October 31, 2010

Pamela Creedon
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Dear Ms. Creedon,

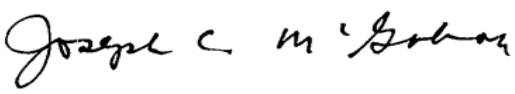
The East San Joaquin Water Quality Coalition (ESJWQC) and Westside San Joaquin River Watershed Coalition (Westside Coalition) are submitting the 2010 Annual Monitoring Report (AMR) for the San Joaquin Chlorpyrifos and Diazinon TMDL Compliance Monitoring for review by the Central Valley Regional Water Quality Control Board (CVRWQCB).

The attached documents report on the monitoring program for the period of January 1, 2010 to September 30, 2010 and assesses compliance with the monitoring objectives as described in the Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Diazinon and Chlorpyrifos Runoff into the Lower San Joaquin River (finalized October 2005).

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment for violations."

This letter will be mailed to the CVRWQCB with an original signature.

Submitted respectfully,



Parry Klassen
Executive Director
East San Joaquin Water Quality Coalition

Joseph C. McGahan
Westside San Joaquin River Watershed Coalition

San Joaquin River Chlorpyrifos and Diazinon 2010 Annual Monitoring Report

For Compliance with the Central Valley Regional Water Quality Control Board Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Diazinon and Chlorpyrifos Runoff Into the Lower San Joaquin River (October 2005)

Reporting period: January – September 2010

Submitted: October 31, 2010

Prepared by the East San Joaquin Water Quality Coalition and the Westside San Joaquin River Watershed Coalition

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS

AMR	Annual Monitoring Report
CDEC	California Data Exchange Center
COC	Chain of Custody
DO	Dissolved Oxygen
DWR	(California) Department of Water Resources
ESJWQC	East San Joaquin Water Quality Coalition
FB	Field Blank
FD	Field Duplicate
ILRP	Irrigated Lands Regulatory Program
K_{oc}	Organic Carbon Partitioning Coefficient
LABQA	Laboratory Quality Assurance
LC_{50}	Lethal Concentration at 50% mortality
LCS	Laboratory Control Spike
LCSD	Laboratory Control Spike Duplicate
MDL	Minimum Detection Limit
MLJ-LLC	Michael L. Johnson, LLC
MPUR	Management Plan Update Report
MRPP	Monitoring and Reporting Program Plan
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	Not Detected
OP	Organophosphate pesticides
pH	Power of Hydrogen
PR	Percent Recovery
PUR	Pesticide Use Report
PFTE	Polytetrafluoroethylene
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
S	Sum
SAMR	Semi-Annual Monitoring Report
SC	Specific Conductance
SJR	San Joaquin River
SJRECWQ	San Joaquin River Exchange Center Water Authority
SOP	Standard operating procedure

TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USGS	United States Geological Survey
Westside Coalition	Westside San Joaquin River Watershed Coalition
Westside Coalition MRP	Monitoring and Reporting Program Order No R5-2008-0831
WQO	Water Quality Objective
YSI	Yellow Springs Instruments

LIST OF UNITS

cm	centimeter
cfs	cubic feet per second
°C	degrees Celsius
L	Liter
µg	microgram
µmhos	micromhos
µS	microsiemens
mg	milligram

LIST OF TERMS

ArcGIS – Geographic Information Systems mapping software

Basin Plan – Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition

Basin Plan Amendment - *Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Diazinon and Chlorpyrifos Runoff into the Lower San Joaquin River* (Final Staff Report October 2005)

Coalitions –East San Joaquin Water Quality Coalition and Westside San Joaquin River Watershed Coalition

Drainage –water that moves horizontally across the surface or vertically into the subsurface from land

ESJWQC region – The region within the Central Valley that is monitored by the East San Joaquin Water Quality Coalition

Not detected – A constituent within a sample is below the minimum detection limit

Regional Board – Central Valley Regional Water Quality Control Board

Water body –standing or flowing water of any size that may or may not move into a larger body of water, including lakes, reservoirs, ponds, rivers, streams, tributaries, creeks, sloughs, canals, laterals and drainage ditches

Water year – the twelve month period from October through September, designated by the calendar year in which it ends and which includes nine of the twelve months

Watershed – The land area that drains into a stream; the watershed for a major river may encompass a number of smaller watersheds that ultimately combine at a common point. (EPA terms of environment: http://www.epa.gov/OCEPAterms/wterms.html)

Westside Coalition region – The region within the Central Valley that is monitored by the Westside San Joaquin River Watershed Coalition

EXECUTIVE SUMMARY

The Lower San Joaquin River is divided into seven subareas as described in the Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Diazinon and Chlorpyrifos Runoff into the Lower San Joaquin River (hereafter Basin Plan Amendment). The Central Valley Regional Water Quality Control Board (Regional Board) developed the Basin Plan Amendment (finalized in October 2005) to establish a total maximum daily load (TMDL) for the organophosphate pesticides chlorpyrifos and diazinon in the lower reaches of the San Joaquin River. As part of the Basin Plan Amendment, a surveillance and monitoring program is required to collect information necessary to assess compliance with six monitoring objectives. The East San Joaquin Water Quality Coalition (ESJWQC) and Westside Coalition developed a monitoring strategy to comply with the chlorpyrifos and diazinon TMDL program Monitoring Objectives which include:

1. Determine compliance with established water quality objectives (WQOs) and the loading capacity applicable to diazinon and chlorpyrifos in the San Joaquin River.
2. Determine compliance with established load allocations for diazinon and chlorpyrifos.
3. Determine the degree of implementation of management practices to reduce off-site movement of diazinon and chlorpyrifos.
4. Determine the effectiveness of management practices and strategies to reduce off-site migration of diazinon and chlorpyrifos.
5. Determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts.
6. Determine whether the discharge causes or contributes to a toxicity impairment due to additive or synergistic effects of multiple pollutants.
7. Demonstrate that management practices are achieving the lowest pesticide levels technically and economically achievable.

The Coalitions submitted a memorandum to the Regional Board on May 14, 2010 outlining the approach to implement the monitoring component for the San Joaquin River chlorpyrifos and diazinon TMDL. The approach includes compliance monitoring of chlorpyrifos and diazinon in the San Joaquin River at six compliance points on a quarterly basis, tributary monitoring based on each Coalitions approved monitoring plan on a monthly basis and an assessment of the monitoring objectives and results on an annual basis. These compliance points are (from upstream to downstream, Table 5):

1. San Joaquin River at Sack Dam,
2. San Joaquin River at Highway 165 (Lander Ave) near Stevinson (USGS 11260815),
3. San Joaquin River at Hills Ferry,
4. San Joaquin River at Las Palmas Avenue near Patterson (USGS 11274570),
5. San Joaquin River at the Maze Boulevard (Highway 132) Bridge (USGS 11290500), and
6. San Joaquin River at the Airport Way Bridge near Vernalis (USGS 11303500).

Each Coalition sampled three of the six compliance points as well as tributaries within their respective subregions as per each Coalition's monitoring plan. Water samples collected from the San Joaquin River were analyzed for chlorpyrifos and diazinon. Habitat information and field data, including dissolved oxygen (DO), pH, specific conductance (SC), and water temperature were collected at each site during each monitoring event. Discharge was obtained via Department of Water Resources (DWR) gauge readings posted on the California Data Exchange Center (CDEC) Website.

During the reporting period, the chlorpyrifos WQO was exceeded once on July 22, 2010 at the San Joaquin River at Las Palmas Avenue near Patterson sampling station (0.041 µg/L). Also on July 22, 2010, chlorpyrifos was detected in both the environmental and field duplicate samples collected from San Joaquin River at the Airport Way Bridge near Vernalis below the WQO (both 0.013 µg/L). The laboratory reporting limit for chlorpyrifos is 0.015 µg/L, therefore the detected sample result is an estimated value. Chlorpyrifos was not detected at any other San Joaquin River sampling location during the reporting period. Diazinon was not detected at any San Joaquin River sampling location during the reporting period.

The ESJWQC developed an overall management plan for all 27 waterways sampled between 2004 and 2008 and set priorities for both waterways and constituents in those waterways. In setting priorities, the Coalition is focusing first on constituents likely originating from agriculture including pesticides and sediment. The outreach and education strategy focuses on informing growers of problems in their watershed and providing information on effective management practices. A key component of the Coalition's management strategy is to hold individual member meetings to discuss farm management practices and water quality issues. Whether Coalition efforts can be credited with the absence of pesticide exceedances cannot be known with 100% certainty. However, the Coalition considers the significant decrease in chlorpyrifos exceedances in 2009 and 2010 an important step in demonstrating the effectiveness of its management plan strategy.

The Westside Coalition is also in the process of evaluating management practice implementation and effectiveness. To accomplish this, the Westside Coalition utilizes its two-pronged strategy guided by the tiered approach described in the Westside Coalition Management Plan. Because there is likely an overlap in effect from practices to address a specific constituent, the Westside Coalition identified a prioritized, tiered list of actions to be taken to address issues of the most immediate concern (highest tier constituents), and, presumably, those actions will also benefit lower prioritized (tiered) constituents. These actions are then employed under two concurrent approaches (prongs) to improve water quality within the region. The General Approach identifies and employs common, constituent-specific strategies that can be applied throughout the region. Focused Watershed Management Plans, the second prong, identify and employ a subwatershed specific approach to implement management practices and improve water quality. Together, these strategies enable the Westside Coalition to adequately assess water quality and management practice implementation in its region. Management practices assessments are reported in the Westside Coalition Semi Annual Monitoring Reports (SAMRs).

Both Coalitions monitor chlorpyrifos as a part of tributary monitoring within their respective regions. Results from ESJWQC tributary monitoring during the reporting period (January through September 2010) will be detailed in the ESJWQC Annual Monitoring Report to be submitted March 1, 2011. Westside Coalition tributary monitoring results from January and February 2010 were reported in the Westside Coalition SAMR submitted June 15, 2010. Westside Coalition tributary monitoring results from March through August 2010 will be reported in the Westside Coalition SAMR to be submitted November 30, 2010 and tributary monitoring results from September 2010 will be reported in the Westside Coalition SAMR to be submitted June 15, 2011.

INTRODUCTION

The Lower San Joaquin River is divided into seven subareas as described in the *Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Diazinon and Chlorpyrifos Runoff into the Lower San Joaquin River* (hereafter Basin Plan Amendment). The seven areas include agricultural drainages monitored by the East San Joaquin Water Quality Coalition (ESJWQC) and Westside San Joaquin River Watershed Coalition (Westside Coalition) under the Irrigated Lands Regulatory Program (ILRP). These two coalitions were formed to ensure growers within those regions were in compliance with the ILRP conditional waiver.

The Central Valley Regional Water Quality Control Board (Regional Board) developed the Basin Plan Amendment (finalized in October 2005) to establish a total maximum daily load (TMDL) for the organophosphate pesticides chlorpyrifos and diazinon in the lower reaches of the San Joaquin River. As dictated by the Basin Plan Amendment, a surveillance and monitoring program is required to collect information necessary to assess compliance with six monitoring objectives. Assessment of compliance with the Basin Plan Amendment is addressed at two levels: 1) water quality within the Lower San Joaquin River at six compliance points, and 2) water quality within the subareas that drain to the Lower San Joaquin River.

In 2010, the ESJWQC and the Westside Coalition developed a monitoring plan for assessing compliance of the Lower San Joaquin River concentration based loads at the six compliance points identified in the Basin Plan Amendment. This report summarizes the water quality monitoring conducted at the compliance points in 2010 and compares those results with the water quality objectives outlined in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Fourth Edition, hereafter referred to as the Basin Plan).

Each coalition conducts a monitoring program under the ILRP designed to assess water quality within their region. In addition, both coalitions have developed management plans to address subwatersheds where exceedances of a water quality trigger limit has occurred more than once within a three year period. The results summarized below are for an additional monitoring program put into place by the Regional Board to regulate organophosphate pesticides. This annual report discusses how the Coalitions are addressing load allocations for the subareas that drain to the San Joaquin River through their monitoring and implementation strategies outlined in their respective monitoring and management plans.

MONITORING OBJECTIVES AND DESIGN

MONITORING OBJECTIVES

The ESJWQC and Westside Coalition developed a monitoring strategy to comply with the chlorpyrifos and diazinon TMDL program Monitoring Objectives. Table 1 lists the WQOs for chlorpyrifos and diazinon (Basin Plan, 4th Edition, page III-6.01).

The Monitoring Objectives include:

1. Determine compliance with established water quality objectives (WQOs) and the loading capacity applicable to diazinon and chlorpyrifos in the San Joaquin River.
2. Determine compliance with established load allocations for diazinon and chlorpyrifos.
3. Determine the degree of implementation of management practices to reduce off-site movement of diazinon and chlorpyrifos.
4. Determine the effectiveness of management practices and strategies to reduce off-site migration of diazinon and chlorpyrifos.
5. Determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts.
6. Determine whether the discharge causes or contributes to a toxicity impairment due to additive or synergistic effects of multiple pollutants.
7. Demonstrate that management practices are achieving the lowest pesticide levels technically and economically achievable.

Table 1. WQOs for chlorpyrifos and diazinon.

PESTICIDE	MAXIMUM CONCENTRATION AND AVERAGE PERIOD
Chlorpyrifos	0.025 µg/L ; 1-hour average (acute) 0.015 µg/L ; 4-day average (chronic) Not to be exceeded more than once in a three year period.
Diazinon	0.16 µg/L ; 1-hour average (acute) 0.10 µg/L ; 4-day average (chronic) Not to be exceeded more than once in a three year period.

The chlorpyrifos and diazinon WQOs are used to determine the concentration based loading capacity for the San Joaquin River and load allocations within the upstream tributaries. Both the loading capacity of the San Joaquin River and load allocation of any tributary to the river shall not exceed one, as determined from the formula listed in Figure 1.

Figure 1. Formula used to calculate chlorpyrifos and diazinon loading capacity in San Joaquin River and load allocation for waterways entering the River.

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

Where

C_D = diazinon concentration in µg/L
C_C = chlorpyrifos concentration in µg/L
WQO_D = diazinon water quality objective; 0.1 µg/L
WQO_C = chlorpyrifos water quality objective; 0.015 µg/L

The WQO used for diazinon and chlorpyrifos reflect the 4-day average (chronic) maximum listed in Table 1. If the measured concentration of either constituent exceeds its WQO in a sample collected from the San Joaquin River, the loading capacity is exceeded. If the measured concentration of either constituent exceeds its WQO in a sample collected from a tributary within one of the seven subareas, the load allocation is exceeded. The chlorpyrifos and diazinon loading capacity or load allocation also can be exceeded if the combined concentrations of chlorpyrifos and diazinon cause the sum (S) to be greater than one, even if both concentrations are below the two constituents' respective WQOs.

