9/17/08 Bd. Wrkshp
San Joaquin River Flows
Deadline: 9/3/08 by 12:00 p.m.

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A PROFESSIONAL CORPORATION

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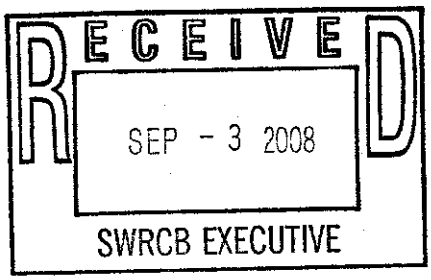
September 3, 2008



Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

Re: Materials for San Joaquin River Flow and Southern Delta Salinity Workshop

Dear Ms. Townsend:

Pursuant to the August 11, 2008, notice of public workshop titled "Discussion of the San Joaquin River Flow Objectives for the San Francisco/Sacramento-San Joaquin Delta Estuary and an Update on Southern Delta Salinity" ("Workshop"), the San Luis & Delta-Mendota Water Authority ("Authority") and Westlands Water District ("Westlands") submit the enclosed materials, which are: (1) the annual Vernalis Adaptive Management Plan ("VAMP") reports from 2000 to 2007, (2) the July 31, 2008, Westside San Joaquin River Watershed Coalition Semi-Annual Monitoring Report, and (3) the December 28, 2007 Water Discharge Requirement Order No. 5-01-234, Update of Long-term Drainage Management Plan. The Authority and Westlands will supplement these materials with an oral presentation at the Workshop.

Specifically, at the Workshop, the Authority and Westlands intend to provide an overview of the VAMP and an update on existing data produced from the experiment. The Authority and Westlands also intend to highlight the ongoing efforts of the Authority and its member agencies, which have improved water quality in the San Joaquin River and the perceived impact on water quality in the Delta.

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Thank you for your consideration of the enclosed materials. The Authority and Westlands look forward to presenting at the Workshop.

Very truly yours,

DIEPENBROCK HARRISON
A Professional Corporation

Valerie C. Kincaid
Attorneys for the San Luis & Delta-Mendota Water Authority and Westlands Water District

VCK:jvo

Enclosures

December 28, 2007

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

Subject: Waste Discharge Requirement Order No. 5-01-234, Update of Long Term Drainage Management Plan.

Dear Rudy,

The above Waste Discharge Requirements (WDR) requires submission of an update of the long-term drainage management plan for the Grassland Bypass Project. The WDR's were issued to the San Luis & Delta-Mendota Water Authority (Water Authority) and the U. S. Bureau of Reclamation. The Water Authority members that participate in the Grassland Bypass Project are hereafter referred to as the Grassland Area Farmers.

The long-term drainage management plan was submitted on September 30, 1998 in compliance with WDR No. 98-171. The plan was updated on July 1, 1999, January 1, 2000, January 1, 2001, December 31, 2001, December 24, 2002, December 31, 2003, December 31, 2004, December 30, 2005, and December 29, 2006.

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Milestones since Last Update

The milestones that have occurred for the Grassland Bypass Channel Project since the 2006 update are as follows:

- The Grassland Area Farmers have reduced the discharge of selenium from the Grassland Drainage Area by 79% since the beginning of the project as measured at the end of Water Year 2007. There were no exceedances of monthly selenium load allocations during Water Year 2007.

- The Grassland Area Farmers have continued to develop funding for the Westside Regional Drainage Plan as described in previous reports. In October 2007, the Water Authority executed a grant agreement under Proposition 50 for $25 million to implement portions of the Westside Regional Drainage Plan. Additionally, a $1 million grant was awarded under the Consolidated Grant program for improvements to irrigation distribution systems in Firebaugh Canal Water District and Panoche Water District. These improvements are expected to reduce seepage into the shallow water table by 900 acre feet annually and recover approximately 1,400 acre feet of operational spill water.

- The Grassland Area Farmers continue to utilize and expand the San Joaquin River Water Quality Improvement Project (SJRIP). The total cropped acreage of the SJRIP has been increased in 2007 to over 3,800 acres and the project reused more than 11,000 acre feet of subsurface drain water.

- The Grassland Area Farmers are continuing to work closely with the U.S. Bureau of Reclamation to develop an in-valley drainage solution for the Grassland Drainage Area. The In-Valley Solution Plan includes irrigation improvements, seepage reduction, land retirement, recirculation, drainage reuse, and drainage treatment.

- The discharge from the Grassland Bypass Project in Calendar Year 2006 (a wet year type) was 3,775 pounds of selenium with a load limit of 4,480 pounds. It is anticipated that the discharge during Calendar Year 2007 (a critical year type) will be approximately 35% below the annual load limit of 3,196 pounds, with no monthly exceedances.

Statement of Goals

The principal goal of the Grassland Area Farmers remains as described in the September 30, 1998 long term drainage management plan. This goal is summarized as providing for the achievement of the water quality objectives fixed by the Regional Board and their Basin Plan related to subsurface drainage discharges from the drainage area while maintaining viable agricultural production in that area.

Meeting Water Quality Objectives within Grassland Area Channels

The Regional Board has established a two parts per billion monthly average selenium objective for water delivery channels within the wetland areas. Previous long term drainage management plans discussed the activities within the Grassland Drainage Area to meet this water quality objective. The objective has been exceeded on a few occasions. During 1997 and 1998 there were storm water discharges caused by excessive rainfall and discharge from coastal streams. Subsequent to that time the Grassland Area Farmers have taken actions as submitted to the Regional Board to prevent discharges to wetland areas during non-storm event periods. This has been successful in eliminating discharges from the Grassland Drainage Area that might cause exceedence of the two parts per billion water quality objective. However, in February of 2005, significant storm events required the Grassland Area Farmers to divert water through the Agatha Canal. No diversions into wetland channels have been made since that time.

Uncontrolled Discharges

The Grassland Area Farmers are continuing to work with the USBR and USGS to identify sources of high drainage flows in extreme wet weather events. In September,

2005 the USGS issued a draft of their report “Update Of A Ground-Water Flow Model For The Central Part Of The Western San Joaquin Valley, California”. This is the first product of the work that is supposed to assist in identifying these sources. Another source that continues to be of interest is contribution from seepage out of the San Luis Canal/California Aqueduct. This issue was described in the 2004 annual report.

Future Regulation and Milestones

The Regional Board has adopted a TMDL for salt and boron and one for dissolved oxygen. These TMDLs have subsequently been approved by the State Board and the State Office of Administrative Law. These regulations encompass discharges from a much larger area than the Grassland Drainage Area. The Grassland Area Farmers are a participant in these processes.

Discharge during Water Year 2007

Table 1 sets forth discharges from the Grassland Drainage Area for the period Water Year 1995 through Water Year 2007. The Grassland Bypass Project began in Water Year 1997. The volume of drainage has been reduced significantly since this time including a selenium load reduction of 79% in Water Year 2007 compared to pre-project discharges in Water Year 1995. The volume of drainage discharge was reduced by 68%, the salt load by 66%, and the boron load by 61% when compared to pre-project (WY 1995) discharges. Selenium load discharged from the Grassland Drainage Area compared with 2007 monthly targets in WDR 5-01-234 are shown in Figure 1. Figure 2 shows the 2007 discharged load along with historic discharges and the “glidepath” in the Use Agreement incorporating the load values from the August 4, 2005 request for revision of the TMML for selenium. Figure 3 compares actual discharges to the revised load values starting in 2002. Figure 4 shows an estimate of the impact of control activities that occurred during Water Year 2007. Conservation, which includes improved irrigation application, tiered water pricing, tailwater controls and our tradable loads program accounted for a reduction of approximately 2,900 pounds of selenium from historic loads. Reuse and treatment, which includes recycling, use of subsurface drainage water on salt tolerant crops and displacement of subsurface drainage water such as for wetting of roadways for dust control, resulted in a 7,200 pound reduction in discharge in Water Year 2007. The remaining 2,600 pounds was discharged to the San Joaquin River through the Grassland Bypass Project.

Water Year 2007 was designated a critical year type in accordance with the Waste Discharge Requirements. The applicable performance goal from the waste Discharge Requirements is 5 ppb selenium monthly mean. During Water Year 2007 this performance goal was met and exceeded as the 4-day average selenium concentration at Crows Landing did not exceed 5 ppb in all months through mid August where data was available. This is in compliance with the October 1, 2005 water quality objective for above normal and wet year types.

Tools to be used For Long Term Drainage Management

Conservation, reuse and treatment, and river discharge will continue to be the main tools available to the Grassland Area Farmers during the next several years.

During Water Year 2001, Panoche Drainage District on behalf of the other Grassland Area Farmers implemented the San Joaquin River Water Quality Improvement Project (SJRIP). Table 2 shows the usage of subsurface drainage water within the SJRIP area in 2007. The project resulted in a displacement of 3,441 pounds of selenium. The SJRIP is a multi-phase project, which was initiated with the purchase of 4,000 acres of land in the year 2000 within the Grassland Drainage Area by Panoche Drainage District. During 2007, 3,800 acres were irrigated within the 4,000 acre area. Additionally, the Grassland Area Farmers are in the process of designing and constructing a number of infrastructure projects that will increase the operational flexibility and efficiency of the SJRIP. Future phases call for installing subsurface tile drainage systems in the remainder of the SJRIP area to maintain a salt balance within the soil and for disposal of the collected water through treatment and salt disposal options.

In October, 2007, the Water Authority was awarded a $25 million grant which includes funds to purchase and develop an additional 2,000 acres. This additional acreage, once developed, will further reduce the volume of subsurface drainage discharged from the Grassland Drainage Area. Other funds within this grant will be used to investigate drainage treatment options for final salt disposal.

Future Needs

In order to maintain the drainage control strategy for the Grassland Area Farmers, there are several needs. They are as follows:

- The completion of the SJRIP Project including planting and construction of subsurface drainage systems.

- Purchase of additional SJRIP lands of up to 2,000 acres for planting of additional cropping to be irrigated with subsurface drainage water.

- Implementation of treatment and disposal of salt from the SJRIP lands.

- Investigations need to be completed on the identification of contributions to subsurface drainage within the Grassland Drainage Area from other sources, primarily the uncontrolled discharges described above. Once this has been determined, then control and participation by other parties will need to be identified.

- Retirement of land could be part of the ultimate solution to the problem within the Grassland Drainage Area. The Grassland Area Farmers have developed a land retirement policy that was identified and described in the September 30, 1998 Long Term Drainage Management Plan. In addition to this plan, Broadview Water District has recently been purchased and has been fallowed. Other lands within the Grassland Drainage Area are also being considered for fallowing.

- The Grassland Area Farmers and other local interests have been participating with the USBR in their San Luis Drainage Feature Re-Evaluation Program. The goal of the Grassland Area Farmers is to develop local projects that can be implemented to meet the selenium load reduction targets, while still a viable agricultural economy.

- The Grassland Are Farmers continue to work with the USBR, other local stakeholders and interested parties to resolve long standing drainage issues through a drainage settlement process. The main component would be full implementation of the Westside Regional Drainage Plan.

Recent Developments

There are three recent and on-going developments related to efforts of the Grassland Area Farmers to meet the regulatory requirements of the Waste Discharge Permit and the Use Agreement. The first two were indicated in the 2004 annual report.

- The Westside Regional Drainage Plan has been developed by the San Joaquin River Exchange Contractors Water Authority, the Broadview Water District, Panoche Water District and Westlands Water District. This process is meant to complement the USBR San Luis Drain Feature Re-evaluation process and to help resolve long standing drainage issues within the area. The Grassland Area Farmers are aggressively pursuing funding opportunities to implement the Westside Regional Drainage Plan, and have met on a number of occasions with the USBR to move this plan forward.

- The San Joaquin River Water Quality Management Group was formed out of the "UOP Discussions" between statewide water interests and Delta interests to develop a plan to meet Vernalis salinity objectives. There are many components to this plan that is being developed, one of the major ones being the future reductions of discharge from the Grassland Drainage Area.

- In the Spring of 2006, the Grassland Area Farmers submitted proposals to the Proposition 40 Consolidated Grants program and the Proposition 50 Integrated Regional Watershed Management program. These funds were awarded and are currently being used to implement portions of the Westside Regional Drainage Plan.

- In December, 2006 the Grassland Area Farmers complied with the requirement in the Use Agreement that a Mud Slough Compliance Plan be developed by 2006 to meet Mud Slough water quality objectives. This letter also outlined a process to continue discharges to the San Joaquin River beyond the term of the current Use Agreement, which expires in December, 2009.

In the summer of 2007 the Grassland Area Farmers initiated discussions with stakeholders regarding a time extension of the Grassland Bypass Project. The

discharge of selenium and salinity has significantly reduced since the initiation of the Grassland Bypass Project. The Westside Regional Drainage Plan has been developed and significant funding has been obtained to implement parts of the plan. However, the final funding and technical steps are not yet in place and therefore the Grassland Area Farmers are requesting up to a 10 year extension of the Use Agreement. This action will require a Basin Plan Amendment and revised Waste Discharge Requirements. The environmental review process has begun on this action and a scoping meeting is scheduled for January 17, 2008 in Los Banos.

Conclusion

The Grassland Area Farmers are committed to a reasonable process that will meet the goals as earlier stated. This includes maintaining efforts to meet current monthly and annual selenium targets while at the same time aggressively pursuing the long term solutions and funding that will be necessary to meet the future requirements.

If you should have any questions please feel free to call. I can be reached at (559) 582-9237.

Very Truly Yours,

Joseph C. McGahan
Drainage Coordinator
Grassland Area Farmers

JCM/jcl

Cc: Dan Nelson, SL&D-MWA
Grassland Basin Drainage Steering Committee
John Davis , USBR
Mike Delamore, USBR

Table 1
Discharge Comparison from Grassland Drainage Area
Values October thru September

	WY 95	WY 96	WY 97	WY 98	WY 99	WY 00	WY 01
Volume (AF)	57,574	52,978	39,856	49,289	32,317	31,342	28,235
Se (lbs)	11,875	10,034	7,096	9,118	5,124	4,603	4,377
Salt (tons)	237,530	197,526	172,602	213,533	149,081	139,303	142,415
B (1,000 lbs)	868	723	753	983	630	619	423
Se (ppm)	0.076	0.070	0.066	0.068	0.058	0.054	0.057
Salt (µmhos/cm)	4,102	3,707	4,306	4,308	4,587	4,420	5,016
Boron (ppm)	5.5	5.0	7.0	7.3	7.2	7.3	5.5

	WY 02	WY 03	WY 04	WY 05	WY 06	WY 07	Reduction from WY 95 to WY 06
Volume (AF)	28,358	27,345	27,640	29,957	25,995	18,531	68%
Se (lbs)	3,939	4,032	3,860	4,305	3,583	2,551	79%
Salt (tons)	128,411	126,500	121,138	138,908	120,258	81,072	66%
B (1,000 lbs)	544	554	530	585	540	338	61%
Se (ppm)	0.051	0.054	0.051	0.053	0.051	0.051	
Salt (µmhos/cm)	4,503	4,600	4,358	4,611	4,600	4,350	
Boron (ppm)	7.1	7.5	7.1	7.2	7.6	6.7	

Note: WY 97, 98, & 05 include discharges through Grasslands
Note: GAF quality data used where RWQCB data was missing or pending.

Table 2
San Joaquin River Improvement Project
Calendar Year 2007

MONTH	WATER APPLIED (AF) DRAIN	OTHER	TOTAL	SELENIUM LBS	SALT TONS	BORON LBS
JAN 07		585	585			
FEB	466	289	755	153	2,490	8,698
MAR	964	409	1,373	185	3,567	10,269
APR	1,307	779	2,086	372	6,400	21,515
MAY	1,432	341	1,773	626	8,832	36,518
JUN	2,048	640	2,688	630	11,847	44,522
JUL	1,587	458	2,045	456	9,924	34,512
AUG	1,492	838	2,330	494	7,981	29,537
SEP	897	410	1,307	207	4,863	10,871
OCT	951	165	1,116	309	5,118	13,084
NOV	89	302	391	9	390	1,056
DEC	0	0	0	0	0	0
TOTAL	**11,233**	**5,216**	**16,449**	**3,441**	**61,412**	**210,582**

Figure 1
Discharge from the Grassland Drainage Area
October 2006 through September 2007

