

DRAFT

June 2, 2009

Sam Unger
Section Chief - Regional Programs
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, CA 90013-2343

Re: Calleguas Creek Watershed Salts TMDL Monitoring Approach

Dear Mr. Unger,

Attached to this letter is an approach to meeting the monitoring requirements outlined in the Basin Plan Amendment (BPA) for the Total Maximum Daily Load (TMDL) for Salts in the Calleguas Creek, its Tributaries and Mugu Lagoon as adopted by the Los Angeles Regional Water Quality Control Board on October 4, 2008, approved by the State Water Resources Control Board on May 20, 2008 and approved by USEPA on December 2, 2008 (Hence "Effective" on that December 2, 2008).

The monitoring program presented in the Salts BPA states that monitoring will begin within one year approval of the salts TMDL monitoring plan. The implementation plan in the BPA requires that a monitoring program be submitted to the Regional Board Executive Officer within six months of the effective date of the TMDL and monitoring will begin within one year of Executive Officer approval of the monitoring plan. The BPA identifies individual responsible parties, including POTWs, permitted stormwater dischargers (PSD), and agricultural dischargers. A group of these responsible parties, through the Calleguas Creek Watershed Management Plan (CCWMP) and the Water Quality/Water Resources Subcommittee, developed a Memorandum of Agreement (MOA). The MOA outlines an agreement to implement monitoring programs to meet TMDL BPA requirements for the following parties:

- City of Camarillo
- City of Moorpark
- City of Oxnard
- City of Simi Valley
- City of Thousand Oaks
- County of Ventura
- Ventura County Waterworks District No. 1
- Camrosa Water District
- Camarillo Sanitary District
- U.S. Department of the Navy
- California Department Of Transportation
- Farm Bureau Of Ventura County

The aforementioned group has already submitted a Quality Assurance Project Plan (QAPP) for the CCW TMDL Monitoring Program (CCWTMP) to address the following TMDLs in the CCW:

- Nitrogen Compounds and Related Effects in Calleguas Creek (Nitrogen TMDL)
- Organochlorine (OC) Pesticides, Polychlorinated Biphenyls (PCBs) And Siltation In Calleguas Creek, its Tributaries, and Mugu Lagoon (OCs TMDL)
- Toxicity, Chlorpyrifos, and Diazinon In The Calleguas Creek, its Tributaries and Mugu Lagoon (Toxicity TMDL)
- Metals and Selenium in the Calleguas Creek, its Tributaries and Mugu Lagoon (Metals TMDL)

The attachment to this letter outlines the general approach to fulfilling the requirements of the Salts TMDL monitoring. Subsequent revisions to the CCWTMP QAPP are intended to fulfill the TMDL monitoring requirements for only those parties which are part of the MOA or otherwise identified by the participants of the MOA.

The CCWTMP QAPP is intended to allow for the inclusion of additional monitoring requirements identified in the Salts TMDL and as yet to be adopted future TMDLs as they become adopted. Once approved, the following Salts TMDL Monitoring Approach will be incorporated into the current version of the Executive Officer (EO) of the Regional Board approved CCWTMP QAPP.

Please contact Kevin Coyne (Larry Walker Associates) at (805) 585-1835 if you have any questions or comments regarding the approach outlined in the attachment or the existing CCWTMP QAPP.

Sincerely,

XXX

June 2, 2009

DRAFT Calleguas Creek Watershed Management Plan

Monitoring Approach for the Boron, Chloride, Sulfate, and TDS (Salts) Total Maximum Daily Loads

submitted to

Los Angeles Regional Water Quality Control Board

prepared by

LARRY WALKER ASSOCIATES

on behalf of the

CALLEGUAS CREEK WATERSHED MANAGEMENT PLAN
WATER QUALITY/WATER RESOURCES SUBCOMMITTEE

1 Introduction

The following is intended to outline an approach to meeting the monitoring requirements presented in the Total Maximum Daily Load for Boron, Chloride, Sulfate, and TDS (herein referred to as the *Salts TMDL*) in the Calleguas Creek Watershed Basin Plan Amendment (BPA). The Salts TMDL Monitoring Approach will be incorporated into the Calleguas Creek Watershed TMDL Monitoring Program (CCWTMP) Quality Assurance Project Plan (QAPP) during future revisions of that document/upon approval of approach by Regional Board Executive Officer (EO).