Table 2 is an overview of the ESJWQC and Westside Coalition actions and associated reporting documents utilized to assess each of the seven Monitoring Objectives. These actions are further detailed and elaborated upon in the Comparison with TMDL Objectives section of this report. Table 3 lists all the ESJWQC and Westside Coalition submission dates for each of their reporting elements listed in Table 2; each relevant document is listed below for each Coalition as reference.

Westside Coalition

- Monitoring and Reporting Program Order No R5-2008-0831 (Westside Coalition MRP),
- Westside Coalition Draft Quality Assurance Project Plan (QAPP),
- Semi-Annual Monitoring Reports (SAMR) including management plan status updates,
- Westside Coalition Management Plan

ESJWQC

- ESJWQC Monitoring and Reporting Program Plan (MRPP),
- ESJWQC Quality Assurance Project Plan (QAPP),
- Annual Monitoring Reports (AMR),
- ESJWQC Management Plan, and
- ESJWQC Management Plan Update Reports (MPUR).

To assess compliance with Objective 1, the ESJWQC and Westside Coalition conducted monitoring at six designated compliance sites on the San Joaquin River during the first three quarters of 2010. To assess compliance with Objectives 2 through 7, the Coalitions are reviewing the results of the San Joaquin River monitoring relative to the monitoring conducted in the upstream tributaries within each coalition region respectively. The management plans developed by each coalition under the ILRP include a section to assess TMDL compliance including the chlorpyrifos and diazinon TMDL for the Lower San Joaquin River.

Table 2. Monitoring Objectives for the control of diazinon and chlorpyrifos runoff into the Lower San Joaquin River and associated ESJWQC and Westside Coalition actions. Refer to Table 3 for submission dates of all documents listed in this table.

Objective Number	Coalition	Coalition Actions	Location of Additional Information
1	ESJWQC and Westside Coalition	• Monitor 6 compliance sites on the San Joaquin River. • Assess monitoring results to determine compliance with chlorpyrifos and diazinon WQO. • Assess monitoring results to determine compliance with chlorpyrifos and diazinon loading capacity.	San Joaquin River Chlorpyrifos and Diazinon TMDL AMR
2	ESJWQC	• Conduct representative monitoring of the Coalition region according to Monitoring Strategy explained in MRPP. • Assess monitoring results to determine compliance with chlorpyrifos and diazinon load allocations in ESJWQC MPURs.	ESJWQC MRPP, Management Plan, and MPURs
	Westside Coalition	• Conduct representative monitoring of the Coalition region according to Monitoring Strategy and Schedule explained in the Westside Coalition MRP. • Assess monitoring results to determine compliance with chlorpyrifos and diazinon load allocations in Westside Coalition SAMRs.	Westside Coalition MRP and Management Plan
3	ESJWQC	• Adhere to strategy put forth in the ESJWQC Management Plan to determine current management practices to reduce off-site movement of chlorpyrifos and diazinon. • Status reported in MPURs.	ESJWQC Management Plan and MPURs
	Westside Coalition	• Adhere to strategy put forth in the Westside Coalition Management Plan to determine current management practices to reduce off-site movement of chlorpyrifos and diazinon. • Status reported in SAMRs.	Westside Coalition Management Plan and SAMRs
4	ESJWQC	• Adhere to strategy put forth in the ESJWQC Management Plan to determine the effectiveness of management practices to reduce off-site migration of chlorpyrifos and diazinon. • Status reported in MPURs.	ESJWQC Management Plan and MPURs
	Westside Coalition	• Adhere to strategy put forth in the Westside Coalition Management Plan to determine current management practices to reduce off-site movement of chlorpyrifos and diazinon. • Status reported in SAMRs.	Westside Coalition Management Plan and SAMRs
5	ESJWQC	• Conduct representative monitoring of Coalition region according to Monitoring Strategy outlined in ESJWQC MRPP to determine whether alternatives to diazinon and chlorpyrifos are causing surface water impairments. • Assess and discuss monitoring results in ESJWQC Management Plan and MPURs.	ESJWQC MRPP, Management Plan, and MPURs
	Westside Coalition	• Conduct representative monitoring of Coalition region according to Monitoring Strategy outlined in Westside Coalition MRP to determine whether alternatives to diazinon and chlorpyrifos are causing surface water impairments. • Assess and discuss monitoring results in Westside Coalition SAMRs.	Westside Coalition MRP and SAMRs

Objective Number	Coalition	Coalition Actions	Location of Additional Information
6	ESJWQC	• Conduct representative monitoring of Coalition region according to Monitoring Strategy explained in ESJWQC MRPP to assess toxicity and determine if agricultural discharge contributes to toxicity impairment due to additive or synergistic effects of multiple pollutants. • Assess and discuss monitoring results in ESJWQC Management Plan and MPURs.	ESJWQC MRPP, Management Plan, and MPURs
	Westside Coalition	• Conduct representative monitoring of Coalition region according to Monitoring Strategy explained in Westside Coalition MRP to assess toxicity and determine if agricultural discharge contributes to toxicity impairment due to additive or synergistic effects of multiple pollutants. • Assess and discuss monitoring results in Westside Coalition SAMRs.	Westside Coalition MRP and SAMRs
7	ESJWQC	• The ESJWQC assesses the information collected to meet Objectives 3 and 4 to determine if management practices are achieving the lowest pesticides levels technically and economically achievable in the ESJWQC Management Plan and MPURs.	ESJWQC Management Plan and MPURs
	Westside Coalition	• The Westside Coalition assesses the information collected to meet Objectives 3 and 4 to determine if management practices are achieving the lowest pesticides levels technically and economically achievable in the Westside Coalition Management Plan and SAMRs.	Westside Coalition Management Plan and SAMRs

[1]First quarter (January through March) monitoring did not capture a storm event in 2010 (refer to Sample Details subsection of Monitoring Results section in this report).

Table 3. ESJWQC and Westside Coalition MRP Order/MRPP, QAPP, AMRs/SAMRs, Management Plans, and MPURs submission dates. The table is organized by Coalition and submission date.

COALITION	DOCUMENT NAME	SUBMISSION DATE	SAMPLING DATES ADDRESSED
ESJWQC	ESJWQC MRPP	August 25, 2008	NA[1]
ESJWQC	ESJWQC QAPP	August 25, 2008	NA[1]
ESJWQC	ESJWQC SAMR	June 30, 2008	October 2007 – March 2008
ESJWQC	ESJWQC Management Plan	September 30, 2008	August 2004 – December 2007
ESJWQC	ESJWQC SAMR	March 1, 2009	April – September 2008
ESJWQC	ESJWQC AMR	March 1, 2010	October 2008 – December 2009
ESJWQC	ESJWQC MPUR	April 1, 2010	October 2008 – December 2009
ESJWQC	ESJWQC AMR	To be submitted March 1, 2011	January – December 2010
ESJWQC	ESJWQC MPUR	To be submitted April 1, 2011	January – December 2010
Westside Coalition	Westside Coalition MRP Order No.R5-2008-0831	September 15, 2008	NA[1]
Westside Coalition	Westside Coalition Management Plan and Focused Management Plan	October 23, 2008	March 2009 to Present
Westside Coalition	Westside Coalition QAPP (Draft)	June 30, 2009	NA[1]
Westside Coalition	Westside Coalition SAMR	June 15, 2009	September 2008 – February 2009
Westside Coalition	Westside Coalition SAMR	November 30, 2009	March – August 2009
Westside Coalition	Westside Coalition SAMR	June 15, 2010	September 2009 – February 2010
Westside Coalition	Westside Coalition SAMR	To be submitted November 30, 2010	March – August 2010
Westside Coalition	Westside Coalition SAMR	To be submitted June 15, 2011	September 2010 – February 2011
ESJWQC / Westside Coalition	San Joaquin River OP TMDL AMR	October 31, 2010	January – September 2010

NA[1] – Not Applicable. The document addresses and is applicable to the entire project, not a subset of sampling dates.

MONITORING DESIGN

The Coalitions submitted a memorandum to the Regional Board on May 14, 2010 outlining the approach to implement the monitoring component for the San Joaquin River chlorpyrifos and diazinon TMDL. The approach includes compliance monitoring of chlorpyrifos and diazinon in the San Joaquin River at six compliance points on a quarterly basis, tributary monitoring based on each Coalitions approved monitoring plan on a monthly basis and an assessment of the monitoring objectives and results on an annual basis.

Sampling Coordination

Each Coalition sampled three of the six compliance points (see Sampling Site Descriptions) as well as tributaries within their respective subregions as per each Coalition's monitoring plan. The ESJWQC typically schedules its normal monitoring to occur on the third Tuesday of the month (this may vary depending on holidays). Due to the number of sampling locations and the large distances between sites, it takes a substantial amount of time to collect samples and deliver them to the laboratories within hold times. ESJWQC collect San Joaquin River chlorpyrifos and diazinon samples the Thursday following normal monitoring (two days after the tributary water monitoring samples are collected) in May, July and October of each year.

The WSJRWC typically schedules its normal monitoring to occur on the second Tuesday of the month. Based on a review of use patterns and other quarterly sampling dates, it was decided that the WSJRWC would collect SJR chlorpyrifos and diazinon at the same time as the ESJWQC, on the third Thursday of the month in each quarter except for the first quarter which will coordinate with a storm event. The WSJRWC will sample its normal monitoring locations (tributary locations) on the third Tuesday during those months whenever possible. During May 2010, the WSJRWC sampled the SJR on May 6 however the ESJWQC was unable to sample at that time. The ESJWQC therefore monitored its locations on May 20, 2010.

Monitoring Frequency and Timing

Monitoring frequency must adequately assess concentrations of chlorpyrifos and diazinon in the San Joaquin River throughout the year. To provide a complete overview of each year, the San Joaquin River locations are sampled quarterly. Table 4 lists which months constitute each quarter. The Coalitions collect samples once during each quarter and consider those samples representative of the entire quarter. The Coalitions reviewed previous year's pesticide use reports (PURs) and decided on sampling dates that would correspond to the highest period of use of chlorpyrifos and diazinon.

During the first quarter of each year after dormant sprays have occurred in December/January, both Coalitions will monitor a storm event. However, due to the distance between the upstream and downstream most sampling points, a single storm may not cover the entire valley and therefore storm discharge may not occur in all locations at the same time. Sampling will coincide with a storm event if such an event occurs on or after January 15. The SJR chlorpyrifos and diazinon sampling will occur as close to the normal Coalition monitoring as possible. Although uncommon, storm events may occur at any time during the year. If a storm event occurs outside of the first three months of the year, the Coalitions will make reasonable efforts to capture such an event when possible.

First quarter 2010 sampling (January – March)

At the meeting with Regional Water Board staff on March 3, 2010, it was acknowledged that opportunity for collecting samples in 2010 at the six compliance monitoring locations immediately following the use of chlorpyrifos and diazinon on dormant orchards had already passed (applications are typically in December or January). Samples were taken in March during the week when the respective sampling crews were performing monthly Coalition monitoring.

Second quarter 2010 sampling (April – June)

Sampling in this period occurred at the end of May to coincide with applications of chlorpyrifos to alfalfa.

Third quarter 2010 sampling (July – September)

Sampling in this period occurred in late July to coincide with chlorpyrifos and diazinon applications to alfalfa, almonds and walnuts.

Fourth quarter 2010 sampling (October – December)

Sampling in this period will occur in late October to coincide with applications of chlorpyrifos to grapes and alfalfa. Diazinon does not typically have high use in this period. Sampling from the fourth quarter will be reported in the following year's annual report.

Table 4. San Joaquin River monitoring quarters, listed chronologically according to water year.

YEAR	QUARTER	MONTHS	2010 WATER YEAR SAMPLING DATE
2009	4	October, November, December	NA[1]
2010	1	January, February, March	March 25, 2010[2]
2010	2	April, May, June	May 5 (Sack Dam, Lander Ave, Las Palmas) and May 20 (Hills Ferry, Maze Blvd, Airport Way), 2010
2010	3	July, August, September	July 22, 2010

[1]NA – Monitoring program not initiated until 2010; therefore no samples were collected during 2009.
[2]Although in the first quarter, this event was not a storm event.

Constituents Monitored

Water samples collected from the San Joaquin River were analyzed for chlorpyrifos and diazinon. Habitat information and field data, including dissolved oxygen (DO), pH, specific conductance (SC), and water temperature, were collected at each site during each monitoring event. Discharge was obtained via Department of Water Resources (DWR) gauge readings posted on the California Data Exchange Center (CDEC) Website. The sampling procedures and analytical methods are further discussed in the Sampling and Analytical Methods section.

SAMPLE SITE DESCRIPTIONS

The Basin Plan Amendment requires the coalitions to assess compliance with WQOs and loading capacity for, at a minimum, the six designated water quality compliance points on the San Joaquin River. These compliance points are (from upstream to downstream, Table 5):

1. San Joaquin River at Sack Dam,
2. San Joaquin River at Highway 165 (Lander Ave) near Stevinson (USGS 11260815),
3. San Joaquin River at Hills Ferry,
4. San Joaquin River at Las Palmas Avenue near Patterson (USGS 11274570),
5. San Joaquin River at the Maze Boulevard (Highway 132) Bridge (USGS 11290500), and
6. San Joaquin River at the Airport Way Bridge near Vernalis (USGS 11303500).

The station names, station codes, locations, and the Coalition responsible for monitoring these sites during the reporting period are provided in Table 5. The sample locations are mapped in Figure 2.

Additionally, the Basin Plan Amendment specifies that compliance with load allocations for nonpoint source discharges into the San Joaquin River must be determined for the following five subareas (from upstream to downstream, Table 6):

1. Bear Creek and Fresno-Chowchilla subareas
2. Stevinson and Grassland subareas,
3. Turlock, Merced, and Greater Orestimba subareas,
4. Tuolumne River, Northeast Bank, and Westside Creek subareas, and
5. Stanislaus River, North Stanislaus, and Vernalis North subareas.

Five of the six compliance points on the San Joaquin River monitor drainage from these subareas. The subareas and their corresponding San Joaquin River compliance point are listed in Table 6 and are also mapped in Figure 2.

The ESJWQC and Westside Coalition conduct monitoring within their respective drainage areas as outlined in their approved monitoring program documents (refer to the Westside Coalition MRP and ESJWQC MRPP for a discussion of representative monitoring strategies). Table 7 lists all the tributary stations sampled during the reporting period and the compliance point to which each tributary drains. Figure 3 provides a map of all sampled tributary stations (refer to the tributary map key in Table 7). Table 8 provides the San Joaquin River compliance sites and the associated tributaries that drain to each compliance point. Although there are no specific tributaries listed that drain into SJR @ Sack Dam, there is the potential for indirect drainage and spray drift to occur in a small area next to the river upstream of this monitoring location. This is reflected in Figure 4 which maps the upstream drainage areas for each San Joaquin River compliance point.