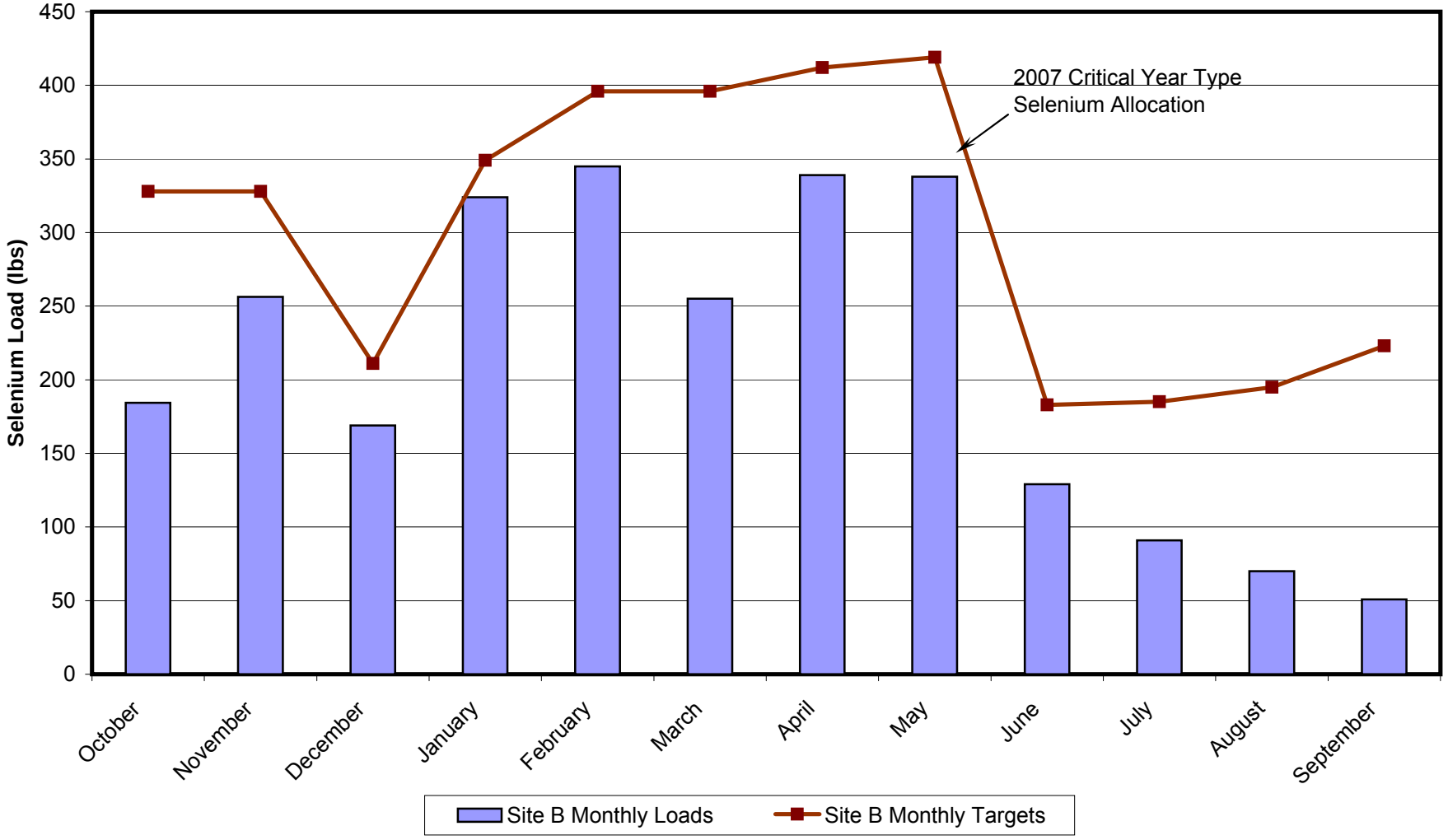


Figure 2
Grassland Drainage Area
Selenium Discharge and Targets

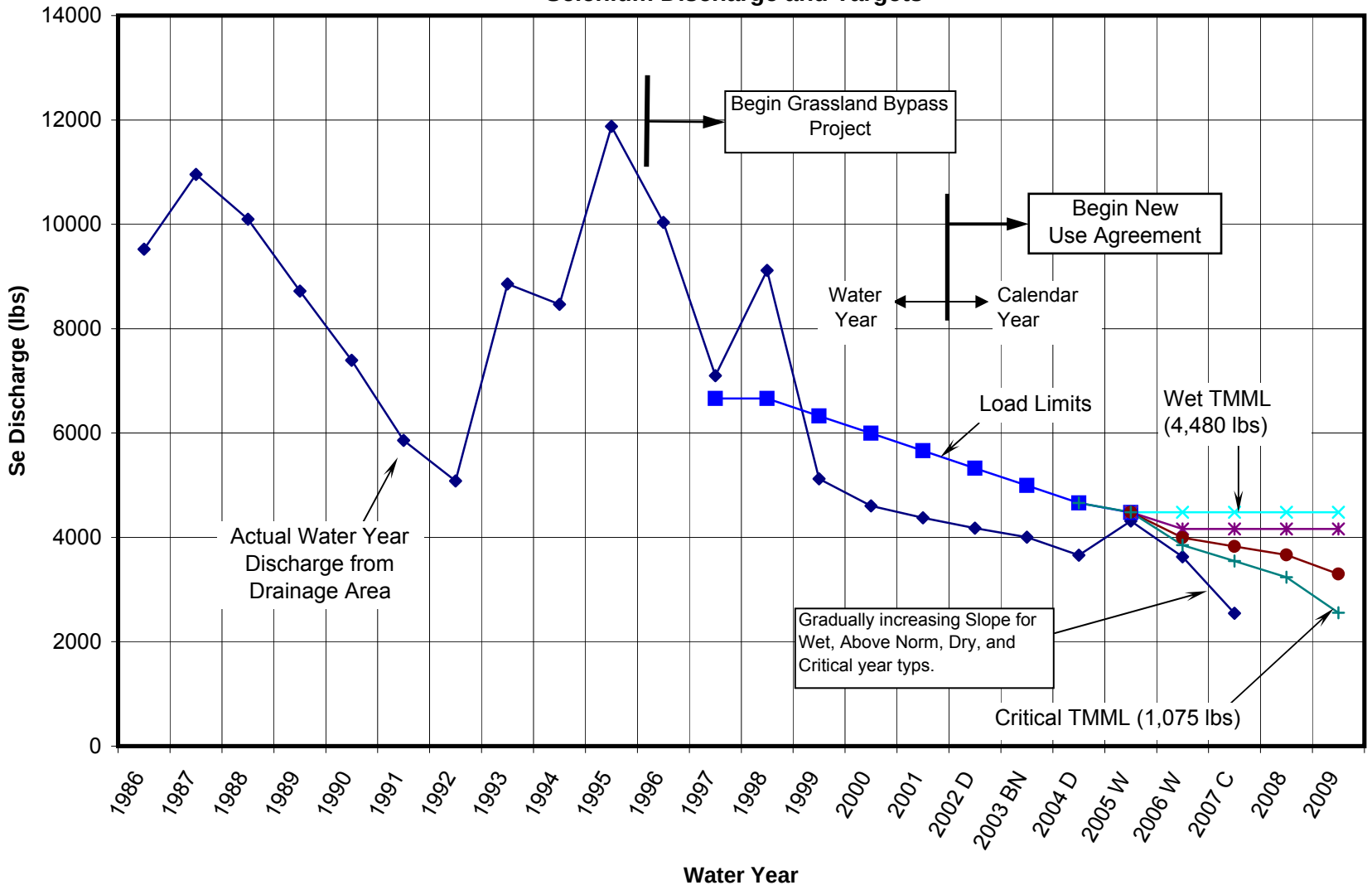


Figure 3
Grassland Bypass Project
Annual Selenium Load Discharge and Values

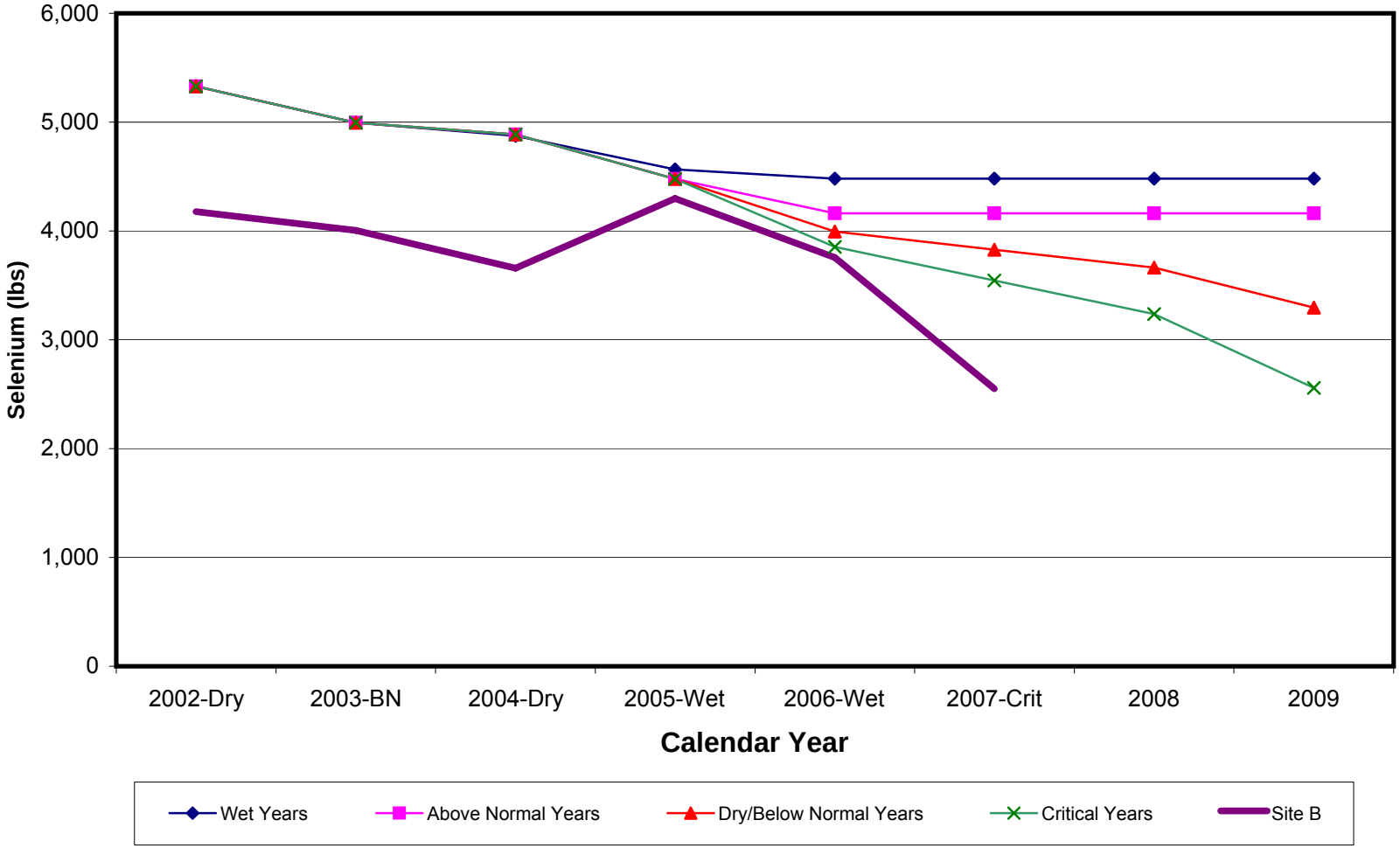
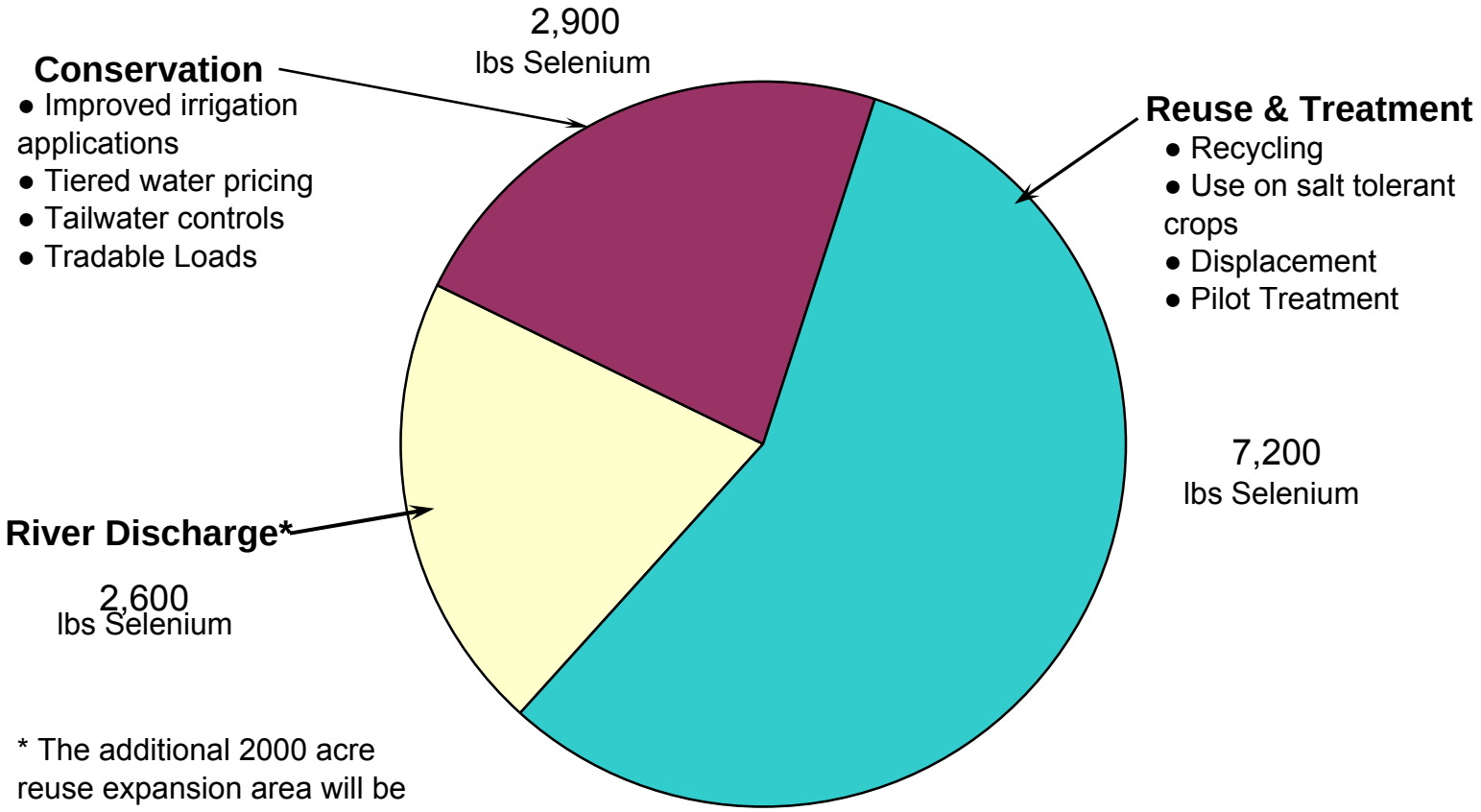


Figure 4

Historic Drainage Water (lbs selenium)

57,000 AF 12,700 lbs Se 240,000 Tons Salt



2007 Drainage Management

SAN JOAQUIN VALLEY DRAINAGE AUTHORITY

P O Box 2157 Los Banos, CA 93635
209 826 9696 Phone 209 826 9698 Fax

July 31, 2008

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

Subject: Westside San Joaquin River Watershed Coalition
Submittal of July 31, 2008 semi-annual monitoring report

Dear Pamela,

Attached is the July 31, 2008 semi-annual monitoring report as required under our Monitoring and Reporting Plan. This report covers the non-irrigation season monitoring from November 2007 through February 2008.

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.

If you should have any questions on the information submitted in this report, please give me a call directly at 559-582-9237.

Joseph C. McGahan
Watershed Coordinator
Westside San Joaquin River Watershed Coalition

San Joaquin Valley Drainage Authority

Westside San Joaquin River Watershed Coalition

Semi-Annual Monitoring Report

2007/2008 Non-Irrigation Season Report

Covering the period: November 2007 through February 2008

(Sampling Events 39 through 41 including Rain Event 6)

July 31, 2008

Prepared by:
Summers Engineering, Inc.
Consulting Engineers
Hanford California

TABLE OF CONTENTS

SECTION 1: EXECUTIVE SUMMARY

In June, 2003, the San Joaquin Valley Drainage Authority (SJVDA) submitted a Conditional Waiver Report for the Westside San Joaquin River Watershed Coalition (Westside Coalition). The Westside Coalition watershed generally lies on the westside of the San Joaquin River from approximately the Stanislaus River on the north to 10 miles south of Mendota and encompasses an area of approximately 460,500 acres. There are approximately 4,000 landowners and 1,500 operators within the watershed. Most of the watershed receives water supplies from the Central Valley Project, while certain areas receive water from the State Water Project. In addition, some areas receive supplies from the San Joaquin River and local water sources, one area receives a Kings River supply, and some areas receive water from groundwater wells. The Delta-Mendota Canal and San Luis Canal run through the center of the watershed. Water deliveries are made to Federal Central Valley Project Contractors and to San Joaquin River Exchange Contractors from these facilities. State water deliveries are also made to one area.

The Grassland Drainage Area encompasses 97,400 acres that are geographically within the watershed. The Grassland Drainage Area is covered under waste discharge requirements (No. 5-01-234), which regulates the discharge of subsurface drainage water through the San Luis Drain to the San Joaquin River. The area coordinates its separate monitoring and reporting program under the above waste discharge requirements.

The described Westside Coalition area also includes federal, state and private managed wetlands. These areas share water delivery and drainage conveyance systems with the surrounding agricultural areas. Due to the integrated nature of the water facilities the managed wetlands have joined the Westside Coalition as a wetland sub-watershed participant to comply with the Conditional Waiver and effectively and efficiently address water quality issues. The effects of discharges form the wetland areas are covered in this monitoring program.

The communities of Grayson, Westley, Vernalis, Crows Landing, Patterson, Newman, Gustine, Stevinson, Los Banos, Dos Palos, South Dos Palos, Firebaugh, Mendota and Tranquillity lie within the geographic area of the Westside Coalition. These communities do not have discharges from irrigated lands and are not included in the Westside Coalition, but contribute storm waters and municipal waste waters to the watershed and may impact discharges from irrigated lands.

Interstate Highway 5 and State Highways 33, 140, 165 and 152 and many county roads run through the geographic area of the Westside Watershed. Storm water discharges from these roads and highways could contribute contaminants to the same water bodies that carry agricultural return water.

The San Joaquin Valley Drainage Authority, a joint powers agency, is the umbrella organization for the Westside Coalition for purposes of the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands within the Central Valley Region (Resolution No.R5-2003-0105). On July 30, 2004, the Westside Coalition received approval for its irrigated agricultural monitoring plan from the Central Valley Regional Water Quality Control Board. The first sampling event took place on July 6, 2004, with subsequent event samples collected

monthly. This report covers the 2007/2008 Non-irrigation season sampling events beginning November 2007 through February 2008 (Events 39 through 41), including Rain Event 6, which occurred in January 2008.

The Monitoring and Reporting Plan for the Westside Coalition includes a monthly sampling plan for 19 monitoring sites within the coalition area as well as plans for sampling for two rain events during each year. During any given sampling event, each accessible site is visited, visually assessed, and samples are collected in accordance with the field sampling manual. **Table 1**, below, shows the monitoring events summary by site for the reporting period.