2 Monitoring Questions

The Salts TMDL portion of the CCWTMP is designed to monitor and evaluate the implementation of the TMDL. The Monitoring Approach is intended to parallel efforts of the four TMDLs currently addressed by the CCWTMP QAPP. The goals of the Salts TMDL portion of the CCWTMP include:

- To determine compliance with numeric targets, waste load and load allocations.
- To track and determine compliance with a salt balance in the watershed.
- To generate additional land use runoff data to better understand pollutant sources and proportional contributions from various land use types.
- To monitor the effect of implementation actions by urban, POTW, and agricultural dischargers on water quality.
- To implement the program consistent with other regulatory actions within the CCW.

The CCWTMP is intended to answer the following monitoring questions to meet the goals of the program:

- Are numeric targets and allocations met at the locations indicated in the TMDLs?
- Are conditions improving?
- What is the contribution of constituents of concern from various land use types?

The approach to evaluating the implementation of the Salts TMDL is slightly different than the previous TMDLs in that to ensure the goal of a salts balance in the watershed is being achieved and water quality objectives are being met, a comprehensive method of evaluating compliance with objectives **and** tracking inputs and outputs to the watershed will be utilized. As such, the following monitoring approach contains two components:

1. Target Compliance Monitoring – Target compliance monitoring will focus on evaluating attainment with targets and allocations at key locations where beneficial uses occur in the watershed. Load information will be collected at these sites to determine allocation compliance and to track the output of salts in the watershed for the salt balance monitoring.
2. Salt Balance Monitoring – Salt balance monitoring will track inputs and outputs of salts in the watershed. Input tracking information will focus on sources of salts to the watershed, including imported water state water, groundwater pumping activities, water softeners, POTW treatment chemicals, and other household salt additions in the

watershed. Load information from the target compliance monitoring locations will be used to determine the outputs from the watershed.

Salts data collected through the CCWTMP will be used in conjunction with historic data to evaluate whether conditions are improving. Land use sites data will be used to evaluate the contribution of salts from each type of land use. Lastly, data will be used to evaluate the CCWTMP's effectiveness at answering the monitoring questions and provide guidance for modifications.

To fully evaluate the loads and salt balance component of the TMDL, monitoring approaches that differ from the current monitoring effort associated with the other TMDLs will be required. The Salts BPA indicates that composite sampling equipment will be used for the salt balance monitoring. However, since the time of TMDL development, continuous monitoring equipment has become available that may provide data more appropriate to the nature of this impairment, and better answer the monitoring questions. However, the use of the continuous monitoring equipment requires evaluation prior to full scale implementation as part of this monitoring program. As such, a feasibility study (discussed further in Attachment A) will be conducted to determine the final monitoring approach. At this time, it is assumed that the continuous monitoring equipment will be used to evaluate loads and the salt balance component of the TMDL. Therefore, the use of these devices and the corresponded data will be discussed further in this document. However, it is possible that alternative methods for monitoring loads and the salt balance will need to be identified prior to the initiation of the monitoring under this approach. If that is the case, an addendum to the monitoring approach (or QAPP) will be submitted prior to the initiation of monitoring.

To the extent monitoring required by the Salts TMDL Monitoring Approach parallels monitoring required by the Conditional Waiver for Discharges from Irrigated Lands (Conditional Waiver Program), monitoring shall be coordinated with monitoring conducted by individuals and groups subject to the terms and conditions of the Conditional Waiver Program. Coordination will also be explored with any parallel efforts associated with the new Ventura County MS4 Monitoring Program.

3 Project Description

The primary purpose of the Salts TMDL Monitoring Approach and ultimately the revisions to the QAPP is to outline the process for collecting data to meet the goals of the CCWTMP. Data collected through previous studies were compiled for use in developing the TMDLs and will be considered along with data collected through the CCWTMP. Monitoring is currently being undertaken by various groups including participants in the Ventura County Agricultural Irrigated Lands Group (VCAILG) under the Conditional Waiver Program and NPDES, POTW, and MS4 Permittees. Additionally, the Nutrients, Toxicity, OCs, and Metals and Selenium TMDL Implementation Plans call for special studies to be completed to investigate a range of issues.

The CCWTMP provides a means for integration of the information. Data collected through the Conditional Waiver Program, NPDES POTW and MS4 permittees, and special studies will be incorporated to the extent practicable. The extent practicable will be dictated by the cost of gathering and compiling information from outside programs. Element 18 of the CCWTMP

QAPP describes the process for including data collected through other programs. It is not the intent or purpose of the CCWTMP to compile and analyze all available data.

The Salts TMDL Monitoring Approach identifies two categories of monitoring:

- Required – required monitoring is intended to determine compliance with the TMDL and meet the BPA monitoring requirements. Both Target Compliance Monitoring and Salt Balance Monitoring are considered required elements of the Salts TMDL Monitoring Approach.
- Special Studies – special studies monitoring is intended to address sample collection for special studies identified in the BPA or developed through other processes.