ESJWQC tributary monitoring locations and 2010 results will be detailed in the ESJWQC AMR to be submitted March 1, 2011.

Westside Coalition tributary monitoring locations and January and February 2010 results were reported in the Westside Coalition SAMR submitted June 15, 2010. Westside Coalition tributary monitoring locations and results from March through August 2010 will be reported in the Westside Coalition SAMR to be submitted November 30, 2010 and tributary locations and monitoring results from September

2010 through February 2011 will be reported in the Westside Coalition SAMR to be submitted June 15, 2011.

Table 5. ESJWQC and Westside Coalition chlorpyrifos and diazinon TMDL San Joaquin River sampling locations, listed in order of upstream to downstream.

Responsible Coalition	Station Name	Station Code	Latitude	Longitude
Westside	SJR @ Sack Dam	541XSJRSD	36.98361	-120.50028
Westside	SJR @ Lander Ave	541XSJRLA	37.29528	-120.85028
ESJWQC	SJR @ Hills Ferry Rd	541STC512	37.34250	-120.97722
Westside	SJR @ Las Palmas Ave	541STC507	37.49778	-121.08167
ESJWQC	SJR @ Maze Blvd	541STC510	37.64194	-121.22778
ESJWQC	SJR @ Airport Way	541SJC501	37.67556	-121.26417

Table 6. San Joaquin River (SJR) sampling locations and associated drainage subareas identified in the Basin Plan to be used in assessing compliance with load allocations, listed in order of upstream to downstream.

Station Name	Subareas
SJR @ Sack Dam	NA[1]
SJR @ Lander Ave	Bear Creek, Fresno-Chowchilla
SJR @ Hills Ferry Rd	Stevinson, Grassland
SJR @ Las Palmas Ave	Turlock, Merced, Greater Orestimba
SJR @ Maze Blvd	Tuolumne River, Northeast Bank, Westside Creek
SJR @ Airport Way	Stanislaus River, North Stanislaus, and Vernalis North

NA[1] – Not applicable because this station is not identified as having drainage from subareas as listed in the Basin Plan amendment (see Figure 2). However, this report identifies some drainage possible along the river in the Fresno-Chowchilla and Grassland subareas (see Figure 4).

Table 7. ESJWQC and Westside Coalition upstream tributary sites monitored during the first three quarters of 2010 (January through September). The most immediate downstream San Joaquin River monitoring station is listed for each tributary. Tributary map key refers to Figures 3 and 4.

Tributary Map Key	SJR Downstream Monitoring Location	Coalition Region	Tributary Station Name	Tributary Station Code	Tributary Latitude	Tributary Longitude
1	SJR @ Maze Blvd	Westside	Blewett Drain at Highway 132	541XVH132	37.640520	-121.229600
2	SJR @ Maze Blvd	Westside	Del Puerto Creek at Hwy 33	541XDPCHW	37.514210	-121.158750
3	SJR @ Maze Blvd	Westside	Del Puerto Creek near Cox Road	541XDPCCR	37.539400	-121.122100
5	SJR @ Maze Blvd	Westside	Hospital Creek at River Road	541XHCARR	37.610472	-121.230778
6	SJR @ Maze Blvd	Westside	Ingram Creek at River Road	541XICARR	37.600222	-121.225056
9	SJR @ Hills Ferry Rd	Westside	Los Banos Creek at China Camp Road	541XLBCCC	37.114500	-120.889500
10	SJR @ Hills Ferry Rd	Westside	Los Banos Creek at Hwy 140	541XLBCHW	37.276200	-120.955500
11	SJR @ Hills Ferry Rd	Westside	Los Banos Creek at Sunset Ave.	541XLBCSA	37.027500	-120.889800
12	SJR @ Las Palmas Ave	Westside	Marshall Road Drain near River Road	541XMRDRR	37.436300	-121.036200
13	SJR @ Hills Ferry Rd	Westside	Mud Slough Upstream of San Luis Drain	541XMSUSL	37.263880	-120.906110
14	SJR @ Hills Ferry Rd	Westside	Newman Wasteway near Hills Ferry Road	541XNWHFR	37.320400	-120.983400
15	SJR @ Las Palmas Ave	Westside	Orestimba Creek at Hwy 33	541XOCAHW	37.377150	-121.058120
16	SJR @ Las Palmas Ave	Westside	Orestimba Creek at River Road	541XOCARR	37.413880	-121.014166
17	SJR @ Hills Ferry Rd	Westside	Poso Slough at Indiana Ave	541XPSAIA	37.006200	-120.599600
18	SJR @ Las Palmas Ave	Westside	Ramona Lake near Fig Avenue	541XROLFA	37.478800	-121.068400
20	SJR @ Hills Ferry Rd	Westside	Salt Slough at Lander Ave	541XSSALA	37.247900	-120.852200
21	SJR @ Hills Ferry Rd	Westside	Salt Slough at Sand Dam	541XSSASD	37.136600	-120.761900
22	SJR @ Lander Ave	Westside	San Joaquin River at Lander Ave	541XSJRLA	37.295100	-120.851400
23	SJR @ Las Palmas Ave	Westside	San Joaquin River at PID Pumps	541XSJRPP	37.497200	-121.082800
24	SJR @ Sack Dam	Westside	San Joaquin River at Sack Dam	541XSJRSD	36.983611	-120.500278
25	SJR @ Hills Ferry Rd	Westside	Turner Slough at Edminster Road	541XTSAER	37.304100	-120.900800
26	SJR @ Maze Blvd	Westside	Westley Wasteway near Cox Road	541XWWNCR	37.558200	-121.163700
27	SJR @ Lander Ave	ESJWQC	Ash Slough @ Ave 21	545XASAAT	37.054500	-120.415800
28	SJR @ Lander Ave	ESJWQC	Bear Creek @ Kibby Rd	535XBCAKR	37.312800	-120.413800

Tributary Map Key	SJR Downstream Monitoring Location	Coalition Region	Tributary Station Name	Tributary Station Code	Tributary Latitude	Tributary Longitude
29	SJR @ Lander Ave	ESJWQC	Cottonwood Creek @ Rd 20	545XCCART	36.868600	-120.181800
30	SJR @ Lander Ave	ESJWQC	Deadman Creek @ Gurr Rd	535XDCAGR	37.193600	-120.561200
31	SJR @ Lander Ave	ESJWQC	Deadman Creek @ Hwy 59	535DMCAHF	37.198100	-120.486900
32	SJR @ Maze Blvd	ESJWQC	Dry Creek @ Wellsford Rd	535XDCAWR	37.660200	-120.874300
33	SJR @ Lander Ave	ESJWQC	Duck Slough @ Gurr Rd	535XDSAGR	37.214200	-120.559600
34	SJR @ Lander Ave	ESJWQC	Duck Slough @ Hwy 99	535XDSAHN	37.250100	-120.410000
35	SJR @ Las Palmas Ave	ESJWQC	Highline Canal @ Hwy 99	535XHCHNN	37.415300	-120.755700
36	SJR @ Las Palmas Ave	ESJWQC	Highline Canal @ Lombardy Ave	535XHCHNN	37.455600	-120.720700
37	SJR @ Lander Ave	ESJWQC	Howard Lateral @ Hwy 140	535XHLAHO	37.307900	-120.782000
38	SJR @ Maze Blvd	ESJWQC	Lateral 2 1/2 near Keyes Rd	535LTHNKR	37.547800	-121.092740
39	SJR @ Las Palmas Ave	ESJWQC	Merced River @ Santa Fe	535XMRSFD	37.427100	-120.672100
40	SJR @ Lander Ave	ESJWQC	Miles Creek @ Reilly Rd	535XMCARR	37.258200	-120.475500
41	SJR @ Airport Way	ESJWQC	Mootz Drain Downstream of Langworth Pond	535XMDDLP	37.705510	-120.894380
42	SJR @ Las Palmas Ave	ESJWQC	Mustang Creek @ East Ave	535XMCAEA	37.491800	-120.683900
43	SJR @ Las Palmas Ave	ESJWQC	Prairie Flower Drain @ Crows Landing Rd	535XPFDCL	37.442200	-121.002400
44	SJR @ Las Palmas Ave	ESJWQC	Dry Creek @ Oakdale	535DCAORD	37.460470	-120.615300

Table 8. San Joaquin River sampling locations and associated upstream tributaries monitored during the first three quarters of 2010 (January through September), listed in order from upstream to downstream.

STATION NAME	UPSTREAM TRIBUTARY STATION NAMES
SJR @ Sack Dam	San Joaquin River at Sack Dam
SJR @ Lander Ave	All stations listed in the row above and San Joaquin River at Lander Ave, Ash Slough @ Ave 21, Bear Creek @ Kibby Rd, Cottonwood Creek @ Rd 20, Deadman Creek @ Gurr Rd, Deadman Creek @ Hwy 59, Duck Slough @ Gurr Rd, Duck Slough @ Hwy 99, Howard Lateral @ Hwy 140, Miles Creek @ Reilly Rd
SJR @ Hills Ferry Rd	All stations listed in the rows above and Los Banos Creek at China Camp Road, Los Banos Creek at Hwy 140, Los Banos Creek at Sunset Ave., Newman Wasteway near Hills Ferry Rd., Mud Slough Upstream of San Luis Drain, Poso Slough at Indiana Ave, Salt Slough at Lander Ave, Salt Slough at Sand Dam, Turner Slough at Edminster Road
SJR @ Las Palmas Ave	All stations listed in the rows above and Marshall Road Drain near River Road, , Orestimba Creek at Hwy 33, Orestimba Creek at River Road, Ramona Lake near Fig Avenue, San Joaquin River at PID Pumps, Highline Canal @ Hwy 99, Highline Canal @ Lombardy Ave, Merced River @ Santa Fe, Mustang Creek @ East Ave, Prairie Flower Drain @ Crows Landing Rd, Dry Creek @ Oakdale
SJR @ Maze Blvd	All stations listed in the rows above and Blewett Drain at Highway 132, Del Puerto Creek at Hwy 33, Del Puerto Creek near Cox Road, Hospital Creek at River Road, Ingram Creek at River Road, Westley Wasteway near Cox Road, Dry Creek @ Wellsford Rd, Lateral 2 1/2 near Keyes Rd
SJR @ Airport Way	All stations listed in the rows above and Mootz Drain Downstream of Langworth Pond

To better characterize the upstream drainage area for each of the San Joaquin River monitoring compliance points, subwatershed land use acreage is compiled in Table 9 based on United States Department of Agriculture (USDA) cropland data from 2009. The entire drainage area is estimated at more than three and a half million acres with close to two million acres estimated to be irrigated agriculture. Of the estimated irrigated acreage land uses, field crops are the majority and account for approximately 50% of estimated irrigated acreage. Orchards are the second most prevalent land use acreage at approximately 25%, followed by pasture land and vineyards accounting for 20% and 4% of the total estimated irrigated acreage, respectively. Overall, estimated irrigated land comprises 51% of the land use within the entire Lower San Joaquin River drainage area according to the 2009 USDA cropland data.

The land use of the area draining directly into each compliance location (subwatershed acres in Table 9) varies among the subwatersheds. For example, the percentage of estimated orchard acres within each of the compliance point subwatersheds varies from 4% (SJR @ Hills Ferry Rd) to 23% (SJR @ Airport Way). However, percentage of irrigated acres has a more defined range, varying from 45% (SJR @ Hills Ferry Rd) to 59% (SJR @ Sack Dam).

Table 10 identifies the most prevalent (largest acreage) crop types within each compliance point subwatershed based on the USDA 2009 cropland data. Alfalfa acreage is within the top four in all subwatersheds and almond acreage is within the top two in all subwatersheds except Hills Ferry Rd. Corn, grapes, oats, pasture/grasses, tomatoes, and winter wheat are also all very common in the Lower San Joaquin River drainage area as their land use acreages in each subwatershed are in the top ten. It should be noted that the acreage of most field crops are driven by market forces, water supply, and other factors and will vary significantly from year to year.

Figure 4 provides a map of the six San Joaquin River monitoring locations and their entire associated upstream drainage area (cumulative acres); including upstream tributaries sampled by the Coalitions (refer to the tributary map key in Table 7).

Table 9. San Joaquin River sampling stations upstream estimated land use acreage. Stations are listed in order of upstream to downstream from left to right. Subwatershed totals reflect the acreages within the subareas that drain to each SJR location. Cumulative totals reflect acreages that drain to each SJR location including any land use of upstream SJR locations. Acreages estimated from 2009 USDA data.

	SJR @ Sack Dam	SJR @ Lander Ave	SJR @ Hills Ferry Rd	SJR @ Las Palmas Ave	SJR @ Maze Blvd	SJR @ Airport Way
Field Crops (I)	18,800	326,200	324,100	163,600	91,900	41,500
Orchard (I)	18,600	177,400	45,900	101,200	101,200	44,600
Pasture (I)	2,400	72,800	137,600	67,400	96,900	11,900
Vineyard (I)	10,100	58,300	4,100	9,000	2,000	500
Estimated Subwatershed Irrigated Acres:	**49,900**	**634,700**	**511,700**	**341,200**	**292,000**	**98,500**
Estimated Cumulative Irrigated Acres:	**49,900**	**684,600**	**1,196,300**	**1,537,500**	**1,829,500**	**1,928,000**
Developed (NI)	8,200	118,200	76,600	55,700	63,900	40,500
Native (NI)	24,300	403,500	497,500	193,000	198,200	47,900
Not Farmed (NI)	1,700	17,100	38,700	6,200	4,500	1,300
Open Water (NI)	1,000	2,100	18,000	1,800	8,800	3,100
Estimated Subwatershed Non-Irrigated Acres:	**35,200**	**540,900**	**630,800**	**256,700**	**275,400**	**92,800**
Estimated Cumulative Non-Irrigated Acres:	**35,200**	**576,100**	**1,206,900**	**1,463,600**	**1,739,000**	**1,831,800**
Estimated Subwatershed Total Acres	**85,100**	**1,175,600**	**1,142,500**	**597,900**	**567,400**	**191,300**
Estimated Cumulative Total Acres	**85,100**	**1,260,700**	**2,403,200**	**3,001,100**	**3,568,500**	**3,759,800**

SJR – San Joaquin River
I – Irrigated
NI – Not Irrigated

Table 10. Top ten crops (based on acreage) upstream of each San Joaquin River sampling station, listed in order of largest (first row) to smallest acreage (last row). Acreages estimated from 2009 USDA data.

