



June 30, 2022

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

Subject: **2022 ANNUAL REPORT FOR THE VENTURA RIVER ALGAE TMDL
(RESOLUTION NO. R12-011)**

Dear Dr. Nye:

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 in Ventura River watershed (represented by the Farm Bureau of Ventura County) are pleased to submit for your review and consideration the 2022 Annual Report for the Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients Total Maximum Daily Load, Resolution No. R12-011 (Ventura Algae TMDL).

All monitoring and reporting activities were completed in accordance with the approved Ventura Algae TMDL Comprehensive Monitoring Plan (CMP) for Receiving Water approved by Los Angeles Regional Water Quality Control Board on October 20, 2014, and revised monitoring and reporting program effective in January 2021. The CMP modifications include reduction from 5 to 3 algae sampling events during the dry season; the elimination of continuous water quality measurement events for the main-stem sampling locations during the first quarter (Jan-Mar) and fourth quarter (Oct-Dec); elimination of semiannual report submittals, and elimination of visual flow observations on the condition that alternative data is available and adequately represents the visual flow monitoring locations.

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

Sincerely,

Ewelina Mutkowska
Senior Stormwater Manager
Ventura County Public Works Agency

Dr. LB Nye, Chief of Regional Programs

June 30, 2022

Page 2 of 2

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JUNE 2022



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

2022 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:



Rincon Consultants, Inc.

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EXECUTIVE SUMMARY

On behalf of the Ventura River Algae Total Maximum Daily Load (VR Algae TMDL) Responsible Agencies¹ (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 and 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, Ventura River reaches 1 – 4, and in two main tributaries to the Ventura River from May 2021 through April 2022. This report includes field measurements and observations, continuous data logger results, and laboratory results from each site, including monthly flow measurements, nutrients, dissolved oxygen (DO), and pH; two-week continuous monitoring of DO and pH for each quarter; qualitative observations of flow along the Ventura River mainstem (flowing, ponded, or dry); and bi-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 seven 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 developed areas within the Ojai Valley), were still subject to heavy ash deposition.

Drought conditions generally eased for Ventura County from 2018-2020, with wet seasons producing average or just below average rainfall. Drought conditions of increasing severity returned for the 2020-2021 water year and have continued through the 2021-2022 water year. According to qualitative flow observations taken at the Ventura River at Hwy 150, Santa Ana Boulevard, and Casitas Vista Road, flow remained discontinuous for the Ventura River from May 2021 until December 2021 storms restored continuous surface water flow. Flow became discontinuous again in January 2022 and remained discontinuous into the 2022 dry season. The San Antonio Creek monitoring site was dry from May 2021 through the December 2021 monitoring event. Flow returned by January 2022 after late December storms and remained until the site became ponded in April 2022. The Cañada Larga monitoring site was dry from May 2021 through the December 2021 monitoring event. Flow returned by January 2022 after late December storms and remained until the site became dry in April 2022. Flow at the Ventura River Reach 4 monitoring site became dry in August 2021. Flow returned by January 2022 after late December storms and remained for the duration of the 2022 wet season monitoring events. The monitoring sites at Ventura River Reach 3 and downstream were perennial. Flow at the Ventura River Reach 2 monitoring location and downstream locations includes treated discharge waters from the Ojai Valley Sanitary District's wastewater treatment plant.

The continuous water quality data and monthly *in situ* measurements collected through the year indicate that pH and DO follow similar trends at each monitoring location and are generally meeting the VR Algae TMDL numeric targets. However, during *in situ* measurement collection events, several monitoring locations had dissolved oxygen (DO) measurements that were below the daily minimum numeric target (7 mg/L), including TMDL-SA (San Antonio Creek), TMDL-R4 (Ventura River Reach 4), and TMDL-R1 (Ventura River Reach 1). 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. Continuous water quality monitoring measurements indicate that DO measurements at multiple monitoring locations fell below the daily minimum numeric target for DO for numerous 5-min intervals during the continuous monitoring events. In general, these continuous DO data exhibit a diurnal trend with excursions below the daily target occurring during the night and early morning. Neither *in situ*

¹ Responsible Agencies include the City of Ojai, City of Ventura, County of Ventura, Ojai Valley Sanitary District, California Department of Transportation, Ventura County Watershed Protection District, and Ventura County Agricultural Irrigated Lands Group

measurements nor continuous water quality measurements for pH exceeded the upper numeric target (8.5) during the 2021-2022 monitoring period. Continuous pH water quality measurements display a diurnal trend similar to DO where pH is highest during the day and lowest during the night.

During the 2021 dry season, all the sampleable sites exceeded the seasonal average numeric target for macroalgal cover ($\leq 15\%$ for the estuary and $\leq 30\%$ for the riverine sites) at least once. None of the sampleable riverine sites exceeded the riverine seasonal average chlorophyll *a* target of ≤ 150 milligrams per square meter (mg/m^2), and TMDL-Est exceeded the estuarine phytoplankton seasonal average chlorophyll *a* target of ≤ 20 micrograms per liter ($\mu\text{g}/\text{L}$) in July 2021. In general, there was no clear relationship between algal cover and algal biomass at any of the sites.

Continuous water quality monitoring equipment performed much more reliably during this period than during the previous 2020-2021 monitoring period due to implementation of new equipment and enhanced security protocols. 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. Monitoring equipment continues to be deployed in a manner intended to be less conspicuous, with enhanced housings for the data loggers, and a robust security chain and locking system for the Estuary site deployments. These measures appear to have been effective, as equipment was not stolen or vandalized during the 2021-2022 monitoring period.

Finally, the Responsible Agencies coordinated with the Los Angeles Regional Water Quality Control Board to modify the CMP effective in January 2021. These modifications include the reduction from 5 to 3 algae sampling events during the dry season; the elimination of continuous water quality measurement events for the main-stem sampling locations during the First and Fourth Quarters; elimination of visual flow observations on the condition that alternative data is available and adequately represents the visual flow monitoring locations, and discontinuation of Annual Dry Weather Reports.

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 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 Responsible Agencies retained Rincon to continue implementation of this monitoring and reporting program.

In January 2021, the Responsible Agencies coordinated with the Los Angeles Regional Water Quality Control Board to modify the CMP effective in January 2021. These modifications include the reduction from 5 to 3 algae sampling events during the dry season; the elimination of continuous water quality measurement events for the main-stem sampling locations during the First and Fourth Quarters; elimination of visual flow observations on the condition that alternative data is available and adequately represents the visual flow monitoring locations, and discontinuation of Dry Weather Reports due by December 31st each year.

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 at 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).

FIGURE 1 SAMPLING SITES AND FLOW OBSERVATION LOCATIONS



Imagery provided by Microsoft Bing and its licensors © 2020. Additional data provided by USGS, 2020.

Figure 1 Sampling Sites and Flow Observation Locations

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. 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 was 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 are also measured continuously for two-week periods at three of the sites (TMDL-Est, TMDL-CL, and TMDL-SA) during the wet season in the fourth and first quarters². For the 2021-2022 monitoring period these measurements occurred during November 2021 and March 2022.

This report is a summary of monthly dry season monitoring data from May 2021 – September 2021, monthly wet season monitoring data from October 2021 – April 2022, and quarterly continuous data logging conducted in May 2021, September 2021, November 2021, and March 2022.

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. Monitoring event dates and collecting agency details are presented in **Table 1**. Monthly *in situ* parameters for each site are presented in **Appendix A**.

² With approval from the Los Angeles Regional Water Quality Control Board, Quarter 4 and Quarter 1 Sonde deployments were required only at TMDL-Est, TMD-SA, and TMDL-CL.

TABLE 1 MAY 2021 – APRIL 2022 WATER QUALITY SAMPLE COLLECTION DATES

Sample Month	Season	TMDL-Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL-SA	TMDL-CL
MAY 2021	Dry	5/13	5/13	5/13	5/12	5/12	5/12 (Mostly Dry)	5/12 (Dry)
JUN 2021	Dry	6/9	6/9	6/9	6/9	6/9	6/9 (Mostly Dry)	6/9 (Dry)
JUL 2021	Dry	7/15	7/15	7/15	7/14	7/14	7/14 (Mostly Dry)	7/14 (Dry)
AUG 2021	Dry	8/11	8/11	8/11	8/11	8/11	8/11 (Mostly Dry)	8/11 (Dry)
SEP 2021	Dry	9/8	9/9	9/9	9/8	9/8 (Mostly Dry)	9/8 (Mostly Dry)	9/8 (Dry)
OCT 2021	Wet	10/14	10/14	10/14	10/14	10/14 (Dry)	10/14 (Dry)	10/14 (Dry)
NOV 2021	Wet	11/10	11/10	11/10	11/10	11/10 (Dry)	11/10 (Dry)	11/10 (Dry)
DEC 2021	Wet	12/8	12/8	12/8	12/8	12/8 (Dry)	12/8 (Dry)	12/8 (Dry)
JAN 2022	Wet	1/12	1/12	1/12	1/12	1/12	1/12	1/12
FEB 2022	Wet	2/9	2/9	2/9	2/9	2/9	2/9	2/9
MAR 2022	Wet	3/9	3/9	3/9	3/9	3/9	3/9	3/9
APR 2022	Wet	4/13	4/13	4/13	4/13	4/13	4/13	4/13 (Mostly Dry)

Table Notes:

Grey shading indicates dry or mostly dry conditions.

“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.

“Dry” sites had insufficient water present for any sampling to take place due to absence of flow.

MONTHLY FIELD RESULTS**FLOW**

Flow presence/absence observations (flowing, ponded, or dry) are provided for the visual observation monitoring locations in **Table 2**. Due to low rainfall during the 2021 wet season, surface flow was not continuous from the upper monitoring area to the estuary for the Ventura River, San Antonio Creek, and Cañada Larga for any of the 2021 dry season. Surface flow became continuous from the upper monitoring area through the estuary after December 2021 storms and became discontinuous in the Ventura River at Santa Ana Boulevard in January 2022 and at Highway 150 in February 2022. In addition, the estuary berm was closed for the June through July and September through December monitoring events.

TABLE 2 MAY 2021 – APRIL 2022 QUALITATIVE FLOW OBSERVATIONS

Date	Ventura River at Hwy 150	Ventura River at Santa Ana Blvd	Ventura River at Casitas Vista Road
5/27/2021	Dry	Dry	Flowing
6/24/2021	Dry	Dry	Flowing
7/26/2021	Dry	Dry	Flowing
8/25/2021	Dry	Dry	Flowing
9/29/2021	Dry	Dry	Flowing
10/27/2021	Dry	Dry	Flowing
11/21/2021	Dry	Ponded	Flowing
12/15/2021	Flowing	Flowing	Flowing
1/27/2022	Flowing	Dry	Flowing
2/24/2022	Dry	Dry	Flowing
3/30/2022	Dry	Dry	Flowing
4/27/2022	Dry	Dry	Flowing

Monthly flow data for the water quality monitoring locations are presented in **Figure 2**. As seen in this chart, flow typically 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. However, during the 2021-2022 wet season (October to April), below-average rainfall resulted in a subdued increase in river discharge. While instream flow increased due to the December 2021 storm events, there were no major flow increases for the remainder of the 2021-2022 wet season. The increase at the flow monitoring locations corresponds with measurable precipitation at the Ojai-County Fire Station (Site ID 030D) in December 2021.³ Less than 0.1 inches of precipitation was recorded in January 2022, no precipitation was recorded in February 2022, and less than 2 inches of precipitation was recorded in March 2022 at the Ojai-County Fire Station. 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.

Figure 3 and **Figure 4** provide additional context to the flow regime at the water quality monitoring locations over the past six 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).⁴ As illustrated in these figures, 2021-22 wet season flow was of a similar magnitude to flows in 2017 following the end of the 2011-2017 drought period.

³ Data download available here: https://www.vcwatershed.net/hydrodata/php/getstation.php?siteid=030D#rain_hour

⁴ 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 2 2021-2022 MONTHLY FLOW MONITORING

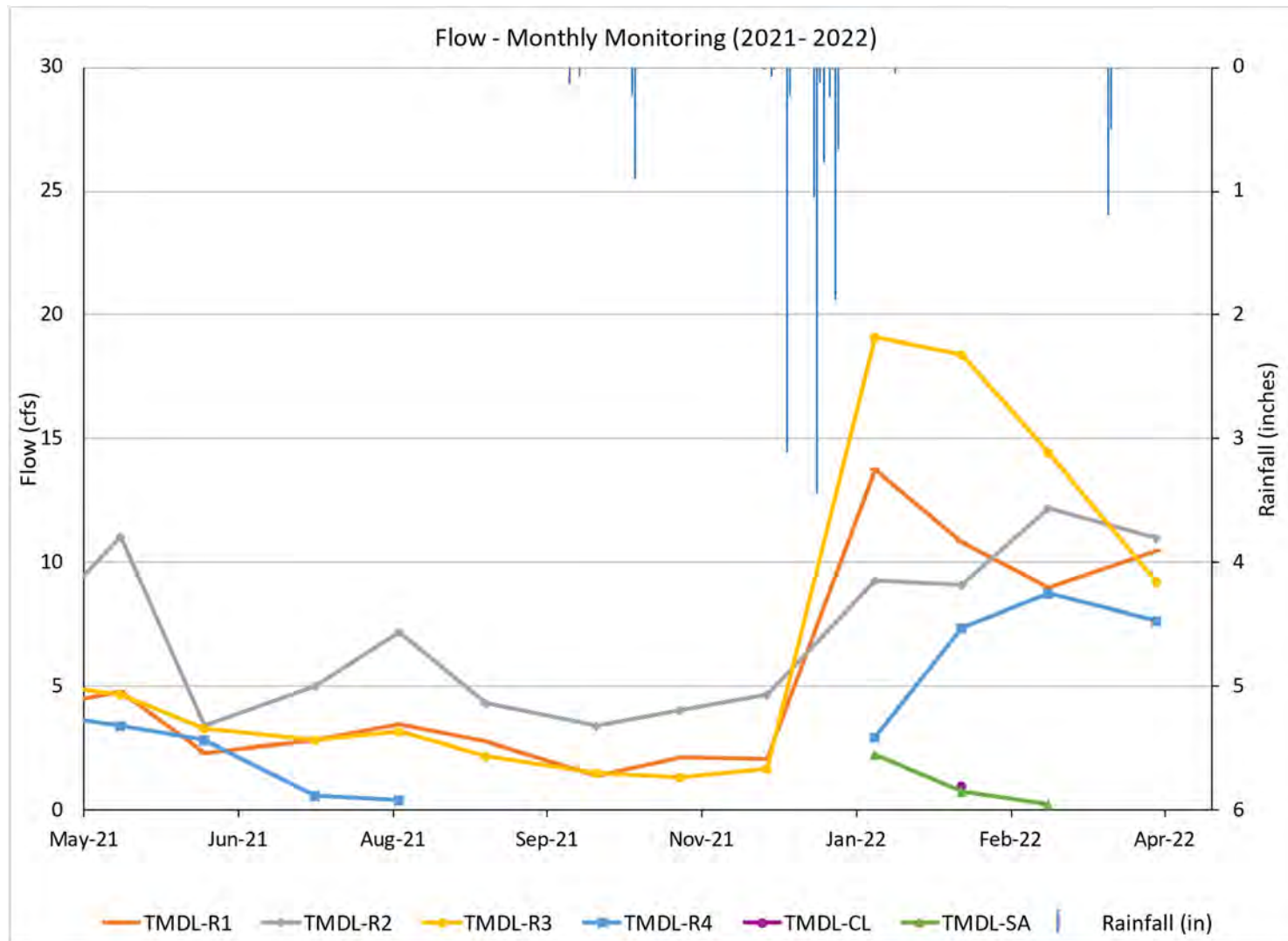


Figure Notes:

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

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 3 2015-2022 MONTHLY FLOW MONITORING IN THE LOWER MONITORING AREA

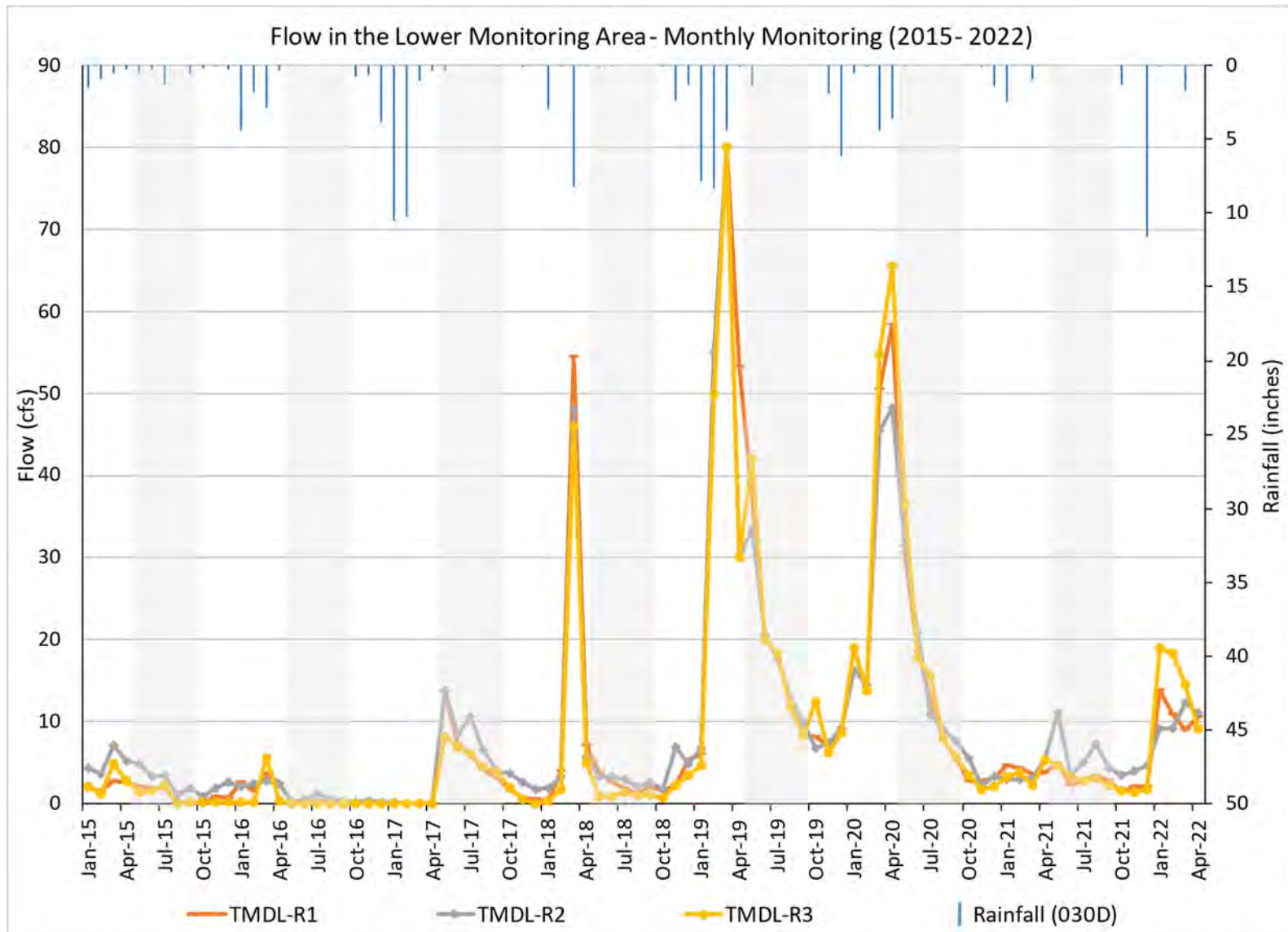


Figure Notes:

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 4 2015-2022 MONTHLY FLOW MONITORING IN THE UPPER MONITORING AREA

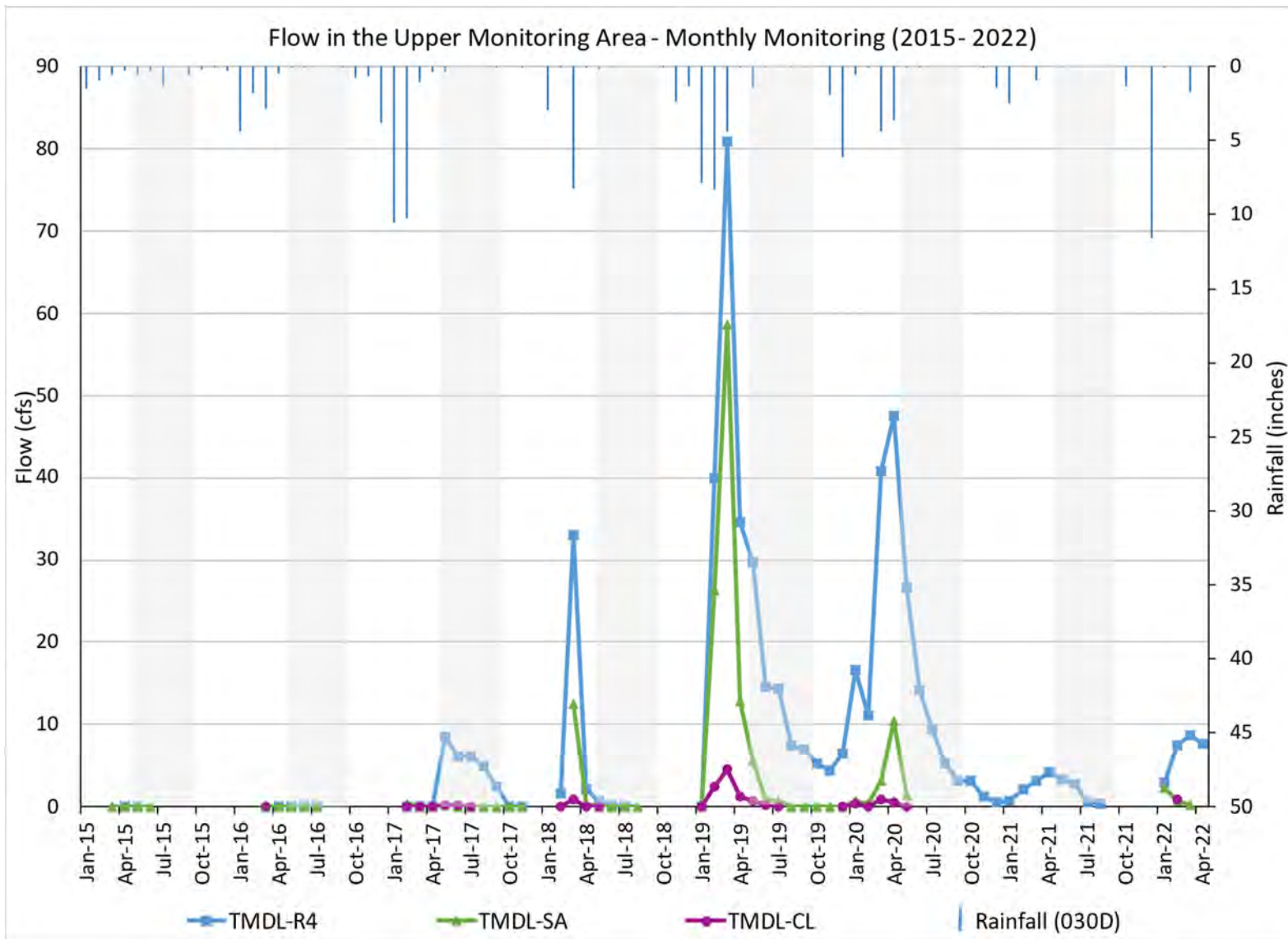


Figure Notes:

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 2021-2022 monitoring period, instantaneous DO concentrations measured during monthly sampling ranged from 5.18– 16.3 mg/L (**Figure 5**). The minimum (5.18 mg/L) was recorded at TMDL-SA during the April 2022 sampling event at 8:30 am⁵, the maximum (16.30 mg/L) was recorded at TMDL-Est during the November sampling event at 11:10 am. Instantaneous DO concentrations below the target minimum (7 mg/L) were recorded at five of the seven sites (TMDL-SA, TMDL-Est, TMDL-R1, TMDL-R2, and TMDL-R4), and most of these concentrations were measured between 8:00 – 10:00 am and a majority of the exceedances occurred at TMDL-R4. Low levels of DO tend to occur during periods of low flow, 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 due to bacterial respiration and increases during the day as photosynthesis increases.

PH

During the 2021-2022 monitoring period, pH measurements taken during monthly sampling events ranged from 7.04 – 8.6 (**Figure 6**). The minimum (7.04) was recorded at TMDL-R4 during the June 2021 sampling event at 9:00 am, and the maximum (8.6) was recorded at TMDL-R3 during the December 2021 sampling event at 11:59 am. With the exception of TMDL-Est in March 2022 and TMDL-SA in December 2021, instantaneous pH measurements were within the pH target range (6.5 – 8.5) for the duration of the monitoring period.

MONTHLY NUTRIENT RESULTS

Nutrient levels show variation between sites, seasons, and years. Charts of results for total nitrogen and total phosphorus from 2021-2022 and the previous seven years (2015-2022) are included below for comparison.

NITROGEN

During the 2021-2022 monitoring period, concentrations of total nitrogen above the laboratory reporting limit (0.3 mg/L) ranged from 0.317 – 4.97 mg/L (**Figure 7**). The lowest concentrations, including results below the reporting limit, occurred at TMDL-R3. The maximum concentration occurred during the March 2022 sampling event at TMDL-R3. TMDL-Est had the lowest average total nitrogen concentration, and TMDL-R1 and TMDL-R2 had the highest average concentrations. All results were below the numeric objective of 10 mg/L for the Ventura River Reaches. A nitrogen summary table showing all results from the 2021-2022 monthly data is provided as **Appendix B**.

To provide context as to how these results compare to previous monitoring periods, **Figure 8** and **Figure 9** present the past seven years of nitrogen monitoring results. Total nitrogen concentrations in the 2021-2022 monitoring period were of a similar magnitude to results obtained in the 2020-2021 monitoring period, and of a similar magnitude to results obtained in the 2017-2018 monitoring period. The trends indicate 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, 2016, 2018, 2020, and 2021 dry seasons. These results appear to be associated with prolonged dry periods, followed by sporadic rain events, as displayed by the low concentrations during the dry seasons and the spikes of increased concentrations during the wet seasons.

⁵ Note that this sample at TMDL-SA during the April 2022 event occurred in ponded conditions.

FIGURE 5 2021 - 2022 MONTHLY MONITORING – DISSOLVED OXYGEN

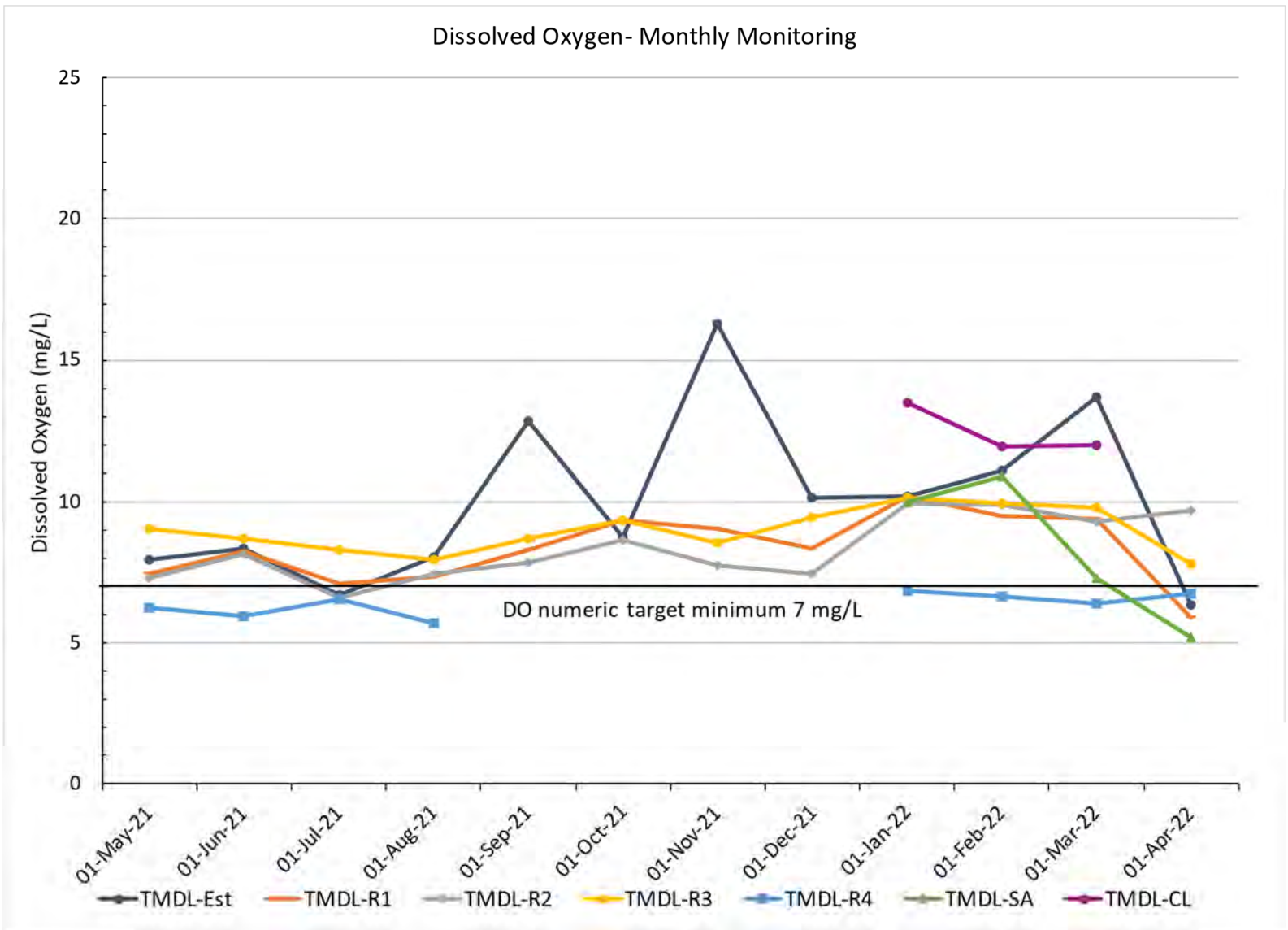


Figure Notes:
 Missing data points indicate that the measurement could not be taken due to flow conditions (e.g., the site was dry or ponded).

FIGURE 6 2021 - 2022 MONTHLY MONITORING – PH

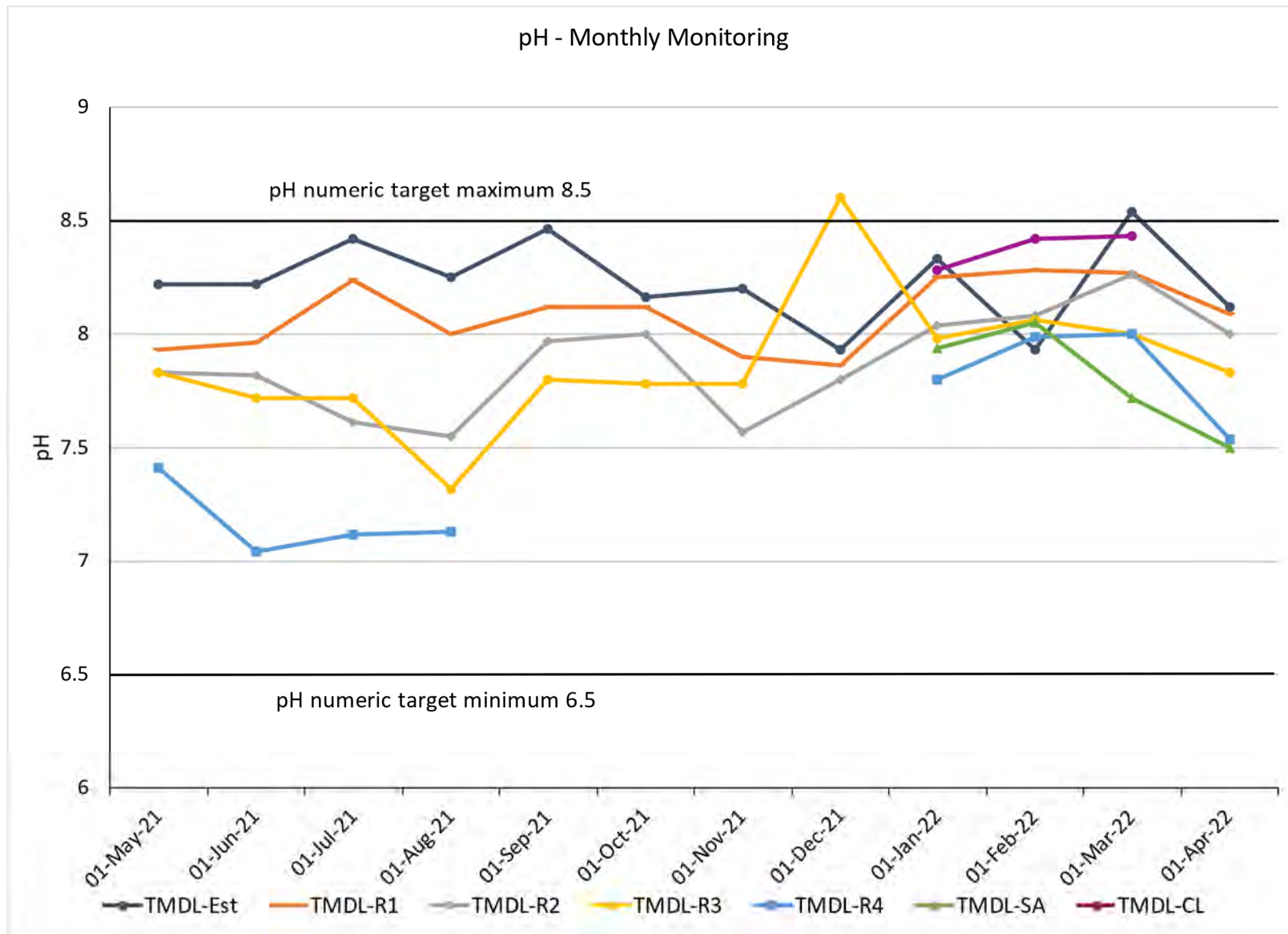


Figure Notes:

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

FIGURE 7 2021 - 2022 MONTHLY MONITORING – TOTAL NITROGEN

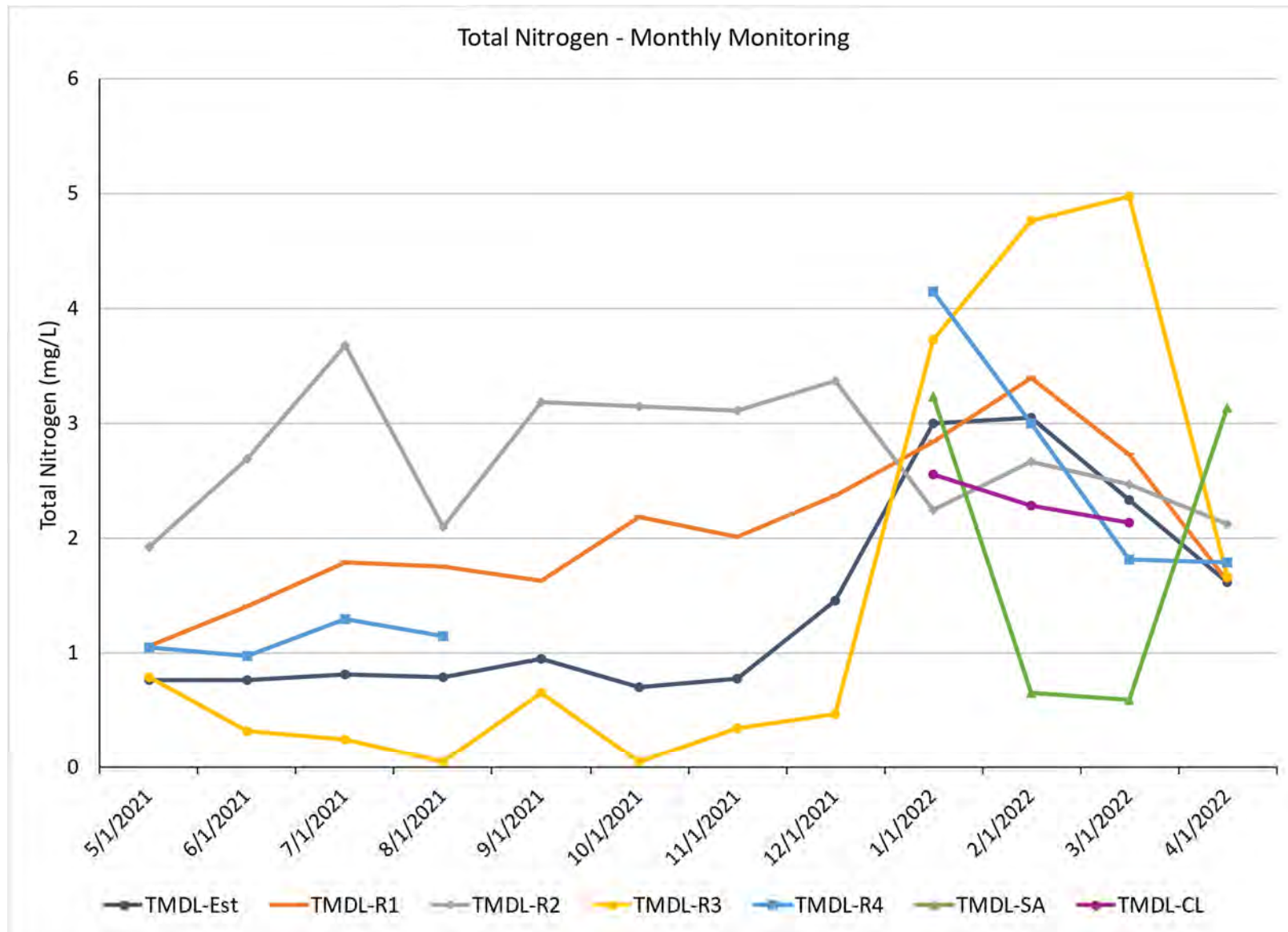


Figure Notes:

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

FIGURE 8 2015 - 2022 MONTHLY MONITORING – TOTAL NITROGEN, LOWER MONITORING AREA

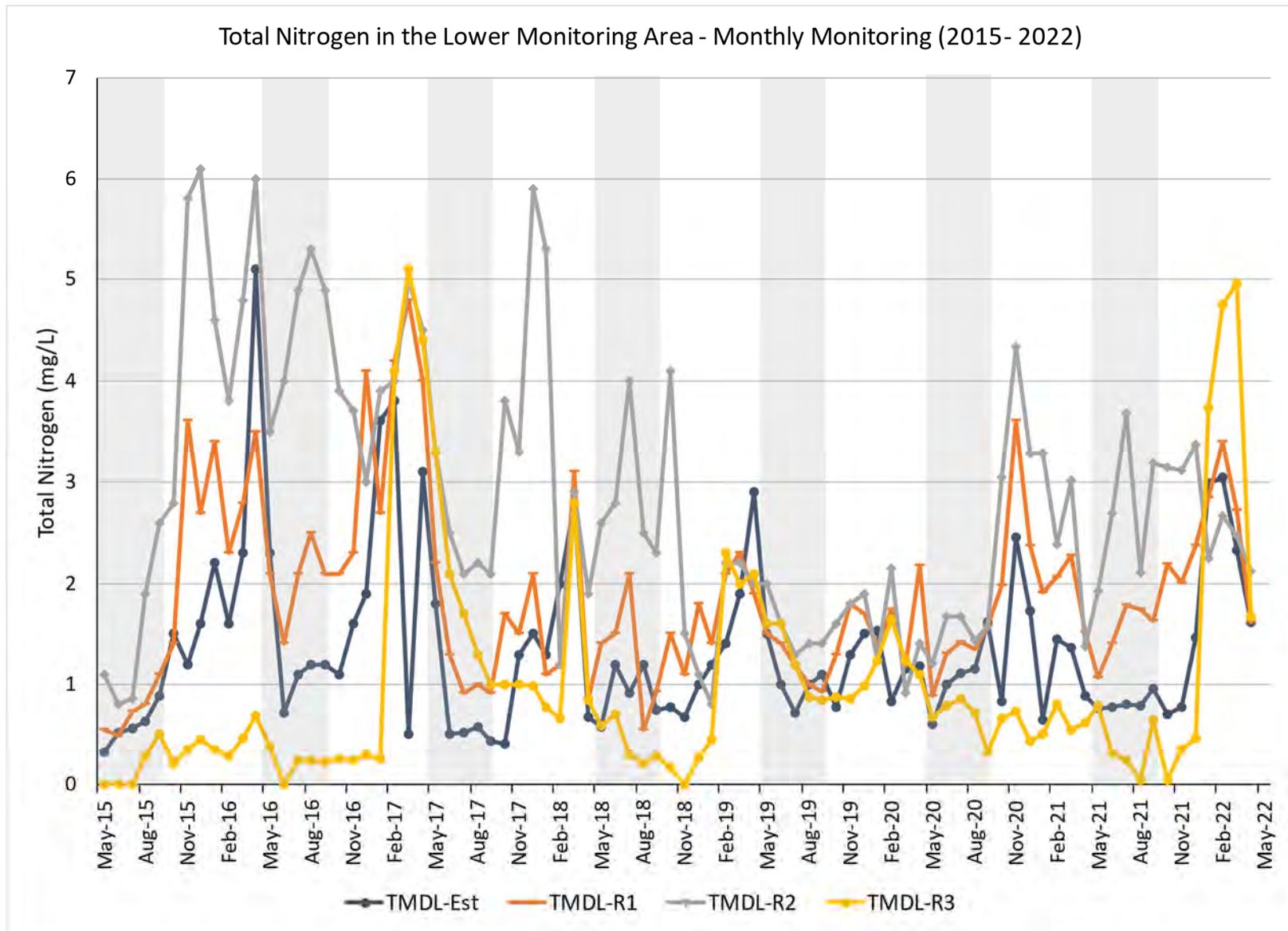


Figure Notes:

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 9 2015 - 2022 MONTHLY MONITORING – TOTAL NITROGEN, UPPER MONITORING AREA

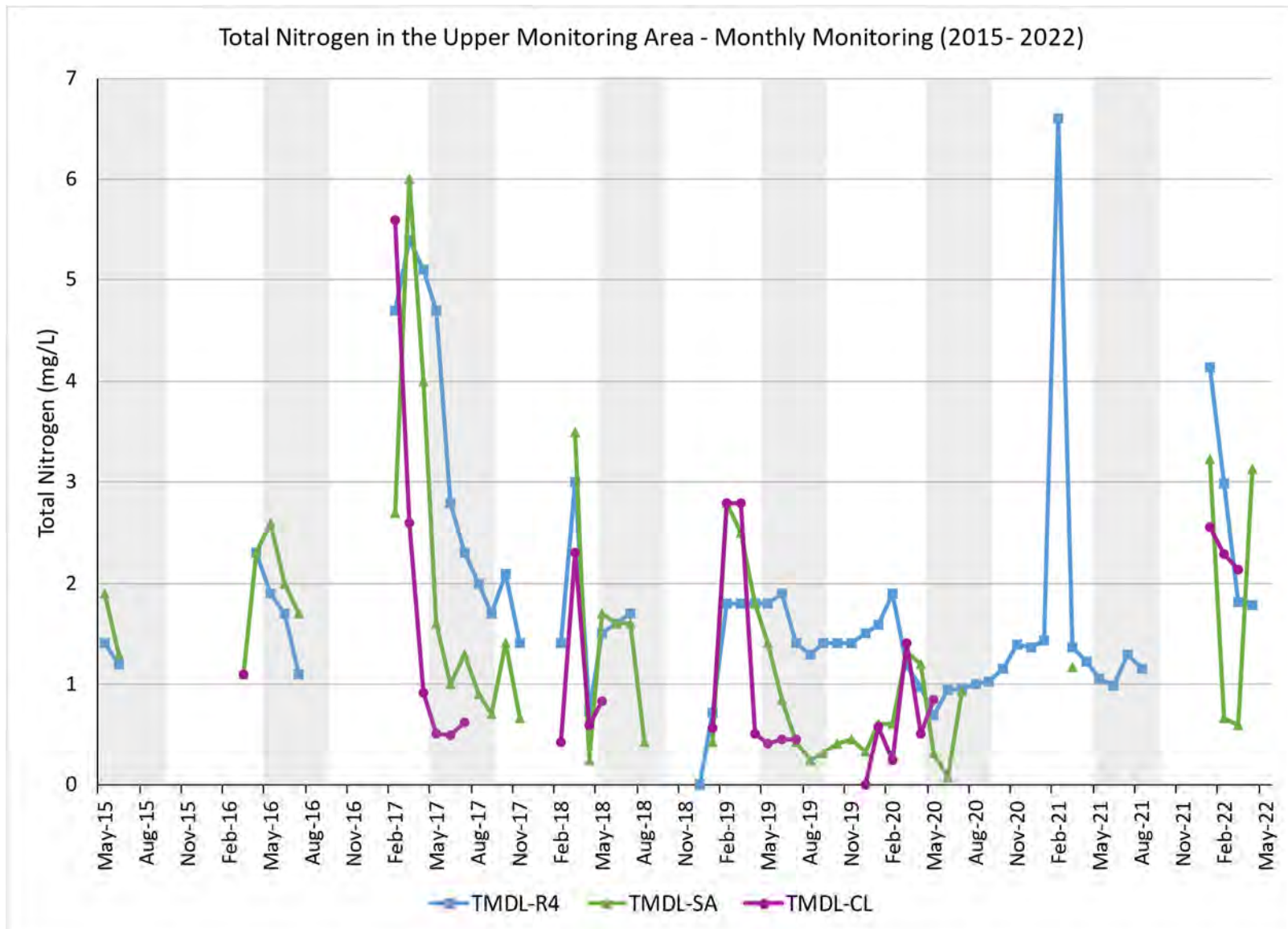


Figure Notes:

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 the 2021-2022 monitoring period, concentrations of total phosphorus above the minimum detection limit (0.016 mg/L) ranged from 0.017 mg/L - 0.291 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 September 2021 sampling event at TMDL-R1, which had an annual average of 0.094 mg/L.

Figure 11 and Figure 12 present the past six years of total phosphorous monitoring results, which illustrate greater seasonal variation during periods of drought, especially for TMDL-R1 and TMDL-R2. **Figure 12** shows that the total phosphorous monitoring results are especially variable from 2015 to 2018 but somewhat stabilize thereafter. As with the long-term data assessment for nitrogen presented above, total phosphorus concentrations for the 2021-2022 monitoring period were of a similar magnitude to concentrations during the 2020-2021 monitoring period, which were generally higher and varied more between sites than in 2019-2020, though concentrations are not as high as during the drought period ending in 2018. Phosphorus concentrations increased at TMDL-R2 following the rain season from 2015 through 2018, but such elevated concentrations have not been observed since early 2019.

DRY SEASON MONTHLY ALGAE RESULTS

The 2021 dry season sampling was conducted three times, in May, July, and September, in accordance with the revised CMP. Sampleable conditions were present for each event at TMDL-R2 and TMDL-R3, while TMDL-R1 was not sampleable during the May event and TMDL-R4 was not sampleable during the September event. Conditions encountered at TMDL-R1 during the May sampling event featured deep pools and eroded banks that kept samplers from being able to collect measurements, and TMDL-R4 was dry during September 2021.

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) algae, and total algal biomass [measured as chlorophyll a (mg/m^2)]. Macroalgal percent cover estimates only include living algae. Riverine total algal biomass concentrations are shown in **Figure 13** and macroalgal percent cover is displayed in **Figure 14**.

Total algal biomass (measured as chlorophyll a) ranged from 11.2 to 109 mg/m^2 across the four riverine sites where it could be measured (**Figure 13**). The maximum (109 mg/m^2) was recorded at TMDL-R4 during the July 2021 sampling event, and the minimum (11.2 mg/m^2) was recorded at TMDL-R1 during the July 2021 sampling event. Seasonal average chlorophyll a concentrations (**Table 3**) were below the target seasonal average (150 mg/m^2) for all sampleable sites.

Macroalgal percent cover ranged from 14% to 76 % across the four riverine sites where it could be measured (**Figure 14**). The minimum (14%) occurred at TMDL-R1 during the July 2021 sampling event, and the maximum (76%) occurred at TMDL-R4 during the July 2021 sampling event. The lowest percent cover observations occurred during the September 2021 sampling event for TMDL-R2 and TMDL-R3, while TMDL-R4 was lowest in May and TMDL-R1 was lowest in July. Seasonal average percent coverage was below the target seasonal average ($\leq 30\%$) at TMDL-R1 and TMDL-R3, and above the target seasonal average at TMDL-R2 and TMDL-R4. All four sites were below the numeric target seasonal average of 150 mg/m^2 (**Table 3**).