The CCWTMP QAPP provides information on sample collection and analysis methodologies relevant to all categories of monitoring. Once this Monitoring Approach is reviewed and approved, the elements of the Salts Monitoring Approach will be incorporated into the existing QAPP.

3.1 REQUIRED MONITORING ELEMENTS

The following environmental monitoring elements are required in the Salts BPA and will be included in the CCWTMP QAPP:

- General Water Quality Constituents (GWQC)
- Salts Constituents (Chloride, Total Dissolved Salts [TDS], Boron, Sulfate)

Table 1 lists the constituents for which analysis will be conducted, all of which are considered critical to the monitoring program. Table 1 also provides a general sampling frequency that will be followed for the target compliance salts monitoring portion of this effort.

Table 1. Constituents and Required Monitoring Frequency for Salts TMDL

Constituent	Frequency
Salts Constituents (Boron, Chloride, Sulfate, TDS)	Monthly
General Water Quality Constituents (GWQC) Flow, pH, Temperature, Dissolved Oxygen (DO), Conductivity, Total Suspended Solids (TSS)	Monthly

For the load and salt balance monitoring, continuous samplers may be utilized. The use of the continuous monitoring devices will allow for a greater frequency of sample collection. The minimum requirement, which is monthly, will be augmented with an increase of data, which may be reported in a variety of methods, including daily or weekly averages. The final reporting frequency of data will be further examined during the *1st Year Feasibility Study* associated with the installation of the continuous monitoring devices proposed in this approach.

3.2 SPECIAL STUDIES

The Salts TMDL BPA identifies special studies to investigate a range of issues. No specific special studies are incorporated into this Monitoring Approach or the current CCWTMP QAPP

at this time; however, a summary of special studies that may be incorporated at a later date are provided below. Work Plans for special studies will be submitted to the Regional Board Executive Officer for approval per the BPAs.

Salts TMDL Special Studies

- Develop Averaging Periods and Compliance Points
- Develop Natural Background Exclusion
- Develop Site-Specific Objectives
- Develop Site-Specific Objectives for Drought Conditions
- Develop Site-Specific Objectives for Sulfate

3.3 PROJECT SCHEDULE

The effective date of the Salts TMDL is December 2, 2008. Per the BPA, responsible parties must submit a workplan for a monitoring program for approval by the Regional Board Executive Officer (EO) six months after the effective date, which is June 2, 2009. Table 2 outlines the deliverable schedule for development of the monitoring program, revisions to the QAPP, and conducting monitoring. This schedule assumes Regional Board staff review of the monitoring approach contained in this document within two months of submittal and incorporation of Regional Board comments into an updated QAPP within one month of receipt. If EO approval is delayed, the project deliverable schedule will be modified.

Table 2. Year 1 Project Deliverable Schedule for CCWTMP

Deliverable	Anticipated Date Of Initiation	Anticipated Date Of Completion
Salts TMDL Monitoring Approach	December 2008	June 2009
Revised CCWTMP QAPP Incorporating Salts TMDL Monitoring Approach ¹	August 2009	September 2009
Begin Monitoring ¹	September 2010	

1 Monitoring must be initiated within 12 months after EO approval of the QAPP. All dates after QAPP submission will be tied to EO approval.

2 Data will be delivered in an electronic format along with the Annual Report.

4 Data Quality Objectives and Criteria for Measurement

The objective of the Salts Monitoring Approach, in terms of data quality, is to produce data that represent as closely as possible, *in situ* conditions of the CCW. This objective will be achieved by using accepted methods for sample collection and laboratory analysis. Assessing the approach’s ability to meet this objective will be accomplished by evaluating the resulting laboratory measurements in terms of reporting limits, precision, accuracy, representativeness, comparability, and completeness. Quality objectives for constituents unique to Salts TMDL monitoring are presented in Table 3 as they are not presented in the CCWTMP QAPP. The remaining constituents listed in Table 1 are currently included in the CCWTMP QAPP and information on data quality objectives and criteria for measurement data can be found in that document.

Table 3. Data Quality Objectives

Constituent	Accuracy	Precision	Recovery	Target Reporting Limits
Boron	80 – 120%	0 – 25%	80 – 120%	1.0 mg/L
Chloride	80 – 120%	0 – 25%	80 – 120%	1.0 mg/L
Sulfate	80 – 120%	0 – 25%	80 – 120%	1.0 mg/L
Total Dissolved Solids	80 – 120%	0 – 25%	80 – 120%	1.0 mg/L

Based on the results of the feasibility study, continuous monitoring devices may be installed at the compliance/load monitoring sites. The use of the devices in parallel with the monthly monitoring sampling approach will allow for some of the above constituents to be monitored at a much higher frequency than required and provide for assessment of the salt balance component of the TMDL (Currently, the continuously devices cannot monitor for Boron or Sulfate). For this approach, the required monthly “Grabs” will be collected but in the future, as data analysis is conducted and/or technology allows for all constituents to be monitored continuously, the QAPP may be revised to decrease the frequency of the monthly grab requirements if adequately addressed by the continuous monitoring devices.