Table 1: November 2007 through February 2008 Sampling Events Summary

Site Designation	Site	Event 39	Event 40	Rain Event 6	Event 41
		Nov	Dec	Jan	Feb
1	Hospital Cr at River Road	NF	NF	S	NF
2	Ingram Cr at River Road	S	NF	S	S
3	Westley Wasteway near Cox Road	NF	NF	NA	NF
4	Del Puerto Cr near Cox Road	NF	NF	S	S
5	Del Puerto Cr at Hwy 33	NF	NF	S	S
6	Salado Cr near Olive Ave.	NF	NF	NA	NA
7	Ramona Lake near Fig Avenue	S	NF	S	NF
8	Marshall Road Drain near River Road	NF	S	S	NF
9	Orestimba Cr at River Road	S	S	S	S
10	Orestimba Cr at Hwy 33	S	S	S	S
11	Newman Wasteway near Hills Ferry Road	S	S	S	S
12	San Joaquin River at Sack Dam	S	S	S	S
13	San Joaquin River at Lander Avenue	S	S	S	S
14	Mud Slough u/s San Luis Drain	S	S	S	S
15	Salt Slough at Lander Avenue	S	S	S	S
16	Salt Slough at Sand Dam	S	S	S	S
17	Los Banos Creek at Highway 140	S	S	S	S
18	Los Banos Creek at China Camp Road	S	NF	S	NF
19	Turner Slough near Edminster Road	NF	NF	NA	NF
20	Little Panoche Creek 1	NF	NF	NF	NF
21	Little Panoche Creek 2	NF	NF	NF	NF
22	Little Panoche Creek 3	NF	NF	NF	NF
23	Little Panoche Creek 4	NF	NF	NF	NF
24	Little Panoche Creek 5	NF	NF	NF	NF
25	Little Panoche Creek 6	NF	NF	NF	NF
26	Shields Avenue Drain at I-5	NF	NF	NF	NF
27	Russell Avenue Drain at the SLC	NF	NF	NF	NF
28	Los Banos Creek at Sunset Ave.	NF	NF	NF	NF

Notes: S = Water sampled according to the MRP.
NF = Not sampled due to lack of flow.
NA = Not sampled due to lack of safe access

The objectives of the original monitoring program are:

- To assess the existing water quality characteristics of major agricultural drains within the watershed area.
- To determine the location and magnitude of water quality problems.
- To determine the cause of water quality problems and develop solutions.

In 2007, the Westside Coalition began development of a management plan based the results of the monitoring efforts. In support of this management plan, a revised monitoring and reporting plan (Revised MRP) was developed and submitted to the Regional Board. This Revised MRP was provisionally adopted and implemented in March 2008. A revised QAPP is currently in development.

Two sampling crews have been trained by the analytical laboratories to collect samples according to the Westside Coalition's QAPP and Field Sampling Manual. These crews are responsible for collecting samples at each of the 19 sites; the field coordinator for the northerly region is responsible for collecting samples from sites 1 through 10. The field coordinator for the southerly region and is responsible for collecting samples from sites 11 through 19. The sampling crew for the northerly region is comprised of staff from Del Puerto Water District and Patterson Irrigation District. The southerly sampling crew is staffed by Central California Irrigation District. The sampling responsibilities include completion of the field data sheets, collection of water and sediment samples, completion of labels and chain of custody sheets, and coordination with the labs for sample pickup. The parameters analyzed at each site are shown in **Table 2**. The laboratory, method, and constituents analyzed are shown in **Table 3.**

In addition to the constituents presented in **Table 3**, aquatic toxicity samples were collected and analyzed. These samples were analyzed by Pacific Ecorisk, Inc. using the methods described below:

- *Ceriodaphnia dubia*: "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (USEPA 2002a).
- *Pimephales promelas*: "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (USEPA 2002a).
- *Selenastrum capricornutum*: "Short-term Methods for Estimated the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms" (USEPA 2002b).
- *Hyalella azteca*: "Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Organisms" (USEPA 2000).

Fifteen of the 19 monitoring sites are located on streams that dominated by summer agricultural drainage runoff. The irrigation season within the Westside Coalition typically starts in March, with pre-irrigation and typically ends in August, just before harvest of the late season crops (such as cotton and fall corn). Because the irrigation period is also when pesticides are applied, and most likely to be carried off by tailwater drainage, the Westside Coalition has targeted this period for pesticide and toxicity analysis. See the Monitoring and Reporting Plan, page 8 (April 1, 2004). All monitoring events during this reporting period occurred during the non-irrigation season or rain event. Four of the monitoring sites received agricultural drainage during the irrigation season and wetland drainage during the fall and winter (SJR at Lander Ave., Mud Sl.

u/s San Luis Drain, Salt Sl. at Lander Ave. and Los Banos Creek at Hwy 140). Because of this, these four sites are tested for pesticides and toxicity year-round.

Table 2: Monitoring Stations and Samples

Map Designation	Site Description	General Physical	Irrigation Season Aquatic Toxicity	Winter Aquatic Toxicity	Sediment Toxicity	Drinking Water Constituents	Pesticide Sampling
	1	3	4	5	6	7	8
1	Hospital Creek at River Road	x	x		x	x	x
2	Ingram Creek at River Road	x	x		x	x	x
3	Westley Wasteway nr Cox Road	x	x		x	x	x
4	Del Puerto Creek nr Cox Road	x	x		x	x	x
5	Del Puerto Creek at Hwy 33	x	x		x	x	x
6	Salado Creek nr Olive Ave	x	x		x	x	x
7	Ramona Lake nr Fig Avenue	x	x		x	x	x
8	Marshall Road Drain nr River Road	x	x			x	x
9	Orestimba Creek at River Road	x	x		x	x	x
10	Orestimba Creek at Highway 33	x	x		x	x	x
11	Newman Wasteway nr Hills Ferry Rd	x	x		x	x	x
12	SJR at Sack Dam	x					
13	SJR at Lander Ave	x	x	x	x	x	x
14	Mud Sl upstream of San Luis Drain	x	x	x	x	x	x
15	Salt Sl at Lander Ave	x	x	x	x	x	x
16	Salt Sl at Sand Dam	x	x		x	x	x
17	Los Banos Cr at Hwy 140	x	x	x	x	x	x
18	Los Banos Cr at China Camp Road	x	x		x	x	x
19	Turner Slough nr Edminster Road	x	x		x	x	x
20	Little Panoche Creek 1	x	x		x	x	x
21	Little Panoche Creek 2	x	x		x	x	x
22	Little Panoche Creek 3	x	x		x	x	x
23	Little Panoche Creek 4	x	x		x	x	x
24	Little Panoche Creek 5	x	x		x	x	x
25	Little Panoche Creek 6	x	x		x	x	x
26	Shields Avenue Drain at I-5	x	x		x	x	x
27	Russell Avenue Drain at the SLC	x	x		x	x	x
28	Los Banos Creek at Sunset Ave.	x	x		x	x	x
	Number of sites	**28**	**27**	**4**	**26**	**27**	**27**
	Times per year	**13**	**8**	**4**	**2**	**13**	**8**
	Total	**364**	**216**	**16**	**52**	**351**	**216**

Table 3: Analytes, Laboratories, and Methods.

	Constituent	Laboratory	Method	Units	Laboratory SOP No.
Field Data	pH	Field Crew	YSI meter	-	Field Manual
	Temperature	Field Crew	YSI meter	ºC	Field Manual
	Conductivity	Field Crew	YSI meter	µmhos/cm	Field Manual
	Dissolved Oxygen	Field Crew	YSI meter	mg/L	Field Manual
	Flow	Field Crew	Estimate	cfs	Field Manual
Gen. Phy. / D.W.	Color (A.P.H.A.)	Caltest	SM 2120B	-	COLOR-rev4E
	pH	Caltest	SM 4500-H+B	-	PH-rev4
	TDS	Caltest	SM 2540C	mg/L	TDS-rev4E
	TSS	Caltest	SM 2540D	mg/L	TSS-rev4
	Turbidity	Caltest	SM 2130B	NTU	TURB-rev4E
	Hardness	Caltest	EPA 130.2	mg/L	HARD-rev5E
	Metals	Caltest	EPA 200.7, 200.8	mg/L	M-ICP-rev10E & 2008rev5Ea
	Bromide/Nitrate	Caltest	EPA 300.0	mg/L	DIONEX-rev5E
	Nitrogen, Nitrite	Caltest	EPA 354.1	mg/L	NO2-rev6
	TKN	Caltest	EPA 351.3	mg/L	NH3-TKN-rev6E
	Phosphate	Caltest	EPA 365.2	mg/L	PHOS-rev4
	Ammonia (as N)	Caltest	EPA 350.2	mg/L	NH3-TKN-rev6E
	DOC	Caltest	SM 5310-B/C	mg/L	TOC-D0C-rev7E
	TOC	Caltest	SM 5310-B/C	mg/L	TOC-D0C-rev7E
	E. Coli	Caltest	SM 9221BF/9223-B	MPN	MMOMUG-rev8E
Pesticides	Organophosphates	APPL	EPA 8141A	µg/L	ANA8141A
	Organochlorines	APPL	8081A/8082	µg/L	ANA8081A
	Carbamates	APPL	EPA 8321A LL	µg/L	HPL8321A
	Pyrethroids	APPL	EPA 8081A-P	µg/L	ANA8081A
	Herbicides	APPL	EPA 619	µg/L	ANA8151A
Toxicity	*Ceriodaphnia d.*	PER	EPA-821-R-02-012	% survival	Acute Cerio SOP
	Selenastrum c.	PER	EPA-821-R-02-013 & EPA-600-4-91-002	cell growth	Chronic Selenastrum SOP
	Pimephales p.	PER	EPA-821-R-02-012	% survival	Acute FHM SOP
	Hyalella a.	PER	EPA-600-R-99-064	% survival	10-D HyalellaAcuteSedTest

CalTest Labs in Napa, California
APPL labs in Fresno, California
Pacific Ecorisk (PER) in Martinez, California

Attachment 1 details the samples collected at each site during each sampling event. A summary of the monitoring results is presented in **Appendix A**. Significant aquatic toxicity was measured eight times, during two sampling events (Event 39 in November and Rain Event 6 in January) and at seven sites during the reporting period. Four of these measurements affected *Ceriodaphnia dubia* and four affected algae. No toxicity was measured for fathead minnow. All but one measurement of toxicity (for *Ceriodaphnia dubia*) occurred during Rain Event 6. These results, along with associated water quality and flow data, are summarized in **Attachment 2**. Details of the aquatic toxicity analyses are shown in **Appendix C**.

Quality control samples were collected in addition to the event analysis sample. The quality control samples included field blanks, field duplicates, and matrix spike/matrix spike duplicate samples (MS/MSD). No significant quality control events were encountered, although there were some of minor quality control issues, including exceedance of the field duplicate RPD

value, hold time violation, or control sample failure. Results of the Quality Control samples are discussed in Section 4.

Nine sites within San Luis Water District (SLWD) were monitored monthly in accordance with the Monitoring and Reporting Plan, including daily visits during Rain Event 6. SLWD has implemented an aggressive tailwater prohibition and none of these sites discharged during this reporting period. No samples have been collected at any of the SLWD sites since they joined the Westside Coalition.

Monitoring Toxicity Event Summaries.
The 2007/2008 non-irrigation season was extremely dry and 25% of the sites visited during the reporting period were observed to have no flow. One Rain Event was sampled during this reporting period.

Event 39, November 13, 2007.
Non-irrigation season water samples were collected on November 13th from all sites except Hospital Creek (no flow), Westley Wasteway (no flow), Del Puerto Creek at River Road and at Highway 33 (no flow), Salado Creek (no flow), Turner Slough (no flow), and the San Luis Water District Sites (no flow). Samples were collected in accordance with the original MRP submitted in April 2004. A reduction in *Ceriodaphnia dubia* survival was measured at Salt Slough at Lander Avenue (33% different from control). A follow-up sample was collected on November 20th and no toxicity was observed.

Event 40, December 11, 2007.
Non-irrigation season water samples were collected on December 11th from ten sites within the Westside Coalition. Nine sites had no flow: Hospital Creek, Ingram Creek, Westley Wasteway, Del Puerto Creek (both sites), Salado creek, Ramona Lake, Marshall Road Drain, Los Banos Creek at China Camp Road, and Turner Slough. Sites within San Luis Water District also had no flow. No significant toxicity was observed.

Rain Event 6, January 5th, 6th, and 7th, 2008.
From January 3rd through January 7th, 2008, a series of storms moved across the Westside Coalition. Table 4, below, summarized the total precipitation for CIMIS stations 7, 92, and 161 for that period.

Table 4

Station No.	Subarea	Total Precipitation
7 (Firebaugh/Telles)	Grasslands	0.55”
92 (Kesterson)	Los Banos	0.02”
161 (Patterson)	Patterson	2.59”

The precipitation was sufficient to cause surface runoff to discharge at sites within the Northern and Southern regions of the Westside Coalition although the flow rate at several sites was small. Sites within San Luis Water District were monitored on a daily basis during this period but no runoff was observed and no samples were collected. Samples were collected at all other sites except Westley Wasteway (no access), Salado Creek (no access), and Turner Slough (no access).

Toxicity to *Ceriodaphnia dubia* was measured at Hospital Creek (0% survival), Del Puerto Creek at Highway 33 (70% survival), and Ramona Lake (0% survival). Dilution series and TIE testing were performed on the Hospital and Del Puerto Creek samples and a follow up sample was collected at Ramona Lake. See Attachment 2 for the results. Toxicity to algae was measured at Hospital Creek (3% of control growth), Ingram Creek (12% of control growth), Marshall Road Drain (1% of control growth), and Orestimba Creek at River Road (69% of control growth). Dilution series and TIE testing was performed on each of the toxic samples except Orestimba Creek (algal growth was above the trigger). See attachment 2. No toxicity to fathead minnow was measured.

- Samples measuring *Ceriodaphnia dubia* toxicity. Chlorpyrifos (0.039µg/L), Diazinon (0.068µg/L) and Methyl Parathion (0.59µg/L) were measured at Hospital Creek and are consistent with the findings of the TIE as the probable cause of toxicity. No pesticides were detected at either the Del Puerto Creek or Ramona Lake sites and the cause of toxicity is no known. The Ramona Lake TIE was inconclusive and the resample measured no toxicity.
- Sample measuring algae toxicity. Diuron and copper were detected in all four samples that measured algae toxicity and are likely the cause of toxicity. Diuron is commonly used for weed control at road edges and canal banks and is used by both county road maintenance agencies and the California Department of Transportation.

Event 41, February 12, 2008.

Non-irrigation season samples were collected on February 12th at the Westside Coalition monitoring sites. Hospital Creek, Westley Wasteway, Ramona Lake, Marshall Road Drain, Los Banos Creek at China Camp Road, and Turner Slough did not have any flow and no samples were collected. No access was available to Salado Creek. No significant toxicity was observed.

SECTION 2: SAMPLING SITES DESCRIPTION

Figure 1 shows the Westside Coalition area and the location of the monitoring sites. Following is a description and rationale for the monitoring sites.

- Hospital and Ingram Creek (Designation 1 & 2, Table 2 of MRP). The confluence of Hospital and Ingram creeks is on the 303(d) list for pesticides. The sites are each located on the individual creeks, upstream of the confluence. Both of these creeks are significant drainages for the Patterson subarea. Ingram Creek site water is analyzed for Group A pesticides. Flow at both of these sites is measured with a sharp-crested weir.
- Westley Wasteway (Designation 3). Westley Wasteway is a significant drainage for the Patterson Subarea for both tailwater and storm runoff. Land use upstream of this monitoring station is similar to that of Del Puerto Creek. Westley Wasteway site water is analyzed for Group A pesticides. Flow at this site is measured with a sharp-crested weir.
- Del Puerto Creek (Designations 4 and 5). Del Puerto Creek is on the 303(d) list for pesticides and is a major drainage for the Patterson subarea and major storm runoff collector. Two stations are identified on this waterbody; one near the discharge to the San Joaquin River, and one at Highway 33, near the middle of the Patterson subarea. Biological assessments are performed on Del Puerto creek to assess its overall health,

which will be useful in relating to collected water quality data. Del Puerto Creek site water is analyzed for Group A pesticides. A stage-discharge curve has been developed for Del Puerto Creek near Cox Road, and is used to estimate flow. Discharge at Del Puerto Creek at Highway 33 is estimated by timing a floating object over a set distance and applied over the measured cross section.

- Salado Creek, Ramona Lake, and Marshall Road Drain (Designations 6, 7 & 8). All three of these are significant drainages for the Patterson subarea. All three carry tail water from similar landuse areas, as well as operational spills. Salado Creek also collects storm water runoff from the City of Patterson. The outlet of Salado Creek is a pipe discharge into the San Joaquin River, and access for sampling is subject to the water level and flow conditions of the River, which frequently prevent sample collection. The Westside Coalition has proposed discontinuing monitoring at this location, pending approval of the Regional Board. Water from all three of these sites is analyzed for Group A pesticides. All three of these discharges are piped and direct measurement of discharge cannot be safely performed during sample collection. Discharge at Marshall Road Drain and Ramona Lake are measured through the San Joaquin River Dissolved Oxygen Upstream Studies program.
- Orestimba Creek (Designation 9). There are two monitoring locations on Orestimba Creek; one near the discharge point to the San Joaquin River; and one upstream at Highway 33. The importance of Orestimba Creek is similar to that of Del Puerto: it is on the 303(d) list for pesticides, is a major drainage for the Patterson subarea, and is included in the biological assessment portion of the monitoring program. Orestimba Creek site water is analyzed for Group A pesticides. Flow data for Orestimba Creek at River Road is collected and reported by USGS. Discharge at Orestimba Creek at Highway 33 is estimated by timing a floating object over a set distance and applied over the measured cross section.
- Newman Wasteway (Designation 11). The Newman Wasteway is a significant drainage for the Patterson subarea and is on the 303(d) list for salt and pesticides. This measures drainage that originates from the southerly region of the Patterson subarea. Newman Wasteway site water is analyzed for Group A pesticides. Discharge at Newman Wasteway is estimated by timing a floating object over a set distance and applied over the measured cross section.
- The San Joaquin River at Sack Dam and Lander Avenue (Designations 12 & 13). These are baseline sites to establish the water quality backdrop in the San Joaquin River. The Sack Dam site is a water supply site that delivers water to agricultural areas within the Dos Palos Subarea as well as wetland water supplies. It can also receive agricultural return waters from the Tranquillity subarea. It is included to determine supply side water quality that may be affected by upstream discharge. San Joaquin River at Lander Avenue site water is analyzed for Group A pesticides. Discharge through the Lander Avenue site is reported through CDEC. Discharge past Sack Dam is visually assessed.
- Mud Slough and Salt Slough (Designations 14, 15 & 16). These sites measure both drainage originating from the Los Banos and Dos Palos subareas that flow through the wetlands, as well as discharge from the wetlands themselves. Both Mud and Salt Sloughs are on the 303(d) list for a variety of constituents. In addition to the Westside Coalition's monitoring program, the Central Valley Regional Water Quality Control Board, Surface Water Ambient Monitoring Program (SWAMP) collects and analyzes samples from these

sites throughout the year. These samples are analyzed for selenium, boron, and EC, along with other constituents. The SWAMP Data is available via the internet at: http://www.waterboards.ca.gov/centralvalley/programs/agunit/swamp/index.html. Mud Slough and Salt Slough at Lander Avenue site water is analyzed for Group A pesticides. Discharge through Mud Slough is calculated as the difference between the flow at Mud Slough downstream of the San Luis Drain, and San Luis Drain discharge measured at Site B. Discharge at Salt Slough at Sand Dam is measured through a sharp-crested weir at the dam. Discharge at Salt Slough at Lander Avenue is reported through CDEC.