SJR @ Sack Dam	SJR @ Lander Ave	SJR @ Hills Ferry Rd	SJR @ Las Palmas Ave	SJR @ Maze Blvd	SJR @ Airport Way
Almonds	Alfalfa	Pasture/Grass	Almonds	Pasture/Grass	Almonds
Grapes	Almonds	Alfalfa	Oats	Almonds	Alfalfa
Alfalfa	Pasture/Grass	Tomatoes	Pasture/Grass	Alfalfa	Oats
Pistachios	Grapes	Oats	Alfalfa	Oats	Pasture/Grass
Winter Wheat	Oats	Winter Wheat	Winter Wheat	Walnuts	Walnuts
Pasture/Grass	Winter Wheat	Cotton	Grapes	Tomatoes	Winter Wheat
Oats	Pistachios	Almonds	Tomatoes	Winter Wheat	Corn
Tomatoes	Tomatoes	Corn	Corn	Corn	Other Hays
Corn	Corn	Cantaloupe	Walnuts	Grapes	Tomatoes
Walnuts	Cotton	Grapes	Pistachios	Cotton	Grapes

Figure 2. San Joaquin River monitoring locations and drainage subareas.

Figure 3. San Joaquin River monitoring locations, associated subareas, and all upstream ESJWQC and Westside Coalition tributaries monitored during the first, second, and third quarters of 2010 (January through September). Refer to Table 7 for tributary map key.

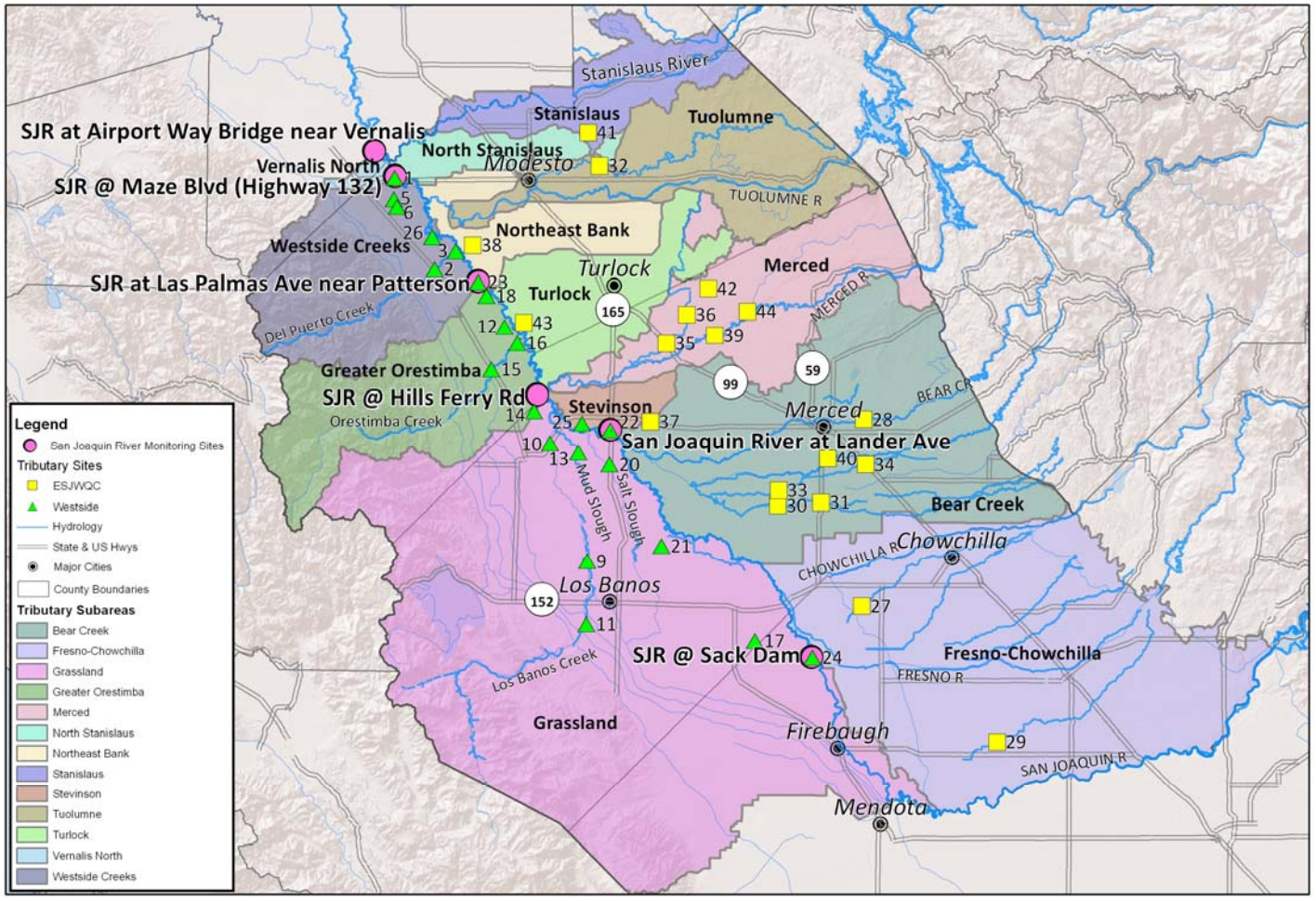
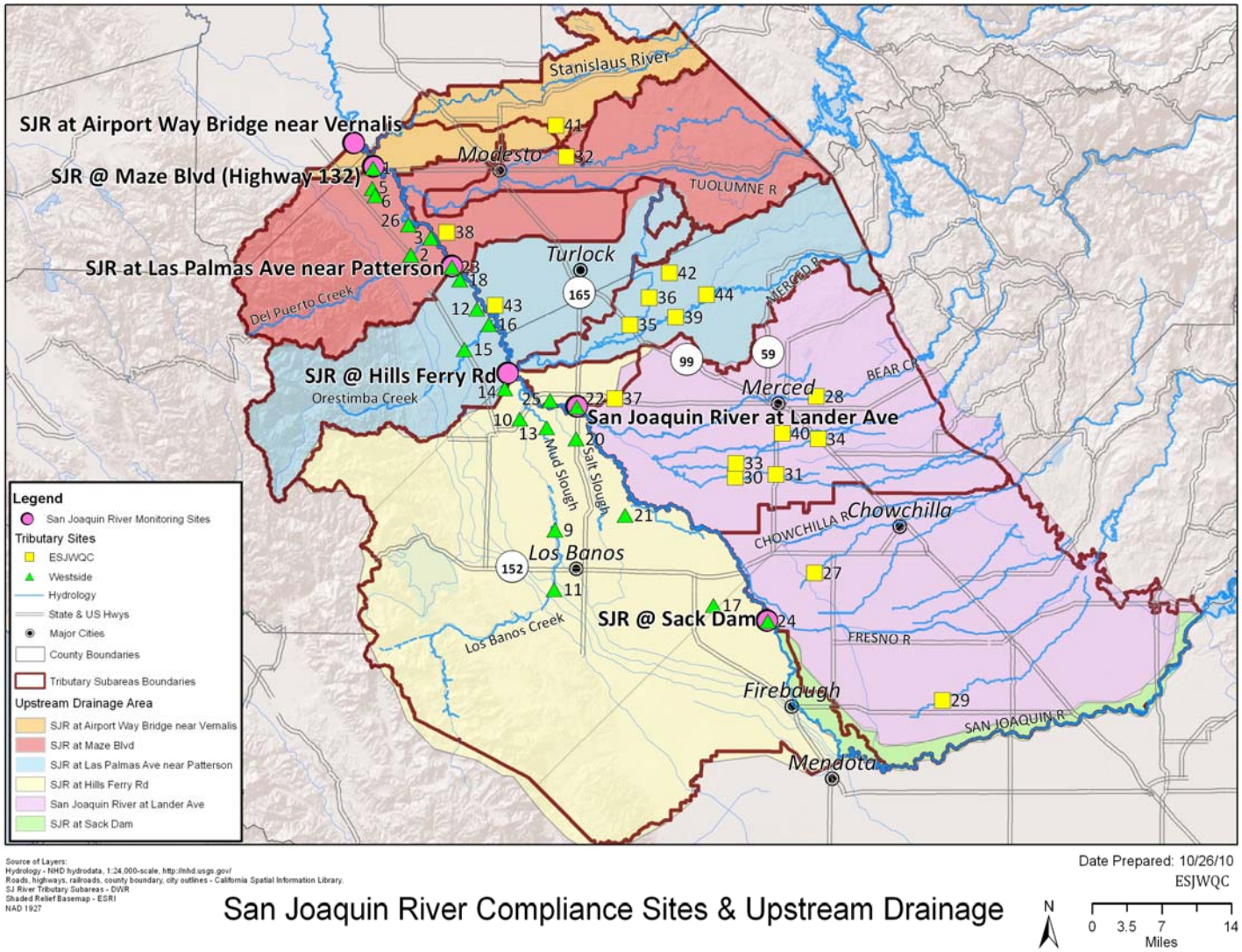


Figure 4. San Joaquin River monitoring locations and associated subwatershed drainage areas (may include multiple subareas) with ESJWQC and Westside Coalition tributaries monitored during the first, second, and third quarters of 2010 (January through September). Refer to Table 7 for tributary map key.



RAINFALL RECORDS

Daily rainfall records are provided for four locations spread throughout the ESJWQC and Westside Coalition regions: Modesto, Merced, Madera and Vernalis. All storms and subsequent rainfall occurring within the ESJWQC and Westside Coalition regions during the reporting period are discussed in the following sections by quarter.

January through March 2010

Figure 5 presents daily rainfall for January through March 2010. Sampling during the first quarter did not occur until March 25, 2010 which was after the major storms of the season. The first storm event with greater than 0.25 inch of rain occurred on January 12 and 13, during which Merced received 0.34 inches of rainfall, Modesto received 0.57 inches, Madera received 0.05 inches, and Vernalis received 0.24 inches. During eleven days in late January, Merced reported 2.38 inches of precipitation, Modesto reported 2.4 inches, Madera reported 1.79 inches, and Vernalis reported 3.83 inches. During the first part of February, Merced received 1.0 inch of precipitation, Modesto received 0.66 inches, Madera received 1.37 inches, and Vernalis received 0.38 inches. On February 23; Merced received 0.82 inches of rainfall while Modesto received 0.36 inches, Madera received 0.47 inches, and Vernalis received 0.48 inches. During the first five days of March, Merced recorded 0.65 inches of rainfall, Modesto recorded 0.48 inches, Madera recorded 0.52 inches, and Vernalis recorded 0.38 inches.

April 2010 – June 2010

Figure 6 presents daily rainfall for April through June 2010. Two major storms occurred in April; the first totaled 0.7 inches in Merced, 0.19 inches in Modesto, 0.68 inches in Madera, and 0.25 inches in Vernalis, and during the second Merced received 0.66 inches of precipitation, Modesto received 0.72 inches, Madera received 0.48 inches, and Vernalis received 0.36 inches that first day. The month of May was much dryer, as is typical of the Mediterranean summer climate in the San Joaquin Valley region. During the month, Merced received 0.28 inches, Modesto received 0.25 inches, Madera received 0.02 inches, and Vernalis received 0.33 inches of precipitation. Modesto reported 0.02 inches of precipitation on June 25, 2010. The remainder of the month was dry.

July 2010 – September 2010

No precipitation occurred during July, August and September 2010. San Joaquin River sampling at all locations for the third quarter occurred on July 22, 2010. No graph is included for July through September due to the lack of measurable precipitation.

Figure 5. Precipitation history between January 1 and March 31, 2010. All data was recorded at weather stations in Modesto, Merced, Madera, and Vernalis, CA and reported on weatherunderground.com.