FIGURE 10 2021 - 2022 MONTHLY MONITORING – TOTAL PHOSPHORUS

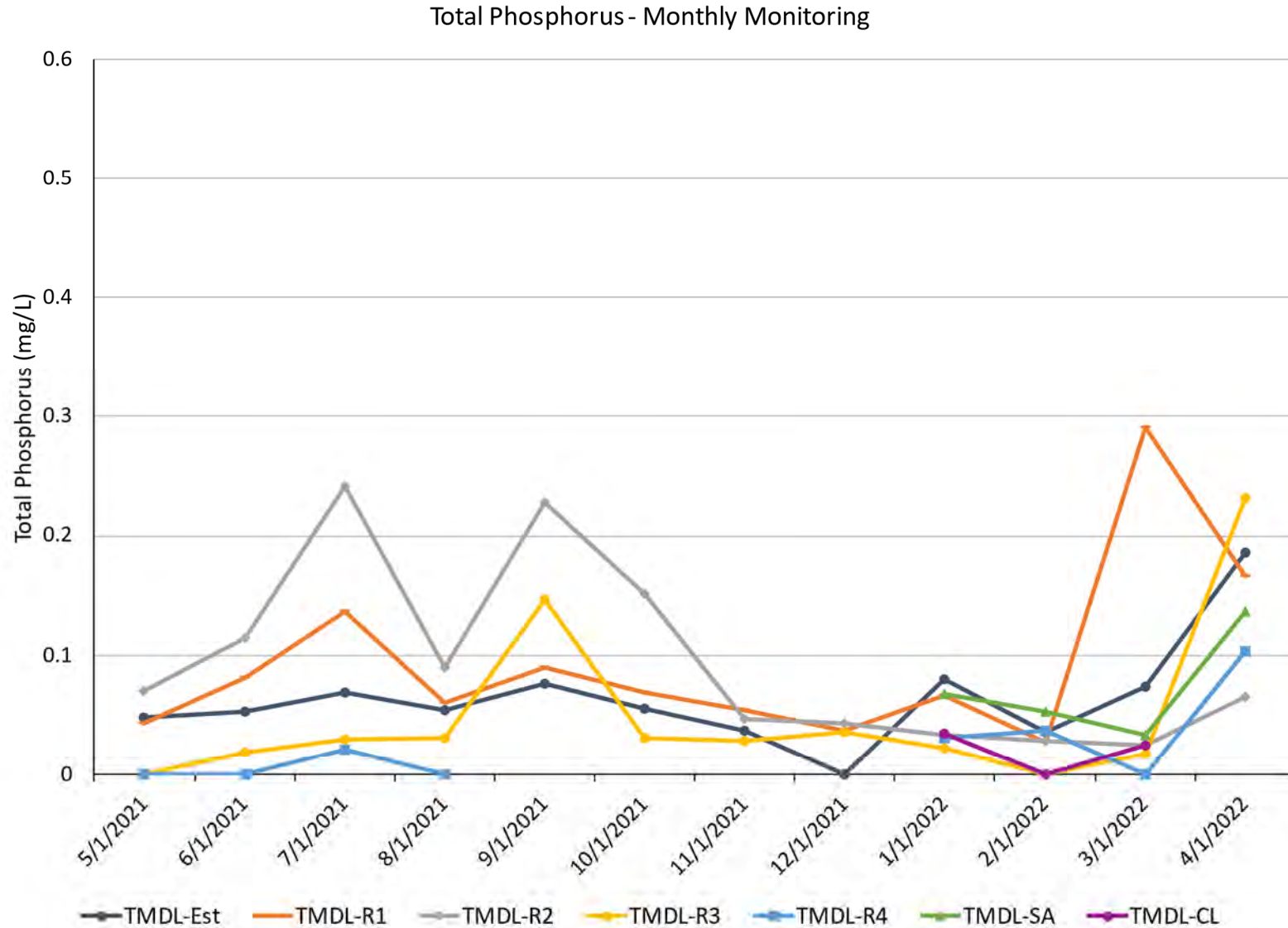


Figure Notes:

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

FIGURE 11 2015 - 2022 MONTHLY MONITORING – TOTAL PHOSPHORUS, LOWER MONITORING AREA

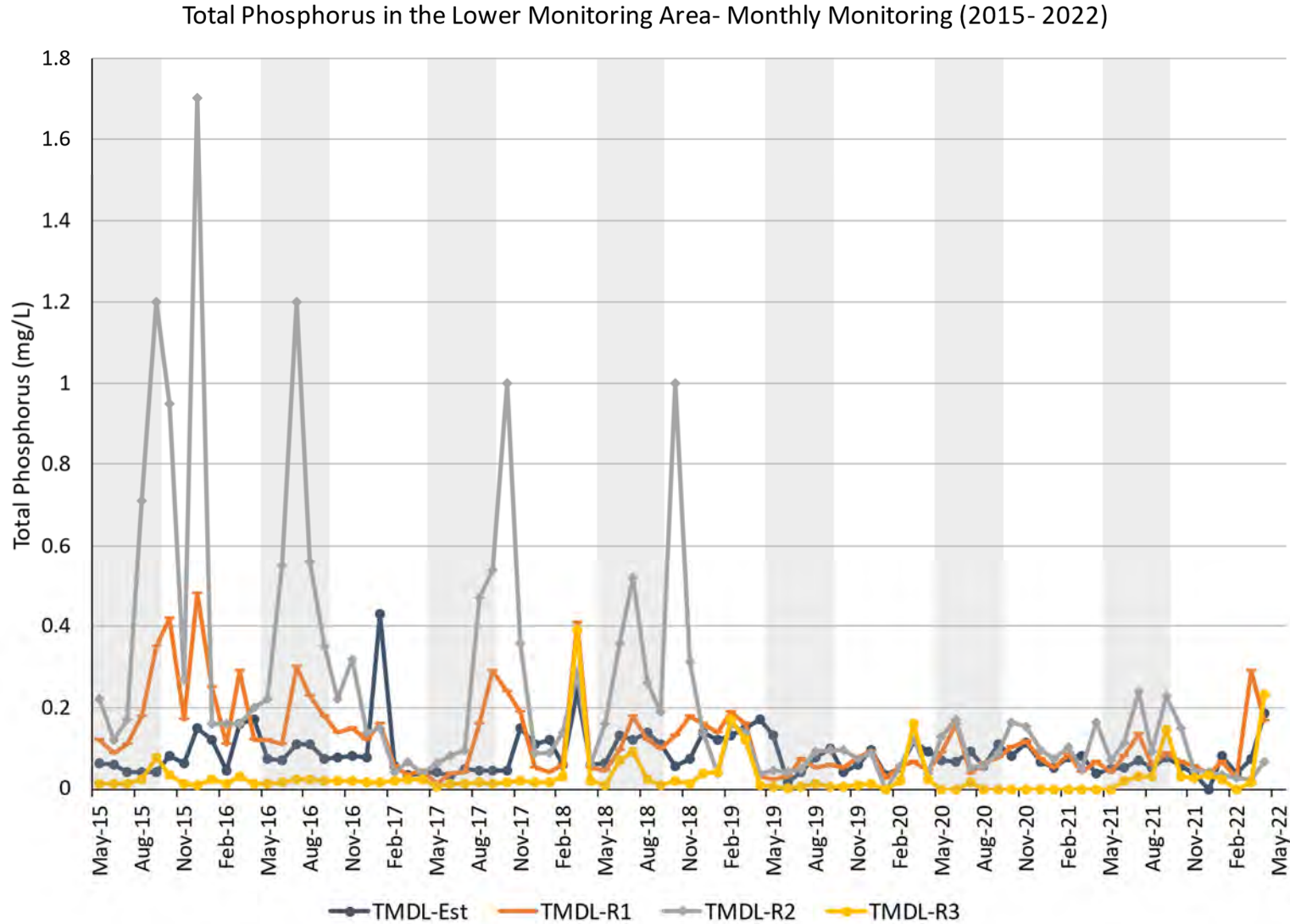


Figure Notes:

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 12 2015 - 2022 MONTHLY MONITORING – TOTAL PHOSPHORUS, UPPER MONITORING AREA

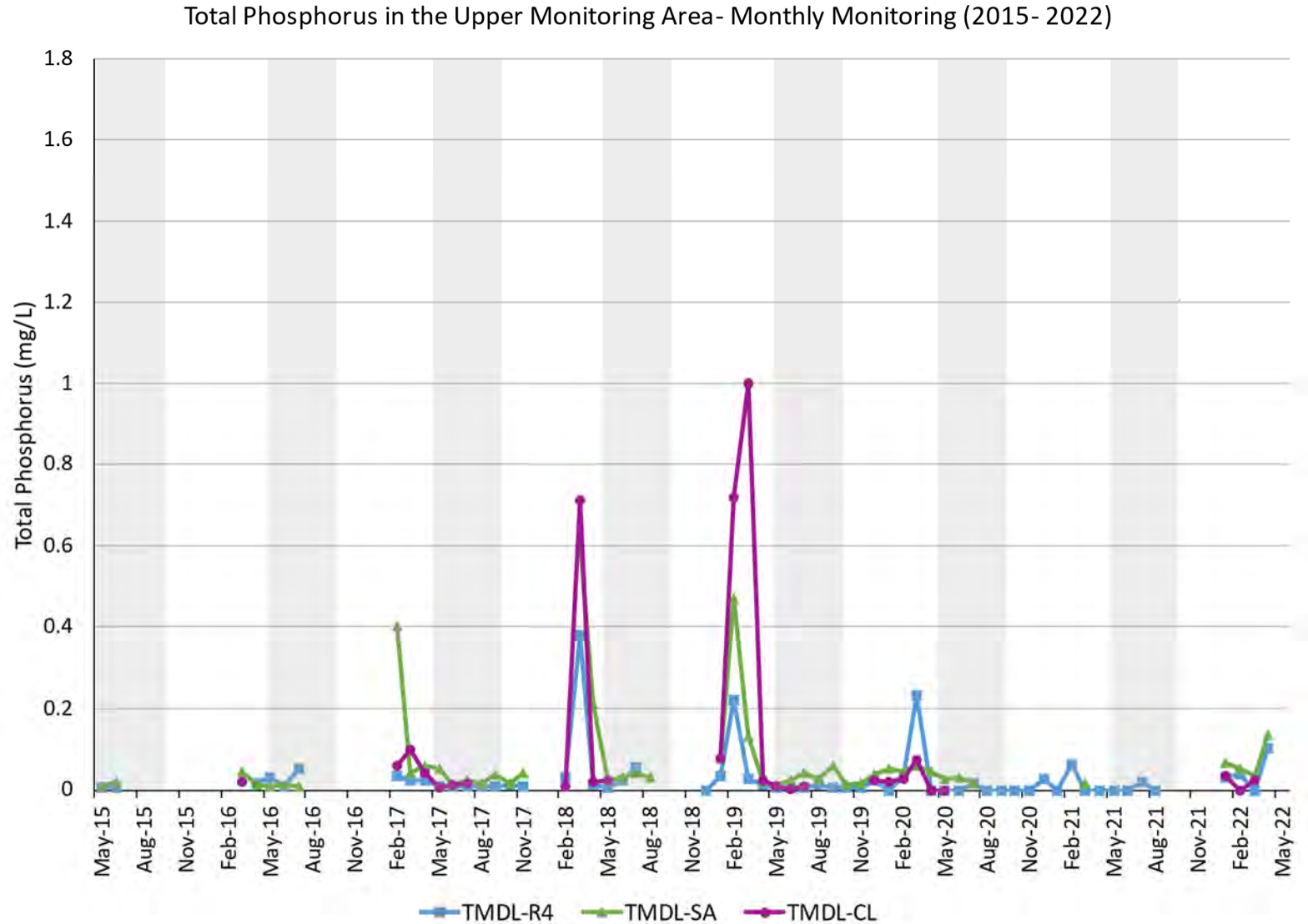


Figure Notes:

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 13 2021 DRY SEASON – TOTAL ALGAL BIOMASS (CHLOROPHYLL A) AT RIVERINE SITES

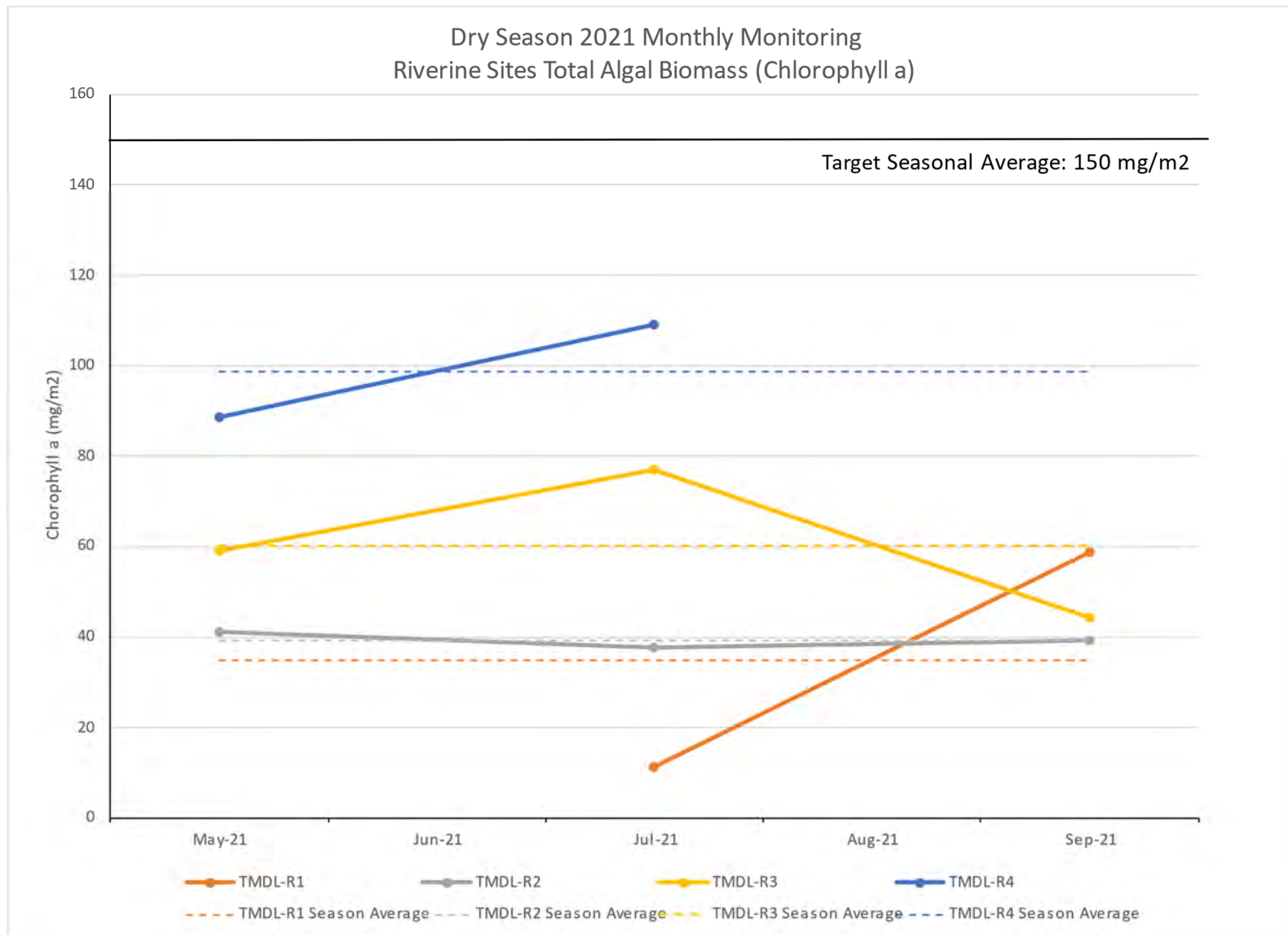


Figure Notes:

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/m² is plotted for reference, and seasonal averages for each site are presented in **Table 3**.

FIGURE 14 2021 DRY SEASON – MACROALGAL PERCENT COVER AT RIVERINE SITES

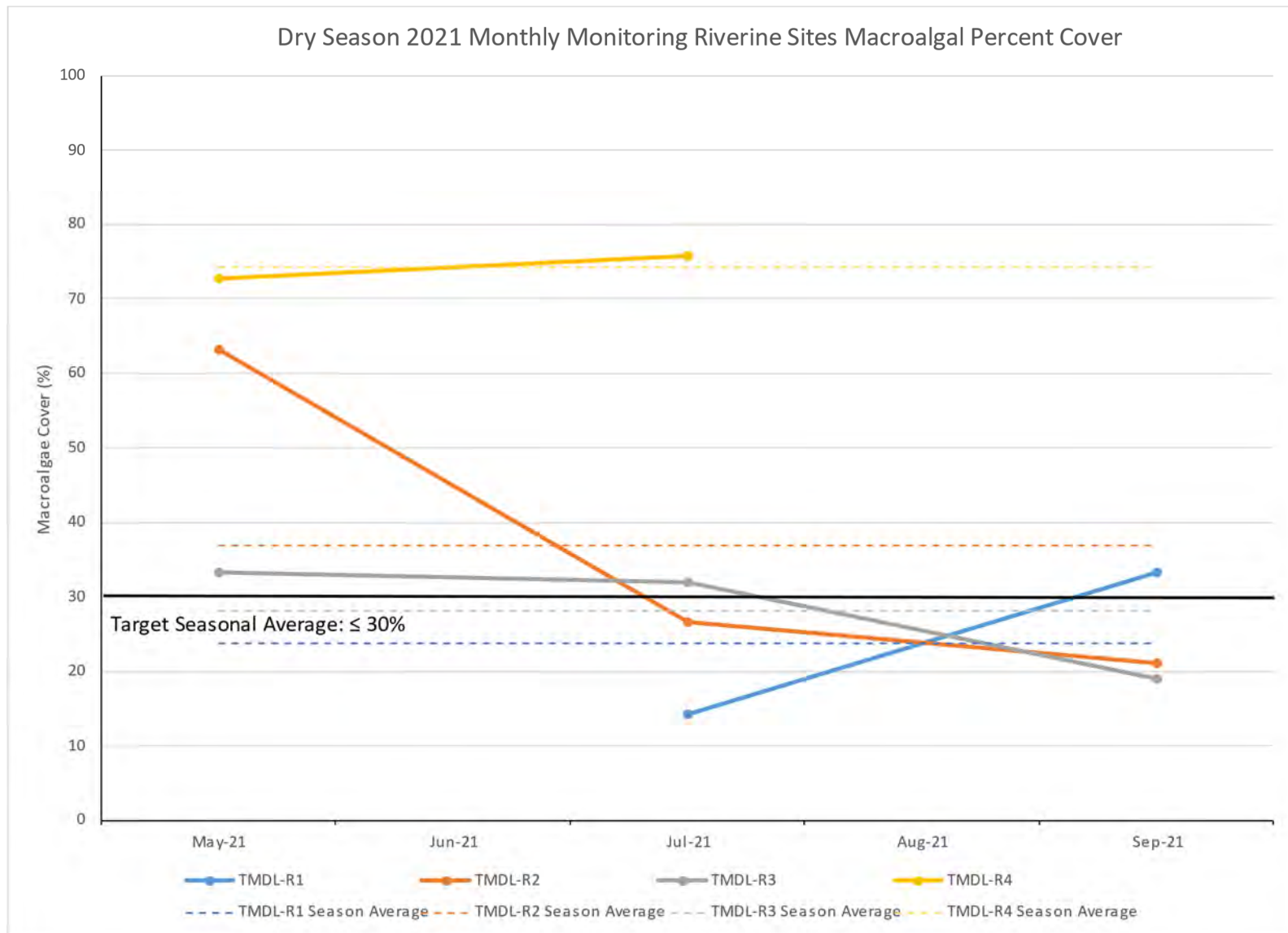


Figure Notes:

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 $\leq 30\%$ is plotted for reference, and seasonal averages for each site are presented in **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 table for dry season monthly algae monitoring is provided in **Appendix C**.

TABLE 3 DRY SEASON RIVERINE SEASONAL AVERAGES AND NUMERIC TARGETS

Site	Seasonal Average Biomass (mg/m ² chlorophyll a)	Seasonal Average Macroalgal Cover (%)
	<i>Numeric Target Seasonal Average 150 mg/m²</i>	<i>Numeric Target Seasonal Average ≤ 30%</i>
TMDL-R1	35.0	23.8 ¹
TMDL-R2	39.4	37.0
TMDL-R3	60.1	28.1
TMDL-R4	98.8	74.2²

Table Notes:

Bolded averages exceed numeric targets.

1. Sampling at TMDL-R1 was not possible in May 2021, therefore this value represents the average of July 2021 and September 2021.
2. Sampling at TMDL-R4 was not possible in September 2021, therefore this value represents average of May 2021 and July 2021.

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* (µg/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) to approximately 1 to 2 feet above the MLLW. Floating algae is measured to a depth of 0.3 meters, and all measurements include 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**.

Phytoplankton biomass (measured as chlorophyll *a*) ranged from 8.01 µg/L – 45.4 µg/L at the estuary water quality monitoring location (**Figure 15**). The maximum occurred during the July sampling event and the minimum during the May sampling event. The phytoplankton biomass seasonal average at TMDL-Est (22.87 µg/L) was above the numeric target (20 µg/L) (**Table 4**).

Attached macroalgal percent cover ranged from 14% – 26% and floating macroalgal percent cover ranged from <1% – 17% (**Figure 16**). Attached macroalgal cover was above the target seasonal average (≤15%) during the May and July sampling events and just below the numeric target in September (14.5%). Floating macroalgal percent cover was slightly above the target seasonal average (17%) during the July sampling event. The seasonal average for attached macroalgal percent cover at TMDL-Est (19%) was above the numeric target and the seasonal average for floating macroalgal percent cover (8%) was below the numeric target (**Table 4**).

FIGURE 15 2021 DRY SEASON – ESTUARY CHLOROPHYLL A

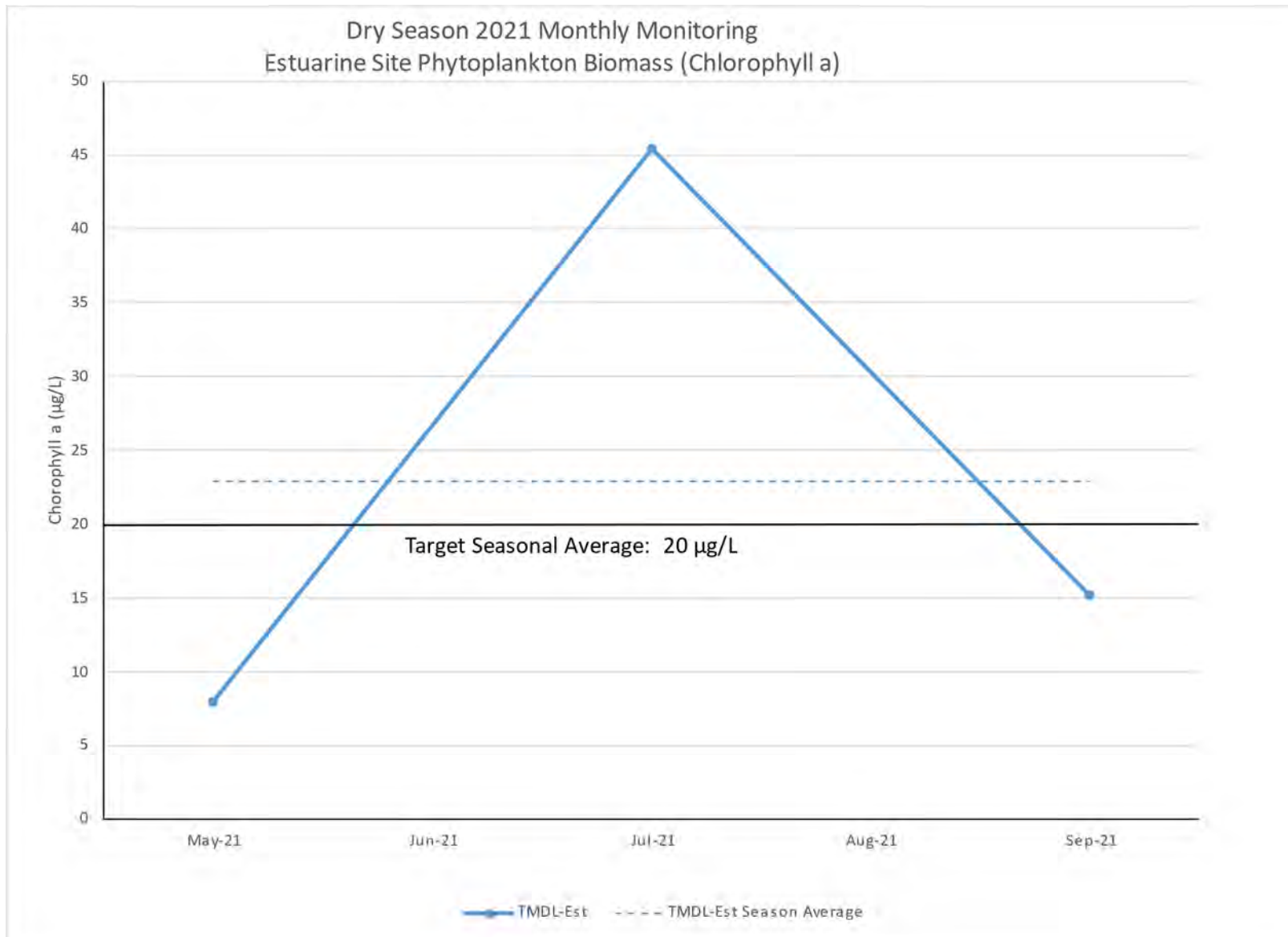


Figure Notes:

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

FIGURE 16 2021 DRY SEASON – ESTUARY MACROALGAL PERCENT COVER

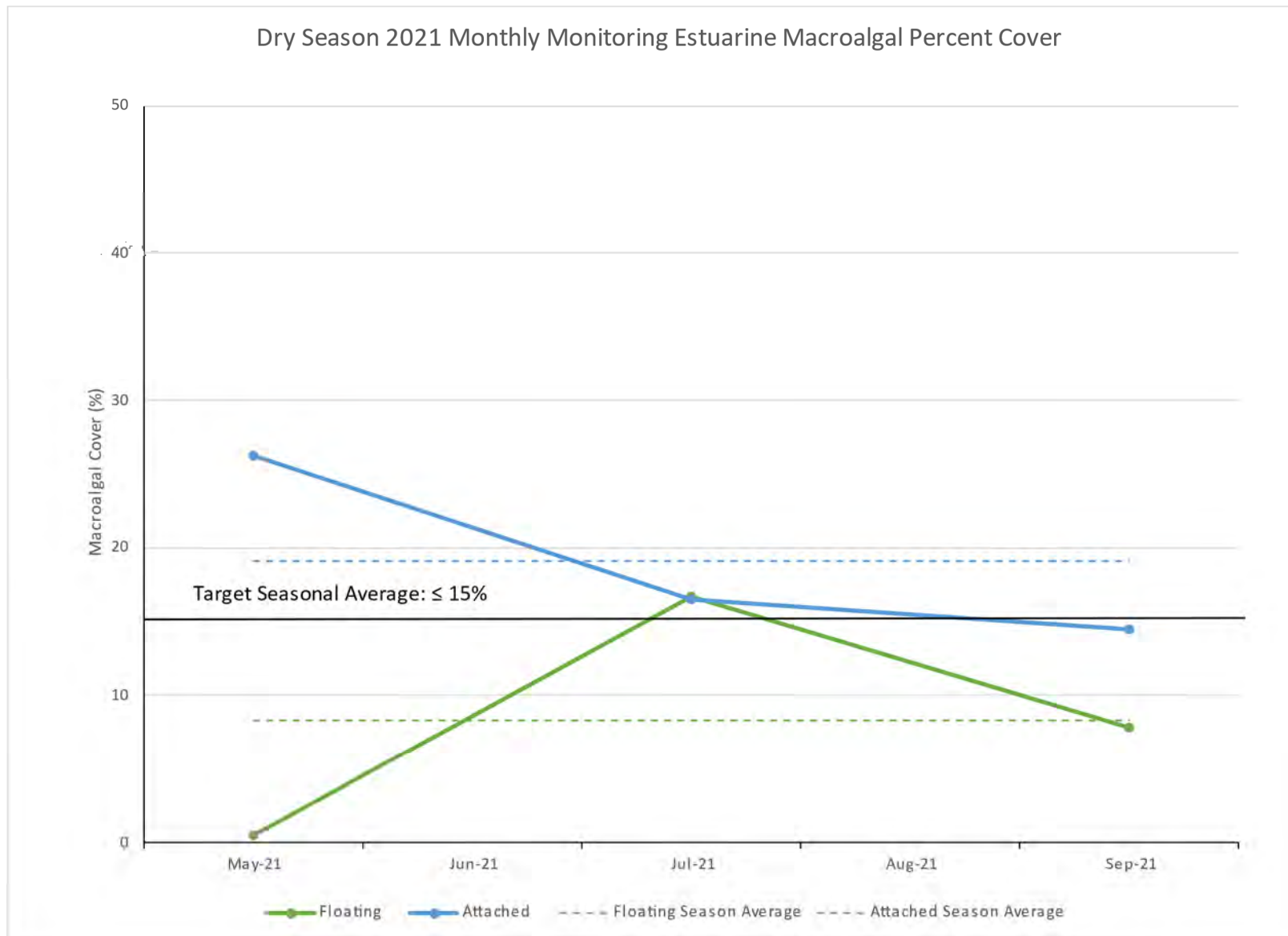


Figure Notes:

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

TABLE 4 DRY SEASON ESTUARINE MONTHLY OBSERVATIONS AND SEASONAL AVERAGE

Site	Date	Phytoplankton Biomass Chlorophyll <i>a</i> (µg/L)	Floating Cover (%)	Attached Macroalgal Cover (%)	Total Macroalgal Cover ⁶ (%)
<i>Seasonal Average Numeric Target</i>		<i>20 µg/L</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>≤ 15</i>
TMDL-Est	May 2021	8.01	0.5	26.3	18.9
TMDL-Est	July 2021	45.4	16.7	16.5	16.5
TMDL-Est	Sept. 2021	15.2	7.8	14.5	12.6
	Seasonal Average	22.87	8.3	19.0	16.0

Table Notes:

Bolded averages exceed numeric targets.

FIELD OBSERVATIONS

TMDL-EST

Water level in the estuary fluctuates with tides and river flow, which also affects berm status and estuary shape. The estuary berm was closed during the monitoring events in June and July 2021 and September through December 2021, and open during the May 2021, August 2021, and January 2022 through April 2022 monitoring events, with flow exiting through the east end. The berm appeared to have been altered by humans in the month of July, which likely indicates attempts to open the estuary mouth. Dogs off leash and people recreating in the lagoon are frequently seen, and birds (especially gulls) are commonly present. In addition to the frequently seen birds within the estuary, large fish were observed jumping near the sampling location at the closed berm during the September monitoring event. Academic researchers were observed in the estuary installing continuous water quality sonde equipment during the May monitoring event. Homeless encampments were observed approximately 100 meters from the sampling area during the June monitoring event.

TMDL-R1

The lower section of this reach is frequently littered with washing materials and containers (e.g., soap, shampoo, laundry detergent, clothing, towels) 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, and also speaks with people directly about the hazards and legality of washing in the stream. The human use near this monitoring location is heavier in the summer months. The Ventura Land Trust conducts weekly trash removal and periodic vegetation removal in the area, and the California Department of Parks and Recreation with the California Department of Forestry and Fire Protection conducted *Arundo donax* (*Arundo*) removal in the area from the fall of 2021 through the winter of 2022. 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, as well as encampment litter in the river.

⁶ Total Macroalgal Cover is determined by averaging results from 12 quadrats of floating macroalgae and 30 quadrats of attached macroalgae per sampling event (four quadrats of floating and ten quadrats of attached, at three transects at each monitoring location).

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 “B” to transect “H”, as delineated by the dry season algae sampling protocol.⁷ Evidence of washing (e.g., soap, shampoo bottles) are frequently seen near the water. Additionally, miscellaneous encampment litter was observed in the river. Some rocks have been moved to create deeper pools for the camp. Additionally, overgrown Arundo on the left bank occasionally made measurements on that bank infeasible.

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 2020 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.

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. Additionally, the “A” through “J” transects were shortened by approximately 10 meters due to dense Arundo. The streambed was dry during the September 2021 monitoring event.

TMDL-SA

While a natural spring tends to keep the area directly above the confluence with the Ventura River wet for most or all of the year, transect “A” was observed to be ponded during the May through July 2021 monitoring events and completely dry during the August through December 2021 monitoring events. Surface flow returned for the January through March 2022 monitoring events. The site was observed to be ponded during the April 2022 monitoring event.

TMDL-CL

The monitoring location was dry for most of the monitoring period, exhibiting edaphic conditions without any discernable soil moisture difference between the stream bed and the nearby soils above the banks. Surface flow returned for the January through March 2022 monitoring events, but the site was dry again for the April 2022 monitoring event.

CONTINUOUS DATA LOGGING

In accordance with the VR Algae TMDL and CMP, DO and pH were measured continuously for two-week periods on a quarterly basis during the months of May, September, November and March. With approval from the Los Angeles Regional Water Quality Control Board, Quarter 4 and Quarter 1 sonde deployments occurred only at TMDL-Est, TMD-SA, and TMDL-CL This section provides an overview of the equipment used to measure these parameters and presents results for the 2021-2022 monitoring period.

DATA COLLECTION EQUIPMENT

Continuous water quality measurements have been collected over the past seven 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. In 2020, following theft of a unit from the Estuary, DO and pH Hobo sondes were purchased to replace the missing equipment. This equipment was deployed only in freshwater monitoring locations (because

⁷ Dry season algae sampling protocols are to divide each monitoring location reach into transects “A” through “J”, omitting “I” to avoid transcription errors.

of the need for conductivity compensation for saline environments) and an HL4 from another location was swapped. During a calibration in 2021, an existing HL4 failed to accurately calibrate, and repair costs exceeded the replacement cost of a hobo DO and pH array, which were purchased and deployed to provide continuous monitoring capabilities. As discussed in previous reports, the sampling team anticipated the continued replacement of the older HL4 equipment with HOB0 sondes based on cost and performance equivalence. In April 2022, four additional HOB0 sonde arrays, including a conductivity sensor to deploy at TMDL-Est, were purchased to completely phase out the HL4s.

Data sondes are vulnerable to vandalism and theft, which has occurred at the estuary monitoring location (TMDL-Est) over the seven-year period of this monitoring program. Two HL4 data sondes have been stolen from this location, including from 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. No equipment was stolen or vandalized during the 2021-2022 monitoring period, and the combination of newer Hobo sondes and remaining HL4s worked well to obtain the needed data at the sampleable sites, with few issues. 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 November 2021, and March 2022. **Table 5** presents deployment dates and provides general notes related to each deployment where applicable. As compared to past monitoring periods, the 2021-2022 monitoring period saw better performance from the mix of newer equipment and enhanced security procedures at TMDL-Est. Continuous water quality monitoring data for pH and DO measured during each quarter is presented as **Figure 17** and **Figure 18**, respectively (full size charts are provided as **Appendix D**). These figures also show instantaneous measurements of pH and DO taken at deployment, mid-monitoring, and retrieval to provide quality assurance and quality checks of the continuous data readings. Dissolved Oxygen is heavily influenced by flow, sedimentation, and algae presence, and it is noted when the data is suspected to have been influenced by these factors.

TABLE 5 SONDE DEPLOYMENT DATES

Site	2021 Quarter 2 (May ¹)	2021 Quarter 3 (September ¹)	2021 Quarter 4 (November)	2022 Quarter 1 (March)
TMDL-Est	5/10/2021 – 5/27/2021	9/23/2021 – 10/8/2021 ³	11/5/2021 – 11/23/2021	3/8/2022 – 3/23/2022 ⁴
TMDL-R1	5/10/2021 – 5/27/2021 ²	9/23/2021 – 10/8/2021	Not Deployed ⁵	Not Deployed ⁵
TMDL-R2	5/10/2021 – 5/27/2021	9/23/2021 – 10/8/2021	Not Deployed ⁵	Not Deployed ⁵
TMDL-R3	5/10/2021 – 5/27/2021	9/23/2021 – 10/8/2021	Not Deployed ⁵	Not Deployed ⁵
TMDL-R4	5/10/2021 – 5/27/2021	9/23/2021 – 10/8/2021	Not Deployed ⁵	Not Deployed ⁵
TMDL-SA	DRY	DRY	11/5/2021 – 11/23/2021	3/8/2022 – 3/23/2022
TMDL-CL	DRY	DRY	11/5/2021 – 11/23/2021	3/8/2022 – 3/23/2022

Table Notes:

1. Month required by TMDL.
2. The DO sensor appears to have become impacted by low flow, sedimentation, bio-fouled or otherwise disturbed on 5/18 and data after this date are suspect
3. The DO sensor appears to have become lodged at or below the sediment in the estuary, or otherwise disturbed on 9/25 and data after this date are suspect
4. The DO sensor appears to have become lodged at or below the sediment in the estuary, or otherwise disturbed on 3/20 and data after this date are suspect
5. With approval from the Los Angeles Regional Water Quality Control Board, Quarter 4 and Quarter 1 Sonde deployments were required only at TMDL-Est, TMD-SA, and TMDL-CL.

In May 2021, five sondes were installed at five water quality monitoring locations 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 May 10, 2021 and were removed after two weeks of logging. The TMDL-R1 DO sensor appears to have become impacted by low flow, sedimentation, bio-fouled or otherwise disturbed on May 18th after which DO measurements sharply declined, and DO data collected after this date at TMDL-R1 are suspect.

In September 2021, sondes were installed at five water quality monitoring locations 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 23, 2021 and were removed after two weeks of logging. The TMDL-Est DO sensor appears to have become lodged at or below the sediment in the estuary, or otherwise disturbed on September 25th after which DO measurements sharply declined to zero, and DO data collected after this date at TMDL-Est are suspect.

In November 2021, sondes were installed at TMDL-Est for continuous data logging. With approval from the Los Angeles Regional Water Quality Control Board, First Quarter deployments were required only at TMDL-Est, TMD-SA, and TMDL-CL. Sondes were not installed at TMDL-SA and TMD-CL due to dry conditions. The sondes were installed before the logging program began on November 5, 2021 and were removed after two weeks of data collection. Instantaneous measurements taken at deployment and retrieval confirm the DO decrease seen over the two-week monitoring period. Measurements taken mid-monitoring period for TMDL-Est were taken off of a nearby bridge rather than at the place of deployment and are likely not representative of the sonde measurement point at depth.

In March 2022, sondes were installed at three water quality monitoring locations for continuous data logging. With approval from the Los Angeles Regional Water Quality Control Board, Second Quarter sonde deployments were required only at TMDL-Est, TMD-SA, and TMDL-CL. The sondes were installed before the logging program began on March 8, 2022 and were removed after two weeks of data collection. The TMDL-Est DO sensor appears to have become lodged at or below the sediment in the estuary, or otherwise disturbed on March 20th, after which DO measurements sharply declined to zero, and DO data collected after this date at TMDL-Est are suspect. TMDL-SA was ponded during the retrieval of the sonde, which likely contributed to decreased DO readings at the site during the later half of the record.

FIGURE 17 2021-2022 CONTINUOUS DATA LOGGING – PH

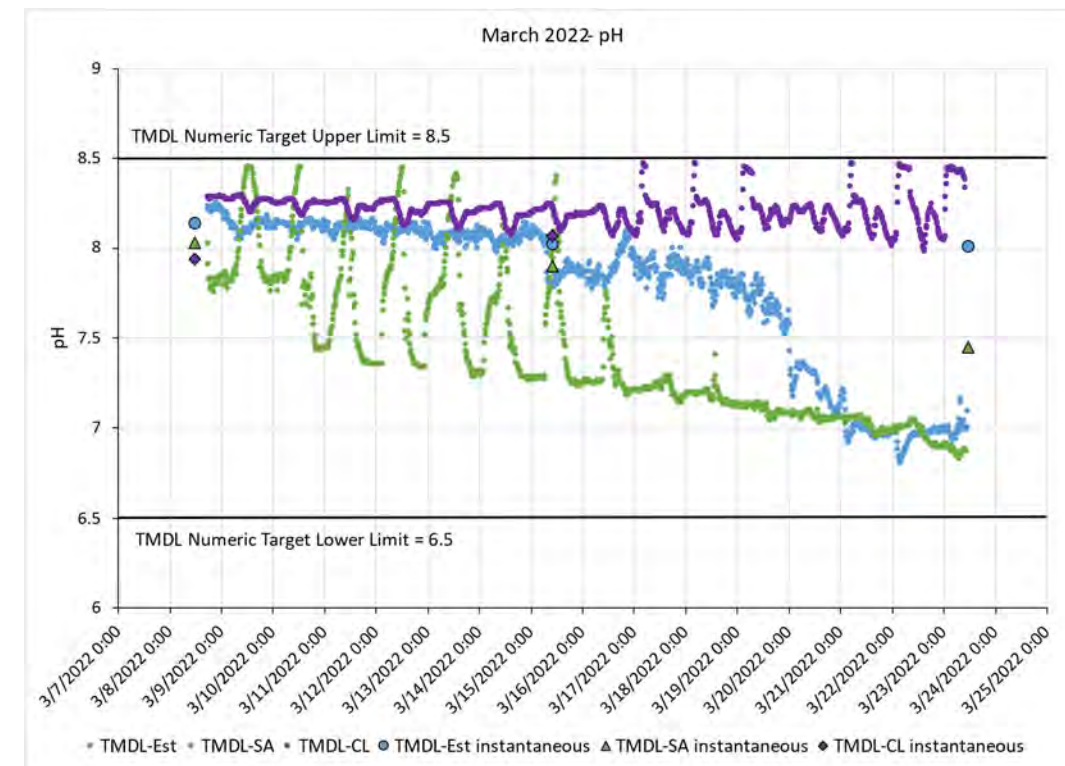
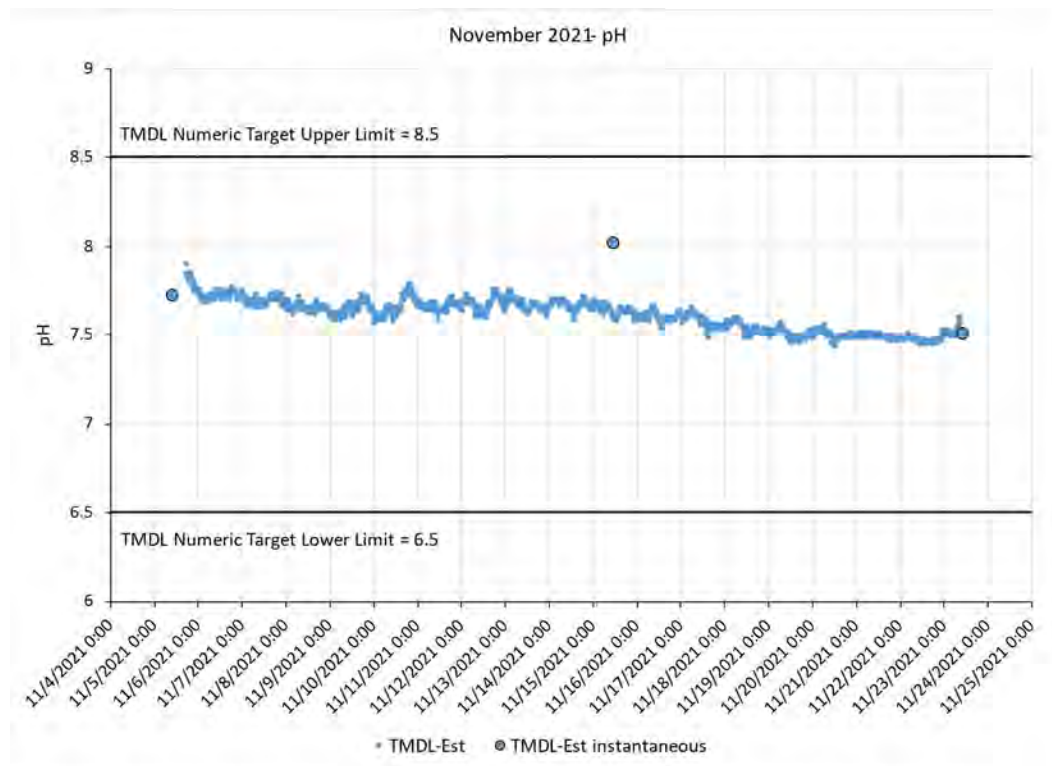
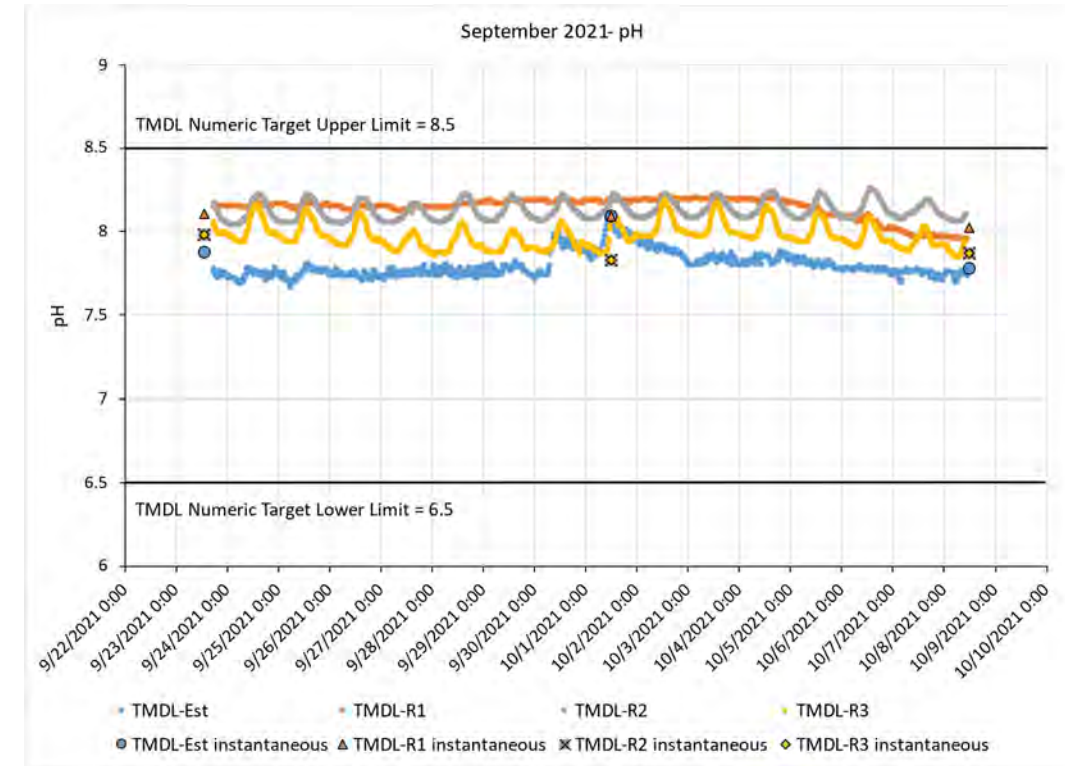
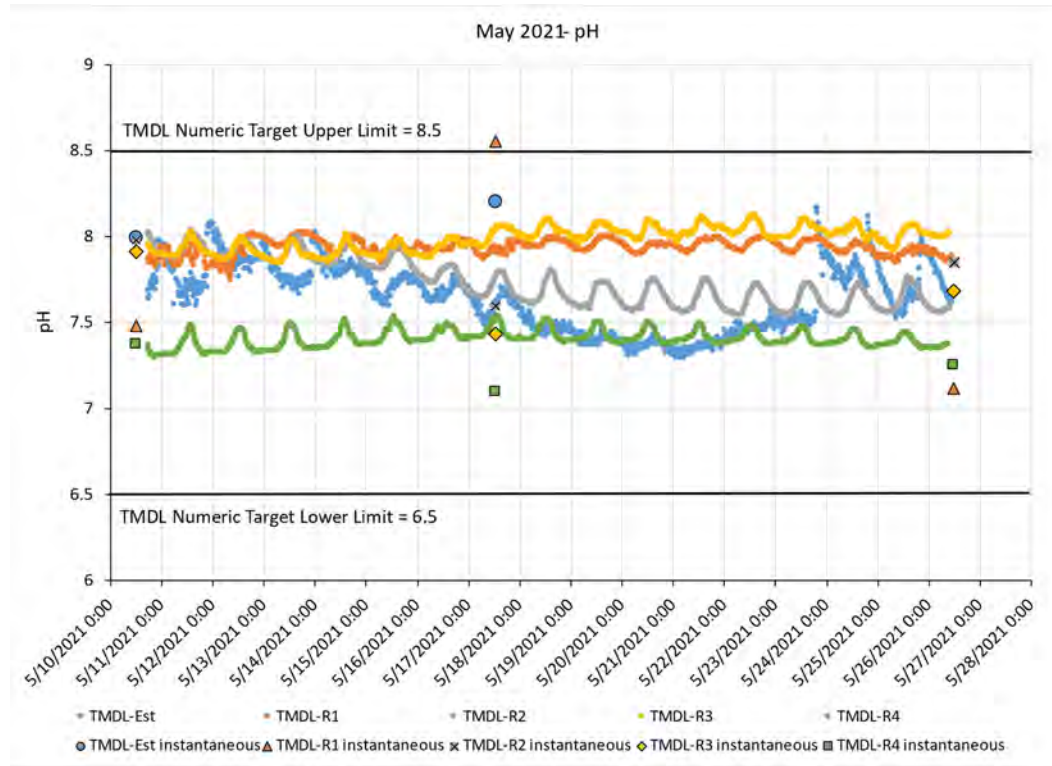
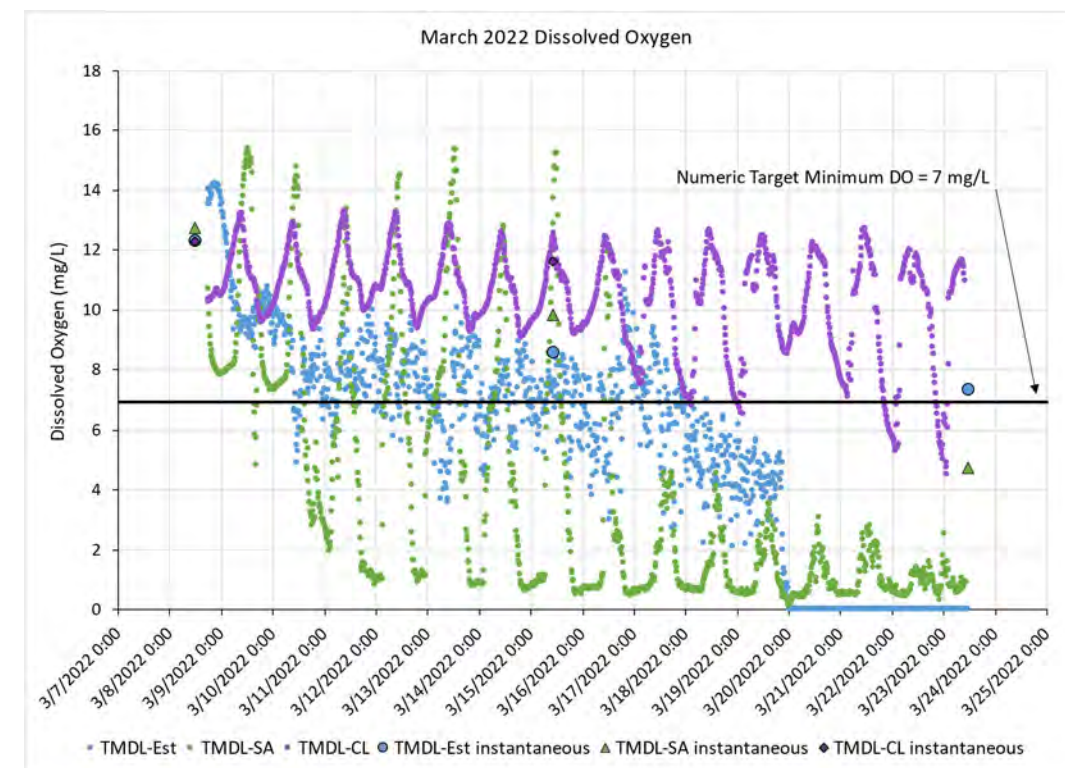
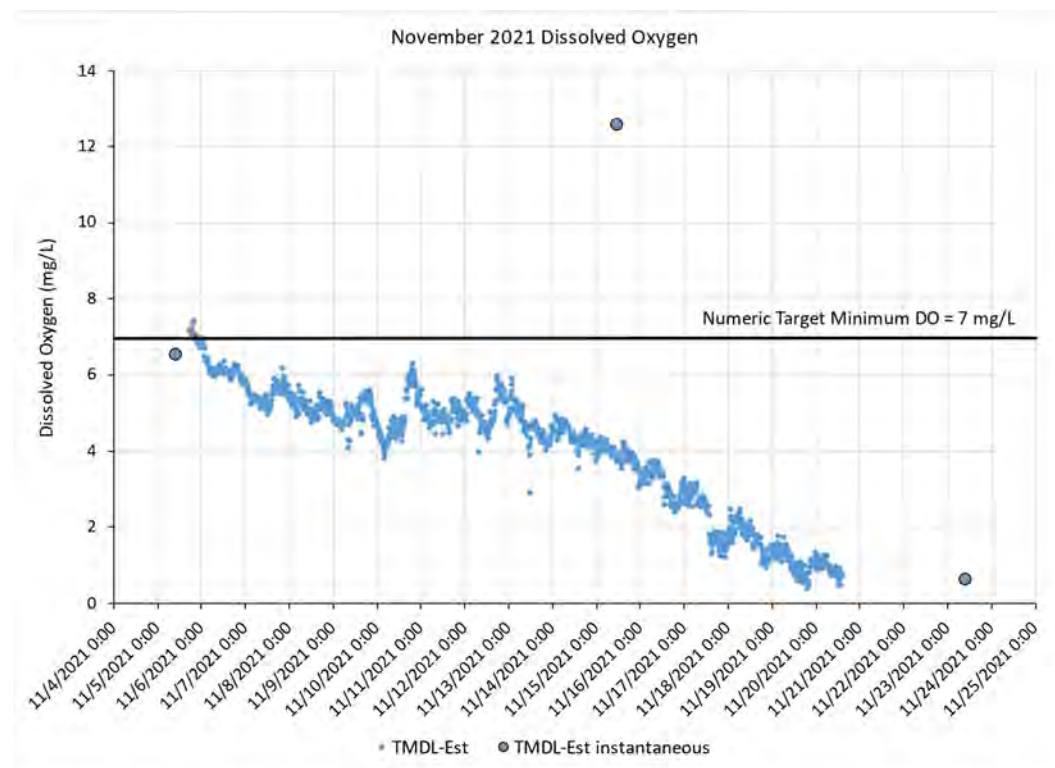
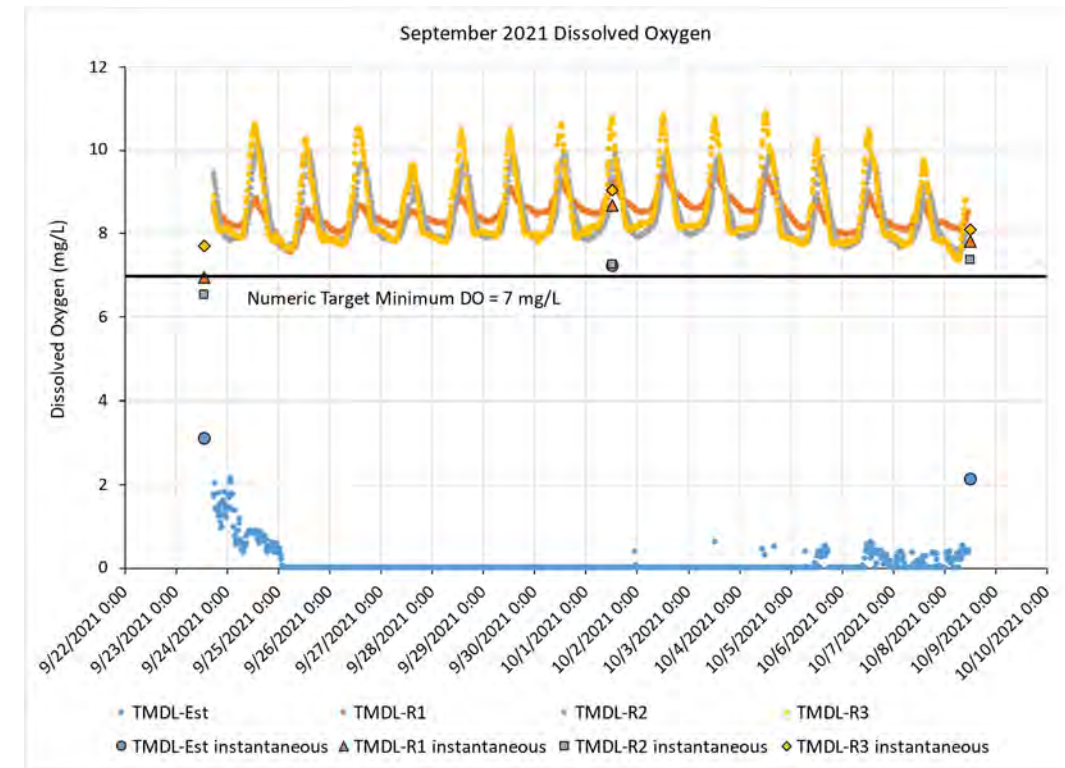
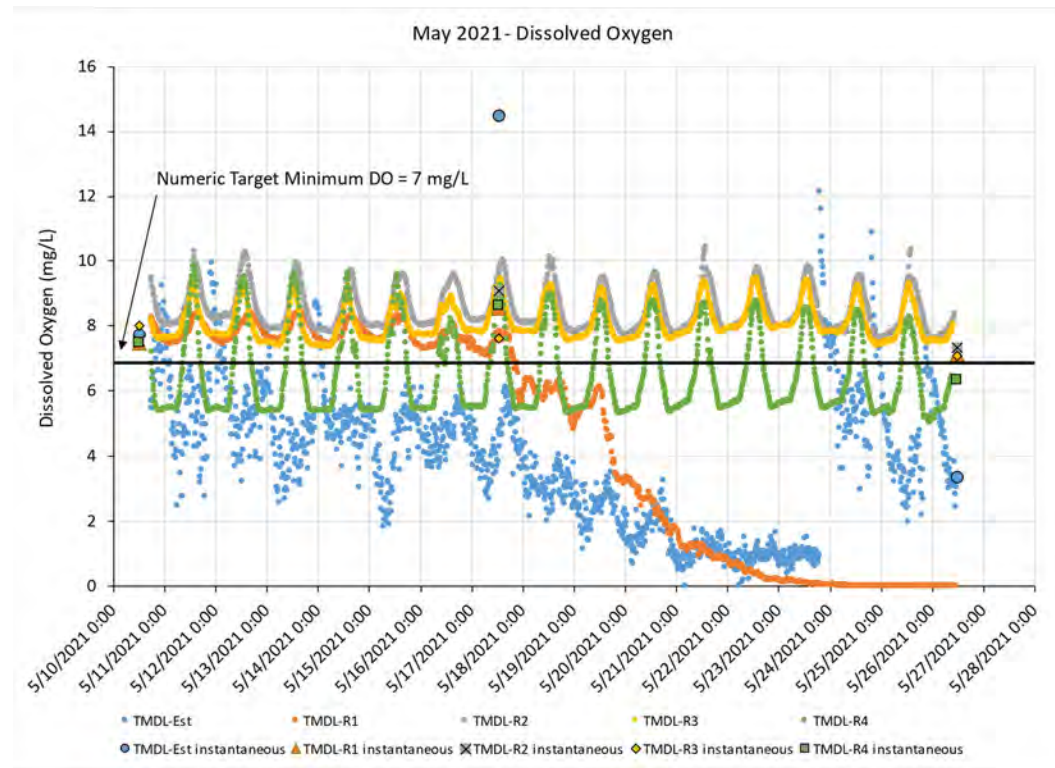


FIGURE 18 2021-2022 CONTINUOUS DATA LOGGING – DISSOLVED OXYGEN⁸



⁸ The DO sensor for TMDL-R1 appears to have become impacted by low flow, sedimentation, bio-fouled or otherwise disturbed on 5/18 and data after this date are suspect; the DO sensor for TMDL-Est appears to have become lodged at or below the sediment in the estuary, bio-fouled or otherwise disturbed during the September 2021 deployment on 9/25 and during the March 2022 event on 3/20 and data after these dates are suspect; and TMDL-SA was observed to be ponded during sonde retrieval in March 2022, which likely contributed to decreasing DO levels at the site.