5 Training and Certification

No specialized training or certifications are required for sampling personnel conducting the monthly grab samples. However, staff that will perform field sampling should receive annual refresher training to ensure the samples are collected correctly and safely. The Project Manager, or designee, will provide training prior to initiation of sampling and will document training of staff. Documentation will consist of a sign in sheet, time and date, and instructor. The documentation will be maintained in the project files of the Project Manager. All sampling shall be performed under the supervision of experienced staff. No volunteers will be used for sampling.

Field staff that will be installing, deploying, and maintaining the continuous monitoring devices will need to be sufficient trained in the standard operating procedures associated with the monitoring devices. Only staff training on the use and application of the continuous monitoring devices will be handling the units and performing any routine or emergency maintenance as needed.

At minimum, laboratories selected to perform analysis for this program must maintain current certification through the California Department of Health Services – Environmental Laboratory Accreditation Program (ELAP) or the National Environmental Laboratory Accreditation Program (NELAP). CRG marine laboratories (chemistry laboratory) is certified by NELAP; their certificate numbers is 2261, respectively. Any additional laboratories used to conduct analysis on CCWTMP samples will be accredited by ELAP and/or NELAP and meet the requirements outlined in the QAPP. Chemistry laboratories are required to maintain records of analyst training and will make these records available upon request.

6 Sampling Process Design

The following section provides a description and justification for the sampling design strategy and site selection. The primary driver in designing the monitoring is to meet the monitoring requirements of the Salts TMDL Implementation Plan. In addition to the monitoring sites sampled as part of the CCWTMP, as previously stated, efforts will be made to obtain data from other monitoring programs in the watershed. It is the desire of the responsible entities to avoid duplicative sampling efforts and additional coordination will occur as each program develops.

Changes to aspects of the sampling process design related to meeting the monitoring requirements of the TMDL BPA will be recommended in the annual report to the Management Committee identified in Element 4 of the CCWTMP QAPP and the Regional Board Project Manager.

6.1 TARGET COMPLIANCE MONITORING

Target compliance monitoring will focus on evaluating attainment with water quality objectives at key locations where beneficial uses occur in the watershed. Target compliance monitoring includes in-stream water quality samples and load measurements for compliance with allocations. For target compliance monitoring, in-stream water column samples will be collected monthly for analysis of general water quality constituents (GWQC) and the Salts TMDL constituents, including TDS, boron, sulfate, chloride. Additionally, flow measurements will be collected to allow for the calculation of loading.

In conjunction with the monthly monitoring, continuous monitoring devices will be installed at the compliance monitoring locations to further evaluate loading and provide information for calculating the output component of the salt balance. Currently, the continuous monitoring devices measure the following:

- Electrical Conductivity (surrogate for TDS)
- Chlorides
- Flow (via depth)
- Temperature
- pH

The monitoring devices currently do not reliably measure boron or sulfate, although technology is improving for these constituents and in the future may be added to the suite of constituents. Additionally, the devices measure electrical conductivity, not TDS. Therefore a relationship between TDS and conductivity in the watershed needs to be established. The monitoring devices will be collecting data at five minute intervals at the start of this monitoring effort yet the time interval may be modified as more data is collected and a more adequate frequency is identified. Collected data will be downloaded and electronically delivered to an Access database and will be available to complement the information obtained via the grab monitoring.

Prior to the incorporation of the continuous monitoring devices into the required monitoring efforts, the CCWTMP stakeholders will conduct a *1st Year Feasibility Study* to ensure the technology is appropriate for meeting the goals of the CCWTMP. The goals of the Feasibility Study are as follows:

- Identify environmental challenges specific to the Calleguas Creek Watershed that may disrupt or inhibit the installation of a device at a monitoring location.
- Calibrate the continuous monitoring devices to determine the precision and accuracy of the equipment and start to compile baseline data.
- Identify relationships between sensor monitored constituents and TDS, sulfate and boron to see if conductivity and chloride are sufficient surrogates for salt balance monitoring.

Although not required for EO approval, the CCWTMP stakeholders are willing to discuss and incorporate Regional Board staff comments/recommendations on the *1st Year Feasibility Study* included in Attachment A. Should the feasibility study determine that the use of the continuous monitoring equipment is not appropriate for salt balance tracking, alternative monitoring methods will be submitted to the Regional Board prior to initiation of monitoring.