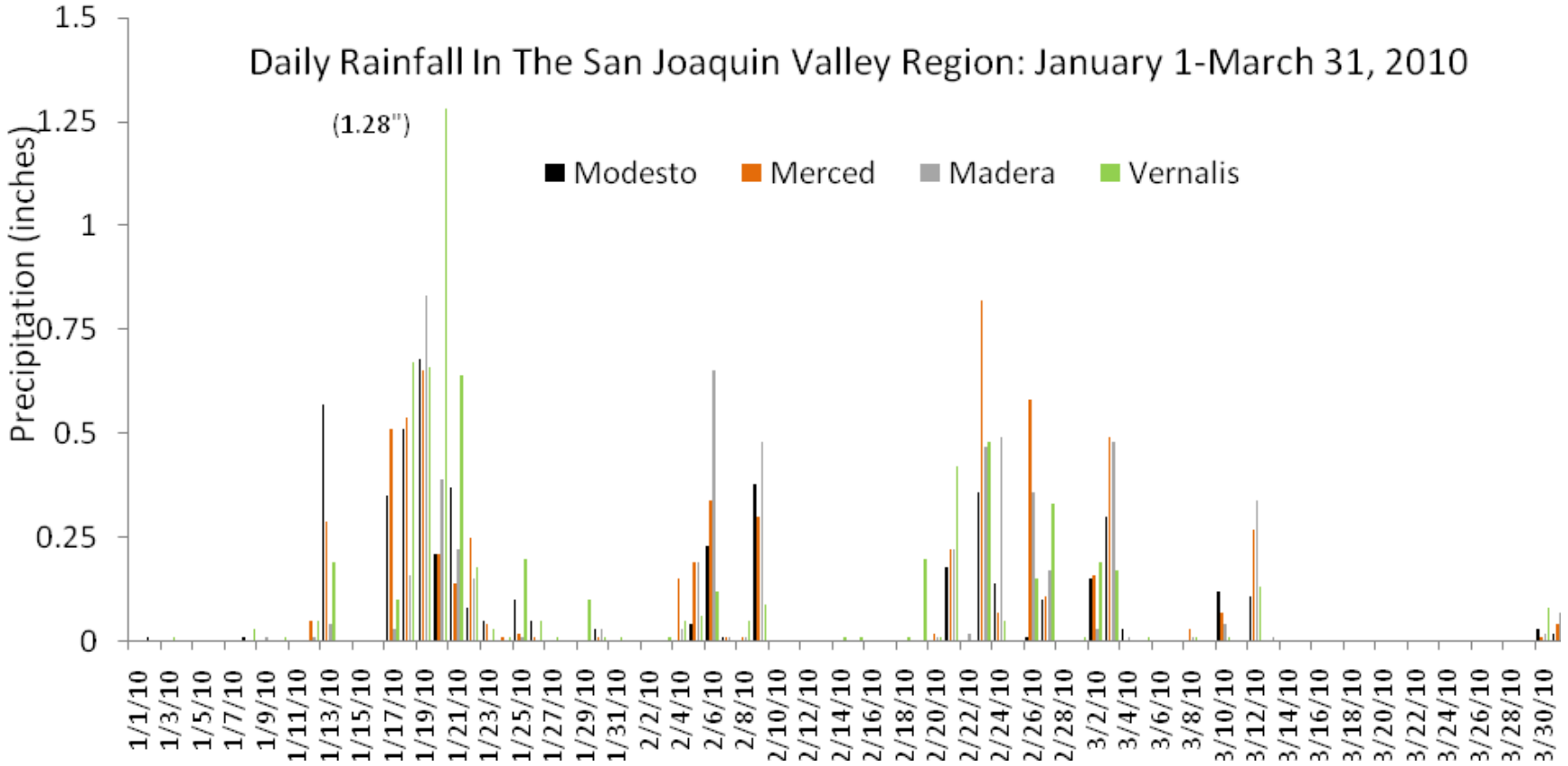
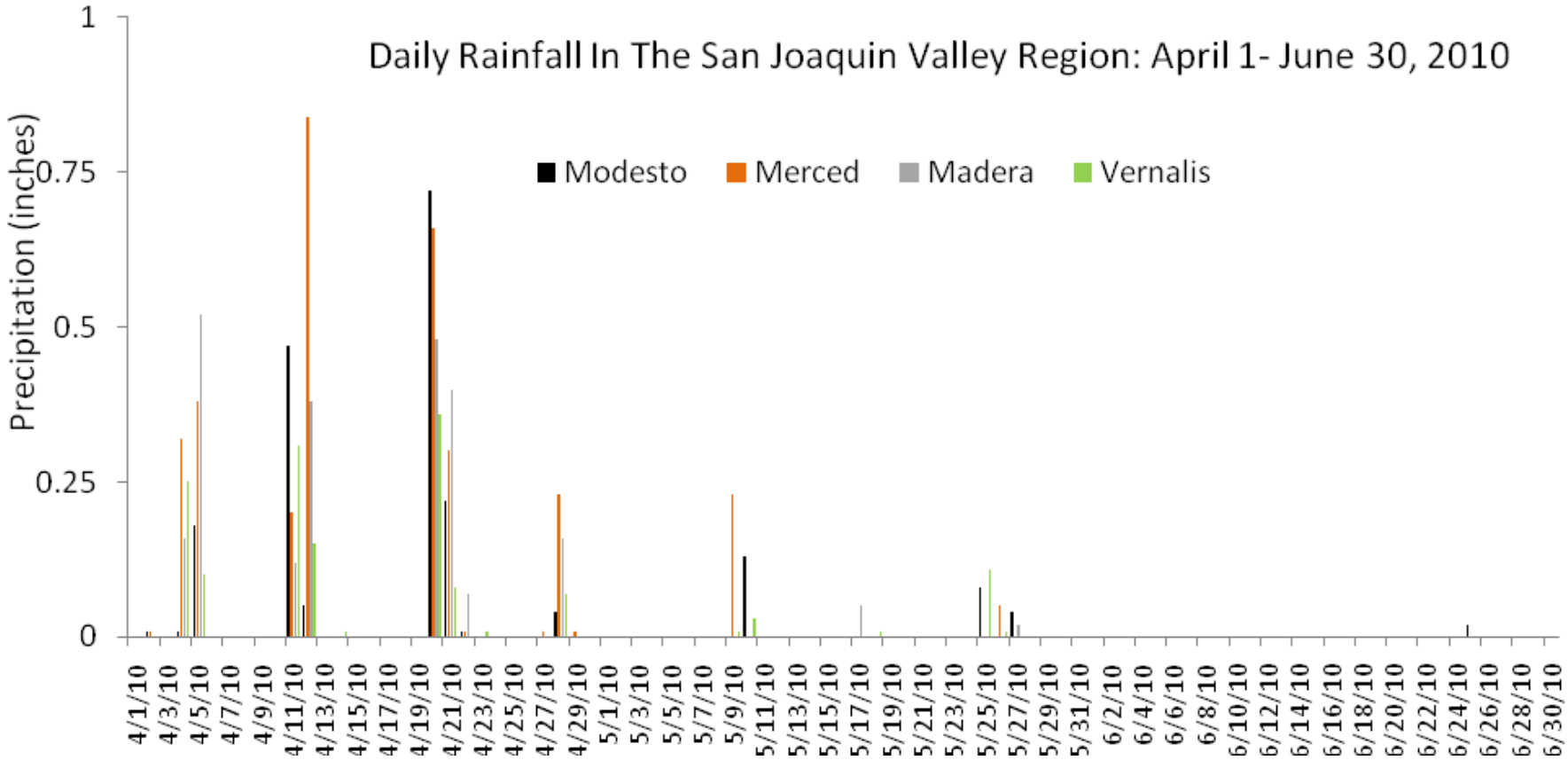


Figure 6. Precipitation history between April 1 and June 30, 2010. All data was recorded at weather stations in Modesto, Merced, Madera, and Vernalis, CA and reported on weatherunderground.com.



SAMPLING AND ANALYTICAL METHODS

Sample collection containers, volumes, preservations and holding times are provided in Table 11 and field instrument information is included in Table 12. Site-specific discharge methods are provided in Table 13, and analytical methods and reporting limits (RL) are provided in Table 14.

Field sampling procedures and analytical methods were performed at SJR @ Airport Way, SJR @ Hills Ferry Rd, and SJR @ Maze Blvd as outlined in the standard operating procedures (SOPs) provided in the ESJWQC QAPP. ESJWQC field samplers collected an integrated river water sample using a three liter polytetrafluoroethylene (PFTE) bottle from a bridge crossing. Amber glass bottles are filled from the integrated sample collected in the PFTE bottle. The complete ESJWQC field sampling SOPs are included in Appendix I for reference; no deviations from these procedures occurred during the monitoring.

The Westside Coalition sampled the SJR @ Lander Ave, SJR @ Las Palmas, and SJR @ Sack Dam according to the field sampling procedures and analytical methods described in the Westside Coalition QAPP. The Westside Coalition field samplers collected sample water directly into amber glass bottles from the San Joaquin River bank at each site. Due to safety concerns, Westside Coalition samplers avoid bridge sampling where possible. The complete Westside Coalition field sampling SOPs are included in Appendix I for reference; no deviations from these procedures occurred during the monitoring.

Table 11. Sampling procedures, containers, sample volumes, preservation and storage techniques, and holding times.

Analytical Parameter	Sample Volume[1]	Sample Container	Initial Preservation/Holding Requirements	Holding Time[2]
Organophosphates	1 L	1 L Amber Glass	Store at 4°C; extract within 7 days	40 Days

[1] Additional volume may be required for QC analyses.
[2] Holding time after initial preservation or extraction.

Table 12. Field parameters and instruments used to collect measurements.

Parameter	Instrument
Dissolved oxygen	YSI Model 556
Temperature	YSI Model 556
pH	YSI Model 556
Specific Conductance	YSI Model 556
Discharge	DWR Gauge/CDEC Website

DWR – California Department of Water Resources
CDEC – California Data Exchange Center

Table 13. Site specific discharge methods.

Responsible Coalition	Station Name	Discharge Method	Gauge
Westside	SJR @ Sack Dam	DWR Gauge	CDEC San Joaquin River near Dos Palos (SDP)
Westside	SJR @ Lander Ave	DWR Gauge	CDEC San Joaquin River near Stevinson (SJS)[1]
ESJWQC	SJR @ Hills Ferry Rd	USGS and DWR Gauge	CDEC San Joaquin River Near Newman (NEW)

Responsible Coalition	Station Name	Discharge Method	Gauge
Westside	SJR @ Las Palmas Ave	DWR Gauge	CDEC San Joaquin River near Patterson (SJP)
ESJWQC	SJR @ Maze Blvd	DWR Gauge	CDEC San Joaquin River at Maze Rd Bridge (MRB)
ESJWQC	SJR @ Airport Way	DWR Gauge	CDEC San Joaquin River Mccune Station NR Vernalis (SJR)

[1]The last available discharge data for this gauge station was March 5, 2010.

Table 14. Field and laboratory analytical methods.

Constituent	Matrix	Analyzing Lab	RL	MDL	Analytical Method
Physical Parameters					
pH	Water	Field Measure	0.1 pH units	NA	EPA 150.1
Specific Conductivity	Water	Field Measure	100 µmhos/cm	NA	EPA 120.1
Dissolved Oxygen	Water	Field Measure	0.1 mg/L	NA	SM 4500-O
Temperature	Water	Field Measure	0.1 °C	NA	SM 2550
Organophosphates					
Chlorpyrifos	Water	APPL Inc	0.015 µg/L	0.0026 µg/L	EPA 8141A
Diazinon	Water	APPL Inc	0.02 µg/L	0.004 µg/L	EPA 8141A

RL – Reporting Limit
MDL – Minimum Detection Limit
cfs - Cubic Feet per Second

MONITORING RESULTS

As described in the Monitoring Objectives section, this report includes all monitoring data collected from January through September 2010.

Original Chain of Custody (COC) forms were scanned and converted to pdf. Copies of the COCs are provided in Appendix II. COCs were faxed by the laboratories to Michael L. Johnson, LLC (MLJ-LLC) and Summers Engineering after the receipt of samples by the laboratory. As such, they are complete and accurate records of sample handling and processing and reflect the timing of sample collection and delivery to the laboratories. Sample collection and delivery were performed according to the ESJWQC QAPP and Westside Coalition QAPP. Each Coalition adhered to its own procedures for the three sites each Coalition was responsible for monitoring. If there were any discrepancies between the COC and sample delivery, the issues were resolved and documented directly on the COC.

Complete monitoring results from sampling conducted at the six compliance points on the San Joaquin River are included in Appendix III (Monitoring Results) and Appendix IV (Field and Laboratory Quality Assurance (QA) Results). The results in Appendix III include field parameter results (DO, SC, pH, temperature and discharge) and laboratory analyses for chlorpyrifos and diazinon. Field and laboratory quality assurance data including field duplicates, field blanks, laboratory blanks, laboratory duplicates, matrix spikes and control spike results are included in Appendix IV and are discussed in the Laboratory and Field Quality Assurance Results and Summary of Precision and Accuracy sections.

Loading capacity and compliance were determined for all environmental samples collected from the San Joaquin River during the reporting period. Loading capacities and compliance status are reported in Table 28 in the Comparison with TMDL Objectives section of this report.

All field data sheets can be found in Appendix V. All associated laboratory reports (as pdfs) are submitted along with this report.

SAMPLE DETAILS

Table 15 lists each San Joaquin River sampling location, sample date, sample time and type of monitoring for each sampling event conducted by the Coalitions during the reporting period.

As explained in the Monitoring Objectives and Design section of this report, sampling frequency and timing were determined based on the history of chlorpyrifos and diazinon use and the potential for either irrigation and/or storm runoff. The Coalitions did not collect samples from a storm event in 2010 immediately following dormant applications (discussed with Regional Board staff on March 3, 2010). First quarter sampling instead occurred during the same week of ESJWQC tributary monitoring in March ESJWQC tributary monitoring on March 23 and San Joaquin River monitoring occurred on March 25, 2010 for all six compliance locations, Table 16.

The Coalitions worked together to develop a schedule for monitoring tributary water quality within their respective Coalition regions two days prior to monitoring the six San Joaquin River compliance locations. The ESJWQC and Westside Coalition were unable to coordinate sampling of the San Joaquin River during the second quarter event (April through June). Westside Coalition San Joaquin River organophosphate TMDL monitoring and normal monitoring were conducted on May 6 and May 11, 2010, respectively.

ESJWQC normal monitoring and San Joaquin River organophosphate TMDL monitoring were conducted on May 18 and May 20, 2010, respectively (Table 16). During the second quarter, monitoring within the San Joaquin River occurred nine days apart however still represents water quality within the San Joaquin River during the period when chlorpyrifos use is the highest.

Table 16 lists the 2010 water year sampling dates of the San Joaquin River sites and sampling dates of each Coalition's tributary monitoring during the same months.

Table 15. Sample details for samples collected during 2010 (sorted by sample date and station name).

Responsible Coalition	Station Name	Station Code	Season	Sample Date	Sample Time	Failure Reason	Sample Comments
ESJWQC	SJR @ Airport Way	541SJC501	Qrt1	25-Mar-10	13:30	None	Discharge not available.
ESJWQC	SJR @ Hills Ferry Rd	541STC512	Qrt1	25-Mar-10	11:20	None	
Westside	SJR @ Lander Ave	541XSJRLA	Qrt1	25-Mar-10	12:15	None	Flow estimated. CDEC station down.
Westside	SJR @ Las Palmas Ave	541STC507	Qrt1	25-Mar-10	10:00	None	Flow from CDEC
ESJWQC	SJR @ Maze Blvd	541STC510	Qrt1	25-Mar-10	12:30	None	
Westside	SJR @ Sack Dam	541XSJRSD	Qrt1	25-Mar-10	10:06	None	Flow per SJRECWA records.
Westside	SJR @ Lander Ave	541XSJRLA	Qrt2	6-May-10	10:48	None	CDEC station off-line. No flow available.
Westside	SJR @ Las Palmas Ave	541STC507	Qrt2	6-May-10	10:30	None	Flow from CDEC.
Westside	SJR @ Sack Dam	541XSJRSD	Qrt2	6-May-10	9:35	None	Flow from CDEC.
ESJWQC	SJR @ Airport Way	541SJC501	Qrt2	20-May-10	11:20	None	Discharge not available.
ESJWQC	SJR @ Hills Ferry Rd	541STC512	Qrt2	20-May-10	9:20	None	
ESJWQC	SJR @ Maze Blvd	541STC510	Qrt2	20-May-10	10:40	None	
ESJWQC	SJR @ Airport Way	541SJC501	Qrt3	22-Jul-10	11:20	None	Discharge not available.
ESJWQC	SJR @ Hills Ferry Rd	541STC512	Qrt3	22-Jul-10	9:20	None	
Westside	SJR @ Lander Ave	541XSJRLA	Qrt3	22-Jul-10	11:00	None	
Westside	SJR @ Las Palmas Ave	541STC507	Qrt3	22-Jul-10	10:30	None	
ESJWQC	SJR @ Maze Blvd	541STC510	Qrt3	22-Jul-10	10:20	None	
Westside	SJR @ Sack Dam	541XSJRSD	Qrt3	22-Jul-10	10:00	None	Flow from CDEC.

TMDL – Total Maximum Daily Load
SJRECWQ – San Joaquin River Exchange Center Water Authority
CDEC – California Data Exchange Center

Table 16. San Joaquin River sample sites and upstream tributaries dates monitored.

Responsible Coalition	Station Name	Qrt 4	Qrt 1			Qrt 2				Qrt 3		
		Oct. – Dec., 2009	March 9, 2010	March 23, 2010	March 25, 2010	May 6, 2010	May 11, 2010	May 18, 2010	May 20, 2010	July 14, 2010	July 20, 2010	July 22, 2010
Westside Coalition	SJR @ Sack Dam	NA			X	X						X
Westside Coalition	SJR @ Lander Ave	NA			X	X						X
ESJWQC	SJR @ Hills Ferry Rd	NA			X				X			X
Westside Coalition	SJR @ Las Palmas Ave	NA			X	X						X
ESJWQC	SJR @ Maze Blvd	NA			X				X			X
ESJWQC	SJR @ Airport Way	NA			X				X			X
ESJWQC	ESJWQC normal monitoring of tributaries	NA		X				X			X	
Westside Coalition	Westside Coalition normal monitoring of tributaries	NA	X				X			X		

NA – not applicable. Sampling for the chlorpyrifos and diazinon TMDL San Joaquin River project was not initiated until 2010.