- Los Banos Creek (Designations 17 & 18). Los Banos Creek carries storm water runoff from the Coastal Mountain Range, the City of Los Banos, and from the adjacent agricultural lands and wetlands. It also receives tail water from the Los Banos subarea. Two stations have been established on this waterbody, one upstream of the wetland area within the Los Banos subarea, and one within the wetlands. Discharge through both of these sites is estimated by timing a floating object over a set distance and applied over the measured cross section.
- Turner Slough (Designation 19). This station is located on the eastside of the San Joaquin River and measures drainage from a portion of the Patterson subarea. Site water from Turner Slough is analyzed for Group A pesticides. Discharge through Turner Slough is estimated by timing a floating object over a set distance and applied over the measured cross section.
- Little Panoche Creek. This creek is monitored as part of the San Luis Water District monitoring plan. There are six sites on this creek. The creek has the ability to convey storm runoff from adjacent orchards as well as releases from Little Panoche Reservoir. These sites are visited monthly and samples are collected in water is present. No samples have been collected since they have been incorporated into the Westside Coalition's monitoring program. Discharge through these sites will be estimated by timing a floating object over a set distance and applied over the measured cross section.
- Shields Avenue at I-5. This is an edge of road ditch that can collect runoff from adjacent farmed fields as well as road runoff from Shields Avenue. This site is part of the San Luis Water District monitoring program and has not conveyed water since the inception of their program. Discharge through this site will be estimated by timing a floating object over a set distance and applied over the measured cross section.
- Russell Avenue Drain at the San Luis Canal. This is an edge of road ditch that can collect runoff from adjacent farmed fields as well as road runoff from Russell Avenue. This site is part of the San Luis Water District monitoring program and has not conveyed water since the inception of their program. Discharge through this site will be estimated by timing a floating object over a set distance and applied over the measured cross section.
- Los Banos Creek at Sunset Avenue. This site is on Los Banos Creek at the eastern boundary of San Luis Water District and is part of the San Luis Water District Monitoring Program. It was dry during the monitoring period. There is a potential for minimal agricultural inputs at this site and most of the water conveyed would likely be releases from Los Banos Reservoir or upstream gravel pits. Discharge through this site will be estimated by timing a floating object over a set distance and applied over the measured cross section.

More than 59 different varieties of crops are grown within the Westside Coalition watershed area, ranging from fruit and nut trees to melons and cotton. **Table 5** shows the top twenty crops within the watershed area based on 2006 DPR pesticide use data.

These crops are dispersed approximately evenly throughout the watershed area, with the exceptions of cotton (mostly in the Los Banos, Dos Palos and Tranquillity subareas), rice (Dos Palos subarea only), and fruit trees (mostly in the Patterson subarea). The planting practices are typical for conventional agriculture within the Central Valley. A complete crop list and detailed crop calendar was presented in the "Watershed Evaluation Report", submitted in April, 2004.

In general, annual field crops (cotton, tomatoes, melons, etc.) are planted in the spring between March and May, and harvested in the late summer and early fall, depending on the crop. Orchard crops come out of dormancy between March and April, and are harvested in the late summer and fall.

Table 5: Top 20 Crops Grown

Fresno	Merced	Stanislaus
Cotton	Almonds	Almonds
Grapes	Cotton	Walnuts
Almonds	Alfalfa	Corn
Tomatoes	Tomatoes	Alfalfa
Alfalfa	Grapes	Peaches
Lettuce	Corn	Tomatoes
Corn	Pistachios	Grapes
Citrus	Oats	Dry Beans
Mellons	Peaches	Apricots
Nectarines	Wheat	Oats
Peaches	Mellons	Nursery
Pistachios	Walnuts	Mellons
Onion	Sugar Beets	Broccoli
Sugar Beets	Green Beans	Cherrys
Wheat	Sweet Potato	Green Beans
Plums	Rice	Apples
Garlic	Prunes	Lettuce
Broccoli	Onion	Wheat
Peppers	Nursery	Spinach

Data from 2006 DPR Pesticide Use database.

Annual field crops are typically planted as seed or transplants after the field has been pre-irrigated to provide salt leaching and soil moisture for germination. These crops are usually furrow irrigated using either a plowed head ditch or gated pipe, but may also be sprinkler or sub-surface drip irrigated. Permanent field crops such as pasture or alfalfa are usually flood or sprinkler irrigated. The younger fruit and nut trees are almost universally irrigated with drip or micro-sprinkler systems, though many of the older orchards are still flood irrigated.

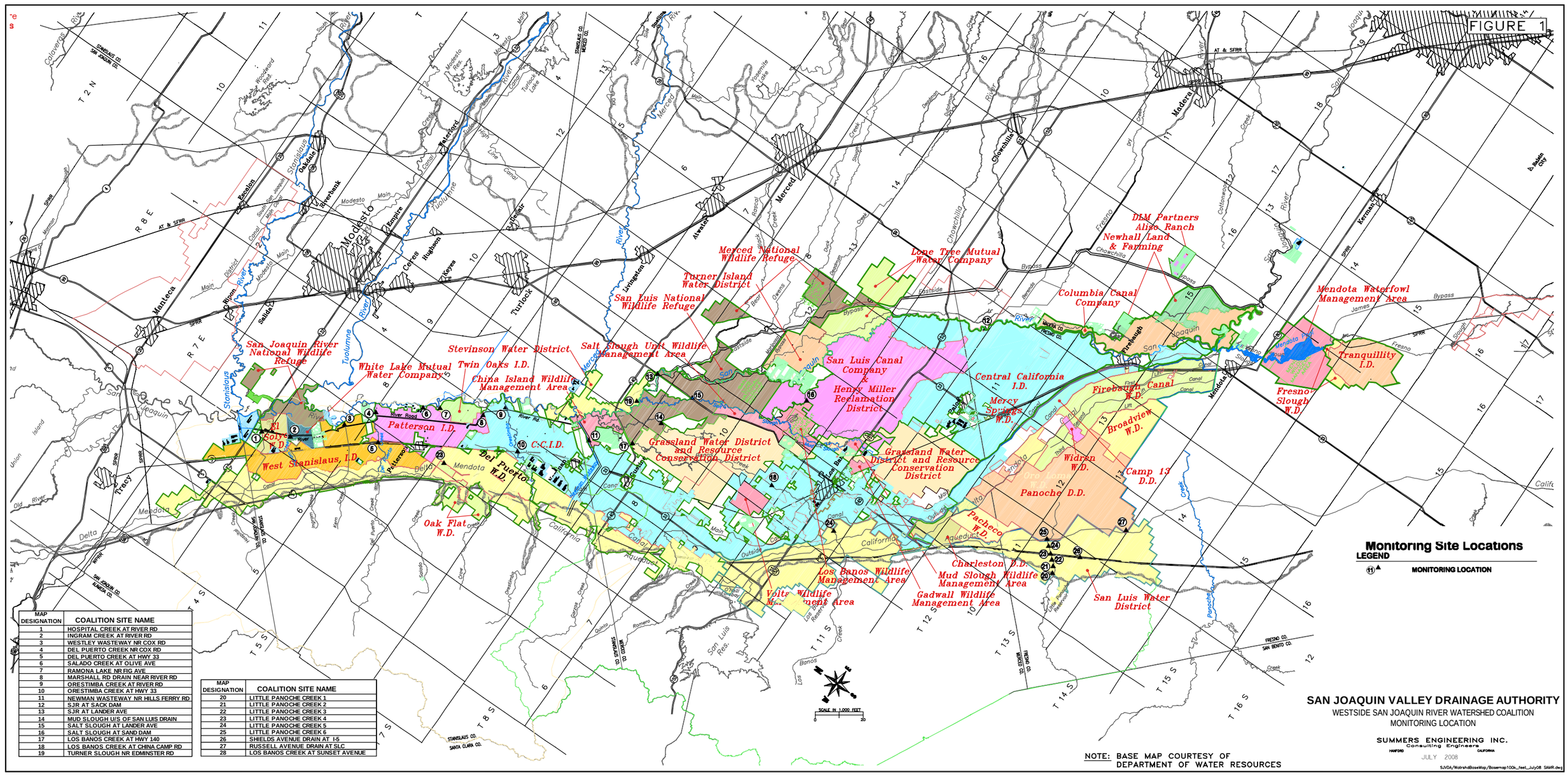
Table 6 shows the types of pesticides used in 2006 reported from the California Department of Pesticide Regulation, by sub-watershed and crop type. This area includes 10 of the 19 monitoring sites within the Westside Coalition, 3 of which are on the 303d list for pesticides.

Table 6: Stanislaus County 2006 Pesticide Use by Subwatershed

	Pesticide Type	Fallow / Native	Field Crops	Pasture	Orchard Crops	Vineyards	Nursery
Del Puerto Cr. Subwatershed	Carbamates		X		X		
	Herbicides	X	X	X	X	X	
	Organochlorine		X		X		
	Organophosphorus		X	X	X		
	Pyrethroid		X		X	X	
Hospital/Ingram Cr. Subwatershed	Carbamates		X		X		
	Herbicides	X	X		X	X	
	Organochlorine		X		X		
	Organophosphorus		X		X		
	Pyrethroid		X		X	X	
Orestimba Cr. Subwatershed	Carbamates		X		X		
	Herbicides	X	X	X	X		X
	Organochlorine		X		X		
	Organophosphorus		X		X		
	Pyrethroid		X		X		
Salado Creek Subwatershed	Carbamates		X		X		
	Herbicides	X	X	X	X		
	Organochlorine		X		X		
	Organophosphorus		X		X		
	Pyrethroid		X		X		
Westley Wasteway Subwatershed	Carbamates		X		X		
	Herbicides	X	X		X	X	
	Organochlorine		X				
	Organophosphorus		X		X		
	Pyrethroid		X		X	X	

Note: Shaded regions indicate no recorded pesticide application on that crop type in that subwatershed.

FIGURE 1



MAP DESIGNATION	COALITION SITE NAME
1	HOSPITAL CREEK AT RIVER RD
2	INGRAM CREEK AT RIVER RD
3	WESTLEY WASTEWAY NR COX RD
4	DEL PUERTO CREEK NR COX RD
5	DEL PUERTO CREEK AT HWY 33
6	SALADO CREEK AT OLIVE AVE
7	RAMONA LAKE NR RIG AVE
8	MARSHALL RD DRAIN NEAR RIVER RD
9	ORESTIMBA CREEK AT RIVER RD
10	ORESTIMBA CREEK AT HWY 33
11	NEWMAN WASTEWAY NR HILLS FERRY RD
12	SJR AT SACK DAM
13	SJR AT LANDER AVE
14	MUD SLOUGH U/S OF SAN LUIS DRAIN
15	SALT SLOUGH AT LANDER AVE
16	SALT SLOUGH AT SAND DAM
17	LOS BANOS CREEK AT HWY 140
18	LOS BANOS CREEK AT CHINA CAMP RD
19	TURNER SLOUGH NR EDMINSTER RD

MAP DESIGNATION	COALITION SITE NAME
20	LITTLE PANOCHE CREEK 1
21	LITTLE PANOCHE CREEK 2
22	LITTLE PANOCHE CREEK 3
23	LITTLE PANOCHE CREEK 4
24	LITTLE PANOCHE CREEK 5
25	LITTLE PANOCHE CREEK 6
26	SHIELDS AVENUE DRAIN AT I-5
27	RUSSELL AVENUE DRAIN AT SLC
28	LOS BANOS CREEK AT SUNSET AVENUE

Monitoring Site Locations

LEGEND

(11)▲ MONITORING LOCATION

NOTE: BASE MAP COURTESY OF DEPARTMENT OF WATER RESOURCES

SAN JOAQUIN VALLEY DRAINAGE AUTHORITY

WESTSIDE SAN JOAQUIN RIVER WATERSHED COALITION

MONITORING LOCATION

SUMMERS ENGINEERING INC.
Consulting Engineers
HANFORD CALIFORNIA

JULY 2008

SJVDA/Watrshd\BaseMap/Basemap100k_feet_July08 SAMR.dwg

Table 7 shows the 10 most commonly applied pesticides (by acreage) for the three major counties occupied by the Westside Coalition.

Table 7: Most Commonly Applied Pesticides by County (2006).

Fresno		Merced		Stanislaus	
Pesticide	Class	Pesticide	Class	Pesticide	Class
Ethephon	OP	Ethephon	OP	Lambda-cyhalothrin	Pyrethroid
Chlorpyrifos	OP	Chlorpyrifos	OP	Dimethoate	OP
Methomyl	Carbamates	Lambda-cyhalothrin	Pyrethroid	Esfenvalerate	Pyrethroid
Lambda-cyhalothrin	Pyrethroid	Cyfluthrin	Pyrethroid	Chlorpyrifos	OP
Esfenvalerate	Pyrethroid	Mehtomyl	Carbamate	Methomyl	Carbamates
Naled	OP	Dicofol	OC	Permethrin	Pyrethroid
Cyfluthrin	Pyrethroid	Malithion	OP	Parathion-Methyl	OP
Permethrin	Pyrethroid	Aldicarb	Carbamate	Bifenthrin	Pyrethroid
Bifenthrin	Pyrethroid	Dimethoate	OP	Ethephon	OP
Diazinon	OP	Esfenvalerate	Pyrethroid	Dicofol	OC

SECTION 3: FIELD SAMPLING PROCEEDURE

Field water quality data and sample collections were collected as outlined in the Westside Coalition's Quality Assurance Project Plan (QAPP) and Field Sampling Manual. Two sampling crews are responsible for collecting samples at each of the 19 sites; the field coordinator for the northerly region is responsible for collecting samples from sites 1 through 10. The field coordinator for the southerly region and is responsible for collecting samples from sites 11 through 19. The sampling crew for the northerly region is comprised of staff from Del Puerto Water District and Patterson Irrigation District. The southerly sampling crew is staffed by Central California Irrigation District. These responsibilities include completion of the field data sheets, collection of water and sediment samples, completion of labels and chain of custody sheets, and coordination with the labs for sample pickup. Samples are collected either as a direct grab from the waterbody or as a bucket grab, where a large volume of water is collected in a stainless steel bucket and transferred to the sample bottles. Details of these collection methods are explained in Field Sampling manual. The list of tested constituents is shown in **Table 8**, below.

Table 8: Current Monitoring Constituents

Pesticides	
Material	**Class**
Aldicarb	Carbamate
Carbaryl	Carbamate
Carbofuran	Carbamate
Diuron	Carbamate
Linuron	Carbamate
Methiocarb	Carbamate
Methomyl	Carbamate
Oxamyl	Carbamate
4,4'-DDE	Organochlorine
4,4'-DDT	Organochlorine
4,4'-TDE/DDD	Organochlorine
Dicofol	Organochlorine
Dieldrin	Organochlorine
Endrin	Organochlorine
Methoxychlor	Organochlorine
Methamidophos	Organophosphate
Azinphosmethyl	Organophosphate
Chlorpyrifos	Organophosphate
Diazinon	Organophosphate
Dimethoate	Organophosphate
Disulfoton	Organophosphate
Malathion	Organophosphate
Methidathion	Organophosphate
Parathion, methyl	Organophosphate
Phorate	Organophosphate
Phosmet	Organophosphate
Bifenthrin	Pyrethroid
Cyfluthrin	Pyrethroid
Cypermethrin	Pyrethroid
Esfenvalerate/Fenvalerate	Pyrethroid
Lambda cyhalothrin	Pyrethroid
Permethrin	Pyrethroid
Atrazine	Triazine
Cyanazine	Triazine
Diuron	Triazine
Linuron	Triazine
Molinate	Triazine
Simazine	Triazine
Thiobencarb	Triazine

General Chemistry Constituents	
Material	**Class**
Bromide	Drinking Water
E. Coli	Drinking Water
Color	General Physical
Dissolved Organic Carbon	General Physical
Hardness (as CACO3)	General Physical
Total Dissolved Solids	General Physical
Total Organic Carbon	General Physical
Total Suspended Solids	General Physical
Turbidity	General Physical
Arsenic	Metal
Boron	Metal
Cadmium	Metal
Copper	Metal
Lead	Metal
Nickel	Metal
Selenium	Metal
Zinc	Metal
Ammonia (as N)	Nutrient
Nitrogen, Nitrate (as N)	Nutrient
Nitrogen, Nitrite	Nutrient
Phosphate as P,Ortho dissolved	Nutrient
Total Kjeldahl Nitrogen	Nutrient
Total Phosphate as P	Nutrient

Field Measurements
Material
DO
EC
Est Depth
pH
Flow
Staff Gage
Temp

Toxicity Analyses	
Material	**Class**
Hyalella azteca	Sediment Toxicity
Pimephales promelas	Fathead Minnow
Selenastrum capricornutum	Algae
Ceriodaphnia dubia	Water Flea

SECTION 4: FIELD QUALITY CONTROL SAMPLES

Field quality control samples included the collection of field duplicate samples for aquatic toxicity analysis, and the collection of both field duplicate and field blank samples for pesticides, drinking water, and general physical constituent analysis. It should be noted that the field duplicate samples are typically collected as separate samples simultaneously with the event

sample (as opposed to field split samples). The calculated relative percent difference (RPD) between the event sample and field duplicate sample should be considered measurements of site water variability.

- **Water Chemistry Analyses.** Field duplicate and field blank samples were collected at three sampling events during the reporting period and analyzed for general chemistry and drinking water constituents. A comparison of the event samples, duplicate samples, and blank samples is tabulated in **Attachment 3**. A total of 66 duplicate analyses were completed and compared to the event sample results. Six duplicate samples exceeded the 25% relative percent difference (RPD) established in the QAPP for:

Color	E. Coli	Hardness
Nitrate	Total Suspended Solids	Turbidity

  Three field blank sample sets were analyzed during the report period (66 results, total). Of these, none resulted in values greater than 20% of the event sample result.

  There were some samples that were analyzed or re-analyzed outside of the designated hold-time. It is not expected that these hold-time violations will significantly affect the data usability.