For the purposes of the Salts TMDL, the CCW was divided into five subwatersheds that were used to assign numeric targets and allocations and to evaluate compliance with the TMDL. The subwatersheds are shown in Figure 1. The five subwatersheds (Simi, Las Posas, Conejo, Camarillo and Pleasant Valley) were developed based on ensuring protection of beneficial uses by defining the base of the subwatersheds (compliance points for the TMDL) at points where beneficial uses occur. . Additionally, the subwatersheds were developed specifically for this TMDL to group areas with related beneficial uses, sources of water, and uses of water for determining the salt balance and to provide consistency with implementation actions planned for the watershed. To measure compliance, in-stream water column samples will generally be collected at the base of each of the subwatersheds assigned waste load and load allocations. Site selection procedures and the locations of the compliance monitoring sampling stations are discussed in subsequent sections.

POTW effluent will be monitored for compliance with the effluent limits presented in the BPA on a monthly basis. Environmentally relevant detection limits will be used to the extent practicable. Detection limits will be the lower of either the allocations or the numeric targets presented in the BPA, if attainable at a commercial laboratory through standard analytical techniques.

Urban and Agricultural land use sites will be included in this effort to identify sources of salts attributed to specific land use types found in the CCW watershed and facilitate determining compliance with TMDL allocations. For each subwatershed being evaluated via this TMDL monitoring effort, all efforts will be made to monitor one urban and one agricultural site utilizing the same methods as for the compliance monitoring sites.

All efforts will be made to include two wet weather water sampling events for compliance monitoring during targeted storm events between October and April. Wet weather events will be conducted in addition to the 12 monthly events. Wet weather sampling conditions are discussed in the sampling schedule section of the CCWTMP QAPP.

