL 0.052 mental La  MDL 0.052 mental La	RDL  0.4 boratories  RDL  0.4 boratories	Sampl Units mg/L S, Inc. Co Sampl Units mg/L S, Inc. Co	Prepared  02/05/20  ollector: Client e Type:  Prepared  02/05/20  ollector: Client e Type:	QCBatchID: QC1 02/06/20 TP  Analyzed By QCBatchID: QC1 02/06/20 TP	Notes 1214231 J
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte Method: EPA 351.2 Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012 Notes: FIELD FILTERED Analyte Method: EPA 351.2 Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:48 Sample #: 424291-013  Analyte	Site: Client Sample #: TMDL_R1  Result Prep Method: Method  0.342 J  Client: PHYSIS E Site: Client Sample #: TMDL_R1  Result Prep Method: Method  0.369 J  Client: PHYSIS E Site: Client Sample #: TMDL_Esite: Result	DF 1 Environ t	MDL 0.052 mental La  MDL 0.052 mental La	RDL  0.4 boratories  RDL  0.4 boratories	Sampl Units mg/L S, Inc. Co Sampl Units mg/L S, Inc. Co	Prepared  02/05/20  ollector: Client e Type:  Prepared  02/05/20  ollector: Client e Type:	QCBatchID: QC1 02/06/20 TP  Analyzed By QCBatchID: QC1 02/06/20 TP	Notes 1214231 J
Sampled: 01/15/2020 12:00 Sample #: 424291-011  Analyte Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:00 Sample #: 424291-012  Notes: FIELD FILTERED Analyte Method: EPA 351.2  Total Kjeldahl Nitrogen  Matrix: Water Sampled: 01/15/2020 12:48 Sample #: 424291-013  Analyte Method: EPA 351.2	Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.342 J  Client: PHYSIS E Site: Client Sample #: TMDL_R1  Result  Prep Method: Method  0.369 J  Client: PHYSIS E Site: Client Sample #: TMDL_Es  Result  Prep Method: Method	DF 1 Environ t DF 1	MDL 0.052  mental La  MDL 0.052  mental La	RDL 0.4 boratories RDL 0.4 boratories	Sampl Units mg/L s, Inc. Co Sampl Units mg/L s, Inc. Co Sampl Units mg/L	Prepared  02/05/20  Dilector: Client e Type:  Prepared  02/05/20  Dilector: Client e Type:  Prepared  Prepared  Prepared	QCBatchID: QC1 02/06/20 TP  Analyzed By QCBatchID: QC1 02/06/20 TP  Analyzed By QCBatchID: QC1	Notes 1214231 J

Analyzed By Notes

02/06/20

QCBatchID: QC1214231

TP

Analyte

Method: EPA 351.2

Total Kjeldahl Nitrogen

Sample #: 424291-014

Notes: FIELD FILTERED

Client Sample #: TMDL\_Est

Prep Method: Method

Result

0.387 J

DF

1

MDL

0.052

**RDL** 

0.4

Sample Type:

**Prepared** 

02/05/20

**Units** 

mg/L

Matrix: Water Client: PHYSIS Environmental Laboratories, Inc. Collector: Client

Sample #: 424291-015 Client Sample #: TMDL\_FB Sample Type:

Notes: FIELD FILTERED

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed By Notes
Method: EPA 351.2	Prep Method: Method						QCBatchID: QC1214231
Total Kjeldahl Nitrogen	ND	1	0.052	0.4	mg/L	02/05/20	02/06/20 TP

QCBatchID: QC1214230	Analyst:	trinh		Meth	od:	EPA 351.2						
Matrix: Water	Analyzed:		2020	Instrum	ent:	CHEM (group	)					
			BI	ank Sum	mar	У						
			Blank									
Analyte			Result	Unit	s	MDL	RI	DL	No	tes		
QC1214230MB1												
Total Kjeldahl Nitrogen			ND	mg/l	L	0.052	0.	4				
L	ab Conti	rol Spi	ike/ Lab	Control	Spil	ke Duplicat	e Sur	nmary	,			
		Spike	Amount	Spike Re	sult		Reco	veries		Limi	its	
Analyte		LCS	LCSD	LCS I	CSE	Units	LCS	LCSD	RPD	%Rec	RPE	Notes
QC1214230LCS1, QC1214230LCSD1	,											
Total Kjeldahl Nitrogen		2.5	2.5	2.6	2.5	mg/L	104	100	4	90-110	20	
	Mat	rix Sp	ike/Matı	rix Spike	Dup	olicate Sum	mary	,				
	Sample	Spike	Amount	Spike Re	sult		Reco	overies		Limit	s	
Analyte	Amount	MS	MSD	MS	MSD	Units	MS	MSD	RPD	%Rec	RPD	Notes
QC1214230MS1, QC1214230MSD1									•	So	urce:	424291-001

0.575

Total Kjeldahl Nitrogen

12.5

12.5

15

14

mg/L

115 107

6.9

90-110 20

М

QCBatchID: QC1214231	Analyst:	trinh		Metho	d: E	EPA 351.2						
Matrix: Water	Analyzed:	02/06/	2020	Instrume	nt: C	CHEM (group)	)					
			BI	ank Sumr	nary	, , , , , , , , , , , , , , , , , , ,						
			Blank									
Analyte			Result	Units		MDL	RI	DL	No	tes		
QC1214231MB1	"				-					1		
Total Kjeldahl Nitrogen			ND	mg/L		0.052	0.	4				
	I ah Cant	"al Cn	ila/Lab	A	:1.	- Dunlingto		nmori				
	Lab Com	•	Amount	Spike Res	•	e Duplicate		veries		Lim	its	
Analyte	Lab Com	•		Spike Res	•					Lim %Rec	its RPD	Notes
Analyte	Lab Com	Spike	Amount	Spike Res	ult		Reco	veries				Notes
	Lab Com	Spike	Amount	Spike Res	ult		Reco	veries				Notes
Analyte QC1214231LCS1, QC1214231LCSD1		Spike LCS 2.5	Amount LCSD 2.5	Spike Res	ult CSD	Units	Reco LCS	LCSD 96	RPD	%Rec	RPD	Notes
Analyte QC1214231LCS1, QC1214231LCSD1		Spike LCS 2.5	Amount LCSD 2.5	Spike Res	ult CSD 2.4	Units mg/L	Reco LCS 96 <b>mary</b>	LCSD 96	RPD	%Rec	RPD 20	Notes

Total Kjeldahl Nitrogen

0.604

12.5

12.5

13

12

99

mg/L

91

8.0

90-110 20

### **Data Qualifiers and Definitions**

### **Qualifiers**

A See Report Comments.

B Analyte was present in an associated method blank.

B1 Analyte was present in a sample and associated method blank greater than MDL but less than RDL.

**BQ1** No valid test replicates. Sample Toxicity is possible. Best result was reported.

BQ2 No valid test replicates.

BQ3 No valid test replicates. Final DO is less than 1.0 mg/L. Result may be greater.

BQ4 Minor Dissolved Oxygen loss was observed in the blank water check, however, the LCS was within criteria, validating the batch.

**BQ5** Minor Dissolved Oxygen loss was observed in the blank water check.

C Possible laboratory contamination.

D RPD was not within control limits. The sample data was reported without further clarification.

**D1** Lesser amount of sample was used due to insufficient amount of sample supplied.

D2 Reporting limit is elevated due to sample matrix. Target analyte was not detected above the elevated reporting limit.

D3 Insufficient sample was supplied for TCLP. Client was notified. TCLP was performed per the Client's instructions.

**DW** Sample result is calculated on a dry weigh basis.

E Concentration is estimated because it exceeds the quantification limits of the method.

The sample was read outside of the method required incubation period.

IR Inconclusive Result. Legionella is present, however, there is possible non-specific agglutination preventing specific identification.

J Reported value is estimated

L The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample

data was reported with qualifier.

LCS did not meet recovery criteria, however, the MS and/or MSD met LCS recovery criteria, validating the batch.

M The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated

LCS and/or LCSD was within control limits and the sample data was reported without further clarification.

M1 The matrix spike (MS) or matrix spike duplicate (MSD) is not within control limits due to matrix interference.

M2 The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits. The associated LCS and/or LCSD was not

within control limits. Sample result is estimated.

N1 Sample chromatography does not match the specified TPH standard pattern.

NC The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not

apply.

P Sample was received without proper preservation according to EPA guidelines.

P1 Temperature of sample storage refrigerator was out of acceptance limits.

P2 The sample was preserved within 24 hours of collection in accordance with EPA 218.6.

P3 Per Client request, sample was composited for volatile analysis. Sample compositing for volatile analysis is not recommended

due to potential loss of target analytes. Results may be biased low.

Q1 Analyte Calibration Verification exceeds criteria. The result is estimated.
Q2 Analyte calibration was not verified and the result was estimated.

Q3 Analyte initial calibration was not available or exceeds criteria. The result was estimated.

S The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery

was within control limits and the sample data was reported without further clarification.

**S1** The associated surrogate recovery was out of control limits; result is estimated.

S2 The surrogate was diluted out due to the presence of high concentrations of target and/or non-target compounds. Surrogate

recoveries in the associated batch QC met recovery criteria.

S3 Internal Standard did not meet recovery limits. Analyte concentration is estimated.

T Sample was extracted/analyzed past the holding time.

T1 Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).

T2 Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.

T3 Sample received and analyzed out of hold time per client's request.

T4 Sample was analyzed out of hold time per client's request.

T5 Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.

T6 Hold time is indeterminable due to unspecified sampling time.

T7 Sample was analyzed past hold time due to insufficient time remaining at time of receipt.

### **Definitions**

**DF** Dilution Factor

MDL Method Detection Limit. Result is reported ND when it is less than or equal to MDL.

ND Analyte was not detected or was less than the detection limit.

NR Not Reported. See Report Comments.

RDL Reporting Detection Limit

TIC Tentatively Identified Compounds



## Chain of Custody

# Physis Project ID: 2001003-001

Anaheim, CÁ 92806 714-605-5320 (office), 714-335-5918 (cell) sc@physislabs.com Physis Environmental Laboratories, Inc. 1904 E. Wrigth Cir. Misty Mercier From:

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	7	
	7	

Lisa Nguyen 931 W. Barkley Ave. Orange, CA 92868 Lisa.Nguyen@enthalpy.com nthalpy Analytical

Physis SOS Number:	2001003			PO Number:		Samp	Sampled by:	
Turnaround Time	V Standard	□ RUSH:	Business Days	Type of ice used:	BLUE 🔽	<b>▼</b> WET	□ DRY	
tono d	▼ PDF/EDD	SWAMP EDD	CEDEN EDD	T Sin Posting	FEDEX	UPS	USPS	
nepolt rolliat	Other EDD:			Simpled vid:	☐ Client 🔽	V Physis	Other:	
Sample ID	Samp	Sample Description	Requested An	Requested Analyses/Method	Sample Date	Sample Time	Matrix	# of Bottles
TMDL-CL		Total	Total Kjeldahl Nit	Total Kjeldahl Nitrogen (EPA 351.2)	1/15/2020	7:45:00 AM	Liquid	-
TMDL-CL	Fié	Field Filtered	Total Kjeldahl Nitrogen (	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	1/15/2020	7:45:00 AM	Liquid	
TMDL_R4		Total	Total Kjeldahl Nit	Total Kjeldahl Nitrogen (EPA 351.2)	1/15/2020	8:54:00 AM	Liquid	<b>-</b>
TMDL_R4	Fie	Field Filtered	Total Kjeldahl Nitrogen (I	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	1/15/2020	8:54:00 AM	Liquid	<b>-</b>
TMDL_SA		Total	Total Kjeldahl Nit	Total Kjeldahl Nitrogen (EPA 351.2)	1/15/2020	9:15:00 AM	Liquid	<del></del>
TMDL_SA	Fie	Field Filtered	Total Kjeldahl Nitrogen (I	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	1/15/2020	9:15:00 AM	Liquid	<b>-</b>
TMDL_R3		Total	Total Kjeldahl Nit	Total Kjeldahl Nitrogen (EPA 351.2)	1/15/2020	10:16:00 AM	Liquid	<u>_</u>

Page 1 of 2	main (714) 602-5320 Fax (714) 602-5321	CA ELAP #2769	info@physislabs.com	o www.physislabs.com	uary 30, 202	Thursday, January 30, 2020
Time:	Sign:	Org:	Time:		Sign:	Org:
Date:	Print:	Received By:	Date:		: Print:	Relinquished: Print:
Time: 16:32	Sign: Lywn	Org:	ル Time: /632	Moralla	Sign:	Org: Physis Sign:
Date: 1/30/20	Print: Elizabeth Raminez Date: 1/30/20	Received By:	We Date: $1/20/20$ Received By:	Print: CETSAC NWADIUN		Relinquished:



### Chain of Custody

# Physis Project ID: 2001003-001

Physis Environmental Laboratories, Inc. Misty Mercier From:

1904 E. Wrigth Cir.

Anaheim, CA 92806

714-605-5320 (office), 714-335-5918 (cell)

sc@physislabs.com

Orange, CA 92868 Lisa.Nguyen@enthalpy.com Lisa Nguyen 931 W. Barkley Ave. **Enthalpy Analytical** <u>ن</u>

Sample ID	Sample Description	Requested Analyses/Method	Sample Date	Sample Time	Matrix	# of Bottles
TMDL_R3	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	1/15/2020	10:16:00 AM	Liquid	-
TMDL_R2	Total	Total Kjeldahl Nitrogen (EPA 351.2)	1/15/2020	11:07:00 AM	Liquid	-
TMDL_R2	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	1/15/2020	11:07:00 AM	Liquíd	-
TMDL_R1	Total	Total Kjeldahl Nitrogen (EPA 351.2)	1/15/2020	12:00:00 PM	Liquid	-
TMDL_R1	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	1/15/2020	12:00:00 PM	Liquid	_
TMDL_Est	Total	Total Kjeldahl Nitrogen (EPA 351.2)	1/15/2020	12:48:00 PM	Liquid	_
TMDL_Est	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	1/15/2020	12:48:00 PM	Liquid	_
TMDL_FB	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	1/15/2020	7:45:00 AM	Liquíd	_
Notes/Comments:	i	Report Down to the MDI				

Report Down to the MDL

## Please Report EPA 351.2 Required QA Frequency and Acceptance Ranges. Please Contact Lisa Nguyen or Dan Chavez if any Questions.