- **Pesticide Analyses.** Two field duplicate and field blank samples sets were collected during the reporting period and analyzed for pesticides. There were no detections of pesticides for any of the field blank samples. Calculated RPD for Field duplicate results were greater than 25% for four analytes during Rain Event 6 (January 2008). The RPD was 44% for Chlorpyrifos, 30% for DDE, 43% for Diazinon, and 48% for Methyl-parathion. All other RPDs were within the 25% margin. These variations likely demonstrate the site water variability and are not expected to affect data usability. The results of the field blank, field duplicate and event sample comparisons are tabulated in **Attachment 3**.

- **Aquatic Toxicity Analyses.** Field duplicate samples were collected and analyzed for toxicity to all three species for two of the aquatic toxicity events tested during the reporting period. Field duplicate results were acceptable for all of the tests, although the Rain Event 6 (January 2008) algae duplicate RPD measured 25%.

- **Sediment Toxicity Analysis.** There were no sediment toxicity analyses performed during this reporting period.

SECTION 5: ANALYTICAL METHODS

Table 3 indicates the laboratories responsible for the analytical results of this monitoring program, the analytical method used, and the standard operating procedure (SOP) document number. This table includes the additional Phase II constituents.

Chain of Custody (COC) sheets were maintained from the time of sample collection to receipt at the laboratories. Copies of the COC sheets are included in **Appendix A**, along with a summary of the data results. The data summary includes all of the field readings, analytical chemistry results, pesticide scan results, and toxicity test results (including results from the initial screening tests, dilution series, and TIE's). The original laboratory reports are included in **Appendix C**. These reports also include all of the field and internal quality control results.

The laboratory original data sheets (raw data) for the toxicity results are included in **Appendix C**, as part of the laboratory reports. Raw data for general physical results, drinking water results, and pesticide results are kept by the laboratories for a minimum of five years and are available upon request.

SECTION 6: DATA INTERPRETATION

The primary objective of the monitoring program is to identify water bodies that are adversely affected by agricultural discharges. The monitoring program has used a combination of toxicity tests and pesticide analyses, along with close coordination among districts and growers to not only identify problem areas but also to determine the magnitude and cause of the problems.

The Westside Coalition's monitoring program includes 28 stations on the Westside of the San Joaquin Valley (see **Table 1** and **Figure 1**). These stations were selected to provide a representative snapshot of all of the various regions of the watershed. A summary of this data is presented in **Appendix A**, and the laboratory data reports are provided in **Appendix C**.

All of the analyzed parameters were reviewed regularly to evaluate the overall health of the water bodies within the coalition area. This reporting period covered only non-irrigation months with limited agricultural activity. Eight measurements of significant aquatic toxicity were measured, all but one of which occurred during Rain Event 6 (January 2008). Four of the toxicity measurements were to *Ceriodaphnia dubia*, with the remaining to algae.

Ceriodaphnia dubia. Toxicity was measured once during Event 39 (November 2007) at Salt Slough at Lander Avenue. Survival was measured at 60% (33% different from control). No pesticides were detected and a resample indicated no toxicity. The remaining three toxicity measurements occurred during Rain Event 6 at Hospital Creek and Ramona Lake (both 0% survival) and at Del Puerto Creek at Highway 33 (70% survival – 26% different from control). Chlorpyrifos, DDE, Diazinon, and Methyl Parathion were detected at Hospital Creek and likely contributed to the toxicity. No pesticides were detected in either the Ramona Lake nor Del Puerto Creek samples and the cause of toxicity at both of those sites is unknown. See **Attachment 2**.

Selenastrum capricornutum. Toxicity was measured to algae four times during the reporting period, all of which occurred during Rain Event 6. Severe reductions in growth (>90% difference from control) were observed in the Hospital Creek, Ingram Creek, and Marshall Road Drain samples, with a 31% difference from control measured at Orestimba Creek at River Road. Diuron was detected at all four sites and likely contributed to the toxicity. This is consistent with previous rain events. See **Attachment 2**.

Pimephales Prromelas. No toxicity to fathead minnow was observed during this reporting period.

A variety of pesticide analyses were conducted in tandem with the toxicity screening. During the reporting period, there were 41 detections of 10 different pesticides.

- Chlorpyrifos (6 detections): Chlorpyrifos is an organophosphate pesticide used to control a wide range of insects in orchards, pasture, and field crops. It can be used as a dormant spray for fruit and nut trees.
- Cyanazine (2 detection): Cyanazine is a triazine pre- and post- emergent herbicide to control annual grasses and broadleaf weeds.
- DDT/DDE (8 detections): DDT is an organochlorine pesticide that was banned for agricultural use in 1972. It is a legacy pesticide that is still detected in the watershed relatively low levels. DDE and DDD have no commercial value but are compounds normally associated with the degradation of DDT.
- Diazinon (3 detection): Diazinon is an organophosphate pesticide used to control a wide range of insects and is frequently applied to nut trees, melons, and tomatoes, and is often used as a dormant spray for trees.
- Dieldrin (1 detections): Dieldrin is an orgaonchlorine insecticide that was used on a variety of field and orchard crops including cotton, corn, and citrus. Most uses of Dieldrin were banned in 1987.
- Dimethoate (1 detections): Dimethoate is an organophosphate pesticide used to control a wide range of insects. It is used on a variety of field crops including alfalfa, beans, tomatoes, and cotton.
- Diuron (10 detections): Diuron is a substitute urea herbicide used to control weeds in a variety of field crops including cotton, alfalfa, and wheat. It is also effective in controlling algae. Two of the Diuron detections occurred in Event 41 (February), with the remaining occurring in Rain Event 6.
- Methyl parathion (1 detection): Methyl parathion is an organophosphate pesticide used to control a wide range of insects. It is approved for a variety of non-food crops including alfalfa, cotton, and silage corn.
- Simazine (9 detections): Simazine is a triazine herbicide used to control broadleaf weeds and annual grasses in a variety of field crops.

Exceedences of Recommended Water Quality Values

Water chemistry analyses were compared to recommended water quality values[1] (RWQV).

- **Field, General Physical and Drinking Water Quality Exceedences.** Comparisons were made to seven RWQVs. **Attachment 4** tabulates the results for these constituents and the comparison to the RWQVs. The Westside Coalition performed analyses or observed almost 1,500 field and chemistry (non-pesticide) parameters during the reporting period, during which, 74 (5%) results were greater than the RWQVs. Electrical

[1] Water Quality Limits were taken from a Central Valley Regional Water Quality Control Board letter to the Westside Coalition, dated 30 September 2005.

Conductivity and TDS accounted for 24 and 28 of these exceedances (respectively). E. coli results accounted for 17 of these exceedences, 1 for TSS, 1 for Dissolved Oxygen, and 2 for pH, and 1 for boron.

- **Pesticide exceedences.** The Westside Coalition tested for 1,050 pesticides during the reporting period. These analyses resulted in 41 detections, of which, 13 were greater than established RWQVs. Of the 13 exceedances, 8 were caused by legacy pesticides (either DDT, or DDE), which are not currently in use. Five pesticides constituted the 13 exceedances, which are listed in **Table 9** (below).

Table 9: Pesticide Exceedances

Pesticide	Number of Exceedances
Chlorpyrfos	2
Diazinon	2
Methyl Parathion	1
DDT	2
DDE	6

SECTION 7: ACTIONS TAKEN TO ADDRESS WATER QUALITY IMPACTS

1. Reporting and Outreach:

Outreach included update presentations at regular board meetings of the West Stanislaus Resource Conservation District and the El Solyo Water District. Presentations to these groups focused on providing updates and results of BMP studies undertaken in this project. A meeting was also held with the manger of the Blewett Mutual Water Company. Regular updates were also given at the monthly meeting of the Westside Coalition. A tabulation of meetings is shown in **Table 10**.

Table 10: Outreach Meetings.

Date	Group	Location	Description	Approximate Attendance
5/10/2007	Landowner Tailgate	Patterson	Sediment, pesticides.	1
5/22/2007	Water District Managers	Los Banos	Water quality issues	10
5/30/2007	Patterson ID Workshop	Westley	toxicity, pesticides, sediment, and others	30
6/13/2007	W. Stan. RCD - Board of Directors	Patterson	Water quality issues	8
6/26/2007	Water District Managers	Los Banos	Water quality issues	10
7/24/2007	Water District Managers	Los Banos	Water quality issues	10
8/28/2007	Water District Managers	Los Banos	Water quality issues	10
9/25/2007	Water District Managers	Los Banos	Water quality issues	10
10/18/2007	BMP Field Day	Patterson	BMP treatments for sediment, PAM, Land Guard emzyme, sediment ponds, recirculation systems, funding sources	50
11/27/2007	Dept of Fish and Game	Fresno	Update on wetland compliance with Ag Waiver	2

Pesticide manufacturers are also responding to the water monitoring results from the Westside Coalition through sponsorship and participation in developing BMP literature that has been distributed at grower meetings through their ongoing relationship with CURES. These BMP publications cover changes in CAL-EPA approved labels for chlorpyrifos and diazinon and

stewardship practices for pyrethroid insecticides (these publications are included in the project's "Grower Handbook: Management Practices for Protecting Water Quality.") Information on label changes as well as other best management practices specific to these pesticides was also presented at the grower/PCA meetings.

Grower outreach continued during this reporting period. Through close partnership with the West Stanislaus Resource Conservation District, the local water districts and the Westside Coalition, CURES conducted nine outreach meetings that were organized for growers and PCAs in the region. At each meeting, the latest information on the BMP studies conducted in this grant as well as other BMPs applicable to managing sediment and pesticide runoff were provided. In addition, a number of "tailgate meetings" were held with individual large-acreage growers at their farm offices. Growers were selected based on having properties near or adjoining Orestimba Creek. These informal meetings were facilitated by CURES staff, the Del Puerto Water District or the Central California Irrigation District and were found to be an effective way to discuss the results of water and sediment monitoring and the requirements for Management Plans in the coalition area.

2. BMP Implementation:

During this reporting period, the Westside Coalition continued the development of a Management Plan. The Management Plan includes details on the finding of the first three years of monitoring as well as plans to improve water quality where appropriate. The Management Plan also includes a focused watershed plan for Ingram and Hospital Creeks. The Management Plan is expected to be submitted to the Regional Board by the end of July.

In support of the Management Plan activities, a revised Monitoring and Reporting Plan (MRP) has also been developed. This MRP is structured to target monitoring activities according to the water quality issues of concern within each subwatershed. It is designed to be a flexible plan the adjusts to changes in conditions. An initial revision to the MRP was submitted to the Regional Board in February 2008, with the final plan expected by the end of July.

In addition to these activities, efforts continue by growers and the Coalition to install and evaluate numerous management practices to mitigate sediment and pesticide runoff from irrigated cropland in the Westside Coalition region. Of specific note are the installation of a number of tailwater management systems and other BMPs that will likely affect the water quality during the 2008 irrigation season.

- Completion of the Westley Tailwater Return System project. With funding from a Proposition 50 grant, Patterson Irrigation District and West Stanislaus Irrigation District completed a tailwater return system during this reporting period. The pond consisted of an initial and primary collection basin, as well as a return pump and pipeline. The pond collected tailwater from a 550 acre field of row crops that previously discharged directly into Ingram Creek. Since the completion of this project, tailwater is routed into the pond, where it is detained so that silt can settle out. If there is irrigation demand, the

water is returned to the irrigation system, otherwise it is decanted out of the pond and into Ingram Creek.

	
Westley Tailwater Pond – Ingram Creek in the background. Initial basin in the foreground	Westley Tailwater Pond – Pump station in the primary basin.

- Construction of the Northside Recovery System in Patterson Irrigation District was completed during the winter of 2008 and will be operational for the 2008 irrigation season. This project will collect tailwater from approximately 4,500 acres in northern Patterson Irrigation District. The system includes a 55 acre foot reservoir, five return pump stations, and four pipelines to collect and redistribute tailwater within Patterson's irrigation system. Prior to this project, discharges from this region would largely discharge into Del Puerto Creek downstream of Highway 33. It is expected that this project will significantly improve some of the water quality issues measured at Del Puerto Creek near Cox Road.

	
Tailwater entering the reservoir during the initial filling. Incoming flow is about 5 cfs.	Reservoir pump station. Tailwater will enter the reservoir through the pipeline outlet (foreground) and recirculated into the irrigation system through the pump station.

- The Westside Coalition is in the process of developing a Focused Watershed Plan for Ingram and Hospital Creeks. This plan will outline specific actions that the Coalition will undertake to improve water quality within these two watersheds. The Focused Watershed Plan includes a surveillance level monitoring program that will specifically monitoring the impacts of in-field management activities such as sediment ponds.

- A BMP Handbook continues to be distributed to landowners in the Coalition region. The Handbook was developed as part of a project to identify and design BMP's for reduction of discharge from the Orestimba Creek watershed.

- Landowners are continuing to install drip and micro spray irrigation systems. These systems reduce or eliminate irrigation drainage water and subsequent discharges. Since 2006, high efficiency irrigation systems (drip and micro sprinklers) have been installed on over 460 acres of farmland within the Orestimba Creek subwatershed

2007/08 BMP Evaluations

The Westside Coalition collaborated with a Regional Board funded grant project in the Orestimba Creek and Del Puerto Creek subwatersheds, partnering with the San Luis and Delta Mendota Water Authority (SLDWA). The project was funded by the Pesticide Research and Investigation of Source Management Program (PRISM) using Proposition 13 Funds. The project, entitled "Western San Joaquin Valley Pesticide BMP Implementation Program", evaluated the effectiveness of three best management practices (BMPs) used in irrigated cropland, conducted a baseline survey of grower practices in the Orestimba and Del Puerto watersheds (two tributaries of the San Joaquin River in western Stanislaus County) and implemented a significant grower outreach program. The project, both the BMP effectiveness study and outreach, served and continue to provide important information for growers operating in the project region as they comply with requirements in the ILRP.

The BMPs evaluated in the project included one newly emerging practice and three existing practices: vegetated drainage ditches, treatment of irrigation tailwater with polyacrylamide (PAM) and constructed wetlands. The existing practices are suited to local conditions in the Orestimba and Del Puerto Creek watersheds and are used to reduce pesticide residues in irrigation tailwater. The implementation of vegetated ditches and PAM on selected commercial size fields was comprehensively monitored to evaluate the effectiveness of these technologies in reducing pesticide contamination and sediment loads in the irrigation return flows from participating farmlands. In addition to these two BMPs, a constructed wetland, riparian to the San Joaquin River and designed to receive irrigation runoff, was monitored for pesticide levels to establish baseline data for future mitigation at the site. The implementation and/or assessment of BMPs through this project affected approximately 4100 acres of cropland in the Orestimba and Del Puerto Creek subwatersheds

Project results indicate that constructed vegetated ditches are an effective management practice for reducing pesticide concentrations in irrigation return flows, with chlorpyrifos

reductions averaging between 25% and 38% and lambda-cyhalothrin reductions averaging between 11% and 49% under the conditions of the project studies. There was little effect on the sediment loads in these studies, although this was not unexpected as these studies were run in alfalfa where sediment movement tends to be minimal.

The results from the PAM study were disappointing in that there was no noticeable effect of PAM on the offsite movement of chlorpyrifos, an insecticide that moves offsite in the dissolved form. However, there was a significant, observable reduction in the sediment load when using PAM in this study. This has significance for non-water soluble pesticides such as the pyrethroids which have a greater propensity for binding to soil particles. PAM should be able to significantly reduce the off-site movement of these materials. Another observation from this study was that delaying irrigation (up to four days), did not appreciably slow chlorpyrifos movement from a minimally vegetated or bare ground scenario typically found in newly emerging row crops.

The primary objective of the wetlands study was to determine the wetland's effectiveness in reducing the mass of organophosphate (OP) pesticides in discharge. Tailwater was diverted through the wetlands and tested as it entered and exited. The study was performed during July, typically the peak pesticide application month. However, of the ten OP insecticides measured, only dimethoate was found at measureable levels (87% of the samples collected). Additionally, on-site flow complications and poor analytical QC results made the usable conclusions regarding pesticide removal impossible. Other wetland flow-through studies suggest that wetlands have a beneficial impact on overall water quality but these other studies did not analyze for pesticides.

Another phase of this grant was to identify a minimum of twenty growers in the Orestimba and Del Puerto Creek watersheds that would potentially participate in site assessments of their properties to evaluate BMP implementation. Assessments were to be conducted by licensed Pest Control Advisors (PCAs) in the management area. It was initially found that there was some reluctance by growers to participate in the program due to 1) a limited number of growers in the Orestimba/Del Puerto Creek watersheds and 2) the Irrigated Lands Regulatory Program. Growers were concerned that the site assessments would provide detailed information about their field operations that might potentially be made public record and could be used if exceedances were found in either creek. After these concerns were alleviated, a total of 22 growers participated in this baseline survey. Survey results indicated a medium to high level of understanding of water quality issues in the region and related BMPs. The orchard and row crop farms covered in this survey have an excellent pest management program and closely follow PCA recommendations for scouting, resistance management, and treatment. Most of the respondents calibrate their sprayers prior to each application and all calibrated at least once per year.

3. Monitoring Results:

Data gathered since the inception of the monitoring program has allowed the Westside Coalition to identify problem areas and issues. Details of sites exhibiting significant toxicity during this

monitoring period are included in **Attachment 2** and all results that exceeded RWQVs are included in **Attachment 4**. This information, along with results from previous years will be used as talking points during upcoming grower meetings to outline the problem issues and sites as well as for the development of the revised MRP, the Management Plan, and the Focused Watershed Plan. A number of preliminary conclusions can be made from the data collected so far:

- **Sediment Toxicity:** No sediment toxicity tests were performed during this reporting period. Sediment samples were collected by the Westside Coalition in March 2008 and will be discussed in the 2008 Irrigation Season monitoring report that will be submitted in the fall of 2008.
- **Aquatic Toxicity:** During this reporting period, 8 samples indicated significant toxicity; four to algae and four *ceriodaphnia dubia.* One measurement of *ceriodaphnia dubia* toxicity occurred in November 2007, with all other toxicity measurements occurring during Rain Event 6. **Attachment 2** provides monitoring results for all of the sites that measured significant toxicity, including a discussion of the TIE and dilution series findings. It is significant to note that virtually all of the measured toxicity occurred during the rain event. In all of the instances of algae toxicity, Diuron and copper were detected in the sample. Diuron is a common herbicide used by state and municipal transportation agencies as well as agricultural districts and growers. Although no direct evidence exists, it seems that surface runoff from rainfall is picking up diuron as it flows across areas of application and carrying it into the waterways. Pesticide use data for the reporting period is not yet available but the 2006 data from Department of Pesticide Regulation indicates that about 50% of the pounds of Diuron applied in Stanislaus County are for non-agricultural purposes (assumed to be right-of-way applications) during the December through February period. Of the four measurements of significant toxicity to *ceriodaphnia dubia*, insecticides were detected only at Hospital Creek. The other three sites detected no pesticides and the TIEs performed were inconclusive.
- **Pesticide Analyses:** During this reporting period, 13 pesticide detections exceeded RWQVs (see **Table 9)**. All of the pesticide exceedances occurred during Rain Event 6.
- **General Chemistry and Field Observations:** The monitoring results during this reporting period indicated the same issues as in previous reports. EC/TDS measured the largest number of exceedances for this reporting period (24 and 28 exceedances, respectively), which is not surprising given the very dry hydrologic year. E. Coli continues to be a leading source of exceedances (17 during this period). Other constituent exceedances include TSS (1 exceedance), pH (2 exceedances), DO (1 exceedance) and Boron (1 exceedance). With many of these constituents, the source of the exceedance is neither clear nor easily traceable, and often can be found in the source water itself (such as the San Joaquin River at Sack Dam).