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 2021-2022 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

The Ventura River watershed experienced developing drought conditions during the 2020-2021 and 2021-2022 monitoring periods. Over the past seven years, flows were generally observed to increase starting in the 2017 rainy season with higher flow rates through 2018, 2019, and 2020. In 2021, rainfall was not sufficient to restore continuous flow in the Ventura River, and peak flows were correspondingly diminished in comparison to the 2019-2020 monitoring period. While rainfall in 2022 was higher than rainfall in 2021, precipitation was not enough to restore flow conditions from the 2018-2020 period. Data show that total nitrogen concentrations are higher during monthly sampling events in dry years and demonstrate greater variation between monitoring locations than during wetter years.

A summary of exceedances is provided in **Table 6**, which considers monthly grab sample and continuous water quality monitoring results. While pH measurements at two monitoring locations (TMDL-Est and TMDL-R3,) exceeded VR TMDL numeric targets during several monthly grab sample monitoring events, continuous water quality monitoring measurements coupled with monthly *in situ* measurements indicate that pH is primarily meeting the VR Algae TMDL numeric targets. An exceedance of the upper numeric target for pH (8.5) occurred in June 2021 at TMDL-Est, where the highest measurements was 8.63. While numeric target exceedances during continuous monitoring events for DO (<7 mg/L) occurred at all seven sites, numeric target exceedances during monthly monitoring events for DO occurred only at TMDL-SA, where the minimum measurement was 5.18 (April 2022), and was likely low due to ponded conditions. Some of the DO exceedances during the continuous monitoring events may have been due to fouling of the sensor. 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.

In February 2021, the Los Angeles Regional Water Quality Control Board approved a reduction in the frequency of dry season algal monitoring events from 5-months (May through September) to 3-months (May, July, and September). This change in the monitoring program was based on a statistical comparison of 5-month and 3-month seasonal averages for algal biomass and macroalgal cover over the first five years of the monitoring program and was implemented during the May-September 2021 dry season.

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 2021	May 2021	DO (c), MC	DO (c)	MC	MC, DO (c)	DO (c, m), MC	Dry	Dry
	Jun 2021	-	-	-	-	DO (m)	Dry	Dry
	Jul 2021	MC, Chl a(m), DO (m)	-	DO (m)	MC	DO (m), MC	Dry	Dry
	Aug 2021	-	-	-	-	DO (m)	Dry	Dry
	Sept 2021	DO (c)	MC	-	-	Dry	Dry	Dry
	Seasonal Average	Chl a, MC	-	MC	-	MC	Dry	Dry
Wet Season 2021/2022	Oct 2021	DO (c)	-	-	-	-	Dry	Dry
	Nov 2021	DO (c)	-	-	-	-	Dry	Dry
	Dec 2021	pH (m)	-	-	pH (m)	-	Dry	Dry
	Jan 2022	-	-	-	-	DO (m)	-	-
	Feb 2022	-	-	-	-	DO (m)	-	-
	Mar 2022	DO (c)	-	-	-	DO (m)	DO (c)	DO (c)
	Apr 2022	DO (m)	DO (m)	-	-	DO (m)	DO (m)	Dry

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.

DO: Dissolved Oxygen

MC: Macroalgal Percent Cover

LESSONS LEARNED

Actions taken to secure sonde deployments, including implementation of alternative deployment locations, enhanced housings for the data loggers, and continued use of a security chain and locking system for the TMDL-Est sonde appears to have successfully deterred theft during the 2021-2022 monitoring period. Site access has been improved through selective vegetation clearance, and field teams consisted of two or more personnel, mitigating risks from encounters with transients.

All sondes were calibrated by monitoring staff before and after deployment, regardless of history, and field meter readings were taken in the vicinity of the sondes at deployment, during a mid-deployment check, and immediately prior to their removal to check/confirm that the sondes were reading accurately through the deployment. Issues with the data collected from the sondes appear to be primarily driven by low flow, high algae presence, sedimentation, some bio-fouling, and deployment in the estuary at depth. The most significant issues occurred at TMDL-Est, with sedimentation and depth of deployment likely affecting the continuous DO data. Going forward, sondes deployed at the TMDL-Est site will be reconfigured with strategically located floats and weights to keep the sonde suspended in the water column above the sediment and below the surface. Detected errors in sonde recordings did not substantially affect continuous data collection during the 2021-2022 continuous monitoring events.

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

Site	Date	Time	DO	pH	Salinity	SC	Temp.	Berm Status	Discharge
			mg/L		ppt	µs/cm	°C		cfs
TMDL-CL	May-21	0.3034722	13.47	8.28	2.78	5206	4.1	N/A	<1
TMDL-CL	Jun-21	7:30	11.94	8.42	8.67	4995	5.5	N/A	0.96256
TMDL-CL	Jul-21	7:25	11.97	8.43	2.71	5065	5.2	N/A	<1
TMDL-CL	Aug-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	Sep-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	Oct-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	Nov-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	Dec-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	Jan-22	7:17	13.47	8.28	2.78	5206	4.1	N/A	<1
TMDL-CL	Feb-22	7:30	11.94	8.42	8.67	4995	5.5	N/A	0.96256
TMDL-CL	Mar-22	7:25	11.97	8.43	2.71	5065	5.2	N/A	<1
TMDL-CL	Apr-22	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-Est	May-21	11:05	7.96	8.22	9.89	16568	18.1	Open	N/A
TMDL-Est	Jun-21	12:20	8.36	8.22	8.05	13831	20.5	Closed	N/A
TMDL-Est	Jul-21	12:15	6.69	8.42	5.13	9189	26.1	Closed	N/A
TMDL-Est	Aug-21	10:30	8.05	8.25	18.13	24104	21.3	Open	N/A
TMDL-Est	Sep-21	11:15	12.83	8.46	7.77	13466	23.3	Closed	N/A
TMDL-Est	Oct-21	10:10	8.77	8.16	1.21	2343	16.3	Closed	N/A
TMDL-Est	Nov-21	11:10	16.3	8.2	11.28	18535	18.2	Closed	N/A
TMDL-Est	Dec-21	11:29	10.13	7.93	2.64	4906	14.4	Closed	N/A
TMDL-Est	Jan-22	12:19	10.17	8.33	3.01	5536	12.5	Open	N/A
TMDL-Est	Feb-22	11:30	11.08	7.93	11.05	16013	14.7	Open	N/A
TMDL-Est	Mar-22	12:43	13.66	8.54	1.27	2788	15.6	Open	N/A
TMDL-Est	Apr-22	11:20	6.36	8.12	1	1992	16.3	Open	N/A
TMDL-R1	May-21	10:00	7.45	7.93	0.74	1458	17.7	N/A	4.76747
TMDL-R1	Jun-21	11:40	8.25	7.96	0.79	1564	18	N/A	2.33077
TMDL-R1	Jul-21	10:25	7.12	8.24	0.82	1617	21.5	N/A	2.82517
TMDL-R1	Aug-21	10:00	7.35	8	0.74	1473	20	N/A	3.46084
TMDL-R1	Sep-21	10:15	8.28	8.12	0.81	1606	20	N/A	2.78986
TMDL-R1	Oct-21	10:00	9.33	8.12	0.84	1650	12.7	N/A	1.41259
TMDL-R1	Nov-21	10:25	9.04	7.9	0.84	1659	14.9	N/A	2.15419
TMDL-R1	Dec-21	10:48	8.35	7.86	0.84	1663	13	N/A	2.08356
TMDL-R1	Jan-22	11:31	10.18	8.25	0.85	1669	11.7	N/A	13.77272
TMDL-R1	Feb-22	11:00	9.47	8.28	0.7	1395	12.8	N/A	10.8416
TMDL-R1	Mar-22	12:03	9.41	8.27	0.69	1365	12.8	N/A	8.96992
TMDL-R1	Apr-22	10:40	5.89	8.09	0.73	1452	14.4	N/A	10.48845
TMDL-R2	May-21	7:30	7.28	7.83	0.6	1202	19.4	N/A	11.041475

Site	Date	Time	DO	pH	Salinity	SC	Temp.	Berm Status	Discharge
			mg/L		ppt	µs/cm	°C		cfs
TMDL-R2	Jun-21	10:30	8.15	7.82	0.63	1260	19.5	N/A	3.42552
TMDL-R2	Jul-21	7:40	6.58	7.61	0.64	1274	22.8	N/A	5.01468
TMDL-R2	Aug-21	9:00	7.44	7.55	0.61	1218	21.2	N/A	7.20419
TMDL-R2	Sep-21	7:40	7.85	7.97	0.7	1388	21.9	N/A	4.30839
TMDL-R2	Oct-21	8:55	8.65	8	0.68	1357	16	N/A	3.42552
TMDL-R2	Nov-21	9:35	7.77	7.57	0.64	1271	18.1	N/A	4.0258725
TMDL-R2	Dec-21	9:53	7.43	7.8	0.64	1275	15.6	N/A	4.66153
TMDL-R2	Jan-22	10:27	9.93	8.04	0.62	1234	12.5	N/A	9.25244
TMDL-R2	Feb-22	10:15	9.87	8.08	0.59	1176	13.3	N/A	9.11118
TMDL-R2	Mar-22	10:56	9.28	8.26	0.58	1162	14	N/A	12.21887
TMDL-R2	Apr-22	9:50	9.69	8	0.6	1204	-88	N/A	11.01817
TMDL-R3	May-21	10:50	9.04	7.83	0.53	1062	18.6	N/A	4.66153
TMDL-R3	Jun-21	10:00	8.7	7.72	0.55	1096	18.1	N/A	3.28426
TMDL-R3	Jul-21	10:00	8.3	7.72	0.56	1127	20.8	N/A	2.82517
TMDL-R3	Aug-21	8:20	7.96	7.32	0.58	1160	19.6	N/A	3.17832
TMDL-R3	Sep-21	9:00	8.72	7.8	0.62	1233	19.4	N/A	2.18951
TMDL-R3	Oct-21	8:25	9.35	7.78	0.62	1241	13.2	N/A	1.48322
TMDL-R3	Nov-21	8:50	8.54	7.78	0.6	1201	15.4	N/A	1.34196
TMDL-R3	Dec-21	9:12	9.42	8.6	0.6	1201	12.8	N/A	1.69504
TMDL-R3	Jan-22	9:38	10.12	7.98	0.6	1196	11.7	N/A	19.10523
TMDL-R3	Feb-22	9:30	9.94	8.06	0.56	1126	12.7	N/A	18.39894
TMDL-R3	Mar-22	9:59	9.79	8	0.56	1113	12.9	N/A	14.4437
TMDL-R3	Apr-22	9:10	7.8	7.83	0.59	1177	13.7	N/A	9.21713
TMDL-R4	May-21	0:00	6.24	7.41	0.52	1042	17.5	N/A	3.39021
TMDL-R4	Jun-21	9:00	5.95	7.04	0.54	1084	-88	N/A	2.83765
TMDL-R4	Jul-21	7:50	6.55	7.12	0.55	1103	18.72	N/A	0.56503
TMDL-R4	Aug-21	7:30	5.72	7.13	0.51	1027	18.4	N/A	0.38846
TMDL-R4	Sep-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	Oct-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	Nov-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	Dec-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	Jan-22	8:11	6.87	7.8	0.49	994	13.9	N/A	2.96643
TMDL-R4	Feb-22	8:00	6.65	7.99	0.53	1065	14.1	N/A	7.38076
TMDL-R4	Mar-22	8:11	6.4	8	0.53	1067	15.1	N/A	8.72272
TMDL-R4	Apr-22	8:05	6.73	7.54	0.56	1114	15.8	N/A	7.66328
TMDL-SA	May-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Jun-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Jul-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Aug-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Sep-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Oct-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Nov-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY

Site	Date	Time	DO	pH	Salinity	SC	Temp.	Berm Status	Discharge
			mg/L		ppt	µs/cm	°C		cfs
TMDL-SA	Dec-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Jan-22	8:46	10.01	7.94	0.77	1516	9.6	N/A	2.22482
TMDL-SA	Feb-22	8:30	10.91	8.05	0.75	1486	10.6	N/A	0.74161
TMDL-SA	Mar-22	0:00	7.31	7.72	0.66	1318	12.1	N/A	0.21189
TMDL-SA	Apr-22	8:30	5.18	7.5	0.52	1049	13.7	N/A	<1
TMDL-R4	Oct-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Nov-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Dec-21	-	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	Jan-22	8:46	10.01	7.94	0.77	1516	9.6	N/A	2.22482
TMDL-SA	Feb-22	8:30	10.91	8.05	0.75	1486	10.6	N/A	0.74161
TMDL-SA	Mar-22	0:00	7.31	7.72	0.66	1318	12.1	N/A	0.21189
TMDL-SA	Apr-22	8:30	5.18	7.5	0.52	1049	13.7	N/A	<1

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

APPENDIX B MONTHLY WATER QUALITY DATA

Date	Analyte	Units	MDL	RL	TMDL-Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL-SA	TMDL-CL
Apr-22	Dissolved Nitrogen	mg/L	NA	NA	1.4415	1.555	2.105	1.67	1.79	3.1352	NS
Apr-22	Dissolved Phosphorous	mg/L	0.016	0.03	0.046	0.0553	0.0843	0.169	0.0624	0.109	NS
Apr-22	Dissolved TKN	mg/L	0.13	0.4	0.271	0.275	0.235	NA	NA	NA	NS
Apr-22	Total Nitrate + Nitrite as N	mg/L	NA	NA	1.1705	1.28	1.87	1.67	1.79	3.1352	NS
Apr-22	Nitrate	mg/L	0.01	0.02	1.16	1.28	1.87	1.67	1.79	3.1	NS
Apr-22	Nitrite	mg/L	0.01	0.02	0.0105	NA	NA	NA	NA	0.0352	NS
Apr-22	Total Nitrogen	mg/L	NA	NA	1.6225	1.623	2.127	1.67	1.79	3.1352	NS
Apr-22	Total Phosphorous	mg/L	0.016	0.02	0.186	0.166	0.0655	0.231	0.103	0.137	NS
Apr-22	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.452	0.343	0.257	NA	NA	NA	NS
Aug-21	Dissolved Nitrogen	mg/L	NA	NA	0.534	1.707	2.074	0.0505	1.15	NS	NS
Aug-21	Dissolved Phosphorous	mg/L	0.016	0.03	0.0401	0.0615	0.0681	NA	NA	NS	NS
Aug-21	Dissolved TKN	mg/L	0.13	0.4	0.276	0.597	0.474	NA	NA	NS	NS
Aug-21	Total Nitrate + Nitrite as N	mg/L	NA	NA	0.258	1.11	1.6	0.0505	1.15	NS	NS
Aug-21	Nitrate	mg/L	0.01	0.02	0.258	1.11	1.6	0.0505	1.15	NS	NS
Aug-21	Nitrite	mg/L	0.01	0.02	NA	NA	NA	NA	NA	NS	NS
Aug-21	Total Nitrogen	mg/L	NA	NA	0.795	1.75	2.101	0.0505	1.15	NS	NS
Aug-21	Total Phosphorous	mg/L	0.016	0.02	0.0539	0.0605	0.0903	0.031	NA	NS	NS
Aug-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.537	0.64	0.501	NA	NA	NS	NS
Aug-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.537	0.64	0.501	NA	NA	NS	NS
Dec-21	Dissolved Nitrogen	mg/L	NA	NA	1.5225	2.343	3.07	0.47	NS	NS	NS
Dec-21	Dissolved Phosphorous	mg/L	0.016	0.03	NA	0.0315	0.0505	0.016	NS	NS	NS
Dec-21	Dissolved TKN	mg/L	0.13	0.4	0.702	0.563	0.54	NA	NS	NS	NS
Dec-21	Total Nitrate + Nitrite as N	mg/L	NA	NA	0.8205	1.78	2.53	0.47	NS	NS	NS
Dec-21	Nitrate	mg/L	0.01	0.02	0.81	1.78	2.53	0.47	NS	NS	NS
Dec-21	Nitrite	mg/L	0.01	0.02	0.0105	NA	NA	NA	NS	NS	NS
Dec-21	Total Nitrogen	mg/L	NA	NA	1.4615	2.372	3.368	0.47	NS	NS	NS
Dec-21	Total Phosphorous	mg/L	0.016	0.02	NA	0.037	0.0427	0.0225	NS	NS	NS
Dec-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.641	0.592	0.838	NA	NS	NS	NS

Date	Analyte	Units	MDL	RL	TMDL-Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL-SA	TMDL-CL
Feb-22	Dissolved Nitrogen	mg/L	NA	NA	2.5872	3.3052	2.8406	4.76	3.0515	0.542	2.1022
Feb-22	Dissolved Phosphorous	mg/L	0.016	0.03	NA	NA	0.0348	NA	NA	0.0441	NA
Feb-22	Dissolved TKN	mg/L	0.13	0.4	0.187	0.302	0.465	0.17	NA	0.358	0.542
Feb-22	Total Nitrate + Nitrite as N	mg/L	NA	NA	2.2852	2.8402	2.6706	4.76	2.6935	NA	1.9152
Feb-22	Nitrate	mg/L	0.01	0.02	1.9	2.27	2.83	2.66	4.75	2.68	NA
Feb-22	Nitrite	mg/L	0.01	0.02	0.0152	0.0152	0.0102	0.0106	0.01	0.0135	NA
Feb-22	Total Nitrogen	mg/L	NA	NA	3.0452	3.3942	2.6706	4.76	2.9935	0.659	2.2842
Feb-22	Total Phosphorous	mg/L	0.016	0.02	0.0363	0.0267	0.0286	NA	0.0374	0.0524	NA
Feb-22	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.369	0.76	0.554	NA	NA	0.3	0.659
Jan-22	Dissolved Nitrogen	mg/L	NA	NA	2.6882	2.815	2.243	3.694	4.143	3.0512	2.5412
Jan-22	Dissolved Phosphorous	mg/L	0.016	0.03	0.0541	0.0255	0.0236	NA	0.0282	0.065	0.0386
Jan-22	Dissolved TKN	mg/L	0.13	0.4	0.408	0.485	0.315	0.203	0.174	0.333	1.56
Jan-22	Total Nitrate + Nitrite as N	mg/L	NA	NA	2.2032	2.5	2.04	3.52	3.81	1.4912	2.1332
Jan-22	Nitrate	mg/L	0.01	0.02	2.12	2.19	2.5	2.04	3.52	3.81	1.47
Jan-22	Nitrite	mg/L	0.01	0.02	0.0132	0.0132	NA	NA	NA	NA	0.0212
Jan-22	Total Nitrogen	mg/L	NA	NA	2.9942	2.843	2.242	3.731	4.14	3.2312	2.5572
Jan-22	Total Phosphorous	mg/L	0.016	0.02	0.0798	0.0662	0.0334	0.022	0.0305	0.0672	0.0341
Jan-22	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.424	0.791	0.343	0.202	0.211	0.33	1.74
Jul-21	Dissolved Nitrogen	mg/L	NA	NA	0.591	1.707	3.572	0.2279	1.29	NS	NS
Jul-21	Dissolved Phosphorous	mg/L	0.016	0.03	0.0303	0.0891	0.204	NA	NA	NS	NS
Jul-21	Dissolved TKN	mg/L	0.13	0.4	0.591	0.497	0.552	0.137	NA	NS	NS
Jul-21	Chlorophyll a	mg/m3	1	2	45.4	NS	NS	NS	NS	NS	NS
Jul-21	Total Nitrate + Nitrite as N	mg/L	NA	NA	NA	1.21	3.02	0.0909	1.29	NS	NS
Jul-21	Nitrate	mg/L	0.01	0.02	NA	1.21	3.02	0.0909	1.29	NS	NS
Jul-21	Nitrite	mg/L	0.01	0.02	NA	NA	NA	NA	NA	NS	NS
Jul-21	Total Nitrogen	mg/L	NA	NA	0.811	1.789	3.676	0.2449	1.29	NS	NS
Jul-21	Total Phosphorous	mg/L	0.016	0.02	0.0696	0.137	0.241	0.0291	0.0215	NS	NS
Jul-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.811	0.579	0.656	0.154	NA	NS	NS
Jul-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.811	0.579	0.656	0.154	NA	NS	NS

Date	Analyte	Units	MDL	RL	TMDL-Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL-SA	TMDL-CL
Jun-21	Dissolved Nitrogen	mg/L	NA	NA	0.679	1.326	2.602	0.317	0.849	NS	NS
Jun-21	Dissolved Phosphorous	mg/L	0.016	0.03	0.0286	0.0562	0.108	0.0184	NA	NS	NS
Jun-21	Dissolved TKN	mg/L	0.13	0.4	0.38	0.433	0.442	NA	NA	NS	NS
Jun-21	Total Nitrate + Nitrite as N	mg/L	NA	NA	0.299	0.893	2.16	0.317	0.849	NS	NS
Jun-21	Nitrate	mg/L	0.01	0.02	0.299	0.893	2.16	0.317	0.849	NS	NS
Jun-21	Nitrite	mg/L	0.01	0.02	NA	NA	NA	NA	NA	NS	NS
Jun-21	Total Nitrogen	mg/L	NA	NA	0.771	1.408	2.695	0.317	0.981	NS	NS
Jun-21	Total Phosphorous	mg/L	0.016	0.02	0.0524	0.0819	0.114	0.0191	NA	NS	NS
Jun-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.472	0.515	0.535	NA	0.132	NS	NS
Mar-22	Dissolved Nitrogen	mg/L	NA	NA	2.254	2.722	2.31	4.97	1.8014	0.5352	2.0603
Mar-22	Dissolved Phosphorous	mg/L	0.016	0.03	0.0253	0.022	NA	NA	NA	NA	NA
Mar-22	Dissolved TKN	mg/L	0.13	0.4	0.39	0.314	0.272	NA	NA	0.21	0.519
Mar-22	Total Nitrate + Nitrite as N	mg/L	NA	NA	1.94	2.45	2.31	4.97	1.5914	0.0162	1.6703
Mar-22	Nitrate	mg/L	0.01	0.02	1.66	1.94	2.45	2.31	4.97	1.58	0.0162
Mar-22	Nitrite	mg/L	0.01	0.02	0.0103	NA	NA	NA	NA	0.0114	NA
Mar-22	Total Nitrogen	mg/L	NA	NA	2.33	2.729	2.473	4.97	1.8134	0.5942	2.1373
Mar-22	Total Phosphorous	mg/L	0.016	0.02	0.0736	0.291	0.0244	0.017	NA	0.0339	0.0246
Mar-22	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.467	0.39	0.279	0.163	NA	0.222	0.578
May-21	Dissolved Nitrogen	mg/L	NA	NA	0.679	0.962	2.97	0.816	1.088	NS	NS
May-21	Dissolved Phosphorous	mg/L	0.016	0.03	NA	0.0379	0.0569	NA	NA	NS	NS
May-21	Dissolved TKN	mg/L	0.13	0.4	0.412	0.419	1.66	0.426	0.181	NS	NS
May-21	Chlorophyll a	mg/m3	1	2	8.01	NS	NS	NS	NS	NS	NS
May-21	Total Nitrate + Nitrite as N	mg/L	NA	NA	0.267	0.543	1.31	0.39	0.907	NS	NS
May-21	Nitrate	mg/L	0.01	0.02	0.267	0.543	1.31	0.39	0.907	NS	NS
May-21	Nitrite	mg/L	0.01	0.02	NA	NA	NA	NA	NA	NS	NS
May-21	Total Nitrogen	mg/L	NA	NA	0.763	1.065	1.931	0.789	1.055	NS	NS
May-21	Total Phosphorous	mg/L	0.016	0.02	0.0479	0.0429	0.0705	NA	NA	NS	NS
May-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.496	0.522	0.621	0.399	0.148	NS	NS
Nov-21	Dissolved Nitrogen	mg/L	NA	NA	0.81	1.986	3.437	0.35	NS	NS	NS

Date	Analyte	Units	MDL	RL	TMDL-Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL-SA	TMDL-CL
Nov-21	Dissolved Phosphorous	mg/L	0.016	0.03	0.0163	0.0313	0.0396	NA	NS	NS	NS
Nov-21	Dissolved TKN	mg/L	0.13	0.4	0.396	0.346	0.727	NA	NS	NS	NS
Nov-21	Total Nitrate + Nitrite as N	mg/L	NA	NA	0.414	1.64	2.71	0.35	NS	NS	NS
Nov-21	Nitrate	mg/L	0.01	0.02	0.414	1.64	2.71	0.35	NS	NS	NS
Nov-21	Nitrite	mg/L	0.01	0.02	NA	NA	NA	NA	NS	NS	NS
Nov-21	Total Nitrogen	mg/L	NA	NA	0.778	2.008	3.114	0.35	NS	NS	NS
Nov-21	Total Phosphorous	mg/L	0.016	0.02	0.037	0.0548	0.047	0.0279	NS	NS	NS
Nov-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.364	0.368	0.404	NA	NS	NS	NS
Oct-21	Dissolved Nitrogen	mg/L	NA	NA	0.6299	2.127	3.052	0.0508	NS	NS	NS
Oct-21	Dissolved Phosphorous	mg/L	0.016	0.03	0.0341	0.0512	0.0862	0.0305	NS	NS	NS
Oct-21	Dissolved TKN	mg/L	0.13	0.4	0.41	0.367	0.482	NA	NS	NS	NS
Oct-21	Total Nitrate + Nitrite as N	mg/L	NA	NA	0.2199	1.76	2.57	0.0508	NS	NS	NS
Oct-21	Nitrate	mg/L	0.01	0.02	0.205	1.76	2.57	0.0508	NS	NS	NS
Oct-21	Nitrite	mg/L	0.01	0.02	0.0149	NA	NA	NA	NS	NS	NS
Oct-21	Total Nitrogen	mg/L	NA	NA	0.7059	2.19	3.149	0.0508	NS	NS	NS
Oct-21	Total Phosphorous	mg/L	0.016	0.02	0.0527	0.0686	0.151	0.031	NS	NS	NS
Oct-21	Total Phosphorous	mg/L	0.016	0.02	0.0527	0.0686	0.151	0.031	NS	NS	NS
Oct-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.486	0.43	0.579	NA	NS	NS	NS
Oct-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.486	0.43	0.579	NA	NS	NS	NS
Sep-21	Dissolved Nitrogen	mg/L	NA	NA	0.57	1.861	2.907	0.378	NS	NS	NS
Sep-21	Dissolved Phosphorous	mg/L	0.016	0.03	NA	0.0577	0.129	NA	NS	NS	NS
Sep-21	Dissolved TKN	mg/L	0.13	0.4	0.57	0.771	0.857	0.378	NS	NS	NS
Sep-21	Chlorophyll a	mg/m3	1	2	15.2	NS	NS	NS	NS	NS	NS
Sep-21	Total Nitrate + Nitrite as N	mg/L	NA	NA	NA	1.09	2.05	NA	NS	NS	NS
Sep-21	Nitrate	mg/L	0.01	0.02	NA	1.09	2.05	NA	NS	NS	NS
Sep-21	Nitrite	mg/L	0.01	0.02	NA	NA	NA	NA	NS	NS	NS
Sep-21	Total Nitrogen	mg/L	NA	NA	0.956	1.635	3.18	0.649	NS	NS	NS
Sep-21	Total Phosphorous	mg/L	0.016	0.02	0.0762	0.0831	0.228	0.147	NS	NS	NS
Sep-21	Total Kjeldahl Nitrogen	mg/L	0.13	0.4	0.956	0.545	1.13	0.649	NS	NS	NS

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/m ²)	Percent Presence Macroalgae (%)
TMDL-R1	15-Jul-21	1	11	11.2	14.29
TMDL-R1	09-Sep-21	1	11	58.8	33.33
TMDL-R2	13-May-21	1	11	41.1	63.27
TMDL-R2	15-Jul-21	1	11	37.8	26.73
TMDL-R2	09-Sep-21	1	11	39.3	21.11
TMDL-R3	12-May-21	1	11	59	33.33
TMDL-R3	14-Jul-21	1	11	77	32.04
TMDL-R3	08-Sep-21	1	11	44.3	19.05
TMDL-R4	12-May-21	1	11	88.6	72.82
TMDL-R4	14-Jul-21	1	11	109	75.73

APPENDIX D FULL SIZE CONTINUOUS MONITORING CHARTS

FIGURE D1 2021 SECOND QUARTER PH CONTINUOUS DATA LOGGING

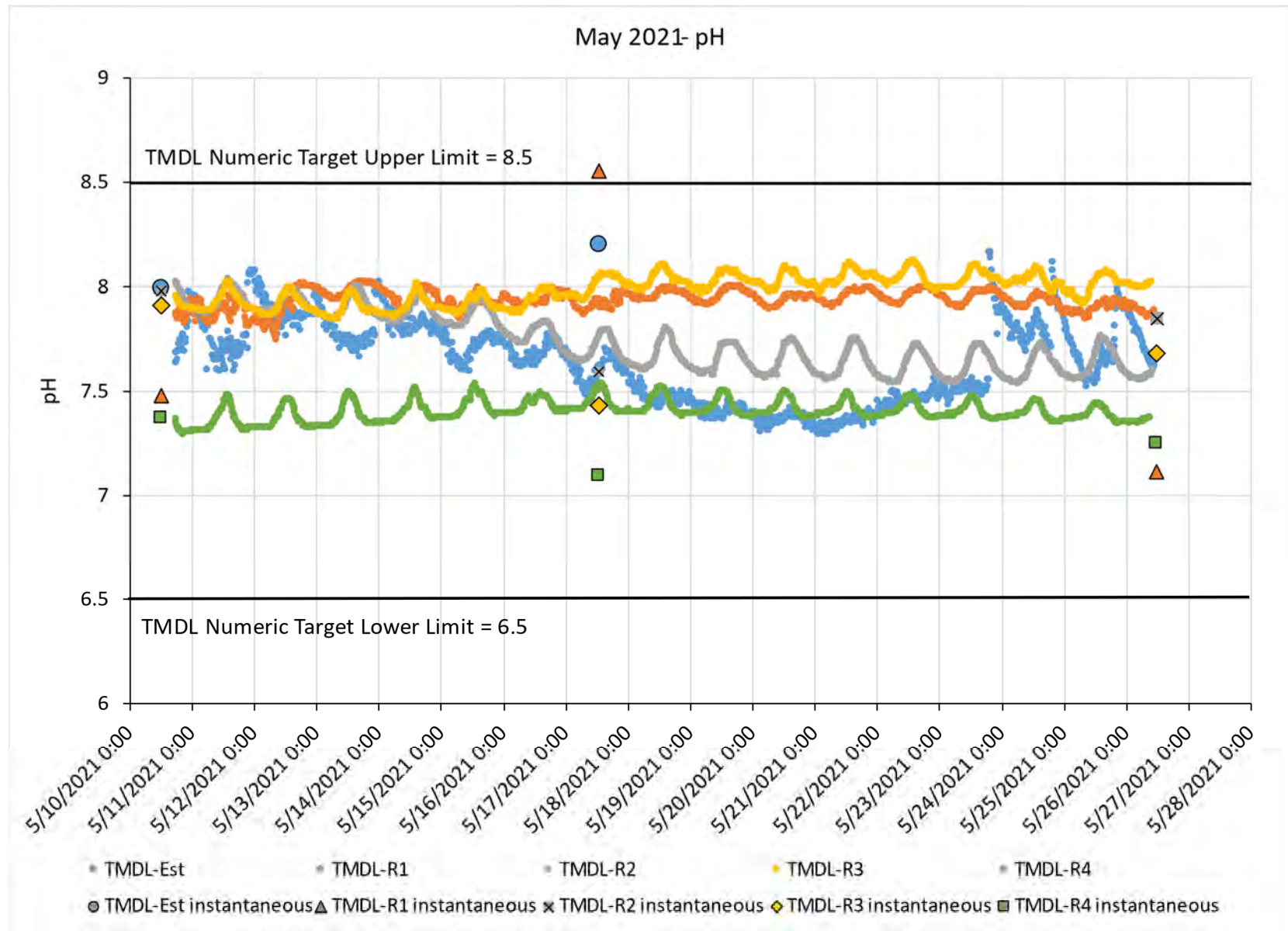


FIGURE D2 2021 THIRD QUARTER PH CONTINUOUS DATA LOGGING

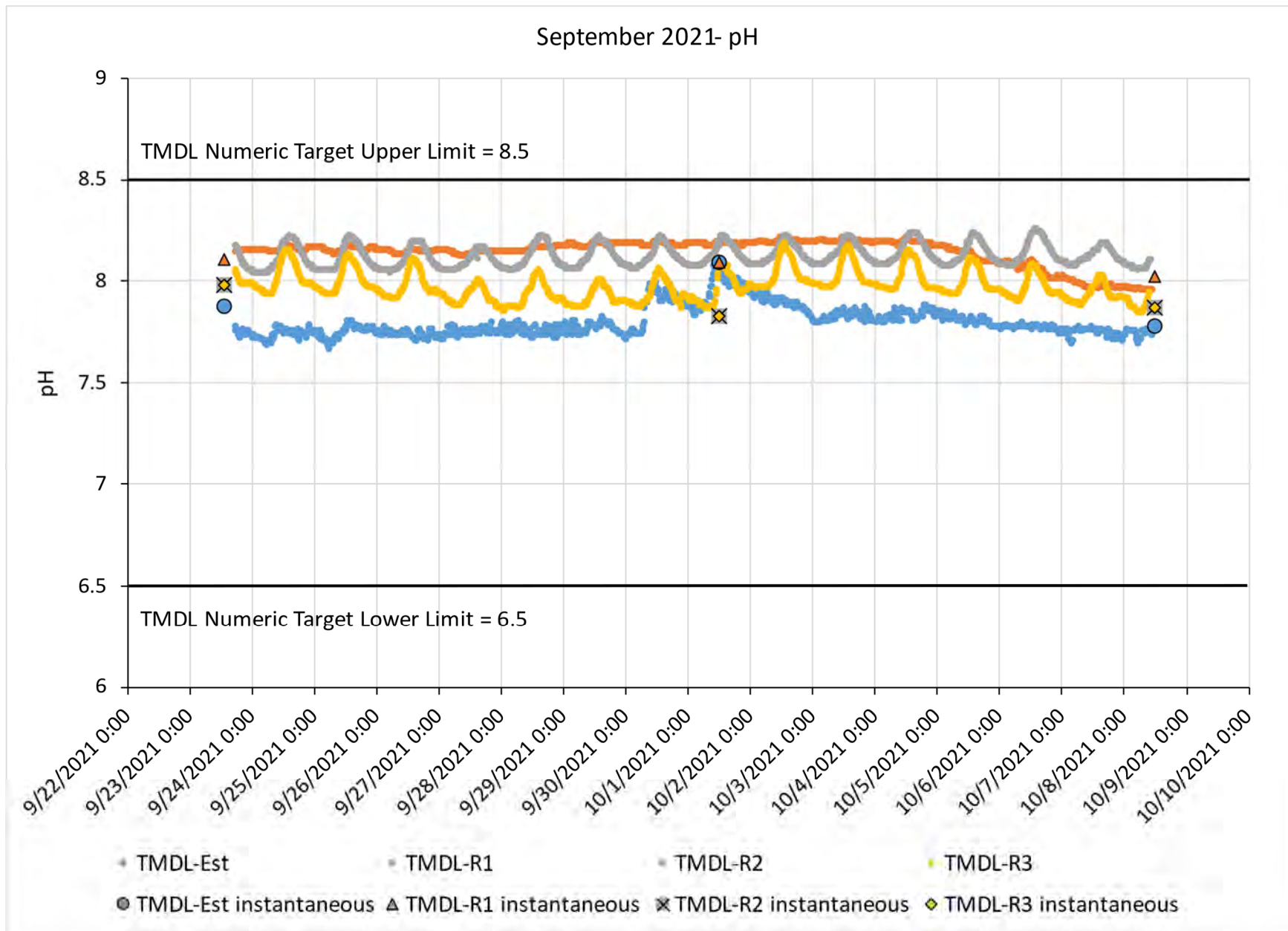


FIGURE D3 2021 FOURTH QUARTER PH CONTINUOUS DATA LOGGING

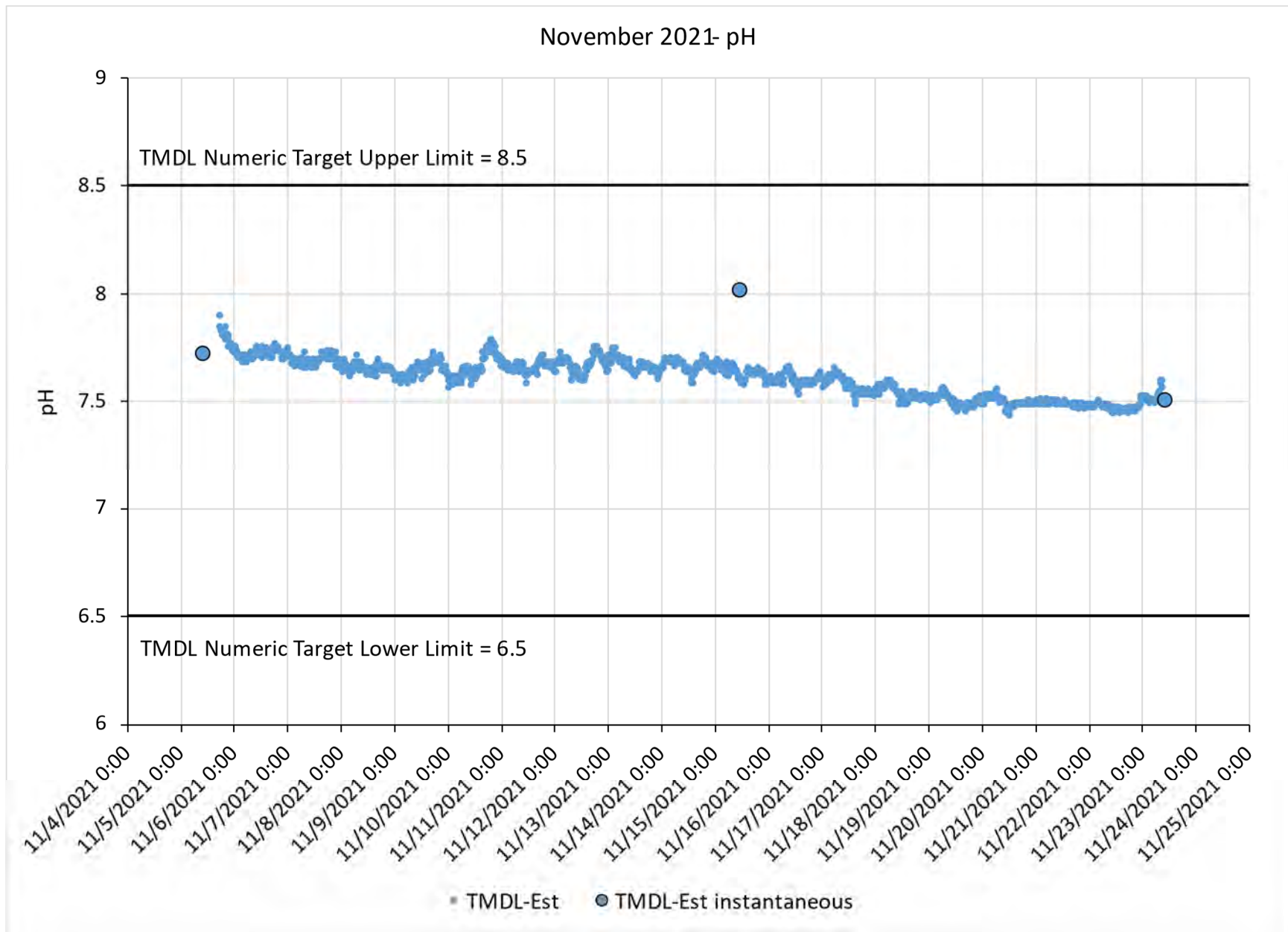


FIGURE D4 2022 FIRST QUARTER PH CONTINUOUS DATA LOGGING

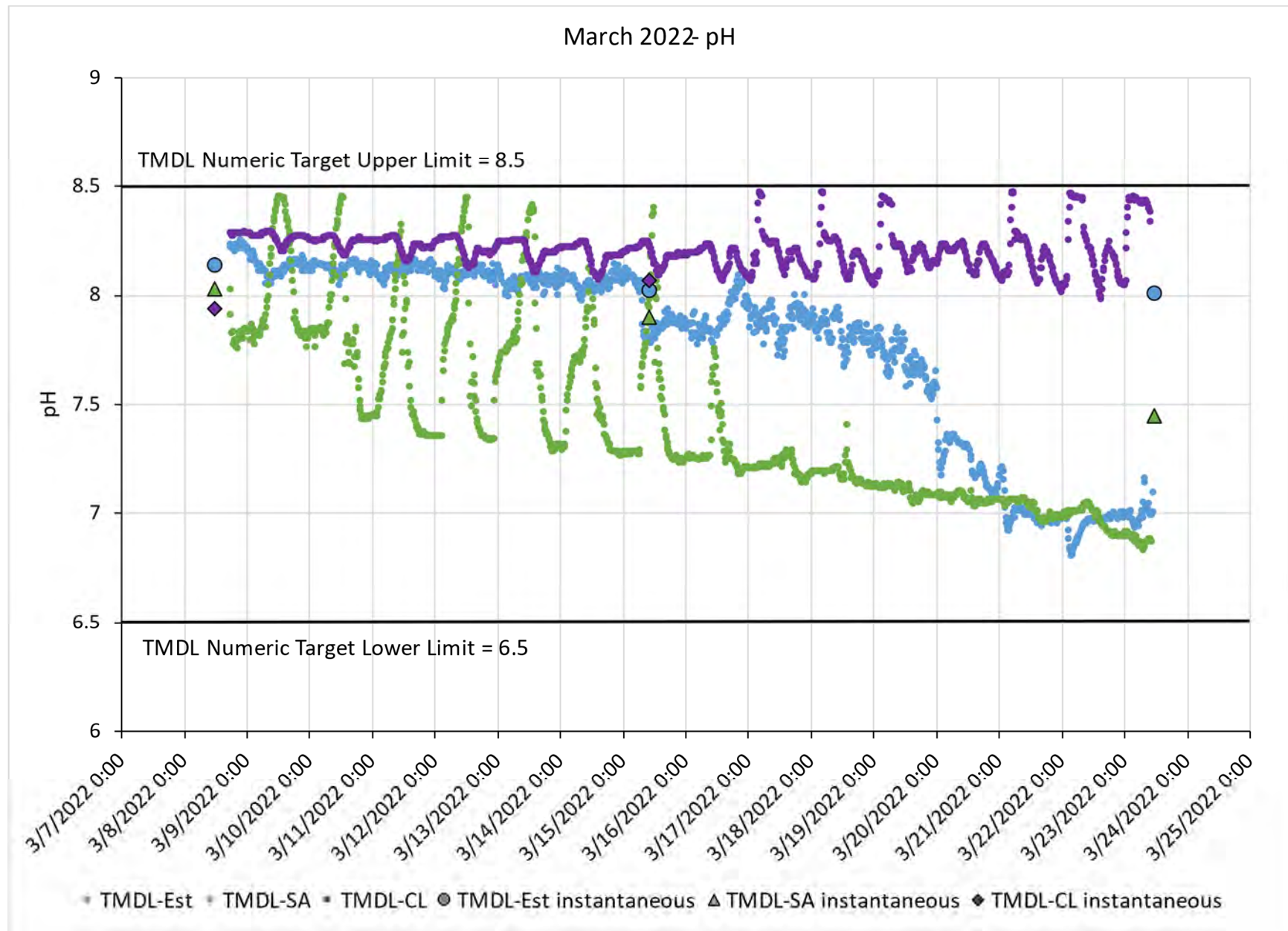
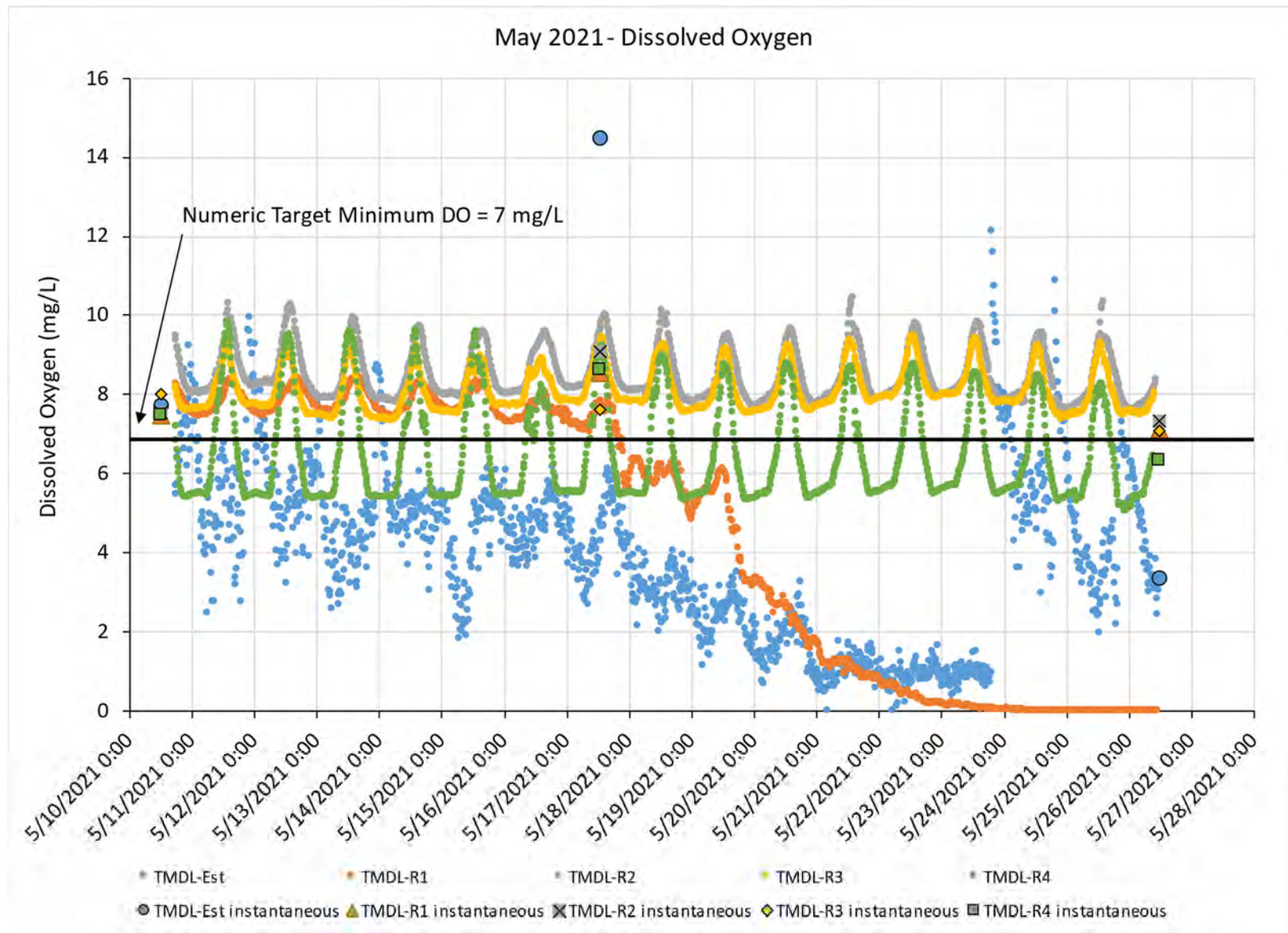
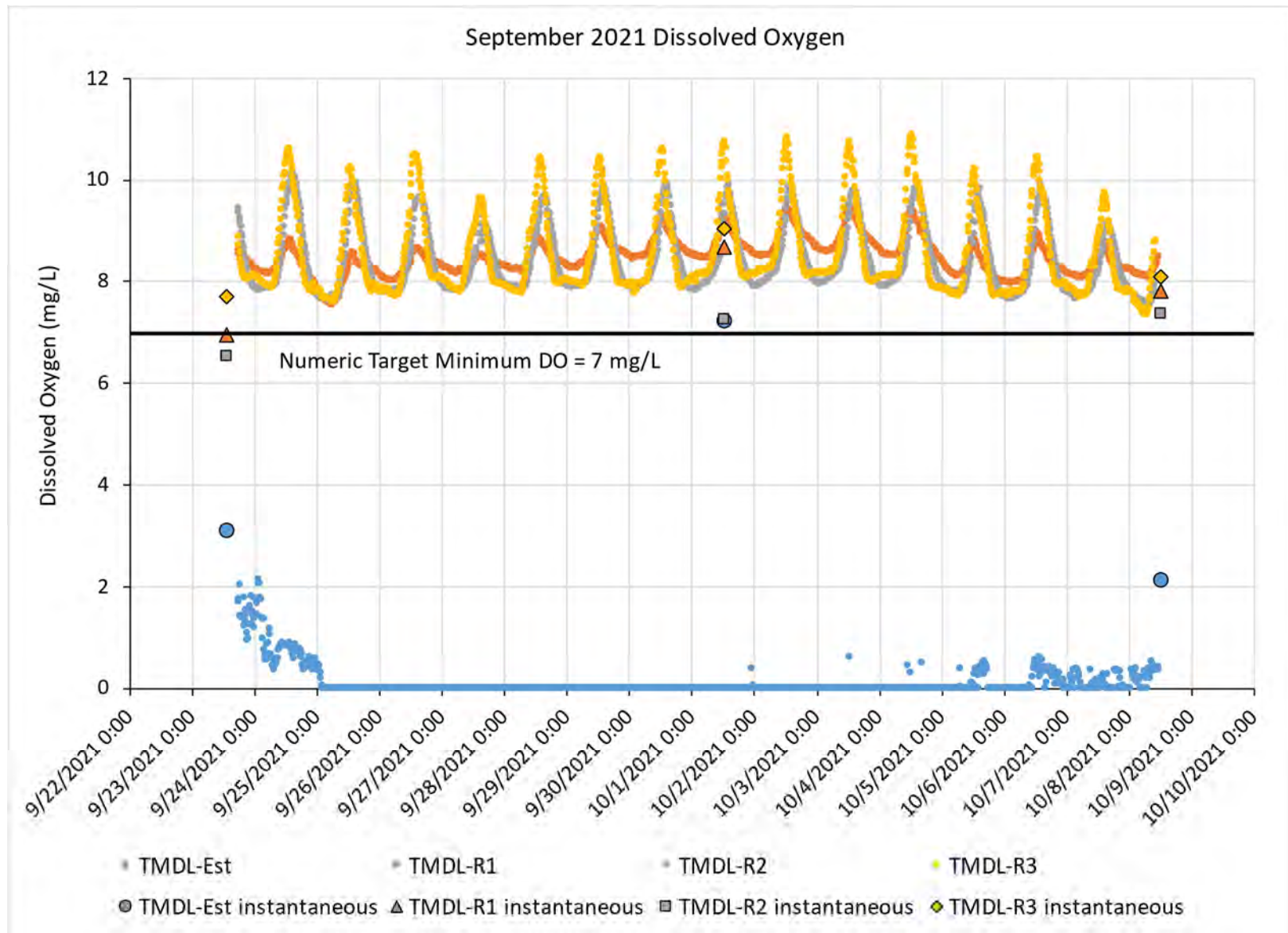


FIGURE D5 2021 SECOND QUARTER DISSOLVED OXYGEN CONTINUOUS DATA LOGGING⁹



⁹ The DO sensor for TMDL-R1 appears to have become impacted by low flow, sedimentation, bio-fouled or otherwise disturbed on 5/18 and data after this date are suspect.