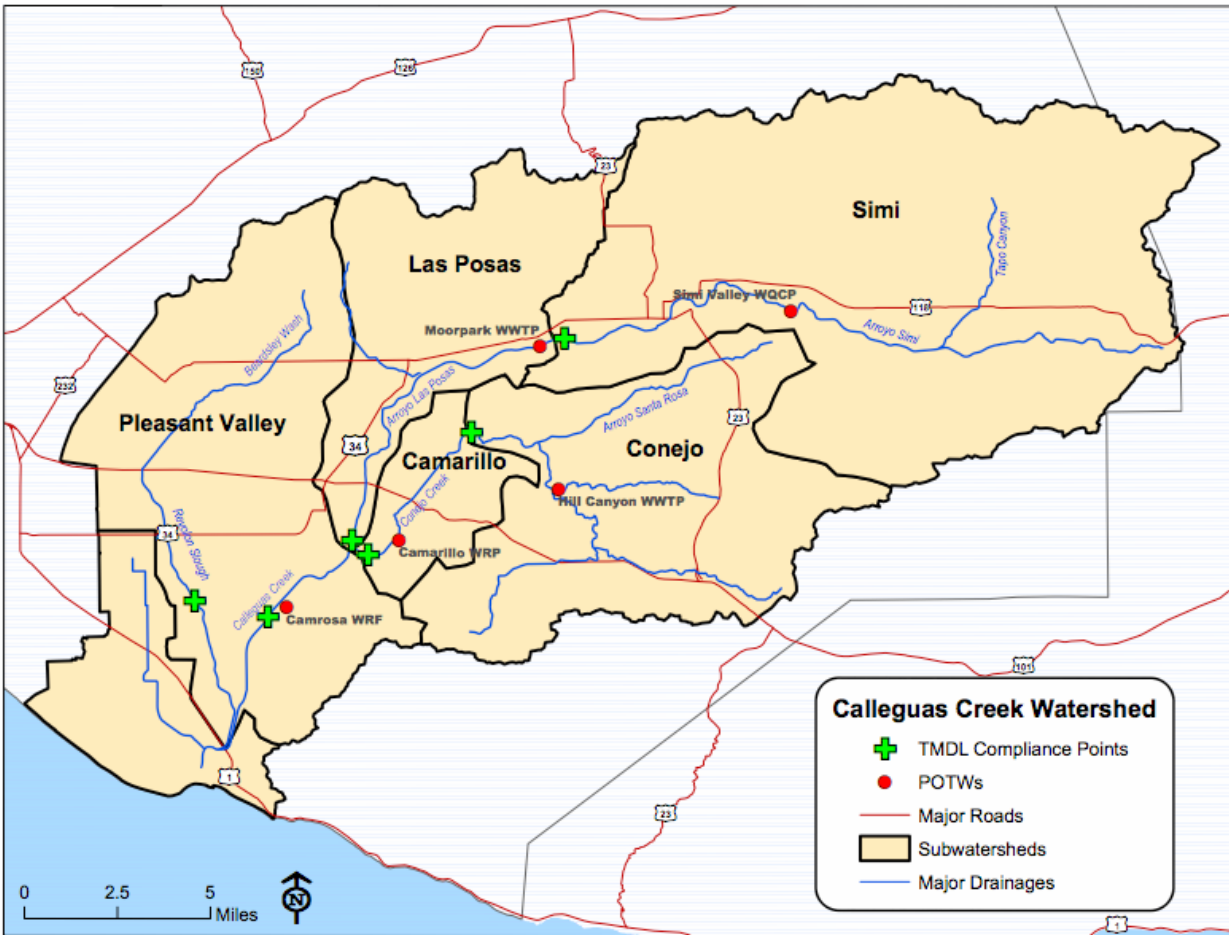


Figure 1. CCW Salts TMDL Subwatersheds **Note to reviewers, this map includes a compliance point on Calleguas Creek above the confluence with Conejo Creek that has not been included in the monitoring approach for technical reasons. This map will be revised to remove that site prior to submittal to the Regional Board.

6.2 SALT BALANCE MONITORING

Salt balance monitoring will focus on tracking input and outputs of salts in the watershed to ensure that the goal of a salts balance in the watershed is being achieved.

6.2.1 Input Tracking

To evaluate whether a salts balance is attained in the watershed inputs will be tracked through four mechanisms:

1. State Water Project – provides information on the mass of salts brought into the watershed;
2. Santa Clara River (Freeman Division) – provides information on the mass of salts brought into the watershed;
3. Groundwater Pumping – provide information on the mass of salts imported into the watershed from deep aquifer pumping;

4. POTW Effluent – provides an estimate of the amount of salts added through human use of water from aforementioned sources.

Data from the first three mechanisms will not be generated through the QAPP (e.g. water quality and flow data will be generated through other programs and obtained for use). Data from the fourth mechanism (POTW Effluent) will be generated through the QAPP or existing NPDES permit monitoring. Data for the four mechanisms that are not generated through the QAPP will be obtained from the sources presented in Table 4.

Table 4. Sources of Salts Input Information to the Calleguas Creek Watershed

Input Information Required	Source of Information
State Water Project volume and quality	Calleguas Municipal Water District (CMWD)
Santa Clara River (Freeman Diversion) volume and quality	United Water Conservation District
Groundwater pumping volume and quality	CMWD/Water Purveyors, Fox Canyon Groundwater Management Agency
POTW Effluent	Individual POTWs in the CCW

6.2.2 Output Tracking

Outputs from the watershed will be tracked through surface water monitoring at the compliance monitoring locations in the watershed and monitoring of discharges to the brine line. As stated previously, in-stream water column samples will be collected for general water quality constituents (*GWQC*) and the required Salts TMDL constituents (boron, chloride, sulfate, and TDS). For the Output tracking portion of this monitoring effort, the continuous monitoring devices will be utilized for determining compliance with this requirement, pending the results of the feasibility study. These continuous monitoring devices allow for an increased amount of data that is not available via typical grab or automated sampling methods. The use of the continuous monitors will;

1. Accurately measure small changes in loadings on a much smaller time scale than traditional grab sampling methods. Data will be collected on 5 - 15 minute intervals everyday of deployment and this time interval can be reduced if warranted.
2. Accurately measure seasonal changes with much higher confidence than traditional sampling methods.

Analysis of the continuous monitoring data will greatly reduce the biases associated with typical grab sampling approaches to monitoring salts. Daily fluctuations can be identified and daily, weekly, monthly averages can be constructed at a much higher level and more will be more representative of the environmental conditions of the CCW. The proposed Feasibility Study (Attachment A) will cover include both a monitoring device and environmental calibration study prior to the required start of the compliance monitoring.

6.3 SAMPLING SITES

The stations used to determine compliance with targets and allocations will also be used for output tracking. Monitoring sites for the Salts TMDL are located in the Simi, Conejo, Camarillo and Pleasant Valley subwatersheds (as defined in the Salts TMDL) and at the POTW effluent discharge locations. Representative agricultural and urban CCWTMP land use sites within each of the target subwatersheds will also be sampled (one each respectively).

In the case of the Pleasant Valley subwatershed, compliance monitoring sampling sites on Revolon Slough and Calleguas Creek Reach 3 are located upstream of the base of the subwatershed as 1) these locations are located where salts objectives apply and 2) the majority of the salts data in these reaches have been collected at the upstream locations. Five sites have been identified as Compliance Monitoring locations, four of which coincide with existing CCWTMP monitoring sites:

- Pleasant Valley/Revolon subwatershed - **04 WOOD**(Revolon Slough at Wood Rd)
- Calleguas subwatershed - **03 UNIV** (Calleguas Creek at University Dr)
- Arroyo Simi subwatershed- **07 HITCH** (Arroyo Simi at Hitch Boulevard)
- Camarillo subwatershed - - **9A HOWAR** (Conejo Creek at Howard Rd)

Specific details including GPS coordinates for the above listed sites and other constituents monitored at these locations is outlined in Table 6 of the existing QAPP. A fourth site has been identified as a compliance monitoring site specific to the Salts TMDL:

- Conejo subwatershed - **9B BARON** - Baron Brothers Nursery (Behind facility @ the Ventura County Watershed Protection District [VCWPD] stream gauge).

This location, behind Baron Brothers Nursery was suggested in the BPA as a potential location for a compliance location for this TMDL effort, and further investigations have found this site as an adequate location. Specific location details of this site will be incorporated into the QAPP in a similar format to the existing sites. After the first year of sampling it may be deemed that locations for sampling sites need to be modified and/or additional compliance monitoring locations are necessary. Any modifications to the sampling sites will be vetted through the standard process outlined in the QAPP, including Regional Board consultation prior to any changes.

Land use monitoring will be conducted concurrently at representative agricultural and urban runoff discharge sites as well as at POTWs in the subwatersheds described above. The land use sites currently considered for this effort are as follows:

- Pleasant Valley/Revolon subwatershed - **04D WOOD** (Revolon Slough at Wood Rd) - Agricultural Drain
- Pleasant Valley/Revolon subwatershed - **04D VENTURA** (Camarillo Hills Drain at Las Posas Rd) - Urban Drain
- Camarillo /Conejo subwatershed - **9BD GERRY** - (Drainage Ditch at Gerry Rd) - Agricultural Drain
- Camarillo subwatershed - **9BD ADOLF** - (Drain passing under Adolph Rd) - Urban Drain

- Conejo subwatershed - **13 SB HILL** - (Arroyo Conejo on S Side of W Hillcrest) - Urban Drain
- Arroyo Simi subwatershed - **07D HITCH LEVEE 2** - (2nd Corrugated pipe discharging via the North side of the levee to the Arroyo Simi, upstream of Hitch Boulevard) - Agricultural Drain
- Arroyo Simi subwatershed- **07D_CTP** - (Flood Control Channel in County Line Park) - Urban Drain

These proposed land use sites are currently monitored with the existing CCWTMP effort and are located in accessible areas at or near the proposed Salts TMDL compliance monitoring sites. Due to lack of an existing Agricultural Land Use site in the Conejo subwatershed, the site 9BD_GERRY will be used as a representative agricultural site for both the Conejo and Camarillo subwatersheds. These land use sites may include the use of the continuous monitoring devices and will be explored in the *1st Year Feasibility Study*. Land use samples will be analyzed for the required constituents similar to the compliance monitoring sites. Specific details for the above land use monitoring sites are listed in Table 8 of the QAPP. All efforts will be made to include at least two wet weather sampling events during the wet season (October through April) during a targeted storm event.

POTW sampling is required and will be conducted at the following locations:

- **9AD CAMA** (Camarillo Water Reclamation Plant)
- **10D HILL** (Hill Canyon Wastewater Treatment Plant)
- **07D SIMI** (Simi Valley Water Quality Control Plant)
- **03D CAMR (Camarosa Water Reclamation Plant)**
- **06D MOOR (Ventura County Wastewater Treatment Plant)**

Even if discharge to surface waters does not occur for the POTWs listed above, representative effluent samples for boron, sulfate, TDS, and chloride will be needed for tracking the watershed salt balance. Information including specific location details is located in Table 6 of the QAPP.

6.4 SAMPLING SCHEDULE

Table 5 presents the sampling schedule. Dates will be finalized during coordination with other monitoring efforts (NPDES POTW and Stormwater monitoring and the Conditional Waiver Program) in order to minimize duplication of effort and to develop a representative data set. All efforts will be made to include two additional wet weather water sampling events between October and April during targeted storm events, as described in the CCWTMP QAPP.

Collection of land use samples will make all efforts to coincide with compliance monitoring and wet weather sampling events as outlined in Table 5. The monitoring schedule will be revised if it does not appropriately characterize conditions in the watershed. Any changes with regard to the sample schedule will be determined through discussions between the CCWTMP QAPP Project Manager, Project QA Manager, field staff, and the Regional Board Project Manager and will be documented in the Annual Report.

Table 5. Compliance Monitoring Sites and Schedules¹

Subwatershed	Station ID	Reach	Month											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Revolon	04_WOOD	4	X	X	X	X	X	X	X	X	X	X	X	X
Calleguas	03_UNIV	3	X	X	X	X	X	X	X	X	X	X	X	X
Simi	07_HITCH	7	X	X	X	X	X	X	X	X	X	X	X	X
Camarillo	9A_HOWAR	9A	X	X	X	X	X	X	X	X	X	X	X	X
Conejo	09B_BARON	9B	X	X	X	X	X	X	X	X	X	X	X	X

¹ Collection of land use samples will coincide with compliance monitoring and wet weather sampling. POTW sampling will be conducted monthly coinciding with the compliance monitoring.

7 Sampling Methods

Samples will be collected in a manner appropriate for the specific analytical methods to be used. Proper sampling techniques must be used to ensure that samples are representative of environmental conditions. Field personnel will adhere to established sample collection protocols in order to ensure the collection of representative and uncontaminated (*i.e.*, contaminants not introduced by the sample handling process itself) samples for laboratory analyses. Deviations from the standard protocols must be documented. Standard operating procedures (SOPs) for collection of samples are provided in Appendix C of the CCWTMP QAPP. The handing of the continuous monitoring devices will follow the standard operating procedures pertinent to the use, maintenance, and calibration of the device. All field measurements taken in for the calibration of the devices will be complied and summarized in the annual report along with the final data. All deviations from the standard protocols will be documented.

7.1 SAMPLE HANDLING AND CUSTODY

Sampling handling and custody procedures are presented in detail in Element 12 of the CCWTMP QAPP. Sampling container, storage, preservation, and holding times for constituents specific to the Salts TMDL are presented here as they are not presented in the CCWTMP QAPP.

7.2 SAMPLE CONTAINERS, STORAGE, PRESERVATION, AND HOLDING TIMES

Sample containers must be pre-cleaned and certified free of contamination according to the USEPA specification for the appropriate methods. Sample container, storage and preservation, and holding time requirements for constituents unique to Salts TMDL monitoring are presented in Table 6 as they are not presented in the CCWTMP QAPP. The remaining constituents listed in Table 1 are currently included in the CCWTMP QAPP and information on container, storage and preservation, and holding time requirements can be found in that document. After collection, samples will be stored at 4°C until arrival at the contract laboratory.

Table 6. Sample Container, Volume, Initial Preservation, and Holding Time Requirements

Constituent	Sample Container	Sample Volume ¹	Immediate Processing And Storage	Holding Time
Total Dissolved Salts (TDS)	polyethylene	500	4°C	7 days
Boron	polyethylene	250		6 months
Sulfate	polyethylene	500		28 days
Chloride	polyethylene	500		28 days

¹ Additional volume may be required for QC analyses.

8 Analytical Methods

Aspects of analytical methods not specific to Salts TMDL monitoring are presented in detail in the CCWTMP QAPP. Analytical methods, method detection limits (MDLs), and reporting limits (RLs) required for samples analyzed for constituents unique to Salts TMDL monitoring are summarized in Table 7. The remaining constituents listed in Table 1 are currently included in the CCWTMP QAPP and information on data quality objectives and criteria for measurement data can be found in that document. MDLs and RLs are discussed in more detail in the CCWTMP QAPP. Environmentally relevant detection limits will be used to the extent practicable.

Table 7. Analytical Methods and Project Method Detection and Reporting Limits for Laboratory Analysis

Constituent	Method ¹	Units	Project MDL	Project RL
Total Dissolved Salts (TDS)	2540c	mg/L	0.1	5.0
Boron	200.8	µ/L	1.0	5.0
Sulfate	300.0	mg/L	0.01	0.05
Chloride	300.0	mg/L	0.01	0.05

MDL – Method Detection Limit RL – Reporting Limit

¹ Standard Methods (SM) or EPA Method number.

9 Reporting

An adaptive management approach to the CCWTMP has been adopted as it may be necessary to modify aspects of the CCWTMP. Results of sampling carried out through the CCWTMP and more specifically the Salts TMDL may be used to modify this plan, as appropriate. These modifications, if identified and deemed necessary, will be summarized in the annual report.

10 Additional Information

Additional information regarding various aspects of monitoring not covered in the Salts TMDL Monitoring Approach are contained in the CCWTMP QAPP. The information provided in the Salts TMDL Monitoring Approach is intended to compliment the CCWTMP QAPP. The CCWTMP QAPP was designed to allow for the inclusion of additional monitoring requirements identified in TMDL. The approach outlined above will be incorporated into EO approved CCWTMP version of the QAPP addressing the Nitrogen, OCs, Metals and Toxicity TMDLs.