SECTION 8: COMMUNICATION REPORTS

Exceedance reports were submitted to the Central Valley Regional Water Quality Control Board in response to monitoring results for the reporting period. These reports are included in **Appendix B.**

Follow-up included reporting statistically significant toxic events and exceedences of water quality values to the overlying districts, PCA's and to individual coalition participants. The districts would then communicate with the affected growers to notify them there is a problem. Meetings are then be organized at the Coalition level as required to inform landowners, operators, PCA's, chemical applicators and others on monitoring results and likely best management measures that could be undertaken to minimize these problems (See **Table 10**).

SECTION 9: CONCLUSIONS AND RECOMMENDATIONS

The Westside Coalition's monitoring program has identified constituents of concern (see **Attachments 2** and **4** and **Table 9**). The Westside Coalition is in the process of developing a Management Plan, Focused Watershed Plan, and a revised Monitoring and Reporting Plan to address the water quality concerns discovered by previous monitoring. We are in the process of meeting with Regional Board staff to finalize the details of these plans. The management and monitoring plans are expected to be implemented in July of 2008.

Attachment 1
Sampling Event Details

Event 39		Caltest		APPL	PER				
November 07		Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Creek at River Road	HCARR	No Flow							
Ingram Creek at River Road	ICARR	x	x						
Westley Wasteway nr Cox Road	WWNCR	No Flow							
Del Puerto Creek nr Cox Road	DPCCR	No Flow							
Del Puerto Creek at Hwy 33	DPCHW	No Flow							
Salado Creek nr Olive Ave	SCOAV	No Flow							
Ramona Lake nr Fig Avenue	ROLFA	x	x						
Marshall Road Drain nr River Road	MRDRR	No Flow							
Orestimba Creek at River Road	OCARR	x	x						
Orestimba Creek at Highway 33	OCAHW	x	x						
Newman Wasteway nr Hills Ferry Rd	NWHFR	x	x						
SJR at Sack Dam	SJRSD	x	x						
SJR at Lander Ave	SJRLA	x	x	x		x	x	x	
Mud Sl upstream of San Luis Drain	MSUSL	x	x	x		x	x	x	
Salt Sl at Lander Ave	SSALA	x	x	x		x	x	x	
Salt Sl at Sand Dam	SSASD	x	x						
Los Banos Cr at Hwy 140	LBCHW	x	x	x		x	x	x	x
Los Banos Cr at China Camp Road	LBCCC	x	x						
Turner Slough nr Edminster Road	TSAER	No Flow							

Event 40		CalTest		APPL	PER				
December 07		Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Creek at River Road	HCARR	No Flow							
Ingram Creek at River Road	ICARR	No Flow							
Westley Wasteway nr Cox Road	WWNCR	No Flow							
Del Puerto Creek nr Cox Road	DPCCR	No Flow							
Del Puerto Creek at Hwy 33	DPCHW	No Flow							
Salado Creek nr Olive Ave	SCOAV	No Flow							
Ramona Lake nr Fig Avenue	ROLFA	No Flow							
Marshall Road Drain nr River Road	MRDRR	x	x						
Orestimba Creek at River Road	OCARR	x	x						
Orestimba Creek at Highway 33	OCAHW	x	x						
Newman Wasteway nr Hills Ferry Rd	NWHFR	x	x						
SJR at Sack Dam	SJRSD	x	x						
SJR at Lander Ave	SJRLA	x	x	x		x	x	x	
Mud Sl upstream of San Luis Drain	MSUSL	x	x	x		x	x	x	
Salt Sl at Lander Ave	SSALA	x	x	x		x	x	x	x
Salt Sl at Sand Dam	SSASD	x	x						
Los Banos Cr at Hwy 140	LBCHW	x	x	x		x	x	x	
Los Banos Cr at China Camp Road	LBCCC	No Flow							
Turner Slough nr Edminster Road	TSAER	No Flow							

Rain Event 6		Caltest		APPL	PER				
January 07		Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Creek at River Road	HCARR	x	x	x		x	x	x	x
Ingram Creek at River Road	ICARR	x	x	x		x	x	x	
Westley Wasteway nr Cox Road	WWNCR	No Access							
Del Puerto Creek nr Cox Road	DPCCR	x	x	x		x	x	x	
Del Puerto Creek at Hwy 33	DPCHW	x	x	x		x	x	x	
Salado Creek nr Olive Ave	SCOAV	No Access							
Ramona Lake nr Fig Avenue	ROLFA	x	x	x		x	x	x	
Marshall Road Drain nr River Road	MRDRR	x	x	x		x	x	x	
Orestimba Creek at River Road	OCARR	x	x	x		x	x	x	
Orestimba Creek at Highway 33	OCAHW	x	x	x		x	x	x	
Newman Wasteway nr Hills Ferry Rd	NWHFR	x	x	x		x	x	x	
SJR at Sack Dam	SJRSD	x	x	x		x	x	x	
SJR at Lander Ave	SJRLA	x	x	x		x	x	x	
Mud Sl upstream of San Luis Drain	MSUSL	x	x	x		x	x	x	
Salt Sl at Lander Ave	SSALA	x	x	x		x	x	x	
Salt Sl at Sand Dam	SSASD	x	x	x		x	x	x	
Los Banos Cr at Hwy 140	LBCHW	x	x	x		x	x	x	
Los Banos Cr at China Camp Road	LBCCC	x	x	x		x	x	x	
Turner Slough nr Edminster Road	TSAER	No Access							

Event 41		CalTest		APPL	PER				
February 07		Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Creek at River Road	HCARR	No Flow							
Ingram Creek at River Road	ICARR	x	x						
Westley Wasteway nr Cox Road	WWNCR	No Flow							
Del Puerto Creek nr Cox Road	DPCCR	x	x						
Del Puerto Creek at Hwy 33	DPCHW	x	x						
Salado Creek nr Olive Ave	SCOAV	No Access							
Ramona Lake nr Fig Avenue	ROLFA	No Flow							
Marshall Road Drain nr River Road	MRDRR	No Flow							
Orestimba Creek at River Road	OCARR	x	x						
Orestimba Creek at Highway 33	OCAHW	x	x						
Newman Wasteway nr Hills Ferry Rd	NWHFR	x	x						
SJR at Sack Dam	SJRSD	x	x						
SJR at Lander Ave	SJRLA	x	x	x		x	x	x	
Mud Sl upstream of San Luis Drain	MSUSL	x	x	x		x	x	x	
Salt Sl at Lander Ave	SSALA	x	x	x		x	x	x	
Salt Sl at Sand Dam	SSASD	x	x						
Los Banos Cr at Hwy 140	LBCHW	x	x	x		x	x	x	x
Los Banos Cr at China Camp Road	LBCCC	No Flow							
Turner Slough nr Edminster Road	TSAER	No Flow							

Attachment 2
Significant Aquatic Toxicity Results

Westside San Joaquin River Watershed Coalition
Significant Aquatic Toxicity Results

Monitoring Site	Sample Date	Event	Reactive Species	Results	Control Results	Percent Difference	Units
Salt Slough at Lander Ave	11/13/2007	39	Ceriodaphnia dubia	60	90	33%	%

Followup: TIE and dilution series not required. Resample measured no significant toxicity.

Field Data

DO	6.69	mg/l
EC	1592	µmhos/cm
Est Depth	2.8	ft
Flow	118	cfs
pH	7.55	
Staff Gage	65.5	ft
Temp	14.77	c

Water Chemistry

Bromide	6.6	mg/L
Dissolved Organic Carbon	6.5	mg/L
E. Coli	240	MPN/100mL
Total Organic Carbon	6.7	mg/L
Color	40	CU
Hardness (as CACO3)	390	mg/L
Total Dissolved Solids	1000	mg/L
Total Suspended Solids	49	mg/L
Turbidity	24	NTU
Arsenic	4.7	ug/L
Boron	840	ug/L
Cadmium	ND	ug/L
Copper	3.2	ug/L
Lead	0.68	ug/L
Nickel	5.4	ug/L
Selenium	1.3	ug/L
Zinc	8	ug/L
Ammonia (as N)	0.13	mg/L
Nitrogen, Nitrate (as N)	0.97	mg/L
Nitrogen, Nitrite	J0.0080	mg/L
Ortho Phosphate as P	0.08	mg/L
Total Kjeldahl Nitrogen	0.71	mg/L

Detected Pesticides

J = Estimated value, below PQL.
Y = % Difference primary and confirmation column is >40%.
B = Constituent also detected in blank sample.

Monitoring Site	Sample Date	Event	Reactive Species	Results	Control Results	Percent Difference	Units
Hospital Creek at River Road	1/5/2008	R6	Ceriodaphnia dubia	0	100	100%	%

Followup: Dilution series measured 3.3TU. TIE results suggest non-polar organics and metals contributed to the cause of toxicity.

Field Data

DO	5.07	mg/l
EC	176	µmhos/cm
Est Depth		ft
Flow	0.2	cfs
pH	7.26	
Staff Gage	0.1	ft
Temp	10.15	c

Water Chemistry

Bromide	ND	mg/L
Dissolved Organic Carbon	25	mg/L
E. Coli	>2400	MPN/100mL
Total Organic Carbon	24	mg/L
Color	350	CU
Hardness (as CACO3)	180	mg/L
Total Dissolved Solids	360	mg/L
Total Suspended Solids	120	mg/L
Turbidity	460	NTU
Arsenic	8.7	ug/L
Boron	480	ug/L
Cadmium	0.2	ug/L
Copper	36	ug/L
Lead	8.8	ug/L
Nickel	50	ug/L
Selenium	J0.62	ug/L
Zinc	110	ug/L
Ammonia (as N)	ND	mg/L
Nitrogen, Nitrate (as N)	2.2	mg/L
Nitrogen, Nitrite	J0.024	mg/L
Ortho Phosphate as P	4.3	mg/L
Total Kjeldahl Nitrogen	2.9	mg/L

Detected Pesticides

Chlorpyrifos	0.039	µg/L
DDE(p,p')	0.02	µg/L
Diazinon	0.068	µg/L
Diuron	0.22	µg/L
Parathion, Methyl	0.59	µg/L
Simazine	0.16	µg/L

J = Estimated value, below PQL.
Y = % Difference primary and confirmation column is >40%.
B = Constituent also detected in blank sample.

Monitoring Site	Sample Date	Event	Reactive Species	Results	Control Results	Percent Difference	Units
Hospital Creek at River Road	1/5/2008	R6	Selenastrum capricornutum	67,800	2,370,000	97%	cells/ml

Followup: Dilution series measured 11.2 TU. TIE results suggest that both non-polar organics and divalent cations contributed to the toxicity but only when present together.

Field Data

DO	5.07	mg/l
EC	176	µmhos/cm
Est Depth		ft
Flow	0.2	cfs
pH	7.26	
Staff Gage	0.1	ft
Temp	10.15	c

Water Chemistry

Bromide	ND	mg/L
Dissolved Organic Carbon	25	mg/L
E. Coli	>2400	MPN/100mL
Total Organic Carbon	24	mg/L
Color	350	CU
Hardness (as CACO3)	180	mg/L
Total Dissolved Solids	360	mg/L
Total Suspended Solids	120	mg/L
Turbidity	460	NTU
Arsenic	8.7	ug/L
Boron	480	ug/L
Cadmium	0.2	ug/L
Copper	36	ug/L
Lead	8.8	ug/L
Nickel	50	ug/L
Selenium	J0.62	ug/L
Zinc	110	ug/L
Ammonia (as N)	ND	mg/L
Nitrogen, Nitrate (as N)	2.2	mg/L
Nitrogen, Nitrite	J0.024	mg/L
Ortho Phosphate as P	4.3	mg/L
Total Kjeldahl Nitrogen	2.9	mg/L

Detected Pesticides

Chlorpyrifos	0.039	µg/L
DDE(p,p')	0.02	µg/L
Diazinon	0.068	µg/L
Diuron	0.22	µg/L
Parathion, Methyl	0.59	µg/L
Simazine	0.16	µg/L

J = Estimated value, below PQL.
Y = % Difference primary and confirmation column is >40%.
B = Constituent also detected in blank sample.

Monitoring Site	Sample Date	Event	Reactive Species	Results	Control Results	Percent Difference	Units
Ingram Creek at River Road	1/5/2008	R6	Selenastrum capricornutum	278,000	2,370,000	88%	cells/ml

Followup: Dilution series measured <1 TU and TIE was inconclusive.

Field Data

DO	6.13	mg/l
EC	751	µmhos/cm
Est Depth	1.1	ft
Flow	1.4	cfs
pH	7.38	
Staff Gage	0.12	ft
Temp	11.44	c

Water Chemistry

Bromide	J0.076	mg/L
Dissolved Organic Carbon	7	mg/L
E. Coli	>2400	MPN/100mL
Total Organic Carbon	9.2	mg/L
Color	120	CU
Hardness (as CACO3)	340	mg/L
Total Dissolved Solids	760	mg/L
Total Suspended Solids	110	mg/L
Turbidity	140	NTU
Arsenic	14	ug/L
Boron	730	ug/L
Cadmium	J0.1	ug/L
Copper	13	ug/L
Lead	3.7	ug/L
Nickel	20	ug/L
Selenium	1.7	ug/L
Zinc	54	ug/L
Ammonia (as N)	J0.099	mg/L
Nitrogen, Nitrate (as N)	9.6	mg/L
Nitrogen, Nitrite	0.049	mg/L
Ortho Phosphate as P	0.36	mg/L
Total Kjeldahl Nitrogen	1.4	mg/L

Detected Pesticides

Chlorpyrifos	0.013	µg/L
DDE(p,p')	0.021	µg/L
DDT(p,p')	0.0086	µg/L
Diazinon	0.055	µg/L
Diuron	2.9	µg/L
Simazine	20	µg/L

J = Estimated value, below PQL.
Y = % Difference primary and confirmation column is >40%.
B = Constituent also detected in blank sample.

Monitoring Site	Sample Date	Event	Reactive Species	Results	Control Results	Percent Difference	Units
Marshall Road Drain near River Road	1/5/2008	R6	Selenastrum capricornutum	30,500	2,370,000	99%	cells/ml

Followup: Dilution series measured 5.2 TU. TIE suggest divalent cations caused toxicity. Diuron also present in the sample.

Field Data

DO	7.03	mg/l
EC	152	µmhos/cm
Est Depth		ft
Flow		cfs
pH	7.4	
Staff Gage		ft
Temp	10.17	c

Water Chemistry

Bromide	ND	mg/L
Dissolved Organic Carbon	9.2	mg/L
E. Coli	>2400	MPN/100mL
Total Organic Carbon	7.5	mg/L
Color	300	CU
Hardness (as CACO3)	140	mg/L
Total Dissolved Solids	300	mg/L
Total Suspended Solids	180	mg/L
Turbidity	470	NTU
Arsenic	8.5	ug/L
Boron	86	ug/L
Cadmium	0.2	ug/L
Copper	30	ug/L
Lead	13	ug/L
Nickel	52	ug/L
Selenium	J0.61	ug/L
Zinc	99	ug/L
Ammonia (as N)	J0.099	mg/L
Nitrogen, Nitrate (as N)	7.3	mg/L
Nitrogen, Nitrite	0.046	mg/L
Ortho Phosphate as P	0.89	mg/L
Total Kjeldahl Nitrogen	1.8	mg/L

Detected Pesticides

Chlorpyrifos	0.079	µg/L
DDE(p,p')	0.033	µg/L
DDT(p,p')	0.02	µg/L
Dimethoate	0.11	µg/L
Diuron	14	µg/L
Simazine	0.37	µg/L

J = Estimated value, below PQL.
Y = % Difference primary and confirmation column is >40%.
B = Constituent also detected in blank sample.

Monitoring Site	Sample Date	Event	Reactive Species	Results	Control Results	Percent Difference	Units
Orestimba Creek at River Road	1/5/2008	R6	Selenastrum capricornutum	1,630,000	2,370,000	31%	cells/ml

Followup: No follow-up performed.

Field Data

DO	7.3	mg/l
EC	221	µmhos/cm
Est Depth		ft
Flow	240	cfs
pH	7.67	
Staff Gage		ft
Temp	10.16	c

Water Chemistry

Bromide	ND	mg/L
Dissolved Organic Carbon	14	mg/L
E. Coli	>2400	MPN/100mL
Total Organic Carbon	16	mg/L
Color	500	CU
Hardness (as CACO3)	180	mg/L
Total Dissolved Solids	280	mg/L
Total Suspended Solids	650	mg/L
Turbidity	600	NTU
Arsenic	7.2	ug/L
Boron	150	ug/L
Cadmium	0.2	ug/L
Copper	40	ug/L
Lead	16	ug/L
Nickel	120	ug/L
Selenium	J0.86	ug/L
Zinc	240	ug/L
Ammonia (as N)	ND	mg/L
Nitrogen, Nitrate (as N)	3.8	mg/L
Nitrogen, Nitrite	J0.017	mg/L
Ortho Phosphate as P	0.44	mg/L
Total Kjeldahl Nitrogen	4	mg/L

Detected Pesticides

Chlorpyrifos	0.0091	µg/L
DDE(p,p')	0.015	µg/L
Diuron	3.6	µg/L
Simazine	0.18	µg/L

J = Estimated value, below PQL.
Y = % Difference primary and confirmation column is >40%.
B = Constituent also detected in blank sample.