FIGURE D6 2021 THIRD QUARTER DISSOLVED OXYGEN CONTINUOUS DATA LOGGING¹⁰



¹⁰ the DO sensor for TMDL-Est appears to have become lodged at or below the sediment in the estuary, bio-fouled or otherwise disturbed on 9/25 and data after this date are suspect.

FIGURE D7 2021 FOURTH QUARTER DISSOLVED OXYGEN CONTINUOUS DATA LOGGING

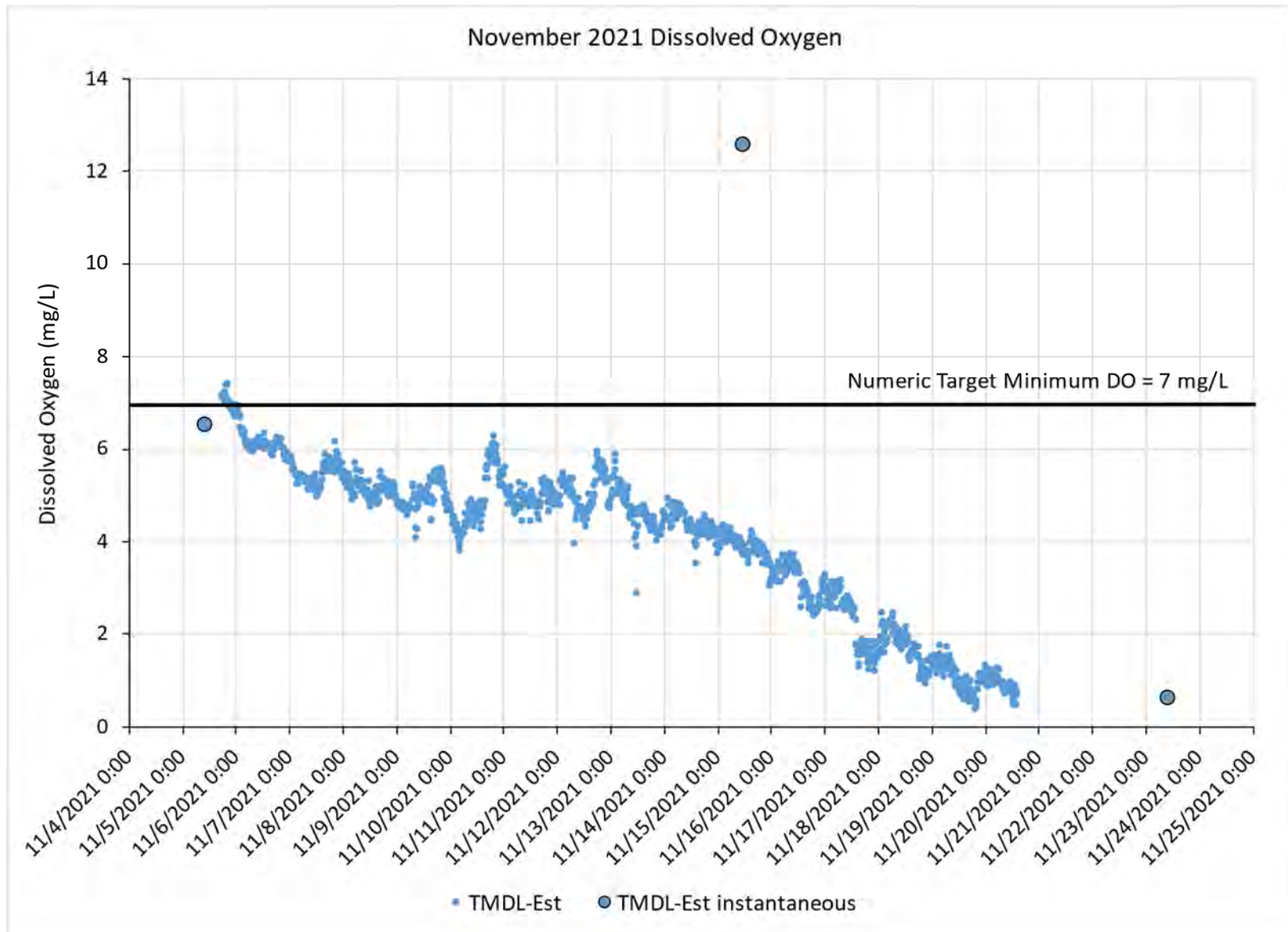
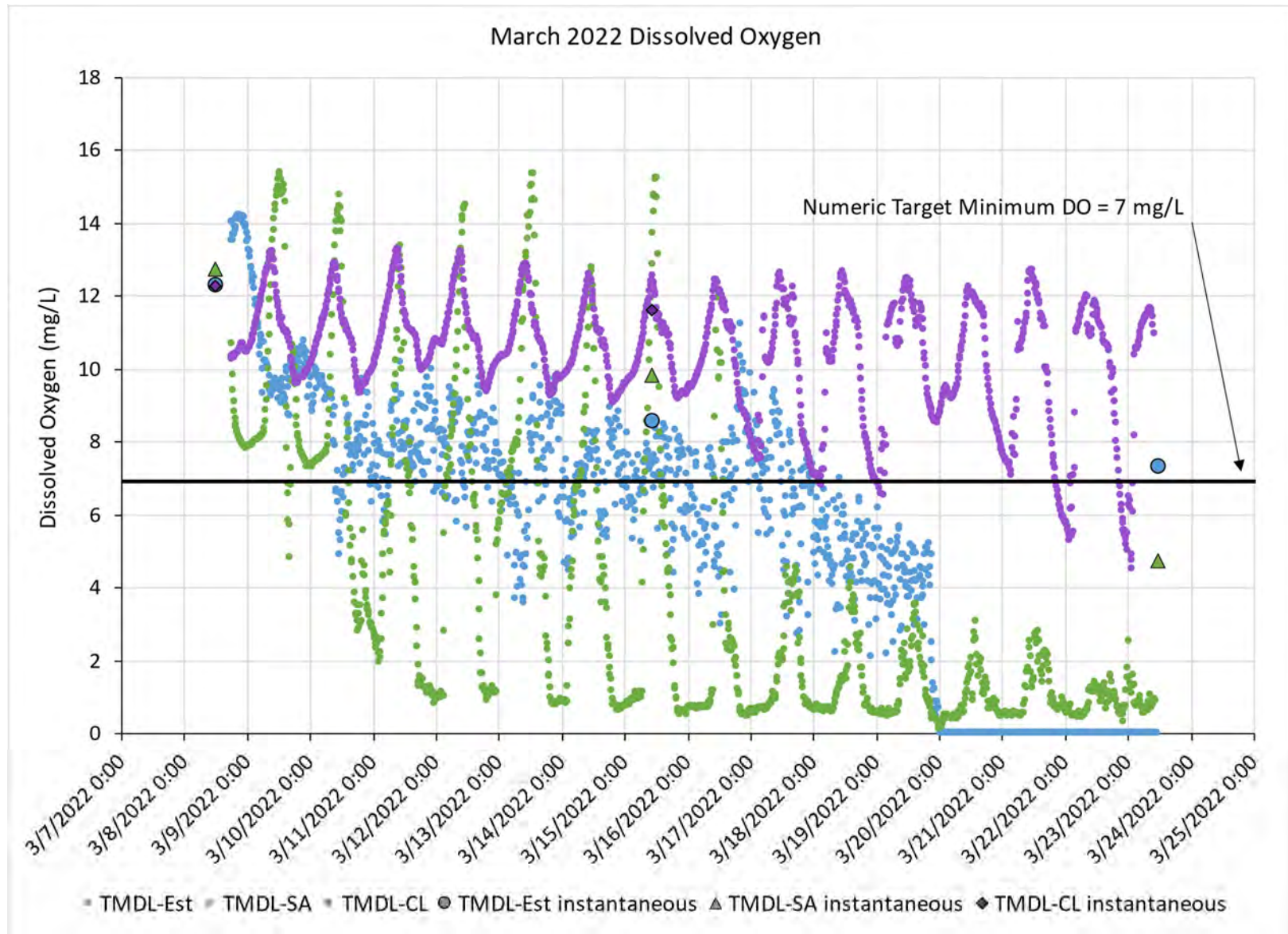


FIGURE D8 2022 FIRST QUARTER DISSOLVED OXYGEN CONTINUOUS DATA LOGGING¹¹



¹¹ the DO sensor for TMDL-Est appears to have become lodged at or below the sediment in the estuary, bio-fouled or otherwise disturbed on 3/20 and data after this date are suspect, and TMDL-SA was observed to be ponded during sonde retrieval in March 2022, which likely contributed to decreasing DO levels at the site.

APPENDIX E FIELD DATA SHEETS

https://countyofventuraca-my.sharepoint.com/personal/ewelina_mutkowska_ventura_org/_layouts/15/onedrive.aspx?id=%2Fpersonal%2Ffewelina%5Fmutkowska%5Fventura%5Forg%2FDocuments%2F2022%20VR%20Algae%20TMDL%20AMR&ga=1

APPENDIX F CHAIN OF CUSTODIES AND LABORATORY REPORTS

https://countyofventuraca-my.sharepoint.com/personal/ewelina_mutkowska_ventura_org/_layouts/15/onedrive.aspx?id=%2Fpersonal%2Ffewelina%5Fmutkowska%5Fventura%5Forg%2FDocuments%2F2022%20VR%20Algae%20TMDL%20AMR&ga=1

**Rincon Ventu. River TMDL
Field Data Sheet**

Sample Date: 05/12/2021

Sample Crew: SPSH MC MS

Station ID:	R4	R3	CL	SA			
Sample Time:	08:00	10:50	DRY	DRY			
Collection Method: (Circle method)	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM
Collection Device	Rubber delimiter (area=12.6cm ²)	4	10				
	PVC Delimiter (area=12.6cm ²)	0	1				
	Syringe Scrubber (area=5.3cm ²)	7	0				
Number of transects sampled (0-11)	11	11					
Composite Volume (mL)	380	440					
Chlorophyll a volume (25 mL preferred)	25	25					

Comments: _____

**Rincon Ventu. River TMDL
Field Data Sheet**

Sample Date: 05/13/2004

Sample Crew: SP SH MC MJ

Station ID:	RZ	R1	EST				
Sample Time:	0730	1000	1105				
Collection Method: (Circle method)	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM
Collection Device	Rubber delimiter (area=12.6cm ²)	1		X			
	PVC Delimiter (area=12.6cm ²)	4					
	Syringe Scrubber (area=5.3cm ²)	6					
Number of transects sampled (0-11)	11		—				
Composite Volume (mL)	380		1000				
Chlorophyll a volume (25 mL preferred)	25		500				

Comments: R1 was unable to be sampled due to deep pools and inaccessible banks. flow and water was collected.

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): May 2021
 Site ID: TMDL-R1
 Date/Time: 05/13/2021 1000
 Crew Members: SD SH MC MS

Latitude/Longitude: 34.281439 -119.309016
 Flow (circle one): Flowing / Poned / 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.):
Unable to be sampled for data due to deep pools and inaccessible banks

January—December Monthly In Situ Measurements:
 pH: 7.93 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 7.45 mg/L SC: 1458 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.74 ppt
 Water Temp: 17.7 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

METER

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 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 \leq 10 m; 250 m if wetted width > 10 m): 150

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

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): May 2021
Site ID: TMDL-R21
Date/Time: 5/13/2021 0730
Crew Members: SPSH MC HS

Latitude/Longitude: 34.339240 -119.29763
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.): Flow taken @ B
encumbrment EF → H

January—December Monthly In Situ Measurements:
 pH: 7.83 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 7.28 mg/L SC: 1212 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.60 ppt
 Water Temp: 19.4 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

DUPLICATE

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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	1
PVC Delimiter (Area=12.6cm ²)	4
Syringe Scrubber (Area=5.3cm ²)	6
Other (Area= _____)	0
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

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: TMDL-RZ Date: 05/13/2004 Crew: SP SH MC MJ

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	
A	6.5	0/A	43/P	66/P	70/P	0/A	6	12	6	11	UP, down
AB	7	0/A	40/A	33/A	47/P	0/A					
B	4.5	0/P	22/P	40/A	47/A	0/P	16	10	8	10	
BC	5.0	0/P	41/P	40/P	40/A	0/P					
C	2.3	0/NA	30/A	40/P	27/P	0/P	14	9	16	12	
CD	4.0	0/A	27/P	25/P	22/P	0/A					
D	4.35	0/A	28/A	15/P	17/P	0/P	17	16	15	17	
DE	3.8	0/A	27/P	25/P	27/P	0/A					
E	5.2	0/A	10/P	25/P	25/A	0/A	12	7	8	14	
EF	7.0	0/P	43/P	NA	28/P	0/P					
F	8.5	0/P	14/P	45/P	49/P	0/P	13	11	4	6	UP, down
FG	6.0	0/P	50/P	54/P	60/P	0/NA					
G	7.7	0/P	50/P	50/P	59/P	0/A	17	15	15	14	
GH	7.5	0/P	50/A	47/A	66/P	0/P					
H	7.1	0/P	51/P	54/P	47/A	0/P	10	9	12	11	
HI	7.7	0/P	60/A	74/P	47/P	0/P					
I	7.5	0/P	35/A	37/P	43/A	0/A	12	11	9	9	
IJ	7.3	0/A	19/A	25/P	30/P	0/A					
J	7.0	0/NA	20/A	17/A	13/P	0/P	16	10	12	4	
JK	5.5	0/NA	5/NA	38/A	29/A	0/A					
K	5.5	0/NA	7/P	23/P	37/P	0/A	14	17	17	17	UP, down

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): May 2024
 Site ID: TMDL-R3
 Date/Time: 05/22/24 10:50
 Crew Members: SP SH MC MJ

Latitude/Longitude: 34.2040 -119.152
 Flow (circle one): Flowing / Ponded / Dry
 Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
 Wind Direction: Blowing (circle one) From / To SE
 Photos (check): Upstream Downstream
 Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly In Situ Measurements:
 pH: 7.83 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 9.04 mg/L SC: 1062 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.53 ppt
 Water Temp: 18.0 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	10
PVC Delimiter (Area=12.6cm ²)	1
Syringe Scrubber (Area=5.3cm ²)	0
Other (Area=)	0
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	440
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: B3 Date: 5/12/01 Crew: SH MD

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	4.5	0/A	8/A	10/P	12/P	0/A	9	0	5	9	CP 409 down 408
AB	6.5	0/A	16/P	34/P	5/P	0/P					
B	5.6	0/A	25/P	9/P	15/P	0/P	4	4	7	5	
BC	6.0	0/A	22/A	25/P	14/A	0/A					
C	7.2	0/P	24/A	10/A	11/A	0/P	4	2	3	9	
CD	6.2	0/P	17/A	30/A	24/P	0/A					
D	9	0/NA	18/A	0/A	6/P	0/A	7	2	0	0	
DE	12	0/NA	10/A	7/A	14/P	0/P					
E	11	0/NA	14/P	26/A	21/P	0/P	8	4	6	9	
EF	9	0/A	34/P	36/A	50/P	0/P					
F	6.5	0/A	52/A	36/A	37/P	0/A	8	7	4	11	CP 407 down 406
FG	9.5	0/A	12/A	27/A	33/A	0/A					
G	7.1	0/A	30/A	29/A	31/P	0/P	6	10	0	7	
GH	6.8	0/A	28/P	37/P	44/A	0/A					
H	5.8	0/A	30/A	26/A	40/A	0/A	8	12	17	17	
HI	4.5	0/A	14/P	30/A	34/A	0/A					
I	4.3	0/A	0/A	24/P	25/A	0/A	16	16	17	15	
J	2.0	0/A	2/A	9/A	6/A	0/A					
J	1.2	0/A	2/A	18/A	8/A	0/A	17	17	17	17	
JK	1.8	0/A	3/A	7/A	0/P	0/A					
K	2.5	0/P	14/A	6/P	2/A	0/A	8	9	8	16	CP 405 down 404

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): May 2021
 Site ID: TMDL-R41
 Date/Time: 05/12/2021
 Crew Members: SH SP MC MS

Latitude/Longitude: 34.2207 -119.830
 Flow (circle one): Flowing / Poned / 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: 7.41 pH units EC: _____ $\mu\text{S/cm}$
 DO: 6.24 mg/L SC: 10.42 $\mu\text{S/cm}$
 DO: _____ % Salinity: 0.52 ppt
 Water Temp: 17.5 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
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12			
13			
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 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 \leq 10 m; 250 m if wetted width > 10 m): 150m

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	4
PVC Delimiter (Area=12.6cm ²)	6
Syringe Scrubber (Area=5.3cm ²)	7
Other (Area=)	0
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

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: B4 Date: 5/12/21 Crew: -SH, MD

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	5.5	0/P	43/P	21/P	12/P	0/P	0	0	0	0	UP 415 down 414
AB	4.2	0/A	51/P	22/P	16/P	0/P					
B	5.8	0/P	14/P	10/P	18/P	0/P	0	0	0	0	
BC	6.5	0/P	4/P	21/P	5/P	0/A					
C	11	0/P	13/P	15/P	18/P	0/A	0	0	2	0	
CD	9	0/A	21/P	16/P	24/P	0/A					
D	8	0/P	21/P	24/P	24/P	0/A	0	4	6	1	
DE	9	0/P	13/P	12/P	27/P	0/A					
E	9	0/P	8/P	31/P	33/P	0/A	0	0	4	6	
EF	9	0/P	23/P	48/P	40/A	NA					
F	10	NA	8/A	28/P	47/P	0/P	0	0	0	0	UP 413 down 412
FG	7.1	0/P	19/A	42/P	54/P	0/A					
G	7.5	0/A	0/A	20/P	31/P	0/P	13	17	8	10	
GH	6.6	0/A	36/A	28/P	36/P	0/A					
H	7	0/A	15/A	58/P	32/P	0/A	11	13	17	15	
HI	5.2	0/P	30/P	40/P	9/P	0/A					
I	5.4	0/A	46/P	37/A	22/P	0/P	16	13	5	16	
II	4.5	0/P	14/P	0/A	8/P	0/A					
J	6.1	0/P	7/P	11/P	10/P	0/P	1	0	0	0	
JK	8	0/P	6/A	10/P	14/P	0/P					
K	8	0/P	10/P	22/A	19/P	0/A	0	0	0	0	UP 411 down 410

Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est
 Event ID (Month Year): May 2021 Date: 5/13/21 1105
 Crew Members: MC MSP SH
 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: 1622 Time of High Tide: 1151
 Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Windy / Strong Wind Wind Direction: Blowing From W / To W
 Notes (e.g. homeless, wildlife, dogs, swimming/recreation): SW Long Beach researchers in the estuary deploying sondes

16.1
2.6
14.0
22.4
15.6
24.9
23.2
25.7
5.6
12.6

TRANSECT 1

In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)
 Monthly (Jan—Dec):
 pH: 8.22 pH units EC: _____ $\mu\text{S}/\text{cm}$ Water Temp: 18.1 °C
 DO: 7.96 mg/L SC: 16568 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 9.89 ppt

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: _____

Photos: Oceanward Landward Start Time: 11:17 End Time: 11:23
 Start Latitude: 34.274882 Start Longitude: -119.307200
 End Latitude: 34.275051 End Longitude: -119.307453
 PVC Latitude: _____ PVC Longitude: _____

Quadrat	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	2.6	5.6	10.0	12.6	15.6	16.1	20.9	22.4	23.2	25.7	2.6	2.6	25.7	25.7
Water Depth (must be ≤ 0.3 m)	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Condition [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 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	4	7	1	0	3	1	3	5	8	2	0	0	0	0
No. Crosshairs with Macroalgae Absent	45	42	48	49	46	48	46	44	41	47	49	49	49	49
Crosshair Total (must equal 49)	49	49	49	49	49	49	49	49	49	49	49	49	49	49

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

Ventura River Algae TMDL— Estuary Transect Measurements Date: 05/13/2021 Crew: SPSIT MC MS

TRANSECT 2

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward	Start Time: <u>11:28</u>	End Time: <u>11:32</u>
Start Latitude: <u>34.275027</u>	Start Longitude: <u>-119.307476</u>	
End Latitude: <u>34.274968</u>	End Longitude: <u>-119.307695</u>	
PVC Latitude: _____	PVC Longitude: _____	

Quadrat	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	<u>2.6</u>	<u>5.6</u>	<u>10.0</u>	<u>12.6</u>	<u>15.6</u>	<u>16.1</u>	<u>20.4</u>	<u>22.4</u>	<u>23.2</u>	<u>25.7</u>	<u>2.6</u>	<u>2.6</u>	<u>25.7</u>	<u>25.7</u>
Water Depth (must be ≤ 0.3 m)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	<u>Frsh</u> Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	<u>1</u>	<u>15</u>	<u>4</u>	<u>23</u>	<u>46</u>	<u>41</u>	<u>4</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
No. Crosshairs with Macroalgae Absent	<u>48</u>	<u>6</u>	<u>45</u>	<u>26</u>	<u>3</u>	<u>8</u>	<u>45</u>	<u>49</u>	<u>49</u>	<u>47</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>
Crosshair Total (must equal 49)	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>

TRANSECT 3

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward	Start Time: <u>11:37</u>	End Time: <u>11:41</u>
Start Latitude: <u>34.275262</u>	Start Longitude: <u>-119.308007</u>	
End Latitude: <u>34.275475</u>	End Longitude: <u>-119.308067</u>	
PVC Latitude: _____	PVC Longitude: _____	

Quadrat	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	<u>2.6</u>	<u>5.6</u>	<u>10.0</u>	<u>12.6</u>	<u>15.6</u>	<u>16.1</u>	<u>20.4</u>	<u>22.4</u>	<u>23.2</u>	<u>25.7</u>	<u>2.6</u>	<u>2.6</u>	<u>25.7</u>	<u>25.7</u>
Water Depth (must be ≤ 0.3 m)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	<u>Frsh</u> Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	<u>48</u>	<u>46</u>	<u>5</u>	<u>46</u>	<u>12</u>	<u>28</u>	<u>7</u>	<u>9</u>	<u>1</u>	<u>16</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>2</u>
No. Crosshairs with Macroalgae Absent	<u>1</u>	<u>3</u>	<u>47</u>	<u>13</u>	<u>37</u>	<u>21</u>	<u>42</u>	<u>40</u>	<u>48</u>	<u>33</u>	<u>49</u>	<u>49</u>	<u>48</u>	<u>47</u>
Crosshair Total (must equal 49)	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): May 2021 Date: 05/12/2021
Crew Members: SP SA MC MS
Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____
Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)
Notes: _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Santa Ana Blvd
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Casitas Vista Road
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Additional Observation Site: _____
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

UNSAMPLED TMDL SITES

Site ID: TMDL-CL Time: 07:35 Photos Taken: Upstream / Downstream
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: TMDL-SA Time: 10:00 Photos Taken: Upstream / Downstream
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: Site dried up at B. Algae not collected

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Assessment of hydrologic states

Site: TMDL-CL Lat: _____ Long: _____ Date: 05/12/2021
 Observer(s): Menso de Jong MC SH SP

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL-SA Lat: _____ Long: _____ Date: 05/12/2021

Observer(s): SP MC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach					10		90

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input checked="" type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels
<input type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Rincon/Ventura River TMDL Data Logger Field Sheet

Site ID: TMDL R4

Field Crew: ZARO P. RIVER
1 AM MARR

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-10-21	0938	°N: <u>34.57990</u> °W: <u>119.38597</u>	17	US: <u>✓</u> DS: <u>✓</u>	17.9	7.48	7.37	1060	0.53

Location Description: _____

Comments: _____

Rincon/Ventura River TMDL Data Logger Field Sheet

Site ID: TMDL R3

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5.10.21	1007	31.345952 °N: _____ °W: 129.299913	23	✓ US: _____ DS: _____	18.5	800	7.91	1069	0.53

Location Description: _____

Comments: _____

Rincon/Ventura River TMDL Data Logger Field Sheet

Site ID: TMDL R2

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5.10.24	1042	°N: <u>34.340348</u> °W: <u>119.297264</u>	21	✓ US: <u>✓</u> DS: <u>✓</u>	19.4	7.55	7.98	1209	0.60

Location Description: _____

Comments: _____

Rincon/Ventura River TMDL Data Logger Field Sheet

Site ID: TMWL R1

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5/10/24	1125	°N: <u>34.281816</u> °W: <u>119.309058</u>	36	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	17.9	7.48	8.03	1486	0.75

Location Description: _____

Comments: _____

Rincon/Ventura River TMDL Data Logger Field Sheet

Site ID: TM02 EST

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-10-21	1210	°N: <u>34.276964</u> °W: <u>119.309044</u>		US: <u>✓</u> DS: <u>✓</u>	21.6	7.74	7.99	20,939	1256

Location Description: _____

Comments: _____

Rincon/Ventura River T. Data Logger Field Sheet

Site ID: TM02 R4

Field Crew: MENZO J. Monr

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5/18/21	1110	°N: _____ °W: _____	15	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	19.0	8.63	7.09	1041	0.52

Location Description: _____

Comments: _____

Rincon/Ventura River T. Data Logger Field Sheet

Site ID: TM02 R3

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-7-77	1138	°N: _____ °W: _____	21	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	19.6	7.61	7.43	1062	0.53

Location Description: _____

Comments: _____

Rincon/Ventura River 1 Data Logger Field Sheet

Site ID: TM02 R2

Field Crew: Manso J. Manso

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-17-21	1201	°N: _____ °W: _____	29	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	19.4	9.09	7.59	1175	0.59

Location Description: _____

Comments: _____

Rincon/Ventura River T. Data Logger Field Sheet

Site ID: TMDL R-1

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-17-21	1231	°N: _____ °W: _____	32	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	17.8	8.55	7.70	1476	0.75

Location Description: _____

Comments: _____

Rincon/Ventura River T... Data Logger Field Sheet

Site ID: TM02 EST

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5.17.21	1249	°N: _____ °W: _____	/	US: _____ DS: _____	22.9	14.49	8.20	1215	6.96

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TM02 R4

Field Crew: Peter Doernier J. Moore

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-26-21	0933	°N: _____ °W: _____	17	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	17.6	6.33	7.25	1079	0.54

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TWNL-R3

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-22-21	1011	°N: _____ °W: _____	18	US: _____ DS: _____	18.4	7.09	7.68	109L	0.55

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TH02-R2

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-26-21	1039	°N: _____ °W: _____	25	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	19.4	7.32	7.55	1247	0.62

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TW02-35T

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-28-21	1144	°N: _____ °W: _____		US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	16.9	3.38	2.35	49975	32.77

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-121

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
5-26-21	1116	°N: _____ °W: _____	32	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	18.0	7.11	7.75	1548	0.78

Location Description: _____

Comments: _____

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): June 2021 Date: 06/09/2021

Crew Members: SP MC

Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____

Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)

Notes: _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream

Notes: _____

Ventura River at Santa Ana Blvd

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream

Notes: _____

Ventura River at Casitas Vista Road

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream

Notes: _____

Additional Observation Site: _____

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream

Notes: _____

UNSAMPLED TMDL SITES

Site ID: TMDL-CL Time: 08:30 Photos Taken: Upstream / Downstream

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)

Reason not sampled (if flowing): _____

Notes: _____

Site ID: TMDL-SA Time: 09:30 Photos Taken: Upstream / Downstream

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)

Reason not sampled (if flowing): _____

Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)

Reason not sampled (if flowing): _____

Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)

Reason not sampled (if flowing): _____

Notes: _____

Assessment of hydrologic states

Site: TMDL-SA Lat: 34.2287 Long: -119.1844 Date: 06/09/2024

Observer(s): SP MC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach					20		80

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input checked="" type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels
<input type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL-CL

Lat: 34.342042 Long: -119.286384 Date: 06/09/2014

Observer(s): SP MC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): June 2024
 Site ID: TMDL-R1
 Date/Time: 06/09/2024 10:40
 Crew Members: SP ME
 Latitude/Longitude: 34.28138 -119.309048
 Flow (circle one): Flowing / Ponded / Dry
 Wind Strength:
 Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
 Wind Direction: Blowing (circle one) From / To E
 Photos (check): Upstream Downstream
 Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.):
People recently in water playing

January—December Monthly *In Situ* Measurements:
 pH: 7.96 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 8.25 mg/L SC: 1564 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.77 ppt
 Water Temp: 80 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ON METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): June 2021
 Site ID: TMDL-R7
 Date/Time: 06/09/2021 10:30
 Crew Members: SP MC

Latitude/Longitude: 34.339389 -119.297272
 Flow (circle one): Flowing / Ponded / Dry
 Wind Strength: Light Breeze / Moderate Breeze / Strong Breeze / Windy
 Wind Direction: Blowing (circle one) From / To E
 Photos (check): Upstream Downstream
 Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly In Situ Measurements:
 pH: 7.82 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 8.15 mg/L SC: 1260 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.63 ppt
 Water Temp: 19.5 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ONE METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Sum 2024
 Site ID: TMDL-R3
 Date/Time: 06/09/2024 10:00
 Crew Members: SP MC
 Latitude/Longitude: 34.345495 -119.299582
 Flow (circle one): Flowing / Ponded / Dry
 Wind Strength:
 Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
 Wind Direction: Blowing (circle one) From / To E
 Photos (check): Upstream Downstream
 Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

Velocity Area Method (preferred)			
No	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ON METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

January—December Monthly In Situ Measurements:
 pH: 7.72 pH units ~~EC: _____ μS/cm~~
 DO: 8.70 mg/L ~~SC: 096 μS/cm~~
~~DO: _____ % Salinity: 0.55 ppt~~
 Water Temp: 18.1 °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):

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=12.6cm ²)	
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=5.3cm ²)	
Other (Area=)	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

Ventura River Algae TMDL Field D heet (Reaches 1—4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): JUNE 2021
 Site ID: TMDL-R4
 Date/Time: 06/09/2021 09:00
 Crew Members: SP MC
 Latitude/Longitude: 34.379768 -119.38626
 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: 7.04 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 5.95 mg/L SC: 1082 $\mu\text{S}/\text{cm}$
 DO_2 : _____ % Salinity: 0.54 ppt
 Water Temp: _____ $^{\circ}\text{C}$
 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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

CROSS METERS

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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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): June 2021 **Date/Time:** 06/09/2021 12:20
Crew Members: _____
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:** 1503 **Time of High Tide:** 1034
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):
Dogs playing, homeless encampment closer than 100m from sampling area

In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)

Monthly (Jan—Dec):
 pH: 8.22 pH units EC: _____ $\mu\text{S/cm}$ Water Temp: 20.5 °C
 DO: 1.36 mg/L SC: 13831 $\mu\text{S/cm}$
 DO: _____ % Salinity: 8.05 ppt

Photos:	<input type="checkbox"/> Oceanward	<input checked="" type="checkbox"/> Landward	
Sample Latitude:	<u>34.274995</u>		
Sample Longitude:	<u>-119.307443</u>		

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:

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

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 Downstream

Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly *In Situ* Measurements:

pH: _____ pH units EC: _____ $\mu\text{S}/\text{cm}$

DO: _____ mg/L SC: _____ $\mu\text{S}/\text{cm}$

DO: _____ % Salinity: _____ ppt

Water Temp: _____ $^{\circ}\text{C}$

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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

**Rincon Ventu. River TMDL
Field Data Sheet**

Sample Date: 7/14/2011

Sample Crew: SP, SH, MC, MD

Station ID:		R 4	R-3				
Sample Time:		0750	000				
Collection Method: (Circle method)		Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM
Collection Device	Rubber delimiter (area=12.6cm ²)	9	8				
	PVC Delimiter (area=12.6cm ²)	0	3				
	Syringe Scrubber (area=5.3cm ²)	2	0				
Number of transects sampled (0-11)		11	11				
Composite Volume (mL)		420	450				
Chlorophyll a volume (25 mL preferred)		25	25				

Comments:

**Rincon Ventu... River TMDL
Field Data Sheet**

Sample Date: 07/15/2008

Sample Crew: SP, SH, MG, SS

Station ID:	RZ	RZDU	R1	EST			
Sample Time:	0740	0740	1025	1215			
Collection Method: (Circle method)	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM
Collection Device	Rubber delimiter (area=12.6cm ²)	7	5	6			
	PVC Delimiter (area=12.6cm ²)	2	4	5			
	Syringe Scrubber (area=5.3cm ²)	2	2	2			
Number of transects sampled (0-11)	11	11	11				
Composite Volume (mL)	420	360	500	1000			
Chlorophyll a volume (25 mL preferred)	25	25	25	1000			

Comments: _____

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): July 2024 Date: 07/14/2024
Crew Members: SP, SH, MC, MD
Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____
Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)

Notes : _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)

Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Santa Ana Blvd

Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Casitas Vista Road

Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Additional Observation Site: _____

Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

UNSAMPLED TMDL SITES

Site ID: TMDL-CL Time: 0710 Photos Taken: Upstream / Downstream
Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: TMDL-SA Time: 0915 Photos Taken: Upstream / Downstream
Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Assessment of hydrologic states

Site: TMDL-CL Lat: 34.342064 Long: -119.286313 Date: 07/14/2024

Observer(s): SP, SH, MG, MD

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							0%

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL-SA Lat: 34.228332 Long: -119.184463 Date: 07/14/2021
 Observer(s): SP, SH, MC, MD

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach					10		90

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input checked="" type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels
<input type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Ventura River Algae TMDL Field D Sheet (Reaches 1—4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): July 2001
 Site ID: TMDL-RI
 Date/Time: 07/15/2001 1025
 Crew Members: SP, SH, MG, SS
 Latitude/Longitude: 34.281916 -119.308509
 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.): bathe in water
A moral upstream due to human
damming. Reach shortened

January—December Monthly In Situ Measurements:
 pH: 8.24 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 7.12 mg/L SC: 1617 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.82 ppt
 Water Temp: 21.5 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

ON METER

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 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 \leq 10 m; 250 m if wetted width > 10 m): 100

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	6
PVC Delimiter (Area=12.6cm ²)	5
Syringe Scrubber (Area=5.3cm ²)	0
Other (Area= _____)	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	500
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	250

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: TMDL-R1 Date: 07/15/2004 Crew: JP, SH, MC, SS

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	3.7	0/A	32/A	54/A	63/A	0/A	10	6	5	0	1/2
AB	3.1	0/A	36/A	39/A	32/A	0/A					
B	2.5	7/A	18/A	25/A	21/A	0/A	16	17	12	8	
BC	4.1	0/A	18/A	24/A	20/P	0/A					
C	2.8	0/P	48/A	41/A	24/A	0/A	17	8	9	10	
CD	2.0	0/A	17/A	27/A	27/A	0/A					
D	1.7	0/P	8/P	19/A	15/A	0/A	17	17	17	17	
DE	2.8	0/A	17/P	20/A	20/A	0/A					
E	1.5	0/A	13/P	15/A	15/P	0/P	17	15	17	13	
EF	2.0	0/A	20/A	34/A	30/P	0/A					
F	6.0	0/A	23/A	19/A	25/A	0/A	10	1	3	2	3/4
FG	6.0	0/A	23/A	31/A	42/A	0/A					
G	6.3	0/A	22/A	56/A	80/A	0/A	13	17	17	14	
GH	6.5	0/A	56/A	82/P	67/A	0/A					
H	6.5	0/A	69/P	73/P	10/A	0/A	17	17	17	17	
HI	4.2	0/A	67/A	69/A	73/A	0/A					
I	2.5	0/A	45/A	21/A	21/A	0/A	17	17	17	17	
J	2.0	0/A	16/A	15/P	15/A	0/A					
J	2.7	0/A	10/A	16/P	16/A	0/A	17	17	17	17	
JK	2.6	0/A	5/A	19/P	18/A	0/A					
K	2.1	0/A	18/A	18/A	13/A	0/A	17	17	17	17	5/6

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): July 2021
 Site ID: TMDL-R2L
 Date/Time: 07/15/2021 0746
 Crew Members: SP, SH, MC, SS
 Latitude/Longitude: 34.339442 -119.297122
 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.):
Dup site for water quality + Algae
Encampment from B → G14

January—December Monthly In Situ Measurements:
 pH: 7.61 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 6.58 mg/L SC: 1274 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.64 ppt
 Water Temp: 22.8 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			NO METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): 150 Dup 58

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	5 7
PVC Delimiter (Area=12.6cm ²)	4 2
Syringe Scrubber (Area=5.3cm ²)	2 2
Other (Area=)	1
Number of Transects Sampled (0-11)	11 11
Composite Volume (mL)	50 420
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25 42

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: B2 Date: 7/15/21 Crew: _____

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	7.0	0/A	36/A	3/A	65/A	11/A	11	16	17	14	1/2
AB	6.0	0/A	29/A	44/A	40/A	1/A					
B	3.2	0/A	5/A	10/P	22/A	0/A	17	17	17	16	
BC	4.2	0/A	17/A	41/P	15/A	0/A					
C	2.4	0/A	34/A	50/A	50/A	0/A	17	17	17	17	
CD	2.7	NA	NA	40/A	35/P	0/A					
D	4.1	0/A	2/A	28/A	30/A	0/A	17	17	17	17	
DE	4.1	17/P	5/P	10/P	23/A	0/A					
E	5.0	0/P	30/P	15/P	19/A	0/P	8	7	8	15	
EF	4.0	11/A	10/P	20/P	23/P	0/A					
F	5.0	0/P	36/P	45/A	55/A	0/P	17	7	10	14	3/4
FG	2.5	0/P	41/P	50/A	50/A	0/A					
G	5.0	0/A	57/P	37/A	51/A	0/A	8	8	8	2	
GH	4.7	0/A	43/A	46/P	15/P	0/A					
H	5.0	0/A	48/A	57/A	59/A	0/P	17	17	17	17	
HI	4.7	0/A	16/P	34/A	27/P	0/A					
I	5.5	0/A	0/A	27/A	26/A	0/A	17	17	17	17	
J	5.1	NA	30/A	20/A	10/A	0/A					
J	3.2	0/A	40/P	33/A	25/A	0/A	14	17	17	12	
JK	5.0	0/A	25/A	23/A	0/A	0/A					
K	6.4	NA	23/A	15/P	10/P	0/A	17	11	12	9	5/6

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): JULY
 Site ID: TMDL-R31
 Date/Time: 07/14/2021 1000
 Crew Members: SP, SH, MC, MD
 Latitude/Longitude: 34.345458 -119.299341
 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.): A 10m downstream

January—December Monthly In Situ Measurements:
 pH: 7.72 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 8.30 mg/L SC: 1127 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.56 ppt
 Water Temp: 20.8 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

ON METER

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 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 \leq 10 m; 250 m if wetted width > 10 m): 150

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	8
PVC Delimiter (Area=12.6cm ²)	3
Syringe Scrubber (Area=5.3cm ²)	0
Other (Area=)	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	450
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: B3

Date: 7/14/21

Crew: _____

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	
A	4.2	0/P	10/A	15/A	19/P	0/P	10	15	11	14	78
AB	5.0	0/A	10/A	18/A	10/P	0/A					
B	6.0	0/P	16/P	20/P	10/P	0/A	11	15	17	2	
BC	5.1	0/A	17/A	0/A	16/A	0/A					
C	5.0	0/A	23/A	15/A	14/A	0/A	4	4	5	4	
CD	6.2	1/A	20/A	13/P	15/A	0/A					
D	6.1	0/P	20/P	16/A	20/A	0/A	4	2	3	1	
DE	6.4	0/A	11/A	16/P	0/A	0/A					
E	9.0	0/A	12/A	0/A	8/P	0/A	3	0	5	0	
EF	6.1	NA	14/A	20/P	11/P	0/P					
F	7.0	0/A	29/P	28/P	28/P	0/P	0	0	3	0	9/10
FG	9.0	0/A	26/P	35/P	48/P	0/P					
G	6.0	0/A	35/P	40/A	47/P	9/A	6	11	5	5	
GH	8.5	0/A	21/P	27/P	25/A	0/A					
H	2.1	0/A	5/A	26/P	30/A	20/P	8	6	7	6	
HI	6.8	0/A	36/P	32/P	36/P	25/A					
I	5.4	1/A	34/A	35/A	40/A	0/A	13	11	10	1	
II	5.0	0/A	20/A	22/A	26/A	2/A					
J	3.0	0/A	18/A	20/A	22/A	0/A	8	8	15	4	
JK	4.5	0/A	11/A	20/A	15/A	5/A					
K	4.1	11/A	24/A	26/A	35/A	0/A	15	13	17	16	11/12

Ventura River Algae TMDL Field D Sheet (Reaches 1-4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): July 2021
 Site ID: TMDL-R4
 Date/Time: 07/14/2021 07:50
 Crew Members: SP, SH, MC, MD
 Latitude/Longitude: 34.37796 -119.308528
 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.): flow taken near above B. Shortland reach by 10m due to discharge. V. mostly covered in thick albedo

January—December Monthly In Situ Measurements:
 pH: 7.12 pH units EC: _____ $\mu\text{S/cm}$
 DO: 6.55 mg/L SC: 1105 $\mu\text{S/cm}$
 DO: _____ % Salinity: 0.55 ppt
 Water Temp: 18.72 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ON METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width > 10 m): 150

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	9
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=5.3cm ²)	2
Other (Area=)	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	420
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: B4

Date: 7/14/21

Crew: _____

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	
A	6	5/P	50/P	37/D	19/P	0/P	15	12	0	10	1/2
AB	5.2	5/A	45/P	26/D	18/P	0/P					
B	4.5	0/A	40/A	23/P	15/A	0/P	17	7	0	2	
BC	6	0/P	4/P	0/A	9/A	0/P					
C	6.2	0/P	19/P	15/P	10/P	0/P	3	0	2	0	
CD	8.7	0/P	3/P	8/P	12/P	0/P					
D	10.2	0/P	13/D	11/P	24/P	0/P	3	4	0	0	
DE	9.5	0/P	20/P	10/P	9/P	0/P					
E	10.1	0/A	13/P	5/P	17/P	0/A	9	2	0	1	
EF	7.5	0/A	18/P	25/P	9/P	0/P					
F	9.0	0/P	11/P	21/P	26/P	0/P	0	0	4	8	3/4
FG	9.0	0/P	23/P	35/P	17/P	0/A					
G	8.0	0/A	26/P	40/P	26/P	0/P	7	3	1	0	
GH	7.0	0/P	25/P	43/P	51/P	0/A					
H	6.0	0/P	15/P	30/P	47/A	0/A	0	3	6	2	
HI	6.0	0/P	9/P	19/P	23/P	0/A					
I	6.5	0/A	21/P	25/P	25/P	0/A	12	17	13	2	
IJ	7.0	0/P	47/P	34/P	25/P	2/A					
J	4.5	0/P	35/P	59/P	33/P	0/A	14	10	5	11	
JK	4.5	0/A	45/A	10/P	10/P	0/A					
K	N/A	N/A	MA	1/A	0/A	0/A	17	17	17	17	6/5

Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est
 Event ID (Month Year): July 2001 Date: 7/15/01 12:15
 Crew Members: SP, SH, MG, SS
 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: 0804 Time of High Tide: 1454
 Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Windy / Strong Wind Wind Direction: Blowing From NE To
 Notes (e.g. homeless, wildlife, dogs, swimming/recreation): _____

TRANSECT 1

In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)
 Monthly (Jan—Dec):
 pH: 8.42 pH units EC: _____ μ S/cm Water Temp: 26.1 °C
 DO: 6.69 mg/L SC: 9189 μ S/cm
~~DO: _____ %~~ Salinity: 5.13 ppt

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: _____

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward	Start Time: <u>1253</u>	End Time: <u>1238</u>
Start Latitude: <u>34.273986</u>	Start Longitude: <u>-119.307094</u>	
End Latitude: <u>34.274371</u>	End Longitude: <u>-119.307401</u>	
PVC Latitude: _____	PVC Longitude: _____	

204
 146
 100
 2
 50
 200
 180
 254
 100
 13

Quadrat	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0.2	1.3	5.2	10.0	10.6	14.6	18.0	20.4	23.8	25.4	0.2	0.2	25.4	25.4
Water Depth (must be \leq 0.3 m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Condition [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 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	4	26	24	33	17	22	0	0	0	49	49	0	0
No. Crosshairs with Macroalgae Absent	23	45	23	25	16	32	27	49	49	49	0	0	49	49
Crosshair Total (must equal 49)	49	49	49	49	49	49	49	49	49	49	49	49	49	49