LABORATORY AND FIELD QUALITY ASSURANCE RESULTS

During the monitoring period of this report, all six compliance monitoring locations within the San Joaquin River were accessible at the time of sampling and had continuous flow. Because the ESJWQC and Westside Coalition share sampling responsibilities, each Coalition was responsible for three sites per sampling event and each Coalition collected its own set of field quality control (QC) samples.

CHEMISTRY

All results are tabulated in the Monitoring Results section of this report (Appendix III and Appendix IV). Results were flagged if they did not meet data quality objectives (acceptability criteria). Copies of the ESJWQC database and copies of the Westside Coalition excel spread sheets are submitted to the Regional Board with the hardcopy of this report.

Chemistry Completeness

Chlorpyrifos and diazinon were monitored at all six compliance locations during Quarters 1 through 3 of 2010. Not including laboratory QA or field QC samples, 18 chlorpyrifos and 18 diazinon environmental samples were collected and analyzed. There was 100% completeness for environmental samples collected for analysis.

For each sampling event, a field duplicate (FD) and field blank (FB) were collected by each Coalition so that each Coalition's three sites had their own set of associated QC samples. Hence, there were two field duplicates and two field blanks per each sampling event. Field blanks and field duplicates each compromised 20.0% of the total samples analyzed (Table 17).

Table 17. ESJWQC and Westside Coalition sample counts, field quality control counts and percentages.

Method	Analyte	Env. Samples (#)	Env. and Field QC Samples (#)	Field Blanks (#)	Field Blanks (%)	Field Dup. (#)	Field Dup. (%)
EPA 8141A OP	Chlorpyrifos	18	30	6	20.0%	6	20.0%
EPA 8141A OP	Diazinon	18	30	6	20.0%	6	20.0%

All chemistry batches were reviewed for completeness. No batches during the reporting period were flagged as having incomplete QC or QA.

Hold times for all chemistry analysis were met for both Coalitions (Table 18).

Table 18. ESJWQC and Westside Coalition summary of holding time evaluations for environmental, field blank, field duplicate and matrix spike samples.

Method	Analyte	Data Quality Objective	Number of Samples	Samples Within Control Limits	Percent Samples Acceptable
EPA 8141A OP	Chlorpyrifos	7 days	36	36	100%
EPA 8141A OP	Diazinon	7 days	36	36	100%
		Total	**72**	**72**	**100%**

SUMMARY OF PRECISION AND ACCURACY

A review of the number of samples analyzed and the percentage per analyte of those samples that met acceptability criteria are provided in Tables 19 - 26. A brief overview is provided below to assess overall precision and accuracy. Precision and accuracy criteria were met for 100% of the samples for all analytes and all criteria.

One hundred percent of field blanks and duplicates met acceptability criteria (Tables 19 and 20).

Lab blanks were run with each batch and 100% of the samples met acceptability criteria (Table 21).

Surrogates were run with each pesticide analysis. Surrogate recoveries were within specific acceptance criteria for 100% of all samples analyzed (Table 22).

Matrix spikes (MS) and laboratory control spikes (LCS) were performed for each batch to assess accuracy and possible matrix interference. A duplicate analysis was performed per batch to assess precision on either the LCS or MS. Samples collected by the Westside Coalition on July 22, 2010 (SJR @ Las Palmas Ave, SJR @ Lander Ave, SJR @ Sack Dam) were analyzed with both an matrix spike duplicate (MSD) and laboratory control spike duplicate (LCSD). One hundred percent of MS and LCS samples (including duplicates) run were within acceptability criteria (Tables 23 and 24).

Laboratory precision assessed by the relative percent difference (RPD) of laboratory duplicates met acceptability criteria in 100% of MSD and LCSD (Tables 25 and 26).

Table 19. ESJWQC and Westside Coalition summary of field blank quality control sample evaluations.

Method	Analyte	Data Quality Objective	Number of Samples	Samples Within Control Limits	Percent Samples Acceptable
EPA 8141A OP	Chlorpyrifos	<RL or < (env sample/5)	6	6	100%
EPA 8141A OP	Diazinon	<RL or < (env sample/5)	6	6	100%
		Total	**12**	**12**	**100%**

Table 20. ESJWQC and Westside Coalition summary of field duplicate quality control sample evaluations.

Method	Analyte	Data Quality Objective	Number of Samples	Samples Within Control Limits	Percent Samples Acceptable
EPA 8141A OP	Chlorpyrifos	RPD ≤ 25	6	6	100%
EPA 8141A OP	Diazinon	RPD ≤ 25	6	6	100%
		Total	**12**	**12**	**100%**

Table 21. ESJWQC and Westside Coalition summary of method blank quality control sample evaluations.

Method	Analyte	Data Quality Objective	Number of Samples	Samples Within Control Limits	Percent Samples Acceptable
EPA 8141A OP	Chlorpyrifos	<RL	6	6	100%
EPA 8141A OP	Diazinon	<RL	6	6	100%
		Total	**12**	**12**	**100%**

Table 22. ESJWQC and Westside Coalition summary of surrogate recovery quality control sample evaluations.

Method	Analyte	Data Quality Objective	Number of Samples	Samples Within Control Limits	Percent Samples Acceptable
EPA 8141A OP	Tributylphosphate(Surrogate)	RPD ≤ 25; PR 60-150	55	55	100%
EPA 8141A OP	Triphenyl phosphate(Surrogate)	RPD ≤ 25; PR 56-129	55	55	100%
		Total	**110**	**110**	**100%**

Table 23. ESJWQC and Westside Coalition summary of matrix spike quality control sample evaluations.

Method	Analyte	Data Quality Objective	Number of Samples	Samples Within Control Limits	Percent Samples Acceptable
EPA 8141A OP	Chlorpyrifos	PR 61-125	12	12	100%
EPA 8141A OP	Diazinon	PR 57-130	12	12	100%
		Total	**24**	**24**	**100%**

Table 24. ESJWQC and Westside Coalition summary of lab control spike quality control sample evaluations.

Method	Analyte	Data Quality Objective	Number of Samples	Samples Within Control Limits	Percent Samples Acceptable
EPA 8141A OP	Chlorpyrifos	PR 61-125	7	7	100%
EPA 8141A OP	Diazinon	PR 57-130	7	7	100%
		Total	**14**	**14**	**100%**

Table 25. ESJWQC and Westside Coalition summary of matrix spike duplicate quality control sample evaluations. Non project matrix spikes are included for batch completeness.

Method	Analyte	Data Quality Objective	Number of Pairs	Pairs Within Control Limits	Percent Samples Acceptable
EPA 8141A OP	Chlorpyrifos	RPD ≤ 25	6	6	100%
EPA 8141A OP	Diazinon	RPD ≤ 25	6	6	100%
		Total	**12**	**12**	**100%**

Table 26. ESJWQC and Westside Coalition summary of lab control spike duplicate quality control sample evaluations.

Method	Analyte	Data Quality Objective	Number of Pairs	Pairs Within Control Limits	Percent Samples Acceptable
EPA 8141A OP	Chlorpyrifos	RPD ≤ 25	1	1	100%
EPA 8141A OP	Diazinon	RPD ≤ 25	1	1	100%
		Total	**2**	**2**	**100%**

COMPARISON WITH TMDL OBJECTIVES

The Lower San Joaquin River chlorpyrifos and diazinon TMDL objectives include:

1. Determine compliance with established water quality objectives (WQOs) and the loading capacity applicable to diazinon and chlorpyrifos in the San Joaquin River.
2. Determine compliance with established load allocations for diazinon and chlorpyrifos.
3. Determine the degree of implementation of management practices to reduce off-site movement of diazinon and chlorpyrifos.
4. Determine the effectiveness of management practices and strategies to reduce off-site migration of diazinon and chlorpyrifos.
5. Determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts.
6. Determine whether the discharge causes or contributes to toxicity impairment due to additive or synergistic effects of multiple pollutants.
7. Demonstrate that management practices are achieving the lowest pesticide levels technically and economically achievable.

Quarterly monitoring of the San Joaquin River in 2010 was designed to assess compliance with Objective 1. Objectives 2 through 7 are addressed individually by each Coalition and are discussed in the ESJWQC Management Plan and MPURs for chlorpyrifos and diazinon and Westside Coalition Management Plan and SAMRs (refer to Table 3 for a list of submitted reports for each Coalition). Included in the Management Plans and subsequent reports are an assessment of upstream water quality conditions including load allocations and a strategy for implementation and tracking of management practices as well as assessing effectiveness. A brief description of Coalition actions relevant to each of Objective 2 through 7 and where additional information can be found is provided below.

OBJECTIVE 1: DETERMINE COMPLIANCE WITH ESTABLISHED WATER QUALITY OBJECTIVES AND THE LOADING CAPACITY APPLICABLE TO DIAZINON AND CHLORPYRIFOS IN THE SAN JOAQUIN RIVER.

As described in the Monitoring Design section of this report, the ESJWQC and Westside Coalition collaborated to monitor the six locations on the San Joaquin River to ensure compliance with the chlorpyrifos and diazinon WQOs and loading capacity. There was a single sample that exceeded chlorpyrifos WQO and was therefore out of compliance with the San Joaquin River loading capacity.

Water Quality Objectives

Table 1 in the Monitoring Objectives and Design section identifies the WQOs for chlorpyrifos and diazinon (0.015 µg/L and 0.10 µg/L, respectively).

During the reporting period, the chlorpyrifos WQO was exceeded once on July 22 at the SJR @ Las Palmas Avenue sampling station (0.041 µg/L; Table 27). Also on July 22, 2010, chlorpyrifos was detected in both the environmental and field duplicate samples collected from SJR @ Airport Way below the WQO (both 0.013 µg/L). The laboratory RL for chlorpyrifos is 0.015 µg/L, therefore the detected sample

result is an estimated value. Chlorpyrifos was not detected at any other San Joaquin River sampling location during the reporting period.

Diazinon was not detected at any San Joaquin River station during the reporting period.

Complete environmental monitoring results are listed in Appendix III; complete quality control monitoring results including field duplicates are listed in Appendix IIV.

Table 27. Exceedances of chlorpyrifos and diazinon WQOs in the San Joaquin River during 2010 monitoring.

Responsible Coalition	Station Name	Season	Sample Date	Chlorpyrifos (µg/L)	Diazinon (µg/L)
Westside Coalition	SJR @ Las Palmas Ave	Qrt 3	7/22/2010	0.041	<0.004
			Total WQO Exceedances	1	0

Loading Capacity

As explained in the Monitoring Objectives and Design section of this report, the WQOs for chlorpyrifos and diazinon are used to determine the loading capacity. The formula to calculate loading capacity is provided in Figure 1 in the Monitoring Objectives and Design section.

Table 28 lists the calculated loading capacity for all samples collected from each monitoring location during the reporting period (January through September 2010).

The loading capacity limit was exceeded once in the San Joaquin River during 2010 monitoring. The July 22, 2010 chlorpyrifos concentration in samples collected from the SJR @ Las Palmas Ave monitoring location resulted in a load capacity greater than the compliance limit of one (2.73; Table 28). The measured chlorpyrifos concentration of 0.041 µg/L also exceeded the chlorpyrifos WQO, as mentioned resulting in non-compliance of the San Joaquin River loading capacity. There were no diazinon detections during the monitoring period. There were no detections of chlorpyrifos or diazinon July 22 at the next downstream location along the San Joaquin River, Maze Blvd. There are six tributary locations monitored by the Westside Coalition and two tributary locations monitored by the ESJWQC on July 20, 2010 that are part of the subwatershed drainage area to the Las Palmas sampling location. Monitoring data from the tributary sites will be included in the Westside SAMR (to be submitted on November 30, 2010) and the ESJWQC AMR (to be submitted on March 1, 2011). The Westside AMR will also include a management plan update evaluating management practice implementation and effectiveness within the Westside tributaries to the Las Palmas monitoring location. The ESJWQC will assess management practices for its two tributaries (Dry Creek @ Wellsford and Lateral 2 ½ near Keyes Rd) in its Management Plan Update Report (to be submitted April 1, 2011).

The only other detection of chlorpyrifos also occurred on July 22 in samples collected from the SJR @ Airport Way (downstream of Las Palmas) in both the environmental sample and field duplicate sample. The calculated load based on the chlorpyrifos result (0.013 µg/L) and diazinon (non detect, 0 µg/L) does not exceed the load capacity limit of one (0.87; Table 28).

Loading capacity compliance is tallied per each station of the San Joaquin River in Table 29. This is the first year of monitoring within the San Joaquin River for compliance with the chlorpyrifos and diazinon TMDL and therefore there is not yet enough information to assess if improvements in water quality have been made.

Table 28. Chlorpyrifos and diazinon TMDL calculated loading capacities for all samples collected from the San Joaquin River during the reporting period (January through September 2010).

Responsible Coalition	Station Name	Sample Date	Chlorpyrifos (µg/L)	Diazinon (µg/L)	Load[1]	Loading Capacity Compliance
Westside	SJR @ Sack Dam	3/25/2010	<0.0026	<0.004	0	Compliant
Westside	SJR @ Lander Ave	3/25/2010	<0.0026	<0.004	0	Compliant
ESJWQC	SJR @ Hills Ferry Rd	3/25/2010	<0.0026	<0.004	0	Compliant
Westside	SJR @ Las Palmas Ave	3/25/2010	<0.0026	<0.004	0	Compliant
ESJWQC	SJR @ Maze Blvd	3/25/2010	<0.0026	<0.004	0	Compliant
ESJWQC	SJR @ Airport Way	3/25/2010	<0.0026	<0.004	0	Compliant
Westside	SJR @ Sack Dam	5/6/2010	<0.0026	<0.004	0	Compliant
Westside	SJR @ Lander Ave	5/6/2010	<0.0026	<0.004	0	Compliant
ESJWQC	SJR @ Hills Ferry Rd	5/20/2010	<0.0026	<0.004	0	Compliant
Westside	SJR @ Las Palmas Ave	5/6/2010	<0.0026	<0.004	0	Compliant
ESJWQC	SJR @ Maze Blvd	5/20/2010	<0.0026	<0.004	0	Compliant
ESJWQC	SJR @ Airport Way	5/20/2010	<0.0026	<0.004	0	Compliant
Westside	SJR @ Sack Dam	7/22/2010	<0.0026	<0.004	0	Compliant
Westside	SJR @ Lander Ave	7/22/2010	<0.0026	<0.004	0	Compliant
ESJWQC	SJR @ Hills Ferry Rd	7/22/2010	<0.0026	<0.004	0	Compliant
Westside	SJR @ Las Palmas Ave	7/22/2010	0.041	<0.004	2.73	Out of compliance
ESJWQC	SJR @ Maze Blvd	7/22/2010	<0.0026	<0.004	0	Compliant
ESJWQC	SJR @ Airport Way	7/22/2010	0.013	<0.004	0.87	Compliant
ESJWQC	SJR @ Airport Way (FD)	7/22/2010	0.013	<0.004	0.87	Compliant

[1]Load is concentration based following the formula in Figure 1.
FD – Field duplicate

Table 29. Tally of chlorpyrifos and diazinon TMDL load capacity compliance per each of the six San Joaquin River stations since the inception of San Joaquin River monitoring (January 2010).