Monitoring Site	Sample Date	Event	Reactive Species	Results	Control Results	Percent Difference	Units
Del Puerto Creek at Hwy 33	1/6/2008	R6	Ceriodaphnia dubia	70	95	26%	%

Followup: No follow-up performed

Field Data

DO	6.53	mg/l
EC	374	µmhos/cm
Est Depth		ft
Flow		cfs
pH	7.64	
Staff Gage		ft
Temp	8.24	c

Water Chemistry

Bromide	ND	mg/L
Dissolved Organic Carbon	12	mg/L
E. Coli	690	MPN/100mL
Total Organic Carbon	12	mg/L
Color	180	CU
Hardness (as CACO3)	300	mg/L
Total Dissolved Solids	390	mg/L
Total Suspended Solids	44	mg/L
Turbidity	62	NTU
Arsenic	1.9	ug/L
Boron	450	ug/L
Cadmium	J0.05	ug/L
Copper	8.2	ug/L
Lead	1.7	ug/L
Nickel	21	ug/L
Selenium	1.5	ug/L
Zinc	23	ug/L
Ammonia (as N)	ND	mg/L
Nitrogen, Nitrate (as N)	2.6	mg/L
Nitrogen, Nitrite	J0.020	mg/L
Ortho Phosphate as P	0.1	mg/L
Total Kjeldahl Nitrogen	1.1	mg/L

Detected Pesticides

J = Estimated value, below PQL.
Y = % Difference primary and confirmation column is >40%.
B = Constituent also detected in blank sample.

Monitoring Site	Sample Date	Event	Reactive Species	Results	Control Results	Percent Difference	Units
Ramona Lake near Fig Avenue	1/6/2008	R6	Ceriodaphnia dubia	0	95	100%	%

Followup: The TIE and Dilution Series measured no toxicity (<1 TU). The TIE was inconclusive. Resample collected on 1/9/08 - no toxicty was observed.

Field Data

DO	5.85	mg/l
EC	969	µmhos/cm
Est Depth		ft
Flow		cfs
pH	7.77	
Staff Gage		ft
Temp	9.36	c

Water Chemistry

Bromide	J0.43	mg/L
Dissolved Organic Carbon	4.3	mg/L
E. Coli	920	MPN/100mL
Total Organic Carbon	5	mg/L
Color	65	CU
Hardness (as CACO3)	350	mg/L
Total Dissolved Solids	930	mg/L
Total Suspended Solids	34	mg/L
Turbidity	32	NTU
Arsenic	2.5	ug/L
Boron	820	ug/L
Cadmium	ND	ug/L
Copper	5.4	ug/L
Lead	1.4	ug/L
Nickel	7.9	ug/L
Selenium	1.9	ug/L
Zinc	26	ug/L
Ammonia (as N)	0.52	mg/L
Nitrogen, Nitrate (as N)	E11	mg/L
Nitrogen, Nitrite	0.05	mg/L
Ortho Phosphate as P	0.075	mg/L
Total Kjeldahl Nitrogen	1.9	mg/L

Detected Pesticides

J = Estimated value, below PQL.
Y = % Difference primary and confirmation column is >40%.
B = Constituent also detected in blank sample.

Attachment 3
Field Quality Control Sample Results

Field Quality Control Samples

Field Duplicate and RPD Calculation

Analyte/Species	Type	Event	QC Code	FD	QC Code	Units	RPD	
Sample Date: 11/13/2007 Site: Los Banos Creek at Hwy 140								
Ammonia (as N)	General Chemistry	0.16		J0.077		mg/L	NA	
Arsenic	General Chemistry	4.7		4.8		ug/L	2%	
Boron	General Chemistry	580		610		ug/L	5%	
Bromide	General Chemistry	ND		J0.065		mg/L	NA	
Cadmium	General Chemistry	ND		J0.05		ug/L	NA	
Color	General Chemistry	50		50		CU	0%	
Copper	General Chemistry	2		2.1		ug/L	5%	
Dissolved Organic Carbon	General Chemistry	14		13		mg/L	7%	
E. Coli	General Chemistry	>2400		>2400		MPN/100mL	NA	
Hardness (as CACO3)	General Chemistry	270		280		mg/L	4%	
Lead	General Chemistry	0.39		0.44		ug/L	12%	
Nickel	General Chemistry	4.5		4.9		ug/L	9%	
Nitrogen, Nitrate (as N)	General Chemistry	0.11		0.12		mg/L	9%	
Nitrogen, Nitrite	General Chemistry	J0.011		J0.010		mg/L	NA	
Ortho Phosphate as P	General Chemistry	0.34		0.35		mg/L	3%	
Selenium	General Chemistry	1.1		1.1		ug/L	0%	
Total Dissolved Solids	General Chemistry	600		590		mg/L	2%	
Total Kjeldahl Nitrogen	General Chemistry	0.91		0.94		mg/L	3%	
Total Organic Carbon	General Chemistry	15		15		mg/L	0%	
Total Suspended Solids	General Chemistry	7		ND		mg/L	NA	
Turbidity	General Chemistry	10		11		NTU	10%	
Zinc	General Chemistry	4		4		ug/L	0%	
Sample Date: 1/5/2008 Site: Hospital Creek at River Road								
Ceriodaphnia dubia	Aquatic Toxicity	0		0		%	NA	
Pimephales Promelas	Aquatic Toxicity	97.5		100		%	3%	
Selenastrum capricornutum	Aquatic Toxicity	67800		53000		cells/ml	25%	
Ammonia (as N)	General Chemistry	ND		ND		mg/L	NA	
Arsenic	General Chemistry	8.7		8.8		ug/L	1%	
Boron	General Chemistry	480		460		ug/L	4%	
Bromide	General Chemistry	ND		ND		mg/L	NA	
Cadmium	General Chemistry	0.2		0.2		ug/L	0%	
Color	General Chemistry	350		700		CU	67%	*
Copper	General Chemistry	36		36		ug/L	0%	
Dissolved Organic Carbon	General Chemistry	25		23		mg/L	8%	
E. Coli	General Chemistry	>2400		>2400		MPN/100mL	NA	
Hardness (as CACO3)	General Chemistry	180		120		mg/L	40%	*
Lead	General Chemistry	8.8		8.9		ug/L	1%	
Nickel	General Chemistry	50		50		ug/L	0%	
Nitrogen, Nitrate (as N)	General Chemistry	2.2		21		mg/L	162%	*
Nitrogen, Nitrite	General Chemistry	J0.024		J0.016		mg/L	NA	

Event = Event Sample Results FD = Field Duplicate Sample Results RPD = Relative percent difference

Field Quality Control Samples

Field Duplicate and RPD Calculation

Analyte/Species	Type	Event	QC Code	FD	QC Code	Units	RPD	
Ortho Phosphate as P	General Chemistry	4.3		5.2		mg/L	19%	
Selenium	General Chemistry	J0.62		J0.66		ug/L	NA	
Total Dissolved Solids	General Chemistry	360		360		mg/L	0%	
Total Kjeldahl Nitrogen	General Chemistry	2.9		2.8		mg/L	4%	
Total Organic Carbon	General Chemistry	24		23		mg/L	4%	
Total Suspended Solids	General Chemistry	120		100		mg/L	18%	
Turbidity	General Chemistry	460		470		NTU	2%	
Zinc	General Chemistry	110		110		ug/L	0%	
Aldicarb	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	µg/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	µg/L	NA	
Bifenthrin	Pesticide	-0.006	ND	-0.006	ND	µg/L	NA	
Carbaryl	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA	
Carbofuran	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA	
Chlorpyrifos	Pesticide	0.039		0.025		µg/L	44%	*
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	µg/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	µg/L	NA	
DDE(p,p')	Pesticide	0.02		0.027		µg/L	30%	*
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA	
Diazinon	Pesticide	0.068		0.044		µg/L	43%	*
Dicofol	Pesticide	-0.01	ND	-0.01	ND	µg/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	µg/L	NA	
Dimethoate	Pesticide	-0.08	ND	-0.08	ND	µg/L	NA	
Disulfoton	Pesticide	-0.02	ND	-0.02	ND	µg/L	NA	
Diuron	Pesticide	0.22	DNQ	0.21	DNQ	µg/L	5%	
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	µg/L	NA	
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	µg/L	NA	
Endrin	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA	
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	µg/L	NA	
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA	
Linuron	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA	
Malathion	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA	
Methamidophos	Pesticide	-0.01	ND	-0.01	ND	µg/L	NA	
Methidathion	Pesticide	-0.04	ND	-0.04	ND	µg/L	NA	
Methiocarb	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA	
Methomyl	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA	
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	µg/L	NA	
Molinate	Pesticide	-0.13	ND	-0.13	ND	µg/L	NA	
Oxamyl	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA	
Parathion, Methyl	Pesticide	0.59		0.36		µg/L	48%	*
Phorate	Pesticide	-0.07	ND	-0.07	ND	µg/L	NA	
Phosmet	Pesticide	-0.06	ND	-0.06	ND	µg/L	NA	
Simazine	Pesticide	0.16	DNQ	-0.08	ND	µg/L	NA	

Event = Event Sample Results FD = Field Duplicate Sample Results RPD = Relative percent difference

Field Quality Control Samples

Field Duplicate and RPD Calculation

Analyte/Species	Type	Event	QC Code	FD	QC Code	Units	RPD	
Thiobencarb	Pesticide	-0.06	ND	-0.06	ND	µg/L	NA	
Toxaphene	Pesticide	-0.38	ND	-0.38	ND	µg/L	NA	
Sample Date: 2/12/2008	**Site: Los Banos Creek at Hwy 140**							
Ceriodaphnia dubia	Aquatic Toxicity	100		100		%	0%	
Pimephales promelas	Aquatic Toxicity	100		100		%	0%	
Selenastrum capricornutum	Aquatic Toxicity	2580000		2540000		cells/ml	2%	
Ammonia (as N)	General Chemistry	0.22		J0.044		mg/L	NA	
Arsenic	General Chemistry	6.3		6.1		ug/L	3%	
Boron	General Chemistry	1800		1800		ug/L	0%	
Bromide	General Chemistry	1.4		1.5		mg/L	7%	
Cadmium	General Chemistry	ND		ND		ug/L	NA	
Color	General Chemistry	120		100		CU	18%	
Copper	General Chemistry	4.7		4.7		ug/L	0%	
Dissolved Organic Carbon	General Chemistry	18		18		mg/L	0%	
E. Coli	General Chemistry	160		230		MPN/100mL	36%	*
Hardness (as CACO3)	General Chemistry	550		520		mg/L	6%	
Lead	General Chemistry	1		1.1		ug/L	10%	
Nickel	General Chemistry	11		11		ug/L	0%	
Nitrogen, Nitrate (as N)	General Chemistry	0.28		0.28		mg/L	0%	
Nitrogen, Nitrite	General Chemistry	J0.017		J0.017		mg/L	NA	
Ortho Phosphate as P	General Chemistry	0.19		0.2		mg/L	5%	
Selenium	General Chemistry	1.4		1.5		ug/L	7%	
Total Dissolved Solids	General Chemistry	1400		1400		mg/L	0%	
Total Kjeldahl Nitrogen	General Chemistry	2.3		2.3		mg/L	0%	
Total Organic Carbon	General Chemistry	20		20		mg/L	0%	
Total Suspended Solids	General Chemistry	130		54		mg/L	83%	*
Turbidity	General Chemistry	55		32		NTU	53%	*
Zinc	General Chemistry	8		8		ug/L	0%	
Aldicarb	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	µg/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	µg/L	NA	
Bifenthrin	Pesticide	-0.006	ND	-0.006	ND	µg/L	NA	
Carbaryl	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA	
Carbofuran	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA	
Chlorpyrifos	Pesticide	-0.003	ND	-0.003	ND	µg/L	NA	
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	µg/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	µg/L	NA	
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	µg/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA	
Diazinon	Pesticide	-0.004	ND	0.033	Y	µg/L	NA	
Dicofol	Pesticide	-0.01	ND	-0.01	ND	µg/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	µg/L	NA	

Event = Event Sample Results FD = Field Duplicate Sample Results RPD = Relative percent difference

Field Quality Control Samples

Field Duplicate and RPD Calculation

Analyte/Species	Type	Event	QC Code	FD	QC Code	Units	RPD
Dimethoate	Pesticide	-0.08	ND	-0.08	ND	µg/L	NA
Disulfoton	Pesticide	-0.02	ND	-0.02	ND	µg/L	NA
Diuron	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	µg/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	µg/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	µg/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Linuron	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Malathion	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Methamidophos	Pesticide	-0.01	ND	-0.01	ND	µg/L	NA
Methamidophos	Pesticide	-0.01	ND	0.421		µg/L	NA
Methamidophos	Pesticide	-0.01	ND	0.418		µg/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	µg/L	NA
Methiocarb	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Methomyl	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	µg/L	NA
Molinate	Pesticide	-0.13	ND	-0.13	ND	µg/L	NA
Oxamyl	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	µg/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	µg/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	µg/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	µg/L	NA
Thiobencarb	Pesticide	-0.06	ND	-0.06	ND	µg/L	NA
Toxaphene	Pesticide	-0.38	ND	-0.38	ND	µg/L	NA

Event = Event Sample Results FD = Field Duplicate Sample Results RPD = Relative percent difference

Field Quality Control Samples

Field Blank

Analyte/Species	Type	Event	QC Code	FB	QC Code	Units	% Difference
Sample Date: 11/13/2007 Site: LBCHW							
Ammonia (as N)	General Chemistry	0.16		ND		mg/L	NA
Arsenic	General Chemistry	4.7		ND		ug/L	NA
Boron	General Chemistry	580		J3		ug/L	NA
Bromide	General Chemistry	ND		ND		mg/L	NA
Cadmium	General Chemistry	ND		J0.04		ug/L	NA
Color	General Chemistry	50		ND		CU	NA
Copper	General Chemistry	2		J0.1		ug/L	NA
Dissolved Organic Carbon	General Chemistry	14		1.1		mg/L	8%
E. Coli	General Chemistry	>2400		ND		MPN/100mL	NA
Hardness (as CACO3)	General Chemistry	270		ND		mg/L	NA
Lead	General Chemistry	0.39		ND		ug/L	NA
Nickel	General Chemistry	4.5		ND		ug/L	NA
Nitrogen, Nitrate (as N)	General Chemistry	0.11		ND		mg/L	NA
Nitrogen, Nitrite	General Chemistry	J0.011		ND		mg/L	NA
Ortho Phosphate as P	General Chemistry	0.34		ND		mg/L	NA
Selenium	General Chemistry	1.1		ND		ug/L	NA
Total Dissolved Solids	General Chemistry	600		ND		mg/L	NA
Total Kjeldahl Nitrogen	General Chemistry	0.91		ND		mg/L	NA
Total Organic Carbon	General Chemistry	15		0.66		mg/L	4%
Total Suspended Solids	General Chemistry	7		ND		mg/L	NA
Turbidity	General Chemistry	10		ND		NTU	NA
Zinc	General Chemistry	4		J0.8		ug/L	NA
Sample Date: 1/5/2008 Site: HCARR							
Ammonia (as N)	General Chemistry	ND		ND		mg/L	NA
Arsenic	General Chemistry	8.7		ND		ug/L	NA
Boron	General Chemistry	480		ND		ug/L	NA
Bromide	General Chemistry	ND		ND		mg/L	NA
Cadmium	General Chemistry	0.2		ND		ug/L	NA
Color	General Chemistry	350		ND		CU	NA
Copper	General Chemistry	36		J0.2		ug/L	NA
Dissolved Organic Carbon	General Chemistry	25		J0.45		mg/L	NA
E. Coli	General Chemistry	>2400		ND		MPN/100mL	NA
Hardness (as CACO3)	General Chemistry	180		ND		mg/L	NA
Lead	General Chemistry	8.8		ND		ug/L	NA
Nickel	General Chemistry	50		J0.3		ug/L	NA
Nitrogen, Nitrate (as N)	General Chemistry	2.2		J0.012		mg/L	NA
Nitrogen, Nitrite	General Chemistry	J0.024		ND		mg/L	NA
Ortho Phosphate as P	General Chemistry	4.3		ND		mg/L	NA
Selenium	General Chemistry	J0.62		ND		ug/L	NA
Total Dissolved Solids	General Chemistry	360		ND		mg/L	NA
Total Kjeldahl Nitrogen	General Chemistry	2.9		ND		mg/L	NA
Total Organic Carbon	General Chemistry	24		0.61		mg/L	3%
Total Suspended Solids	General Chemistry	120		ND		mg/L	NA

Event = Event Sample Result FB = Field Blank Sample Result

Field Quality Control Samples

Field Blank

Analyte/Species	Type	Event	QC Code	FB	QC Code	Units	% Difference
Turbidity	General Chemistry	460		ND		NTU	NA
Zinc	General Chemistry	110		4		ug/L	4%
Aldicarb	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Aldrin	Pesticide	-0.009	ND	-0.009	ND	µg/L	NA
Atrazine	Pesticide	-0.07	ND	-0.07	ND	µg/L	NA
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	µg/L	NA
Bifenthrin	Pesticide	-0.006	ND	-0.006	ND	µg/L	NA
Carbaryl	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Carbofuran	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	µg/L	NA
Chlorpyrifos	Pesticide	0.039		-0.003	ND	µg/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	µg/L	NA
Cyhalothrin, lambda, total	Pesticide	-0.001	ND	-0.001	ND	µg/L	NA
Cypermethrin, total	Pesticide	-0.004	ND	-0.004	ND	µg/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	µg/L	NA
DDE(p,p')	Pesticide	0.02		-0.004	ND	µg/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Diazinon	Pesticide	0.068		-0.004	ND	µg/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	µg/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	µg/L	NA
Dimethoate	Pesticide	-0.08	ND	-0.08	ND	µg/L	NA
Disulfoton	Pesticide	-0.02	ND	-0.02	ND	µg/L	NA
Diuron	Pesticide	0.22	DNQ	-0.2	ND	µg/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	µg/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	µg/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Esfenvalerate/Fenvalerate, total	Pesticide	-0.002	ND	-0.002	ND	µg/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	µg/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Linuron	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Malathion	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Methamidophos	Pesticide	-0.01	ND	-0.01	ND	µg/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	µg/L	NA
Methiocarb	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Methomyl	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	µg/L	NA
Molinate	Pesticide	-0.13	ND	-0.13	ND	µg/L	NA
Oxamyl	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Paraquat dichloride	Pesticide	-0.14	ND	-0.14	ND	µg/L	NA
Parathion, Methyl	Pesticide	0.59		-0.08	ND	µg/L	NA
Permethrin, total	Pesticide	-0.009	ND	-0.009	ND	µg/L	NA
Phorate	Pesticide	-0.07	ND	-0.07	ND	µg/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	µg/L	NA
Simazine	Pesticide	0.16	DNQ	-0.08	ND	µg/L	NA

Event = Event Sample Result FB = Field Blank Sample Result

Field Quality Control Samples

Field Blank

Analyte/Species	Type	Event	QC Code	FB	QC Code	Units	% Difference
Thiobencarb	Pesticide	-0.06	ND	-0.06	ND	µg/L	NA
Toxaphene	Pesticide	-0.38	ND	-0.38	ND	µg/L	NA
Sample Date: 2/12/2008 Site: LBCHW							
Ammonia (as N)	General Chemistry	0.22		ND		mg/L	NA
Arsenic	General Chemistry	6.3		ND		ug/L	NA
Boron	General Chemistry	1800		ND		ug/L	NA
Bromide	General Chemistry	1.4		ND		mg/L	NA
Cadmium	General Chemistry	ND		ND		ug/L	NA
Color	General Chemistry	120		ND		CU	NA
Copper	General Chemistry	4.7		J0.05		ug/L	NA
Dissolved Organic Carbon	General Chemistry	18		ND		mg/L	NA
E. Coli	General Chemistry	160		ND		MPN/100mL	NA
Hardness (as CACO3)	General Chemistry	550		ND		mg/L	NA
Lead	General Chemistry	1		ND		ug/L	NA
Nickel	General Chemistry	11		ND		ug/L	NA
Nitrogen, Nitrate (as N)	General Chemistry	0.28		ND		mg/L	NA
Nitrogen, Nitrite	General Chemistry	J0.017		ND		mg/L	NA
Ortho Phosphate as P	General Chemistry	0.19		ND		mg/L	NA
Selenium	General Chemistry	1.4		J0.53		ug/L	NA
Total Dissolved Solids	General Chemistry	1400		ND		mg/L	NA
Total Kjeldahl Nitrogen	General Chemistry	2.3		J0.088		mg/L	NA
Total Organic Carbon	General Chemistry	20		J0.36		mg/L	NA
Total Suspended Solids	General Chemistry	130		ND		mg/L	NA
Turbidity	General Chemistry	55		ND		NTU	NA
Zinc	General Chemistry	8		J1		ug/L	NA
Aldicarb	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Aldrin	Pesticide	-0.009	ND	-0.009	ND	µg/L	NA
Atrazine	Pesticide	-0.07	ND	-0.07	ND	µg/L	NA
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	µg/L	NA
Bifenthrin	Pesticide	-0.006	ND	-0.006	ND	µg/L	NA
Carbaryl	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Carbofuran	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	µg/L	NA
Chlorpyrifos	Pesticide	-0.003	ND	-0.003	ND	µg/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	µg/L	NA
Cyhalothrin, lambda, total	Pesticide	-0.001	ND	-0.001	ND	µg/L	NA
Cypermethrin, total	Pesticide	-0.004	ND	-0.004	ND	µg/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	µg/L	NA
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	µg/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Diazinon	Pesticide	-0.004	ND	-0.004	ND	µg/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	µg/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	µg/L	NA

Event = Event Sample Result FB = Field Blank Sample Result

Field Quality Control Samples

Field Blank

Analyte/Species	Type	Event	QC Code	FB	QC Code	Units	% Difference
Dimethoate	Pesticide	-0.08	ND	-0.08	ND	µg/L	NA
Disulfoton	Pesticide	-0.02	ND	-0.02	ND	µg/L	NA
Diuron	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	µg/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	µg/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Esfenvalerate/Fenvalerate, total	Pesticide	-0.002	ND	-0.002	ND	µg/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	µg/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	µg/L	NA
Linuron	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Malathion	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Methamidophos	Pesticide	-0.01	ND	-0.01	ND	µg/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	µg/L	NA
Methiocarb	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Methomyl	Pesticide	-0.05	ND	-0.05	ND	µg/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	µg/L	NA
Molinate	Pesticide	-0.13	ND	-0.13	ND	µg/L	NA
Oxamyl	Pesticide	-0.2	ND	-0.2	ND	µg/L	NA
Paraquat dichloride	Pesticide	-0.21	ND	-0.21	ND	µg/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	µg/L	NA
Permethrin, total	Pesticide	-0.009	ND	-0.009	ND	µg/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	µg/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	µg/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	µg/L	NA
Thiobencarb	Pesticide	-0.06	ND	-0.06	ND	µg/L	NA
Toxaphene	Pesticide	-0.38	ND	-0.38	ND	µg/L	NA

Event = Event Sample Result FB = Field Blank Sample Result

Attachment 4
Exceedance of Recommended Water Quality Values

Westside San Joaquin River Watershed Coalition

Number of Water Quality Value Exceedances for the period of 11/1/2007 to 2/29/2008

Type	Constituient	# of Exceedances	# of Tests
Aquatic Toxicity	Ceriodaphnia dubia	4	27
Aquatic Toxicity	Selenastrum capricornutum	4	27
Field Data	DO	1	51
Field Data	EC	24	51
Field Data	pH	2	51
General Chemistry	Boron	1	45
General Chemistry	E. Coli	17	45
General Chemistry	Total Dissolved Solids	28	49
General Chemistry	Total Suspended Solids	1	49
Pesticide	Chlorpyrifos	2	23
Pesticide	DDE(p,p')	6	23
Pesticide	DDT(p,p')	2	23
Pesticide	Diazinon	2	23
Pesticide	Parathion, methyl	1	23

Westside San Joaquin River Watershed Coalition

Number of Water Quality Value Exceedances for the period of 11/1/2007 to 2/29/2008

Del Puerto Creek at Hwy 33

Type	Constituient	# of Exceedances	# of Tests
Aquatic Toxicity	Ceriodaphnia dubia	1	1
General Chemistry	E. Coli	1	2
General Chemistry	Total Dissolved Solids	1	2

Del Puerto Creek near Cox Road

Type	Constituient	# of Exceedances	# of Tests
General Chemistry	E. Coli	1	2
General Chemistry	Total Dissolved Solids	1	2

Hospital Creek at River Road

Type	Constituient	# of Exceedances	# of Tests
Aquatic Toxicity	Ceriodaphnia dubia	1	1
Aquatic Toxicity	Selenastrum capricornutum	1	1
General Chemistry	E. Coli	1	1
Pesticide	Chlorpyrifos	1	1
Pesticide	DDE(p,p')	1	1
Pesticide	Diazinon	1	1
Pesticide	Parathion, methyl	1	1

Ingram Creek at River Road

Type	Constituient	# of Exceedances	# of Tests
Aquatic Toxicity	Selenastrum capricornutum	1	1
Field Data	DO	1	3
Field Data	EC	1	3
General Chemistry	E. Coli	1	3
General Chemistry	Total Dissolved Solids	3	3
Pesticide	DDE(p,p')	1	1
Pesticide	DDT(p,p')	1	1
Pesticide	Diazinon	1	1

Los Banos Creek at China Camp Road

Type	Constituient	# of Exceedances	# of Tests
Field Data	EC	1	2
General Chemistry	Boron	1	2
General Chemistry	E. Coli	2	2
General Chemistry	Total Dissolved Solids	1	2

Los Banos Creek at Hwy 140

Type	Constituient	# of Exceedances	# of Tests
Field Data	EC	4	4

General Chemistry	E. Coli	1	4
General Chemistry	Total Dissolved Solids	4	4

Marshall Road Drain near River Road

Type	Constituient	# of Exceedances	# of Tests
Aquatic Toxicity	Selenastrum capricornutum	1	1
General Chemistry	E. Coli	1	2
General Chemistry	Total Dissolved Solids	1	2
Pesticide	Chlorpyrifos	1	1
Pesticide	DDE(p,p')	1	1
Pesticide	DDT(p,p')	1	1

Mud Slough Upstream of San Luis Drain

Type	Constituient	# of Exceedances	# of Tests
Field Data	EC	4	4
General Chemistry	Total Dissolved Solids	4	4

Newman Wasteway near Hills Ferry Road

Type	Constituient	# of Exceedances	# of Tests
Field Data	EC	4	4
General Chemistry	E. Coli	2	4
General Chemistry	Total Dissolved Solids	3	4
Pesticide	DDE(p,p')	1	1

Orestimba Creek at Hwy 33

Type	Constituient	# of Exceedances	# of Tests
General Chemistry	E. Coli	2	4
General Chemistry	Total Dissolved Solids	1	4
Pesticide	DDE(p,p')	1	1

Orestimba Creek at River Road

Type	Constituient	# of Exceedances	# of Tests
Aquatic Toxicity	Selenastrum capricornutum	1	1
General Chemistry	E. Coli	3	4
General Chemistry	Total Suspended Solids	1	4
Pesticide	DDE(p,p')	1	1

Ramona Lake near Fig Avenue

Type	Constituient	# of Exceedances	# of Tests
Aquatic Toxicity	Ceriodaphnia dubia	1	1
Field Data	EC	2	3
Field Data	pH	1	3
General Chemistry	E. Coli	1	2

Westside San Joaquin River Watershed Coalition

Number of Water Quality Value Exceedances for the period of 11/1/2007 to 2/29/2008

General Chemistry	Total Dissolved Solids	2	2

Salt Slough at Lander Ave

Type	Constituient	# of Exceedances	# of Tests
Aquatic Toxicity	Ceriodaphnia dubia	1	4
Field Data	EC	5	5
General Chemistry	E. Coli	1	4
General Chemistry	Total Dissolved Solids	4	4

Salt Slough at Sand Dam

Type	Constituient	# of Exceedances	# of Tests
General Chemistry	Total Dissolved Solids	1	4

San Joaquin River at Lander Ave

Type	Constituient	# of Exceedances	# of Tests
Field Data	EC	3	4
Field Data	pH	1	4
General Chemistry	Total Dissolved Solids	2	3

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 11/1/2007 to 2/29/2008

Del Puerto Creek at Hwy 33

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Ceriodaphnia dubia	R6	1/6/2008	70		%	Yes		
E. Coli	R6	1/6/2008	690		MPN/100mL		220	
Total Dissolved Solids	41	2/12/2008	550		mg/L		500	

Del Puerto Creek near Cox Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
E. Coli	R6	1/6/2008	2000		MPN/100mL		220	
Total Dissolved Solids	41	2/12/2008	530		mg/L		500	

Hospital Creek at River Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Ceriodaphnia dubia	R6	1/5/2008	0		%	Yes		
Chlorpyrifos	R6	1/5/2008	0.039		µg/L		0.014	
DDE(p,p')	R6	1/5/2008	0.02		µg/L		0.00059	
Diazinon	R6	1/5/2008	0.068		µg/L		0.05	
E. Coli	R6	1/5/2008	>2400		MPN/100mL		220	
Parathion, methyl	R6	1/5/2008	0.59		µg/L		0.08	
Selenastrum capricornutum	R6	1/5/2008	67800		cells/ml	Yes		

Ingram Creek at River Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Total Dissolved Solids	39	11/13/2007	730		mg/L		500	
DDE(p,p')	R6	1/5/2008	0.021		µg/L		0.00059	
DDT(p,p')	R6	1/5/2008	0.0086	DNQ	µg/L		0.00059	
Diazinon	R6	1/5/2008	0.055		µg/L		0.05	
E. Coli	R6	1/5/2008	>2400		MPN/100mL		220	
Selenastrum capricornutum	R6	1/5/2008	278000		cells/ml	Yes		
Total Dissolved Solids	R6	1/5/2008	760		mg/L		500	
DO	41	2/12/2008	2.51		mg/l			5
EC	41	2/12/2008	1420		µmhos/cm		900	
Total Dissolved Solids	41	2/12/2008	1300		mg/L		500	

Los Banos Creek at China Camp Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
E. Coli	39	11/13/2007	330		MPN/100mL		220	
Boron	R6	1/5/2008	2200		ug/L		2000	
E. Coli	R6	1/5/2008	1400		MPN/100mL		220	
EC	R6	1/5/2008	2011		µmhos/cm		900	
Total Dissolved Solids	R6	1/5/2008	1300		mg/L		500	

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 11/1/2007 to 2/29/2008

Los Banos Creek at Hwy 140

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
E. Coli	39	11/13/2007	>2400		MPN/100mL		220	
EC	39	11/13/2007	991		µmhos/cm		900	
Total Dissolved Solids	39	11/13/2007	600		mg/L		500	
EC	40	12/11/2007	1167		µmhos/cm		900	
Total Dissolved Solids	40	12/11/2007	710		mg/L		500	
EC	R6	1/5/2008	1129		µmhos/cm		900	
Total Dissolved Solids	R6	1/5/2008	690		mg/L		500	
EC	41	2/12/2008	2182		µmhos/cm		900	
Total Dissolved Solids	41	2/12/2008	1400		mg/L		500	

Marshall Road Drain near River Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Total Dissolved Solids	40	12/11/2007	1100		mg/L		500	
Chlorpyrifos	R6	1/5/2008	0.079		µg/L		0.014	
DDE(p,p')	R6	1/5/2008	0.033		µg/L		0.00059	
DDT(p,p')	R6	1/5/2008	0.02		µg/L		0.00059	
E. Coli	R6	1/5/2008	>2400		MPN/100mL		220	
Selenastrum capricornutum	R6	1/5/2008	30500		cells/ml	Yes		

Mud Slough Upstream of San Luis Drain

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
EC	39	11/13/2007	1305		µmhos/cm		900	
Total Dissolved Solids	39	11/13/2007	820		mg/L		500	
EC	40	12/11/2007	1515		µmhos/cm		900	
Total Dissolved Solids	40	12/11/2007	910		mg/L		500	
EC	R6	1/5/2008	1675		µmhos/cm		900	
Total Dissolved Solids	R6	1/5/2008	1100		mg/L		500	
EC	41	2/12/2008	2047		µmhos/cm		900	
Total Dissolved Solids	41	2/12/2008	1300		mg/L		500	

Newman Wasteway near Hills Ferry Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
E. Coli	39	11/13/2007	580		MPN/100mL		220	
EC	39	11/13/2007	1646		µmhos/cm		900	
Total Dissolved Solids	39	11/13/2007	1100		mg/L		500	
EC	40	12/11/2007	1594		µmhos/cm		900	
Total Dissolved Solids	40	12/11/2007	1000		mg/L		500	
DDE(p,p')	R6	1/5/2008	0.0055	DNQ	µg/L		0.00059	
E. Coli	R6	1/5/2008	>2400		MPN/100mL		220	
EC	R6	1/5/2008	947		µmhos/cm		900	

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 11/1/2007 to 2/29/2008

EC	41	2/12/2008	1897	µmhos/cm		900	
Total Dissolved Solids	41	2/12/2008	1300	mg/L		500	

Orestimba Creek at Hwy 33

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
DDE(p,p')	R6	1/5/2008	0.01	µg/L		0.00059	
E. Coli	R6	1/5/2008	>2400	MPN/100mL		220	
E. Coli	41	2/12/2008	>2400	MPN/100mL		220	
Total Dissolved Solids	41	2/12/2008	510	mg/L		500	

Orestimba Creek at River Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
E. Coli	39	11/13/2007	550	MPN/100mL		220	
DDE(p,p')	R6	1/5/2008	0.015	µg/L		0.00059	
E. Coli	R6	1/5/2008	>2400	MPN/100mL		220	
Selenastrum capricornutum	R6	1/5/2008	1630000	cells/ml	Yes		
Total Suspended Solids	R6	1/5/2008	650	mg/L		400	
E. Coli	41	2/12/2008	420	MPN/100mL		220	

Ramona Lake near Fig Avenue

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
pH	39	11/13/2007	9.03			8.5	6.5
Total Dissolved Solids	39	11/13/2007	570	mg/L		500	
Ceriodaphnia dubia	R6	1/6/2008	0	%	Yes		
E. Coli	R6	1/6/2008	920	MPN/100mL		220	
EC	R6	1/6/2008	969	µmhos/cm		900	
Total Dissolved Solids	R6	1/6/2008	930	mg/L		500	
EC	R6	1/9/2008	1100	µmhos/cm		900	

Salt Slough at Lander Ave

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Ceriodaphnia dubia	39	11/13/2007	60	%	Yes		
E. Coli	39	11/13/2007	240	MPN/100mL		220	
EC	39	11/13/2007	1592	µmhos/cm		900	
Total Dissolved Solids	39	11/13/2007	1000	mg/L		500	
EC	39	11/20/2007	1573	µmhos/cm		900	
EC	40	12/11/2007	1521	µmhos/cm		900	
Total Dissolved Solids	40	12/11/2007	950	mg/L		500	
EC	R6	1/5/2008	1494	µmhos/cm		900	
Total Dissolved Solids	R6	1/5/2008	940	mg/L		500	
EC	41	2/12/2008	1637	µmhos/cm		900	
Total Dissolved Solids	41	2/12/2008	1100	mg/L		500	

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 11/1/2007 to 2/29/2008

Salt Slough at Sand Dam

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Total Dissolved Solids	41	2/12/2008	580	mg/L		500	

San Joaquin River at Lander Ave

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	39	11/13/2007	1166	µmhos/cm		900	
pH	39	11/13/2007	8.78			8.5	6.5
Total Dissolved Solids	39	11/13/2007	720	mg/L		500	
EC	40	12/11/2007	1525	µmhos/cm		900	
EC	R6	1/5/2008	1372	µmhos/cm		900	
Total Dissolved Solids	R6	1/5/2008	840	mg/L		500	

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

Appendix A
Chain of Custody Sheets and Data Summary

Appendix A
Definitions

Sample Type:
E: Event sample
FD: Field duplicate sample
FB: Field blank sample.

Result Flags:
B: Potential blank contamination. Constituent was detected in field blank sample.
E: The reported value exceeds the linear range. The sample has been reanalyzed.
J: Estimated value. The result is below detection limit.
Y: The percent difference between the primary and confirmation column is >40%. The higher value has been reported.

Note: Pesticides with results indicating "Non-Detect" are not reported in this summary. See **Table 7** for a list of analytes. See **Appendix C** for the laboratory data reports.

Appendix A
Chain of Custody Sheets

Appendix A
Aquatic Toxicity Results by Event

Appendix A
Data Summary

Appendix B
Communication Reports
Organized by Event Date

Appendix C
Laboratory Data Reports
Organized by Event Date

Field Data Sheets
CalTest General Physical, Drinking Water Data, Nutrient Data, Metals Data
APPL Pesticide Analyses
Pacific Ecorisk Toxicity Reports