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

Ventura River Algae TMDL— Estuary Transect Measurements Date: _____ Crew: _____

TRANSECT 2

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward					Start Time: 12:40					End Time: 12:44				
Start Latitude: 34.274379					Start Longitude: -119.307405									
End Latitude: 34.274613					End Longitude: -119.307389									
PVC Latitude:					PVC Longitude:									
Quadrat	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0.2	1.3	5.2	10.0	10.6	14.6	18.0	20.4	23.8	25.4	0.2	0.2	25.4	25.4
Water Depth (must be ≤ 0.3 m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Condition [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 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	0	0	0	2	29	5	6	0	1	1	0	0	0	0
No. Crosshairs with Macroalgae Absent	49	49	49	47	20	44	43	49	48	49	49	49	49	49
Crosshair Total (must equal 49)	49	49	49	49	49	49	49	49	49	49	49	49	49	49

TRANSECT 3

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward					Start Time: 12:45					End Time: 12:48				
Start Latitude: 34.274613					Start Longitude: -119.307389									
End Latitude: 34.274785					End Longitude: -119.307450									
PVC Latitude:					PVC Longitude:									
Quadrat	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0.2	1.3	5.2	10.0	10.6	14.6	18.0	20.4	23.8	25.4	0.2	0.2	25.4	25.4
Water Depth (must be ≤ 0.3 m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Condition [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 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	2	7	0	0	0	8	10	10	9	0	0	0	0	0
No. Crosshairs with Macroalgae Absent	47	42	49	49	49	41	36	39	40	49	49	49	49	49
Crosshair Total (must equal 49)	49	49	49	49	49	49	49	49	49	49	49	49	49	49

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): August 2021 Date: 8/11/2021
Crew Members: SPUMC
Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____
Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)
Notes: _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Santa Ana Blvd

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Casitas Vista Road

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Additional Observation Site:

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

UNSAMPLED TMDL SITES

Site ID: TMDL-CL Time: 0706 Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: TMDL-SA Time: 0712 Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Assessment of hydrologic states

Site: TMDL-CL Lat: 34.341967 Long: -119.286446 Date: 8/11/2004

Observer(s): SP MC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL-SA Lat: 34380674 Long: -119.307531 Date: 8/11/2007

Observer(s): SP MC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input checked="" type="checkbox"/> Hyporheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): August 2021
Site ID: TMDL-R4
Date/Time: 8/11/2021 0730
Crew Members: SP MC

Latitude/Longitude: 34.379789 -119.308492
Flow (circle one): Flowing / Pondered / 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: 7.13 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 5.72 mg/L SC: 1027 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.51 ppt
 Water Temp: 18.4 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

ON METER

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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): August 2021
 Site ID: TMDL-R3
 Date/Time: 8/11/2021 8:20
 Crew Members: SP MC
 Latitude/Longitude: 34.315461 -119.294365
 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: 7.52 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 7.96 mg/L SC: 1160 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.58 ppt
 Water Temp: 19.6 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

NO MEASUREMENTS

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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): August 2004
Site ID: TMDL-R1 100
Date/Time: 08/11/2004
Crew Members: SP MC

Latitude/Longitude: 34.579792 -119.308572
Flow (circle one): Flowing / Ponded / Dry
Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To NW
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

ON METER

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 Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

January—December Monthly *In Situ* Measurements:
 pH: 8.00 pH units EC: _____ $\mu\text{S/cm}$
 DO: 7.35 mg/L SC: 1473 $\mu\text{S/cm}$
 DO: _____ % Salinity: 0.74 ppt
 Water Temp: 20.0 °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):

May—September: Algae Collection for Chlorophyll *a*
 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=12.6cm ²)	
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=5.3cm ²)	
Other (Area=)	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): August 2001
Site ID: TMDL-R2
Date/Time: 8/1/2001 0900
Crew Members: SP MC
Latitude/Longitude: 34.337410 -119.297196
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: 7.55 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 7.44 mg/L SC: 1218 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.01 ppt
 Water Temp: 21.2 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
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10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

NO METER

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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Ventura River Algae TMDL—Estuary Details

Site ID: <u>TMDL-Est</u>		Date/Time: <u>8/11/2021</u> <u>10:30</u>
Event ID (Month Year): <u>August 2021</u>		
Crew Members: <u>SP</u> <u>MC</u>		
Weather (circle one): Clear / Partly Cloudy / <u>Overcast</u> / Rainy / Foggy		Ocean Inlet (circle one): <u>Open</u> / Restricted / Closed
Direction of Tide: <u>Ebb</u> / Flood / Slack / N/A		Time of Low Tide: <u>1805</u> Time of High Tide: <u>1230</u>
Wind Strength: Calm / Slight Breeze / <u>Moderate Breeze</u> / Strong Breeze / Windy / Strong Wind		Wind Direction: Blowing From/ To <u>W</u>
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): <u>Dogs in water, first time beam has been open in months.</u>		

In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)

Monthly (Jan—Dec):

pH: 8.25 pH units EC: _____ $\mu\text{S/cm}$ Water Temp: 21.3 °C

DO: 5.05 mg/L SC: 24104 $\mu\text{S/cm}$

DO: _____ % Salinity: 18.15 ppt

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward	
Sample Latitude: <u>34.274581</u>	
Sample Longitude: <u>-119.207494</u>	

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:

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

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 Downstream

Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly *In Situ* Measurements:

pH: _____ pH units EC: _____ $\mu\text{S/cm}$

DO: _____ mg/L SC: _____ $\mu\text{S/cm}$

DO: _____ % Salinity: _____ ppt

Water Temp: _____ $^{\circ}\text{C}$

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):

Velocity Area Method (preferred)

No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
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7			
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11			
12			
13			
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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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

Rincon Venturo River TMDL Field Data Sheet

Sample Date: 09/08/2022

Sample Crew: SP, SH, ML, SC

Station ID:		TMDL R3	TMDL EST					
Sample Time:		0900	1115					
Collection Method: (Circle method)		Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM
Collection Device	Rubber delimiter (area=12.6cm ²)	11	X					
	PVC Delimiter (area=12.6cm ²)	0						
	Syringe Scrubber (area=5.3cm ²)	0						
Number of transects sampled (0-11)		11	0					
Composite Volume (mL)		460	1000					
Chlorophyll a volume (25 mL preferred)		25	1000					

Comments:

**Rincon Ventu River TMDL
Field Data Sheet**

Sample Date: 09/09/08

Sample Crew: SP, SH, MC, SC

Station ID:		TMDL R2	TMDL R1					
Sample Time:		0940	1015					
Collection Method: (Circle method)		Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM	Standard MCM
Collection Device	Rubber delimiter (area=12.6cm ²)	8	7					
	PVC Delimiter (area=12.6cm ²)	3	4					
	Syringe Scrubber (area=5.3cm ²)	0	0					
Number of transects sampled (0-11)		11	11					
Composite Volume (mL)		510	460					
Chlorophyll a volume (25 mL preferred)		25	25					

Comments:

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): Sept 2001 Date: 09/08/2001

Crew Members: SP, SH, M, SC

Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____

Event Type (check): Dry (<0.1" rain per day for the preceding three days)

Wet (days with ≥0.1" rain and the three days following)

Notes: _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream

Notes: _____

Ventura River at Santa Ana Blvd

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream

Notes: _____

Ventura River at Casitas Vista Road

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream

Notes: _____

Additional Observation Site: _____

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream

Notes: _____

UNSAMPLED TMDL SITES

Site ID: TMDL-CL Time: 0742 Photos Taken: Upstream / Downstream

Flow Status: Dry Pondered / Flowing (Estimated Flow: _____ cfs)

Reason not sampled (if flowing): _____

Notes: _____

Site ID: TMDL-R4 Time: 0815 Photos Taken: Upstream / Downstream

Flow Status: Dry Pondered / Flowing (Estimated Flow: _____ cfs)

Reason not sampled (if flowing): _____

Notes: _____

Site ID: TMDL-SA Time: 8:34 Photos Taken: Upstream / Downstream

Flow Status: Dry Pondered / Flowing (Estimated Flow: _____ cfs)

Reason not sampled (if flowing): _____

Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)

Reason not sampled (if flowing): _____

Notes: _____

Assessment of hydrologic states

Site: TMDL - CL Lat: 34.34208 Long: -119.28640 Date: 07/08/2024

Observer(s): SP, SC, ML, SH
Sawyer Carman

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporeheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporeheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL-R4 Lat: 34.3981 Long: -119.3650 Date: 09/08/2014

Observer(s): SP, SH, MC, SC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach						10	100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input checked="" type="checkbox"/> Hyporheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: LTMDL-SK Lat: 34.38070 Long: -119.30746 Date: 09/08/2024

Observer(s): SP, SH, MG, SC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input checked="" type="checkbox"/> Hyporehic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

8:34

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): September 2012

Site ID: TMDL-R3

Date/Time: 09/08/12 09:00

Crew Members: SP, SH, MC, SC

Latitude/Longitude: 34.34552, -119.29943

Flow (circle one): Flowing / Poned / 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: 7.0 pH units EC: _____ $\mu\text{S}/\text{cm}$

DO: 8.72 mg/L SC: 1253 $\mu\text{S}/\text{cm}$

DO: _____ % Salinity: 0.62 ppt

Water Temp: 19.4 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

on meter

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 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 \leq 10 m; 250 m if wetted width > 10 m): 156

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	11
PVC Delimiter (Area=12.6cm ²)	0
Syringe Scrubber (Area=5.3cm ²)	0
Other (Area=)	0
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	460
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

34.34552 -119.29943

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: TMDL-B5 Date: 9/8/21 Crew: SH, MC

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	
A	4.40	0/A	5/P	13/A	13/A	0/A	11	10	13	8	1,2
AB	5.00	0/A	15/A	15/P	16/P	0/A					
B	6.52	0/A	22/A	23/P	18/A	0/P	12	5	9	15	
BC	6.00	0/A	25/P	17/A	18/A	0/A					
C	7.45	0/A	19/A	18/A	10/A	0/A	11	10	16	13	
CD	6.40	0/A	13/P	19/A	25/A	0/A					
D	7.90	0/A	20/A	5/A	0/A	0/A	0	2	4	9	
DE	9.75	0/A	10/P	8/P	15/A	0/A					
E	11.38	0/A	13/A	12/A	12/A	0/A	12	10	4	6	
EF	7.25	0/A	30/A	30/A	34/P	4/P					
F	6.75	0/A	39/P	41/P	50/P	0/A	4	4	5	2	4,3
FG	7.50	0/A	21/P	32/A	45/A	0/A					
G	7.32	0/A	10/A	22/A	32/A	10/A	6	4	6	8	
GH	6.85	0/A	25/A	28/A	36/A	0/A					
H	6.40	0/A	22/A	26/A	38/A	0/P	12	17	15	6	
HI	4.60	0/P	8/P	33/A	37/A	0/A					
I	4.34	0/A	1/A	25/A	15/A	0/A	17	17	17	17	
II	1.50	0/A	1/A	13/A	4/A	0/A					
J	1.60	0/A	1/A	15/A	15/A	0/A	17	17	17	17	
JK	1.29	2/A	3/A	0/A	9/A	0/A					
K	2.50	0/A	12/A	8/P	1/P	0/A	17	14	16	16	5,6

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): September 2011
 Site ID: TMDL-RZ
 Date/Time: 09/09/2011 0740
 Crew Members: SP, SH, MG, SC
 Latitude/Longitude: 34.339432 -119.297020
 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 encampment
D → G

January—December Monthly In Situ Measurements:
 pH: 7.97 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 7.85 mg/L SC: 1388 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.7 ppt
 Water Temp: 21.9 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

ON METER

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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: TMDL B2 Date: 9/9/21 Crew: SH SC

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	6.23	0/A	30/A	49/A	62/A	0/A	13	15	17	16	1/2
AB	6.22	0/A	29/A	42/A	46/A	0/A					
B	4.45	0/A	5/A	30/A	33/P	0/A	14	14	15	16	
BC	4.30	0/A	13/A	27/A	30/A	0/A					
C	8.48	NA	NA	34/A	25/P	0/A	17	17	17	17	
CD	2.85	0/A	33/A	28/A	14/A	0/A					
D	4.45	0/A	24/A	34/A	25/A	0/A	7	3	10	8	
DE	4.75	0/A	18/A	24/P	13	0/A					
E	6.08	0/A	32/P	33/P	16/P	0/A	9	6	5	4	
EF	7.90	0/A	13/P	32/A	45/A	0/A					
F	6.95	0/A	36/A	47/A	44/A	0/A	5	2	9	9	3/4
FG	6.85	0/P	12/P	41/A	57/A	0/A					
G	5.47	13/A	37/A	40/A	48/A	0/A	15	13	14	13	
GH	2.27	0/A	39/A	52/A	55/A	0/A					
H	5.25	0/P	25/A	26/A	21/P	0/A	17	17	17	17	
HI	5.13	NA	16/A	34/P	19/P	0/P					
I	5.48	NA	18/P	20/P	20/A	8/A	12	16	17	17	
J	4.07	NA	20/P	11/P	22/P	10/A					
J	NA	NA	NA	NA	16/A	0/A	17	17	17	17	
JK	NA	NA	NA	NA	45/A	0/A					
K	4.12	NA	NA	47/A	43/A	0/A	17	17	17	17	5/6

NA = too overgrown / deep to sample

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 2

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): September 2021
 Site ID: TMDL- R1
 Date/Time: 09/09/2021 1015
 Crew Members: SP SA, MG, SC
34.378121 -119.308534
 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, discharge comments, etc.): no homeless present. Reach shortened by ~ 31 m.

January—December Monthly *In Situ* Measurements:
 pH: 8.12 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 8.28 mg/L SC: 1606 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.81 ppt
 Water Temp: 20.0 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
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11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

on meter

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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	7
PVC Delimiter (Area=12.6cm ²)	4
Syringe Scrubber (Area=5.3cm ²)	0
Other (Area= _____)	0
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	460
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 2 of 2

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

Site: TMDL P1 Date: 9/9/21 Crew: SP, SH, MC, SC

Transect	Wetted Width (m)	Macroalgae Presence/Absence (P/A) and Water Depth (cm)					Densimeter (0-17) Count covered dots				Photo (✓ when Taken)
		Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	
A	2.65	0/A	25/A	40/A	30/A	22/A	10	15	10	6	1/2
AB	3.65	0/A	15/P	16/P	12/P	0/A					
B	3.00	0/A	30/A	35/A	29/P	14/A	10	8	17	14	
BC	1.50	2/A	16/A	17/P	15/P	0/A					
C	2.55	6/P	25/A	0/P	17/P	0/A	17	16	17	17	
CD	2.65	12/A	20/P	19/P	16/P	0/P					
D	1.70	0/A	20/A	21/P	20/A	9/P	15	17	17	15	
DE	1.52	2/P	12/P	22/P	21/A	1/P					
E	5.75	1/P	15/P	13/P	25/A	0/A	17	8	17	17	
EF	6.17	0/A	16/A	26/A	36/A	0/A					
F	NA	0/A	32/A	60/A	NA	NA	17	17	17	17	3/4
FG	6.75	0/A	37/A	41/A	67/NA	0/A					
G	6.84	0/A	54/A	70/NA	80/NA	0/A	17	17	17	17	
GH	7.22	0/A	55/A	69/NA	100/NA	0/A					
H	5.35	0/A	43/A	87/NA	97/NA	0/A	17	17	17	17	
HI	4.40	0/A	60/NA	75/NA	75/NA	0/A					
I	2.50	0/A	20/A	27/A	22/P	0/P	17	17	17	17	
J	1.65	0/A	17/A	26/A	12/P	0/A					
J	2.90	0/A	17/P	17/A	10/P	0/A	17	17	17	17	
JK	2.70	0/A	8/P	10/P	7/P	0/A					
K	2.05	0/A	0/A	15/A	15/A	0/A	17	17	17	17	5/6

NA = too overgrown / deep

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 2021

Date: 09/08/2021 1115

Crew Members: SP, SH, MC, SC

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: 1706 Time of High Tide: 1107

Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Windy / Strong Wind

Wind Direction: Blowing From / To NE

Notes (e.g. homeless, wildlife, dogs, swimming/recreation): Large fish near collection site

TRANSECT 1

In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)

Monthly (Jan—Dec):

pH: 8.46 pH units

EC: _____ $\mu\text{S}/\text{cm}$

Water Temp: 23.3 °C

DO: 12.83 mg/L

SC: 13466 $\mu\text{S}/\text{cm}$

DO: _____ %

Salinity: 7.77 ppt

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: 600

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward	Start Time: <u>1140</u>	End Time: <u>1144</u>
Start Latitude: <u>34.27431</u>	Start Longitude: <u>-119.30756</u>	
End Latitude: <u>34.27414</u>	End Longitude: <u>-119.30732</u>	
PVC Latitude: _____	PVC Longitude: _____	

Quadrat	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	<u>1.6</u>	<u>4.2</u>	<u>6.1</u>	<u>8.3</u>	<u>9.0</u>	<u>9.6</u>	<u>13.5</u>	<u>16.1</u>	<u>26.3</u>	<u>29.0</u>	<u>1.6</u>	<u>1.6</u>	<u>29.0</u>	<u>29.0</u>
Water Depth (must be ≤ 0.3 m)														
Condition [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 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	<u>0</u>	<u>0</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>8</u>	<u>1</u>	<u>1</u>	<u>5</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
No. Crosshairs with Macroalgae Absent	<u>49</u>	<u>49</u>	<u>47</u>	<u>46</u>	<u>45</u>	<u>41</u>	<u>48</u>	<u>48</u>	<u>44</u>	<u>44</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>
Crosshair Total (must equal 49)	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>

13.5
29.0
4.2
6.1
8.3
9.0
9.6
16.1
26.3
29.0

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

Ventura River Algae TMDL— Estuary Transect Measurements Date: 09/08/2024 Crew: SP, SH, MG, SC

TRANSECT 2

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward	Start Time: <u>1147</u>	End Time: <u>1151</u>
Start Latitude: <u>34.27451</u>	Start Longitude: <u>-119.30734</u>	
End Latitude: <u>34.27474</u>	End Longitude: <u>-119.30740</u>	
PVC Latitude: _____	PVC Longitude: _____	

Quadrat	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	<u>1.6</u>	<u>4.2</u>	<u>6.1</u>	<u>8.3</u>	<u>9.0</u>	<u>9.6</u>	<u>13.5</u>	<u>16.9</u>	<u>26.2</u>	<u>29.0</u>	<u>1.6</u>	<u>1.6</u>	<u>29.0</u>	<u>29.0</u>
Water Depth (must be ≤ 0.3 m)														
Condition [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 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	<u>0</u>	<u>1</u>	<u>0</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>0</u>	<u>28</u>	<u>14</u>	<u>3</u>	<u>0</u>	<u>46</u>	<u>0</u>	<u>0</u>
No. Crosshairs with Macroalgae Absent	<u>49</u>	<u>48</u>	<u>49</u>	<u>47</u>	<u>47</u>	<u>47</u>	<u>49</u>	<u>21</u>	<u>35</u>	<u>46</u>	<u>49</u>	<u>3</u>	<u>49</u>	<u>49</u>
Crosshair Total (must equal 49)	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>

TRANSECT 3

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward	Start Time: <u>1153</u>	End Time: <u>1155</u>
Start Latitude: <u>34.27476</u>	Start Longitude: <u>-119.30710</u>	
End Latitude: <u>34.27493</u>	End Longitude: <u>-119.30752</u>	
PVC Latitude: _____	PVC Longitude: _____	

Quadrat	MACROALGAE—LAND BASED										FLOATING MACROALGAE			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	<u>1.6</u>	<u>4.2</u>	<u>6.1</u>	<u>8.3</u>	<u>9.0</u>	<u>9.6</u>	<u>13.5</u>	<u>16.9</u>	<u>26.2</u>	<u>29.0</u>	<u>1.6</u>	<u>1.6</u>	<u>29.0</u>	<u>29.0</u>
Water Depth (must be ≤ 0.3 m)														
Condition [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 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	<u>3</u>	<u>0</u>	<u>0</u>	<u>16</u>	<u>0</u>	<u>1</u>	<u>10</u>	<u>18</u>	<u>49</u>	<u>27</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
No. Crosshairs with Macroalgae Absent	<u>46</u>	<u>49</u>	<u>41</u>	<u>33</u>	<u>49</u>	<u>48</u>	<u>39</u>	<u>31</u>	<u>0</u>	<u>22</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>
Crosshair Total (must equal 49)	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>	<u>49</u>

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-R3

Field Crew: J.M. Peter Dolman

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
9-23-21	1118	°N: <u>34.345930</u> °W: <u>119.299870</u>	<u>20</u>	US: <input checked="" type="checkbox"/> DS: <input type="checkbox"/>	<u>18.0</u>	<u>7.70</u>	<u>7.83</u>	<u>1238</u>	<u>0.62</u>

Location Description: down by last

Comments:

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMD2-R2

Field Crew: Peter Deaman Jim M

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
8-23-21	1201	°N: <u>34.340325</u> °W: <u>119.247139</u>	<u>21</u>	US: _____ DS: _____	<u>21.3</u>	<u>6.53</u>	<u>7.98</u>	<u>1305</u>	<u>0.65</u>

Location Description: same as LAST

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TM02-R1

Field Crew: JIM PETER DORAN

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
9.23.21	1245	°N: _____ °W: _____	30	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	18.6	6.95	8.11	1612	0.82

Location Description: SAME AS LAST

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-EST

Field Crew: Peter Dawson Jim Moran

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
9-23-21	1315	°N: <u>520m AS LST</u> °W: _____	<u>1/2</u>	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	<u>21.6</u>	<u>3.11</u>	<u>7.88</u>	<u>631100</u>	<u>3.45</u>

Location Description: HIGH H₂O LEVEL

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TWAL 23

Field Crew: Petra D Jan M

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
10-8-24	1019	°N: _____ °W: _____	19	US: _____ DS: _____	18.7	8.10	7.60	1238	6.62

Location Description: Light rain night before

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-f2

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
10-8-21	1055	°N: _____ °W: _____	19	US: _____ DS: _____	20.1	7.31	7.87	1328	0.67

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: Trk L - R1

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
10-8-21	1130	°N: _____ °W: _____	30	US: <u>✓</u> DS: <u>✓</u>	18.1	7.82	8.02	1541	0.83

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TWDL - 551

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing/ Poned/ Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
10.8.21	1150	°N: _____ °W: _____		US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	19.6	2.14	7.78	2748	1.43

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-R3

Field Crew: Pete Dornor Jim Moner

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
10-1-21	1030	°N: <u>50m</u> °W: _____	19.0	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	18.6	9.05	7.55	1205	0.60

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMMAL-R2

Field Crew: Peter D J-M

Deployment / Mid / Retrieval

Flow (circle one): Flowing/ Poned/ Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
10-1-21	1056	°N: _____ °W: _____	21	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	16.8	7.26	7.83	1298	0.65

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-R1

Field Crew: Peter D. Johnson

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
10-1-21	1243	°N: _____ °W: _____	30	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	16.9	8.68	8.09	1619	0.82

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-257

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
10-7-21	1203	°N: _____ °W: _____		US: _____ DS: _____	11.7	7.22	8.09	2863	1.49

Location Description: _____

Comments: _____

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): October 2021 Date: 10/14/2021
Crew Members: SBSH, MC
Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____
Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)
Notes: _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Santa Ana Blvd

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Casitas Vista Road

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Additional Observation Site: _____

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

UNSAMPLED TMDL SITES

Site ID: TMDL-CL Time: 0715 Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: TMDL-R4 Time: 0733 Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: TMDL-SA Time: 0740 Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Assessment of hydrologic states

Site: TMDC-CL Lat: 34.34297 Long: -119.286382 Date: 10/14/2008
 Observer(s): SP SH MC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporehic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL- RY

Lat: 34.37753 Long: -119.50853 Date: 10/14/2024

Observer(s): SP, SH, MC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporeheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporeheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

0740

Assessment of hydrologic states

Site: TMDL-SA

Lat: 34.380686 Long: -119.307380 Date: 10/14/2014

Observer(s): SH, SP, MC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporeheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporeheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): October 2024

Site ID: TMDL-R2

Date/Time: 10/4/2024 0855

Crew Members: SP, SH, MC

Latitude/Longitude: 31.339456, -119.097253

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: 8.00 pH units EC: _____ $\mu\text{S}/\text{cm}$

DO: 8.65 mg/L SC: 1557 $\mu\text{S}/\text{cm}$

~~DO~~ % Salinity: 0.68 ppt

Water Temp: 16.0 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ON METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): October 2021
 Site ID: TMDL-R3
 Date/Time: 10/14/2021 0825
 Crew Members: SP, SA, MC
 Latitude/Longitude: 34.345527, -119.299499
 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: 7.78 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 9.35 mg/L SC: 12.41 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.62 ppt
 Water Temp: 15.2 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			0.1 METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

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

Event ID (Month Year): October 2024
 Site ID: TMDL-R1
 Date/Time: 10/14/2024 0940
 Crew Members: SP, SH, MC
 Latitude/Longitude: 34.282015 -119.309023
 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: 8.12 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 9.53 mg/L SC: 1650 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.84 ppt
 Water Temp: 12.7 °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):

Velocity Area Method (preferred)			
No	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			NO MEASUREMENT
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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=12.6cm ²)		
PVC Delimiter (Area=12.6cm ²)		
Syringe Scrubber (Area=5.3cm ²)		
Other (Area=)		
Number of Transects Sampled (0-11)		
Composite Volume (mL)		
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)		

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): <u>OCTOBER 2021</u>	Date/Time: <u>10/14/2021 1010</u>
Crew Members: <u>SP. SH, MC</u>	
Weather (circle one): <input checked="" type="radio"/> Clear / <input type="radio"/> Partly Cloudy / <input type="radio"/> Overcast / <input type="radio"/> Rainy / <input type="radio"/> Foggy	Ocean Inlet (circle one): <input type="radio"/> Open / <input checked="" type="radio"/> Restricted / <input type="radio"/> Closed
Direction of Tide: Ebb / Flood / Slack / <input checked="" type="radio"/> N/A	Time of Low Tide: <u>1707</u> Time of High Tide: <u>1742</u>
Wind Strength: <input checked="" type="radio"/> Calm / <input type="radio"/> Slight Breeze / <input type="radio"/> Moderate Breeze / <input type="radio"/> Strong Breeze / <input type="radio"/> Windy / <input type="radio"/> Strong Wind	Wind Direction: <u>Blowing From / To</u>
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): _____	

<u>In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)</u>	
Monthly (Jan—Dec):	
pH: <u>8.16</u> pH units	EC: _____ $\mu\text{S/cm}$
DO: <u>8.77</u> mg/L	SC: <u>2343</u> $\mu\text{S/cm}$
DO: _____ %	Salinity: <u>1.21</u> ppt
Water Temp: <u>16.3</u> °C	
Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward	
Sample Latitude:	<u>34.274348</u>
Sample Longitude:	<u>-119.306963</u>

<u>Water Samples Collected (check box)</u>
<u>[Collect at Floating Macroalgae Quadrat 1, Transect 1]</u>
Monthly Water (Jan—Dec):
Nitrogen, total and dissolved: <input checked="" type="checkbox"/>
Phosphorus, total and dissolved: <input checked="" type="checkbox"/>
Nitrate + Nitrite as Nitrogen: <input checked="" type="checkbox"/>

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): October, 2021 Date: 10.27.21
 Crew Members: 50
 Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____
 Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)
 Notes: Rain on 10.25.21 ~2 inches
>0.1 inch

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)
 Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
 Notes: _____

Ventura River at Santa Ana Blvd
 Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
 Notes: Construction of bridge, no flow

Ventura River at Casitas Vista Road
 Flow Status: Dry / Pondered Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
 Notes: Low flow

Additional Observation Site: _____
 Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
 Notes: _____

UNSAMPLED TMDL SITES

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
 Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
 Reason not sampled (if flowing): _____
 Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
 Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
 Reason not sampled (if flowing): _____
 Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
 Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
 Reason not sampled (if flowing): _____
 Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
 Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
 Reason not sampled (if flowing): _____
 Notes: _____

Assessment of hydrologic states

Site: H150 Lat: _____ Long: _____ Date: 10.27.21

Observer(s): SJ

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							X

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description/Indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: 51A Lat: _____ Long: _____ Date: 10.27.21

Observer(s): SJ

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							X

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description/Indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes: Construction

Assessment of hydrologic states

Site: CVR Lat: _____ Long: _____ Date: 10.27.21

Observer(s): ST

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach			80		20		

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description/Indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input checked="" type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): November 2021 Date: 11/10/2021

Crew Members: SP, M

Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____

Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)

Notes: _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Santa Ana Blvd

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Casitas Vista Road

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Additional Observation Site: _____

Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

UNSAMPLED TMDL SITES

Site ID: TMDL-CL Time: 8:05 Photos Taken: Upstream / Downstream
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: TMDL-SA Time: 08:20 Photos Taken: Upstream / Downstream
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: TMDL-R4 Time: 08:30 Photos Taken: Upstream / Downstream
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status : Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Assessment of hydrologic states

Site: TMDL-CL Lat: 34.34212 Long: -119.28650 Date: 11/10/2024

Observer(s): SP, SC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporehic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL-SA Lat: 34.38074 Long: -119.3752 Date: 11/10/2028
 Observer(s): SP, SC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL-R4 Lat: 34.37892 Long: -119.30847 Date: 11/10/2021
 Observer(s): SP, SC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporehic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): November 2001
 Site ID: TMDL-R3
 Date/Time: 11/10/2001 0850
 Crew Members: SP SC

Latitude/Longitude: 34.34245 -119.2935
 Flow (circle one): Flowing / Pondered / Dry
 Wind Strength:
 Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
 Wind Direction: Blowing (circle one) From / To E
 Photos (check): Upstream Downstream
 Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly In Situ Measurements:
 pH: 7.78 pH units —EC: _____ $\mu\text{S}/\text{cm}$
 DO: 8.54 mg/L SC: 1201 $\mu\text{S}/\text{cm}$
 DO_2 : _____ % Salinity: 0.60 ppt
 Water Temp: 15.4 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

DU METER

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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): November 2021
 Site ID: TMDL-R2
 Date/Time: 11/10/2021 09:35
 Crew Members: SP SC
 Latitude/Longitude: 34.35936, -122.21742
 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.):
flow taken at AB

January—December Monthly *In Situ* Measurements:
 pH: 7.57 pH units EC: _____ $\mu\text{S}/\text{cm}^2$
 DO: 7.77 mg/L SC: 127 $\mu\text{S}/\text{cm}$
 DO : _____ % Salinity: 0.64 ppt
 Water Temp: 18.1 °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):

Velocity Area Method (preferred)			
No	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

on meter

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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=5.3cm ²)	
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

1st Measurement = left bank (looking downstream)

Event ID (Month Year): November 2021
 Site ID: TMDL-R1
 Date/Time: 11/10/2021 1025
 Crew Members: SP SC
 Latitude/Longitude: 34.281941, -119.50912
 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.):
VCLT members cleaning up trash in stream

January—December Monthly In Situ Measurements:
 pH: 7.90 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 9.04 mg/L SC: 1659 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.84 ppt
 Water Temp: 14.9 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			NO METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

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 Downstream

Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) : _____

January—December Monthly *In Situ* Measurements:

pH: _____ pH units EC: _____ $\mu\text{S}/\text{cm}$

DO: _____ mg/L SC: _____ $\mu\text{S}/\text{cm}$

DO: _____ % Salinity: _____ ppt

Water Temp: _____ $^{\circ}\text{C}$

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):

Velocity Area Method (preferred)

No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Ventura River Algae TMDL—Estuary Details

Site ID: <u>TMDL-Est</u>		Date/Time: <u>11/10/2024</u> <u>11:10</u>
Event ID (Month Year): <u>November 2024</u>		
Crew Members: <u>SP SC</u>		
Weather (circle one): <u>Clear</u> / Partly Cloudy / Overcast / Rainy / Foggy		Ocean Inlet (circle one): Open / Restricted / <u>Closed</u>
Direction of Tide: Ebb / Flood / Slack / <u>N/A</u>		Time of Low Tide: <u>0721</u> Time of High Tide: <u>1316</u>
Wind Strength: <u>Calm</u> / Slight Breeze / Moderate Breeze / Strong Breeze / Windy / Strong Wind		Wind Direction: Blowing <u>From</u> / To <u>E</u>
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): _____		

<u>In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)</u>	
Monthly (Jan—Dec):	
pH: <u>8.20</u> pH units	EC: _____ $\mu\text{S}/\text{cm}$ Water Temp: <u>18.2</u> °C
DO: <u>16.30</u> mg/L	SC: <u>18535</u> $\mu\text{S}/\text{cm}$
DO: _____ %	Salinity: <u>11.28</u> ppt
Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward	
Sample Latitude:	<u>34.27521</u>
Sample Longitude:	<u>-119.30772</u>

<u>Water Samples Collected (check box)</u>
<u>[Collect at Floating Macroalgae Quadrat 1, Transect 1]</u>
Monthly Water (Jan—Dec):
Nitrogen, total and dissolved: <input checked="" type="checkbox"/>
Phosphorus, total and dissolved: <input checked="" type="checkbox"/>
Nitrate + Nitrite as Nitrogen: <input checked="" type="checkbox"/>

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

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 Downstream

Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly *In Situ* Measurements:

pH: _____ pH units EC: _____ $\mu\text{S}/\text{cm}$

DO: _____ mg/L SC: _____ $\mu\text{S}/\text{cm}$

DO: _____ % Salinity: _____ ppt

Water Temp: _____ $^{\circ}\text{C}$

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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): Nov - 2021 Date: 11/21/21

Crew Members: _____

Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____

Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)

Notes: _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)
Flow Status: Dry / Pondered / Flowing (Estimated Flow: 0 cfs) Photos Taken: 1 Upstream / 2 Downstream
Notes: _____

Ventura River at Santa Ana Blvd
Flow Status: Dry / Pondered / Flowing (Estimated Flow: 0 cfs) Photos Taken: None Upstream / Downstream
Notes: major construction - could only drive past site

Ventura River at Casitas Vista Road
Flow Status: Dry / Pondered / Flowing (Estimated Flow: - cfs) Photos Taken: 4 Upstream / 3,5 Downstream
Notes: _____

Additional Observation Site: _____
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

UNSAMPLED TMDL SITES

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Assessment of hydrologic states

Site: VR - Casita Veloz

Lat: _____

Long: _____

Date: 11-21-21

Observer(s): KW

Flow habitats: Estimate the percent cover of each habitat type across the entire reach, to within 5%. Definitions follow Ote (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach			20		80		

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input checked="" type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporeheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporeheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: VR - Baldwin Rd

Lat: _____

Long: _____

Date: 11-21-21

Observer(s): KW

Flow habitats: Estimate the percent cover of each habitat type across the entire reach, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: VR - Santa Ana Blue Lat: _____ Long: _____ Date: 11-21-21

Observer(s): KW

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporeheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporeheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-357

Field Crew: PD Lewis JMV

Deployment / Mid Retrieval

Flow (circle one): Flowing/ Poned/ Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
11-23-20	0740	°N: <u>same</u> °W: _____		US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	18.8	0.65	7.51	42724.0	27.537

Location Description: MURKY GRN/BRN WATER

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-3ST

Field Crew: Jim M. Peter Downer

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
11-15-21	1547	°N: _____ °W: _____		US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	18.3	12.58	8.02	18,605	11.07

Location Description: Readings off edge of bridge

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-25T

Field Crew: Peter D Jim M

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
11-5-21	0943	°N: _____ °W: _____		✓ US: ✓ DS: _____	16.3	6.54	7.72	46583.0	30.30

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMWL - CL

Field Crew: JW

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements					
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)	
11-4-21	1230	°N: _____ °W: _____		US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>						

Location Description: Don't bz bowz dry

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TWDL-5A

Field Crew: [Signature]

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
11-7-21	1246	°N: _____ °W: _____		US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>					

Location Description: Bone Dry too!

Comments: _____

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Dec 2021
 Site ID: TMDL-R3
 Date/Time: 12/8/21 9:12
 Crew Members: SH, SP, SC
 Latitude/Longitude: 34.345458/-119.299408
 Flow (circle one): Flowing / Ponded / Dry
 Wind Strength:
 Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
 Wind Direction: Blowing (circle one) From / To To
 Photos (check): Upstream Downstream
 Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly In Situ Measurements:
 pH: 8.60 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 9.42 mg/L SC: 1201 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.60 ppt
 Water Temp: 12.8 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

ON METER

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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Dec 2021
 Site ID: TMDL-B2
 Date/Time: 12/18/21 9:53
 Crew Members: SH SP SC

Latitude/Longitude: 34.239414/-119.29720
 Flow (circle one): Flowing / Ponded / Dry
 Wind Strength:
 Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
 Wind Direction: Blowing (circle one) From / To A
 Photos (check): Upstream Downstream
 Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly In Situ Measurements:
 pH: 7.8 pH units EC: — $\mu\text{S/cm}$
 DO: 2.43 mg/L SC: 1275 $\mu\text{S/cm}$
 DO: — % Salinity: 0.64 ppt
 Water Temp: 15.6 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

ON Meter

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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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): Dec 2021

Date/Time: 12/8/21 11:29

Crew Members: SH, SP, SC

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: 19:26 Time of High Tide: 11:43

Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Windy / Strong Wind

Wind Direction: Blowing From / To E

Notes (e.g. homeless, wildlife, dogs, swimming/recreation): 3 dead birds

In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)

Monthly (Jan—Dec):

pH: 2.93 pH units EC: — $\mu\text{S}/\text{cm}$ Water Temp: 14.4 $^{\circ}\text{C}$

DO: 10.13 mg/L SC: 4906 $\mu\text{S}/\text{cm}$

DO: — % Salinity: 2.64 ppt

Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward		
Sample Latitude: <u>34.274582</u>		
Sample Longitude: <u>-119.302456</u>		

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:

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Dec 2021
Site ID: TMDL-B1
Date/Time: 12/8/21 10:48
Crew Members: SH, SP, SC

Latitude/Longitude: 34.281983 / -119.3091034
Flow (circle one): Flowing / Ponded / Dry
Wind Strength: Calm / light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To X
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.):

January—December Monthly In Situ Measurements:
 pH: 7.86 pH units EC: _____ $\mu\text{S/cm}$
 DO: 8.35 mg/L SC: 1663 $\mu\text{S/cm}$
 DO: _____ % Salinity: 0.84 ppt
 Water Temp: 13.5 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

Assessment of hydrologic states

Site: TMDL-CL

Lat: 34.341962 Long: -119.286446 Date: 12/8/21

Observer(s): SH, SP, SC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL-SA Lat: 34.35062 Long: -119.302462 Date: 12/8/21

Observer(s): SH, SP, SC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Assessment of hydrologic states

Site: TMDL-R4

Lat: 34.379284 Long: -119.308518 Date: 12/8/01

Observer(s): JH, SP, SC

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach							100

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input type="checkbox"/> Hyporeheic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporheic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels.
<input checked="" type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporheic life (although desiccation-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): Dec 2021 CH SP SC
 Crew Members: _____
 Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____
 Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)
 Notes: _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)
 Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
 Photos Taken: Upstream / Downstream

Ventura River at Santa Ana Blvd
 Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
 Photos Taken: Upstream / Downstream

Ventura River at Casitas Vista Road
 Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
 Photos Taken: Upstream / Downstream

Additional Observation Site:
 Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
 Photos Taken: Upstream / Downstream

Notes: _____

UNSAMPLED TMDL SITES

Site ID: TMDL-CL Time: 8:30
 Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
 Reason not sampled (if flowing): _____
 Notes: _____
 Photos Taken: Upstream / Downstream

Site ID: TMDL-BH Time: 8:48
 Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
 Reason not sampled (if flowing): _____
 Notes: _____
 Photos Taken: Upstream / Downstream

Site ID: TMDL-SA Time: 8:51
 Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
 Reason not sampled (if flowing): _____
 Notes: _____
 Photos Taken: Upstream / Downstream

Site ID: _____ Time: _____
 Flow Status : Dry / Poned / Flowing (Estimated Flow: _____ cfs)
 Reason not sampled (if flowing): _____
 Notes: _____
 Photos Taken: Upstream / Downstream

Ventura River Algae TMDL Field D Sheet (Reaches 1—4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Jan 2022
Site ID: TMDL - R2
Date/Time: 1/2/22 10:22
Crew Members: SH, SC
Latitude/Longitude: 34.339347 / -119.292801
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: 8.04 pH units EC: $\mu\text{S}/\text{cm}$
 DO: 9.93 mg/L SC: 1234 $\mu\text{S}/\text{cm}$
 DO: % Salinity: 0.62 ppt
 Water Temp: 12.5 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
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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 Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

May—September: Algae Collection for Chlorophyll <i>a</i>	
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=12.6cm ²)	
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=5.3cm ²)	
Other (Area=)	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Jan 2022
 Site ID: TMDL-R1
 Date/Time: 1/21/22 11:31
 Crew Members: SH SC

Latitude/Longitude: 34.282015/-119.308924
 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: 8.25 pH units EC: _____ μ S/cm
 DO: 10.18 mg/L SC: 1669 μ S/cm
 DO: _____ % Salinity: 0.85 ppt
 Water Temp: 11.7 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
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3			
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19			
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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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Jan 2022
 Site ID: TMDL 31
 Date/Time: 1/12/22 8:46
 Crew Members: SH SC
 Latitude/Longitude: 34.390811/-119.308246
 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: 7.94 pH units EC: _____ μ S/cm
 DO: 10.01 mg/L SC: 1516 μ S/cm
 DO: _____ % Salinity: 0.77 ppt
 Water Temp: 9.6 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4	<u>on</u>		
5			
6			
7	<u>meter</u>		
8			
9			
10			
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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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Jan 2022
Site ID: TMDL - R3
Date/Time: 1/12/22 9:38
Crew Members: SH SC

Latitude/Longitude: 34.345501/-119.299378
Flow (circle one): Flowing / Pounded / Dry
Wind Strength:
 Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To SW / SE
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly In Situ Measurements:
 pH: 7.98 pH units EC: _____ $\mu\text{S/cm}$
 DO: 10.12 mg/L SC: 1196 $\mu\text{S/cm}$
 DO: _____ % Salinity: 0.60 ppt
 Water Temp: 11.7 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3	<u>on</u>		
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19			
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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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Jan 2022
Site ID: TMDL-R4
Date/Time: 1/12/22 8:11
Crew Members: SH, SC

Latitude/Longitude: 34329842/-119308488
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: 7.8 pH units EC: μ S/cm
 DO: 6.87 mg/L SC: 994 μ S/cm
 DO: % Salinity: 0.49 ppt
 Water Temp: 13.9 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
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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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): Jan 2022
 Site ID: TMDL-CL
 Date/Time: 1/12/22 2:17
 Crew Members: SH, SC
 Latitude/Longitude: 34.341902/-119.286358
 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: 8.28 pH units EC: — $\mu\text{S}/\text{cm}$
 DO: 13.47 mg/L SC: 5206 $\mu\text{S}/\text{cm}$
 DO: — % Salinity: 2.78 ppt
 Water Temp: 4.1 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
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20			

on notes

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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): _____

Site ID: _____

Date/Time: _____

Crew Members: _____

Latitude/Longitude: _____

Flow (circle one): Flowing / Poned / 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.): _____

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
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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 Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

January—December Monthly *In Situ* Measurements:

pH: _____ pH units EC: _____ μ S/cm

DO: _____ mg/L SC: _____ μ S/cm

DO: _____ % Salinity: _____ ppt

Water Temp: _____ °C

Flow (from discharge measurement): _____ cfs

May—September: Algae Collection for Chlorophyll *a*

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=12.6cm ²)	
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=5.3cm ²)	
Other (Area= _____)	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

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):

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

Ventura River Algae TMDL—Estuary Details

Site ID: <u>TMDL-Est</u>	
Event ID (Month Year): <u>Jan 2022</u>	Date/Time: <u>1/12/22 12:19</u>
Crew Members: <u>SH, SC</u>	
Weather (circle one): Clear / Partly Cloudy / <u>Overcast</u> / Rainy / Foggy	Ocean Inlet (circle one): <u>Open</u> / Restricted / Closed
Direction of Tide: Ebb / <u>Flood</u> / Slack / N/A	Time of Low Tide: <u>13:10</u> Time of High Tide: <u>2:37</u>
Wind Strength: <u>Calm</u> / Slight Breeze / Moderate Breeze / Strong Breeze / Windy / Strong Wind	Wind Direction: Blowing From / To <u>W/S</u>
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): _____	

In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)

Monthly (Jan—Dec):

pH: 8.33 pH units EC: — $\mu\text{S/cm}$ Water Temp: 12.5 °C

DO: 10.17 mg/L SC: 5536 $\mu\text{S/cm}$

DO: — % Salinity: 3.01 ppt

Photos: <input checked="" type="checkbox"/> Oceanward	<input checked="" type="checkbox"/> Landward	
Sample Latitude: <u>34.274524</u>		
Sample Longitude: <u>-119.307203</u>		

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:




From: Aquatic Bioassay and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: Company: PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	Nitrate / Nitrite, Filtered (SM 4500 NO3) Filter (SM 4500 NU2 B)	ANALYSIS				Comments
							Total Phosphorous (SM 4500 P-E)	Dissolved Phosphorous, Field Filtered (SM 4500-P-E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL	02/09/2022	07:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R4	02/09/2022	08:00	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-SA	02/09/2022	08:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R3	02/09/2022	09:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R2	02/09/2022	10:15	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R1	02/09/2022	11:00	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-Est	02/09/2022	11:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbtralik@rinconconsultants.com

RELINQUISHED BY Name: Shelly Palasik Signature:  Date: 02/09/2022 Time: 12:15	RECEIVED BY Name: Sabrina Humber Signature:  Date: 2/9/22 Time: 12:15	RELINQUISHED BY Name: Shelly Palasik Signature:  Date: 02/09/2022 Time: 12:46	RECEIVED BY Name: Signature: Date: Time:
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Ventura River Algae TMDL Field D Sheet (Reaches 1—4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): February 2022
 Site ID: TMDL-CL
 Date/Time: 2/19/2022 7:30
 Crew Members: SP, SL, SS
Stephanie Stater
 Latitude/Longitude: 34.34482 -119.286452
 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: 8.42 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 11.94 mg/L SC: 4995 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 8.67 ppt
 Water Temp: 5.5 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			On Meter
2			
3			
4			
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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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): February 2022
 Site ID: TMDL-R4
 Date/Time: 02/09/2022 08:00
 Crew Members: SP, SC, SS
 Latitude/Longitude: 34.37852 -119.308521
 Flow (circle one): Flowing / Ponded / Dry
 Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
 Wind Direction: Blowing (circle one) From / To NW
 Photos (check): Upstream Downstream
 Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly In Situ Measurements:
 pH: 7.77 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 6.55 mg/L SC: 1065 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.53 ppt
 Water Temp: 14.1 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
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19			
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ON METER

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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

Ventura River Algae TMDL Field D Sheet (Reaches 1-4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): February 2022
 Site ID: TMDL-SA
 Date/Time: 02/09/2022 0830
 Crew Members: _____
 Latitude/Longitude: 34.380784 -119.307511
 Flow (circle one): Flowing / Ponded / Dry
 Wind Strength: _____
 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: 8.05 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 10.91 mg/L SC: 1486 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.75 ppt
 Water Temp: 10.6 °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):

Velocity Area Method (preferred)			
No	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ON METER
2			
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19			
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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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=5.3cm ²)	
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 Field Data Sheet (Reaches 1—4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): February 2022
 Site ID: TMDL-R3
 Date/Time: 02/09/2022 09:30
 Crew Members: SP, SC, SS
 Latitude/Longitude: 34.345610 -119.299372
 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: 8.06 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 9.94 mg/L SC: 1126 $\mu\text{S}/\text{cm}$
 Salinity: 0.56 ppt
 Water Temp: 12.7 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
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NO METER

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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): February 2022
Site ID: TMDL-R2
Date/Time: 02/09/2022 10:15
Crew Members: SP, SC, SS
Latitude/Longitude: 34.359437 -119.297462
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: 8.08 pH units EC: _____ $\mu\text{S/cm}$
 DO: 9.87 mg/L SC: 1176 $\mu\text{S/cm}$
 DO: _____ % Salinity: 0.59 ppt
 Water Temp: 13.5 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ON METER
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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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): February 2022
 Site ID: TMDL-R1
 Date/Time: 02/09/2022 11:00
 Crew Members: SP, SC, SS
 Latitude/Longitude: 34.281713 -119.809219
 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: 8.28 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 9.47 mg/L SC: 1345 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.70 ppt
 Water Temp: 12.8 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
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ON WEIR

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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

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 Downstream

Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) : _____

January—December Monthly *In Situ* Measurements:

pH: _____ pH units EC: _____ $\mu\text{S/cm}$

DO: _____ mg/L SC: _____ $\mu\text{S/cm}$

DO: _____ % Salinity: _____ ppt

Water Temp: _____ $^{\circ}\text{C}$

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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
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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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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): February 2002 **Date/Time:** 02/09/2002 11:30
Crew Members: SP, SC, SS
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: 12:00 **Time of High Tide:** 19:14
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Windy / Strong Wind
Wind Direction: Blowing From W / To _____
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): _____

In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)

Monthly (Jan—Dec):
 pH: 7.93 pH units EC: _____ $\mu\text{S}/\text{cm}$ Water Temp: 14.7 °C
 DO: 11.08 mg/L SC: 16003 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 11.05 ppt

Photos:	<input checked="" type="checkbox"/> Oceanward	<input checked="" type="checkbox"/> Landward	
Sample Latitude:	<u>34.271684</u>		
Sample Longitude:	<u>-119.307420</u>		

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:

Ventura River Algae TMDL Field D. Sheet (Reaches 1—4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): March 2022
Site ID: VMTMDL-CL
Date/Time: 3/9/22 7:25
Crew Members: SH SC LL

Latitude/Longitude: 34.347011, -119.286418
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: 8.43 pH units EC: _____ $\mu\text{S/cm}$
 DO: _____ mg/L SC: 5065 $\mu\text{S/cm}$
 DO: 11.97 % Salinity: 2.71 ppt
 Water Temp: 5.2 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
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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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): March 2022
 Site ID: VR TMDL R4
 Date/Time: 3/9/22 8:11
 Crew Members: SH, SC, LL
 Latitude/Longitude: 34.329225 -119.308694
 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: 8.00 pH units EC: _____ $\mu\text{S/cm}$
 DO: 6.40 mg/L SC: 1067 $\mu\text{S/cm}$
 DO: _____ % Salinity: 0.53 ppt
 Water Temp: 15.1 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
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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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): msch 2022

Site ID: VATMDL SA

Date/Time: 3/9/22

Crew Members: SH SC LL

Latitude/Longitude: 34.380821, -119.307389

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.):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
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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 Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

January—December Monthly *In Situ* Measurements:

pH: 8.22 pH units EC: _____ μ S/cm

DO: 8.31 mg/L SC: 1318 μ S/cm

DO: _____ % Salinity: 0.66 ppt

Water Temp: 12.1 °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):

May—September: Algae Collection for Chlorophyll *a*

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=12.6cm ²)	
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=5.3cm ²)	
Other (Area= _____)	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

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 Downstream

Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.): _____

January—December Monthly *In Situ* Measurements:

pH: _____ pH units EC: _____ $\mu\text{S}/\text{cm}$

DO: _____ mg/L SC: _____ $\mu\text{S}/\text{cm}$

DO: _____ % Salinity: _____ ppt

Water Temp: _____ $^{\circ}\text{C}$

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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
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19			
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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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): March 2022

Site ID: VR TMDL R3

Date/Time: 3/9/22 9:59

Crew Members: JH SC LL

Latitude/Longitude: 34.345538 -119.299372

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: 8.00 pH units EC: _____ $\mu\text{S}/\text{cm}$

DO: 9.79 mg/L SC: 1113 $\mu\text{S}/\text{cm}$

DO: _____ % Salinity: 0.56 ppt

Water Temp: 12.9 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2		<u>cm</u>	
3			
4		<u>meter</u>	
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): March 2022
Site ID: VA TMDL R2
Date/Time: 3/9/22 10:56
Crew Members: SH SC LL

Latitude/Longitude: 34.334945 -119.291737
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: 8.26 pH units EC: _____ $\mu\text{S/cm}$
 DO: 9.28 mg/L SC: 1162 $\mu\text{S/cm}$
 DO: _____ % Salinity: 0.58 ppt
 Water Temp: 14.0 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): March 2022
 Site ID: VR TMDL - R1
 Date/Time: 3/9/22 12:03
 Crew Members: SH SC LL
 Latitude/Longitude: 34.281943 -119.309115
 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: 8.27 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 9.41 mg/L SC: 1365 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.69 ppt
 Water Temp: 12.8 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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): March 2022

Date/Time: 3/9/22 12:43

Crew Members: SH SC LL

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: 09:52 Time of High Tide: 00:59

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)

Monthly (Jan—Dec):

pH: 8.54 pH units EC: _____ $\mu\text{S}/\text{cm}$ Water Temp: 15.6 °C

DO: 13.66 mg/L SC: 2788 $\mu\text{S}/\text{cm}$

DO: _____ % Salinity: 1.22 ppt

Photos: <input checked="" type="checkbox"/> Oceanward	<input checked="" type="checkbox"/> Landward	
Sample Latitude: <u>34.274661</u>		
Sample Longitude: <u>-119.302268</u>		

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:

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-SA
Rincon

Field Crew: JD

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3-3-22	1248	°N: _____ °W: _____	10cm	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>					

Location Description: Flowing

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMVRL CL

Field Crew: fw

Rincon
Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3-3-22	1230	°N: _____ °W: _____	6	US: <u> </u> DS: <u> </u>					

Location Description: Low flow but typical

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-CL

Field Crew: SOMYER CARMAN J. MANN

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3-8-22	0940	°N: 34.34190 °W: 119.286158	14	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	6.6	12.29	7.94	5218	2.81

Location Description: Low flow but adequate

Comments:

Rincon/Ventura River Data Logger Field Sheet

Site ID: TW02-SA

Field Crew: Stacy & Larissa Jmr

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Poned / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3.8.22	1025	°N: <u>44.380864</u> °W: <u>119.307016</u>	22	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	13.8	12.74	8.03	1575	0.8

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMM02 - 25F

Field Crew: Sawyer C. / LONDON L.