Print: Elizabeth Dam 1482 Date: 1/30/20	- Sign: 2977 Time: 16:32	Print: Date:	Sign: Time:
Received By:	Org:	Received By:	Org:
Print: CEASAK, NWADIWE Date: 1/30/20	Sign: Africadu Time: 1632 Org.	Print:	Sign: Time:
Relinquished:	Org: Physis	Relinquished:	Org:

Thursday, January 30, 2020

www.physislabs.com

info@physislabs.com

CA ELAP #2769

main (714) 602-5320 fax (714) 602-5321

2,3/1,8

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### **SAMPLE ACCEPTANCE CHECKLIST**

Section 1				
Client: Physis	Project: 2001003-001			
Date Received: 1/30/20	Sampler's Name Present:	Yes	√No	
Section 2 Sample(s) received in a cooler? ✓ Yes, How many? 1	NO (skin saction 2)		e Temp (°C)	
Sample Temp (°C), One from each cooler: #1: 2.3  (Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptant the same day as sample receipt to have a higher temperature Shipping Information:	#2:#3:_ nce range is <10°C but not frozen). It is	_#4: acceptable		-
Section 3 Was the cooler packed with: ✓ Ice	Bubble Wrap Styrof	oam		
Was the cooler packed with: ✓ Ice	Other#3:	 _#4:		
Section 4		YES	NO	N/A
Was a COC received?		<u>√</u>		, .
Are sample IDs present?		1		
Are sampling dates & times present?		1		
Is a relinquished signature present?		1		
Are the tests required clearly indicated on the COC?		<b>√</b>		
Are custody seals present?			<b>√</b>	
If custody seals are present, were they intact?				✓
Are all samples sealed in plastic bags? (Recommended fo	r Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 be	elow.	✓		
Did all bottle labels agree with COC? (ID, dates and times)		✓		
Were the samples collected in the correct containers for t	the required tests?	✓		
Are the containers labeled with the correct preserva	atives?	✓		
Is there headspace in the VOA vials greater than 5-6 mm i	n diameter?			✓
Was a sufficient amount of sample submitted for the requ	uested tests?	✓		
Section 5 Explanations/Comments				
Section 6				
For discrepancies, how was the Project Manager notified?	P Verbal PM Initials: Email (email sent to/o			
Project Manager's response:	_			
Completed By:	1/30/20			

# CHAIN OF TERRA GUSTEO DA AURA ENVIRON ESTA DE LA COMPANIES, INC.

Innovative Solutions for Nature

Aquatic Bioassay (805) 643-5621 Phone: To: Compan PHYSIS and Consulting Labs. Fax: (805) 643-2930 Address 1904 E Wright Circle 29 N. Olive St. Project ID: Ventura River Anaheim, CA 92806 Ventura, CA 93001 AlgaeTMDL Phone: (714) 335-5793 **ANALYSIS** Phosphorous (SM 4500-P E) Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B) Phosphorous (SM Total TKN (EPA 351.2) Nitrite Dissolved TKN Volume/ Sample I.D. No. Sample Date EPA 351.2) Time Matrix Reps No. Dissolved 1500-P E) rotal Comments 3-250 mL, pl; TMDL-CL 2-250 mL, ql. Water 3-250 mL, pl: TMDL-R4 2-250 mL, gl. Water 3-250 mL, pl; TMDL-SA 2-250 mL, ql. Water 3-250 mL, pl; TMDL-R3 Water 2-250 mL, gl. 3-250 mL, pl; TMDL-R2 Water 2-250 mL, gl. 3-250 mL, pl; TMDL-R1 X Water 2-250 mL, gl. 3-250 mL, pl; TMDL-Est X 2-250 mL, gl. Water 2-250 mL, pl; TMDL-FB 0745 Water 1-250 mL, gl. N/A N/A Field filtered Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.com RELINQUISHED BY RECEIVED BY Name: Richard Honken Signature: The Hon **RELINQUISHED BY** Name: Karis Wise aba Kyr Name: alt kis Wallengren Signature: Acure Signature: Signature: CA Date: Time: Time: 133° Date: 1/15/20 Time: \34



### Sample Receipt Summary

Client: Rincon Consultants	Date Received: 1/16/2020 Re	eceived By: RGH Inspected By: RGH
Courier:	Cooler:	Temperature:
☐ Physis ☐ FEDEX 🗹 UPS ☐ Client	✓ Cooler	2 □ BLUE ☑ WET □ DRY
Start End Other:	Other:	☐ None 3.6°C
	Sample Integrity Upon Receipt:	
<ol> <li>COC(s) included and completely filled of a containers arrived intact</li> <li>All samples listed on COC(s) are present information on containers consistent in a containers consistent in a container consistent in a container consistent in a container consistent in a container containe</li></ol>	with information on COC(s)	Yes Yes Yes Yes Yes

Notes:



March 13, 2020

Karin Wisenbaker Aquatic Bioassay & Consulting Laboratories, Inc. 29 N. Olive Street Ventura, CA 93001

Project Name: Ventura River Algae TMDL

Physis Project ID: 2001003-002

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 2/13/2020. A total of 14 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Conventionals					
Total Phosphorus by SM 4500-P E					
Total Dissolved Phosphorus by SM 4500-P E					
Nitrite as N by SM 4500-NO2 B					
Nitrate as N by SM 4500-NO3 E					
Subcontract					
Total Kjeldahl Nitrogen (Field Filtered) by EPA 351.2					
Total Kjeldahl Nitrogen by EPA 351.2					

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Misty Mercier 714 602-5320 Extension 202 mistymercier@physislabs.com



PROJECT SAMPLE LIST

Aquatic Bioassay & Consulting Laboratories, Inc.

PHYSIS Project ID: 2001003-002

Ventura River Algae TMDL Total Samples: 14

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
70995	TMDL-CL	Total	2/12/2020	7:50	Liquid	Not Specified
70996	TMDL-CL	Field Filtered	2/12/2020	7:50	Liquid	Not Specified
70997	TMDL-R4	Total	2/12/2020	8:35	Liquid	Not Specified
70998	TMDL-R4	Field Filtered	2/12/2020	8:35	Liquid	Not Specified
70999	TMDL-SA	Total	2/12/2020	9:00	Liquid	Not Specified
71000	TMDL-SA	Field Filtered	2/12/2020	9:00	Liquid	Not Specified
71001	TMDL-R3	Total	2/12/2020	9:45	Liquid	Not Specified
71002	TMDL-R3	Field Filtered	2/12/2020	9:45	Liquid	Not Specified
71003	TMDL-R2	Total	2/12/2020	10:35	Liquid	Not Specified
71004	TMDL-R2	Field Filtered	2/12/2020	10:35	Liquid	Not Specified
71005	TMDL-R1	Total	2/12/2020	11:30	Liquid	Not Specified
71006	TMDL-R1	Field Filtered	2/12/2020	11:30	Liquid	Not Specified
71007	TMDL-Est	Total	2/12/2020	12:05	Liquid	Not Specified
71008	TMDL-Est	Field Filtered	2/12/2020	12:05	Liquid	Not Specified



### **ABBREVIATIONS and ACRONYMS**

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight

### **QUALITY ASSURANCE SUMMARY**

LABORATORY BATCH: Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

PROCEDURAL BLANK: Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

ACCURACY: Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

BLANK SPIKES: BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

MATRIX SPIKES: MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

CERTIFIED REFERENCE MATERIALS: CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

LABORATORY CONTROL MATERIAL: LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

LABORATORY CONTROL SPIKES: LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

SURROGATES: A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to



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the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

HOLDING TIME: Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes.

SAMPLE STORAGE/RETENTION: In order to maintain chemical integrity prior to analysis, all samples submitted to Physis are refrigerated (liquids) or frozen (solids) upon receipt unless otherwise recommended by applicable methods. Solid samples are retained for 1 year from collection while liquid samples are retained until method recommended holding times elapse.

TOTAL/DISSOLVED FRACTION: In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.



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### **PHYSIS QUALIFIER CODES**

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
В	analyte was detected in the procedural blank greater than 10 times the MDL
Е	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
Н	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified accuracy and/or precision acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore accuracy and/or precision acceptance limits do not apply
SL	analyte results were lower than 10 times the MDL, therefore accuracy and/or precision acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore accuracy and/or precision acceptance limits do not apply
Q	analyte was outside the specified QAPP acceptance limits for precision and/or accuracy but within Physis derived acceptance limits, therefore the sample data was reported without further clarification
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

## TERRA REPORTA AURA ENVIRON RES, INC.

Innovative Solutions for Nature



PHYSIS Project ID: 2001003-002

Client: Aquatic Bioassay & Consulting Laboratories, Inc.

**Project: Ventura River Algae TMDL** 

			Conve	ention	als				
ANALYTE	Method	Units	RESULT	MDL	RL	Fraction Q	A CODE Batch ID	Date Processed	Date Analyzed
Sample ID: 70995-R1	TMDL-CL Total	N	latrix: Liquid	Dilutio	on Factor: 1	Sampl	ed: 12-Feb-20 7:50	Received	: 13-Feb-20
Total Phosphorus	SM 4500-P E	mg/L	0.0267	0.016	0.02	NA	C-47114	21-Feb-20	02-Mar-20 15:00
Sample ID: 70996-R1	TMDL-CL Field Filtered	N	latrix: Liquid	Dilutio	on Factor: 1	Sampl	ed: 12-Feb-20 7:50	Received	: 13-Feb-20
Nitrate as N	SM 4500-NO3 E	mg/L	ND	0.01	0.02	NA	C-47132	14-Feb-20	10-Mar-20 16:30
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA	C-47104	14-Feb-20	14-Feb-20 7:30
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA	C-47127	04-Mar-20	o6-Mar-20 9:00
Sample ID: 70997-R1	TMDL-R4 Total	N	latrix: Liquid	Dilutio	on Factor: 1	Sampl	ed: 12-Feb-20 8:35	Received	: 13-Feb-20
Total Phosphorus	SM 4500-P E	mg/L	0.0356	0.016	0.02	NA	C-47114	21-Feb-20	02-Mar-20 15:00
Sample ID: 70998-R1	TMDL-R4 Field Filtered	N	latrix: Liquid	Dilutio	on Factor: 1	Sampl	ed: 12-Feb-20 8:35	Received	: 13-Feb-20
Nitrate as N	SM 4500-NO3 E	mg/L	1.62	0.01	0.02	NA	C-47132	14-Feb-20	10-Mar-20 16:30
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA	C-47104	14-Feb-20	14-Feb-20 7:30
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA	C-47127	04-Mar-20	o6-Mar-20 9:00
Sample ID: 70999-R1	TMDL-SA Total	N	latrix: Liquid	Dilutio	on Factor: 1	Sampl	ed: 12-Feb-20 9:00	Received	: 13-Feb-20
Total Phosphorus	SM 4500-P E	mg/L	0.0448	0.016	0.02	NA	C-47114	21-Feb-20	02-Mar-20 15:00
Sample ID: 71000-R1	TMDL-SA Field Filtered	N	latrix: Liquid	Dilutio	on Factor: 1	Sampl	ed: 12-Feb-20 9:00	) Received	: 13-Feb-20
Nitrate as N	SM 4500-NO3 E	mg/L	0.413	0.01	0.02	NA	C-47132	14-Feb-20	10-Mar-20 16:30
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA	C-47104	14-Feb-20	14-Feb-20 7:30
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA	C-47127	04-Mar-20	o6-Mar-20 9:00
Sample ID: 71001-R1	TMDL-R3 Total	N	latrix: Liquid	Dilutio	on Factor: 1	Sampl	ed: 12-Feb-20 9:45	Received	: 13-Feb-20
Total Phosphorus	SM 4500-P E	mg/L	0.0208	0.016	0.02	NA	C-47114	21-Feb-20	02-Mar-20 15:00

1904 E. Wright Circle, Anaheim CA 92806 fax: (714) 602-5321 main: (714) 602-5320 www.physislabs.com info@physislabs.com CA ELAP #2769 ar - 1 of 2



PHYSIS Project ID: 2001003-002

Client: Aquatic Bioassay & Consulting Laboratories, Inc.

Project: Ventura River Algae TMDL

### Conventionals

			Conve	HUOH	Idis						
ANALYTE	Method	Units	RESULT	MDL	RL	Fraction	QA CODE	Batch ID	<b>Date Processed</b>	Date Ana	lyzed
Sample ID: 71002-R1	TMDL-R3 Field Filtered	Λ	Natrix: Liquid	Dilutio	on Factor: 1	. San	npled: 12-Fe	b-20 9:45	Received	13-Feb-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	1.29	0.01	0.02	NA		C-47132	14-Feb-20	10-Mar-20	16:30
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47104	14-Feb-20	14-Feb-20	7:30
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-47127	04-Mar-20	06-Mar-20	9:00
Sample ID: 71003-R1	TMDL-R2 Total	Λ	Natrix: Liquid	Dilutio	on Factor: 1	San	npled: 12-Fe	eb-20 10:3	5 Received	13-Feb-20	)
Total Phosphorus	SM 4500-P E	mg/L	0.0561	0.016	0.02	NA		C-47114	21-Feb-20	02-Mar-20	15:00
Sample ID: 71004-R1	TMDL-R2 Field Filtered	N	Matrix: Liquid	Dilutio	on Factor: 1	. San	npled: 12-Fe	b-20 10:3	5 Received	13-Feb-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	1.68	0.01	0.02	NA		C-47132	14-Feb-20	10-Mar-20	16:30
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47104	14-Feb-20	14-Feb-20	7:30
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0306	0.016	0.03	NA		C-47127	04-Mar-20	06-Mar-20	9:00
Sample ID: 71005-R1	TMDL-R1 Total	Λ	Natrix: Liquid	Dilutio	on Factor: 1	. San	npled: 12-Fe	b-20 11:30	Received	13-Feb-20	)
Total Phosphorus	SM 4500-P E	mg/L	0.0555	0.016	0.02	NA		C-47114	21-Feb-20	02-Mar-20	15:00
Sample ID: 71006-R1	TMDL-R1 Field Filtered	Λ	Natrix: Liquid	Dilutio	on Factor: 1	. San	npled: 12-Fe	b-20 11:30	Received	13-Feb-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	1.36	0.01	0.02	NA		C-47132	14-Feb-20	10-Mar-20	16:30
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47104	14-Feb-20	14-Feb-20	7:30
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0181	0.016	0.03	NA	J	C-47127	04-Mar-20	06-Mar-20	9:00
Sample ID: 71007-R1	TMDL-Est Total	Λ	Matrix: Liquid	Dilutio	on Factor: 1	San	npled: 12-Fe	b-20 12:0	5 Received	13-Feb-20	)
Total Phosphorus	SM 4500-P E	mg/L	0.0527	0.016	0.02	NA		C-47114	21-Feb-20	02-Mar-20	15:00
Sample ID: 71008-R1	TMDL-Est Field Filtered	Λ	Natrix: Liquid	Dilutio	on Factor: 1	San	npled: 12-Fe	b-20 12:0	5 Received	13-Feb-20	)
Nitrate as N	SM 4500-NO3 E	mg/L	0.752	0.01	0.02	NA		C-47132	14-Feb-20	10-Mar-20	16:30
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47104	14-Feb-20	14-Feb-20	7:30
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0165	0.016	0.03	NA	J	C-47127	04-Mar-20	06-Mar-20	9:00

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TRATORIES, INC.

Innovative Solutions for Nature



Innovative Solutions for Nature 1904 E. Wright Circle, Anaheim CA 92806 main: (714) 602-5320

fax: (714) 602-5321

www.physislabs.com

info@physislabs.com

CA ELAP #2769

			* ' ' '			· · · /		' '						
	Conventio	nals						Q	UALI	TY CONTR	OL R	EP	ORT	
SAMPLE ID		BATCH ID	RESULT	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT		ACCURACY LIMITS	P %	RECIS L	SION IMITS	QA CODE
Nitrate as N	I	Method:	SM 4500-NO3 E	<u>:</u>	Fraction	: NA	Dilution Fac	tor: 1	Prepare	d: 14-Feb-20	Anal	vzed:	10-Mar-	20
70994-B1	QAQC Procedural Blank	C-47132	ND	0.01	0.02	mg/L			•	•				
70994-BS1	QAQC Procedural Blank	C-47132	0.519	0.01	0.02	mg/L	0.5	0	104	68 - 135% PASS				
70994-BS2	QAQC Procedural Blank	C-47132	0.524	0.01	0.02	mg/L	0.5	0	105	68 - 135% PASS	1	25	PASS	
70996-MS1	TMDL-CL	C-47132	0.549	0.01	0.02	mg/L	0.5	0	110	80 - 120% PASS		25		
70996-MS2	TMDL-CL	C-47132	0.549	0.01	0.02	mg/L	0.5	0	110	80 - 120% PASS	0	25	PASS	
70996-R2	TMDL-CL	C-47132	ND	0.01	0.02	mg/L					0	25	PASS	
Nitrite as N		Method:	SM 4500-NO2 E	3	Fraction	NA	Dilution Fac	tor: 1	Prepare	d: 14-Feb-20	Anal	yzed:	14-Feb-2	.0
70994-B1	QAQC Procedural Blank	C-47104	ND	0.01	0.02	mg/L								
70994-BS1	QAQC Procedural Blank	C-47104	0.0465	0.01	0.02	mg/L	0.05	0	93	49 - 120% PASS				
70994-BS2	QAQC Procedural Blank	C-47104	0.0471	0.01	0.02	mg/L	0.05	0	94	49 - 120% PASS	1	25	PASS	
71008-MS1	TMDL-Est	C-47104	0.0485	0.01	0.02	mg/L	0.05	0	97	80 - 120% PASS		25		
71008-MS2	TMDL-Est	C-47104	0.049	0.01	0.02	mg/L	0.05	0	98	80 - 120% PASS	1	25	PASS	
71008-R2	TMDL-Est	C-47104	ND	0.01	0.02	mg/L					0	25	PASS	
Total Dissol	ved Phosphorus	Method:	SM 4500-P E		Fraction	: NA	Dilution Fac	tor: 1	Prepare	d: 04-Mar-20	Analy	yzed:	o6-Mar-	20
70994-B1	QAQC Procedural Blank	C-47127	ND	0.016	0.03	mg/L								
70994-BS1	QAQC Procedural Blank	C-47127	0.301	0.016	0.03	mg/L	0.3	0	100	86 - 118% PASS				
70994-BS2	QAQC Procedural Blank	C-47127	0.309	0.016	0.03	mg/L	0.3	0	103	86 - 118% PASS	3	25	PASS	
70998-MS1	TMDL-R4	C-47127	0.309	0.016	0.03	mg/L	0.3	0	103	80 - 120% PASS		25		
70998-MS2	TMDL-R4	C-47127	0.316	0.016	0.03	mg/L	0.3	0	105	80 - 120% PASS	2	25	PASS	
70998-R2	TMDL-R4	C-47127	ND	0.016	0.03	mg/L					0	25	PASS	
Total Phosp	horus	Method:	SM 4500-P E		Fraction	NA	Dilution Fac	tor: 1	Prepare	d: 21-Feb-20	Anal	yzed:	o2-Mar-	20
70994-B1	QAQC Procedural Blank	C-47114	ND	0.016	0.02	mg/L								
70994-BS1	QAQC Procedural Blank	C-47114	0.311	0.016	0.02	mg/L	0.3	0	104	73 - 131% PASS				
70994-BS2	QAQC Procedural Blank	C-47114	0.301	0.016	0.02	mg/L	0.3	0	100	73 - 131% PASS	4	25	PASS	
71007-MS1	TMDL-Est	C-47114	0.35	0.016	0.02	mg/L	0.3	0.0523	99	80 - 120% PASS		25		
71007-MS2	TMDL-Est	C-47114	0.358	0.016	0.02	mg/L	0.3	0.0523	102	80 - 120% PASS	3	25	PASS	
71007-R2	TMDL-Est	C-47114	0.0518	0.016	0.02	mg/L					2	25	PASS	

## SUBCONTRACT TERRA REPORTA ENVIRON TERRA ENVIRON TERRA REPORTA AURA ENVIRON TERRA ENVIRON TERRA REPORTA AURA ENVIRON TERRA TERRA TERRA REPORTA TERRA TE

Innovative Solutions for Nature



Enthalpy Analytical 931 West Barkley Ave Orange, CA 92868 (714) 771-6900

enthalpy.com

Lab Job Number: 424832

Report Level: II

Report Date: 02/26/2020

### **Analytical Report** *prepared for:*

Misty Mercier PHYSIS Environmental Laboratories 1904 E. Wright Circle Anaheim, CA 92806

Location: 2001003-002

Authorized for release by:

Lisa Nguyen, Project Manager ext 10323

lisa.nguyen@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.



### **Sample Summary**

Misty Mercier Lab Job #: 424832

PHYSIS Environmental Laboratories Location: 2001003-002

1904 E. Wright Circle

Anaheim, CA 92806

Date Received: 02/14/20

Sample ID	Lab ID	Collected	Matrix
TMDL-CL	424832-001	02/12/20 07:50	Water
TMDL-CL FIELD FILTERED	424832-002	02/12/20 07:50	Water
TMDL-R4	424832-003	02/12/20 08:35	Water
TMDL-R4 FIELD FILTERED	424832-004	02/12/20 08:35	Water
TMDL-SA	424832-005	02/12/20 09:00	Water
TMDL-SA FIELD FILTERED	424832-006	02/12/20 09:00	Water
TMDL-R3	424832-007	02/12/20 09:45	Water
TMDL-R3 FIELD FILTERED	424832-008	02/12/20 09:45	Water
TMDL-R2	424832-009	02/12/20 10:35	Water
TMDL-R2 FIELD FILTERED	424832-010	02/12/20 10:35	Water
TMDL-R1	424832-011	02/12/20 11:30	Water
TMDL-R1 FIELD FILTERED	424832-012	02/12/20 11:30	Water
TMDL-EST	424832-013	02/12/20 12:05	Water
TMDL-EST FIELD FILTERED	424832-014	02/12/20 12:05	Water



### **Chain of Custody**

# Physis Project ID: 2001003-002

From: Physis Environmental Laboratories, Inc.
Misty Mercier
1904 E. Wrigth Cir.
Anaheim, CA 92806
714-605-5320 (office), 714-335-5918 (cell)
sc@physislabs.com

424832

Enthalpy Analytical Lisa Nguyen 931 W. Barkley Ave. Orange, CA 92868 Lisa.Nguyen@enthalpy.com

Physis SOS Number:	2001003			PO Number:		Š	Sampled by:	
Turnaround Time	V Standard	□ RUSH:	Business Days	Type of ice used:	☐ BLUE	<b>✓</b> WET	□ DRY	
Report Format	✓ PDF/EDD	SWAMP EDD	☐ CEDEN EDD	Shipped vis.	☐ FEDEX	UPS	SASU	The second secon
	Other EDD:			Jiipped via.	☐ Client	Physis	Other:	
Sample ID	Sampl	Sample Description	Requested An	Requested Analyses/Method	Sample Date	te Sample Time	ne Matrix	# of Bottles
TMDL-CL		Total	Total Kjeldahl Nit	Total Kjeldahl Nitrogen (EPA 351.2)	2/12/2020			_
TMDL-CL	Fie	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	Field Filtered) (EPA 351.2	2/12/2020	7:50:00 AM	A Liquid	<b>-</b>
TMDL-R4		Total	Total Kjeldahl Nit	Total Kjeldahl Nitrogen (EPA 351.2)	2/12/2020	8:35:00 AM	A Liquid	-
TMDL-R4	<u>F1</u>	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	Field Filtered) (EPA 351.2	2/12/2020	8:35:00 AM	A Liquid	-
TMDL-SA		Total	Total Kjeldahl Nit	Total Kjeldahl Nitrogen (EPA 351.2)	2/12/2020	9:00:00 AM	M Liquid	<del>-</del>
TMDL-SA	Fie	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	Field Filtered) (EPA 351.2	2/12/2020	9:00:00 AM	M Liquid	-
TMDL-R3		Total	Total Kjeldahl Nit	Total Kjeldahl Nitrogen (EPA 351.2)	2/12/2020	9:45:00 AM	M Liquid	-

Relinquished:	Print: Mon MA Agray	mich	Date: 04/4/9020 Received By:	Received By:	Print: KILZWOCKN PAMINE Date: 2/14/20	M Pamire	Date: 2/14/20
Org: Physis Sign:	Sign:	1	Time: 15:25	Org:	Sign: Agy		Time: (5':25
Relinquished: Print:_	Print:		Date:	Received By:	Print:		Date:
Org:	Sign:		Time:	Org:	Sign:	-	Time:
Friday, February 14, 2020	14, 2020	www.physislabs.com	info@physislabs.com	CA ELAP #2769	main (714) 602-5320 fax (714) 602-5321	fax (714) 602-5321	Page 1 of 2



## Chain of Custody

# Physis Project ID: 2001003-002

Physis Environmental Laboratories, Inc. Misty Mercier From:

1904 E. Wrigth Cir. Anaheim, CA 92806

714-605-5320 (office), 714-335-5918 (cell) sc@physislabs.com

Orange, CA 92868 Lisa.Nguyen@enthalpy.com Lisa Nguyen 931 W. Barkley Ave. **Enthalpy Analytical** iö To

Sample ID	Sample Description	Requested Analyses/Method	Sample Date	Sample Time	Matrix	# of Bottles
TMDL-R3	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	2/12/2020	9:45:00 AM	Liquid	-
TMDL-R2	Total	Total Kjeldahl Nitrogen (EPA 351.2)	2/12/2020	10:35:00 AM	Liquid	_
TMDL-R2	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	2/12/2020	10:35:00 AM	Liquid	_
TMDL-R1	Total	Total Kjeldahl Nitrogen (EPA 351.2)	2/12/2020	11:30:00 AM	Liquid	_
TMDL-R1	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	2/12/2020	11:30:00 AM	Liquid	-
TMDL-Est	Total	Total Kjeldahl Nitrogen (EPA 351.2)	2/12/2020	12:05:00 PM	Liquid	<b>-</b>
TMDL-Est	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	2/12/2020	12:05:00 PM	Liquid	<del></del>
Notes/Comments:		Report Down to the MDI				

Report Down to the MDL

## Please Report EPA 351.2 Required QA Frequency and Acceptance Ranges. Please Contact Lisa Nguyen or Dan Chavez if any Questions.

Page 2 of 2	nain (714) 602-5320 fax (714) 602-5321	main (714) 602-5320	CA ELAP #2769	info@physislabs.com	www.physislabs.com	14, 2020	Friday, February 14, 2020
	•	Sign:	Org:	Time:		Sign: V	Org:
Date:		Print:	Received By:	Date:	>	Print:	Relinquished: Print:_
Time: (5'.25		Sign:	Org:	Time: 15:26		Sign:	Org: Physis
Date: 2/14/20	& Pamiles	Print: Elzaber Paniles Date: 2/14/20	Received By:	Date: 02/14/2022 Received By:	4 NO NY	Print: MOVN 614 AND M	Relinquished:



### SAMPLE ACCEPTANCE CHECKLIST

Section 1				
Client: Physis	Project: 2001003-002			
Date Received: 2/14/20	Sampler's Name Present:	Yes	√No	
Section 2				
Sample(s) received in a cooler?  Yes, How many? 1	No (skip section 2)	-	e Temp (°C (No Cooler	
Sample Temp (°C), One from each cooler: #1: 4.4	<del>_</del>	#4:	(MO CODIE!	,
(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance)			e for sample	– es collected
the same day as sample receipt to have a higher temperat				
Shipping Information:			<del></del>	
Section 3				
Was the cooler packed with: ✓Ice	Bubble Wrap Styr	ofoam		
Paper None	Other			
Cooler Temp (°C): #1: 0.5 #2:	#3:	#4:		· ·
Section 4		YES	NO	N/A
Was a COC received?		1		,
Are sample IDs present?		1		
Are sampling dates & times present?		1		
Is a relinquished signature present?		✓		
Are the tests required clearly indicated on the COC?		✓		
Are custody seals present?			1	
If custody seals are present, were they intact?				1
Are all samples sealed in plastic bags? (Recommended f	or Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 b	oelow.	✓		
Did all bottle labels agree with COC? (ID, dates and times	5)	✓		
Were the samples collected in the correct containers for	the required tests?	1		
Are the containers labeled with the correct preserv	ratives?	1		
Is there headspace in the VOA vials greater than 5-6 mm				<b>✓</b>
Was a sufficient amount of sample submitted for the rec	uested tests?	<u> </u>		
Section 5 Explanations/Comments				
				i
Section 6				
For discrepancies, how was the Project Manager notified	12 Verhal PM Initials	Date/Time		
. o. a.a. opanicios, non mas me i roject manager notalet	Email (email sent to	<del></del>		
Project Manager's response:	L		·	
Completed By:	Date: 2/14/20			
Completed by,	valt. / /			

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931 W. Barkley Ave, Orange, CA 92868 • T: (714) 771-6900 • F: (714) 538-1209
www.enthalpy.com/socal
Sample Acceptance Checklist – Rev 4, 8/8/2017



Misty Mercier PHYSIS Environmental Laboratories 1904 E. Wright Circle Anaheim, CA 92806

Lab Job #: 424832 Location: 2001003-002 Date Received: 02/14/20

Sample ID: TMDL-CL Lab ID: 424832-001 Collected: 02/12/20 07:50

Matrix: Water

424832-001 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2 Prep Method: METHOD										
1 Tep Method. ML 1110D										
Nitrogen, Total Kjeldahl	0.25	J	mg/L	0.40	0.052	1	242407	02/19/20	02/19/20	ATP

Sample ID: Lab ID: 424832-002 Collected: 02/12/20 07:50

TMDL-CL FIELD FILTERED Matrix: Water

424832-002 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										_
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.32	J	mg/L	0.40	0.052	1	242407	02/19/20	02/19/20	ATP

Sample ID: TMDL-R4 Lab ID: 424832-003 Collected: 02/12/20 08:35

Matrix: Water

424832-003 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.28	J	mg/L	0.40	0.052	1	242407	02/19/20	02/19/20	ATP

Sample ID: Lab ID: 424832-004 Collected: 02/12/20 08:35

TMDL-R4 FIELD FILTERED Matrix: Water

424832-004 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.21	J	mg/L	0.40	0.052	1	242407	02/19/20	02/19/20	ATP



Sample ID: TMDL-SA Lab ID: 424832-005 Collected: 02/12/20 09:00

Matrix: Water

424832-005 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										_
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.19	J	mg/L	0.40	0.052	1	242407	02/19/20	02/19/20	ATP

Sample ID: Lab ID: 424832-006 Collected: 02/12/20 09:00

TMDL-SA FIELD FILTERED Matrix: Water

424832-006 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2 Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.27	J	mg/L	0.40	0.052	1	242407	02/19/20	02/19/20	ATP

Sample ID: TMDL-R3 Lab ID: 424832-007 Collected: 02/12/20 09:45

Matrix: Water

424832-007 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.36	J	mg/L	0.40	0.052	1	242408	02/19/20	02/25/20	ATP

Sample ID: Lab ID: 424832-008 Collected: 02/12/20 09:45

TMDL-R3 FIELD FILTERED Matrix: Water

424832-008 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.20	J	mg/L	0.40	0.052	1	242408	02/19/20	02/19/20	ATP

Sample ID: TMDL-R2 Lab ID: 424832-009 Collected: 02/12/20 10:35

Matrix: Water

424832-009 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.47		mg/L	0.40	0.052	1	242408	02/19/20	02/19/20	ATP



Sample ID: Lab ID: 424832-010 Collected: 02/12/20 10:35

TMDL-R2 FIELD FILTERED Matrix: Water

424832-010 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2 Prep Method: METHOD										
Frep Metriod. MLTHOD										
Nitrogen, Total Kjeldahl	0.37	J	mg/L	0.40	0.052	1	242408	02/19/20	02/19/20	ATP

Sample ID: TMDL-R1 Lab ID: 424832-011 Collected: 02/12/20 11:30

Matrix: Water

424832-011 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2 Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.39	J	mg/L	0.40	0.052	1	242408	02/19/20	02/19/20	ATP

Sample ID: Lab ID: 424832-012 Collected: 02/12/20 11:30

TMDL-R1 FIELD FILTERED Matrix: Water

424832-012 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										_
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.34	J	mg/L	0.40	0.052	1	242408	02/19/20	02/19/20	ATP