Responsible Coalition	Station Name	Sample Dates	Compliant	Out of Compliance	Total Samples Collected
Westside	SJR @ Sack Dam	January –September 2010	3	0	3
Westside	SJR @ Lander Ave	January –September 2010	3	0	3
ESJWQC	SJR @ Hills Ferry Rd	January –September 2010	3	0	3
Westside	SJR @ Las Palmas Ave	January –September 2010	2	1	3
ESJWQC	SJR @ Maze Blvd	January –September 2010	3	0	3
ESJWQC	SJR @ Airport Way	January –September 2010	3	0	3
		Total	**17**	**1**	**18**

OBJECTIVE 2: DETERMINE COMPLIANCE WITH ESTABLISHED LOAD ALLOCATIONS FOR DIAZINON AND CHLORPYRIFOS.

Compliance with load allocations for nonpoint source discharges, including agricultural discharges, must be determined for each of the five subareas draining to the San Joaquin River (Figures 2 and 3, Sample Site Descriptions section). The ESJWQC and Westside Coalition regions encompass portions of these subareas. Tributaries that were monitored during 2010 within each of the subareas are listed in Table 7 and 8. The two Coalitions each characterize and assess water quality within their respective regions through their own strategies of representative monitoring. These strategies are described in the ESJWQC MRPP and Westside Coalition MRP (refer to Table 3 for submission dates).

Compliance with chlorpyrifos and diazinon load allocations are determined by applying the formula in Figure 1 (Monitoring Objectives and Design section) to samples collected from representative monitoring of tributaries draining to the San Joaquin River. The results of each Coalition's monitoring and assessment of load allocations are reported and discussed in each Coalition's Annual/Semi-Annual Monitoring Reports and MPURs (refer to Table 3 for submission dates).

OBJECTIVE 3: DETERMINE DEGREE OF IMPLEMENTATION OF MANAGEMENT PRACTICES TO REDUCE OFF-SITE MOVEMENT OF DIAZINON AND CHLORPYRIFOS.

The Coalitions developed their own strategies for assessing management practice implementation within their respective regions. A brief summary of each Coalition's Management Plan strategy is included in Objective 7.

The ESJWQC Management Plan and Westside Coalition Management Plan (refer to Table 3 for submission dates) detail each Coalition's respective strategy to collect information from growers on the types management practices currently used as well as how additional practices are identified and scheduled for implementation. Subsequent ESJWQC MPURs and Westside Coalition SAMRs (refer to Table 3 for submission dates) summarize the status of each Coalition's strategy. These results will be updated in the ESJWQC MPUR to be submitted April 1, 2011 and Westside Coalition SAMR to be submitted November 30, 2010.

OBJECTIVE 4: DETERMINE THE EFFECTIVENESS OF MANAGEMENT PRACTICES AND STRATEGIES TO REDUCE OFF-SITE MIGRATION OF DIAZINON AND CHLORPYRIFOS.

The ESJWQC and Westside Coalition utilize their own strategies for evaluating the effectiveness of management practices to improve water quality, including reducing the off-site movement of chlorpyrifos and diazinon. As stated above under Objective 3, these strategies are described in the ESJWQC Management Plan and Westside Coalition Management Plan (refer to Table 3 for submission dates) and are briefly described under Objective 7. Discussion of management practice effectiveness relevant to chlorpyrifos and diazinon in each Coalition region can be found in the ESJWQC MPURs and Westside Coalition SAMRs (refer to Table 3 for submission dates) and will be updated in the ESJWQC MPUR to be submitted April 1, 2011 and Westside Coalition SAMR to be submitted November 30, 2010.

OBJECTIVE 5: DETERMINE WHETHER ALTERNATIVES TO DIAZINON AND CHLORPYRIFOS ARE CAUSING SURFACE WATER QUALITY IMPACTS.

Applicable alternatives to chlorpyrifos and diazinon depend on the commodity type, pest pressures and time of year and therefore it is difficult to know if alternatives are causing surface water quality impacts in the San Joaquin River. Therefore, concerns of impairments due to alternatives are better addressed through tributary monitoring and local PURs. The ESJWQC and Westside Coalition report and discuss results of tributary monitoring for a range of pesticides in the ESJWQC MPURs and Westside Coalition SAMRs (refer to Table 3 for submission dates), respectively.

The ESJWQC monitors the water column for several groups of pesticides including organochlorines, organophosphates and carbamates as well as water column toxicity for three species at assessment monitoring locations. The Westside Coalition conducts monthly monitoring of its tributaries for a variety of pesticides, including organophosphates (including chlorpyrifos and diazinon), organochlorines, carbamates and herbicides. Water column toxicity is also tested at select sites. Sediment toxicity monitoring occurs biannually within the ESJWQC and Westside Coalition regions, and toxic samples are analyzed for the presence of pyrethroids and chlorpyrifos. The results of this monitoring are reported in the ESJWQC AMRs and Westside Coalition SAMR (refer to Table 3 for submission dates).

The ESJWQC and Westside Coalition collect and summarize PUR data as a part of their respective monitoring reports (refer to Table 3 for submission dates). The Coalitions incorporate this information into grower outreach and education, and ensure that growers are aware that switching pesticides may lead to other or additional water quality concerns.

Moreover, the ESJWQC and Westside Coalition include toxicity, pesticides, and sediment bound analytes as a part of grower outreach and education regardless of the occurrence of a TMDL for a specific water body. These activities are discussed in the ESJWQC MPURs and Westside Coalition SAMRs (refer to Table 3 for submission dates).

OBJECTIVE 6: DETERMINE WHETHER THE DISCHARGE CAUSES OR CONTRIBUTES TO TOXICITY IMPAIRMENT DUE TO ADDITIVE OR SYNERGISTIC EFFECTS OF MULTIPLE POLLUTANTS.

The loading capacity and load allocation for chlorpyrifos and diazinon take into consideration and are based on current understanding of the two pesticides' additive effects (Figure 1). Table 27 lists calculated loading capacities for all concentrations of chlorpyrifos and diazinon detected in the San Joaquin River during this reporting period. Diazinon was never detected in the San Joaquin River during the reporting period; hence there was never an incidence of interaction between it and chlorpyrifos that could be characterized.

As part of each Coalition's tributary monitoring strategies, the ESJWQC and Westside Coalition sample for a wide range of contaminants and toxicity. Additionally, toxicity identification evaluations (TIEs) are conducted on toxic water samples to determine the cause of toxicity and toxic sediment samples are subject to further analysis for chlorpyrifos and pyrethroids. From these results, the Coalitions are able

to consider the additive and/or synergistic effects of multiple pollutants. These discussions can be found in the ESJWQC MPURs and Westside Coalition SAMRs (refer to Table 3 for submission dates).

OBJECTIVE 7: DEMONSTRATE THAT MANAGEMENT PRACTICES ARE ACHIEVING THE LOWEST PESTICIDE LEVELS TECHNICALLY AND ECONOMICALLY ACHIEVABLE.

Both Coalitions collect information regarding management practice implementation and effectiveness as part of their actions to meet ILRP Monitoring Program Objectives. This information allows the Coalitions to determine which practice(s) are most successful in improving water quality as well as which practice(s) are economically feasible. Additionally, this information allows the Coalitions to assess if implemented practices are widespread enough to achieve to lowest pesticide levels in waterways. Below is a brief summary of the Management Plan strategies developed by each Coalition and current status.

ESJWQC Management Plan Strategy - Summary

The ESJWQC developed an overall management plan for all 27 waterways it sampled between 2004 and 2008 and set priorities for both waterways and constituents in those waterways. The Coalition conducts focused outreach and management practice documentation within three to four subwatersheds for two years, rotating to additional subwatersheds annually (see the ESJWQC Management Plan for a schedule of subwatershed prioritization).

In setting priorities, the Coalition is focusing first on constituents likely originating from agriculture including pesticides and sediment. The Coalition also takes into account toxicity test results from three species (water flea, algae, and fathead minnow) to determine if an association exists between organism toxicity and applied chemicals.

The outreach and education strategy in each of the management plans focuses on informing growers of problems in their watershed and providing information on effective management practices. The steps outlined in the management plan strategy include:

- Evaluation of water quality data;
- Review of pesticide use in a watershed;
- Identify member parcels with the highest potential to affect downstream water quality;
- Hold meetings with individual member to discuss water quality issues, current management practices and additional practices that may be implemented;
- Evaluate water quality to determine the effectiveness of newly implemented practices.

The initial management plans focus on chlorpyrifos, a pesticide that is widely used in the Coalition region due to its cost effective control of invertebrate pests on many commodities, particularly almonds, walnuts and alfalfa. The Coalition recorded an increasing number of chlorpyrifos exceedances between 2004 and 2008 as monitoring locations were expanded in number and monitoring frequency increased. The weather also varied throughout the period with 2006 being an average wet year, 2008 having late spring storms and drought conditions persisting in 2007, 2008 and 2009. Each year, pest pressures varied across the major crops where chlorpyrifos is commonly used.

A key component of the Coalition's management strategy is to hold individual member meetings to discuss farm management practices and water quality issues. The Coalition based its decision to hold these individual interviews in priority watersheds on a number of factors. It was apparent that chlorpyrifos exceedances were continuing to occur and appeared to be occurring more frequently. Also, information from management practice surveys of ESJWQC members taken in 2006 and 2007 showed that most growers were already implementing a range of management practices including those required by DPR on product labels.

In its initial effort starting in 2009, the Coalition focused on members with the potential to drain directly to three priority waterways. This included fields immediately adjacent to the waterway with the potential to drain during normal irrigations or winter storms and fields where spray drift could reach adjacent waterways. Each member was contacted by registered mail to schedule individual interviews. Coalition representatives traveled to the member's farms and discussed downstream water quality issues, their current management practices, pest pressures and potential new practices that could be implemented. The Coalition found that each of the three priority watersheds was unique in the number of irrigated acres, types of crops grown and management practices used on the fields.

Measuring the effectiveness of Coalition efforts in reducing the impact of agricultural practices on water quality is difficult for many reasons including:

- Not all landowners along a waterway are coalition members;
- A field may be enrolled and regulated under the Regional Water Board "Dairy Program" and not contacted by the Coalition;
- Direct source and "cause and effect" of a single exceedance is often difficult if not impossible to confirm.

The Coalition represents approximately 60% of the irrigated agriculture in its region. The other 40% does not receive information from the Coalition about water quality issues, management practices or funding sources to help finance management practice implementation (although other information sources are available to landowners).

The Coalition uses numerous resources to identify potential sources of water quality impairments in a watershed including:

1. Pesticide Use Reports;
2. Crop and parcel information;
3. Upstream and temporal monitoring;
4. Grower interviews;
5. Analysis of pesticide concentrations and pounds of chemical applied to crops in a watershed.

However, it is difficult to know with certainty whether water quality issues are a result of a single pesticide application (lack of management practices) or a high amount of use (even though good management practices are followed).

Even more difficult to determine are sources outside the influence of Coalition efforts. These include:

- Nonmembers with irrigated crop land;

- Dairy operations with irrigated lands;
- Non irrigated crop land;
- Non-commercial farming areas (one- to five-acre ranchettes);
- Rural residences and septic systems;
- Other rural land uses such as industrial, rights-of-way or non-irrigated open lands.

Whether Coalition efforts can be credited with the absence of pesticide exceedances cannot be known with 100% certainty. However, the Coalition considers the significant decrease in chlorpyrifos exceedances in 2009 an important step in demonstrating the effectiveness of its management plan strategy. In addition, member feedback on this strategy has been positive and encouraging. In all cases the growers have appreciated the individual visits and are much more aware of downstream water quality concerns as a result.

Westside Coalition Management Plan Strategy - Summary

The Westside Coalition is also in the process of evaluating management practice implementation and effectiveness. To accomplish this, the Westside Coalition utilizes its two-pronged strategy guided by the tiered approach described in the Westside Coalition Management Plan (refer to Table 3 for submission date). Because there is likely an overlap in effect from practices to address a specific constituent, the Westside Coalition identified a prioritized, tiered list of actions to be taken to address issues of the most immediate concern (highest tier constituents), and, presumably, those actions will also benefit lower prioritized (tiered) constituents. These actions are then employed under two concurrent approaches (prongs) to improve water quality within the region. The General Approach identifies and employs common, constituent-specific strategies that can be applied throughout the region. Focused Watershed Management Plans, the second prong, identify and employ a subwatershed specific approach to implement management practices and improve water quality. Together, these strategies enable the Westside Coalition to adequately assess water quality and management practice implementation in its region. Management practices assessments are reported in the Westside Coalition SAMRs (refer to Table 3 for submission dates).

DISCUSSION OF WQO EXCEEDANCES AND NON-COMPLIANT LOADS

As explained above under Objective 1, the concentration of chlorpyrifos (0.041 µg/L) in the sample collected from SJR @ Las Palmas Ave on July 22, 2010 resulted in both the single exceedance of the chlorpyrifos WQO and the single non-compliant load in the San Joaquin River during the reporting period (January through September 2010; refer to Tables 27 and 28).

Chlorpyrifos is an organophosphate pesticide applied for pest control on alfalfa, grapes, and various deciduous and nut trees, among other crops in California. In a water body, chlorpyrifos can both bind to sediment and remain in the water column (K_{oc} of 6070). The LC_{50} for chlorpyrifos to *Ceriodaphnia* is 0.055 µg/L.

Both Coalitions monitor chlorpyrifos as a part of tributary monitoring within their respective regions. As previously explained in the Sample Site Descriptions section of this report, results from ESJWQC tributary monitoring during the reporting period (January through September 2010) will be detailed in the ESJWQC AMR to be submitted March 1, 2011. Westside Coalition tributary monitoring January and February 2010 results were reported in the Westside Coalition SAMR submitted June 15, 2010. Westside Coalition tributary monitoring results from March through August 2010 will be reported in the Westside Coalition SAMR to be submitted November 30, 2010 and tributary monitoring results from September 2010 will be reported in the Westside Coalition SAMR to be submitted June 15, 2011.

Diazinon was not detected in the San Joaquin River during the reporting period. There were no other exceedances of the WQOs or loading capacity.

APPENDIX III

MONITORING RESULTS

TABLE OF CONTENTS

ACRONYMS

AMR	Annual Monitoring Report
CDEC	California Data Exchange Center
DF	Dilution Factor
DO	Dissolved Oxygen
DNQ	Detected but Not Quantifiable
E	Environmental Sample
EPA	Environmental Protection Agency
ESJWQC	East San Joaquin Water Quality Coalition
MDL	Minimum Detection Limit
NA	Not Applicable
ND	Not Detected
pH	Power of Hydrogen
RL	Reporting Limit
SC	Specific Conductance
TMDL	Total Maximum Daily Load
Westside	Westside San Joaquin River Water Coalition

Table III-1. San Joaquin River chlorpyrifos and diazinon TMDL monitoring field parameter results.

Results include recorded discharge and measured dissolved oxygen (DO), pH, specific conductivity (SC), and temperature and are sorted by station name and sample date.

Responsible Coalition	Station Name	Sample Date	Sample Time	Discharge, cfs	Oxygen, Dissolved, mg/L	pH, none	Specific Conductivity, µS/cm	Temperature, °C	Field result Comments
ESJWQC	SJR @ Airport Way	3/25/10	13:30	NA	10.66	8.2	912	17.08	CDEC site did not have any flow data.
ESJWQC	SJR @ Airport Way	5/20/10	11:20	NA	9.67	7.5	268	16.14	Discharge not available.
ESJWQC	SJR @ Airport Way	7/22/10	11:20	NA	10.29	8.55	546	23.26	Discharge not available.
ESJWQC	SJR @ Hills Ferry	3/25/10	11:20	1410	9.55	7.66	219	16.01	
ESJWQC	SJR @ Hills Ferry	5/20/10	9:20	1280	9.5	7.41	61	16.54	
ESJWQC	SJR @ Hills Ferry	7/22/10	9:20	49.12	6.77	7.71	319	22.87	
Westside	SJR @ Lander Ave	3/25/10	12:15	400	9.43	8.07	653	17.18	Flow estimated. CDEC station down.
Westside	SJR @ Lander Ave	5/6/10	10:48	NA	12.42	7.92	266	17.8	CDEC station off-line. No flow available.
Westside	SJR @ Lander Ave	7/22/10	11:00	NA	8.4	8.75	843	25.62	
Westside	SJR @ Las Palmas Ave	3/25/10	10:00	1342	7.65	7.98	1051	18.85	Flow from CDEC
Westside	SJR @ Las Palmas Ave	5/6/10	10:30	1597	6.93	7.92	456	20.07	Flow from CDEC.
Westside	SJR @ Las Palmas Ave	7/22/10	10:30	544	7.52	8.06	1108	25.69	
ESJWQC	SJR @ Maze	3/25/10	12:30	1910	10.34	8.13	1006	16.8	
ESJWQC	SJR @ Maze	5/20/10	10:40	3273	9.39	7.55	297	15.86	
ESJWQC	SJR @ Maze	7/22/10	10:20	1648	9.6	8.43	567	22.75	
Westside	SJR @ Sack Dam	3/25/10	10:06	480	9.36	7.9	470	15.81	Flow per SJRECWA records.
Westside	SJR @ Sack Dam	5/6/10	9:35	744	13.42	7.53	1840	16.59	Flow from CDEC.
Westside	SJR @ Sack Dam	7/22/10	10:00	22	5.9	7.75	365	24.24	Flow from CDEC.

Table III-2. San Joaquin River chlorpyrifos and diazinon TMDL monitoring environmental sample chemistry analysis results.

Samples are sorted by station name, sample date, and analyte.

Responsible Coalition	Station Name	Sample Type Code	Sample Date	Sample Time	Method Name	Analyte	Result	Unit	Qualifier Code	MDL	RL	Expected Value	Quality Assurance	Data Acceptability Criteria	Lab Comments
ESJWQC	SJR @ Airport Way	E	3/25/10	13:30	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
ESJWQC	SJR @ Airport Way	E	3/25/10	13:30	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
ESJWQC	SJR @ Airport Way	E	3/25/10	13:30	EPA 8141A	Tributylphosphate (Surrogate)	104	%	=	NA	NA	100	None	PR 60-150	DF=1
ESJWQC	SJR @ Airport Way	E	3/25/10	13:30	EPA 8141A	Triphenyl phosphate (Surrogate)	106	%	=	NA	NA	100	None	PR 56-129	DF=1
ESJWQC	SJR @ Airport Way	E	5/20/10	11:20	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
ESJWQC	SJR @ Airport Way	E	5/20/10	11:20	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
ESJWQC	SJR @ Airport Way	E	5/20/10	11:20	EPA 8141A	Tributylphosphate (Surrogate)	107	%	=	NA	NA	100	None	PR 60-150	DF=1
ESJWQC	SJR @ Airport Way	E	5/20/10	11:20	EPA 8141A	Triphenyl phosphate (Surrogate)	114	%	=	NA	NA	100	None	PR 56-129	DF=1
ESJWQC	SJR @ Airport Way	E	7/22/10	11:20	EPA 8141A	Chlorpyrifos	0.013	µg/L	DNQ	0.0026	0.015		None		DF=1
ESJWQC	SJR @ Airport Way	E	7/22/10	11:20	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
ESJWQC	SJR @ Airport Way	E	7/22/10	11:20	EPA 8141A	Tributylphosphate (Surrogate)	106	%	=	NA	NA	100	None	PR 60-150	DF=1
ESJWQC	SJR @ Airport Way	E	7/22/10	11:20	EPA 8141A	Triphenyl phosphate (Surrogate)	102	%	=	NA	NA	100	None	PR 56-129	DF=1
ESJWQC	SJR @ Hills Ferry	E	3/25/10	11:20	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
ESJWQC	SJR @ Hills Ferry	E	3/25/10	11:20	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
ESJWQC	SJR @ Hills Ferry	E	3/25/10	11:20	EPA 8141A	Tributylphosphate (Surrogate)	98	%	=	NA	NA	100	None	PR 60-150	DF=1
ESJWQC	SJR @ Hills Ferry	E	3/25/10	11:20	EPA 8141A	Triphenyl phosphate (Surrogate)	104	%	=	NA	NA	100	None	PR 56-129	DF=1
ESJWQC	SJR @ Hills Ferry	E	5/20/10	9:20	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
ESJWQC	SJR @ Hills Ferry	E	5/20/10	9:20	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
ESJWQC	SJR @ Hills Ferry	E	5/20/10	9:20	EPA 8141A	Tributylphosphate (Surrogate)	112	%	=	NA	NA	100	None	PR 60-150	DF=1
ESJWQC	SJR @ Hills Ferry	E	5/20/10	9:20	EPA 8141A	Triphenyl phosphate (Surrogate)	121	%	=	NA	NA	100	None	PR 56-129	DF=1

Responsible Coalition	Station Name	Sample Type Code	Sample Date	Sample Time	Method Name	Analyte	Result	Unit	Qualifier Code	MDL	RL	Expected Value	Quality Assurance	Data Acceptability Criteria	Lab Comments
ESJWQC	SJR @ Hills Ferry	E	7/22/10	9:20	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
ESJWQC	SJR @ Hills Ferry	E	7/22/10	9:20	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
ESJWQC	SJR @ Hills Ferry	E	7/22/10	9:20	EPA 8141A	Tributylphosphate (Surrogate)	106	%	=	NA	NA	100	None	PR 60-150	DF=1
ESJWQC	SJR @ Hills Ferry	E	7/22/10	9:20	EPA 8141A	Triphenyl phosphate (Surrogate)	100	%	=	NA	NA	100	None	PR 56-129	DF=1
Westside	SJR @ Lander Ave	E	3/25/10	12:15	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
Westside	SJR @ Lander Ave	E	3/25/10	12:15	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
Westside	SJR @ Lander Ave	E	3/25/10	12:15	EPA 8141A	Tributylphosphate (Surrogate)	86.3	%	=	NA	NA	100	None	PR 60-150	DF=1
Westside	SJR @ Lander Ave	E	3/25/10	12:15	EPA 8141A	Triphenyl phosphate (Surrogate)	90.9	%	=	NA	NA	100	None	PR 56-129	DF=1
Westside	SJR @ Lander Ave	E	5/6/10	10:48	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
Westside	SJR @ Lander Ave	E	5/6/10	10:48	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
Westside	SJR @ Lander Ave	E	5/6/10	10:48	EPA 8141A	Tributylphosphate (Surrogate)	100.0	%	=	NA	NA	100	None	PR 60-150	DF=1
Westside	SJR @ Lander Ave	E	5/6/10	10:48	EPA 8141A	Triphenyl phosphate (Surrogate)	107	%	=	NA	NA	100	None	PR 56-129	DF=1
Westside	SJR @ Lander Ave	E	7/22/10	11:00	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
Westside	SJR @ Lander Ave	E	7/22/10	11:00	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
Westside	SJR @ Lander Ave	E	7/22/10	11:00	EPA 8141A	Tributylphosphate (Surrogate)	109	%	=	NA	NA	100	None	PR 60-150	DF=1
Westside	SJR @ Lander Ave	E	7/22/10	11:00	EPA 8141A	Triphenyl phosphate (Surrogate)	101	%	=	NA	NA	100	None	PR 56-129	DF=1
Westside	SJR @ Las Palmas Ave	E	3/25/10	10:00	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
Westside	SJR @ Las Palmas Ave	E	3/25/10	10:00	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
Westside	SJR @ Las Palmas Ave	E	3/25/10	10:00	EPA 8141A	Tributylphosphate (Surrogate)	91.5	%	=	NA	NA	100	None	PR 60-150	DF=1
Westside	SJR @ Las Palmas Ave	E	3/25/10	10:00	EPA 8141A	Triphenyl phosphate (Surrogate)	98.7	%	=	NA	NA	100	None	PR 56-129	DF=1
Westside	SJR @ Las Palmas Ave	E	5/6/10	10:30	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
Westside	SJR @ Las Palmas Ave	E	5/6/10	10:30	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
Westside	SJR @ Las Palmas Ave	E	5/6/10	10:30	EPA 8141A	Tributylphosphate (Surrogate)	103	%	=	NA	NA	100	None	PR 60-150	DF=1
Westside	SJR @ Las Palmas Ave	E	5/6/10	10:30	EPA 8141A	Triphenyl phosphate	109	%	=	NA	NA	100	None	PR 56-129	DF=1

Responsible Coalition	Station Name	Sample Type Code	Sample Date	Sample Time	Method Name	Analyte	Result	Unit	Qualifier Code	MDL	RL	Expected Value	Quality Assurance	Data Acceptability Criteria	Lab Comments
						(Surrogate)									
Westside	SJR @ Las Palmas Ave	E	7/22/10	10:30	EPA 8141A	Chlorpyrifos	0.041	µg/L	=	0.0026	0.015		None		DF=1
Westside	SJR @ Las Palmas Ave	E	7/22/10	10:30	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
Westside	SJR @ Las Palmas Ave	E	7/22/10	10:30	EPA 8141A	Tributylphosphate (Surrogate)	119	%	=	NA	NA	100	None	PR 60-150	DF=1
Westside	SJR @ Las Palmas Ave	E	7/22/10	10:30	EPA 8141A	Triphenyl phosphate (Surrogate)	110	%	=	NA	NA	100	None	PR 56-129	DF=1
ESJWQC	SJR @ Maze	E	3/25/10	12:30	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
ESJWQC	SJR @ Maze	E	3/25/10	12:30	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
ESJWQC	SJR @ Maze	E	3/25/10	12:30	EPA 8141A	Tributylphosphate (Surrogate)	108	%	=	NA	NA	100	None	PR 60-150	DF=1
ESJWQC	SJR @ Maze	E	3/25/10	12:30	EPA 8141A	Triphenyl phosphate (Surrogate)	109	%	=	NA	NA	100	None	PR 56-129	DF=1
ESJWQC	SJR @ Maze	E	5/20/10	10:40	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
ESJWQC	SJR @ Maze	E	5/20/10	10:40	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
ESJWQC	SJR @ Maze	E	5/20/10	10:40	EPA 8141A	Tributylphosphate (Surrogate)	113	%	=	NA	NA	100	None	PR 60-150	DF=1
ESJWQC	SJR @ Maze	E	5/20/10	10:40	EPA 8141A	Triphenyl phosphate (Surrogate)	119	%	=	NA	NA	100	None	PR 56-129	DF=1
ESJWQC	SJR @ Maze	E	7/22/10	10:20	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
ESJWQC	SJR @ Maze	E	7/22/10	10:20	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
ESJWQC	SJR @ Maze	E	7/22/10	10:20	EPA 8141A	Tributylphosphate (Surrogate)	100	%	=	NA	NA	100	None	PR 60-150	DF=1
ESJWQC	SJR @ Maze	E	7/22/10	10:20	EPA 8141A	Triphenyl phosphate (Surrogate)	92.3	%	=	NA	NA	100	None	PR 56-129	DF=1
Westside	SJR @ Sack Dam	E	3/25/10	10:06	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
Westside	SJR @ Sack Dam	E	3/25/10	10:06	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
Westside	SJR @ Sack Dam	E	3/25/10	10:06	EPA 8141A	Tributylphosphate (Surrogate)	99.0	%	=	NA	NA	100	None	PR 60-150	DF=1
Westside	SJR @ Sack Dam	E	3/25/10	10:06	EPA 8141A	Triphenyl phosphate (Surrogate)	102	%	=	NA	NA	100	None	PR 56-129	DF=1
Westside	SJR @ Sack Dam	E	5/6/10	09:35	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
Westside	SJR @ Sack Dam	E	5/6/10	09:35	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1

Responsible Coalition	Station Name	Sample Type Code	Sample Date	Sample Time	Method Name	Analyte	Result	Unit	Qualifier Code	MDL	RL	Expected Value	Quality Assurance	Data Acceptability Criteria	Lab Comments
Westside	SJR @ Sack Dam	E	5/6/10	09:35	EPA 8141A	Tributylphosphate (Surrogate)	106	%	=	NA	NA	100	None	PR 60-150	DF=1
Westside	SJR @ Sack Dam	E	5/6/10	09:35	EPA 8141A	Triphenyl phosphate (Surrogate)	116	%	=	NA	NA	100	None	PR 56-129	DF=1
Westside	SJR @ Sack Dam	E	7/22/10	10:00	EPA 8141A	Chlorpyrifos	<0.0026	µg/L	ND	0.0026	0.015		None		DF=1
Westside	SJR @ Sack Dam	E	7/22/10	10:00	EPA 8141A	Diazinon	<0.004	µg/L	ND	0.004	0.02		None		DF=1
Westside	SJR @ Sack Dam	E	7/22/10	10:00	EPA 8141A	Tributylphosphate (Surrogate)	103	%	=	NA	NA	100	None	PR 60-150	DF=1
Westside	SJR @ Sack Dam	E	7/22/10	10:00	EPA 8141A	Triphenyl phosphate (Surrogate)	103	%	=	NA	NA	100	None	PR 56-129	DF=1