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3.8.22	1130	°N: <u>34.27964</u> °W: <u>119.39034</u>		US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	14.2	12.33	8.14	7534	4.06

Location Description: _____

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMOL-CL

Field Crew: Southern Johnson

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3-15-22	0841	°N: <u>Southern</u> °W: _____	12	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	8.1 °C	11.63	8.07	5289	2.84

Location Description: Low Flow

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: JMOL-SA

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

					YSI Measurements				
Date	Time	Coordinates	Depth (cm)	Photos	Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3.15.22	0921	°N: <u>S 88m 2</u> °W: _____	17	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	9.7°C	9.82	7.90	1601	0.81

Location Description: cutting to be low flow now

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TM02 - EST

Field Crew: _____

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3.15.22	1003	°N: <u>40W2</u> °W: _____		US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	13.9	8.58	8.02	7654	4.06

Location Description: Water level seems about 1' lower than deployment

Comments: _____

Rincon/Ventura River - Data Logger Field Sheet

Site ID: TMPL-22

Field Crew: SHYR C Jim M.

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3-23-22	1010	°N: <u>50m</u> °W: _____	<u>0</u>	US: <u>✓</u> DS: _____	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Location Description: DRY, JUST MOIST / DAMP MUD / PUDOLZS.

Comments: Looks like it the flow may have ceased one or two days earlier.

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMDL-50

Field Crew: Sowyer C Jim M

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3-23-22	1032	°N: <u>Sowyer</u> °W: _____	10.0	US: <input checked="" type="checkbox"/> DS: <input checked="" type="checkbox"/>	14.2	4.74	7.45	1129	0.56

Location Description: Sand in Ponded area, DRY elsewhere

Comments: _____

Rincon/Ventura River Data Logger Field Sheet

Site ID: TMPL - EST

Field Crew: Sanyal C, Jim M

Deployment / Mid / Retrieval

Flow (circle one): Flowing / Ponded / Dry

Date	Time	Coordinates	Depth (cm)	Photos	YSI Measurements				
					Water Temp (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µs)	Salinity (ppt)
3-23	1114	N: <u>5A m 2</u> W: _____		US: <u>✓</u> DS: <u>✓</u>	17.3	7.36	8.01	1852	0.94

Location Description: Lowest 1/2 depth

Comments: _____

From: Aquatic Bioassay and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL	04/13/2022		Water	3-250 mL, pl; 2-250 mL, gl							<i>not enough water to collect</i>
TMDL-R4	04/13/2022	08:05	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	
TMDL-SA	04/13/2022	08:30	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	
TMDL-R3	04/13/2022	09:10	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	
TMDL-R2	04/13/2022	09:50	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	
TMDL-R1	04/13/2022	10:40	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	
TMDL-Est	04/13/2022	11:20	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.com

RELINQUISHED BY
Name: *Shelby Palasik*
Signature: *[Signature]*
Date: *04/13/2022* Time: *12:26*

RECEIVED BY
Name: *Silvan Mullinger*
Signature: *[Signature]*
Date: *04/13/2022* Time: *12:26*

RELINQUISHED BY
Name:
Signature:
Date: Time:

RECEIVED BY
Name:
Signature:
Date: Time:

Ventura River Algae TMDL Event Details

EVENT DETAILS

Event ID (Month Year): April 2022 Date: 04/13/2022
Crew Members: SP, SP, EM
Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / Other _____
Event Type (check): Dry (<0.1" rain per day for the preceding three days)
 Wet (days with ≥0.1" rain and the three days following)
Notes: _____

OBSERVATION SITES (RIVER FLOW)

Ventura River at Highway 150 (Baldwin Road)

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Santa Ana Blvd

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Ventura River at Casitas Vista Road

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

Additional Observation Site:

Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs) Photos Taken: Upstream / Downstream
Notes: _____

UNSAMPLED TMDL SITES

Site ID: TMDL-CL Time: 07:28 Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Site ID: _____ Time: _____ Photos Taken: Upstream / Downstream
Flow Status: Dry / Pondered / Flowing (Estimated Flow: _____ cfs)
Reason not sampled (if flowing): _____
Notes: _____

Assessment of hydrologic states

Site: TADL-CL Lat: 39.341905 Long: -119.286359 Date: 01/13/2022

Observer(s): SP, SG, EM (Emily McLeod)

Flow habitats: Estimate the percent cover of each habitat type *across the entire reach*, to within 5%. Definitions follow Ode (2007). Total must equal 100%.

	Cascades	Rapids	Riffles	Runs	Glides	Pools	Dry
% of reach					20?		80

Select the hydrologic state that most closely matches the dominant state of the reach:

State (check one)	Description, indicators
<input type="checkbox"/> Hyperrheic (flooding)	Water may be above banks and turbid or carrying suspended particles. Movement of streambed particles may occur.
<input type="checkbox"/> Eurheic (baseflow)	Water always below banks (if banks are evident). Discharge is high enough to allow access to most of the stream bed. Many different flow microhabitats may be evident (e.g., riffles, pools, runs, glides). Gravels will generally be stable on the streambed.
<input type="checkbox"/> Oligorheic (limited flow)	Discharge is low but sufficient to connect pools and other aquatic habitats through small rivulets. Surface water is more or less continuous throughout reach. Riffles are scarce.
<input type="checkbox"/> Arheic (disconnected pools)	Discharge is close to zero, may not be visibly evident. Pools may be abundant, but may be disconnected. This state may not exist in sandy streams with rapid groundwater infiltration or in concrete channels.
<input checked="" type="checkbox"/> Hyporehic (subsurface water)	Most of the stream bed is devoid of surface water, although substrate may remain wet enough to support active hyporehic life. Terrestrial fauna may be common on the stream bed. This state may not exist in concrete or bedrock channels
<input type="checkbox"/> Edaphic (dry)	The entire stream bed is devoid of surface water, and the substrate (if present) is too dry to support active hyporehic life (although dessication-resistant life stages may be present). Soil moisture in the streambed is not discernibly greater than in nearby soils above the banks.

Hobo Meter Depth (m): _____

Take a photo to document conditions (at transects A, F, and K, if possible).

Notes:

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): April 2022
 Site ID: TMDL-R4
 Date/Time: 04/13/2022 805
 Crew Members: SP, SC, EM
 Latitude/Longitude: 34.374841 -119.308489
 Flow (circle one): Flowing / Pounded / 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: 7.51 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 6.73 mg/L SC: 1114 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.56 ppt
 Water Temp: 15.8 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ON METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): April 2022
 Site ID: TMDL-SA
 Date/Time: 04/13/2022 0830
 Crew Members: SP, SC, EH
 Latitude/Longitude: 34.300821 -119.807253
 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.): _____

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			No Measurable Flow
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

January—December Monthly *In Situ* Measurements:
 pH: 7.50 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 5.18 mg/L SC: 1049 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.52 ppt
 Water Temp: 13.7 °C
 Flow (from discharge measurement): _____ cfs

May—September: Algae Collection for Chlorophyll *a*
 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=12.6cm ²)	
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=5.3cm ²)	
Other (Area= _____)	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

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):

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): April 2022
Site ID: TMDL-R3
Date/Time: 04/13/2022 0910
Crew Members: SP, SC, EM

Latitude/Longitude: 34.345531 -119.299581
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: 7.85 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 7.8 mg/L SC: 1177 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.59 ppt
 Water Temp: 13.7 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ON METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm ²)	
PVC Delimiter (Area=12.6cm ²)	
Syringe Scrubber (Area=9.3cm ²)	
Other (Area= _____)	
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	

Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 1

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): April 2022
 Site ID: TMDL-R2
 Date/Time: 04/13/2022 0950
 Crew Members: SP, SG, EM
 Latitude/Longitude: 33.39402 -119.297341
 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: 8.00 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 9.69 mg/L SC: 1204 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.60 ppt
 Water Temp: _____ $^{\circ}\text{C}$
 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):

Velocity Area Method (preferred)			
No	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			ON METER
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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 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 \leq 10 m; 250 m if wetted width $>$ 10 m): _____

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

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

Discharge Measurement

1st Measurement = left bank (looking downstream)

Event ID (Month Year): April 2022
Site ID: TMDL-RI
Date/Time: 4/13/2022 1040
Crew Members: SP, SE, EM

Latitude/Longitude: 34.287022 -119.308162
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: 8.01 pH units EC: _____ $\mu\text{S}/\text{cm}$
 DO: 5.89 mg/L SC: 1452 $\mu\text{S}/\text{cm}$
 DO: _____ % Salinity: 0.73 ppt
 Water Temp: 14.4 °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):

Velocity Area Method (preferred)			
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

OM Meter

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 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 \leq 10 m; 250 m if wetted width > 10 m): _____

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

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

Ventura River Algae TMDL—Estuary Details

Site ID: <u>TMDL-Est</u>	
Event ID (Month Year): <u>April 2022</u>	Date/Time: <u>04/13/2022 1120</u>
Crew Members: <u>SP, SG, EM</u>	
Weather (circle one): <u>Clear</u> / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle one): <u>Open</u> / Restricted / Closed
Direction of Tide: <u>Ebb</u> / Flood / Slack / N/A	Time of Low Tide: <u>1432</u> Time of High Tide: <u>20:47</u>
Wind Strength: <u>Calm</u> / <u>Slight Breeze</u> / Moderate Breeze / Strong Breeze / Windy / Strong Wind	Wind Direction: Blowing <u>From</u> <u>N</u> <u>To</u>
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): <u>Dogs in estuary</u>	

<u>In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)</u>		
Monthly (Jan—Dec):		
pH: <u>8.12</u> pH units	EC: _____ $\mu\text{S}/\text{cm}$	Water Temp: <u>16.3</u> °C
DO: <u>6.36</u> mg/L	SC: <u>1992</u> $\mu\text{S}/\text{cm}$	
DO: _____ %	Salinity: <u>1.00</u> ppt	
Photos: <input checked="" type="checkbox"/> Oceanward <input checked="" type="checkbox"/> Landward		
Sample Latitude:	<u>34.274694</u>	
Sample Longitude	<u>-119.307447</u>	

<u>Water Samples Collected (check box)</u>	
<u>Collect at Floating Macroalgae Quadrat 1, Transect 1</u>	
Monthly Water (Jan—Dec):	
Nitrogen, total and dissolved:	<input checked="" type="checkbox"/>
Phosphorus, total and dissolved:	<input checked="" type="checkbox"/>
Nitrate + Nitrite as Nitrogen:	<input checked="" type="checkbox"/>



June 21, 2021

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River AlgaeTMDL
Physis Project ID: 2001003-021

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 5/13/2021. A total of 10 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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,

Rachel Hansen
714 602-5320
Extension 203
rachelhansen@physislabs.com

PROJECT SAMPLE LIST

Rincon Consultants

PHYSIS Project ID: 2001003-021

Ventura River Algae TMDL

Total Samples: 10

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
86735	TMDL-R4	Total	5/12/2021	8:00	Samplewater	Not Specified
86736	TMDL-R4	Field Filtered	5/12/2021	8:00	Samplewater	Not Specified
86737	TMDL-R3	Total	5/12/2021	10:50	Samplewater	Not Specified
86738	TMDL-R3	Field Filtered	5/12/2021	10:50	Samplewater	Not Specified
86799	TMDL-R2	Total	5/13/2021	7:30	Samplewater	Not Specified
86800	TMDL-R2	Field Filtered	5/13/2021	7:30	Samplewater	Not Specified
86801	TMDL-R1	Total	5/13/2021	10:00	Samplewater	Not Specified
86802	TMDL-R1	Field Filtered	5/13/2021	10:00	Samplewater	Not Specified
86803	TMDL-Est	Total	5/13/2021	11:05	Samplewater	Not Specified
86804	TMDL-Est	Field Filtered	5/13/2021	11:05	Samplewater	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

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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

ANALYTICAL

REPORT

TERRA R AGA A AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 86735-R1	TMDL-R4 Total		Matrix: Samplewater				Sampled: 12-May-21 8:00			Received: 13-May-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.148	1	0.05	0.4	NA	J	C-56142	08-Jun-21	09-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.02	NA		C-57120	02-Jun-21	03-Jun-21
Sample ID: 86736-R1	TMDL-R4 Field Filtered		Matrix: Samplewater				Sampled: 12-May-21 8:00			Received: 13-May-21	
Nitrate as N	SM 4500-NO3 E	mg/L	0.907	1	0.01	0.02	NA		C-57131	13-May-21	08-Jun-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-57104	13-May-21	13-May-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-57120	02-Jun-21	03-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.181	1	0.05	0.4	NA	J	C-56142	08-Jun-21	09-Jun-21
Sample ID: 86737-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled: 12-May-21 10:50			Received: 13-May-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.399	1	0.05	0.4	NA	J	C-56142	08-Jun-21	09-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.02	NA		C-57120	02-Jun-21	03-Jun-21
Sample ID: 86738-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled: 12-May-21 10:50			Received: 13-May-21	
Nitrate as N	SM 4500-NO3 E	mg/L	0.39	1	0.01	0.02	NA		C-57131	13-May-21	08-Jun-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-57104	13-May-21	13-May-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-57120	02-Jun-21	03-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.426	1	0.05	0.4	NA		C-56142	08-Jun-21	09-Jun-21
Sample ID: 86799-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled: 13-May-21 7:30			Received: 14-May-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.621	1	0.05	0.4	NA		C-56142	08-Jun-21	09-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	0.0705	1	0.016	0.02	NA		C-57120	02-Jun-21	03-Jun-21

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 86800-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled: 13-May-21 7:30			Received: 14-May-21	
Nitrate as N	SM 4500-NO3 E	mg/L	1.31	1	0.01	0.02	NA	C-57131		14-May-21	08-Jun-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA	C-57106		14-May-21	14-May-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0569	1	0.016	0.03	NA	C-57120		02-Jun-21	03-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	1.66	1	0.05	0.4	NA	C-56142		08-Jun-21	09-Jun-21
Sample ID: 86801-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled: 13-May-21 10:00			Received: 14-May-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.522	1	0.05	0.4	NA	C-56142		08-Jun-21	09-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	0.0429	1	0.016	0.02	NA	C-57120		02-Jun-21	03-Jun-21
Sample ID: 86802-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled: 13-May-21 10:00			Received: 14-May-21	
Nitrate as N	SM 4500-NO3 E	mg/L	0.543	1	0.01	0.02	NA	C-57131		14-May-21	08-Jun-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA	C-57106		14-May-21	14-May-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0379	1	0.016	0.03	NA	C-57120		02-Jun-21	03-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.419	1	0.05	0.4	NA	C-56142		08-Jun-21	09-Jun-21
Sample ID: 86803-R1	TMDL-Est Total		Matrix: Samplewater				Sampled: 13-May-21 11:05			Received: 14-May-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.496	1	0.05	0.4	NA	C-56142		08-Jun-21	09-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	0.0479	1	0.016	0.02	NA	C-57120		02-Jun-21	03-Jun-21
Sample ID: 86804-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled: 13-May-21 11:05			Received: 14-May-21	
Nitrate as N	SM 4500-NO3 E	mg/L	0.267	1	0.01	0.02	NA	C-57131		14-May-21	08-Jun-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA	C-57106		14-May-21	14-May-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA	C-57120		02-Jun-21	03-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.412	1	0.05	0.4	NA	C-56142		08-Jun-21	09-Jun-21

PHYSICS

QUALITY CONTROL

REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
				MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY LIMITS	PRECISION LIMITS	QA CODE
Nitrate as N		Method: SM 4500-NO₃ E			Fraction: NA			Prepared: 13-May-21		Analyzed: 08-Jun-21	
86733-B1	QAQC Procedural Blank	C-57131	ND	1	0.01	0.02	mg/L				
86733-BS1	QAQC Procedural Blank	C-57131	0.482	1	0.01	0.02	mg/L	0.5	0	96	68 - 135% PASS
86733-BS2	QAQC Procedural Blank	C-57131	0.48	1	0.01	0.02	mg/L	0.5	0	96	68 - 135% PASS
86802-MS1	TMDL-R1	C-57131	0.981	1	0.01	0.02	mg/L	0.5	0.543	88	80 - 120% PASS
86802-MS2	TMDL-R1	C-57131	0.979	1	0.01	0.02	mg/L	0.5	0.543	87	80 - 120% PASS
86802-R2	TMDL-R1	C-57131	0.543	1	0.01	0.02	mg/L				0 25 PASS
Nitrite as N		Method: SM 4500-NO₂ B			Fraction: NA			Prepared: 13-May-21		Analyzed: 13-May-21	
86733-B1	QAQC Procedural Blank	C-57104	ND	1	0.01	0.02	mg/L				
86733-BS1	QAQC Procedural Blank	C-57104	0.0481	1	0.01	0.02	mg/L	0.05	0	96	49 - 120% PASS
86733-BS2	QAQC Procedural Blank	C-57104	0.0484	1	0.01	0.02	mg/L	0.05	0	97	49 - 120% PASS
86736-MS1	TMDL-R4	C-57104	0.0486	1	0.01	0.02	mg/L	0.05	0	97	80 - 120% PASS
86736-MS2	TMDL-R4	C-57104	0.0485	1	0.01	0.02	mg/L	0.05	0	97	80 - 120% PASS
86736-R2	TMDL-R4	C-57104	ND	1	0.01	0.02	mg/L				0 25 PASS
86733-B1	QAQC Procedural Blank	C-57106	ND	1	0.01	0.02	mg/L				
86733-BS1	QAQC Procedural Blank	C-57106	0.0485	1	0.01	0.02	mg/L	0.05	0	97	49 - 120% PASS
86733-BS2	QAQC Procedural Blank	C-57106	0.0488	1	0.01	0.02	mg/L	0.05	0	98	49 - 120% PASS
86800-MS1	TMDL-R2	C-57106	0.0509	1	0.01	0.02	mg/L	0.05	0	102	80 - 120% PASS
86800-MS2	TMDL-R2	C-57106	0.0515	1	0.01	0.02	mg/L	0.05	0	103	80 - 120% PASS
86800-R2	TMDL-R2	C-57106	ND	1	0.01	0.02	mg/L				0 25 PASS
Total Dissolved Phosphorus		Method: SM 4500-P E			Fraction: NA			Prepared: 02-Jun-21		Analyzed: 03-Jun-21	

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
86733-B1	QAQC Procedural Blank	C-57120	ND	1	0.016	0.03	mg/L				
86733-BS1	QAQC Procedural Blank	C-57120	0.292	1	0.016	0.03	mg/L	0.3	0	97	86 - 118% PASS
86733-BS2	QAQC Procedural Blank	C-57120	0.296	1	0.016	0.03	mg/L	0.3	0	99	86 - 118% PASS 2 25 PASS
86736-MS1	TMDL-R4	C-57120	0.281	1	0.016	0.03	mg/L	0.3	0	94	80 - 120% PASS 25
86736-MS2	TMDL-R4	C-57120	0.282	1	0.016	0.03	mg/L	0.3	0	94	80 - 120% PASS 0 25 PASS
86736-R2	TMDL-R4	C-57120	ND	1	0.016	0.03	mg/L				0 25 PASS

Total Kjeldahl Nitrogen		Method: EPA 351.2		Fraction: NA		Prepared: 08-Jun-21		Analyzed: 09-Jun-21			
86733-B1	QAQC Procedural Blank	C-56142	ND	1	0.05	0.4	mg/L				
86733-BS1	QAQC Procedural Blank	C-56142	1.06	1	0.05	0.4	mg/L	1	0	106	90 - 110% PASS
86733-BS2	QAQC Procedural Blank	C-56142	1.04	1	0.05	0.4	mg/L	1	0	104	90 - 110% PASS 2 30 PASS
86734-CRM1	QAQC CRM – TKN QC1	C-56142	13	2	0.05	0.4	mg/L	12.5		104	73 - 122% PASS
86735-MS1	TMDL-R4	C-56142	1.16	1	0.05	0.4	mg/L	1	0.148	101	90 - 110% PASS
86735-MS2	TMDL-R4	C-56142	1.14	1	0.05	0.4	mg/L	1	0.148	99	90 - 110% PASS 2 30 PASS
86735-R2	TMDL-R4	C-56142	0.134	1	0.05	0.4	mg/L				10 30 PASS J
86736-MS1	TMDL-R4	C-56142	1.15	1	0.05	0.4	mg/L	1	0.181	97	90 - 110% PASS
86736-MS2	TMDL-R4	C-56142	1.14	1	0.05	0.4	mg/L	1	0.181	96	90 - 110% PASS 1 30 PASS
86736-R2	TMDL-R4	C-56142	0.165	1	0.05	0.4	mg/L				9 30 PASS J

Total Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 02-Jun-21		Analyzed: 03-Jun-21			
86733-B1	QAQC Procedural Blank	C-57120	ND	1	0.016	0.02	mg/L				
86733-BS1	QAQC Procedural Blank	C-57120	0.292	1	0.016	0.02	mg/L	0.3	0	97	73 - 131% PASS
86733-BS2	QAQC Procedural Blank	C-57120	0.296	1	0.016	0.02	mg/L	0.3	0	99	73 - 131% PASS 2 25 PASS

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODE
									%	LIMITS	%	LIMITS	
86735-MS1	TMDL-R4	C-57120	0.292	1	0.016	0.02	mg/L	0.3	0	97	80 - 120% PASS	25	
86735-MS2	TMDL-R4	C-57120	0.293	1	0.016	0.02	mg/L	0.3	0	98	80 - 120% PASS	1	25 PASS
86735-R2	TMDL-R4	C-57120	ND	1	0.016	0.02	mg/L					0	25 PASS

CHAIN OF CUSTODY

PHYSICS

TERRA FUSION ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

From: Aquatic Bioassay
and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

ANALYSIS

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	Comments
TMDL-CL			water	3-250 mL, pl; 2-250 mL, gl.							not collected
TMDL-R4	05/12/2021	8:00	Water	3-250 mL, pl; 2-250 mL, gl.		X	X	X	X	X	
TMDL-SA			Water	3-250 mL, pl; 2-250 mL, gl.							not collected
TMDL-R3	05/12/2021	10:50	Water	3-250 mL, pl; 2-250 mL, gl.		X	X	X	X	X	
TMDL-R2			Water	3-250 mL, pl; 2-250 mL, gl.							not collected
TMDL-R1			Water	3-250 mL, pl; 2-250 mL, gl.							not collected
TMDL-Est			water	3-250 mL, pl; 2-250 mL, gl.							not collected

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbtrialik@rinconconsultants.co

RELINQUISHED BY
Name: *[Signature]*
Signature: Shelby Polasnik
Date: 05/12/2021 Time: 1345

RECEIVED BY
Name: CHARIS SAMIA
Signature: *[Signature]*
Date: 05/12/2021 Time: 1346

RELINQUISHED BY
Name:
Signature:
Date: Time:

RECEIVED BY (PHYSIS)
Name: Ashley Gonzalez
Signature: *[Signature]*
Date: 5/13/21 Time: 9:20

Project Iteration ID: 2001003-021
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Light Blue w/dot



Sample Receipt Summary

Receiving Info

1. Initials Received By: AG
2. Date Received: 5/13/21
3. Time Received: 9:20
4. Client Name: ABC
5. Courier Information: (Please circle)
 - Client UPS
 - Area Fast
 - DRS
 - FedEx GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 0-7 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:

From: Aquatic Bioassay
and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL			Water	3-250 mL, pl; 2-250 mL, gl.							} NOT SAMPLED
TMDL-R4			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-SA			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-R3			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-R2	05/13/2021	07:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R1	05/13/2021	11:00	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-Est	05/13/2021	11:05	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbtralik@rinconconsultants.co

RELINQUISHED BY
Name: *Shelley Palasik*
Signature: *[Signature]*
Date: 05/13/2021 Time: 1:30

RECEIVED BY
Name: CHARIS SAMIA
Signature: *[Signature]*
Date: 05/13/21 Time: 1:37 P.M.

RELINQUISHED BY
Name:
Signature:
Date: Time:

RECEIVED BY
Name: Sarah Everett
Signature: *[Signature]*
Date: 05/14/2021 Time: 9:20

Project Iteration ID: 2001003-021B
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Light Blue w/dot



Sample Receipt Summary

Receiving Info

1. Initials Received By: SE
2. Date Received: 5/14/2021
3. Time Received: 9:20
4. Client Name: Aquatic Bioassay and Consulting Labs
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - ___ Styrofoam Cooler
 - ___ Boxes
 - None
 - ___ Carboy(s)
 - ___ Carboy Trash Can(s)
 - ___ Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): -1.0 Used I/R Thermometer # 1-1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:



July 15, 2021

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-023

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 6/10/2021. A total of 10 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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

Rincon Consultants

PHYSIS Project ID: 2001003-023

Ventura River Algae TMDL

Total Samples: 10

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
87345	TMDL-R4	Total	6/9/2021	9:00	Samplewater	Not Specified
87346	TMDL-R4	Field Filtered	6/9/2021	9:00	Samplewater	Not Specified
87347	TMDL-R3	Total	6/9/2021	10:00	Samplewater	Not Specified
87348	TMDL-R3	Field Filtered	6/9/2021	10:00	Samplewater	Not Specified
87349	TMDL-R2	Total	6/9/2021	10:30	Samplewater	Not Specified
87350	TMDL-R2	Field Filtered	6/9/2021	10:30	Samplewater	Not Specified
87351	TMDL-R1	Total	6/9/2021	11:40	Samplewater	Not Specified
87352	TMDL-R1	Field Filtered	6/9/2021	11:40	Samplewater	Not Specified
87353	TMDL-Est	Total	6/9/2021	12:20	Samplewater	Not Specified
87354	TMDL-Est	Field Filtered	6/9/2021	12:20	Samplewater	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

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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

PANALYTICAL

REPORT

TERRA RAGLA AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 87345-R1	TMDL-R4 Total		Matrix: Samplewater				Sampled:	09-Jun-21 9:00		Received:	10-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.132	1	0.05	0.4	NA	J	C-56154	22-Jun-21	23-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.02	NA		C-57142	15-Jun-21	16-Jun-21
Sample ID: 87346-R1	TMDL-R4 Field Filtered		Matrix: Samplewater				Sampled:	09-Jun-21 9:00		Received:	10-Jun-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	0.849	1	0.01	0.02	NA		C-57150	10-Jun-21	01-Jul-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-57132	10-Jun-21	10-Jun-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-57142	09-Jun-21	16-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.05	0.4	NA		C-56154	22-Jun-21	23-Jun-21
Sample ID: 87347-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled:	09-Jun-21 10:00		Received:	10-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.05	0.4	NA		C-56154	22-Jun-21	23-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	0.0191	1	0.016	0.02	NA	J	C-57142	15-Jun-21	16-Jun-21
Sample ID: 87348-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled:	09-Jun-21 10:00		Received:	10-Jun-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	0.317	1	0.01	0.02	NA		C-57150	10-Jun-21	01-Jul-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-57132	10-Jun-21	10-Jun-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0184	1	0.016	0.03	NA	J	C-57142	09-Jun-21	16-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.05	0.4	NA		C-56154	22-Jun-21	23-Jun-21
Sample ID: 87349-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled:	09-Jun-21 10:30		Received:	10-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.535	1	0.05	0.4	NA		C-56154	22-Jun-21	23-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	0.114	1	0.016	0.02	NA		C-57142	15-Jun-21	16-Jun-21

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 87350-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled: 09-Jun-21 10:30			Received: 10-Jun-21	
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.16	1	0.01	0.02	NA		C-57150	10-Jun-21	01-Jul-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-57132	10-Jun-21	10-Jun-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.108	1	0.016	0.03	NA		C-57142	09-Jun-21	16-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.442	1	0.05	0.4	NA		C-56154	22-Jun-21	23-Jun-21
Sample ID: 87351-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled: 09-Jun-21 11:40			Received: 10-Jun-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.515	1	0.05	0.4	NA		C-56154	22-Jun-21	23-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	0.0819	1	0.016	0.02	NA		C-57142	15-Jun-21	16-Jun-21
Sample ID: 87352-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled: 09-Jun-21 11:40			Received: 10-Jun-21	
Nitrate as N	SM 4500-NO ₃ E	mg/L	0.893	1	0.01	0.02	NA		C-57150	10-Jun-21	01-Jul-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-57132	10-Jun-21	10-Jun-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0562	1	0.016	0.03	NA		C-57142	09-Jun-21	16-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.433	1	0.05	0.4	NA		C-56154	22-Jun-21	23-Jun-21
Sample ID: 87353-R1	TMDL-Est Total		Matrix: Samplewater				Sampled: 09-Jun-21 12:20			Received: 10-Jun-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.472	1	0.05	0.4	NA		C-56154	22-Jun-21	23-Jun-21
Total Phosphorus	SM 4500-P E	mg/L	0.0524	1	0.016	0.02	NA		C-57142	15-Jun-21	16-Jun-21
Sample ID: 87354-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled: 09-Jun-21 12:20			Received: 10-Jun-21	
Nitrate as N	SM 4500-NO ₃ E	mg/L	0.299	1	0.01	0.02	NA		C-57150	10-Jun-21	01-Jul-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-57132	10-Jun-21	10-Jun-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0286	1	0.016	0.03	NA	J	C-57142	09-Jun-21	16-Jun-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.38	1	0.05	0.4	NA	J	C-56154	22-Jun-21	23-Jun-21

PHYSICS

QUALITY CONTROL

REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
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Nitrate as N		Method: SM 4500-NO ₃ E		Fraction: NA		Prepared: 10-Jun-21		Analyzed: 01-Jul-21	
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87343-B1	QAQC Procedural Blank	C-57150	ND	1	0.01	0.02	mg/L				
87343-BS1	QAQC Procedural Blank	C-57150	0.451	1	0.01	0.02	mg/L	0.5	0	90	68 - 135% PASS
87343-BS2	QAQC Procedural Blank	C-57150	0.451	1	0.01	0.02	mg/L	0.5	0	90	68 - 135% PASS
87346-MS1	TMDL-R4	C-57150	1.24	1	0.01	0.02	mg/L	0.5	0.849	78	80 - 120% PASS
87346-MS2	TMDL-R4	C-57150	1.25	1	0.01	0.02	mg/L	0.5	0.849	80	80 - 120% PASS
87346-R2	TMDL-R4	C-57150	0.859	1	0.01	0.02	mg/L				

Nitrite as N		Method: SM 4500-NO ₂ B		Fraction: NA		Prepared: 10-Jun-21		Analyzed: 10-Jun-21	
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87343-B1	QAQC Procedural Blank	C-57132	ND	1	0.01	0.02	mg/L				
87343-BS1	QAQC Procedural Blank	C-57132	0.0493	1	0.01	0.02	mg/L	0.05	0	99	49 - 120% PASS
87343-BS2	QAQC Procedural Blank	C-57132	0.0484	1	0.01	0.02	mg/L	0.05	0	97	49 - 120% PASS
87346-MS1	TMDL-R4	C-57132	0.0474	1	0.01	0.02	mg/L	0.05	0	95	80 - 120% PASS
87346-MS2	TMDL-R4	C-57132	0.0481	1	0.01	0.02	mg/L	0.05	0	96	80 - 120% PASS
87346-R2	TMDL-R4	C-57132	ND	1	0.01	0.02	mg/L				

Total Dissolved Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 09-Jun-21		Analyzed: 16-Jun-21	
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87343-B1	QAQC Procedural Blank	C-57142	ND	1	0.016	0.03	mg/L				
87343-BS1	QAQC Procedural Blank	C-57142	0.293	1	0.016	0.03	mg/L	0.3	0	98	86 - 118% PASS
87343-BS2	QAQC Procedural Blank	C-57142	0.298	1	0.016	0.03	mg/L	0.3	0	99	86 - 118% PASS
87348-MS1	TMDL-R3	C-57142	0.316	1	0.016	0.03	mg/L	0.3	0.0184	99	80 - 120% PASS
87348-MS2	TMDL-R3	C-57142	0.32	1	0.016	0.03	mg/L	0.3	0.0184	101	80 - 120% PASS
87348-R2	TMDL-R3	C-57142	ND	1	0.016	0.03	mg/L				

Total Kjeldahl Nitrogen		Method: EPA 351.2		Fraction: NA		Prepared: 22-Jun-21		Analyzed: 23-Jun-21	
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Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
87343-B1	QAQC Procedural Blank	C-56154	ND	1	0.05	0.4	mg/L				
87343-BS1	QAQC Procedural Blank	C-56154	1	1	0.05	0.4	mg/L	1	0	100	90 - 110% PASS
87343-BS2	QAQC Procedural Blank	C-56154	0.965	1	0.05	0.4	mg/L	1	0	96	90 - 110% PASS 4 30 PASS
87344-CRM1	QAQC CRM – TKN QC1	C-56154	12.9	2	0.05	0.4	mg/L	12.5		103	73 - 122% PASS
87345-MS1	TMDL-R4	C-56154	1.01	1	0.05	0.4	mg/L	1	0.132	88	90 - 110% FAIL M
87345-MS2	TMDL-R4	C-56154	0.905	1	0.05	0.4	mg/L	1	0.132	77	90 - 110% FAIL 13 30 PASS M
87345-R2	TMDL-R4	C-56154	0.091	1	0.05	0.4	mg/L				37 30 FAIL J,SL
87346-MS1	TMDL-R4	C-56154	0.99	1	0.05	0.4	mg/L	1	0	99	90 - 110% PASS
87346-MS2	TMDL-R4	C-56154	1.01	1	0.05	0.4	mg/L	1	0	101	90 - 110% PASS 2 30 PASS
87346-R2	TMDL-R4	C-56154	ND	1	0.05	0.4	mg/L				0 30 PASS

Total Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 15-Jun-21		Analyzed: 16-Jun-21			
87343-B1	QAQC Procedural Blank	C-57142	ND	1	0.016	0.02	mg/L				
87343-BS1	QAQC Procedural Blank	C-57142	0.293	1	0.016	0.02	mg/L	0.3	0	98	73 - 131% PASS
87343-BS2	QAQC Procedural Blank	C-57142	0.298	1	0.016	0.02	mg/L	0.3	0	99	73 - 131% PASS 1 25 PASS
87347-MS1	TMDL-R3	C-57142	0.335	1	0.016	0.02	mg/L	0.3	0.0191	105	80 - 120% PASS 25
87347-MS2	TMDL-R3	C-57142	0.339	1	0.016	0.02	mg/L	0.3	0.0191	107	80 - 120% PASS 2 25 PASS
87347-R2	TMDL-R3	C-57142	ND	1	0.016	0.02	mg/L				18 25 PASS

CHAIN OF CUSTODY

TERRA FUTURE ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

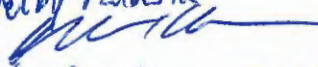
From: Aquatic Bioassay
and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL


To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

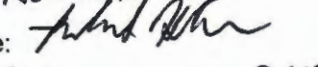
Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL			Water	3-250 mL, pl; 2-250 mL, gl.							no samples collected
TMDL-R4	06/09/2021	0900	Water	3-250 mL, pl; 2-250 mL, gl.	1	1	1	1	1		
TMDL-SA			Water	3-250 mL, pl; 2-250 mL, gl.							no samples collected
TMDL-R3	06/09/2021	1000	Water	3-250 mL, pl; 2-250 mL, gl.	1	1	1	1	1		
TMDL-R2	06/09/2021	1030	Water	3-250 mL, pl; 2-250 mL, gl.	1	1	1	1	1		
TMDL-R1	06/09/2021	1140	Water	3-250 mL, pl; 2-250 mL, gl.	1	1	1	1	1		
TMDL-Est	06/09/2021	1220	Water	3-250 mL, pl; 2-250 mL, gl.	1	1	1	1	1		

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbtrialik@rinconconsultants.c

RELINQUISHED BY
Name: Shelby Palasik
Signature: 
Date: 06/09/2021 Time: 1345

RECEIVED BY
Name: CHARIS SAMIA
Signature: C. Samia
Date: 06/09/21 Time: 1425

RELINQUISHED BY
Name: Shelby Palasik
Signature: 
Date: 06/10/2021 Time: 0945

RECEIVED BY
Name: Richard Hoken
Signature: 
Date: 6/10/21 Time: 945

Project Iteration ID: 2001003-023
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Yellow w/—



Sample Receipt Summary

Receiving Info

1. Initials Received By: RGH
2. Date Received: 6/10/21
3. Time Received: 945
4. Client Name: ABC
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAM5
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 3.3
 Used I/R Thermometer # 1-1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:



August 13, 2021

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-024

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 7/15/2021. A total of 12 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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: 2001003-024

Ventura River Algae TMDL

Total Samples: 12

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
88611	TMDL-R4	Total	7/14/2021	7:50	Samplewater	Not Specified
88612	TMDL-R4	Field Filtered	7/14/2021	7:50	Samplewater	Not Specified
88613	TMDL-R3	Total	7/14/2021	10:00	Samplewater	Not Specified
88614	TMDL-R3	Field Filtered	7/14/2021	10:00	Samplewater	Not Specified
88631	TMDL-R2	Total	7/15/2021	7:40	Samplewater	Not Specified
88632	TMDL-R2	Field Filtered	7/15/2021	7:40	Samplewater	Not Specified
88633	TMDL-R1	Total	7/15/2021	10:25	Samplewater	Not Specified
88634	TMDL-R1	Field Filtered	7/15/2021	10:25	Samplewater	Not Specified
88635	TMDL-Est	Total	7/15/2021	12:15	Samplewater	Not Specified
88636	TMDL-Est	Field Filtered	7/15/2021	12:15	Samplewater	Not Specified
88637	TMDL-R2DUP	Total	7/15/2021	7:40	Samplewater	Not Specified
88638	TMDL-R2DUP	Field Filtered	7/15/2021	7:40	Samplewater	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

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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

PANALYTICAL
REPORT

TERRA AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 88611-R1	TMDL-R4 Total		Matrix: Samplewater				Sampled:	14-Jul-21	7:50	Received:	15-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61008	20-Jul-21	21-Jul-21
Total Phosphorus	SM 4500-P E	mg/L	0.0215	1	0.016	0.02	NA		C-62023	27-Jul-21	30-Jul-21
Sample ID: 88612-R1	TMDL-R4 Field Filtered		Matrix: Samplewater				Sampled:	14-Jul-21	7:50	Received:	15-Jul-21
Nitrate as N	SM 4500-NO3 E	mg/L	1.29	1	0.01	0.02	NA		C-62027	15-Jul-21	10-Aug-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-62009	15-Jul-21	15-Jul-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-62023	27-Jul-21	30-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61008	20-Jul-21	21-Jul-21
Sample ID: 88613-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled:	14-Jul-21	10:00	Received:	15-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.154	1	0.13	0.4	NA	J	C-61008	20-Jul-21	21-Jul-21
Total Phosphorus	SM 4500-P E	mg/L	0.0291	1	0.016	0.02	NA		C-62023	27-Jul-21	30-Jul-21
Sample ID: 88614-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled:	14-Jul-21	10:00	Received:	15-Jul-21
Nitrate as N	SM 4500-NO3 E	mg/L	0.0909	1	0.01	0.02	NA		C-62027	15-Jul-21	10-Aug-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-62009	15-Jul-21	15-Jul-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-62023	27-Jul-21	30-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.137	1	0.13	0.4	NA	J	C-61008	20-Jul-21	21-Jul-21
Sample ID: 88631-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled:	15-Jul-21	7:40	Received:	16-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.656	1	0.13	0.4	NA		C-61008	20-Jul-21	21-Jul-21
Total Phosphorus	SM 4500-P E	mg/L	0.241	1	0.016	0.02	NA		C-62023	27-Jul-21	30-Jul-21

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 88632-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled:	15-Jul-21	7:40	Received:	16-Jul-21
Nitrate as N	SM 4500-NO3 E	mg/L	3.02	1	0.01	0.02	NA	C-62027		16-Jul-21	10-Aug-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA	C-62013		16-Jul-21	16-Jul-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.204	1	0.016	0.03	NA	C-62023		27-Jul-21	30-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.552	1	0.13	0.4	NA	C-61008		20-Jul-21	21-Jul-21
Sample ID: 88633-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled:	15-Jul-21	10:25	Received:	16-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.579	1	0.13	0.4	NA	C-61008		20-Jul-21	21-Jul-21
Total Phosphorus	SM 4500-P E	mg/L	0.137	1	0.016	0.02	NA	C-62023		27-Jul-21	30-Jul-21
Sample ID: 88634-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled:	15-Jul-21	10:25	Received:	16-Jul-21
Nitrate as N	SM 4500-NO3 E	mg/L	1.21	1	0.01	0.02	NA	C-62027		16-Jul-21	10-Aug-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA	C-62013		16-Jul-21	16-Jul-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0891	1	0.016	0.03	NA	C-62023		27-Jul-21	30-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.497	1	0.13	0.4	NA	C-61008		20-Jul-21	21-Jul-21
Sample ID: 88635-R1	TMDL-Est Total		Matrix: Samplewater				Sampled:	15-Jul-21	12:15	Received:	16-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.811	1	0.13	0.4	NA	C-61008		20-Jul-21	21-Jul-21
Total Phosphorus	SM 4500-P E	mg/L	0.0696	1	0.016	0.02	NA	C-62023		27-Jul-21	30-Jul-21
Sample ID: 88636-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled:	15-Jul-21	12:15	Received:	16-Jul-21
Nitrate as N	SM 4500-NO3 E	mg/L	ND	1	0.01	0.02	NA	C-62027		16-Jul-21	10-Aug-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA	C-62013		16-Jul-21	16-Jul-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0303	1	0.016	0.03	NA	C-62023		27-Jul-21	30-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.591	1	0.13	0.4	NA	C-61008		20-Jul-21	21-Jul-21

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 88637-R1	TMDL-R2DUP Total		Matrix: Samplewater				Sampled:	15-Jul-21	7:40	Received:	16-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.816	1	0.13	0.4	NA		C-61008	20-Jul-21	21-Jul-21
Total Phosphorus	SM 4500-P E	mg/L	0.328	1	0.016	0.02	NA		C-62023	27-Jul-21	30-Jul-21
Sample ID: 88638-R1	TMDL-R2DUP Field Filtered		Matrix: Samplewater				Sampled:	15-Jul-21	7:40	Received:	16-Jul-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.9	1	0.01	0.02	NA		C-62027	16-Jul-21	10-Aug-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-62013	16-Jul-21	16-Jul-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.216	1	0.016	0.03	NA		C-62023	27-Jul-21	30-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.552	1	0.13	0.4	NA		C-61008	20-Jul-21	21-Jul-21

PHYSICS

QUALITY CONTROL

REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
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Nitrate as N		Method: SM 4500-NO ₃ E		Fraction: NA		Prepared: 16-Jul-21		Analyzed: 10-Aug-21	
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88609-B1	QAQC Procedural Blank	C-62027	ND	1	0.01	0.02	mg/L				
88609-BS1	QAQC Procedural Blank	C-62027	0.513	1	0.01	0.02	mg/L	0.5	0	103	68 - 135% PASS
88609-BS2	QAQC Procedural Blank	C-62027	0.496	1	0.01	0.02	mg/L	0.5	0	99	68 - 135% PASS 4 25 PASS
88632-MS1	TMDL-R2	C-62027	3.61	1	0.01	0.02	mg/L	0.5	3.02	118	80 - 120% PASS 25
88632-MS2	TMDL-R2	C-62027	3.51	1	0.01	0.02	mg/L	0.5	3.02	98	80 - 120% PASS 19 25 PASS
88632-R2	TMDL-R2	C-62027	2.91	1	0.01	0.02	mg/L				4 25 PASS

Nitrite as N		Method: SM 4500-NO ₂ B		Fraction: NA		Prepared: 15-Jul-21		Analyzed: 15-Jul-21	
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88609-B1	QAQC Procedural Blank	C-62009	ND	1	0.01	0.02	mg/L				
88609-BS1	QAQC Procedural Blank	C-62009	0.0483	1	0.01	0.02	mg/L	0.05	0	97	49 - 120% PASS
88609-BS2	QAQC Procedural Blank	C-62009	0.0489	1	0.01	0.02	mg/L	0.05	0	98	49 - 120% PASS 2 25 PASS
88612-MS1	TMDL-R4	C-62009	0.0477	1	0.01	0.02	mg/L	0.05	0	95	80 - 120% PASS 25
88612-MS2	TMDL-R4	C-62009	0.0484	1	0.01	0.02	mg/L	0.05	0	97	80 - 120% PASS 2 25 PASS
88612-R2	TMDL-R4	C-62009	ND	1	0.01	0.02	mg/L				0 25 PASS
22895-B1	QAQC Procedural Blank	C-62013	ND	1	0.01	0.02	mg/L				
22895-BS1	QAQC Procedural Blank	C-62013	0.0473	1	0.01	0.02	mg/L	0.05	0	95	49 - 120% PASS
22895-BS2	QAQC Procedural Blank	C-62013	0.0476	1	0.01	0.02	mg/L	0.05	0	95	49 - 120% PASS 0 25 PASS
88632-MS1	TMDL-R2	C-62013	0.0513	1	0.01	0.02	mg/L	0.05	0	103	80 - 120% PASS 25
88632-MS2	TMDL-R2	C-62013	0.0519	1	0.01	0.02	mg/L	0.05	0	104	80 - 120% PASS 1 25 PASS
88632-R2	TMDL-R2	C-62013	ND	1	0.01	0.02	mg/L				0 25 PASS

Total Dissolved Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 27-Jul-21		Analyzed: 30-Jul-21	
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Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
88609-B1	QAQC Procedural Blank	C-62023	ND	1	0.016	0.03	mg/L				
88609-BS1	QAQC Procedural Blank	C-62023	0.29	1	0.016	0.03	mg/L	0.3	0	97	86 - 118% PASS
88609-BS2	QAQC Procedural Blank	C-62023	0.287	1	0.016	0.03	mg/L	0.3	0	96	86 - 118% PASS 1 25 PASS
88612-MS1	TMDL-R4	C-62023	0.294	1	0.016	0.03	mg/L	0.3	0	98	80 - 120% PASS 25
88612-MS2	TMDL-R4	C-62023	0.309	1	0.016	0.03	mg/L	0.3	0	103	80 - 120% PASS 5 25 PASS
88612-R2	TMDL-R4	C-62023	ND	1	0.016	0.03	mg/L				0 25 PASS

Total Kjeldahl Nitrogen		Method: EPA 351.2		Fraction: NA		Prepared: 20-Jul-21		Analyzed: 21-Jul-21			
88609-B1	QAQC Procedural Blank	C-61008	ND	1	0.13	0.4	mg/L				
88609-BS1	QAQC Procedural Blank	C-61008	1.04	1	0.13	0.4	mg/L	1	0	104	90 - 110% PASS
88609-BS2	QAQC Procedural Blank	C-61008	1.04	1	0.13	0.4	mg/L	1	0	104	90 - 110% PASS 0 30 PASS
88610-CRM1	QAQC CRM – TKN QC1	C-61008	13.2	2	0.13	0.4	mg/L	12.5		106	73 - 122% PASS
88612-MS1	TMDL-R4	C-61008	1.11	1	0.13	0.4	mg/L	1	0	111	90 - 110% FAIL M
88612-MS2	TMDL-R4	C-61008	1	1	0.13	0.4	mg/L	1	0	100	90 - 110% PASS 10 30 PASS
88612-R2	TMDL-R4	C-61008	ND	1	0.13	0.4	mg/L				0 30 PASS
88635-MS1	TMDL-Est	C-61008	1.88	1	0.13	0.4	mg/L	1	0.811	107	90 - 110% PASS
88635-MS2	TMDL-Est	C-61008	1.82	1	0.13	0.4	mg/L	1	0.811	101	90 - 110% PASS 6 30 PASS
88635-R2	TMDL-Est	C-61008	0.842	1	0.13	0.4	mg/L				4 30 PASS

Total Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 27-Jul-21		Analyzed: 30-Jul-21			
88609-B1	QAQC Procedural Blank	C-62023	ND	1	0.016	0.02	mg/L				
88609-BS1	QAQC Procedural Blank	C-62023	0.29	1	0.016	0.02	mg/L	0.3	0	97	73 - 131% PASS
88609-BS2	QAQC Procedural Blank	C-62023	0.287	1	0.016	0.02	mg/L	0.3	0	96	73 - 131% PASS 1 25 PASS

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODE
									%	LIMITS	%	LIMITS	
88611-MS1	TMDL-R4	C-62023	0.317	1	0.016	0.02	mg/L	0.3	0.0215	99	80 - 120% PASS	25	
88611-MS2	TMDL-R4	C-62023	0.314	1	0.016	0.02	mg/L	0.3	0.0215	98	80 - 120% PASS	0	25 PASS
88611-R2	TMDL-R4	C-62023	ND	1	0.016	0.02	mg/L					29	25 PASS SL,Q

**CHAIN OF
CUSTODY**

P H A S I S

TERRA FUSION AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

From: Aquatic Bioassay and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-R4	07/14/2021	0750	Water	3-250 mL, pl; 2-250 mL, gl.		✓	✓	✓	✓	✓	
TMDL-SA			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-R3	07/14/2021	1000	Water	3-250 mL, pl; 2-250 mL, gl.		✓	✓	✓	✓	✓	
TMDL-R2			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-R1			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-Est			Water	3-250 mL, pl; 2-250 mL, gl.							