Sample ID: TMDL-EST Lab ID: 424832-013 Collected: 02/12/20 12:05

Matrix: Water

424832-013 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										_
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.087	J	mg/L	0.40	0.052	1	242408	02/19/20	02/25/20	ATP

Sample ID: Lab ID: 424832-014 Collected: 02/12/20 12:05

TMDL-EST FIELD FILTERED Matrix: Water

424832-014 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2										_
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.083	J	mg/L	0.40	0.052	1	242408	02/19/20	02/25/20	ATP



J Estimated value



### **Batch QC**

Type: Blank Lab ID: QC860327 Batch: 242408

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

 QC860327 Analyte
 Result
 Qual
 Units
 RL
 MDL
 Prepared
 Analyzed

 Nitrogen, Total Kjeldahl
 ND
 mg/L
 0.40
 0.052
 02/19/20
 02/19/20

Type: Lab Control Sample Lab ID: QC860328 Batch: 242408

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

QC860328 AnalyteResultSpikedUnitsRecoveryQualLimitsNitrogen, Total Kjeldahl2.5802.500mg/L103%90-110

Type: Matrix Spike Lab ID: QC860329 Batch: 242408

Matrix (Source ID): Water (424832-014) Method: EPA 351.2 Prep Method: METHOD

Source Sample

Recovery QC860329 Analyte Result Result Spiked Units Limits DF Qual Nitrogen, Total Kjeldahl 13.70 12.50 2.5 0.08300 mg/L 109% 90-110

Type: Matrix Spike Duplicate Lab ID: QC860330 Batch: 242408

Matrix (Source ID): Water (424832-014) Method: EPA 351.2 Prep Method: METHOD

Source

**RPD** Sample QC860330 Analyte Result Result Spiked Units Recovery Qual Limits **RPD** Lim DF Nitrogen, Total Kjeldahl 14.90 0.08300 12.50 119% mg/L 90-110 20 2.5

Type: Blank Lab ID: QC860323 Batch: 242407

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

QC860323 AnalyteResultQualUnitsRLMDLPreparedAnalyzedNitrogen, Total KjeldahlNDmg/L0.400.05202/19/2002/19/20

Type: Lab Control Sample Lab ID: QC860324 Batch: 242407

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

QC860324 AnalyteResultSpikedUnitsRecoveryQualLimitsNitrogen, Total Kjeldahl2.4602.500mg/L98%90-110



### **Batch QC**

Type: Matrix Spike Lab ID: QC860325 Batch: 242407

Matrix (Source ID): Water (424831-011) Method: EPA 351.2 Prep Method: METHOD

Source Sample

QC860325 Analyte	Result	Result	Spiked	Units	Recovery	Qual Limits	DF
Nitrogen, Total Kjeldahl	22.60	9.500	12.50	mg/L	105%	90-110	5

Type: Matrix Spike Duplicate Lab ID: QC860326 Batch: 242407

Matrix (Source ID): Water (424831-011) Method: EPA 351.2 Prep Method: METHOD

Source RPD Sample QC860326 Analyte Result Result Spiked Units Recovery Qual Limits **RPD** Lim DF 5 Nitrogen, Total Kjeldahl 22.50 9.500 90-110 20 12.50 mg/L 104% 0

Value is outside QC limits

ND Not Detected

# CHAIN OF TERRA GUSTEO DA AURA ENVIRON ESTA DE LA COMPANIES, INC.

Innovative Solutions for Nature

From: Aquatic Bioassay Phone: (805) 643-5621 To: Company: PHYSIS Address: 1904 E Wright Circle and Consulting Labs. (805) 643-2930 Fax: 29 N. Olive St. Project ID: Ventura River Anaheim, CA 92806 Phone: (714) 335-5793 Ventura, CA 93001 AlgaeTMDL **ANALYSIS** Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B) Phosphorous (SM 4500-P E) otal TKN (EPA Vitrate / Nitrite Dissolved TKN Volume/ Reps Sample I.D. No. Sample Date Time Matrix Dissolved No. 351.2) (EPA otal Comments 3-250 mL, pl; 2/12/20 0750 TMDL-CL 2-250 mL, gl. Water 3-250 mL, pl; 0835 TMDL-R4 2-250 mL, gl. Water 3-250 mL, pl; 0900 TMDL-SA 2-250 mL, gl. Water 3-250 mL, pl; X 0945 TMDL-R3 2-250 mL, gl. Water 3-250 mL, pl; 1035 TMDL-R2 Water 2-250 mL, gl. 3-250 mL, pl; 1130 TMDL-R1 2-250 mL, gl. 3-250 mL, pl; 2/12/20 1205 **TMDL-Est** Water 2-250 mL, gl. 2-250 mL, pl; Equipment Blank N/A 1-250 mL, gl. N/A Water

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H2SO4; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.com

**RELINQUISHED BY RECEIVED BY RELINQUISHED BY RECEIVED BY** Name: Brianna Jones Name: Richard Hanken Name: Name: Signature: Kh Signature: W Signature: Signature: 103 PDate: Time: 1330 Date: 2/13/20 Time: Time: Time: Date:



### Sample Receipt Summary

Client: Aquatic Bioassay & Consulting Laborator	ries, Inc. Date Received: 2/13/2020 Rece	eived By: RGH Inspected By: RGH					
Courier:	Cooler:	Temperature:					
☐ Physis ☐ FEDEX 🗹 UPS ☐ Client	✓ Cooler ☐ Box Total #: 2	2 □ BLUE ☑ WET □ DRY					
Start End Other:	☐ Other:	☐ None 0.5°C					
Sample Integrity Upon Receipt:							
<ol> <li>COC(s) included and completely filled</li> <li>All sample containers arrived intact</li> </ol>		<u>Y</u> es					
3. All samples listed on COC(s) are present							
4. Information on containers consistent with information on COC(s)							
5. Correct containers and volume for all analyses indicatedYes							
6. All samples received within method holding timeYes							
7. Correct preservation used for all analyses indicated							
8. Name of sampler included on COC(s)							

Notes:



April 23, 2020

Karin Wisenbaker Aquatic Bioassay & Consulting Laboratories, Inc. 29 N. Olive Street Ventura, CA 93001

Project Name: Ventura River Algae TMDL

Physis Project ID: 2001003-003

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 3/20/2020. A total of 14 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Conventionals				
Total Phosphorus by SM 4500-P E				
Total Dissolved Phosphorus by SM 4500-P E				
Nitrite as N by SM 4500-NO2 B				
Nitrate as N by SM 4500-NO3 E				
Subcontract				
Total Kjeldahl Nitrogen (Field Filtered) by EPA 351.2				
Total Kjeldahl Nitrogen by EPA 351.2				

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Misty Mercier 714 602-5320 Extension 202 mistymercier@physislabs.com



PROJECT SAMPLE LIST

Aquatic Bioassay & Consulting Laboratories, Inc. Ventura River Algae TMDL PHYSIS Project ID: 2001003-003

Total Samples: 14

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
72266	TMDL-CL	Total	3/19/2020	7:47	Liquid	Not Specified
72267	TMDL-CL	Field Filtered	3/19/2020	7:47	Liquid	Not Specified
72268	TMDL-R4	Total	3/19/2020	8:35	Liquid	Not Specified
72269	TMDL-R4	Field Filtered	3/19/2020	8:35	Liquid	Not Specified
72270	TMDL-SA	Total	3/19/2020	9:10	Liquid	Not Specified
72271	TMDL-SA	Field Filtered	3/19/2020	9:10	Liquid	Not Specified
72272	TMDL-R3	Total	3/19/2020	10:20	Liquid	Not Specified
72273	TMDL-R3	Field Filtered	3/19/2020	10:20	Liquid	Not Specified
72274	TMDL-R2	Total	3/19/2020	11:08	Liquid	Not Specified
72275	TMDL-R2	Field Filtered	3/19/2020	11:08	Liquid	Not Specified
72276	TMDL-R1	Total	3/19/2020	12:25	Liquid	Not Specified
72277	TMDL-R1	Field Filtered	3/19/2020	12:25	Liquid	Not Specified
72278	TMDL-Est	Total	3/19/2020	13:22	Liquid	Not Specified
72279	TMDL-Est	Field Filtered	3/19/2020	13:22	Liquid	Not Specified



### **ABBREVIATIONS and ACRONYMS**

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight

### **QUALITY ASSURANCE SUMMARY**

LABORATORY BATCH: Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

PROCEDURAL BLANK: Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

ACCURACY: Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

BLANK SPIKES: BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

MATRIX SPIKES: MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

CERTIFIED REFERENCE MATERIALS: CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

LABORATORY CONTROL MATERIAL: LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

LABORATORY CONTROL SPIKES: LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

SURROGATES: A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to



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the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

HOLDING TIME: Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes.

SAMPLE STORAGE/RETENTION: In order to maintain chemical integrity prior to analysis, all samples submitted to Physis are refrigerated (liquids) or frozen (solids) upon receipt unless otherwise recommended by applicable methods. Solid samples are retained for 1 year from collection while liquid samples are retained until method recommended holding times elapse.

TOTAL/DISSOLVED FRACTION: In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.



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## **PHYSIS QUALIFIER CODES**

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
В	analyte was detected in the procedural blank greater than 10 times the MDL
E	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
Н	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified accuracy and/or precision acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore accuracy and/or precision acceptance limits do not apply
SL	analyte results were lower than 10 times the MDL, therefore accuracy and/or precision acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore accuracy and/or precision acceptance limits do not apply
Q	analyte was outside the specified QAPP acceptance limits for precision and/or accuracy but within Physis derived acceptance limits, therefore the sample data was reported without further clarification
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

# TERRA REPORTA AURA ENVIRON RES, INC.

Innovative Solutions for Nature



PHYSIS Project ID: 2001003-003

Client: Aquatic Bioassay & Consulting Laboratories, Inc.

**Project: Ventura River Algae TMDL** 

			Conve	ntion	als						
ANALYTE	Method	Units	RESULT	MDL	RL	Fraction	QA CODE	Batch ID	<b>Date Processed</b>	Date Ana	lyzed
Sample ID: 72266-R1	TMDL-CL Total	M	atrix: Liquid	Dilutio	n Factor: 1	Saı	mpled: 19-M	ar-20 7:47	Received	20-Mar-2	o
Total Phosphorus	SM 4500-P E	mg/L	0.0737	0.016	0.02	NA		C-49014	13-Apr-20	14-Apr-20	13:00
Sample ID: 72267-R1	TMDL-CL Field Filtered	M	atrix: Liquid	Dilutio	n Factor: 1	Sai	mpled: 19-M	ar-20 7:47	Received	20-Mar-2	0
Nitrate as N	SM 4500-NO3 E	mg/L	0.299	0.01	0.02	NA		C-47155	20-Mar-20	01-Apr-20	11:00
Nitrite as N	SM 4500-NO2 B	mg/L	0.0112	0.01	0.02	NA	J	C-47143	20-Mar-20	20-Mar-20	15:15
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0739	0.016	0.03	NA		C-49017	15-Apr-20	16-Apr-20	13:00
Sample ID: 72268-R1	TMDL-R4 Total	M	atrix: Liquid	Dilutio	n Factor: 1	Sai	mpled: 19-M	ar-20 8:35	Received	20-Mar-2	o
Total Phosphorus	SM 4500-P E	mg/L	0.233	0.016	0.02	NA		C-49014	13-Apr-20	14-Apr-20	13:00
Sample ID: 72269-R1	TMDL-R4 Field Filtered	M	atrix: Liquid	Dilutio	n Factor: 1	Sai	mpled: 19-M	ar-20 8:35	Received	20-Mar-2	0
Nitrate as N	SM 4500-NO3 E	mg/L	0.953	0.01	0.02	NA		C-47155	20-Mar-20	01-Apr-20	11:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47143	20-Mar-20	20-Mar-20	15:15
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-49017	15-Apr-20	16-Apr-20	13:00
Sample ID: 72270-R1	TMDL-SA Total	M	atrix: Liquid	Dilutio	n Factor: 1	Sai	mpled: 19-M	ar-20 9:10	Received	20-Mar-2	0
Total Phosphorus	SM 4500-P E	mg/L	0.0589	0.016	0.02	NA		C-49014	13-Apr-20	14-Apr-20	13:00
Sample ID: 72271-R1	TMDL-SA Field Filtered	M	atrix: Liquid	Dilutio	n Factor: 1	Saı	mpled: 19-M	ar-20 9:10	Received	20-Mar-2	o
Nitrate as N	SM 4500-NO3 E	mg/L	0.496	0.01	0.02	NA		C-47155	20-Mar-20	01-Apr-20	11:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47143	20-Mar-20	20-Mar-20	15:15
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0329	0.016	0.03	NA		C-49017	15-Apr-20	16-Apr-20	13:00
Sample ID: 72272-R1	TMDL-R3 Total	M	atrix: Liquid	Dilutio	n Factor: 1	Sai	mpled: 19-M	ar-20 10:20	Received:	: 20-Mar-2	О
Total Phosphorus	SM 4500-P E	mg/L	0.161	0.016	0.02	NA		C-49014	13-Apr-20	14-Apr-20	13:00

1904 E. Wright Circle, Anaheim CA 92806 fax: (714) 602-5321 main: (714) 602-5320 www.physislabs.com info@physislabs.com CA ELAP #2769 ar - 1 of 2



PHYSIS Project ID: 2001003-003

Client: Aquatic Bioassay & Consulting Laboratories, Inc.

Project: Ventura River Algae TMDL

## Conventionals

			Conve	ntion	ais						
ANALYTE	Method	Units	RESULT	MDL	RL	Fraction	QA CODE	Batch ID	<b>Date Processed</b>	Date Analy	yzed
Sample ID: 72273-R1	TMDL-R3 Field Filtered	٨	Natrix: Liquid	Dilutio	on Factor:	ı San	npled: 19-M	lar-20 10:2	o Received	: 20-Mar-20	
Nitrate as N	SM 4500-NO3 E	mg/L	0.886	0.01	0.02	NA		C-47155	20-Mar-20	01-Apr-20	11:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47143	20-Mar-20	20-Mar-20	15:15
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-49017	15-Apr-20	16-Apr-20 1	13:00
Sample ID: 72274-R1	TMDL-R2 Total	٨	Natrix: Liquid	Dilutio	on Factor:	ı San	npled: 19-M	ar-20 11:08	B Received	: 20-Mar-20	
Total Phosphorus	SM 4500-P E	mg/L	0.125	0.016	0.02	NA		C-49014	13-Apr-20	14-Apr-20 1	13:00
Sample ID: 72275-R1	TMDL-R2 Field Filtered	٨	Лatrix: Liquid	Dilutio	on Factor:	ı San	npled: 19-M	lar-20 11:08	3 Received	: 20-Mar-20	
Nitrate as N	SM 4500-NO3 E	mg/L	1.03	0.01	0.02	NA		C-47155	20-Mar-20	01-Apr-20	11:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47143	20-Mar-20	20-Mar-20	15:15
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-49017	15-Apr-20	16-Apr-20 1	13:00
Sample ID: 72276-R1	TMDL-R1 Total	٨	Лatrix: Liquid	Dilutio	on Factor:	ı San	npled: 19-M	lar-20 12:2	5 Received	: 20-Mar-20	
Total Phosphorus	SM 4500-P E	mg/L	0.0659	0.016	0.02	NA		C-49014	13-Apr-20	14-Apr-20 1	13:00
Sample ID: 72277-R1	TMDL-R1 Field Filtered	٨	Лatrix: Liquid	Dilutio	on Factor:	ı San	npled: 19-M	lar-20 12:2!	5 Received	20-Mar-20	
Nitrate as N	SM 4500-NO3 E	mg/L	0.92	0.01	0.02	NA		C-47155	20-Mar-20	01-Apr-20	11:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47143	20-Mar-20	20-Mar-20	15:15
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-49017	15-Apr-20	16-Apr-20 1	13:00
Sample ID: 72278-R1	TMDL-Est Total	٨	Natrix: Liquid	Dilutio	on Factor:	ı San	npled: 19-M	lar-20 13:2:	2 Received	: 20-Mar-20	
Total Phosphorus	SM 4500-P E	mg/L	0.119	0.016	0.02	NA		C-49014	13-Apr-20	14-Apr-20 1	13:00
Sample ID: 72279-R1	TMDL-Est Field Filtered	٨	Лatrix: Liquid	Dilutio	on Factor:	ı San	npled: 19-M	lar-20 13:2:	2 Received	: 20-Mar-20	
Nitrate as N	SM 4500-NO3 E	mg/L	0.865	0.01	0.02	NA		C-47155	20-Mar-20	01-Apr-20	11:00
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-47143	20-Mar-20	20-Mar-20	15:15
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0222	0.016	0.03	NA	J	C-49017	15-Apr-20	16-Apr-20 1	13:00

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## LITY CONTRO

TRATORIES, INC.

Innovative Solutions for Nature



Innovative Solutions for Nature

1904 E. Wright Circle, Anaheim CA 92806

PHYSIS Project ID: 2001003-003

main: (714) 602-5320

fax: (714) 602-5321

www.physislabs.com

info@physislabs.com

CA ELAP #2769

	Conventio	nals						Q	UALI	TY CONTRO	OL R	EPC	PRT	
SAMPLE ID		BATCH ID	RESULT	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT		ACCURACY LIMITS	P %	RECISI LI <i>I</i>	ON MITS	QA CODE
Nitrate as N		Method:	SM 4500-NO3 E		Fraction:	NA I	Dilution Fac	tor: 1	Prepare	d: 20-Mar-20	Analy	yzed: (	01-Apr-2	20
72265-B1	QAQC Procedural Blank	C-47155	ND	0.01	0.02	mg/L			-				-	
72265-BS1	QAQC Procedural Blank	C-47155	0.532	0.01	0.02	mg/L	0.5	0	106	68 - 135% PASS				
72265-BS2	QAQC Procedural Blank	C-47155	0.529	0.01	0.02	mg/L	0.5	0	106	68 - 135% PASS	0	25 I	PASS	
72267-MS1	TMDL-CL	C-47155	0.824	0.01	0.02	mg/L	0.5	0.3	105	80 - 120% PASS		25		
72267-MS2	TMDL-CL	C-47155	0.83	0.01	0.02	mg/L	0.5	0.3	106	80 - 120% PASS	1	25 I	PASS	
72267-R2	TMDL-CL	C-47155	0.302	0.01	0.02	mg/L					1	25 I	PASS	
Nitrite as N		Method:	SM 4500-NO2 B		Fraction:	NA I	Dilution Fac	tor: 1	Prepare	d: 20-Mar-20	Analy	zed: :	20-Mar-	20
72265-B1	QAQC Procedural Blank	C-47143	ND	0.01	0.02	mg/L								
72265-BS1	QAQC Procedural Blank	C-47143	0.0501	0.01	0.02	mg/L	0.05	0	100	49 - 120% PASS				
72265-BS2	QAQC Procedural Blank	C-47143	0.0499	0.01	0.02	mg/L	0.05	0	100	49 - 120% PASS	0	25 I	PASS	
72267-MS1	TMDL-CL	C-47143	0.053	0.01	0.02	mg/L	0.05	0.011	84	80 - 120% PASS		25		
72267-MS2	TMDL-CL	C-47143	0.0537	0.01	0.02	mg/L	0.05	0.011	85	80 - 120% PASS	1	25 I	PASS	
72267-R2	TMDL-CL	C-47143	0.0107	0.01	0.02	mg/L					5	25 I	PASS	J
Total Dissol	ved Phosphorus	Method:	SM 4500-P E		Fraction:	NA I	Dilution Fac	tor: 1	Prepare	d: 15-Apr-20	Analy	yzed: 1	16-Apr-2	20
72265-B1	QAQC Procedural Blank	C-49017	ND	0.016	0.03	mg/L								
72265-BS1	QAQC Procedural Blank	C-49017	0.301	0.016	0.03	mg/L	0.3	0	100	86 - 118% PASS				
72265-BS2	QAQC Procedural Blank	C-49017	0.293	0.016	0.03	mg/L	0.3	0	98	86 - 118% PASS	2	25 I	PASS	
72267-MS1	TMDL-CL	C-49017	0.358	0.016	0.03	mg/L	0.3	0.0695	96	80 - 120% PASS		25		
72267-MS2	TMDL-CL	C-49017	0.343	0.016	0.03	mg/L	0.3	0.0695	91	80 - 120% PASS	5	25 I	PASS	
72267-R2	TMDL-CL	C-49017	0.065	0.016	0.03	mg/L					13	25 I	PASS	
Total Phosp	horus	Method:	SM 4500-P E		Fraction:	NA I	Dilution Fac	tor: 1	Prepare	d: 13-Apr-20	Analy	yzed: 1	14-Apr-2	20
72265-B1	QAQC Procedural Blank	C-49014	ND	0.016	0.02	mg/L								
72265-BS1	QAQC Procedural Blank	C-49014	0.292	0.016	0.02	mg/L	0.3	0	97	73 - 131% PASS				
72265-BS2	QAQC Procedural Blank	C-49014	0.29	0.016	0.02	mg/L	0.3	0	97	73 - 131% PASS	0	25 I	PASS	
72266-MS1	TMDL-CL	C-49014	0.353	0.016	0.02	mg/L	0.3	0.0708	94	80 - 120% PASS		25		
72266-MS2	TMDL-CL	C-49014	0.357	0.016	0.02	mg/L	0.3	0.0708	95	80 - 120% PASS	1	25 I	PASS	
72266-R2	TMDL-CL	C-49014	0.0678	0.016	0.02	mg/L					8	25 I	PASS	

## SUBCONTRACT TERRA REPORTA ENVIRON TERRA ENVIRON TERRA REPORTA AURA ENVIRON TERRA ENVIRON TERRA REPORTA AURA ENVIRON TERRA TERRA TERRA REPORTA TERRA TE

Innovative Solutions for Nature



Enthalpy Analytical 931 West Barkley Ave Orange, CA 92868 (714) 771-6900

enthalpy.com

Lab Job Number: 426411

Report Level: II

Report Date: 04/17/2020

### **Analytical Report** *prepared for:*

Misty Mercier PHYSIS Environmental Laboratories 1904 E. Wright Circle Anaheim, CA 92806

Location: 2001003-003

Authorized for release by:

Lisa Nguyen, Project Manager ext 10323

lisa.nguyen@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.



## **Sample Summary**

Misty Mercier Lab Job #: 426411

PHYSIS Environmental Laboratories Location: 2001003-003

1904 E. Wright Circle

Anaheim, CA 92806

Date Received: 03/25/20

Sample ID	Lab ID	Collected	Matrix
TMDL-CL (TOTAL)	426411-001	03/19/20 07:47	Water
TMDL-CL (FIELD FILTERED)	426411-002	03/19/20 07:47	Water
TMDL-R4 (TOTAL)	426411-003	03/19/20 08:35	Water
TMDL-R4 (FIELD FILTERED)	426411-004	03/19/20 08:35	Water
TMDL-SA (TOTAL)	426411-005	03/19/20 09:10	Water
TMDL-SA (FIELD FILTERED)	426411-006	03/19/20 09:10	Water
TMDL-R3 (TOTAL)	426411-007	03/19/20 10:20	Water
TMDL-R3 (FIELD FILTERED)	426411-008	03/19/20 10:20	Water
TMDL-R2 (TOTAL)	426411-009	03/19/20 11:08	Water
TMDL-R2 (FIELD FILTERED)	426411-010	03/19/20 11:08	Water
TMDL-R1 (TOTAL)	426411-011	03/19/20 12:25	Water
TMDL-R1 (FIELD FILTERED)	426411-012	03/19/20 12:25	Water
TMDL-EST (TOTAL)	426411-013	03/19/20 13:22	Water
TMDL-EST (FIELD FILTERED)	426411-014	03/19/20 13:22	Water



## Chain of Custody

Physis Project ID: 2001003-003

From: Physis Environmental Laboratories, Inc.

Misty Mercier 1904 E. Wrigth Cir. Anaheim, CA 92806

714-605-5320 (office), 714-335-5918 (cell)

sc@physislabs.com

426411

To: Enthalpy Analytical
Lisa Nguyen
931 W. Barkley Ave.
Orange, CA 92868
Lisa.Nguyen@enthalpy.com

main (714) 602-5320 fax (714) 602-5321

Page 1 of 2

Physis SOS Number: 2001003 PO Number: Sampled by: ✓ Standard Turnaround Time RUSH: Type of ice used: BLUE **Business Days** ✓ WET PDF/EDD ☐ SWAMP EDD ☐ CEDEN EDD ☐ FEDEX ☐ UPS ☐ USPS Report Format Shipped via: Other EDD: Client Physis Other: Sample ID Sample Description Requested Analyses/Method # of Bottles Sample Date Sample Time Matrix TMDL-CL Total Total Kjeldahl Nitrogen (EPA 351.2) 3/19/2020 7:47:00 AM Liquid TMDL-CL Field Filtered Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2) 1 3/19/2020 7:47:00 AM Liquid TMDL-R4 Total Total Kieldahl Nitrogen (EPA 351.2) 1 3/19/2020 8:35:00 AM Liquid TMDL-R4 Field Filtered Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2) 3/19/2020 8:35:00 AM Liquid TMDL-SA Total Total Kjeldahl Nitrogen (EPA 351.2) 3/19/2020 9:10:00 AM Liquid 1 TMDL-SA Field Filtered Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2) 1 3/19/2020 9:10:00 AM Liquid TMDL-R3 Total Total Kjeldahl Nitrogen (EPA 351.2) 1 3/19/2020 10:20:00 AM Liquid EASAR NWADIKE FERNAUDO DWYL Relinguished: Received By: Print: 125/20 Date: Org: E Org: Physis Sign: Sign: Time: Relinquished: Print: Received By: Date: Print: Date: Org:\_ Time: Sign: Org:\_ Time:

CA ELAP #2769

info@physislabs.com

Wednesday, March 25, 2020

www.physislabs.com



## Chain of Custody

Physis Project ID: 2001003-003

Physis Environmental Laboratories, Inc.

Misty Mercier 1904 E. Wrigth Cir. Anaheim, CA 92806

714-605-5320 (office), 714-335-5918 (cell)

sc@physislabs.com

Enthalpy Analytical Lisa Nguyen 931 W. Barkley Ave. Orange, CA 92868

Lisa.Nguyen@enthalpy.com

Sample ID	Sample Description	Requested Analyses/Method	Sample Date	Sample Time	Matrix	# of Bottles
TMDL-R3	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	3/19/2020	10:20:00 AM	Liquid	1
TMDL-R2	Total	Total Kjeldahl Nitrogen (EPA 351.2)	3/19/2020	11:08:00 AM	Liquid	1
TMDL-R2	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	3/19/2020	11:08:00 AM	Liquid	1
TMDL-R1	Total	Total Kjeldahl Nitrogen (EPA 351.2)	3/19/2020	12:25:00 PM	Liquid	1
TMDL-R1	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	3/19/2020	12:25:00 PM	Liquid	1
TMDL-Est	Total	Total Kjeldahl Nitrogen (EPA 351.2)	3/19/2020	1:22:00 PM	Liquid	1
TMDL-Est	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	3/19/2020	1:22:00 PM	Liquid	1

Notes/Comments:

### **Report Down to the MDL**

Relinquished:	Print: CEASAR NWADIKIE	Date: 3/25/20	Received By:	Print:	FERMONDY DWG	Date: 3/25/2
Org: Physis	Sign: Africaly	Time: 140/	Org: EM	Sign:	J	Time:/ <i>Ψ</i> /℃
Relinquished:	Print:	Date:	Received By:	Print:		Date:
Org:	Sign:	Time:	Org:	Sign:		Time:



### SAMPLE ACCEPTANCE CHECKLIST

Section 1				
Client: Physis	Project:		· Miller	
Date Received: 03/25/20	Sampler's Name Present:	Yes	√No	
Section 2				1
Sample(s) received in a cooler? $\boxed{\checkmark}$ Yes, How many? $\boxed{1}$	No (skip section 2)		e Temp (°C) (No Cooler)	:
Sample Temp (°C), One from each cooler: #1: 5.4  (Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptive same day as sample receipt to have a higher temper Shipping Information:	#2: #3: otance range is < 10°C but not frozen). It	_#4:_ is acceptable	e for sample	_
Section 3  Was the cooler packed with:   ☐ Ice ☐ Ice Packs ☐ Paper ☐ None  Cooler Temp (°C): #1: 0.6 #2:	Bubble Wrap Styro Other#3:	foam #4:		
Section 4		YES	NO	N/A
Was a COC received?		1	-	
Are sample IDs present?		<b>√</b>		
Are sampling dates & times present?		<b>√</b>		
Is a relinquished signature present?		<b>√</b>		
Are the tests required clearly indicated on the COC?		1		
Are custody seals present?			<b>✓</b>	
If custody seals are present, were they intact?				✓
Are all samples sealed in plastic bags? (Recommended	for Microbiology samples)			<b>√</b>
Did all samples arrive intact? If no, indicate in Section 4	below.	✓		
Did all bottle labels agree with COC? (ID, dates and tim	es)	✓		
Were the samples collected in the correct containers for	or the required tests?	✓		
Are the containers labeled with the correct prese		<b>√</b>		
Is there headspace in the VOA vials greater than 5-6 mi				<b>√</b>
Was a sufficient amount of sample submitted for the re	equested tests?	✓	ļ.,	
Section 5 Explanations/Comments				
Section 6				
For discrepancies, how was the Project Manager notifice Project Manager's response:	ed? Verbal PM Initials: Email (email sent to/			
Completed By:	Date: 3 /25/20			
(Enthalpy Analytical, a subsidiary o	of Montrose Environmental Group ,Inc.			

\[Enthalpy Analytical, a subsidiary of Montrose Environmental Group ,Inc. 931 W. Barkley Ave, Orange, CA 92868 • T: (714) 771-6900 • F: (714) 538-1209 www.enthalpy.com/socal Sample Acceptance Checklist -- Rev 4, 8/8/2017



## **Analysis Results for 426411**

Misty Mercier PHYSIS Environmental Laboratories 1904 E. Wright Circle Anaheim, CA 92806

Lab Job #: 426411 Location: 2001003-003 Date Received: 03/25/20

Sample ID: TMDL-C	L (TOTAI	_)		Lab ID	: 42641	1-001	Collected: 03/19/20 07:47			
				Matrix	: Water					
426411-001 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2	nesun	Quai	Office	nL.	WIDE	וט	Daten	гтератец	Allalyzeu	Cilcilis
Prep Method: METHOD										
Nitrogen, Total Kjeldahl	1.1		mg/L	0.40	0.052	1	244072	04/16/20	04/17/20	ATP
Sample ID:			l	Lab ID:	426411-	002		Collected:	03/19/20 07:	47
TMDL-CL (FIELD FILTERE	<b>D</b> )		I	Matrix:	Water					
426411-002 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2 Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.97		mg/L	0.40	0.052	1	244072	04/16/20	04/17/20	ATP
Sample ID: TMDL-F	i4 (TOTAI	_)			: 42641			Collected:	03/19/20 08	:35
				Matrix	: Water					
426411-003 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2 Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.37	J	mg/L	0.40	0.052	1	244072	04/16/20	04/17/20	ATP
Sample ID:			ı	ab ID:	426411-	004		Collected:	03/19/20 08:	35
TMDL-R4 (FIELD FILTERE	(D)			Matrix:						
426411-004 Analyte	Result	Qual	Units	RL	MDL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2 Prep Method: METHOD										
Nitrogen, Total Kjeldahl	0.24	J	mg/L	0.40	0.052	1	244072	04/16/20	04/17/20	ATP
	A (TOTAL				40044	4 005		<b>A</b> !!	20/40/20 20	4.0
Sample ID: TMDL-S	A (TOTA	L)			: 42641 : Water			Collected	: 03/19/20 09	:10
Sample ID: TMDL-S				Matrix	: Water					
	Result		Units				Batch	Collected Prepared	: 03/19/20 09 Analyzed	:10 Chemist

Nitrogen, Total Kjeldahl

0.42

0.052

244073

04/16/20

0.40

mg/L

**ATP** 

04/17/20



### **Analysis Results for 426411**

Sample ID: Lab ID: 426411-006 Collected: 03/19/20 09:10

TMDL-SA (FIELD FILTERED) Matrix: Water

426411-006 Analyte Result Qual Units RL MDL DF **Batch Prepared Analyzed** Chemist Method: EPA 351.2 Prep Method: METHOD Nitrogen, Total Kjeldahl 0.26 0.40 0.052 244072 J mg/L 04/16/20 04/17/20 **ATP** 

Sample ID: TMDL-R3 (TOTAL) Lab ID: 426411-007 Collected: 03/19/20 10:20

Matrix: Water

426411-007 Analyte Result Qual Units RL MDL DF **Batch Prepared Analyzed** Chemist Method: EPA 351.2 Prep Method: METHOD Nitrogen, Total Kjeldahl 0.30 mg/L 0.40 0.052 244072 04/16/20 04/17/20 **ATP** 

Sample ID: Lab ID: 426411-008 Collected: 03/19/20 10:20

TMDL-R3 (FIELD FILTERED) Matrix: Water

426411-008 Analyte Result Qual Units RL MDL DF Batch **Prepared Analyzed** Chemist Method: EPA 351.2 Prep Method: METHOD 0.15 Nitrogen, Total Kjeldahl J 0.40 0.052 244072 04/16/20 04/17/20 **ATP** mg/L

Sample ID: TMDL-R2 (TOTAL) Lab ID: 426411-009 Collected: 03/19/20 11:08

Matrix: Water

426411-009 Analyte Result Qual Units RL MDL DF **Batch Prepared Analyzed** Chemist Method: EPA 351.2 Prep Method: METHOD Nitrogen, Total Kjeldahl 0.21 J 0.40 0.052 244072 04/16/20 04/17/20 **ATP** mg/L

Sample ID: Lab ID: 426411-010 Collected: 03/19/20 11:08

TMDL-R2 (FIELD FILTERED) Matrix: Water

426411-010 Analyte Result Qual **Units** RL MDL DF **Batch Prepared Analyzed** Chemist Method: EPA 351.2 Prep Method: METHOD Nitrogen, Total Kjeldahl 0.13 J 0.40 0.052 244072 04/17/20 **ATP** mg/L 04/16/20



### **Analysis Results for 426411**

Sample ID: TMDL-R1 (TOTAL) Lab ID: 426411-011 Collected: 03/19/20 12:25

Matrix: Water

426411-011 Analyte Result Qual Units RL MDL DF **Batch Prepared Analyzed** Chemist Method: EPA 351.2 Prep Method: METHOD Nitrogen, Total Kjeldahl 0.26 0.052 244073 04/16/20 J mg/L 0.40 04/17/20 **ATP** 

Sample ID: Lab ID: 426411-012 Collected: 03/19/20 12:25

TMDL-R1 (FIELD FILTERED) Matrix: Water

426411-012 Analyte Result Qual Units RL MDL DF **Batch Prepared Analyzed** Chemist Method: EPA 351.2 Prep Method: METHOD Nitrogen, Total Kjeldahl 0.15 mg/L 0.40 0.052 244073 04/16/20 04/17/20 ATP

Sample ID: TMDL-EST (TOTAL) Lab ID: 426411-013 Collected: 03/19/20 13:22

Matrix: Water

426411-013 Analyte Result Qual Units RL MDL DF **Batch Prepared Analyzed** Chemist Method: EPA 351.2 Prep Method: METHOD Nitrogen, Total Kjeldahl 0.29 0.052 J 0.40 244073 04/16/20 04/17/20 **ATP** mg/L

Sample ID: Lab ID: 426411-014 Collected: 03/19/20 13:22

TMDL-EST (FIELD FILTERED) Matrix: Water

426411-014 Analyte Result Qual Units RL MDL DF **Batch Prepared Analyzed** Chemist Method: EPA 351.2 Prep Method: METHOD Nitrogen, Total Kjeldahl 0.13 0.40 0.052 244073 04/16/20 04/17/20 **ATP** mg/L

J Estimated value



### **Batch QC**

Type: Blank	Lab ID:	QC864232	Batch:	244072
Matrix: Wate	Method:	EPA 351.2	Prep Method:	METHOD

QC864232 Analyte	Result	Qual	Units	RL	MDL	Prepared	Analyzed
Nitrogen, Total Kjeldahl	ND		mg/L	0.40	0.052	04/16/20	04/17/20

Type: Lab Control Sample Lab ID: QC864233 Batch: 244072

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

QC864233 Analyte	Result	Spiked	Units	Recovery Qual	Limits
Nitrogen, Total Kjeldahl	2.530	2.500	mg/L	101%	90-110

Type: Matrix Spike Lab ID: QC864234 Batch: 244072

Matrix (Source ID): Water (426411-001) Method: EPA 351.2 Prep Method: METHOD

Source Sample

QC864234 Analyte	Result	Result	Spiked	Units	Recovery	Qual	Limits	DF
Nitrogen, Total Kjeldahl	12.90	1.060	12.50	mg/L	95%		90-110	2.5

Type: Matrix Spike Duplicate Lab ID: QC864235 Batch: 244072

Matrix (Source ID): Water (426411-001) Method: EPA 351.2 Prep Method: METHOD

Source Sample **RPD** QC864235 Analyte Result Result Spiked Units Qual Limits **RPD** Lim DF Recovery Nitrogen, Total Kjeldahl 12.80 20 2.5 1.060 12.50 mg/L 94% 90-110

Type: Blank Lab ID: QC864236 Batch: 244073

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

QC864236 Analyte	Result	Qual	Units	RL	MDL	Prepared	Analyzed
Nitrogen, Total Kjeldahl	ND	•	mg/L	0.40	0.052	04/16/20	04/17/20

Type: Lab Control Sample Lab ID: QC864237 Batch: 244073

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

QC864237 Analyte	Result	Spiked	Units	Recovery Qual	Limits
Nitrogen, Total Kjeldahl	2.560	2.500	mg/L	102%	90-110



### **Batch QC**

Type: Matrix Spike Lab ID: QC864238 Batch: 244073

Matrix (Source ID): Water (426411-013) Method: EPA 351.2 Prep Method: METHOD

Source Sample

QC864238 Analyte	Result	Result	Spiked	Units	Recovery	Qual	Limits	DF
Nitrogen, Total Kjeldahl	13.80	0.2870	12.50	mg/L	108%		90-110	2.5

Type: Matrix Spike Duplicate Lab ID: QC864239 Batch: 244073

Matrix (Source ID): Water (426411-013) Method: EPA 351.2 Prep Method: METHOD

Source

		Sample							RPD	
QC864239 Analyte	Result	Result	Spiked	Units	Recovery	Qual	Limits	RPD	Lim	DF
Nitrogen, Total Kjeldahl	13.90	0.2870	12.50	mg/L	109%		90-110	1	20	2.5

ND Not Detected

# CHAIN OF TERRA GUSTEO DA AURA ENVIRON ESTA DE LA COMPANIES, INC.

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200/003-003

(805) 643-5621 Company: PHYSIS To: From: Aquatic Bioassay Phone: (805) 643-2930 Address: 1904 E Wright Circle and Consulting Labs. Fax: Anaheim, CA 92806 Project ID: Ventura River 29 N. Olive St. Phone: (714) 335-5793 **AlgaeTMDL** Ventura, CA 93001 ANALYSIS Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B) Total TKN (EPA 351.2) Dissolved TKN (EPA 351.2) 「デe/d 行/人 Filtered (SM 4500-P Phosphorous, Field Total Phosphorous (SM 4500-P E) Volume/ Sample I.D. No. Sample Date Time **Matrix** Reps No. Comments 3-250 mL, pl; 19/2000 X 7:47 × TMDL-CL 2-250 mL, gl. Water 3-250 mL, pl; 8135 X 12020 X 2-250 mL, gl. TMDL-R4 Water 3-250 mL, pl; X 9:10 X 3/9/z020 TMDL-SA 2-250 mL, gl. Water 3-250 mL, pl; X X 10:20 X TMDL-R3 2-250 mL, gl. 3-250 mL, pl; 3/19/2000 11:08 TMDL-R2 2-250 mL, gl. Water 3-250 mL, pl; 3/9/2020 12:25 TMDL-R1 2-250 mL, gl. Water 3-250 mL, pl; 2/9/2020 13:22 **TMDL-Est** 2-250 mL, gl. Water Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H2SO4; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.co RECEIVED BY Richard Hanken **RELINQUISHED BY RECEIVED BY RELINQUISHED BY** Name: Branna Jones Name: Name: Name: Signature: Signature: Signature: V Signature: Time: 922 Date: 3/20/20 Time: 1430 Date: 3/20/20 Time: Date: Time: Date:



## Sample Receipt Summary

Client: Aquatic Bioassay & Consulting Laboratories, Inc. Date Received: 3/20/2020 Received By: RGH Inspected By: R						
Courier:	Cooler:	Temperature:				
☐ Physis ☐ FEDEX 🗹 UPS ☐ Client	✓ Cooler ☐ Box Total #: 2	☐ BLUE 🗹 WET ☐ DRY				
Start End Other:	Other:	☐ None 1.4°C				
	Sample Integrity Upon Receipt:					
1. COC(s) included and completely filled	out	Yes				
2. All sample containers arrived intact		<u>Y</u> es				
3. All samples listed on COC(s) are prese	nt	Yes				
	with information on COC(s)					
5. Correct containers and volume for all analyses indicatedYes						
6. All samples received within method holding time						
7. Correct preservation used for all analyses indicated						
8. Name of sampler included on COC(s).		No				

### Notes:

Dissolved TKN Bottle - TMDL-R4 Sampled 3/19/20 at 8:35 - so we logged it in to match the COC for Sample ID(s) TMDL-R4 (Field Filtered). Dissolved TKN Bottle - TMDL-R4 Sampled 3/19/20 at 10:20 - so we logged it in to match the COC for Sample ID(s) TMDL-R3 (Field Filtered). Dissolved Nitrate/Nitrite bottle - TMDL-RA Sampled 3/19/20 at 8:35 - so we logged it in to match the COC for Sample ID(s) TMDL-R4 (Field Filtered).

Dissolved Nitrate/Nitrite bottle - TMDL-R4 Sampled 3/19/20 at 10:20 - so we logged it in to match the COC for Sample ID(s) TMDL-R3 (Field Filtered).



May 13, 2020

Karin Wisenbaker Aquatic Bioassay & Consulting Laboratories, Inc. 29 N. Olive Street Ventura, CA 93001

Project Name: Ventura River Algae TMDL

Physis Project ID: 2001003-004

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 4/16/2020. A total of 14 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Conventionals					
Total Phosphorus by SM 4500-P E					
Total Dissolved Phosphorus by SM 4500-P E					
Nitrite as N by SM 4500-NO2 B					
Nitrate as N by SM 4500-NO3 E					
Subcontract					
Total Kjeldahl Nitrogen (Field Filtered) by EPA 351.2					
Total Kjeldahl Nitrogen by EPA 351.2					

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Misty Mercier 714 602-5320

Extension 202

mistymercier@physislabs.com



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### **PROJECT SAMPLE LIST**

Aquatic Bioassay & Consulting Laboratories, Inc. Ventura River Algae TMDL

PHYSIS Project ID: 2001003-004 Total Samples: 14

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
72678	TMDL-CL	Total	4/15/2020	7:45	Liquid	Not Specified
72679	TMDL-CL	Field Filtered	4/15/2020	7:45	Liquid	Not Specified
72680	TMDL-R4	Total	4/15/2020	8:28	Liquid	Not Specified
72681	TMDL-R4	Field Filtered	4/15/2020	8:28	Liquid	Not Specified
72682	TMDL-SA	Total	4/15/2020	8:55	Liquid	Not Specified
72683	TMDL-SA	Field Filtered	4/15/2020	8:55	Liquid	Not Specified
72684	TMDL-R3	Total	4/15/2020	9:40	Liquid	Not Specified
72685	TMDL-R3	Field Filtered	4/15/2020	9:40	Liquid	Not Specified
72686	TMDL-R2	Total	4/15/2020	10:30	Liquid	Not Specified
72687	TMDL-R2	Field Filtered	4/15/2020	10:30	Liquid	Not Specified
72688	TMDL-R1	Total	4/15/2020	11:20	Liquid	Not Specified
72689	TMDL-R1	Field Filtered	4/15/2020	11:20	Liquid	Not Specified
72690	TMDL-Est	Total	4/15/2020	12:40	Liquid	Not Specified
72691	TMDL-Est	Field Filtered	4/15/2020	12:40	Liquid	Not Specified



### **ABBREVIATIONS and ACRONYMS**

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight

### **QUALITY ASSURANCE SUMMARY**

LABORATORY BATCH: Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

PROCEDURAL BLANK: Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

ACCURACY: Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

BLANK SPIKES: BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

MATRIX SPIKES: MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

CERTIFIED REFERENCE MATERIALS: CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

LABORATORY CONTROL MATERIAL: LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

LABORATORY CONTROL SPIKES: LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

SURROGATES: A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to



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the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

HOLDING TIME: Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes.

SAMPLE STORAGE/RETENTION: In order to maintain chemical integrity prior to analysis, all samples submitted to Physis are refrigerated (liquids) or frozen (solids) upon receipt unless otherwise recommended by applicable methods. Solid samples are retained for 1 year from collection while liquid samples are retained until method recommended holding times elapse.

TOTAL/DISSOLVED FRACTION: In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.



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## **PHYSIS QUALIFIER CODES**

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
В	analyte was detected in the procedural blank greater than 10 times the MDL
Е	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
Н	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified accuracy and/or precision acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore accuracy and/or precision acceptance limits do not apply
SL	analyte results were lower than 10 times the MDL, therefore accuracy and/or precision acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore accuracy and/or precision acceptance limits do not apply
Q	analyte was outside the specified QAPP acceptance limits for precision and/or accuracy but within Physis derived acceptance limits, therefore the sample data was reported without further clarification
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

# TERRA REPORTA AURA ENVIRON RES, INC.

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PHYSIS Project ID: 2001003-004

Client: Aquatic Bioassay & Consulting Laboratories, Inc.

**Project: Ventura River Algae TMDL** 

Conventionals												
ANALYTE	Method	Units	RESULT	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed		
Sample ID: 72678-R1	TMDL-CL Total	٨	Natrix: Liquid	Dilution Factor: 1		Sampled: 15-Apr-20 7:45			Received: 16-Apr-20			
Total Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.02	NA		C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72679-R1	TMDL-CL Field Filtered	٨	Лatrix: Liquid	Dilutio	n Factor: 1 Sai		pled: 15-Ap	r-20 7:45	Received	: 16-Apr-20		
Nitrate as N	SM 4500-NO3 E	mg/L	0.0182	0.01	0.02	NA	J	C-49032	27-Apr-20	27-Apr-20 17:00		
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-49018	17-Apr-20	17-Apr-20 7:30		
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72680-R1	TMDL-R4 Total	٨	Лatrix: Liquid	Dilutio	n Factor:	ı Sam	pled: 15-Ap	r-20 8:28	Received:	: 16-Apr-20		
Total Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.02	NA		C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72681-R1	TMDL-R4 Field Filtered	Matrix: Liquid		Dilution Factor: 1		ı Sam	pled: 15-Ap	r-20 8:28	Received: 16-Apr-20			
Nitrate as N	SM 4500-NO3 E	mg/L	0.797	0.01	0.02	NA		C-49032	27-Apr-20	27-Apr-20 17:00		
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-49018	17-Apr-20	17-Apr-20 7:30		
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	0.016	0.03	NA		C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72682-R1	TMDL-SA Total	Matrix: Liquid		Dilution Factor: 1		ı Sam	Sampled: 15-Apr-20 8:55		Received	: 16-Apr-20		
Total Phosphorus	SM 4500-P E	mg/L	0.045	0.016	0.02	NA		C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72683-R1	TMDL-SA Field Filtered	٨	Лatrix: Liquid	Dilution Factor: 1		ı Sam	pled: 15-Ap	r-20 8:55	Received: 16-Apr-20			
Nitrate as N	SM 4500-NO3 E	mg/L	0.938	0.01	0.02	NA		C-49032	27-Apr-20	27-Apr-20 17:00		
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-49018	17-Apr-20	17-Apr-20 7:30		
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0393	0.016	0.03	NA		C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72684-R1	TMDL-R3 Total	٨	Natrix: Liquid	Dilution Factor: 1		ı Sam	pled: 15-Ap	r-20 9:40	Received	Received: 16-Apr-20		
Total Phosphorus	SM 4500-P E	mg/L	0.024	0.016	0.02	NA		C-49048	12-May-20	12-May-20 15:00		

1904 E. Wright Circle, Anaheim CA 92806 main: (714) 602-5320 fax: (714) 602-5321 www.physislabs.com info@physislabs.com CA ELAP #2769 ar - 1 of 2



PHYSIS Project ID: 2001003-004

Client: Aquatic Bioassay & Consulting Laboratories, Inc.

Project: Ventura River Algae TMDL

## Conventionals

			Conve	ention	ais							
ANALYTE	Method	Units	RESULT	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed		
Sample ID: 72685-R1	TMDL-R3 Field Filtered	М	latrix: Liquid	Dilutio	on Factor: 1	ı Sar	npled: 15-Ap	or-20 9:40	Received	: 16-Apr-20		
Nitrate as N	SM 4500-NO3 E	mg/L	0.873	0.01	0.02	NA		C-49032	27-Apr-20	27-Apr-20 17:00		
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-49018	17-Apr-20	17-Apr-20 7:30		
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0179	0.016	0.03	NA	J	C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72686-R1	TMDL-R2 Total	М	latrix: Liquid	Dilutio	on Factor: 1	ı Sar	npled: 15-Ap	or-20 10:3	o Received	: 16-Apr-20		
Total Phosphorus	SM 4500-P E	mg/L	0.0372	0.016	0.02	NA		C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72687-R1	TMDL-R2 Field Filtered	Matrix: Liquid		Dilution Factor: 1		ı Sar	npled: 15-Ap	or-20 10:3	o Received	Received: 16-Apr-20		
Nitrate as N	SM 4500-NO3 E	mg/L	1.16	0.01	0.02	NA		C-49032	27-Apr-20	27-Apr-20 17:00		
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-49018	17-Apr-20	17-Apr-20 7:30		
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0258	0.016	0.03	NA	J	C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72688-R1	TMDL-R1 Total	М	latrix: Liquid	Dilutio	on Factor: 1	ı Sar	npled: 15-Ap	or-20 11:20	11:20 Received: 16-Apr-20			
Total Phosphorus	SM 4500-P E	mg/L	0.0454	0.016	0.02	NA		C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72689-R1	D: 72689-R1 TMDL-R1 Field Filtered		Matrix: Liquid		Dilution Factor: 1		npled: 15-Ap	or-20 11:20	n Received	Received: 16-Apr-20		
Nitrate as N	SM 4500-NO3 E	mg/L	0.974	0.01	0.02	NA		C-49032	27-Apr-20	27-Apr-20 17:00		
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-49018	17-Apr-20	17-Apr-20 7:30		
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0258	0.016	0.03	NA	J	C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72690-R1	TMDL-Est Total	М	latrix: Liquid	Dilutio	on Factor: 1	ı Sar	npled: 15-Ap	or-20 12:4	o Received	: 16-Apr-20		
Total Phosphorus	SM 4500-P E	mg/L	0.0935	0.016	0.02	NA		C-49048	12-May-20	12-May-20 15:00		
Sample ID: 72691-R1	TMDL-Est Field Filtered	М	latrix: Liquid	Dilutio	Dilution Factor: 1		Sampled: 15-Apr-20 12:4		o Received	: 16-Apr-20		
Nitrate as N	SM 4500-NO3 E	mg/L	0.959	0.01	0.02	NA		C-49032	27-Apr-20	27-Apr-20 17:00		
Nitrite as N	SM 4500-NO2 B	mg/L	ND	0.01	0.02	NA		C-49018	17-Apr-20	17-Apr-20 7:30		
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0345	0.016	0.03	NA		C-49048	12-May-20	12-May-20 15:00		

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## LITY CONTRO

TRATORIES, INC.

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1904 E. Wright Circle, Anaheim CA 92806

main: (714) 602-5320

fax: (714) 602-5321

www.physislabs.com

info@physislabs.com

CA ELAP #2769

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Conventionals QUALITY CONTROL REPORT														
SAMPLE ID		BATCH ID	RESULT	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT		ACCURACY LIMITS	PI %	RECISI LI <i>I</i>	ON MITS	QA CODE
Nitrate as N		Method: SM 4500-NO3 E			Fraction: NA Dilution Factor:		tor: 1	Prepared: 27-Apr-20		Analyzed: 27-Apr		27-Apr-2	0	
72677-B1	QAQC Procedural Blank	C-49032	ND	0.01	0.02	mg/L								
72677-BS1	QAQC Procedural Blank	C-49032	0.585	0.01	0.02	mg/L	0.5	0	117	68 - 135% PASS				
72677-BS2	QAQC Procedural Blank	C-49032	0.59	0.01	0.02	mg/L	0.5	0	118	68 - 135% PASS	1	25 I	PASS	
72689-MS1	TMDL-R1	C-49032	1.56	0.01	0.02	mg/L	0.5	0.989	114	80 - 120% PASS		25		
72689-MS2	TMDL-R1	C-49032	1.57	0.01	0.02	mg/L	0.5	0.989	116	80 - 120% PASS	2	25 I	PASS	
72689-R2	TMDL-R1	C-49032	1	0.01	0.02	mg/L					3	25 I	PASS	
Nitrite as N		Method: SM 4500-NO2 B		Fraction: NA Dilut		Dilution Fac	lution Factor: 1		ed: 17-Apr-20	Analyzed: 17-Apr		17-Apr-20	)	
72677-B1	QAQC Procedural Blank	C-49018	ND	0.01	0.02	mg/L								
72677-BS1	QAQC Procedural Blank	C-49018	0.0487	0.01	0.02	mg/L	0.05	0	97	49 - 120% PASS				
72677-BS2	QAQC Procedural Blank	C-49018	0.0489	0.01	0.02	mg/L	0.05	0	98	49 - 120% PASS	1	25 I	PASS	
72691-MS1	TMDL-Est	C-49018	0.0476	0.01	0.02	mg/L	0.05	0	95	80 - 120% PASS		25		
72691-MS2	TMDL-Est	C-49018	0.0476	0.01	0.02	mg/L	0.05	0	95	80 - 120% PASS	0	25 I	PASS	
72691-R2	TMDL-Est	C-49018	ND	0.01	0.02	mg/L					0	25 I	PASS	
Total Dissolved Phosphorus		Method: SM 4500-P E		Fraction: NA Dilu		Dilution Fac	ilution Factor: 1		Prepared: 12-May-20		Analyzed: 12-May		.0	
72677-B1	QAQC Procedural Blank	C-49048	ND	0.016	0.03	mg/L				•			•	
72677-BS1	QAQC Procedural Blank	C-49048	0.306	0.016	0.03	mg/L	0.3	0	102	86 - 118% PASS				
72677-BS2	QAQC Procedural Blank	C-49048	0.301	0.016	0.03	mg/L	0.3	0	100	86 - 118% PASS	2	25 I	PASS	
72691-MS1	TMDL-Est	C-49048	0.32	0.016	0.03	mg/L	0.3	0.0351	95	80 - 120% PASS		25		
72691-MS2	TMDL-Est	C-49048	0.316	0.016	0.03	mg/L	0.3	0.0351	94	80 - 120% PASS	1	25 I	PASS	
72691-R2	TMDL-Est	C-49048	0.0356	0.016	0.03	mg/L					3	25 I	PASS	
Total Phosphorus		Method: SM 4500-P E		Fraction: NA Dilutio		Dilution Fac	actor: 1 Prepared: 12-May-20		d: 12-May-20	Analyzed: 12-Ma		12-May-2	.0	
72677-B1	QAQC Procedural Blank	C-49048	ND	0.016	0.02	mg/L								
72677-BS1	QAQC Procedural Blank	C-49048	0.306	0.016	0.02	mg/L	0.3	0	102	73 - 131% PASS				
72677-BS2	QAQC Procedural Blank	C-49048	0.301	0.016	0.02	mg/L	0.3	0	100	73 - 131% PASS	2	25 I	PASS	
72680-MS1	TMDL-R4	C-49048	0.297	0.016	0.02	mg/L	0.3	0.0087	96	80 - 120% PASS		25		
72680-MS2	TMDL-R4	C-49048	0.308	0.016	0.02	mg/L	0.3	0.0087	100	80 - 120% PASS	4	25 I	PASS	
72680-R2	TMDL-R4	C-49048	0.0174	0.016	0.02	mg/L					8	25 I	PASS	J

PHYSIS Project ID: 2001003-004

## SUBCONTRACT TERRA REPORTA ENVIRON TERRA ENVIRON TERRA REPORTA AURA ENVIRON TERRA ENVIRON TERRA REPORTA AURA ENVIRON TERRA TERRA TERRA REPORTA TERRA TE

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Enthalpy Analytical 931 West Barkley Ave Orange, CA 92868 (714) 771-6900

enthalpy.com

Lab Job Number: 427285

Report Level: II

Report Date: 05/01/2020

### **Analytical Report** *prepared for:*

Misty Mercier PHYSIS Environmental Laboratories 1904 E. Wright Circle Anaheim, CA 92806

Location: 2001003-004

Authorized for release by:

Lisa Nguyen, Project Manager ext 10323

lisa.nguyen@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.



### **Sample Summary**

Misty Mercier Lab Job #: 427285 PHYSIS Environmental Laboratories Location: 2001003-004

1904 E. Wright Circle Date Received: 04/17/20

Anaheim, CA 92806

Sample ID	Lab ID	Collected	Matrix
TMDL-CL	427285-001	04/15/20 07:45	Water
TMDL-R4	427285-002	04/15/20 08:28	Water
TMDL-SA	427285-003	04/15/20 08:55	Water
TMDL-R3	427285-004	04/15/20 09:40	Water
TMDL-R2	427285-005	04/15/20 10:30	Water
TMDL-R1	427285-006	04/15/20 11:20	Water
TMDL-EST	427285-007	04/15/20 12:40	Water



### Chain of Custody

# Physis Project ID: 2001003-004



Anaheim, ČÁ 92806 714-605-5320 (office), 714-335-5918 (cell) sc@physislabs.com Physis Environmental Laboratories, Inc. 1904 E. Wrigth Cir. Misty Mercier From:

582+2h

Lisa Nguyen 931 W. Barkley Ave. Orange, CA 92868 Lisa.Nguyen@enthalpy.com **Enthalpy Analytical** <u>T</u>o:

Physis SOS Number:	2001003		PO Number:		Samp	Sampled by:	
Turnaround Time	Standard 🔲 RUSH:	Business Days	Type of ice used:	BLUE 🔽	<b>✓</b> WET	□ DRY	
10000	✓ PDF/EDD □ SWAMP EDD	☐ CEDEN EDD		FEDEX	□ UPS	USPS	
Nepolt Foliat	Other EDD:			☐ Client	Physis	Other:	
Sample ID	Sample Description	Requested An	Requested Analyses/Method	Sample Date	Sample Time	Matrix	# of Bottles
TMDL-CL	Total	Total Kjeldahl Nii	Total Kjeldahl Nitrogen (EPA 351.2)	4/15/2020	7:45:00 AM	Liquid	-
TMDL-CL	Field Filtered	Total Kjeldahl Nitrogen (	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	4/15/2020	7:45:00 AM	Liquid	-
TMDL-R4	Total	Total Kjeldahl Nii	Total Kjeldahl Nitrogen (EPA 351.2)	4/15/2020	8:28:00 AM	Liquid	-
TMDL-R4	Field Filtered	Total Kjeldahl Nitrogen (	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	4/15/2020	8:28:00 AM	Liquid	-
TMDL-SA	Total	Total Kjeldahl Nii	Total Kjeldahl Nitrogen (EPA 351.2)	4/15/2020	8:55:00 AM	Líquid	-
TMDL-SA	Field Filtered	Total Kjeldahl Nitrogen (	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	4/15/2020	8:55:00 AM	Liquid	-
TMDL-R3	Total	Total Kjeldahl Ni	Total Kjeldahl Nitrogen (EPA 351.2)	4/15/2020	9:40:00 AM	Liquid	-

Relinquished:	Relinquished: Print: MayN64MON	Assim	Date: 4/17/22	Received By:	Print: 6 Kgm		Date: 4/19/20
Org: Physis Sign:	Signs	7	Time: 1558	org: SA	Sign: Con		Time: (SIS
Relinquished: Print:_	Print:		Date:	Received By:	Print:		Date:
Org:	Sign:	1700	Time:	Org:	Sign:		Time:
Friday, April 17, 2020	020	www.physislabs.com	info@physislabs.com	CA ELAP #2769	main (714) 602-5320 fax (714) 602-5321	fax (714) 602-5321	Page 1 of 2

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### Chain of Custody

## Physis Project ID: 2001003-004



Physis Environmental Laboratories, Inc. Misty Mercier From:

1904 E. Wrigth Cir. Anaheim, CA 92806 714-605-5320 (office), 714-335-5918 (cell) sc@physislabs.com

Orange, CA 92868 Lisa.Nguyen@enthalpy.com Lisa Nguyen 931 W. Barkley Ave. **Enthalpy Analytical** <u>1</u>0;

Sample ID	Sample Description	Requested Analyses/Method	Sample Date	Sample Time	Matrix	# of Bottles
TMDL-R3	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	4/15/2020	9:40:00 AM	Liquid	-
TMDL-R2	Total	Total Kjeldahl Nitrogen (EPA 351.2)	4/15/2020	10:30:00 AM	Liquid	-
TMDL-R2	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	4/15/2020	10:30:00 AM	Liquid	-
TMDL-R1	Total	Total Kjeldahl Nitrogen (EPA 351.2)	4/15/2020	11:20:00 AM	Liquid	-
TMDL-R1	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	4/15/2020	11:20:00 AM	Liquid	-
TMDL-Est	Total	Total Kjeldahl Nitrogen (EPA 351.2)	4/15/2020	12:40:00 PM	Liquid	-
TMDL-Est	Field Filtered	Total Kjeldahl Nitrogen (Field Filtered) (EPA 351.2)	4/15/2020	12:40:00 PM	Liquid	-
Notes/Comments:		Report Down to the MDL			ľ	

			•				
Relinquished:	Print: Mounday Now	- Nord	Date: # 177550 Received By:		Print:		Date: 4/173
Org: Physis Sign:	Sign:		Time: 15-58	org:	Sign: 6.1	LIM	Time: (557)
Relinquished:	Print:		Date:	Received By:	Print:		Date:
Org:	Sign:	Topical and the second	Time:	Org:	Sign:		Time:
Friday, April 17, 2020	020	www.physislabs.com	info@physislabs.com	CA ELAP #2769	main (714) 602-5320 fax (714) 602-5321	fax (714) 602-5321	Page 2 of 2



### SAMPLE ACCEPTANCE CHECKLIST

Section 1				
Client: Physis	Project: 2001003-004			
Date Received: 4/17/20	-	√Yes	No	
Section 2				
Sample(s) received in a cooler? ✓Yes, How many? 1	No (skip section 2)		e Temp (°C) (No Cooler)	
Sample Temp (°C), One from each cooler: #1: 0.7				
(Acceptance range is < 6°C but not frozen (for Microbiology samples, accepta	nce range is < 10°C but not frozen). I	t is acceptable		s collected
the same day as sample receipt to have a higher temperatu Shipping Information:	re as long as there is evidence that co	ooling has begu	un.)	
Section 3				
Was the cooler packed with:	Bubble Wrap Styro			
Cooler Temp (°C): #1: 0.6 #2:	#3:	#4:		
Section 4		YES	NO	N/A
Was a COC received?		<b>V</b>		
Are sample IDs present?		1		1
Are sampling dates & times present?		✓		
Is a relinquished signature present?		<b>√</b>		
Are the tests required clearly indicated on the COC?		✓		
Are custody seals present?		1	<b>√</b>	
If custody seals are present, were they intact?				<b>\</b>
Are all samples sealed in plastic bags? (Recommended fo	r Microbiology samples)			<b>\</b>
Did all samples arrive intact? If no, indicate in Section 4 be	elow.	<b>V</b>		
Did all bottle labels agree with COC? (ID, dates and times)		✓		
Were the samples collected in the correct containers for t		1		
Are the containers labeled with the correct preserva		<b>V</b>		
Is there headspace in the VOA vials greater than 5-6 mm i				✓
Was a sufficient amount of sample submitted for the requ	uested tests?	✓		
Section 5 Explanations/Comments				
Section 6				
For discrepancies, how was the Project Manager notified?		_		
Project Manager's response:	Email (email sent to/	on):	/	
Completed By:  Enthalpy Analytical, a subsidiary of M		<u>4/17/2</u>	ઝ ફ્	

Enthalpy Analytical, a subsidiary of Montrose Environmental Group ,Inc.
931 W. Barkley Ave, Orange, CA 92868 • T: (714) 771-6900 • F: (714) 538-1209
www.enthalpy.com/socal
Sample Acceptance Checklist – Rev 4, 8/8/2017

17-APR-2020 17:00	0.	Entha	Enthalpy Analytical - Orange			
		I	Login Number: 427285			
Project: ST	STANDARD	Report To: PHYS	PHYSIS Environmental Laboratories		Bill To: PHYSIS Environmental Laboratories, Inc.	
Site: 20	2001003-004		1904 E. Wright Circle		1904 E. Wright Circle	
Account #: PH	PHYSIS					
Logged By: GCK	м	Anah	Anaheim, CA 92806		Anaheim, CA 92806	
PO#:		ATTN	ATTN: Misty Mercier		ATTN: Misty Mercier	
Proj. Mgr: LSN	N.	714-	-602-5320		714-602-5320	
Rpt Level: II						
Sample # Alias	Client ID	Sampled Ord Recv	Hold Due Matrix	Loc Analyses	COC. Number	
427285-001	TMDL-CL	04/15 07:45 04/17 04/17	COMMENTS:			
			05/13 04/28 Filtrate	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			05/13 04/28 Water	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			04/15 Water	EO FILTER	Field Filtered	
			Water	EO SDF		
427285-002	TMDL-R4	04/15 08:28 04/17 04/17 COMMENTS:	COMMENTS:			
			05/13 04/28 Filtrate	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			05/13 04/28 Water	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			04/15 Water	EO FILTER	Field Filtered	
			Water	EO SDF		
427285-003	TMDL-SA	04/15 08:55 04/17 04/17 COMMENTS:	COMMENTS:			
			05/13 04/28 Filtrate	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			05/13 04/28 Water	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			04/15 Water	EO FILTER	Field Filtered	
			Water	EO SDF		
427285-004	TMDL-R3	04/15 09:40 04/17 04/17	04/17 COMMENTS:			
			05/13 04/28 Filtrate	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			05/13 04/28 Water	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			04/15 Water	EO FILTER	Field Filtered	
			Water	EO SDF		
427285-005	TMDL-R2	04/15 10:30 04/17 04/17	COMMENTS:			
			05/13 04/28 Filtrate	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			05/13 04/28 Water	EO 351.2 TKN AUTO	Dissolved TKN already field filtered.	
			04/15 Water	EO FILTER	Field Filtered	
			Water	EO SDF		



### **Analysis Results for 427285**

Misty Mercier PHYSIS Environmental Laboratories 1904 E. Wright Circle Anaheim, CA 92806

Lab Job #: 427285 Location: 2001003-004 Date Received: 04/17/20

Sample ID: TM	DL-CL		La	b ID: 4	127285-0	001		Col	lected: 04/	15/20 07:45	
427285-001 Analyte	Result	Qual	Units	RL	MDL	Matrix	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2											
Prep Method: METHOD											
Nitrogen, Total Kjeldahl	0.49		mg/L	0.40	0.052	Water	1	245033	04/23/20	04/24/20	ATP
Nitrogen, Total Kjeldahl	0.43		mg/L	0.40	0.052	Filtrate	1	245034	04/23/20	04/24/20	ATP
Sample ID: TM	DL-R4		Lal	b ID: 4	127285-0	002		Col	lected: 04/	15/20 08:28	
427285-002 Analyte	Result	Qual	Units	RL	MDL	Matrix	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2											
Prep Method: METHOD											
Nitrogen, Total Kjeldahl	0.18	J	mg/L	0.40	0.052	Water	1	245033	04/23/20	04/24/20	ATP
Nitrogen, Total Kjeldahl	0.11	J	mg/L	0.40	0.052	Filtrate	1	245034	04/23/20	04/24/20	ATP
Sample ID: TM	DL-SA		La	b ID:	427285-	003		Col	llected: 04/	15/20 08:55	
427285-003 Analyte	Result	Qual	Units	RL	MDL	Matrix	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2											
Prep Method: METHOD											
Nitrogen, Total Kjeldahl	0.26	J	mg/L	0.40	0.052	Water	1	245033	04/23/20	04/24/20	ATP
Nitrogen, Total Kjeldahl	0.24	J	mg/L	0.40	0.052	Filtrate	1	245034	04/23/20	04/24/20	ATP
Sample ID: TM	DL-R3		La	b ID: 4	127285-0	004		Col	lected: 04/	15/20 09:40	
427285-004 Analyte	Result	Qual	Units	RL	MDL	Matrix	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2											
Prep Method: METHOD											
Nitrogen, Total Kjeldahl	0.22	J	mg/L	0.40	0.052	Water	1	245033	04/23/20	04/24/20	ATP
Nitrogen, Total Kjeldahl	0.18	J	mg/L	0.40	0.052	Filtrate	1	245034	04/23/20	04/24/20	ATP
Sample ID: TM	DL-R2		Lal	b ID: 4	127285-0	005		Col	lected: 04/	15/20 10:30	
427285-005 Analyte	Result	Qual	Units	RL	MDL	Matrix	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2											
Prep Method: METHOD											
Nitrogen, Total Kjeldahl	0.25	J	mg/L	0.40	0.052	Water	1	245033	04/23/20	04/24/20	ATP
Nitrogen, Total Kjeldahl	0.21	J	mg/L	0.40	0.052	Filtrate	1	245034	04/23/20	04/24/20	ATP



### **Analysis Results for 427285**

Sample ID: TM	IDL-R1		La	b ID:	427285-	006		Co	llected: 04/	15/20 11:20	
427285-006 Analyte	Result	Qual	Units	RL	MDL	Matrix	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2 Prep Method: METHOD											
Nitrogen, Total Kjeldahl	1.2		mg/L	0.40	0.052	Water	1	245033	04/23/20	04/24/20	ATP
Nitrogen, Total Kjeldahl	0.13	J	mg/L	0.40	0.052	Filtrate	1	245034	04/23/20	04/24/20	ATP
Sample ID: TM	Sample ID: TMDL-EST Lab ID: 427285-007					Co	llected: 04	/15/20 12:40			
427285-007 Analyte	Result	Qual	Units	RL	MDL	Matrix	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 351.2											

Prep Method: METHOD Nitrogen, Total Kjeldahl 0.23 J 0.40 0.052 Water 245033 04/23/20 04/24/20 **ATP** mg/L Nitrogen, Total Kjeldahl 04/24/20 0.17 mg/L 0.40 0.052 Filtrate 245034 04/23/20 ATP

J Estimated value



### **Batch QC**

Type:	Blank	Lab ID:	QC866464	Batch:	245033
Matrix:	Water	Method:	EPA 351.2	Prep Method:	METHOD

QC866464 Analyte	Result	Qual	Units	RL	MDL	Prepared	Analyzed
Nitrogen, Total Kjeldahl	ND		mg/L	0.20	0.026	04/23/20	04/24/20

Type: Lab Control Sample Lab ID: QC866465 Batch: 245033

Matrix: Water Method: EPA 351.2 Prep Method: METHOD

QC866465 Analyte	Result	Spiked	Units	Recovery Q	ual Limits
Nitrogen, Total Kjeldahl	2.440	2.500	mg/L	98%	90-110

Type: Matrix Spike Lab ID: QC866466 Batch: 245033

Matrix (Source ID): Water (427285-001) Method: EPA 351.2 Prep Method: METHOD

Source Sample

QC866466 Analyte	Result	Result	Spiked	Units	Recovery	Qual	Limits	DF
Nitrogen, Total Kjeldahl	13.60	0.4860	12.50	mg/L	105%		90-110	2.5

Type: Matrix Spike Duplicate Lab ID: QC866467 Batch: 245033

Matrix (Source ID): Water (427285-001) Method: EPA 351.2 Prep Method: METHOD

Source **RPD** Sample QC866467 Analyte Result Result Units Limits **RPD** Lim DF Spiked Recovery Qual Nitrogen, Total Kjeldahl 20 2.5 13.50 0.4860 12.50 mg/L 104% 90-110

Type: Blank Lab ID: QC866468 Batch: 245034

Matrix: Filtrate Method: EPA 351.2 Prep Method: METHOD

QC866468 Analyte	Result	Qual	Units	RL	MDL	Prepared	Analyzed
Nitrogen, Total Kjeldahl	ND		mg/L	0.20	0.026	04/23/20	04/24/20

Type: Lab Control Sample Lab ID: QC866469 Batch: 245034

Matrix: Filtrate Method: EPA 351.2 Prep Method: METHOD

QC866469 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Nitrogen, Total Kjeldahl	2.620	2.500	mg/L	105%		90-110



### **Batch QC**

Type: Matrix Spike Lab ID: QC866470 Batch: 245034

Matrix (Source ID): Filtrate (427285-007) Method: EPA 351.2 Prep Method: METHOD

Source Sample

QC866470 Analyte	Result	Result	Spiked	Units	Recovery	Qual	Limits	DF
Nitrogen, Total Kjeldahl	12.10	0.1730	12.50	mg/L	95%		90-110	2.5

Type: Matrix Spike Duplicate Lab ID: QC866471 Batch: 245034

Matrix (Source ID): Filtrate (427285-007) Method: EPA 351.2 Prep Method: METHOD

Source

		Sample							RPD	
QC866471 Analyte	Result	Result	Spiked	Units	Recovery	Qual	Limits	RPD	Lim	DF
Nitrogen, Total Kjeldahl	12.60	0.1730	12.50	mg/L	99%		90-110	4	20	2.5

ND Not Detected

## CHAIN OF TERRA GUSTEO DA AURA ENVIRON ESTA DE LA COMPANIES, INC.

Innovative Solutions for Nature

Company: PHYSIS From: Aquatic Bioassay (805) 643-5621 Phone: To: Address: 1904 E Wright Circle and Consulting Labs. Fax: (805) 643-2930 Project ID: Ventura River Anaheim, CA 92806 29 N. Olive St. Ventura, CA 93001 **AlgaeTMDL** Phone: (714) 335-5793 **ANALYSIS** Filtered (SM 4500 NO3 E / SM 4500 NO2 B) Total TKN (EPA 351.2) Phosphorous, Field Filtered (SM 4500-P E) Nitrate / Nitrite, Field Total Phosphorous (SM 4500-P E) Dissolved TKN (1351.2) Field Fi Volume/ Reps Sample I.D. No. Sample Date Time Matrix No. Dissolved Comments 3-250 mL, pl; 0745 04.15.2020 TMDL-CL 2-250 mL, gl. Water 3-250 mL, pl; 04.15.2020 0828 TMDL-R4 Water 2-250 mL, gl. 3-250 mL, pl; 04-15-2020 0855 TMDL-SA 2-250 mL, gl. Water 3-250 mL, pl; 0940 04-15-2020 TMDL-R3 2-250 mL, gl. Water 3-250 mL, pl; 1030 04.15-2000 TMDL-R2 2-250 mL, gl. Water 3-250 mL, pl; 1120 TMDL-R1 04.15.2020 2-250 mL, gl. Water 3-250 mL, pl; 1240 04.15-2020 TMDL-Est 2-250 mL, gl. Water Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H2SO4; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.co **RELINQUISHED BY** RECEIVED BY RELINQUISHED BY RECEIVED BY Name: Richard Hankey Signature: Ald All Name: Brianna Jones Name: Name. Signature: V Signature: Signature: Date: 4.15-20 Date: 4.15.26 Date: 4/16/20 Time: 1002 Time: 13/5 Time: 1315 Date: 04-15-2020 Time: 1315



### Sample Receipt Summary

Client: Ac	quatic Bioassa	ay & Consult	ing Laborator	ies, Inc.	Date Receiv	ed:	4/16/2020	Received By: RG			Inspected By		RGH	
	C	ourier:				Cool	er:				Tempera	ture:		
Physis	FEDEX	<b>✓</b> UPS	Client	<b>✓</b> Coo	er 🗌	Вох	Total #:	2		BLUE	<b>✓</b> WET	. [	DRY	
Start	End	Other:		Oth	er:					None		2.	2°C	
				Sa	nple Integrity	, Upon	Receipt:							
1. (0)	C(s) included	d and comr	oletely filled	out					Ye	es				
	sample cont		•							es				
<ol> <li>All samples listed on COC(s) are present</li></ol>														
5. Correct containers and volume for all analyses indicated									Yes					
6. All samples received within method holding time									Ye	es				
7. Correct preservation used for all analyses indicated									Ye	es				
8. Name of sampler included on COC(s)									N	0				

Notes:

Low Volume.