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbtralik@rinconconsultants.co

RELINQUISHED BY Name: <i>Saffron Hollinger</i> Signature: <i>[Signature]</i> Date: 7/14/21 Time: 11:30	RECEIVED BY Name: <i>Shelby Palasik</i> Signature: <i>[Signature]</i> Date: 07/14/2021 Time: 11:30	RELINQUISHED BY Name: <i>Shelby Palasik</i> Signature: <i>[Signature]</i> Date: 07/14/2021 Time: 11:30	RECEIVED BY Name: <i>Sarah Everett</i> Signature: <i>[Signature]</i> Date: 7/15/2021 Time: 9:35
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Project Iteration ID: 2001003-024
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Blue w/dot

Sample Receipt Summary

Receiving Info

1. Initials Received By: SE
2. Date Received: 7/15/2021
3. Time Received: 9:35
4. Client Name: Aquatic Bioassay & Consulting Labs
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - ___ Styrofoam Cooler
 - ___ Boxes
 - None
 - ___ Carboy(s)
 - ___ Carboy Trash Can(s)
 - ___ Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 0
 Used I/R Thermometer # 1-1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:

From: Aquatic Bioassay
and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-R4			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-SA			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-R3			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-R2	07/15/2021	07:40	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R1	07/15/2021	10:25	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-Est	07/15/2021	12:15	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R2 DUP	07/15/2021	07:40	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.co

RELINQUISHED BY
Name: *Sethan Mullins*
Signature: *[Signature]*
Date: 7/15/21 Time: 1340

RECEIVED BY
Name: *Shelby Palasik*
Signature: *[Signature]*
Date: 07/15/2021 Time: 1340

RELINQUISHED BY
Name: *CHARIS SAMIA*
Signature: *[Signature]*
Date: 07/15/21 Time: 1340

RECEIVED BY
Name: *Ben Sprigel*
Signature: *[Signature]*
Date: 7-16-21 Time: 0940

Project Iteration ID: 2001003-024B
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Blue w/dot

Sample Receipt Summary

Receiving Info

1. Initials Received By: BTS
2. Date Received: 7-16-21
3. Time Received: 0940
4. Client Name: ABC
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - ___ Styrofoam Cooler
 - ___ Boxes
 - None
 - ___ Carboy(s)
 - ___ Carboy Trash Can(s)
 - ___ Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 0.2 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:



September 22, 2021

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-026

Dear Karin,


Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 8/12/2021. A total of 10 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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

Rincon Consultants

PHYSIS Project ID: 2001003-026

Ventura River Algae TMDL

Total Samples: 10

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
89901	TMDL-R4	Total	8/11/2021	7:30	Samplewater	Not Specified
89902	TMDL-R4	Field Filtered	8/11/2021	7:30	Samplewater	Not Specified
89903	TMDL-R3	Total	8/11/2021	8:20	Samplewater	Not Specified
89904	TMDL-R3	Field Filtered	8/11/2021	8:20	Samplewater	Not Specified
89905	TMDL-R2	Total	8/11/2021	9:00	Samplewater	Not Specified
89906	TMDL-R2	Field Filtered	8/11/2021	9:00	Samplewater	Not Specified
89907	TMDL-R1	Total	8/11/2021	10:00	Samplewater	Not Specified
89908	TMDL-R1	Field Filtered	8/11/2021	10:00	Samplewater	Not Specified
89909	TMDL-Est	Total	8/11/2021	10:30	Samplewater	Not Specified
89910	TMDL-Est	Field Filtered	8/11/2021	10:30	Samplewater	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

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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

PANALYTICAL

REPORT

TERRA R A AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 89901-R1	TMDL-R4 Total		Matrix: Samplewater				Sampled:	11-Aug-21	7:30	Received:	12-Aug-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61014	31-Aug-21	01-Sep-21
Total Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.02	NA		C-62049	07-Sep-21	07-Sep-21
Sample ID: 89902-R1	TMDL-R4 Field Filtered		Matrix: Samplewater				Sampled:	11-Aug-21	7:30	Received:	12-Aug-21
Nitrate as N	SM 4500-NO3 E	mg/L	1.15	1	0.01	0.02	NA		C-62050	07-Sep-21	07-Sep-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-62034	12-Aug-21	12-Aug-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-62049	07-Sep-21	07-Sep-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61014	31-Aug-21	01-Sep-21
Sample ID: 89903-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled:	11-Aug-21	8:20	Received:	12-Aug-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61014	31-Aug-21	01-Sep-21
Total Phosphorus	SM 4500-P E	mg/L	0.031	1	0.016	0.02	NA		C-62049	07-Sep-21	07-Sep-21
Sample ID: 89904-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled:	11-Aug-21	8:20	Received:	12-Aug-21
Nitrate as N	SM 4500-NO3 E	mg/L	0.0505	1	0.01	0.02	NA		C-62050	07-Sep-21	07-Sep-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-62034	12-Aug-21	12-Aug-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-62049	07-Sep-21	07-Sep-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61014	31-Aug-21	01-Sep-21
Sample ID: 89905-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled:	11-Aug-21	9:00	Received:	12-Aug-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.501	1	0.13	0.4	NA		C-61014	31-Aug-21	01-Sep-21
Total Phosphorus	SM 4500-P E	mg/L	0.0903	1	0.016	0.02	NA		C-62049	07-Sep-21	07-Sep-21

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 89906-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled:	11-Aug-21 9:00		Received:	12-Aug-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	1.6	1	0.01	0.02	NA		C-62050	07-Sep-21	07-Sep-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-62034	12-Aug-21	12-Aug-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0681	1	0.016	0.03	NA		C-62049	07-Sep-21	07-Sep-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.474	1	0.13	0.4	NA		C-61014	31-Aug-21	01-Sep-21
Sample ID: 89907-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled:	11-Aug-21 10:00		Received:	12-Aug-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.64	1	0.13	0.4	NA		C-61014	31-Aug-21	01-Sep-21
Total Phosphorus	SM 4500-P E	mg/L	0.0605	1	0.016	0.02	NA		C-62049	07-Sep-21	07-Sep-21
Sample ID: 89908-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled:	11-Aug-21 10:00		Received:	12-Aug-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	1.11	1	0.01	0.02	NA		C-62050	07-Sep-21	07-Sep-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-62034	12-Aug-21	12-Aug-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0615	1	0.016	0.03	NA		C-62049	07-Sep-21	07-Sep-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.597	1	0.13	0.4	NA		C-61014	31-Aug-21	01-Sep-21
Sample ID: 89909-R1	TMDL-Est Total		Matrix: Samplewater				Sampled:	11-Aug-21 10:30		Received:	12-Aug-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.537	1	0.13	0.4	NA		C-61014	31-Aug-21	01-Sep-21
Total Phosphorus	SM 4500-P E	mg/L	0.0539	1	0.016	0.02	NA		C-62049	07-Sep-21	07-Sep-21
Sample ID: 89910-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled:	11-Aug-21 10:30		Received:	12-Aug-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	0.258	1	0.01	0.02	NA		C-62050	07-Sep-21	07-Sep-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-62034	12-Aug-21	12-Aug-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0401	1	0.016	0.03	NA		C-62049	07-Sep-21	07-Sep-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.276	1	0.13	0.4	NA	J	C-61014	31-Aug-21	01-Sep-21

PHYSICS

QUALITY CONTROL

REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
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Nitrate as N		Method: SM 4500-NO ₃ E		Fraction: NA		Prepared: 07-Sep-21		Analyzed: 07-Sep-21	
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89899-B1	QAQC Procedural Blank	C-62050	ND	1	0.01	0.02	mg/L				
89899-BS1	QAQC Procedural Blank	C-62050	0.526	1	0.01	0.02	mg/L	0.5	0	105	68 - 135% PASS
89899-BS2	QAQC Procedural Blank	C-62050	0.526	1	0.01	0.02	mg/L	0.5	0	105	68 - 135% PASS
89902-MS1	TMDL-R4	C-62050	1.66	1	0.01	0.02	mg/L	0.5	1.15	102	80 - 120% PASS
89902-MS2	TMDL-R4	C-62050	1.67	1	0.01	0.02	mg/L	0.5	1.15	104	80 - 120% PASS
89902-R2	TMDL-R4	C-62050	1.13	1	0.01	0.02	mg/L				25

Nitrite as N		Method: SM 4500-NO ₂ B		Fraction: NA		Prepared: 12-Aug-21		Analyzed: 12-Aug-21	
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89899-B1	QAQC Procedural Blank	C-62034	ND	1	0.01	0.02	mg/L				
89899-BS1	QAQC Procedural Blank	C-62034	0.0539	1	0.01	0.02	mg/L	0.05	0	108	49 - 120% PASS
89899-BS2	QAQC Procedural Blank	C-62034	0.055	1	0.01	0.02	mg/L	0.05	0	110	49 - 120% PASS
89902-MS1	TMDL-R4	C-62034	0.0554	1	0.01	0.02	mg/L	0.05	0	111	80 - 120% PASS
89902-MS2	TMDL-R4	C-62034	0.0557	1	0.01	0.02	mg/L	0.05	0	111	80 - 120% PASS
89902-R2	TMDL-R4	C-62034	ND	1	0.01	0.02	mg/L				25

Total Dissolved Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 07-Sep-21		Analyzed: 07-Sep-21	
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89899-B1	QAQC Procedural Blank	C-62049	ND	1	0.016	0.03	mg/L				
89899-BS1	QAQC Procedural Blank	C-62049	0.3	1	0.016	0.03	mg/L	0.3	0	100	86 - 118% PASS
89899-BS2	QAQC Procedural Blank	C-62049	0.304	1	0.016	0.03	mg/L	0.3	0	101	86 - 118% PASS
89902-MS1	TMDL-R4	C-62049	0.306	1	0.016	0.03	mg/L	0.3	0	102	80 - 120% PASS
89902-MS2	TMDL-R4	C-62049	0.305	1	0.016	0.03	mg/L	0.3	0	102	80 - 120% PASS
89902-R2	TMDL-R4	C-62049	ND	1	0.016	0.03	mg/L				25

Total Kjeldahl Nitrogen		Method: EPA 351.2		Fraction: NA		Prepared: 31-Aug-21		Analyzed: 01-Sep-21	
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Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE		
89899-B1	QAQC Procedural Blank	C-61014	ND	1	0.13	0.4	mg/L						
89899-BS1	QAQC Procedural Blank	C-61014	0.936	1	0.13	0.4	mg/L	1	0	94	90 - 110% PASS		
89899-BS2	QAQC Procedural Blank	C-61014	0.996	1	0.13	0.4	mg/L	1	0	100	90 - 110% PASS		
89900-CRM1	QAQC CRM – TKN QC1	C-61014	13.4	2	0.13	0.4	mg/L	12.5		107	73 - 122% PASS		
89902-MS1	TMDL-R4	C-61014	1.06	1	0.13	0.4	mg/L	1	0	106	90 - 110% PASS		
89902-MS2	TMDL-R4	C-61014	1.04	1	0.13	0.4	mg/L	1	0	104	90 - 110% PASS		
89902-R2	TMDL-R4	C-61014	ND	1	0.13	0.4	mg/L				0 30 PASS		
89909-MS1	TMDL-Est	C-61014	1.35	1	0.13	0.4	mg/L	1	0.537	81	90 - 110% FAIL	M	
89909-MS2	TMDL-Est	C-61014	1.32	1	0.13	0.4	mg/L	1	0.537	78	90 - 110% FAIL	4 30 PASS	M
89909-R2	TMDL-Est	C-61014	0.474	1	0.13	0.4	mg/L				12 30 PASS		

Total Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 07-Sep-21		Analyzed: 07-Sep-21			
89899-B1	QAQC Procedural Blank	C-62049	ND	1	0.016	0.02	mg/L				
89899-BS1	QAQC Procedural Blank	C-62049	0.3	1	0.016	0.02	mg/L	0.3	0	100	73 - 131% PASS
89899-BS2	QAQC Procedural Blank	C-62049	0.304	1	0.016	0.02	mg/L	0.3	0	101	73 - 131% PASS
89901-MS1	TMDL-R4	C-62049	0.308	1	0.016	0.02	mg/L	0.3	0	103	80 - 120% PASS
89901-MS2	TMDL-R4	C-62049	0.319	1	0.016	0.02	mg/L	0.3	0	106	80 - 120% PASS
89901-R2	TMDL-R4	C-62049	ND	1	0.016	0.02	mg/L				0 25 PASS

CHAIN OF CUSTODY

TERRA FUTURE ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

From: Aquatic Bioassay
and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001


Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL


To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

ANALYSIS

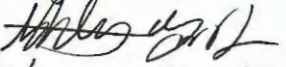
Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	Comments
TMDL-CL			Water	3-250 mL, pl; 2-250 mL, gl.							not sampled
TMDL-R4	8/11/2021	07:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-SA			Water	3-250 mL, pl; 2-250 mL, gl.							not sampled
TMDL-R3	8/11/2021	08:20	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R2	8/11/2021	09:00	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R1	8/11/2021	10:00	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-Est	8/11/2021	10:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbtrialik@rinconconsultants.com

RELINQUISHED BY
Name: Shelby Plasko
Signature: 
Date: 8/11/21 Time: 11:30

RECEIVED BY
Name: 
Signature: 
Date: 8-11-21 Time: 11:50

RELINQUISHED BY
Name:
Signature:
Date: Time:

RECEIVED BY (PHYSIS)
Name: Ashley Gonzalez
Signature: 
Date: 8/11/21 Time: 9:30

Project Iteration ID: 2001003-026
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Light Blue



Sample Receipt Summary

Receiving Info

1. Initials Received By: AG
2. Date Received: 8/11/21
3. Time Received: 9:30
4. Client Name: ABC
5. Courier Information: (Please circle)
 - Client UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - ___ Styrofoam Cooler
 - ___ Boxes
 - None
 - ___ Carboy(s)
 - ___ Carboy Trash Can(s)
 - ___ Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 0-6
 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

TMDL - Est	COC 1030	Notes: Bottle 1000
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November 03, 2021

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Rincon TMDL
Physis Project ID: 2001003-029

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 11/2/2021. A total of 4 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Conventional
Chlorophyll-a by SM 10300 C

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

Rincon Consultants

PHYSIS Project ID: 2001003-029

Rincon TMDL

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
92186	TMDL-R3		9/9/2021	9:00	Biologic	Not Specified
92187	TMDL-R2		9/9/2021	7:40	Biologic	Not Specified
92188	TMDL-R1		9/9/2021	10:15	Biologic	Not Specified
92189	TMDL-EST		9/9/2021	11:15	Biologic	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.

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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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

ANALYTICAL

REPORT

TERRA R AGA AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 92186-R1	TMDL-R3		Matrix: Biologic				Sampled: 09-Sep-21 9:00			Received: 02-Nov-21	
Chlorophyll-a	SM 10300 C	mg/m2	44.3	1	1	2	NA		C-62126	03-Nov-21	03-Nov-21
Sample ID: 92187-R1	TMDL-R2		Matrix: Biologic				Sampled: 09-Sep-21 7:40			Received: 02-Nov-21	
Chlorophyll-a	SM 10300 C	mg/m2	39.3	1	1	2	NA		C-62126	03-Nov-21	03-Nov-21
Sample ID: 92188-R1	TMDL-R1		Matrix: Biologic				Sampled: 09-Sep-21 10:15			Received: 02-Nov-21	
Chlorophyll-a	SM 10300 C	mg/m2	58.8	1	1	2	NA		C-62126	03-Nov-21	03-Nov-21
Sample ID: 92189-R1	TMDL-EST		Matrix: Biologic				Sampled: 09-Sep-21 11:15			Received: 02-Nov-21	
Chlorophyll-a	SM 10300 C	mg/m2	15.2	1	1	2	NA		C-62126	03-Nov-21	03-Nov-21

PHYSICS

QUALITY CONTROL REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
Chlorophyll-a		Method: SM 10300 C			Fraction: NA			Prepared: 03-Nov-21			Analyzed: 03-Nov-21
92185-B1	QAQC Procedural Blank	C-62126	ND	1	1	2	mg/m2				
92185-BS1	QAQC Procedural Blank	C-62126	42.7	1	1	2	mg/m2	40.6	0	105	70 - 130% PASS
92185-BS2	QAQC Procedural Blank	C-62126	41.7	1	1	2	mg/m2	40.6	0	103	70 - 130% PASS 2 30 PASS

CHAIN OF CUSTODY

PHYSICS

TERRA FUSION ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Chain of Custody

From: Aquatic Bioassay and Consulting Labs. 29 N. Olive St. Ventura, CA 93001	Phone: (805) 643-5621 Fax: (805) 643-2930 Project ID: Rincon TMDL	To: Company: Physis Environmental Address: 1904 East Wright Circle Anaheim, California 92806 Phone: (775) 857-2400
--	--	--

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Filter Volume (mL)	Composite Volume (mL)	Area (cm ²)	ANALYSIS						
								Chl-a						
TMDL-R3	8-Sep-21	9:00	fw	1-petri	25	460	25	X						
TMDL-R2	9-Sep-21	7:40	fw	1-petri	25	510	25	X						
TMDL-R1	9-Sep-21	10:15	fw	1-petri	25	460	25	X						
TMDL-EST	9-Sep-21	11:15	fw	1-petri	25	1000	1000	X						

Special Instructions: Please email report to: karin@aquaticbioassay.com
Rush Sample. Please invoice to Aquatic Bioassay and Consulting Labs.

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
<i>Gannic</i>	11/01/21	1300	<i>Rhnd Wh</i>	11/2/21	920						

Project Iteration ID: 2001003-029
 Client Name: Rincon Consultants
 Project Name: Rincon TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

- Initials Received By: RGH
- Date Received: 11/2/21
- Time Received: 9:20
- Client Name: ADC
- Courier Information: (Please circle)
 - Client: UPS Area Fast DRS
 - FedEx GSO/GLS Ontrac PAMS
 - PHYSIS Driver:
 - Start Time: _____
 - End Time: _____
 - Total Mileage: _____
 - Number of Pickups: _____
- Container Information: (Please put the # of containers or circle none)
 - Cooler Styrofoam Cooler Boxes None
 - Carboy(s) Carboy Trash Can(s) Carboy Cap(s) Other _____
- What type of ice was used: (Please circle any that apply)
 - Wet Ice Blue Ice Dry Ice Water None
- Randomly Selected Samples Temperature (°C): -3 Used I/R Thermometer # 1-1

Inspection Info

- Initials Inspected By: RGH

Sample Integrity Upon Receipt:

- COC(s) included and completely filled out..... Yes / No
- All sample containers arrived intact..... Yes / No
- All samples listed on COC(s) are present..... Yes / No
- Information on containers consistent with information on COC(s)..... Yes / No
- Correct containers and volume for all analyses indicated..... Yes / No
- All samples received within method holding time..... Yes / No
- Correct preservation used for all analyses indicated..... Yes / No
- Name of sampler included on COC(s)..... Yes / No

Notes:

Rush



November 15, 2021

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-028

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 10/15/2021. A total of 8 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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,

Rachel Hansen
714 602-5320
Extension 203
rachelhansen@physislabs.com

PROJECT SAMPLE LIST

Rincon Consultants

PHYSIS Project ID: 2001003-028

Ventura River Algae TMDL

Total Samples: 8

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
91285	TMDL-R3	Total	10/14/202	8:25	Samplewater	Not Specified
91286	TMDL-R3	Field Filtered	10/14/202	8:25	Samplewater	Not Specified
91287	TMDL-R2	Total	10/14/202	8:55	Samplewater	Not Specified
91288	TMDL-R2	Field Filtered	10/14/202	8:55	Samplewater	Not Specified
91289	TMDL-R1	Total	10/14/202	9:40	Samplewater	Not Specified
91290	TMDL-R1	Field Filtered	10/14/202	9:40	Samplewater	Not Specified
91291	TMDL-Est	Total	10/14/202	10:10	Samplewater	Not Specified
91292	TMDL-Est	Field Filtered	10/14/202	10:10	Samplewater	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

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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

PANALYTICAL

REPORT

TERRA R AGA AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 91285-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled:	14-Oct-21	8:25	Received:	15-Oct-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA	C-61021		19-Oct-21	20-Oct-21
Total Phosphorus	SM 4500-P E	mg/L	0.031	1	0.016	0.02	NA	C-62100		19-Oct-21	19-Oct-21
Sample ID: 91286-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled:	14-Oct-21	8:25	Received:	15-Oct-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	0.0508	1	0.01	0.02	NA	C-62103		19-Oct-21	20-Oct-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA	C-62092		15-Oct-21	15-Oct-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0305	1	0.016	0.03	NA	C-62100		19-Oct-21	19-Oct-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA	C-61021		19-Oct-21	20-Oct-21
Sample ID: 91287-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled:	14-Oct-21	8:55	Received:	15-Oct-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.579	1	0.13	0.4	NA	C-61021		19-Oct-21	20-Oct-21
Total Phosphorus	SM 4500-P E	mg/L	0.151	1	0.016	0.02	NA	C-62100		19-Oct-21	19-Oct-21
Sample ID: 91288-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled:	14-Oct-21	8:55	Received:	15-Oct-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.57	1	0.01	0.02	NA	C-62103		19-Oct-21	20-Oct-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA	C-62092		15-Oct-21	15-Oct-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0862	1	0.016	0.03	NA	C-62100		19-Oct-21	19-Oct-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.482	1	0.13	0.4	NA	C-61021		19-Oct-21	20-Oct-21
Sample ID: 91289-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled:	14-Oct-21	9:40	Received:	15-Oct-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.43	1	0.13	0.4	NA	C-61021		19-Oct-21	20-Oct-21
Total Phosphorus	SM 4500-P E	mg/L	0.0686	1	0.016	0.02	NA	C-62100		19-Oct-21	19-Oct-21

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 91290-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled:	14-Oct-21 9:40		Received:	15-Oct-21
Nitrate as N	SM 4500-NO3 E	mg/L	1.76	1	0.01	0.02	NA		C-62103	19-Oct-21	20-Oct-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-62092	15-Oct-21	15-Oct-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0512	1	0.016	0.03	NA		C-62100	19-Oct-21	19-Oct-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.367	1	0.13	0.4	NA	J	C-61021	19-Oct-21	20-Oct-21
Sample ID: 91291-R1	TMDL-Est Total		Matrix: Samplewater				Sampled:	14-Oct-21 10:10		Received:	15-Oct-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.486	1	0.13	0.4	NA		C-61021	19-Oct-21	20-Oct-21
Total Phosphorus	SM 4500-P E	mg/L	0.0527	1	0.016	0.02	NA		C-62100	19-Oct-21	19-Oct-21
Sample ID: 91292-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled:	14-Oct-21 10:10		Received:	15-Oct-21
Nitrate as N	SM 4500-NO3 E	mg/L	0.205	1	0.01	0.02	NA		C-62103	19-Oct-21	20-Oct-21
Nitrite as N	SM 4500-NO2 B	mg/L	0.0149	1	0.01	0.02	NA	J	C-62092	15-Oct-21	15-Oct-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0341	1	0.016	0.03	NA		C-62100	19-Oct-21	19-Oct-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.41	1	0.13	0.4	NA		C-61021	19-Oct-21	20-Oct-21

PHYSICS

QUALITY CONTROL

REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
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Nitrate as N		Method: SM 4500-NO ₃ E		Fraction: NA		Prepared: 19-Oct-21		Analyzed: 20-Oct-21			
91283-B1	QAQC Procedural Blank	C-62103	ND	1	0.01	0.02	mg/L				
91283-BS1	QAQC Procedural Blank	C-62103	0.511	1	0.01	0.02	mg/L	0.5	0	102	68 - 135% PASS
91283-BS2	QAQC Procedural Blank	C-62103	0.508	1	0.01	0.02	mg/L	0.5	0	102	68 - 135% PASS
91288-MS1	TMDL-R2	C-62103	3.1	1	0.01	0.02	mg/L	0.5	2.57	106	80 - 120% PASS
91288-MS2	TMDL-R2	C-62103	3.08	1	0.01	0.02	mg/L	0.5	2.57	102	80 - 120% PASS
91288-R2	TMDL-R2	C-62103	2.6	1	0.01	0.02	mg/L				1 25 PASS

Nitrite as N		Method: SM 4500-NO ₂ B		Fraction: NA		Prepared: 15-Oct-21		Analyzed: 15-Oct-21			
91283-B1	QAQC Procedural Blank	C-62092	ND	1	0.01	0.02	mg/L				
91283-BS1	QAQC Procedural Blank	C-62092	0.0468	1	0.01	0.02	mg/L	0.05	0	94	49 - 120% PASS
91283-BS2	QAQC Procedural Blank	C-62092	0.0476	1	0.01	0.02	mg/L	0.05	0	95	49 - 120% PASS
91286-MS1	TMDL-R3	C-62092	0.0458	1	0.01	0.02	mg/L	0.05	0	92	80 - 120% PASS
91286-MS2	TMDL-R3	C-62092	0.0462	1	0.01	0.02	mg/L	0.05	0	92	80 - 120% PASS
91286-R2	TMDL-R3	C-62092	ND	1	0.01	0.02	mg/L				0 25 PASS

Total Dissolved Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 19-Oct-21		Analyzed: 19-Oct-21			
91283-B1	QAQC Procedural Blank	C-62100	ND	1	0.016	0.03	mg/L				
91283-BS1	QAQC Procedural Blank	C-62100	0.307	1	0.016	0.03	mg/L	0.3	0	102	86 - 118% PASS
91283-BS2	QAQC Procedural Blank	C-62100	0.312	1	0.016	0.03	mg/L	0.3	0	104	86 - 118% PASS
91286-MS1	TMDL-R3	C-62100	0.351	1	0.016	0.03	mg/L	0.3	0.0305	107	80 - 120% PASS
91286-MS2	TMDL-R3	C-62100	0.337	1	0.016	0.03	mg/L	0.3	0.0305	102	80 - 120% PASS
91286-R2	TMDL-R3	C-62100	0.0443	1	0.016	0.03	mg/L				37 25 FAIL SL

Total Kjeldahl Nitrogen		Method: EPA 351.2		Fraction: NA		Prepared: 19-Oct-21		Analyzed: 20-Oct-21	
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Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
91283-B1	QAQC Procedural Blank	C-61021	ND	1	0.13	0.4	mg/L				
91283-BS1	QAQC Procedural Blank	C-61021	1.45	1	0.13	0.4	mg/L	1.5	0	97	90 - 110% PASS
91283-BS2	QAQC Procedural Blank	C-61021	1.44	1	0.13	0.4	mg/L	1.5	0	96	90 - 110% PASS 1 30 PASS
91284-CRM1	QAQC CRM – TKN QC1	C-61021	12	1	0.13	0.4	mg/L	12.5		96	73 - 122% PASS
91286-MS1	TMDL-R3	C-61021	1.39	1	0.13	0.4	mg/L	1.5	0	93	90 - 110% PASS
91286-MS2	TMDL-R3	C-61021	1.45	1	0.13	0.4	mg/L	1.5	0	97	90 - 110% PASS 4 30 PASS
91286-R2	TMDL-R3	C-61021	ND	1	0.13	0.4	mg/L				0 30 PASS
91291-MS1	TMDL-Est	C-61021	2.12	1	0.13	0.4	mg/L	1.5	0.486	109	90 - 110% PASS
91291-MS2	TMDL-Est	C-61021	1.84	1	0.13	0.4	mg/L	1.5	0.486	90	90 - 110% PASS 19 30 PASS
91291-R2	TMDL-Est	C-61021	0.426	1	0.13	0.4	mg/L				13 30 PASS

Total Phosphorus		Method: SM 4500-P E	Fraction: NA	Prepared: 19-Oct-21	Analyzed: 19-Oct-21
91283-B1	QAQC Procedural Blank	C-62100	ND	1	0.016 0.02 mg/L
91283-BS1	QAQC Procedural Blank	C-62100	0.307	1	0.016 0.02 mg/L 0.3 0 102 73 - 131% PASS
91283-BS2	QAQC Procedural Blank	C-62100	0.312	1	0.016 0.02 mg/L 0.3 0 104 73 - 131% PASS 2 25 PASS
91291-MS1	TMDL-Est	C-62100	0.349	1	0.016 0.02 mg/L 0.3 0.0527 99 80 - 120% PASS 25
91291-MS2	TMDL-Est	C-62100	0.351	1	0.016 0.02 mg/L 0.3 0.0527 99 80 - 120% PASS 0 25 PASS
91291-R2	TMDL-Est	C-62100	0.055	1	0.016 0.02 mg/L 4 25 PASS

CHAIN OF CUSTODY

TERRA FUTURE ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

From: Aquatic Bioassay and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL			Water	3-250 mL, pl; 2-250 mL, gl							} NOT COLLECTED
TMDL-R4			Water	3-250 mL, pl; 2-250 mL, gl							
TMDL-SA			Water	3-250 mL, pl; 2-250 mL, gl							
TMDL-R3	10/14/2021	08:25	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	
TMDL-R2	10/14/2021	08:55	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	
TMDL-R1	10/14/2021	09:40	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	
TMDL-Est	10/14/2021	10:10	Water	3-250 mL, pl; 2-250 mL, gl	1	X	X	X	X	X	
										X	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.co

RELINQUISHED BY
Name: *Shelby Pelasite*
Signature: *[Signature]*
Date: 10/14/2021 Time: 11:00

RECEIVED BY
Name: *[Signature]*
Signature: *[Signature]*
Date: 10-14-21 Time: 11:00

RELINQUISHED BY
Name:
Signature:
Date: Time:

RECEIVED BY
Name: Ashley Gonzalez
Signature: *[Signature]*
Date: 10/15/21 Time: 9:35



Project Iteration ID: 2001003-028
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: White w/dot

Sample Receipt Summary

Receiving Info

1. Initials Received By: AG
2. Date Received: 10/15/21
3. Time Received: 9:35
4. Client Name: ABC
5. Courier Information: (Please circle)
 - Client UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 2 Cooler
 - ___ Styrofoam Cooler
 - ___ Boxes
 - None
 - ___ Carboy(s)
 - ___ Carboy Trash Can(s)
 - ___ Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): -0.4
 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: BH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:



March 14, 2022

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-030

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 11/11/2021. A total of 8 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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,

Rachel Hansen
714 602-5320
Extension 203
rachelhansen@physislabs.com

PROJECT SAMPLE LIST

Rincon Consultants

PHYSIS Project ID: 2001003-030

Ventura River Algae TMDL

Total Samples: 8

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
92584	TMDL-R3	Total	11/10/202	8:50	Samplewater	Not Specified
92585	TMDL-R3	Field Filtered	11/10/202	8:50	Samplewater	Not Specified
92586	TMDL-R2	Total	11/10/202	9:35	Samplewater	Not Specified
92587	TMDL-R2	Field Filtered	11/10/202	9:35	Samplewater	Not Specified
92588	TMDL-R1	Total	11/10/202	10:25	Samplewater	Not Specified
92589	TMDL-R1	Field Filtered	11/10/202	10:25	Samplewater	Not Specified
92590	TMDL-Est	Total	11/10/202	11:10	Samplewater	Not Specified
92591	TMDL-Est	Field Filtered	11/10/202	11:10	Samplewater	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

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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

PANALYTICAL

REPORT

TERRA R AGA AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 92584-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled:	10-Nov-21	8:50	Received:	11-Nov-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61034	01-Dec-21	02-Dec-21
Total Phosphorus	SM 4500-P E	mg/L	0.0279	1	0.016	0.02	NA		C-63007	06-Dec-21	07-Dec-21
Sample ID: 92585-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled:	10-Nov-21	8:50	Received:	11-Nov-21
Nitrate as N	SM 4500-NO3 E	mg/L	0.35	10	0.01	0.02	NA		C-63062	07-Dec-21	07-Dec-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-62142	11-Nov-21	11-Nov-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63009	08-Dec-21	09-Dec-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61034	01-Dec-21	02-Dec-21
Sample ID: 92586-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled:	10-Nov-21	9:35	Received:	11-Nov-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.404	1	0.13	0.4	NA		C-61034	01-Dec-21	02-Dec-21
Total Phosphorus	SM 4500-P E	mg/L	0.047	1	0.016	0.02	NA		C-63007	06-Dec-21	07-Dec-21
Sample ID: 92587-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled:	10-Nov-21	9:35	Received:	11-Nov-21
Nitrate as N	SM 4500-NO3 E	mg/L	2.71	1	0.01	0.02	NA		C-63062	07-Dec-21	07-Dec-21
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-62142	11-Nov-21	11-Nov-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0396	1	0.016	0.03	NA		C-63009	08-Dec-21	09-Dec-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.727	1	0.13	0.4	NA		C-61034	01-Dec-21	02-Dec-21
Sample ID: 92588-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled:	10-Nov-21	10:25	Received:	11-Nov-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.368	1	0.13	0.4	NA	J	C-61034	01-Dec-21	02-Dec-21
Total Phosphorus	SM 4500-P E	mg/L	0.0548	1	0.016	0.02	NA		C-63007	06-Dec-21	07-Dec-21

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 92589-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled:	10-Nov-21 10:25		Received:	11-Nov-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	1.64	1	0.01	0.02	NA		C-63062	07-Dec-21	07-Dec-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-62142	11-Nov-21	11-Nov-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0313	1	0.016	0.03	NA		C-63009	08-Dec-21	09-Dec-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.346	1	0.13	0.4	NA	J	C-61034	01-Dec-21	02-Dec-21
Sample ID: 92590-R1	TMDL-Est Total		Matrix: Samplewater				Sampled:	10-Nov-21 11:10		Received:	11-Nov-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.364	1	0.13	0.4	NA	J	C-61034	01-Dec-21	02-Dec-21
Total Phosphorus	SM 4500-P E	mg/L	0.037	1	0.016	0.02	NA		C-63007	06-Dec-21	07-Dec-21
Sample ID: 92591-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled:	10-Nov-21 11:10		Received:	11-Nov-21
Nitrate as N	SM 4500-NO ₃ E	mg/L	0.414	1	0.01	0.02	NA		C-63062	07-Dec-21	07-Dec-21
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-62142	11-Nov-21	11-Nov-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0163	1	0.016	0.03	NA	J	C-63009	08-Dec-21	09-Dec-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.396	1	0.13	0.4	NA	J	C-61034	01-Dec-21	02-Dec-21

PHYSICS

QUALITY CONTROL

REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
Nitrate as N											
Method: SM 4500-NO₃ E		Fraction: NA			Prepared: 07-Dec-21				Analyzed: 07-Dec-21		
92582-B1	QAQC Procedural Blank	C-63062	ND	1	0.01	0.02	mg/L				
92582-BS1	QAQC Procedural Blank	C-63062	2.65	1	0.01	0.02	mg/L	2.5	0	106	68 - 135% PASS
92582-BS2	QAQC Procedural Blank	C-63062	2.72	1	0.01	0.02	mg/L	2.5	0	109	68 - 135% PASS 3 25 PASS
92585-MS1	TMDL-R3	C-63062	27.5	10	0.01	0.02	mg/L	25	0.35	109	80 - 120% PASS 25
92585-MS2	TMDL-R3	C-63062	27.9	10	0.01	0.02	mg/L	25	0.35	110	80 - 120% PASS 1 25 PASS
92585-R2	TMDL-R3	C-63062	0.13	10	0.01	0.02	mg/L				92 25 FAIL R
Nitrite as N											
Method: SM 4500-NO₂ B		Fraction: NA			Prepared: 11-Nov-21				Analyzed: 11-Nov-21		
92582-B1	QAQC Procedural Blank	C-62142	ND	1	0.01	0.02	mg/L				
92582-BS1	QAQC Procedural Blank	C-62142	0.047	1	0.01	0.02	mg/L	0.05	0	94	49 - 120% PASS
92582-BS2	QAQC Procedural Blank	C-62142	0.0468	1	0.01	0.02	mg/L	0.05	0	94	49 - 120% PASS 0 25 PASS
Total Dissolved Phosphorus											
Method: SM 4500-P E		Fraction: NA			Prepared: 08-Dec-21				Analyzed: 09-Dec-21		
92582-B1	QAQC Procedural Blank	C-63009	ND	1	0.016	0.03	mg/L				
92582-BS1	QAQC Procedural Blank	C-63009	0.296	1	0.016	0.03	mg/L	0.3	0	99	86 - 118% PASS
92582-BS2	QAQC Procedural Blank	C-63009	0.311	1	0.016	0.03	mg/L	0.3	0	104	86 - 118% PASS 5 25 PASS
Total Kjeldahl Nitrogen											
Method: EPA 351.2		Fraction: NA			Prepared: 01-Dec-21				Analyzed: 02-Dec-21		
92582-B1	QAQC Procedural Blank	C-61034	ND	1	0.13	0.4	mg/L				
92582-BS1	QAQC Procedural Blank	C-61034	2.44	1	0.13	0.4	mg/L	2.5	0	98	90 - 110% PASS
92582-BS2	QAQC Procedural Blank	C-61034	2.44	1	0.13	0.4	mg/L	2.5	0	98	90 - 110% PASS 0 30 PASS
92583-CRM1	QAQC CRM – TKN QC1 575	C-61034	12	1	0.13	0.4	mg/L	12.5		96	73 - 122% PASS

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE	
575												
Total Phosphorus		Method: SM 4500-P E			Fraction: NA			Prepared: 06-Dec-21			Analyzed: 07-Dec-21	
92582-B1	QAQC Procedural Blank	C-63007	ND	1	0.016	0.02	mg/L					
92582-BS1	QAQC Procedural Blank	C-63007	0.3	1	0.016	0.02	mg/L	0.3	0	100	73 - 131% PASS	
92582-BS2	QAQC Procedural Blank	C-63007	0.305	1	0.016	0.02	mg/L	0.3	0	102	73 - 131% PASS 2 25 PASS	

CHAIN OF CUSTODY

TERRA FUTURE ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

From: Aquatic Bioassay and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL			Water	3-250 mL, pl; 2-250 mL, gl.							} NOT SAMPLED
TMDL-R4			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-SA			Water	3-250 mL, pl; 2-250 mL, gl.							
TMDL-R3	11/10/2021	0850	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R2	11/10/2021	0935	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R1	11/10/2021	1025	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-Est	11/10/2021	11:10	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbtralik@rinconconsultants.com

RELINQUISHED BY
Name: Shelby Palasik
Signature: *[Signature]*
Date: 11/10/2021 Time: 1230

RECEIVED BY
Name: *[Signature]*
Signature: *[Signature]*
Date: 11-10-21 Time: 1230

RELINQUISHED BY
Name:
Signature:
Date: Time:

RECEIVED BY *PHYSIS*
Name: Ashley Gonzalez
Signature: *[Signature]*
Date: 11/11/21 Time: 9:20

Project Iteration ID: 2001003-030
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Orange w/—



Sample Receipt Summary

Receiving Info

1. Initials Received By: AG
2. Date Received: 11/11/21
3. Time Received: 9:20
4. Client Name: ABC
5. Courier Information: (Please circle)
 - Client UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - ___ Styrofoam Cooler
 - ___ Boxes
 - None
 - ___ Carboy(s)
 - ___ Carboy Trash Can(s)
 - ___ Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): -1.4
 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:

TKW bottles (Total & Dissolved) for TMDL-R2 and TMDL-R1 were not preserved. We preserved it at the lab,



March 14, 2022

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-031

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 12/9/2021. A total of 8 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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,

Rachel Hansen
714 602-5320
Extension 203
rachelhansen@physislabs.com

PROJECT SAMPLE LIST

Rincon Consultants

PHYSIS Project ID: 2001003-031

Ventura River Algae TMDL

Total Samples: 8

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
93067	TMDL-R3	Total	12/8/2021	9:12	Samplewater	Not Specified
93068	TMDL-R3	Field Filtered	12/8/2021	9:12	Samplewater	Not Specified
93069	TMDL-R2	Total	12/8/2021	9:53	Samplewater	Not Specified
93070	TMDL-R2	Field Filtered	12/8/2021	9:53	Samplewater	Not Specified
93071	TMDL-R1	Total	12/8/2021	10:48	Samplewater	Not Specified
93072	TMDL-R1	Field Filtered	12/8/2021	10:48	Samplewater	Not Specified
93073	TMDL-Est	Total	12/8/2021	11:29	Samplewater	Not Specified
93074	TMDL-Est	Field Filtered	12/8/2021	11:29	Samplewater	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

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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

PANALYTICAL
REPORT

TERRA RAGIA AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 93067-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled: 08-Dec-21 9:12			Received: 09-Dec-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61039	03-Jan-22	04-Jan-22
Total Phosphorus	SM 4500-P E	mg/L	0.0225	1	0.016	0.02	NA		C-63012	10-Dec-21	13-Dec-21
Sample ID: 93068-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled: 08-Dec-21 9:12			Received: 09-Dec-21	
Nitrate as N	SM 4500-NO3 E	mg/L	0.47	10	0.01	0.02	NA		C-63062	04-Jan-22	04-Jan-22
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-63011	10-Dec-21	10-Dec-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.016	1	0.016	0.03	NA	J	C-63012	10-Dec-21	13-Dec-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61039	03-Jan-22	04-Jan-22
Sample ID: 93069-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled: 08-Dec-21 9:53			Received: 09-Dec-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.838	1	0.13	0.4	NA		C-61039	03-Jan-22	04-Jan-22
Total Phosphorus	SM 4500-P E	mg/L	0.0427	1	0.016	0.02	NA		C-63012	10-Dec-21	13-Dec-21
Sample ID: 93070-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled: 08-Dec-21 9:53			Received: 09-Dec-21	
Nitrate as N	SM 4500-NO3 E	mg/L	2.53	1	0.01	0.02	NA		C-63062	04-Jan-22	04-Jan-22
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-63011	10-Dec-21	10-Dec-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0505	1	0.016	0.03	NA		C-63012	10-Dec-21	13-Dec-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.54	1	0.13	0.4	NA		C-61039	03-Jan-22	04-Jan-22
Sample ID: 93071-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled: 08-Dec-21 10:48			Received: 09-Dec-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.592	1	0.13	0.4	NA		C-61039	03-Jan-22	04-Jan-22
Total Phosphorus	SM 4500-P E	mg/L	0.037	1	0.016	0.02	NA		C-63012	10-Dec-21	13-Dec-21

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 93072-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled: 08-Dec-21 10:48			Received: 09-Dec-21	
Nitrate as N	SM 4500-NO ₃ E	mg/L	1.78	1	0.01	0.02	NA		C-63062	04-Jan-22	04-Jan-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-63011	10-Dec-21	10-Dec-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0315	1	0.016	0.03	NA		C-63012	10-Dec-21	13-Dec-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.563	1	0.13	0.4	NA		C-61039	03-Jan-22	04-Jan-22
Sample ID: 93073-R1	TMDL-Est Total		Matrix: Samplewater				Sampled: 08-Dec-21 11:29			Received: 09-Dec-21	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.641	1	0.13	0.4	NA		C-61039	03-Jan-22	04-Jan-22
Total Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.02	NA		C-63012	10-Dec-21	13-Dec-21
Sample ID: 93074-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled: 08-Dec-21 11:29			Received: 09-Dec-21	
Nitrate as N	SM 4500-NO ₃ E	mg/L	0.81	1	0.01	0.02	NA		C-63062	04-Jan-22	04-Jan-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	0.0105	1	0.01	0.02	NA	J	C-63011	10-Dec-21	10-Dec-21
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63012	10-Dec-21	13-Dec-21
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.702	1	0.13	0.4	NA		C-61039	03-Jan-22	04-Jan-22

PHYSICS

QUALITY CONTROL

REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
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Nitrate as N		Method: SM 4500-NO ₃ E		Fraction: NA		Prepared: 04-Jan-22		Analyzed: 04-Jan-22			
93065-B1	QAQC Procedural Blank	C-63062	ND	1	0.01	0.02	mg/L				
93065-BS1	QAQC Procedural Blank	C-63062	2.65	1	0.01	0.02	mg/L	2.5	0	106	68 - 135% PASS
93065-BS2	QAQC Procedural Blank	C-63062	2.72	1	0.01	0.02	mg/L	2.5	0	109	68 - 135% PASS
93068-MS1	TMDL-R3	C-63062	27.9	10	0.01	0.02	mg/L	25	0.47	110	80 - 120% PASS
93068-MS2	TMDL-R3	C-63062	28.1	10	0.01	0.02	mg/L	25	0.47	111	80 - 120% PASS
93068-R2	TMDL-R3	C-63062	0.36	10	0.01	0.02	mg/L				27 25 FAIL Q

Nitrite as N		Method: SM 4500-NO ₂ B		Fraction: NA		Prepared: 10-Dec-21		Analyzed: 10-Dec-21			
93065-B1	QAQC Procedural Blank	C-63011	ND	1	0.01	0.02	mg/L				
93065-BS1	QAQC Procedural Blank	C-63011	0.046	1	0.01	0.02	mg/L	0.05	0	92	49 - 120% PASS
93065-BS2	QAQC Procedural Blank	C-63011	0.0464	1	0.01	0.02	mg/L	0.05	0	93	49 - 120% PASS
93068-MS1	TMDL-R3	C-63011	0.0436	1	0.01	0.02	mg/L	0.05	0	87	80 - 120% PASS
93068-MS2	TMDL-R3	C-63011	0.0443	1	0.01	0.02	mg/L	0.05	0	89	80 - 120% PASS
93068-R2	TMDL-R3	C-63011	ND	1	0.01	0.02	mg/L				0 25 PASS

Total Dissolved Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 10-Dec-21		Analyzed: 13-Dec-21			
93065-B1	QAQC Procedural Blank	C-63012	ND	1	0.016	0.03	mg/L				
93065-BS1	QAQC Procedural Blank	C-63012	0.309	1	0.016	0.03	mg/L	0.3	0	103	86 - 118% PASS
93065-BS2	QAQC Procedural Blank	C-63012	0.301	1	0.016	0.03	mg/L	0.3	0	100	86 - 118% PASS

Total Kjeldahl Nitrogen		Method: EPA 351.2		Fraction: NA		Prepared: 03-Jan-22		Analyzed: 04-Jan-22			
93065-B1	QAQC Procedural Blank	C-61039	ND	1	0.13	0.4	mg/L				
93065-BS1	QAQC Procedural Blank	C-61039	2.44	1	0.13	0.4	mg/L	2.5	0	98	90 - 110% PASS
93065-BS2	QAQC Procedural Blank	C-61039	2.43	1	0.13	0.4	mg/L	2.5	0	97	90 - 110% PASS

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE	
93066-CRM1	QAQC CRM – TKN QC1	12.6	2	0.13	0.4	mg/L	12.5		101	73 - 122%	PASS	
93067-MS1	TMDL-R3	2.7	1	0.13	0.4	mg/L	2.5	0	108	90 - 110%	PASS	
93067-MS2	TMDL-R3	2.75	1	0.13	0.4	mg/L	2.5	0	110	90 - 110%	PASS	
93067-R2	TMDL-R3	ND	1	0.13	0.4	mg/L				0	30	PASS

Total Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 10-Dec-21				Analyzed: 13-Dec-21		
93065-B1	QAQC Procedural Blank	C-63012	ND	1	0.016	0.02	mg/L					
93065-BS1	QAQC Procedural Blank	C-63012	0.309	1	0.016	0.02	mg/L	0.3	0	103	73 - 131%	PASS
93065-BS2	QAQC Procedural Blank	C-63012	0.301	1	0.016	0.02	mg/L	0.3	0	100	73 - 131%	PASS
93067-MS1	TMDL-R3	C-63012	0.321	1	0.016	0.02	mg/L	0.3	0.0225	99	80 - 120%	PASS
93067-MS2	TMDL-R3	C-63012	0.33	1	0.016	0.02	mg/L	0.3	0.0225	102	80 - 120%	PASS
93067-R2	TMDL-R3	C-63012	0.0355	1	0.016	0.02	mg/L			45	25	FAIL

CHAIN OF CUSTODY

PHYSICS

TERRA FUSION ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

From: Aquatic Bioassay and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

ANALYSIS

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	Comments
TMDL-CL	 	 	Water	3-250 mL, pl; 2-250 mL, gl.	 	 	 	 	 	 	Dry
TMDL-R4	 	 	Water	3-250 mL, pl; 2-250 mL, gl.	 	 	 	 	 	 	Dry
TMDL-SA	 	 	Water	3-250 mL, pl; 2-250 mL, gl.	 	 	 	 	 	 	Dry
TMDL-R3	12/08/21	9:12	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R2	12/08/21	9:53	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R1	12/08/21	10:48	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-Est	12/08/21	11:29	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbtralik@rinconconsultants.co

<p>RELINQUISHED BY Name: <i>Sethen Hultinger</i> Signature: <i>[Signature]</i> Date: 12/08/21 Time: 12:26</p>	<p>RECEIVED BY Name: <i>Shelby Palasik</i> Signature: <i>[Signature]</i> Date: 12/08/21 Time: 12:26</p>	<p>RELINQUISHED BY Name: <i>CHARIS SAMIA</i> Signature: <i>[Signature]</i> Date: 12/08/21 Time: 1324</p>	<p>RECEIVED BY Name: <i>Ashley Gonzalez</i> Signature: <i>[Signature]</i> Date: 12/9/21 Time: 9:30</p>
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Project Iteration ID: 2001003-031
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Purple



Sample Receipt Summary

Receiving Info

1. Initials Received By: AG
2. Date Received: 12/9/21
3. Time Received: 9:30
4. Client Name: ABC
5. Courier Information: (Please circle)
 - Client
 - UPS
 - FedEx
 - GSO/GLS
 - Area Fast
 - Ontrac
 - DRS
 - PAMS
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): -0.3
 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:



March 17, 2022

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-032

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 1/13/2022. 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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,

Rachel Hansen
714 602-5320
Extension 203
rachelhansen@physislabs.com

PROJECT SAMPLE LIST

Rincon Consultants

PHYSIS Project ID: 2001003-032

Ventura River Algae TMDL

Total Samples: 14

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
94897	TMDL-CL	Total	1/12/2022	7:17	Samplewater	Not Specified
94898	TMDL-CL	Field Filtered	1/12/2022	7:17	Samplewater	Not Specified
94899	TMDL-R4	Total	1/12/2022	8:11	Samplewater	Not Specified
94900	TMDL-R4	Field Filtered	1/12/2022	8:11	Samplewater	Not Specified
94901	TMDL-SA	Total	1/12/2022	8:46	Samplewater	Not Specified
94902	TMDL-SA	Field Filtered	1/12/2022	8:46	Samplewater	Not Specified
94903	TMDL-R3	Total	1/12/2022	9:38	Samplewater	Not Specified
94904	TMDL-R3	Field Filtered	1/12/2022	9:38	Samplewater	Not Specified
94905	TMDL-R2	Total	1/12/2022	10:27	Samplewater	Not Specified
94906	TMDL-R2	Field Filtered	1/12/2022	10:27	Samplewater	Not Specified
94907	TMDL-R1	Total	1/12/2022	11:31	Samplewater	Not Specified
94908	TMDL-R1	Field Filtered	1/12/2022	11:31	Samplewater	Not Specified
94909	TMDL-Est	Total	1/12/2022	12:19	Samplewater	Not Specified
94910	TMDL-Est	Field Filtered	1/12/2022	12:19	Samplewater	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 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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	analyte was detected in the procedural blank greater than 10 times the MD
E	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
H	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

PHYSIS

ANALYTICAL

REPORT

TERRA R AGA AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 94897-R1	TMDL-CL Total		Matrix: Samplewater				Sampled:	12-Jan-22	7:17	Received:	13-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	1.74	1	0.13	0.4	NA		C-61043	07-Mar-22	08-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0341	1	0.016	0.02	NA		C-63052	26-Jan-22	26-Jan-22
Sample ID: 94898-R1	TMDL-CL Field Filtered		Matrix: Samplewater				Sampled:	12-Jan-22	7:17	Received:	13-Jan-22
Nitrate as N	SM 4500-NO3 E	mg/L	1.47	10	0.01	0.02	NA		C-63062	08-Feb-22	08-Feb-22
Nitrite as N	SM 4500-NO2 B	mg/L	0.0212	1	0.01	0.02	NA		C-63046	13-Jan-22	13-Jan-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0386	1	0.016	0.03	NA		C-63052	26-Jan-22	26-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	1.56	1	0.13	0.4	NA		C-61043	07-Mar-22	08-Mar-22
Sample ID: 94899-R1	TMDL-R4 Total		Matrix: Samplewater				Sampled:	12-Jan-22	8:11	Received:	13-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.211	1	0.13	0.4	NA	J	C-61043	07-Mar-22	08-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0305	1	0.016	0.02	NA		C-63052	26-Jan-22	26-Jan-22
Sample ID: 94900-R1	TMDL-R4 Field Filtered		Matrix: Samplewater				Sampled:	12-Jan-22	8:11	Received:	13-Jan-22
Nitrate as N	SM 4500-NO3 E	mg/L	3.52	1	0.01	0.02	NA		C-63062	08-Feb-22	08-Feb-22
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-63046	13-Jan-22	13-Jan-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0282	1	0.016	0.03	NA	J	C-63052	26-Jan-22	26-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.174	1	0.13	0.4	NA	J	C-61043	07-Mar-22	08-Mar-22
Sample ID: 94901-R1	TMDL-SA Total		Matrix: Samplewater				Sampled:	12-Jan-22	8:46	Received:	13-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.33	1	0.13	0.4	NA	J	C-61043	07-Mar-22	08-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0672	1	0.016	0.02	NA		C-63052	26-Jan-22	26-Jan-22

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 94902-R1	TMDL-SA Field Filtered		Matrix: Samplewater				Sampled:	12-Jan-22	8:46	Received:	13-Jan-22
Nitrate as N	SM 4500-NO ₃ E	mg/L	3.81	1	0.01	0.02	NA		C-63062	08-Feb-22	08-Feb-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-63046	13-Jan-22	13-Jan-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.065	1	0.016	0.03	NA		C-63052	26-Jan-22	26-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.333	1	0.13	0.4	NA	J	C-61043	07-Mar-22	08-Mar-22
Sample ID: 94903-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled:	12-Jan-22	9:38	Received:	13-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.202	1	0.13	0.4	NA	J	C-61043	07-Mar-22	08-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.022	1	0.016	0.02	NA		C-63052	26-Jan-22	26-Jan-22
Sample ID: 94904-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled:	12-Jan-22	9:38	Received:	13-Jan-22
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.04	1	0.01	0.02	NA		C-63062	08-Feb-22	08-Feb-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-63046	13-Jan-22	13-Jan-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63052	26-Jan-22	26-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.203	1	0.13	0.4	NA	J	C-61043	07-Mar-22	08-Mar-22
Sample ID: 94905-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled:	12-Jan-22	10:27	Received:	13-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.343	1	0.13	0.4	NA	J	C-61043	07-Mar-22	08-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0334	1	0.016	0.02	NA		C-63052	26-Jan-22	26-Jan-22
Sample ID: 94906-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled:	12-Jan-22	10:27	Received:	13-Jan-22
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.5	1	0.01	0.02	NA		C-63062	08-Feb-22	08-Feb-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-63046	13-Jan-22	13-Jan-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0236	1	0.016	0.03	NA	J	C-63052	26-Jan-22	26-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.315	1	0.13	0.4	NA	J	C-61043	07-Mar-22	08-Mar-22

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 94907-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled:	12-Jan-22	11:31	Received:	13-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.791	1	0.13	0.4	NA		C-61043	07-Mar-22	08-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0662	1	0.016	0.02	NA		C-63052	26-Jan-22	26-Jan-22
Sample ID: 94908-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled:	12-Jan-22	11:31	Received:	13-Jan-22
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.19	1	0.01	0.02	NA		C-63062	08-Feb-22	08-Feb-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	0.0132	1	0.01	0.02	NA	J	C-63046	13-Jan-22	13-Jan-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0255	1	0.016	0.03	NA	J	C-63052	26-Jan-22	26-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.485	1	0.13	0.4	NA		C-61043	07-Mar-22	08-Mar-22
Sample ID: 94909-R1	TMDL-Est Total		Matrix: Samplewater				Sampled:	12-Jan-22	12:19	Received:	13-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.424	1	0.13	0.4	NA		C-61043	07-Mar-22	08-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0798	1	0.016	0.02	NA		C-63052	26-Jan-22	26-Jan-22
Sample ID: 94910-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled:	12-Jan-22	12:19	Received:	13-Jan-22
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.12	1	0.01	0.02	NA		C-63062	08-Feb-22	08-Feb-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	0.0132	1	0.01	0.02	NA	J	C-63046	13-Jan-22	13-Jan-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0541	1	0.016	0.03	NA		C-63052	26-Jan-22	26-Jan-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.408	1	0.13	0.4	NA		C-61043	07-Mar-22	08-Mar-22

PHYSICS

QUALITY CONTROL

REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
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Nitrate as N		Method: SM 4500-NO ₃ E		Fraction: NA		Prepared: 08-Feb-22		Analyzed: 08-Feb-22	
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94895-B1	QAQC Procedural Blank	C-63062	ND	1	0.01	0.02	mg/L							
94895-BS1	QAQC Procedural Blank	C-63062	2.65	1	0.01	0.02	mg/L	2.5	0	106	68 - 135% PASS			
94895-BS2	QAQC Procedural Blank	C-63062	2.72	1	0.01	0.02	mg/L	2.5	0	109	68 - 135% PASS	3	25	PASS
94898-MS1	TMDL-CL	C-63062	28.2	10	0.01	0.02	mg/L	25	1.47	107	80 - 120% PASS	25		
94898-MS2	TMDL-CL	C-63062	27.5	10	0.01	0.02	mg/L	25	1.47	104	80 - 120% PASS	3	25	PASS
94898-R2	TMDL-CL	C-63062	1.27	10	0.01	0.02	mg/L					15	25	PASS

Nitrite as N		Method: SM 4500-NO ₂ B		Fraction: NA		Prepared: 13-Jan-22		Analyzed: 13-Jan-22	
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94895-B1	QAQC Procedural Blank	C-63046	ND	1	0.01	0.02	mg/L							
94895-BS1	QAQC Procedural Blank	C-63046	0.0488	1	0.01	0.02	mg/L	0.05	0	98	49 - 120% PASS			
94895-BS2	QAQC Procedural Blank	C-63046	0.0488	1	0.01	0.02	mg/L	0.05	0	98	49 - 120% PASS	0	25	PASS
94898-MS1	TMDL-CL	C-63046	0.0625	1	0.01	0.02	mg/L	0.05	0.0212	83	80 - 120% PASS	25		
94898-MS2	TMDL-CL	C-63046	0.0632	1	0.01	0.02	mg/L	0.05	0.0212	84	80 - 120% PASS	1	25	PASS
94898-R2	TMDL-CL	C-63046	0.0206	1	0.01	0.02	mg/L					3	25	PASS

Total Dissolved Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 26-Jan-22		Analyzed: 26-Jan-22	
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94895-B1	QAQC Procedural Blank	C-63052	ND	1	0.016	0.03	mg/L								
94895-BS1	QAQC Procedural Blank	C-63052	0.306	1	0.016	0.03	mg/L	0.3	0	102	86 - 118% PASS				
94895-BS2	QAQC Procedural Blank	C-63052	0.305	1	0.016	0.03	mg/L	0.3	0	102	86 - 118% PASS	0	25	PASS	
94900-MS1	TMDL-R4	C-63052	0.311	1	0.016	0.03	mg/L	0.3	0.0282	94	80 - 120% PASS	25			
94900-MS2	TMDL-R4	C-63052	0.313	1	0.016	0.03	mg/L	0.3	0.0282	95	80 - 120% PASS	1	25	PASS	
94900-R2	TMDL-R4	C-63052	0.0189	1	0.016	0.03	mg/L					39	25	FAIL	J,SL

Total Kjeldahl Nitrogen		Method: EPA 351.2		Fraction: NA		Prepared: 07-Mar-22		Analyzed: 08-Mar-22	
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Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
94895-B1	QAQC Procedural Blank	C-61043	ND	1	0.13	0.4	mg/L				
94895-BS1	QAQC Procedural Blank	C-61043	2.53	1	0.13	0.4	mg/L	2.5	0	101	90 - 110% PASS
94895-BS2	QAQC Procedural Blank	C-61043	2.48	1	0.13	0.4	mg/L	2.5	0	99	90 - 110% PASS 2 30 PASS
94896-CRM1	QAQC CRM – TKN QC1	C-61043	12.1	2	0.13	0.4	mg/L	12.5	97	73 - 122%	PASS
94897-MS1	TMDL-CL	C-61043	4	1	0.13	0.4	mg/L	2.5	1.74	90	90 - 110% PASS
94897-MS2	TMDL-CL	C-61043	4.23	1	0.13	0.4	mg/L	2.5	1.74	100	90 - 110% PASS 6 30 PASS
94897-R2	TMDL-CL	C-61043	1.42	1	0.13	0.4	mg/L				20 30 PASS

Total Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 26-Jan-22		Analyzed: 26-Jan-22			
94895-B1	QAQC Procedural Blank	C-63052	ND	1	0.016	0.02	mg/L				
94895-BS1	QAQC Procedural Blank	C-63052	0.306	1	0.016	0.02	mg/L	0.3	0	102	73 - 131% PASS
94895-BS2	QAQC Procedural Blank	C-63052	0.305	1	0.016	0.02	mg/L	0.3	0	102	73 - 131% PASS 0 25 PASS

CHAIN OF CUSTODY

TERRA FUTURE ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

From: Aquatic Bioassay and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL	1/12/22	7:17	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-R4	1/12/22	8:11	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-SA	1/12/22	8:46	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-R3	1/12/22	9:38	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-R2	1/12/22	10:27	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-R1	1/12/22	11:31	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-Est	1/12/22	12:19	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.com

RELINQUISHED BY Name: <i>Saffron Hunter</i> Signature: <i>[Signature]</i> Date: 1/12/22 Time: 1:15	RECEIVED BY Name: <i>Shelley Polosik</i> Signature: <i>[Signature]</i> Date: 1/12/22 Time: 13:15	RELINQUISHED BY Name: <i>Saffron Hunter</i> Signature: <i>[Signature]</i> Date: 1/13/22 Time: 8:24	RECEIVED BY Name: <i>Jorge Lopez</i> Signature: <i>[Signature]</i> Date: 1/23/22 Time: 9:24
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Project Iteration ID: 2001003-032
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Pink w/X



Sample Receipt Summary

Receiving Info

1. Initials Received By: JL
2. Date Received: 1/23/22
3. Time Received: 8:24
4. Client Name: Aquatic Bio assay and Consulting Labs
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 3 Cooler
 - ___ Styrofoam Cooler
 - ___ Boxes
 - None
 - ___ Carboy(s)
 - ___ Carboy Trash Can(s)
 - ___ Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 1°C
 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:



March 28, 2022

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-033

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 2/10/2022. 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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,

Rachel Hansen
714 602-5320
Extension 203
rachelhansen@physislabs.com

PROJECT SAMPLE LIST

Rincon Consultants

PHYSIS Project ID: 2001003-033

Ventura River Algae TMDL

Total Samples: 14

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
95342	TMDL-CL	Total	2/9/2022	7:30	Samplewater	Not Specified
95343	TMDL-CL	Field Filtered	2/9/2022	7:30	Samplewater	Not Specified
95344	TMDL-R4	Total	2/9/2022	8:00	Samplewater	Not Specified
95345	TMDL-R4	Field Filtered	2/9/2022	8:00	Samplewater	Not Specified
95346	TMDL-SA	Total	2/9/2022	8:30	Samplewater	Not Specified
95347	TMDL-SA	Field Filtered	2/9/2022	8:30	Samplewater	Not Specified
95348	TMDL-R3	Total	2/9/2022	9:30	Samplewater	Not Specified
95349	TMDL-R3	Field Filtered	2/9/2022	9:30	Samplewater	Not Specified
95350	TMDL-R2	Total	2/9/2022	10:15	Samplewater	Not Specified
95351	TMDL-R2	Field Filtered	2/9/2022	10:15	Samplewater	Not Specified
95352	TMDL-R1	Total	2/9/2022	11:00	Samplewater	Not Specified
95353	TMDL-R1	Field Filtered	2/9/2022	11:00	Samplewater	Not Specified
95354	TMDL-Est	Total	2/9/2022	11:30	Samplewater	Not Specified
95355	TMDL-Est	Field Filtered	2/9/2022	11:30	Samplewater	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 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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

ANALYTICAL

REPORT

TERRA R AGA AURA

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Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 95342-R1	TMDL-CL Total		Matrix: Samplewater					Sampled: 09-Feb-22 7:30		Received: 10-Feb-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.659	1	0.13	0.4	NA		C-61046	16-Mar-22	17-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.02	NA		C-63076	16-Feb-22	18-Feb-22
Sample ID: 95343-R1	TMDL-CL Field Filtered		Matrix: Samplewater					Sampled: 09-Feb-22 7:30		Received: 10-Feb-22	
Nitrate as N	SM 4500-NO3 E	mg/L	ND	1	0.01	0.02	NA		C-63096	03-Mar-22	07-Mar-22
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-63072	10-Feb-22	10-Feb-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63076	16-Feb-22	18-Feb-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.542	1	0.13	0.4	NA		C-61046	16-Mar-22	17-Mar-22
Sample ID: 95344-R1	TMDL-R4 Total		Matrix: Samplewater					Sampled: 09-Feb-22 8:00		Received: 10-Feb-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61046	16-Mar-22	17-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0374	1	0.016	0.02	NA		C-63076	16-Feb-22	18-Feb-22
Sample ID: 95345-R1	TMDL-R4 Field Filtered		Matrix: Samplewater					Sampled: 09-Feb-22 8:00		Received: 10-Feb-22	
Nitrate as N	SM 4500-NO3 E	mg/L	4.75	1	0.01	0.02	NA		C-63096	03-Mar-22	07-Mar-22
Nitrite as N	SM 4500-NO2 B	mg/L	0.01	1	0.01	0.02	NA	J	C-63072	10-Feb-22	10-Feb-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63076	16-Feb-22	18-Feb-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61046	16-Mar-22	17-Mar-22
Sample ID: 95346-R1	TMDL-SA Total		Matrix: Samplewater					Sampled: 09-Feb-22 8:30		Received: 10-Feb-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.3	1	0.13	0.4	NA	J	C-61046	16-Mar-22	17-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0524	1	0.016	0.02	NA		C-63076	16-Feb-22	18-Feb-22

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 95347-R1	TMDL-SA Field Filtered		Matrix: Samplewater				Sampled: 09-Feb-22 8:30			Received: 10-Feb-22	
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.68	1	0.01	0.02	NA		C-63096	03-Mar-22	07-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	0.0135	1	0.01	0.02	NA	J	C-63072	10-Feb-22	10-Feb-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0441	1	0.016	0.03	NA		C-63076	16-Feb-22	18-Feb-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.358	1	0.13	0.4	NA	J	C-61046	16-Mar-22	17-Mar-22
Sample ID: 95348-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled: 09-Feb-22 9:30			Received: 10-Feb-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61046	16-Mar-22	17-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.02	NA		C-63076	16-Feb-22	18-Feb-22
Sample ID: 95349-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled: 09-Feb-22 9:30			Received: 10-Feb-22	
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.66	1	0.01	0.02	NA		C-63096	03-Mar-22	07-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	0.0106	1	0.01	0.02	NA	J	C-63072	10-Feb-22	10-Feb-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63076	16-Feb-22	18-Feb-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.17	1	0.13	0.4	NA	J	C-61046	16-Mar-22	17-Mar-22
Sample ID: 95350-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled: 09-Feb-22 10:15			Received: 10-Feb-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.554	1	0.13	0.4	NA		C-61046	16-Mar-22	17-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0286	1	0.016	0.02	NA		C-63076	16-Feb-22	18-Feb-22
Sample ID: 95351-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled: 09-Feb-22 10:15			Received: 10-Feb-22	
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.83	1	0.01	0.02	NA		C-63096	03-Mar-22	07-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	0.0102	1	0.01	0.02	NA	J	C-63072	10-Feb-22	10-Feb-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0348	1	0.016	0.03	NA		C-63076	16-Feb-22	18-Feb-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.465	1	0.13	0.4	NA		C-61046	16-Mar-22	17-Mar-22

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 95352-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled:	09-Feb-22 11:00		Received:	10-Feb-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.76	1	0.13	0.4	NA		C-61046	16-Mar-22	17-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0267	1	0.016	0.02	NA		C-63076	16-Feb-22	18-Feb-22
Sample ID: 95353-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled:	09-Feb-22 11:00		Received:	10-Feb-22
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.27	1	0.01	0.02	NA		C-63096	03-Mar-22	07-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	0.0152	1	0.01	0.02	NA	J	C-63072	10-Feb-22	10-Feb-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63076	16-Feb-22	18-Feb-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.302	1	0.13	0.4	NA	J	C-61046	16-Mar-22	17-Mar-22
Sample ID: 95354-R1	TMDL-Est Total		Matrix: Samplewater				Sampled:	09-Feb-22 11:30		Received:	10-Feb-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.369	1	0.13	0.4	NA	J	C-61046	16-Mar-22	17-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0363	1	0.016	0.02	NA		C-63076	16-Feb-22	18-Feb-22
Sample ID: 95355-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled:	09-Feb-22 11:30		Received:	10-Feb-22
Nitrate as N	SM 4500-NO ₃ E	mg/L	1.9	1	0.01	0.02	NA		C-63096	03-Mar-22	07-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	0.0152	1	0.01	0.02	NA	J	C-63072	10-Feb-22	10-Feb-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63076	16-Feb-22	18-Feb-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.187	1	0.13	0.4	NA	J	C-61046	16-Mar-22	17-Mar-22

PHYSICS

QUALITY CONTROL REPORT

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Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
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Nitrate as N		Method: SM 4500-NO ₃ E		Fraction: NA		Prepared: 03-Mar-22		Analyzed: 07-Mar-22	
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95340-B1	QAQC Procedural Blank	C-63096	ND	1	0.01	0.02	mg/L				
95340-BS1	QAQC Procedural Blank	C-63096	0.994	1	0.01	0.02	mg/L	1	0	99	68 - 135% PASS
95340-BS2	QAQC Procedural Blank	C-63096	0.996	1	0.01	0.02	mg/L	1	0	100	68 - 135% PASS

Nitrite as N		Method: SM 4500-NO ₂ B		Fraction: NA		Prepared: 10-Feb-22		Analyzed: 10-Feb-22	
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95340-B1	QAQC Procedural Blank	C-63072	ND	1	0.01	0.02	mg/L				
95340-BS1	QAQC Procedural Blank	C-63072	0.0497	1	0.01	0.02	mg/L	0.05	0	99	49 - 120% PASS
95340-BS2	QAQC Procedural Blank	C-63072	0.0504	1	0.01	0.02	mg/L	0.05	0	101	49 - 120% PASS
95343-MS1	TMDL-CL	C-63072	0.0439	1	0.01	0.02	mg/L	0.05	0	88	80 - 120% PASS
95343-MS2	TMDL-CL	C-63072	0.0446	1	0.01	0.02	mg/L	0.05	0	89	80 - 120% PASS
95343-R2	TMDL-CL	C-63072	ND	1	0.01	0.02	mg/L				

Total Dissolved Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 16-Feb-22		Analyzed: 18-Feb-22	
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95340-B1	QAQC Procedural Blank	C-63076	ND	1	0.016	0.03	mg/L				
95340-BS1	QAQC Procedural Blank	C-63076	0.292	1	0.016	0.03	mg/L	0.3	0	97	86 - 118% PASS
95340-BS2	QAQC Procedural Blank	C-63076	0.309	1	0.016	0.03	mg/L	0.3	0	103	86 - 118% PASS
95343-MS1	TMDL-CL	C-63076	0.307	1	0.016	0.03	mg/L	0.3	0	102	80 - 120% PASS
95343-MS2	TMDL-CL	C-63076	0.32	1	0.016	0.03	mg/L	0.3	0	107	80 - 120% PASS
95343-R2	TMDL-CL	C-63076	ND	1	0.016	0.03	mg/L				

Total Kjeldahl Nitrogen		Method: EPA 351.2		Fraction: NA		Prepared: 16-Mar-22		Analyzed: 17-Mar-22	
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95340-B1	QAQC Procedural Blank	C-61046	ND	1	0.13	0.4	mg/L				
95340-BS1	QAQC Procedural Blank	C-61046	2.53	1	0.13	0.4	mg/L	2.5	0	101	90 - 110% PASS
95340-BS2	QAQC Procedural Blank	C-61046	2.48	1	0.13	0.4	mg/L	2.5	0	99	90 - 110% PASS

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE	
95341-CRM1 <small>E7E</small>	QAQC CRM – TKN QC1 C-61046	13	2	0.13	0.4	mg/L	12.5		104	73 - 122% PASS		
Total Phosphorus		Method: SM 4500-P E		Fraction: NA			Prepared: 16-Feb-22			Analyzed: 18-Feb-22		
95340-B1	QAQC Procedural Blank C-63076	ND	1	0.016	0.02	mg/L						
95340-BS1	QAQC Procedural Blank C-63076	0.292	1	0.016	0.02	mg/L	0.3	0	97	73 - 131% PASS		
95340-BS2	QAQC Procedural Blank C-63076	0.309	1	0.016	0.02	mg/L	0.3	0	103	73 - 131% PASS	6 25 PASS	

CHAIN OF CUSTODY

TERRA FUTURE ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature


From: Aquatic Bioassay and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001


Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

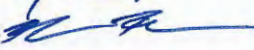
To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Filtered (SM 4500 NO3- NO2- B)	Total Phosphorus (SM 4500 P-C)	Dissolved Phosphorous, Field Filtered (SM 4500-P-E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL	02/09/2022	07:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R4	02/09/2022	08:00	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-SA	02/09/2022	08:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R3	02/09/2022	09:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R2	02/09/2022	10:15	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-R1	02/09/2022	11:00	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	
TMDL-Est	02/09/2022	11:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbirtalik@rinconconsultants.com

RELINQUISHED BY
Name: Shelby Palasik
Signature: 
Date: 02/09/2022 Time: 12:15

RECEIVED BY
Name: Sabrina Humber
Signature: 
Date: 2/9/22 Time: 12:15

RELINQUISHED BY
Name: Shelby Palasik
Signature: 
Date: 02/09/2022 Time: 12:46

RECEIVED BY
Name:
Signature:
Date: Time:

Project Iteration ID: 2001003-033
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: White w/--

Sample Receipt Summary

Receiving Info

1. Initials Received By: AG
2. Date Received: 2/10/22
3. Time Received: 12:40
4. Client Name: ABC
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast ?
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 2.4 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:

~~TMDL~~-R2 Total Phosphorus bottle is missing,
 1x 250 mL w/m Amber w/H₂SO₄ for Total Phosphorus
 had a blank label an no sample in the bottle



April 06, 2022

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-034

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 3/10/2022. 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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

Rincon Consultants

PHYSIS Project ID: 2001003-034

Ventura River Algae TMDL

Total Samples: 14

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
95613	TMDL-CL	Total	3/9/2022	7:25	Samplewater	Not Specified
95614	TMDL-CL	Field Filtered	3/9/2022	7:25	Samplewater	Not Specified
95615	TMDL-R4	Total	3/9/2022	8:11	Samplewater	Not Specified
95616	TMDL-R4	Field Filtered	3/9/2022	8:11	Samplewater	Not Specified
95617	TMDL-SA	Total	3/9/2022	9:02	Samplewater	Not Specified
95618	TMDL-SA	Field Filtered	3/9/2022	9:02	Samplewater	Not Specified
95619	TMDL-R3	Total	3/9/2022	9:59	Samplewater	Not Specified
95620	TMDL-R3	Field Filtered	3/9/2022	9:59	Samplewater	Not Specified
95621	TMDL-R2	Total	3/9/2022	10:56	Samplewater	Not Specified
95622	TMDL-R2	Field Filtered	3/9/2022	10:56	Samplewater	Not Specified
95623	TMDL-R1	Total	3/9/2022	12:03	Samplewater	Not Specified
95624	TMDL-R1	Field Filtered	3/9/2022	12:03	Samplewater	Not Specified
95625	TMDL-Est	Total	3/9/2022	12:43	Samplewater	Not Specified
95626	TMDL-Est	Field Filtered	3/9/2022	12:43	Samplewater	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

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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

PHYSIS

PANALYTICAL
REPORT

TERRA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 95613-R1	TMDL-CL Total		Matrix: Samplewater					Sampled: 09-Mar-22 7:25		Received: 10-Mar-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.578	1	0.13	0.4	NA		C-61047	23-Mar-22	24-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0246	1	0.016	0.02	NA		C-63094	11-Mar-22	11-Mar-22
Sample ID: 95614-R1	TMDL-CL Field Filtered		Matrix: Samplewater					Sampled: 09-Mar-22 7:25		Received: 10-Mar-22	
Nitrate as N	SM 4500-NO ₃ E	mg/L	0.0162	1	0.01	0.02	NA	J	C-63111	11-Mar-22	31-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-63097	10-Mar-22	10-Mar-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63094	11-Mar-22	11-Mar-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.519	1	0.13	0.4	NA		C-61047	23-Mar-22	24-Mar-22
Sample ID: 95615-R1	TMDL-R4 Total		Matrix: Samplewater					Sampled: 09-Mar-22 8:11		Received: 10-Mar-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61047	23-Mar-22	24-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.02	NA		C-63094	11-Mar-22	11-Mar-22
Sample ID: 95616-R1	TMDL-R4 Field Filtered		Matrix: Samplewater					Sampled: 09-Mar-22 8:11		Received: 10-Mar-22	
Nitrate as N	SM 4500-NO ₃ E	mg/L	4.97	10	0.01	0.02	NA		C-63111	11-Mar-22	31-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-63097	10-Mar-22	10-Mar-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63094	11-Mar-22	11-Mar-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61047	23-Mar-22	24-Mar-22
Sample ID: 95617-R1	TMDL-SA Total		Matrix: Samplewater					Sampled: 09-Mar-22 9:02		Received: 10-Mar-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.222	1	0.13	0.4	NA	J	C-61047	23-Mar-22	24-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0339	1	0.016	0.02	NA		C-63094	11-Mar-22	11-Mar-22

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 95618-R1	TMDL-SA Field Filtered		Matrix: Samplewater				Sampled: 09-Mar-22 9:02			Received: 10-Mar-22	
Nitrate as N	SM 4500-NO ₃ E	mg/L	1.58	10	0.01	0.02	NA		C-63111	11-Mar-22	31-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	0.0114	1	0.01	0.02	NA	J	C-63097	10-Mar-22	10-Mar-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63094	11-Mar-22	11-Mar-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.21	1	0.13	0.4	NA	J	C-61047	23-Mar-22	24-Mar-22
Sample ID: 95619-R1	TMDL-R3 Total		Matrix: Samplewater				Sampled: 09-Mar-22 9:59			Received: 10-Mar-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.163	1	0.13	0.4	NA	J	C-61047	23-Mar-22	24-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.017	1	0.016	0.02	NA	J	C-63094	11-Mar-22	11-Mar-22
Sample ID: 95620-R1	TMDL-R3 Field Filtered		Matrix: Samplewater				Sampled: 09-Mar-22 9:59			Received: 10-Mar-22	
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.31	10	0.01	0.02	NA		C-63111	11-Mar-22	31-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-63097	10-Mar-22	10-Mar-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63094	11-Mar-22	11-Mar-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61047	23-Mar-22	24-Mar-22
Sample ID: 95621-R1	TMDL-R2 Total		Matrix: Samplewater				Sampled: 09-Mar-22 10:56			Received: 10-Mar-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.279	1	0.13	0.4	NA	J	C-61047	23-Mar-22	24-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0244	1	0.016	0.02	NA		C-63094	11-Mar-22	11-Mar-22
Sample ID: 95622-R1	TMDL-R2 Field Filtered		Matrix: Samplewater				Sampled: 09-Mar-22 10:56			Received: 10-Mar-22	
Nitrate as N	SM 4500-NO ₃ E	mg/L	2.45	10	0.01	0.02	NA		C-63111	11-Mar-22	31-Mar-22
Nitrite as N	SM 4500-NO ₂ B	mg/L	ND	1	0.01	0.02	NA		C-63097	10-Mar-22	10-Mar-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	ND	1	0.016	0.03	NA		C-63094	11-Mar-22	11-Mar-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.272	1	0.13	0.4	NA	J	C-61047	23-Mar-22	24-Mar-22

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 95623-R1	TMDL-R1 Total		Matrix: Samplewater				Sampled: 09-Mar-22 12:03			Received: 10-Mar-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.39	1	0.13	0.4	NA	J	C-61047	23-Mar-22	24-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.291	1	0.016	0.02	NA		C-63094	11-Mar-22	11-Mar-22
Sample ID: 95624-R1	TMDL-R1 Field Filtered		Matrix: Samplewater				Sampled: 09-Mar-22 12:03			Received: 10-Mar-22	
Nitrate as N	SM 4500-NO3 E	mg/L	1.94	10	0.01	0.02	NA		C-63111	11-Mar-22	31-Mar-22
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-63097	10-Mar-22	10-Mar-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.022	1	0.016	0.03	NA	J	C-63094	11-Mar-22	11-Mar-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.314	1	0.13	0.4	NA	J	C-61047	23-Mar-22	24-Mar-22
Sample ID: 95625-R1	TMDL-Est Total		Matrix: Samplewater				Sampled: 09-Mar-22 12:43			Received: 10-Mar-22	
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.467	1	0.13	0.4	NA		C-61047	23-Mar-22	24-Mar-22
Total Phosphorus	SM 4500-P E	mg/L	0.0736	1	0.016	0.02	NA		C-63094	11-Mar-22	11-Mar-22
Sample ID: 95626-R1	TMDL-Est Field Filtered		Matrix: Samplewater				Sampled: 09-Mar-22 12:43			Received: 10-Mar-22	
Nitrate as N	SM 4500-NO3 E	mg/L	1.66	10	0.01	0.02	NA		C-63111	11-Mar-22	31-Mar-22
Nitrite as N	SM 4500-NO2 B	mg/L	0.0103	1	0.01	0.02	NA	J	C-63097	10-Mar-22	10-Mar-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0253	1	0.016	0.03	NA	J	C-63094	11-Mar-22	11-Mar-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.39	1	0.13	0.4	NA	J	C-61047	23-Mar-22	24-Mar-22

PHYSICS

QUALITY CONTROL

REPORT

TERRA FUSION AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
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Nitrate as N		Method: SM 4500-NO ₃ E		Fraction: NA		Prepared: 11-Mar-22		Analyzed: 31-Mar-22			
95611-B1	QAQC Procedural Blank	C-63111	ND	1	0.01	0.02	mg/L				
95611-BS1	QAQC Procedural Blank	C-63111	1	1	0.01	0.02	mg/L	1	0	100	68 - 135% PASS
95611-BS2	QAQC Procedural Blank	C-63111	0.959	1	0.01	0.02	mg/L	1	0	96	68 - 135% PASS 4 25 PASS
95614-MS1	TMDL-CL	C-63111	0.0632	1	0.01	0.02	mg/L	1	0.0162	5	80 - 120% FAIL 25 M
95614-MS2	TMDL-CL	C-63111	1.04	1	0.01	0.02	mg/L	1	0.0162	102	80 - 120% PASS 181 25 FAIL M
95614-R2	TMDL-CL	C-63111	0.429	1	0.01	0.02	mg/L				185 25 FAIL SL

Nitrite as N		Method: SM 4500-NO ₂ B		Fraction: NA		Prepared: 10-Mar-22		Analyzed: 10-Mar-22			
95611-B1	QAQC Procedural Blank	C-63097	ND	1	0.01	0.02	mg/L				
95611-BS1	QAQC Procedural Blank	C-63097	0.0488	1	0.01	0.02	mg/L	0.05	0	98	49 - 120% PASS
95611-BS2	QAQC Procedural Blank	C-63097	0.0489	1	0.01	0.02	mg/L	0.05	0	98	49 - 120% PASS 0 25 PASS
95614-MS1	TMDL-CL	C-63097	0.0408	1	0.01	0.02	mg/L	0.05	0	82	80 - 120% PASS 25
95614-MS2	TMDL-CL	C-63097	0.0409	1	0.01	0.02	mg/L	0.05	0	82	80 - 120% PASS 0 25 PASS
95614-R2	TMDL-CL	C-63097	ND	1	0.01	0.02	mg/L				0 25 PASS

Total Dissolved Phosphorus		Method: SM 4500-P E		Fraction: NA		Prepared: 11-Mar-22		Analyzed: 11-Mar-22			
95611-B1	QAQC Procedural Blank	C-63094	ND	1	0.016	0.03	mg/L				
95611-BS1	QAQC Procedural Blank	C-63094	0.303	1	0.016	0.03	mg/L	0.3	0	101	86 - 118% PASS
95611-BS2	QAQC Procedural Blank	C-63094	0.315	1	0.016	0.03	mg/L	0.3	0	105	86 - 118% PASS 4 25 PASS

Total Kjeldahl Nitrogen		Method: EPA 351.2		Fraction: NA		Prepared: 23-Mar-22		Analyzed: 24-Mar-22			
95611-B1	QAQC Procedural Blank	C-61047	ND	1	0.13	0.4	mg/L				
95611-BS1	QAQC Procedural Blank	C-61047	2.44	1	0.13	0.4	mg/L	2.5	0	98	90 - 110% PASS
95611-BS2	QAQC Procedural Blank	C-61047	2.53	1	0.13	0.4	mg/L	2.5	0	101	90 - 110% PASS 3 30 PASS

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
95612-CRM1	QAQC CRM – TKN QC1	13.4	2	0.13	0.4	mg/L	12.5		107	73 - 122%	PASS
95613-MS1	TMDL-CL	3.01	1	0.13	0.4	mg/L	2.5	0.578	97	90 - 110%	PASS
95613-MS2	TMDL-CL	3.05	1	0.13	0.4	mg/L	2.5	0.578	99	90 - 110%	PASS
95613-R2	TMDL-CL	0.522	1	0.13	0.4	mg/L				10	30 PASS

Total Phosphorus	Method: SM 4500-P E	Fraction: NA						Prepared: 11-Mar-22	Analyzed: 11-Mar-22
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95611-B1	QAQC Procedural Blank	C-63094	ND	1	0.016	0.02	mg/L				
95611-BS1	QAQC Procedural Blank	C-63094	0.303	1	0.016	0.02	mg/L	0.3	0	101	73 - 131% PASS
95611-BS2	QAQC Procedural Blank	C-63094	0.315	1	0.016	0.02	mg/L	0.3	0	105	73 - 131% PASS

**CHAIN OF
CUSTODY**

P H A S I S

TERRA FUSION AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

From: Aquatic Bioassay
and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: **Company:** PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS					Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)	
TMDL-CL	3/9/22	7:25	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-R4	3/9/22	8:11	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-SA	3/9/22	9:02	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-R3	3/9/22	9:59	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-R2	3/9/22	10:56	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-R1	3/9/22	12:05	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	
TMDL-Est	3/9/22	12:43	Water	3-250 mL, pl; 2-250 mL, gl.	1	✓	✓	✓	✓	✓	

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.com

RELINQUISHED BY
Name: Saffron Hullinger
Signature: *Saffron Hullinger*
Date: 3/9/22 Time: 13:17

RECEIVED BY
Name: Shelby Palanik
Signature: *Shelby Palanik*
Date: 3/9/2022 Time: 13:17

RELINQUISHED BY
Name: Saffron Hullinger
Signature: *Saffron Hullinger*
Date: 3/9/22 Time: 14:30

RECEIVED BY
Name: Jorge Lopez
Signature: *Jorge Lopez*
Date: 3/10/22 Time: 12:00

Project Iteration ID: 2001003-034
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: White

Sample Receipt Summary

Receiving Info

1. Initials Received By: JL
2. Date Received: 3/10/22
3. Time Received: 12:00
4. Client Name: ABC Lab
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 0.7 Used I/R Thermometer # 1

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:



May 02, 2022

Karin Wisenbaker
Aquatic Bioassay & Consulting Laboratories, Inc.
29 N. Olive Street
Ventura, CA 93001

Project Name: Ventura River Algae TMDL
Physis Project ID: 2001003-035

Dear Karin,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 4/14/2022. A total of 12 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 Kjeldahl Nitrogen (Field Filtered) by EPA 351.2
Total Kjeldahl Nitrogen by EPA 351.2
Total Dissolved Phosphorus by SM 4500-P E
Nitrite as N by SM 4500-NO ₂ B
Nitrate as N by SM 4500-NO ₃ E

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,

Rachel Hansen
714 602-5320
Extension 203
rachelhansen@physislabs.com

PROJECT SAMPLE LIST

Rincon Consultants

PHYSIS Project ID: 2001003-035

Ventura River Algae TMDL

Total Samples: 12

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
96406	TMDL-R4	Total	4/13/2022	8:05	Samplewater	Not Specified
96407	TMDL-R4	Field Filtered	4/13/2022	8:05	Samplewater	Not Specified
96408	TMDL-SA	Total	4/13/2022	8:30	Samplewater	Not Specified
96409	TMDL-SA	Field Filtered	4/13/2022	8:30	Samplewater	Not Specified
96410	TMDL-R3	Total	4/13/2022	9:10	Samplewater	Not Specified
96411	TMDL-R3	Field Filtered	4/13/2022	9:10	Samplewater	Not Specified
96412	TMDL-R2	Total	4/13/2022	9:50	Samplewater	Not Specified
96413	TMDL-R2	Field Filtered	4/13/2022	9:50	Samplewater	Not Specified
96414	TMDL-R1	Total	4/13/2022	10:40	Samplewater	Not Specified
96415	TMDL-R1	Field Filtered	4/13/2022	10:40	Samplewater	Not Specified
96416	TMDL-Est	Total	4/13/2022	11:20	Samplewater	Not Specified
96417	TMDL-Est	Field Filtered	4/13/2022	11:20	Samplewater	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 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 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.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	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
H	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

ANALYTICAL REPORT

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Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 96406-R1 TMDL-R4 Total											
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61051	02-May-22	14-Apr-22
Total Phosphorus	SM 4500-P E	mg/L	0.103	1	0.016	0.02	NA		C-63132	18-Apr-22	18-Apr-22
Sample ID: 96407-R1 TMDL-R4 Field Filtered											
Nitrate as N	SM 4500-NO3 E	mg/L	1.79	10	0.01	0.02	NA		C-63135	20-Apr-22	20-Apr-22
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-63125	14-Apr-22	14-Apr-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0624	1	0.016	0.03	NA		C-63132	18-Apr-22	18-Apr-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61051	02-May-22	02-May-22
Sample ID: 96408-R1 TMDL-SA Total											
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61051	02-May-22	14-Apr-22
Total Phosphorus	SM 4500-P E	mg/L	0.137	1	0.016	0.02	NA		C-63132	18-Apr-22	18-Apr-22
Sample ID: 96409-R1 TMDL-SA Field Filtered											
Nitrate as N	SM 4500-NO3 E	mg/L	3.1	10	0.01	0.02	NA		C-63135	20-Apr-22	20-Apr-22
Nitrite as N	SM 4500-NO2 B	mg/L	0.0352	1	0.01	0.02	NA		C-63125	14-Apr-22	14-Apr-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.109	1	0.016	0.03	NA		C-63132	18-Apr-22	18-Apr-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61051	02-May-22	02-May-22
Sample ID: 96410-R1 TMDL-R3 Total											
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61051	02-May-22	14-Apr-22
Total Phosphorus	SM 4500-P E	mg/L	0.231	1	0.016	0.02	NA		C-63132	18-Apr-22	18-Apr-22

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 96411-R1 TMDL-R3 Field Filtered											
Nitrate as N	SM 4500-NO3 E	mg/L	1.67	10	0.01	0.02	NA		C-63135	20-Apr-22	14-Apr-22
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-63125	14-Apr-22	14-Apr-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.169	1	0.016	0.03	NA		C-63132	18-Apr-22	18-Apr-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	ND	1	0.13	0.4	NA		C-61051	02-May-22	02-May-22
Sample ID: 96412-R1 TMDL-R2 Total											
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.257	1	0.13	0.4	NA	J	C-61051	02-May-22	14-Apr-22
Total Phosphorus	SM 4500-P E	mg/L	0.0655	1	0.016	0.02	NA		C-63132	18-Apr-22	18-Apr-22
Sample ID: 96413-R1 TMDL-R2 Field Filtered											
Nitrate as N	SM 4500-NO3 E	mg/L	1.87	10	0.01	0.02	NA		C-63135	20-Apr-22	20-Apr-22
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-63125	14-Apr-22	14-Apr-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0843	1	0.016	0.03	NA		C-63132	18-Apr-22	18-Apr-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.235	1	0.13	0.4	NA	J	C-61051	02-May-22	02-May-22
Sample ID: 96414-R1 TMDL-R1 Total											
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.343	1	0.13	0.4	NA	J	C-61051	02-May-22	14-Apr-22
Total Phosphorus	SM 4500-P E	mg/L	0.166	1	0.016	0.02	NA		C-63132	18-Apr-22	18-Apr-22
Sample ID: 96415-R1 TMDL-R1 Field Filtered											
Nitrate as N	SM 4500-NO3 E	mg/L	1.28	10	0.01	0.02	NA		C-63135	20-Apr-22	20-Apr-22
Nitrite as N	SM 4500-NO2 B	mg/L	ND	1	0.01	0.02	NA		C-63125	14-Apr-22	14-Apr-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.0553	1	0.016	0.03	NA		C-63132	18-Apr-22	18-Apr-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.275	1	0.13	0.4	NA	J	C-61051	02-May-22	02-May-22

Conventionals

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 96416-R1											
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.452	1	0.13	0.4	NA		C-61051	02-May-22	14-Apr-22
Total Phosphorus	SM 4500-P E	mg/L	0.186	1	0.016	0.02	NA		C-63132	18-Apr-22	18-Apr-22
Sample ID: 96417-R1											
TMDL-Est Field Filtered											
Nitrate as N	SM 4500-NO3 E	mg/L	1.16	10	0.01	0.02	NA		C-63135	20-Apr-22	20-Apr-22
Nitrite as N	SM 4500-NO2 B	mg/L	0.0105	1	0.01	0.02	NA	J	C-63125	14-Apr-22	14-Apr-22
Total Dissolved Phosphorus	SM 4500-P E	mg/L	0.046	1	0.016	0.03	NA		C-63132	18-Apr-22	18-Apr-22
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	0.271	1	0.13	0.4	NA	J	C-61051	02-May-22	02-May-22

QUALITY CONTROL REPORT

TERRA

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ENVIRONMENTAL LABORATORIES, INC.

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Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
									LIMITS	LIMITS	

Nitrate as N Method: SM 4500-NO3 E Fraction: NA Prepared: 20-Apr-22 Analyzed: 20-Apr-22

96404-B1	QAQC Procedural Blank	C-63135	ND	1	0.01	0.02	mg/L				
96404-BS1	QAQC Procedural Blank	C-63135	0.945	1	0.01	0.02	mg/L	1	0	94	68 - 135% PASS
96404-BS2	QAQC Procedural Blank	C-63135	0.974	1	0.01	0.02	mg/L	1	0	97	68 - 135% PASS 3 25 PASS

Nitrite as N Method: SM 4500-NO2 B Fraction: NA Prepared: 14-Apr-22 Analyzed: 14-Apr-22

96404-B1	QAQC Procedural Blank	C-63125	ND	1	0.01	0.02	mg/L				
96404-BS1	QAQC Procedural Blank	C-63125	0.0497	1	0.01	0.02	mg/L	0.05	0	99	49 - 120% PASS
96404-BS2	QAQC Procedural Blank	C-63125	0.0499	1	0.01	0.02	mg/L	0.05	0	100	49 - 120% PASS 1 25 PASS
96407-MS1	TMDL-R4	C-63125	0.05	1	0.01	0.02	mg/L	0.05	0	100	80 - 120% PASS 25
96407-MS2	TMDL-R4	C-63125	0.0503	1	0.01	0.02	mg/L	0.05	0	101	80 - 120% PASS 1 25 PASS
96407-R2	TMDL-R4	C-63125	ND	1	0.01	0.02	mg/L			0	25 PASS

Total Dissolved Phosphorus Method: SM 4500-P E Fraction: NA Prepared: 18-Apr-22 Analyzed: 18-Apr-22

96404-B1	QAQC Procedural Blank	C-63132	ND	1	0.016	0.03	mg/L				
96404-BS1	QAQC Procedural Blank	C-63132	0.289	1	0.016	0.03	mg/L	0.3	0	96	86 - 118% PASS
96404-BS2	QAQC Procedural Blank	C-63132	0.275	1	0.016	0.03	mg/L	0.3	0	92	86 - 118% PASS 4 25 PASS
96407-MS1	TMDL-R4	C-63132	0.318	1	0.016	0.03	mg/L	0.3	0.0624	85	80 - 120% PASS 25
96407-MS2	TMDL-R4	C-63132	0.318	1	0.016	0.03	mg/L	0.3	0.0624	85	80 - 120% PASS 0 25 PASS
96407-R2	TMDL-R4	C-63132	0.0693	1	0.016	0.03	mg/L			10	25 PASS

Total Kjeldahl Nitrogen Method: EPA 351.2 Fraction: NA Prepared: 02-May-22 Analyzed: 02-May-22

96404-B1	QAQC Procedural Blank	C-61051	ND	1	0.13	0.4	mg/L				
96404-BS1	QAQC Procedural Blank	C-61051	2.56	1	0.13	0.4	mg/L	2.5	0	102	90 - 110% PASS
96404-BS2	QAQC Procedural Blank	C-61051	2.51	1	0.13	0.4	mg/L	2.5	0	100	90 - 110% PASS 2 30 PASS

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
		RESULT		MDL	RL	UNITS	LEVEL	RESULT	LIMITS	LIMITS	
96405-CRM1 575	QAQC CRM – TKN QC1	12.6	2	0.13	0.4	mg/L	12.5	0	101	73 - 122%	PASS
96406-MS1	TMDL-R4	2.4	1	0.13	0.4	mg/L	2.5	0	96	90 - 110%	PASS
96406-MS2	TMDL-R4	2.38	1	0.13	0.4	mg/L	2.5	0	95	90 - 110%	PASS
96406-R2	TMDL-R4	ND	1	0.13	0.4	mg/L			0	30	PASS

Total Phosphorus		Method: SM 4500-P E	Fraction: NA	Prepared: 18-Apr-22	Analyzed: 18-Apr-22						
96404-B1	QAQC Procedural Blank	C-63132	ND	1	0.016	0.02	mg/L				
96404-BS1	QAQC Procedural Blank	C-63132	0.289	1	0.016	0.02	mg/L	0	96	73 - 131%	PASS
96404-BS2	QAQC Procedural Blank	C-63132	0.275	1	0.016	0.02	mg/L	0	92	73 - 131%	PASS

PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

From: Aquatic Bioassay and Consulting Labs.
29 N. Olive St.
Ventura, CA 93001

Phone: (805) 643-5621
Fax: (805) 643-2930
Project ID: Ventura River
AlgaeTMDL

To: Company: PHYSIS
Address: 1904 E Wright Circle
Anaheim, CA 92806
Phone: (714) 335-5793

Sample I.D. No.	Sample Date	Time	Matrix	Volume/ No.	Reps	ANALYSIS						Comments
						Nitrate / Nitrite, Field Filtered (SM 4500 NO3 E / SM 4500 NO2 B)	Total Phosphorous (SM 4500-P E)	Dissolved Phosphorous, Field Filtered (SM 4500-P E)	Total TKN (EPA 351.2)	Dissolved TKN (EPA 351.2)		
TMDL-CL	04/13/2022		Water	3-250 mL, gl. 2-250 mL, gl.	1	X	X	X	X	X		not enough water to collect
TMDL-R4	04/13/2022	09:05	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X		
TMDL-SA	04/13/2022	09:30	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X		
TMDL-R3	04/13/2022	09:10	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X		
TMDL-R2	04/13/2022	09:50	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X		
TMDL-R1	04/13/2022	10:40	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X		
TMDL-Est	04/13/2022	11:20	Water	3-250 mL, pl; 2-250 mL, gl.	1	X	X	X	X	X		

Notes: Total/dissolved phosphorous and total/dissolved TKN preserved with H₂SO₄; Email report to karin@aquaticbioassay.com and kbrtalik@rinconconsultants.co

RELINQUISHED BY Name: Shelby Palasik Signature: <i>[Signature]</i> Date: 04/13/2022 Time: 12:26	RECEIVED BY Name: Sharon Hellingger Signature: <i>[Signature]</i> Date: 04/13/2022 Time: 12:26
RELINQUISHED BY Name: Shelby Palasik Signature: <i>[Signature]</i> Date: 04/14/2022 Time: 11:21	RECEIVED BY Name: Yvonne Chen Signature: <i>[Signature]</i> Date: 04/14/2022 Time: 11:21

Project Iteration ID: 2001003-035
 Client Name: Rincon Consultants
 Project Name: Ventura River Algae TMDL
 COC Page Number: 2 of 2
 Bottle Label Color: Orange w/-

Sample Receipt Summary

Receiving Info

- Initials Received By: YJC
- Date Received: 4/14/22
- Time Received: 11:21
- Client Name: Aquatic
- Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - Start Time: _____
 - End Time: _____
 - Total Mileage: _____
 - Number of Pickups: _____
- Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
- What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
- Randomly Selected Samples Temperature (°C): 3.2
 Used I/R Thermometer # 1-2

Inspection Info

- Initials Inspected By: AI

Sample Integrity Upon Receipt:

- COC(s) included and completely filled out..... Yes / No
- All sample containers arrived intact..... Yes / No
- All samples listed on COC(s) are present..... Yes / No
- Information on containers consistent with information on COC(s)..... Yes / No
- Correct containers and volume for all analyses indicated..... Yes / No
- All samples received within method holding time..... Yes / No
- Correct preservation used for all analyses indicated..... Yes / No
- Name of sampler included on COC(s)..... Yes / No

Notes: