SAN JOAQUIN VALLEY DRAINAGE AUTHORITY

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June 15, 2011

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 June 15, 2011 semi-annual monitoring report

Dear Pamela,

Attached is the June 15, 2011 semi-annual monitoring report as required under our Monitoring and Reporting Program Order No. R5-2008-0831. This report covers the irrigation season monitoring from September 2010 through February 2011.

Laboratory reports associated with this monitoring period are included electronically (on a CD) as Appendix C, along with associated electronic data deliverables (EDDs). Hard copies of the laboratory reports can be provided upon request.

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

2010-11 Non-Irrigation Season Report

Covering the period: September 2010 through February 2011

(Sampling Events 71 through 76 and Rain Events 11 and 12)

June 15, 2011

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

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SECTION 1: EXECUTIVE SUMMARY

This report covers the 2010/11 non-irrigation season sampling events beginning September 2010 through February 2011 (Event 71 through Event 76) and includes two rain events (Rain Event 11 in December/January and Rain Event 12 in February). Nineteen of the 26 monitoring sites within the Westside San Joaquin River Watershed Coalition (Westside Coalition) are located on streams that are dominated by summer agricultural drainage runoff and are often dry or have little flow outside of the irrigation season.

Several storms contributed significant rainfall during this reporting period and the 2010/11 water year is a wet year type. As in previous years, precipitation was varied throughout the Westside Coalition area and rain event sample collections occurred over several days. See **Section 3** for a discussion of measured rainfall. Non-irigation season samples were collected at all sites containing sufficient water in accordance with the Westside Coalition's Monitoring and Reporting Plan (MRP – see MRP Order No. R5-2008-0831). Additionally, sediment samples were collected in September 2010 at 10 sites and tested for toxicity. Sediment toxicity was observed at Ingram Creek, Hospital Creek, Westley Wasteway and Del Puerto Creek near Cox Road and Del Puerto Creek at Highway 33. Sediment toxicity at Del Puerto Creek at Highway 33 was marginal (81.2% survival), and sediment samples from the other four sites were tested for selected pesticides. See **Sections 8** and **9.**

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 four times: once for *Ceriodaphnia dubia*, and three times for algae. All aquatic toxicity occurred during rain events. These are summarized in **Table 1** below.

Table 1: Summary of Toxicity

Event	Site	Species/% Survival or % Control Growth
Rain Event 11 (December)	Hospital Creek at River Road	*Ceriodaphnia dubia* - 40% survival
Rain Event 11 (December)	Hospital Creek at River Road	Algae - 1% of Control
Rain Event 11 (December)	Ingram Creek at River Road	Algae - 30% of Control
Rain Event 12 (February)	Poso Slough at Indiana Avenue	Algae - 48% of Control

These results, along with associated water quality and flow data, are summarized in **Attachment 2**. Details of the aquatic toxicity analyses are included 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).

There were also a handful of minor quality control issues, including apparent contamination of field blank samples and exceedance of the field duplicate relative percent difference (RPD) value. None of these issues are expected to affect data usability. Results of the Field Quality Control samples are discussed in **Section 6** and **Attachment 3**. A review of Laboratory quality assurance activities is included in **Appendix E**.

Four sites within San Luis Water District (SLWD) were monitored monthly in accordance with the Monitoring and Reporting Plan. SLWD has implemented an aggressive tailwater prohibition policy and growers within the district do not discharge tailwater. Reservoir releases from the Los Banos Detention Dam resulted in significant flow in Los Banos Creek at Sunset Avenue and this site was sampled during Rain Events 11 and 12 (January and February, respectively).

Table 2 lists the sites that were sampled during the 2010/11 Non-Irrigation Season.

Table 2: September 2010 through February 2011 Sampling Events Summary

Map Designation	Monitoring Site	Event 71		Event 72	Event 73	Event 74	Rain Event 11	Event 75	Event 76	Rain Event 12
	Discharge Sites	Sept		Oct	Nov	Dec	Dec/Jan	Jan	Feb	Feb
1	Hospital Cr at River Road	NP	SS	NP	NP	NP	S	NP	NP	NF
2	Ingram Cr at River Road	S	SS	S	S	S	S	NF	NF	NF
3	Westley Wasteway near Cox Road	S	SS	S	NA	NA	NA	S	S	NA
4	Del Puerto Cr near Cox Road	S	SS	S	S	S	S	NF	S	S
5	Del Puerto Cr at Hwy 33	NP	SS	NP	NP	NP	S	NP	NP	S
7	Ramona Lake near Fig Avenue	S	SS	S	S	S	S	NA	S	NF
8	Marshall Road Drain near River Road	S	NP	NF	S	NF	S	NF	NF	NF
9	Orestimba Cr at River Road	S	SS	NF	NF	S	S	S	S	S
10	Orestimba Cr at Hwy 33	NP	SS	NP	NP	NP	S	NP	NP	S
11	Newman Wasteway near Hills Ferry Road	S	SS	S	S	S	S	S	S	S
13	San Joaquin River at Lander Avenue	S	NP	S	S	S	S	S	S	S
14	Mud Slough u/s San Luis Drain	S	NP	S	S	S	S	S	S	S
15	Salt Slough at Lander Avenue	S	NP	S	S	S	S	S	S	S
16	Salt Slough at Sand Dam	NP	NP	NP	NP	NP	S	NP	NP	S
17	Los Banos Creek at Highway 140	S	NP	S	S	S	S	S	S	S
18	Los Banos Creek at China Camp Road	S	SS	S	S	S	S	S	S	S
19	Turner Slough near Edminster Road	S	NP	S	S	S	NA	S	S	S
20	Blewett Drain near Highway 132	S	NP	S	NF	NF	NF	NF	NF	NF
21	Poso Slough at Indiana Avenue	S	NP	S	S	S	S	S	S	S
24	Los Banos Creek at Sunset Ave	NF	NF	NF	NF	NF	S	NF	NF	S
25	Little Panoche Cr at Western Boundary	NF	NF	NF	NF	NF	NF	NF	NF	NF
26	Little Panoche Cr at San Luis Canal	NF	NF	NF	NF	NF	NF	NF	NF	NF
27	Russell Ave. Drain at San Luis Canal	NF	NF	NF	NF	NF	NF	NF	NF	NF
	Source Water Sites									
12	San Joaquin River at Sack Dam	S	NP	S	S	S	S	S	S	S
22	San Joaquin River at PID Pumps	S	NP	S	S	S	S	S	S	S
23	Delta Mendota Canal at Del Puerto WD	S	NP	S	S	S	S	S	S	S

Notes: S = Water sampled according to the MRP.
SS = Sediment sampled according to the MRP.
NA = Not sampled due to lack of safe access.
NF = Not sampled due to lack of flow.
NP = Not included in the sampling plan.

SECTION 2: COALITION AND MONITORING PROGRAM DESCRIPTION

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. Tailwater is aggressively controlled and not allowed to discharge from the region. 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 from 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 can 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. In February, 2008, the Westside Coalition received approval for a revised Monitoring and Reporting Plan (Revised MRP). The Revised MRP was designed to focus monitoring efforts at sites with known water or sediment issues and to support the Management Plan issues. The Revised MRP was implemented in March of 2008. Monitoring and Reporting Program Order No. R5-2008-0831 (MRP Order or MRP) was issued by the Regional Board in September 2008. This order was largely reflective of the Revised MRP and took effect in March 2009.

The MRP Order includes a targeted monthly sampling plan for 26 monitoring sites within the Coalition area as well as plans for sampling for two rain events during each year. The monitoring sites include three source water sites and 23 sites that discharge agricultural drain water. Four of the discharge sites are within San Luis Water District, which maintains a tailwater discharge prohibition. These sites generally only discharge during severe storm events.

During any given sampling event, each accessible site is visited, visually assessed, and samples are collected in accordance with the field sampling manual. See **Table 2.**

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.

Three 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 26 sites; the field coordinator for the northerly region is responsible for collecting samples north of Newman Wasteway. The field coordinator for the southerly region is responsible for collecting samples south of (and including) Newman Wasteway, and staff from San Luis Water District are responsible for monitoring and sampling sites within that 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 3**. The laboratory, method, and constituents analyzed are shown in **Table 4.**

Table 3: Monitoring Stations and Samples

Monitoring Site	Site Code	Season: Irrigation (Mar-Aug)*	Season: Non-Irrigation (Sep-Feb)*	Season: Rain Event (2x per year)	Ceriodaphnia Toxicity	Fathead Toxicity	Algae Toxicity	Sediment Toxicity	Pesticides: OP	Pesticides: OC	Pesticides: Group A	Pesticides: Carb	Pesticides: Herb
Discharge Sites													
Blewett Drain at Highway 132	VH132	Core	Core	Assmt									
Poso Slough at Indiana Avenue	PSAIA	Core	Core	Assmt									
Hospital Cr at River Road	HCARR	Special	-	Rain**	x			x	x	x			x
Ingram Cr at River Road	ICARR	Core + Special	Core	Rain**	x			x	x	x	x	x	x
Westley Wasteway near Cox Road	WWNCR	Core + Special	Core	Rain**	x		x	x	x	x	x		x
Del Puerto Cr near Cox Road	DPCCR	Core + Special	Core	Rain**	x			x	x	x	x		x
Del Puerto Cr at Hwy 33	DPCHW	Special	-	Rain**	x			x	x	x	x		x
Ramona Lake near Fig Avenue	ROLFA	Core + Special	Core	Rain**	x			x	x	x			x
Marshall Road Drain near River Road	MRDRR	Core + Special	Core	Rain**	x				x	x	x		x
Orestimba Cr at River Road	OCARR	Core + Special	Core	Rain**	x			x	x	x	x		x
Orestimba Cr at Hwy 33	OCAHW	Special	-	Rain**	x		x	x	x	x	x		x
Newman Wasteway near Hills Ferry Road	NWHFR	Core + Special	Core	Rain**	x			x	x	x	x		x
San Joaquin River at Lander Avenue	SJRLA	Core + Special	Core + Special	Rain**	x		x		x				x
Mud Slough u/s San Luis Drain	MSUSL	Core + Special	Core + Special	Rain**	x				x	x	x	x	x
Salt Slough at Lander Avenue	SSALA	Core + Special	Core + Special	Rain**	x		x		x	x	x	x	x
Salt Slough at Sand Dam	SSASD	Special	-	Rain**	x		x		x	x		x	x
Los Banos Creek at Highway 140	LBCHW	Core + Special	Core + Special	Rain**	x				x				x
Los Banos Creek at China Camp Road	LBCCC	Core + Special	Core	Rain**	x	x	x	x	x				x
Turner Slough near Edminster Road	TSAER	Core + Special	Core	Rain**	x	x			x				x
Little Panoche Cr at Western Boundary	LPCWB	Core	Core	Rain**	x		x	x					
Little Panoche Cr at San Luis Canal	LPCSL	Core	Core	Rain**	x		x	x					
Russell Ave. Drain at San Luis Canal	RADSL	Core	Core	Rain**	x		x	x					
Los Banos Creek at Sunset Ave	LBCSA	Core	Core	Rain**	x		x	x					
Source Water Sites													
San Joaquin River at Sack Dam	SJRSD	Source	Source	Source									
Delta Mendota Canal at Del Puerto WD	DMCDP	Source	Source	Source									
San Joaquin River at PID Pumps	SJRPP	Source	Source	Source									

* Irrigation season will run from March through August. Non-irrigation season will run from September through February. The Westside Coalition, in colaboration with the Regional Water Quality Control Board, may shift the seasons up or back 1 month to accont for actual practices.

Table 4: 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
	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/100ml	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
	Herbicides	APPL	EPA 619	µg/L	ANA8151A
Sediment	Organochlorine	Caltest	SW846 8081	mg/kg (dry)	8081rev8
	Pyrethroid	Caltest	SW846 8270(SIM)	mg/kg (dry)	Pyrethroidsrev4a
	% Solids	Caltest	EPA 160.3	%	Residue-rev6
	TOC	Caltest	EPA 9060A	%	WalkleyBlack TOC
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

Aquatic toxicity samples were collected and 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).

SECTION 3: MONITORING EVENT SUMMARIES

Monitoring Event Summaries.
Each site was visited monthly during the reporting period and samples were collected from every site with sufficient water to submerge and fill a sample container. Discharges from Los Banos Reservoir resulted in sufficient flow in Los Banos Creek at Sunset Avenue for sample collection in January and February. However none of the other San Luis Water District Sites contained water for the reporting period.

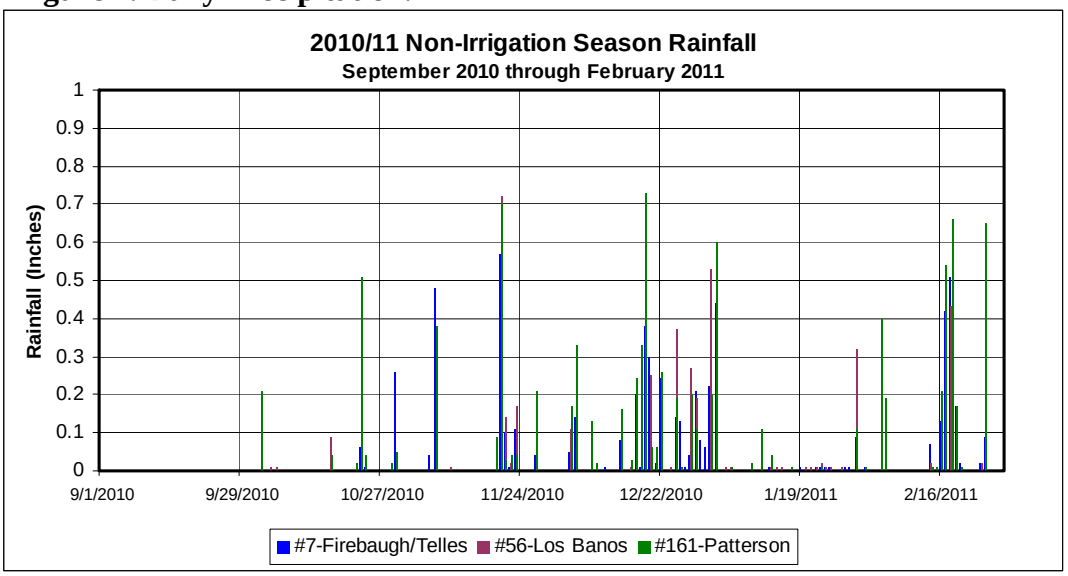
Three CIMIS[1] stations were monitored by the Westside Coalition for rainfall: Patterson, Los Banos, and Firebaugh. **Table 5** summarizes the monthly rainfall measured at each station.

Table 5: Monthly Rainfall in Inches

Month	Patterson	Los Banos	Firebaugh
September	0	0	0
October	0.89	0.11	0.33
November	1.49	1.39	1.35
December	3.03	2.51	2.10
January	1.11	1.38	0.83
February	2.86	1.47	1.44
Report Period Total:	9.38	6.86	6.05

The 2010/2011 non-irrigation season was the wettest on record since the Westside Coalition began monitoring. Daily rainfall is shown in **Figure 1**. Rain event sample collections were made in December/January and in February.

Figure 1. Daily Precipitation.



[1] California Irrigation Management Information System, http://wwwcimis.water.ca.gov/cimis/welcome.jsp

Event 71, September 13th and 16th, 2010.
Sediment samples were collected on September 13th at ten monitoring sites (see **Sections 8** and **9**) and non-irrigation season water samples were collected at 18 site on September 16th in accordance with the MRP Order. Sediment toxicity was observed at Hospital Creek, Ingram Creek, Westley Wasteway, and both Del Puerto Creek sites. Sediment samples from each of these sites (except for Del Puerto Creek at Highway 33) were tested for selected pesticides (see **Section 8)**. The four wetland sites (San Joaquin River at Lander Avenue, Salt Slough at Lander Avenue, Mud Slough, and Los Banos Creek at Highway 140) were tested for aquatic toxicity and none was observed.

Event 72, October 12, 2010.
Non-irrigation season water samples were collected at 16 monitoring sites on October 12th in accordance with the Westside Coalition MRP. No aquatic toxicity was observed in any of tested sites. Insufficient flow was present at the Marshall Road Drain and Orestimba Creek at River Road sites for sample collection and all four SLWD sites were dry.

Event 73, November 9th, 2010.
Non-irrigation season water samples were collected at 15 sites on November 9th in accordance with the Westside Coalition's MRP. There was insufficient flow at the Blewett Drain and Orestimba Creek at River Road monitoring sites, and wet road conditions prevented access to Westley Wasteway. No aquatic toxicity was observed. There was no flow in any of the SLWD monitoring sites.

Event 74, December 14th, 2010.
Non-irrigation season water samples were collected at 15 sites on December 14th in accordance with the Westside Coalition's MRP. There was insufficient flow at the Marshall Road and Blewett Drain sites for sample collection and the four SLWD sites were dry. Wet road conditions prevented access to Westley Wasteway. No aquatic toxicity was observed.

Rain Event 11, December 20th and 21st, 2010 and January 3rd and 4th, 2011.
Late December and early January storms dropped significant rainfall throughout the Westside Coalition and caused sufficient runoff for rain event sample collection. Storm water samples were collected at 17 monitoring sites and source water samples were collected at the three source water sites. Westley Wasteway and Turner Slough were inaccessible and there was no flow at Blewett Drain. Los Banos Reservoir releases caused significant flow at the Los Banos Creek at Sunset Avenue site, and a storm water sample was collected. Toxicity to algae was observed at Hospital Creek (1% of control growth) and Ingram Creek (30% of cell growth) and toxicity to *Ceriodaphnia dubia* was observed at Hospital Creek (40% survival). A dilution series was performed for algae on the Hospital Creek sample and measured 4.29 toxic units. TIEs were performed on all three samples, each indicating a non-polar organic was likely the cause. DDE (0.017µg/L), Diuron (27µg/L) and Prowl (1.2µg/L) were detected in the Hospital Creek sample, and DDE (0.012µg/L), Diuron (8.5 µg/L) and Simazine (3.3 µg/L) were detected in the Ingram Creek samples. Diuron concentrations in both samples likely contributed to the algae toxicity, however the cause of the *Ceriodaphnia dubia* toxicity at Hospital Creek is not apparent. No other aquatic toxicity was observed.

Event 75, January 11th, 2011.
Non-irrigation season water samples were collected at 13 sites on January 11th in accordance with the Westside Coalition's MRP. Insufficient flow was present at Ingram Creek, Del Puerto Creek near Cox Road, Marshall Road Drain and Blewett Drain. High river conditions prevented access to Ramona Lake. No aquatic toxicity was observed.

Event 76, February 8th, 2011.
Non-irrigation season water samples were collected at 15 sites on February 8th in accordance with the Westside Coalition's MRP. Insufficient flow was present at Ingram Creek, Marshall Road Drain and Blewett Drain. No aquatic toxicity was observed.

Rain Event 12, February 22nd and 23rd, 2011.
Mid-February rainfall generated sufficient runoff to collect storm water samples. Storm water samples were collected at 14 sites and source water samples were collected at the three source water sites. Insufficient flow was present at Hospital Creek, Ingram Creek, Ramona Lake, Marshall Road Drain and Blewett Drain. Wet road conditions prevented access to Westley Wasteway. Aquatic toxicity to algae was observed at Poso Slough and diuron (16µg/L) was detected in the sample. No other aquatic toxicity was observed.

SECTION 4: SAMPLING SITE AND WATERSHED DESCRIPTIONS

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

- Blewett Drain near Highway 132 (originally called Vernalis at Highway 132 [VH132]). This site is located at the northerly boundary of the Westside Coalition. The cropping pattern for discharges into this drain is similar to that of Hospital Creek. Flow at this site is calculated as an estimated velocity and measured flow area. The Westside Coalition began monitoring this site in 2008.
- Poso Slough at Indiana Avenue (PSAIA). This site is located on Poso Slough near the boundary between San Luis Canal Company and Central California Irrigation District in the Dos Palos Subarea of the Westside Coalition. Flow at this site is calculated as an estimated velocity and measured flow area. The Westside Coalition began monitoring this site in 2008. Poso Slough is a tributary to Salt Slough, discharging upstream of the Sand Dam monitoring site.
- Hospital Creek at River Road (HCARR). This site is a significant drainage for the Patterson Subarea of the Westside Coalition and has been monitored since July 2004 for a variety of constituents. Sediment discharge, sediment toxicity, aquatic toxicity (water flea), and pesticides have been measured at this site. It is on the 303(d) list for pesticides. Flow at this site is measured by a rectangular weir.
- Ingram Creek at River Road (ICARR). This site is a significant drainage for the Patterson Subarea of the Westside Coalition and has been monitored since July 2004 for a variety of constituents. Sediment discharge, sediment toxicity, aquatic toxicity (water flea), and pesticides have been measured at this site. It is on the 303(d) list for pesticides. Flow at this site is measured by a rectangular weir.

- Westley Wasteway near Cox Road (WWNCR). 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. This site has been monitored for a variety of constituents since 2004. Sediment discharge, sediment toxicity, aquatic toxicity (water flea), and pesticides have been measured at this site. Flow at this site is measured by a rectangular weir.
- Del Puerto Creek near Cox Road (DPCCR) and Del Puerto Creek near Highway 33 (DPCHW). 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. Both of these sites have been monitored for a variety of constituents since 2004. Sediment discharge, sediment toxicity, aquatic toxicity (water flea), and pesticides have been measured at both sites. Flow at this site is measured through a stream rating.
- Ramona Lake near Fig Avenue (ROLFA). This site monitors discharge from a small lake as it flows into the San Joaquin River. Agricultural and storm runoff from the Patterson Subarea can discharge into the lake. This site has been monitored for a variety of constituents since 2004. Some pesticides have been measured at this site.
- Marshall Road Drain near River Road (MRDRR). This site monitors a pipe drain that carries agricultural and storm runoff from the Patterson Subarea of the Westside Coalition. This site has been monitored for a variety of constituents since 2004. Some pesticides and aquatic toxicity have been measured at this site. Flow from this site is measured by a weir within the pipe. During periods of high flow, the weir can become submerged and incapable of measuring flow.
- Orestimba Creek at River Road (OCARR) and Highway 33 (OCAHW). There are two monitoring locations on Orestimba Creek; one near the discharge point to the San Joaquin River; and one upstream at Highway 33. Orestimba Creek is similar to that of Del Puerto in both the surrounding landscape and discharged water quality. 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. Pesticides, sediment discharge, sediment toxicity, and aquatic toxicity have been measured at these sites. USGS monitors are reports flow at Orestimba Creek at River Road. Flow at Orestimba Creek at Highway 33 is calculated through an estimated velocity and cross-sectional flow area.
- Newman Wasteway near Hills Ferry Road (NWHFR). The Newman Wasteway is a significant drainage for the Patterson Subarea and is on the 303(d) list for salt and pesticides. This site measures drainage that originates from the southerly region of the Patterson Subarea, and has been monitored for a variety of constituents since 2004. Pesticides, sediment discharge, sediment toxicity, and aquatic toxicity have been measured at this site. Flow at this site is calculated through an estimated velocity and cross-sectional flow area.
- The San Joaquin River at Lander Avenue (SJRLA). This site is both a receiving waterbody for agricultural and storm drainage and a source water for districts that pump from the San Joaquin River. It also receives drainage flows from irrigated wetlands in

the fall and winter months. It has been monitored for a variety of constituents since 2004, and pesticides, sediment toxicity, and aquatic toxicity have been measured. Flow at this site is reported by a nearby CDEC station.

- Mud Slough upstream of the San Luis Drain (MSUSL). This site measures drainage originating from the Dos Palos and Los Banos Subareas that flow through the wetlands as well as the wetlands themselves. Mud Slough is 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 this site throughout the year. These samples are analyzed for selenium, boron, and EC, along with other constituents. Flow at this site is calculated as the difference between the flow downstream of the San Luis Drain (reported by CDEC) and the measured San Luis Drain Discharge. The SWAMP Data is available via the internet at: http://www.waterboards.ca.gov/centralvalley/programs/agunit/swamp/index.html.
- Salt Slough at Lander Avenue (SSALA) Salt Slough at Lander Avenue measures agricultural, storm, and wetland runoff from the Dos Palos and Los Banos Subareas, and has been monitored (and 303(d) listed) for a variety of constituents since 2004. In addition to the Westside Coalition's monitoring program, the Central Valley Regional Water Quality Control Board, SWAMP collects and analyzes samples from this site throughout the year. These samples are analyzed for selenium, boron, and EC, along with other constituents. Flow at this site is reported by CDEC. The SWAMP Data is available via the internet at: http://www.waterboards.ca.gov/centralvalley/programs/agunit/swamp/index.html.
- Salt Slough at Sand Dam (SSASD). This site is upstream of the Lander Avenue site and measures agricultural and storm drainage originating in portions of the Dos Palos Subarea. Pesticides and aquatic toxicity have been measured at this site, which has been monitored for a variety of constituents since 2004. Flow at this site is measured by a weir.
- Los Banos Creek at Highway 140 (LBCHW). This site carries agricultural, storm and irrigated wetland runoff from the Los Banos Subarea. Some pesticides have been measured at this site. Flow at this site is calculated through an estimated velocity and cross-sectional flow area.
- Los Banos Creek at China Camp Road (LBCCC). This site monitors agricultural and storm runoff from the Los Banos Subarea, upstream of the Highway 140 site. There is a farmer-maintained dam downstream of this site which is frequently used to stop flows so that it may be diverted for irrigation. Flow at this site is calculated through an estimated velocity and cross-sectional flow area.
- Turner Slough near Edminster Road (TSAER). This station is located on the eastside of the San Joaquin River and measures drainage from a portion of the Patterson Subarea. A very small number of pesticides have been detected at this site since 2004. In 2007, Stevinson Water District constructed a drain water return system upstream of the Turner Slough discharge (and monitoring) point. This system captures most of the drainage that flows through Turner Slough and returns it to the Stevinson Water District irrigation system. Since the construction of this system, discharges from Turner Slough into the San Joaquin River have become infrequent. Flow at this site is calculated through an estimated velocity and cross-sectional flow area.

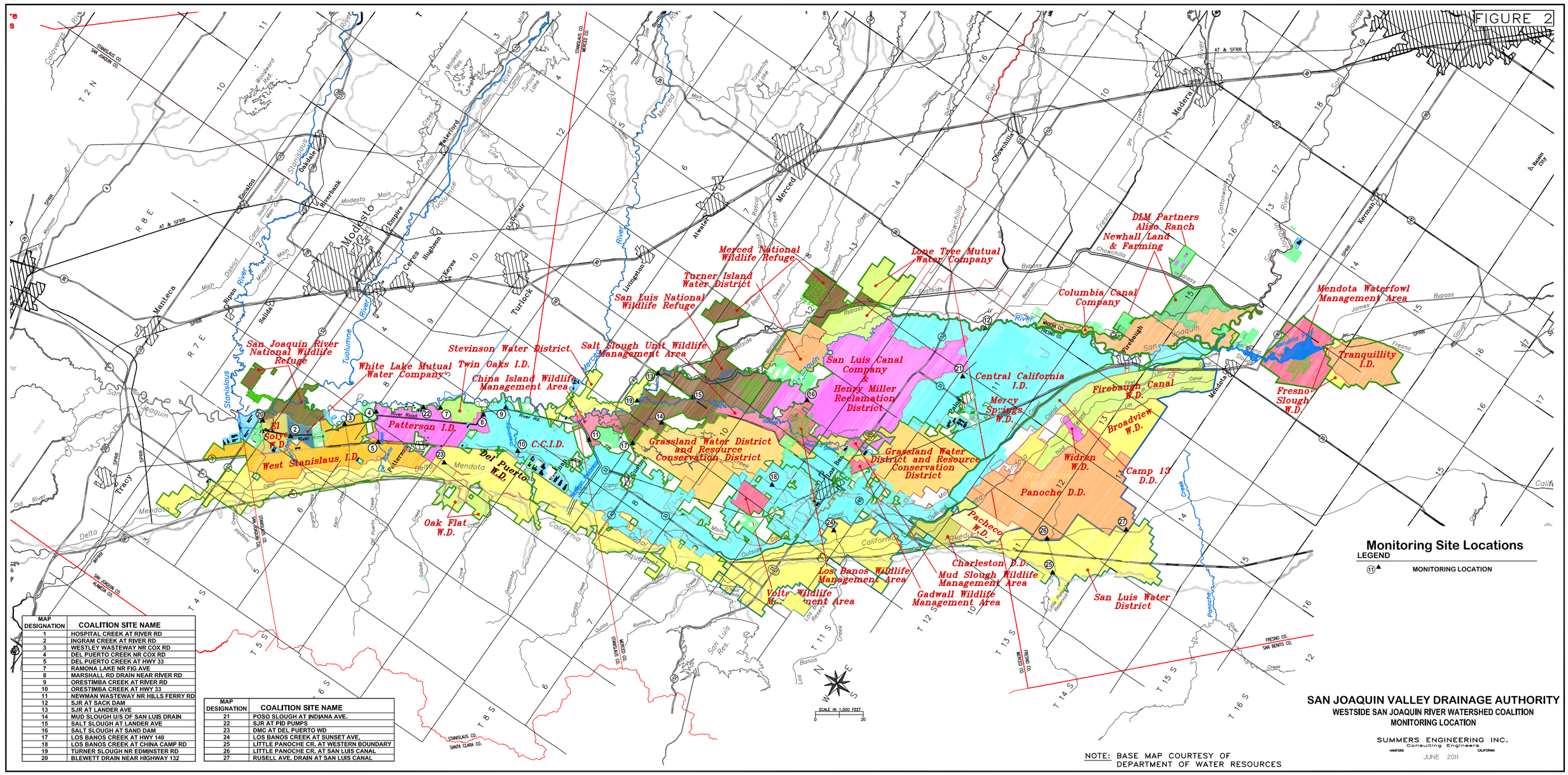
- Little Panoche Creek at Western Boundary (LPCWB) and at San Luis Canal (LPCSL). These two sites were incorporated from the San Luis Water District Water Quality Coalition. Because San Luis Water District has a strict no-discharge policy, these sites are typically dry. High water levels in the Panoche Creek Reservoir have caused shallow groundwater to accrete into the creek at the Western Boundary site, but no other flows (either agricultural discharges or storm runoff) have been observed at either site.
- Russell Avenue Drain at San Luis Canal (RADSL). This is a small drain along Russell Avenue that discharges into the San Luis Canal. These two sites were incorporated from the San Luis Water District Water Quality Coalition. Because San Luis Water District has a strict no-discharge policy, this site will typically measure only storm runoff. Since inclusion within the Westside Coalition, this site has not had any observed flow and has not been sampled.
- Los Banos Creek at Sunset Avenue (LBCSA). This monitoring site was incorporated from the San Luis Water District Water Quality Coalition, and is located near the western boundary of the Westside Coalition, downstream of the Los Banos Reservoir. There is not a large amount of actively farmed land at or upstream of this site, and discharges here are typically releases from the Los Banos Reservoir.
- San Joaquin River at Sack Dam (SJRSD). This is a source water monitoring site located at the diversion point for San Luis Canal Company. This site is monitored for source water constituents. Flow at this site is measured across the dam.
- Delta Mendota Canal at Del Puerto Water District (DMCDP). This site monitors water quality in the Delta Mendota Canal at a Del Puerto Water District turnout. This site characterizes the source water quality typical of the Delta Mendota Canal, and is monitored for source water constituents. Flow is not measured at this site.
- San Joaquin River at Patterson Irrigation District Pumps (SJRPP). This monitoring site is located at the Patterson Irrigation District pump station on the San Joaquin River and characterizes the source water quality of the San Joaquin River in the Patterson Subarea. This site is monitored for source water constituents. Flow from this site is reported by CDEC.

Table 6 lists the monitoring sites and coordinates in the WGS84 datum.

Table 6: Monitoring Site Coordinates

Site	Latitude (N)	Longitude (W)
Hospital Cr at River Road	37.61047	121.23078
Ingram Cr at River Road	37.60022	121.22506
Westley Wasteway near Cox Road	37.55822	121.16372
Del Puerto Cr near Cox Road	37.53936	121.12206
Del Puerto Cr at Hwy 33	37.51406	121.15956
Ramona Lake near Fig Avenue	37.47875	121.06839
Marshall Road Drain near River Road	37.43631	121.03617
Orestimba Cr at River Road	37.41386	121.01489
Orestimba Cr at Hwy 33	37.37717	121.05856
Newman Wasteway near Hills Ferry Road	37.32036	120.98336
San Joaquin River at Sack Dam	36.98353	120.50050
San Joaquin River at Lander Avenue	37.29506	120.85139
Mud Slough u/s San Luis Drain	37.26164	120.90614
Salt Slough at Lander Avenue	37.24797	120.85225
Salt Slough at Sand Dam	37.13664	120.76194
Los Banos Creek at Highway 140	37.27619	120.95547
Los Banos Creek at China Camp Road	37.11447	120.88953
Turner Slough near Edminster Road	37.30411	120.90083
Blewett Drain at Highway 132	37.64053	121.22942
Poso Slough at Indiana Ave	37.00622	120.59033
SJR at PID Pumps	37.49739	121.08267
DMC at Del Puerto WD	37.43678	121.13347
Los Banos Creek at Sunset Ave	37.02747	120.88983
Little Panoche Cr at Western Boundary	36.79100	120.76200
Little Panoche Cr at San Luis Canal	36.81728	120.72614
Russell Ave Drain at San Luis Canal	36.75142	120.65775

FIGURE 2



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
7	RAMONA LAKE NR FIG 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
20	BLEWETT DRAIN NEAR HIGHWAY 132

MAP DESIGNATION	COALITION SITE NAME
21	POSO SLOUGH AT INDIANA AVE.
22	SJR AT PID PUMPS
23	DMC AT DEL PUERTO WD
24	LOS BANOS CREEK AT SUNSET AVE.
25	LITTLE PANOCHE CR. AT WESTERN BOUNDARY
26	LITTLE PANOCHE CR. AT SAN LUIS CANAL
27	RUSELL AVE. DRAIN AT SAN LUIS CANAL

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 7** shows the top ten crops within the Coalition area based on 2010 Agricultural Commissioner pesticide use data.

Table 7: Top 10 Crops Grown by County

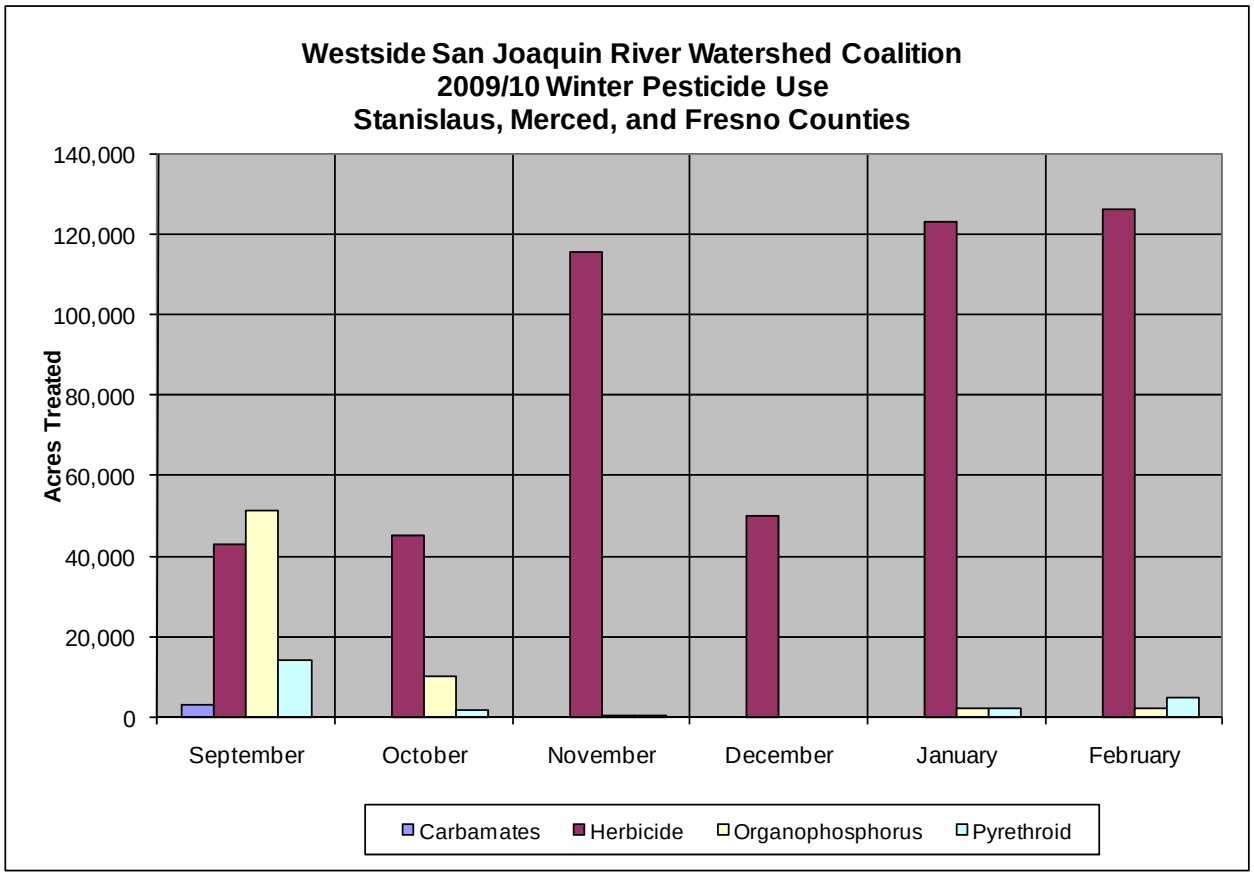
Fresno	Merced	Stanislaus
Alfalfa	Alfalfa	Alfalfa
Tomatoes	Tomatoes	Tomatoes
Cotton	Cotton	Cotton
Melons	Almonds	Melons
Almonds	Melons	Almonds
Corn	Oats	Corn
Wheat/Barley	Wheat/Barley	Wheat
Onions	Corn	Onions
Asparagus	Rangeland/Uncultivated	Asparagus
Beans	Walnuts	Beans

These crops are dispersed approximately evenly throughout the Coalition area, with the exceptions of cotton (mostly in the Los Banos, Dos Palos and Tranquillity Subareas), and fruit trees and beans (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.

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 can furrow irrigated using either a plowed head ditch or gated pipe, sprinkler irrigated with hand-move sprinkler pipe, 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 some of the older orchards are still flood irrigated.

Typically, there is minimal agricultural activity during the non-irrigation season. By September, most crops have been harvested and growers are preparing fields for the next season's crop. Applications of pesticides are usually limited to weed control during the late fall and early winter and orchard insect control through dormant sprays during the late winter. **Figure 3** shows the 2009/10 non-irrigation season monthly pesticide application within the Westside Coalition by pesticide group. Complete pesticide use data for the 2010/11 non-irrigation season is not yet available and the data presented in **Figure 3** should be considered representative of the general trend in cultural practices but not direct measurement of actual 2010/11 pesticide use.

Figure 3: 2009/10 Non-Irrigation Season Pesticide Use.



A more detailed review of pesticide use and detections is provided in **Section 8**.

Table 8 shows the 10 most commonly applied pesticides during the non-irrigation season (by acreage) within the three counties occupied by the Westside Coalition. Pesticide use reports from the county's Agricultural Commissioner for the 2009-2010 non-irrigation season were used as it was the most current complete record.

Table 8: Most Commonly Applied Pesticides by County (2009/2010 Non-irrigation Season)

Fresno County		Merced County		Stanislaus County	
Pesticide	**Class**	**Pesticide**	**Class**	**Pesticide**	**Class**
Paraquat Dichloride	Herbicide	Glyphosate	Herbicide	Glyphosate	Herbicide
Prowl	Herbicide	Oxyfluorfen	Herbicide	Oxyfluorfen	Herbicide
Diuron	Herbicide	Paraquat Dichloride	Herbicide	Prowl	Herbicide
Oxyfluorfen	Herbicide	Diuron	Herbicide	Dimethoate	Organophosphate
Glyphosate	Herbicide	Prowl	Herbicide	Paraquat Dichloride	Herbicide
Thidiazuron	Herbicide	Thidiazuron	Herbicide	Diuron	Herbicide
Chlorpyrifos	Organophosphate	MCPA-Dimethylamine	Herbicide	Simazine	Herbicide
Dimethoate	Organophosphate	Hexazinone	Herbicide	Lambda-Cyhalothrin	Pyrethroid
Trifluralin	Herbicide	Trifluralin	Herbicide	Norflurazon	Herbicide
Sodium Chlorate	Herbicide	2-4D	Herbicide	Hexazinone	Herbicide

Pesticide use trends for this report period are likely similar to the 2009/2010, although the order in which they appear in **Table 8** may be different.

SECTION 5: FIELD SAMPLING PROCEDURE

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. Three 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 26 sites: The field coordinator for the northerly region is responsible for collecting samples from north of Newman Wasteway. The field coordinator for the southerly region is responsible for collecting samples south of (and including) Newman Wasteway, and staff from San Luis Water District are responsible for monitoring and sampling sites within that 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. 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 the Field Sampling Manual. The list of tested constituents is discussed in the MRP Order.

SECTION 6: FIELD AND LABORATORY QUALITY CONTROL SAMPLES

Laboratory Quality Control Samples. The three laboratories that perform analyses for the Westside Coalition monitoring activities are certified through the National Environmental Laboratory Accreditation Program (NELAP) and perform all testing and analyses according to

the most current NELAP standards, including the performance of several quality control tests to ensure all methods and equipment are operating correctly. A handful of quality control tests for APPL and Caltest failed to meet acceptability criteria, however these failures represented less than 10% of the QA/QC analyses performed by each lab and do not affect data usability. All analyses performed by Pacific Ecorisk met test acceptability criteria. Details of the laboratory quality control review are included in **Appendix E**. Although the Westside Coalition reviews each of the laboratories' QA/QC results, it considers each of the laboratories to be experts in their respective fields and defers to their judgment regarding data acceptability.

Field Quality Control Samples. Field quality control samples included the collection of field duplicate samples for sediment and 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 RPD between the event sample and field duplicate sample should be considered a measurement of site water variability.

- **Water Chemistry Analyses.** Eight sets of field duplicate and field blank samples were collected 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 177 duplicate analyses were completed and compared to the event sample results. Thirty three duplicate samples exceeded the 25% relative percent difference (RPD) established in the QAPP for:

Ammonia	Arsenic	Bromide	Cadmium (diss)
Cadmium (tot)	Copper (diss)	Copper (tot)	E. Coli
Lead	Nickel	Nitrate+Nitrite	TKN
TSS	Turbidity	Zinc (tota)	

  These exceedances of the field duplicate quality control criteria are reflective of the complicated nature of the site water and the naturally occurring variations of the stream water quality. Seven of the results exceeding the RPD criteria were detected below the reporting limit (flagged "DNQ") where small variations between the duplicate and event sample can result in relatively large RPD values. The Westside Coalition does not expect these variations to impact data usability.

  Eight field blank sample sets were analyzed during the report period (178 results, total). Of these, five resulted in values greater than 20% of the event sample result, including:

  Copper (total) Copper (dissolved) Nitrate + Nitrite Zinc (total)

  Two of the five field blank results exceeding 20% of the event sample results were detected below the reporting limit ("j" or "DNQ" flagged).

- **Pesticide Analyses.** Eight field duplicate and field blank samples sets were collected during the reporting period and analyzed for pesticides (420 and 412 results,

respectively). There were no pesticide detections in any of the field blank samples. Calculated RPD for field duplicate results exceeded the 25% threshold once for prowl during Event 76 (RPD = 29%). This is 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 species tested during the report period. The calculated RPD value was less than 25% in all cases.

- **Sediment Toxicity Analyses.** A field duplicate sample was collected for sediment toxicity during the March sampling event (Event 65). The measured RPD was 2.7%.

Completeness for sampling collection and analysis was reviewed for samples collected during this monitoring program. Completeness was measured for sample collection and transit, sample analysis, and field quality control samples.

- Collection and Transit: Completeness for this reporting period for sample collection and transit is 100%. No sample containers were lost or broken during this reporting period.
- Sample Analysis: Completeness for sample analysis during this reporting period is 100%. All collected samples were analyzed in accordance with the appropriate method.
- Field Quality Control Samples: Completeness for toxicity duplicate samples is 100% for this reporting period. The completeness for field blank samples is 100% for pesticide analyses and 97% for water chemistry samples.

SECTION 7: ANALYTICAL METHODS

Table 4 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 reflects the constituents analyzed as part of the Revised MRP.

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 screening test results. 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 8: DATA INTERPRETATION

The primary objective of the monitoring program is to identify water bodies that are adversely affected by agricultural discharges and to help determine the impacts of management activities.

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 26 monitoring sites on the Westside of the San Joaquin Valley (see **Table 3** and **Figure 2**). These sites are representative of the various regions within the Coalition and include agricultural discharge sites, storm drainage sites, and irrigation source water sites. 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 the 2010-2011 non-irrigation season months, during which there was minimal agricultural activity, typically limited to weed control and orchard dormant sprays. All four observations of aquatic toxicity occurred during rain events and are detailed in **Attachment 2**.

Ceriodaphnia dubia. Toxicity to *Ceriodaphnia dubia* was measured once at Hospital Creek during Rain Event 11 (December 21, 2010). Survival measured 40% and no cause of the toxicity was apparent.

Selenastrum capricornutum (algae). Toxicity to algae was observed twice during Rain Event 11 (Ingram and Hospital Creeks) and once during Rain Event 12 at Poso Slough. In all three cases elevated levels of diuron were detected in the sample and suspected of contributing to the toxicity.

Pimephales Promelas (fathead minnow). No measurements of fathead minnow toxicity were observed during this reporting period.

Sediment Toxicity (*Hyalella azteca*). Sediment samples were collected during Event 71 (September) and tested for toxicity to *Hyalella azteca*. Eleven samples were collected (including one duplicate), and significant toxicity was measured at five sites (Hospital Creek – 0% survival, Ingram Creek – 0% survival, Westley Wasteway – 41.2% survival, Del Puerto Creek near Cox Road – 0% survival and Del Puerto Creek at Highway 33 – 81.2% survival). Samples from sites with less than 50% survival were tested for selected pesticides including chlorpyrifos and pyrethroids. **Table 9** summarizes the detected pesticide data at those four sites. See **Appendix C** for the full laboratory report. **Table 10** shows the sediment toxicity results since March 2005.

Table 9: Detected Pesticides in Sediment Samples (September 2011)

	Hospital Creek	Ingram Creek	Westley Wasteway	Del Puerto Creek nr. Cox Rd.
Sediment Toxicity (% survival)	0	0	41.2	0
Percent Solids (%)	98	97	94	98
Bifenthrin (µg/kg)	1.4	1.1	7.2	11.8
Chlorpyrifos (µg/kg)	0.88	0.34j	0.54	11.1
Cyfluthrin (µg/kg)	ND	ND	2.6	ND
Cypermethrin (µg/kg)	ND	ND	ND	0.39
Es/Fenvalerate (µg/kg)	0.24j	1.6	9.6	2.7
Lambda-Cyhalothrin (µg/kg)	10.7	15.9	6.7	10.8
Permethrin (µg/kg)	ND	0.98	0.99	0.41
Total Organic Carbon (mg/kg)	2,800	5,400	12,300	9,800

Details of the sediment pesticide analyses are in **Attachment 4.**

Table 10: Sediment Toxicity Results

Site	Sept 10 % Survival	Sept 10 Toxicity (Y/N)	March 10 % Survival	March 10 Toxicity (Y/N)	Sept 09 % Survival	Sept 09 Toxicity (Y/N)	Mar 09 % Survival	Mar 09 Toxicity (Y/N)
Blewett Drain (Vernalis at hwy 132)							18.8	**Y**
Hospital Creek	0	**Y**	77.5	**Y**	10	**Y**	0	**Y**
Ingram Creek	0	**Y**	35	**Y**	0	**Y**	18.8	**Y**
Westley Wasteway	41.2	**Y**	N/A	N/A	92.5	N	82.5	**Y**
Del Puerto Creek (Cox Rd)	0	**Y**	77.5	**Y**	13.8	**Y**	97.5	N
Del Puerto Creek (Hwy 33)	81.2	**Y**	92.5	N	N/A	N/A	97.5	N
Orestimba Creek at River Rd.	95	N	96.2	N	87.5	N	91.2	**Y**
Orestimba Creek at Hwy 33	93.8	N	90	N	80	N	88.8	**Y**
Ramona Lake at Fig Ave.	92.5	N	93.8	N	92.5	N	97.5	N
Newman Wasteway	97.5	N	93.8	N	98.8	N	98.8	N
Poso Slough							N/A	N/A
Turner Slough								
SJR at Lander								
Salt Slough at Lander								
Salt Slough at Sand Dam								
Los Banos Creek at Hwy 140								
Los Banos Creek at China Camp Rd.	98.8/96.2	N	95	N	96.2	N	97.5	N
Los Banos Creek at Sunset Ave.			96.2	N				
Mud Slough								

Site	Sept 08 % Survival	Sept 08 Toxicity (Y/N)	Mar 08 % Survival	Mar 08 Toxicity (Y/N)	Sept 07 % Survival	Sept 07 Toxicity (Y/N)	Mar 07 % Survival	Mar 07 Toxicity (Y/N)
Blewett Drain (Vernalis at hwy 132)	16.2	**Y**						
Hospital Creek	25	**Y**	80	**Y**	16.2	**Y**	0	**Y**
Ingram Creek	0	**Y**	2.5	**Y**	0	**Y**	0	**Y**
Westley Wasteway	1.25	**Y**	65	**Y**	0	**Y**	0	**Y**
Del Puerto Creek (Cox Rd)	62.5	**Y**	N/A	N/A	93.8	N	81.2	**Y**
Del Puerto Creek (Hwy 33)	N/A	N/A	N/A	N/A	58.8	**Y**	91.2	**Y**
Orestimba Creek at River Rd.	80	N	95	N	98.8	N	90	N
Orestimba Creek at Hwy 33	92.5	N	90	N	95	N	13.8	**Y**
Ramona Lake at Fig Ave.	98.8	N	68.8	**Y**	91.2	**Y**	N/A	N/A
Newman Wasteway	82.5	**Y**	97.5	N	51.2	**Y**	93.8	N
Poso Slough	72.5	**Y**	98.8	N				
Turner Slough					92.5	N	96.2	N
SJR at Lander					95	N	90	**Y**
Salt Slough at Lander					86.2	N	96.2	N
Salt Slough at Sand Dam					92.5	N	96.2	N
Los Banos Creek at Hwy 140					87.5	N	96.2	N
Los Banos Creek at China Camp Rd.	87.5	**Y**	92.5	N	13.8	**Y**	98.8	N
Los Banos Creek at Sunset Ave.								
Mud Slough					90	N	96.2	N

Site	Sep 06 % Survival	Sep 06 Toxicity (Y/N)	Mar 06 % Survival	Mar 06 Toxicity (Y/N)	Oct 05 % Survival	Oct 05 Toxicity (Y/N)	Mar 05 % Survival	Mar 05 Toxicity (Y/N)
Blewett Drain (Vernalis at hwy 132)								
Hospital Creek	**1.25**	**Y**	**82.5**	**Y**	**0**	**Y**	**16.2**	**Y**
Ingram Creek	**0**	**Y**	**23.8**	**Y**	**0**	**Y**	**32.5**	**Y**
Westley Wasteway	**1.25**	**Y**	**0**	**Y**	**0**	**Y**	**0**	**Y**
Del Puerto Creek (Cox Rd)	**55**	**Y**	**0**	**Y**	**1.3**	**Y**	N/A	N/A
Del Puerto Creek (Hwy 33)	**1.25**	**Y**	**68.8**	**Y**	**0**	**Y**	**0**	**Y**
Orestimba Creek at River Rd.	96.25	N	97.5	N	93.8	N	**51.2**	**Y**
Orestimba Creek at Hwy 33	**6.25**	**Y**	66.3	N	**32.5**	**Y**	N/A	N/A
Ramona Lake at Fig Ave.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Newman Wasteway	98.75	N	90	N	**76.3**	**Y**	**72.5**	**Y**
Poso Slough								
Turner Slough	98.75	N	91.3	N	95	N	85	N
SJR at Lander	95	N	N/A	N/A	97.5	N	91.2	N
Salt Slough at Lander	97.5	N	100	N	98.8	N	**62.5**	**Y**
Salt Slough at Sand Dam	98.75	N	95	N	91.3	N	87.5	N
Los Banos Creek at Hwy 140	98.75	N	95	N	97.5	N	**56.2**	**Y**
Los Banos Creek at China Camp Rd.	100	N	93.8	N	**91.3**	**Y**	**58.8**	**Y**
Los Banos Creek at Sunset Ave.								
Mud Slough	100	N	98.8	N	97.5	N	**76.2**	**Y**

Pesticide Analyses.
Only five different pesticides were detected in water samples during the 2010/11 non-irrigation season for a total of 45 detections. Thirteen of these detections (29%) were below the reporting limit and 10 (22%) were legacy pesticides that are no longer in use (DDT, DDE, and DDD). With the exception of chlorpyrifos, all of the current use detected pesticides were herbicides.

- Chlorpyrifos (2 detections): Chlorpyrifos is a common 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. Chlorpyrifos use during this reporting season likely occurred on field and forage crops (corn, cotton, alfalfa) in the fall and as dormant sprays on fruit and nut trees in the mid to late winter.
- DDT/DDD/DDE (2 DDT detections, 7 DDE detections, and 1 DDD detection): 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 at relatively low levels. DDE and DDD have no commercial use but are compounds normally associated with the degradation of DDT.
- Diuron (25 detections): Diuron is a substitute urea herbicide used to control weeds in a variety of field crops including cotton, alfalfa, walnuts and wheat. It is also effective in controlling algae.
- Prowl (6 detections): Prowl is a herbicide used to control broadleaf and grassy weeds and is approved for a variety of crops including cotton, field corn, beans, rice, and vineyards.
- Simazine (2 detection): Simazine is a triazine herbicide used to control broadleaf weeds and annual grasses in a variety of field crops.

Exceedances of Recommended Water Quality Values.
Water chemistry analyses were compared to recommended water quality values[2] (RWQV). **Attachment 5** tabulates all of the RWQV exceedances for the reporting period by site.

- **Field, General Physical and Drinking Water Quality Exceedances.** Comparisons were made to several RWQVs. **Attachment 5** tabulates the results for these constituents and the comparison to the RWQVs. The Westside Coalition performed analyses or observed almost 3,150 field and chemistry (non-pesticide) parameters during the reporting period, during which, 218 (7%) results were greater than the RWQVs. Electrical conductivity and total dissolved solids (TDS) accounted for 67 and 71 of these exceedances (respectively, approximately 63% of the exceedances, combined). E. coli results accounted for 54 of these exceedances, 11 for boron and 9 for dissolved oxygen. The RWQV for cadmium, copper, lead, nickel, and zinc are dependant on site water hardness and is a calculated value. None of the dissolved metals exceeded the calculated RWQV. Potential causes for EC/TDS, E. coli, DO, and boron exceedances are discussed below.
    - **EC/TDS.** Electrical Conductivity and TDS are measures of the amount of salts dissolved in the water column. There are a variety of sources of salts that may be contributing to these results including natural marine sediments,

[2] Water Quality Limits were provided by the Central Valley Regional Water Quality Control Board as part of the MRP Order. Water quality limits for cadmium, copper, lead, nickel and zinc are calculated from equations provided by the Central Valley Regional Water Quality Control Board.

accretion of shallow/perched ground water, and the irrigation source water. Additionally, the many growers to rely on wells to supplement surface water supplies. Most of the groundwater wells within the Westside Coalition are more saline than the surface water sources.

- **E. coli.** E. coli is a measurement of bacteria in the water column. The Westside Coalition has participated in a study to attempt to identify the source of these exceedances. The preliminary results were not conclusive, however human sources were identified as the possible cause for at least some of the exceedances. There is also some suspicion that E. coli colonies have become self-sustaining within some watersheds. The Westside Coalition's Management Plan, approved November 18, 2008, discusses future activities related to the E. coli exceedances.
- **Dissolved Oxygen.** DO is measured through a field probe at the time of sample collection. By it's nature, DO is a highly variable and influenced by a variety of conditions including sunlight exposure (related to time of day), turbidity, biological growth and decay, and channel turbulence. The cause of the DO exceedances measured during this report period is not immediately clear, in many cases, a low DO measurement is accompanied with no flow – indicating that the water is stagnant. As part of the Management Plan, the Westside Coalition has reviewed DO exceedances from historic data.
- **Boron.** Boron is a metal element commonly found in soils on the Westside of the San Joaquin Valley. It is not applied by growers for any agricultural purpose but may be dissolved in tail water, storm runoff, subsurface flows, or groundwater supplies.

The number and type of field and general chemistry exceedances was not dramatically different than those of prior years.

- **Pesticide exceedances.** The Westside Coalition tested for more than 3,100 pesticides during the reporting period, 98% of which resulted in no detection. Of the detected pesticides (45), 20 were greater than established RWQVs. Of the 20 exceedances, 10 were caused by legacy pesticides (DDT, DDE, and DDD), which are not currently in use. Of the remaining 10, two were caused by chlorpyrifos, and eight by diuron.

  Compared to the previous irrigation season, there were significantly fewer pesticides detected during this reporting period. The 2009/10 non-irrigation season monitoring detected 95 pesticides and 32 exceedances. Of the 32 exceedances 11 were current use insecticides (including seven chlorpyrifos exceedances).

SECTION 9: ACTIONS TAKEN TO ADDRESS WATER QUALITY IMPACTS – MANAGEMENT PLAN ACTIVITIES

In October 2008, the Westside Coalition submitted a Management Plan and Focused Watershed Plan (Focused Plan) which described the actions that would be taken to address the water quality issues identified by the monitoring program. The Management Plan described a general approach that covered all of the subwatersheds within the Westside Coalition. Focused Plans

have been developed for specific issues within Hospital Creek, Ingram Creek, Del Puerto Creek, Westley Wasteway and Orestimba Creek. The Westside Coalition is currently developing a Focused Plan for the Salt Slough watershed (including Poso Slough). **Table 11** shows the implementation schedule listed in the Management Plan (see the Management Plan – General Approach, Table 4, October 23, 2008). In addition to these actions, the Westside Coalition reviews exceedances over the past three years to determine what modifications (if any) need to be made to the Management or Focused plans. A tally of exceedances from March 2008 through March 2011 is included in **Attachment 6**, along with a more detailed review of Management Plan activities.

Table 11: Management Plan Implementation Schedule

Item	Action	Affecting	Estimated Start	Estimated Completion
1	Continue monitoring program	All Categories	On-going	On-going
2	Develop and implement Focused Plan	Site-specific	July 2008	2013
3	Compile MP inventory	All Categories	Jan. 2009	Nov. 2009
4	Develop subwatershed maps	All Categories	On-going	Jan. 2013
5	Determine regional pesticide application	Pesticides, aquatic toxicity	On-going	Annually updated
6	Continue participation in the Dissolved Oxygen study	Dissolved Oxygen	On-going	On-going
7	Analyze results of E. coli study and map/inventory potential sources	E. coli	Sept. 2007	Jan. 2010
8	Continue outreach and education efforts	All Categories	On-going	On-going
9	Analyze for correlation between low DO and other parameters	Dissolved Oxygen	Sept. 2008	June 2009
10	Continue participation in the Salinity TMDL Program	EC/TDS	On-going	On-going
11	Track changes in water quality	All Categories	On-going	On-going

1. Continue Monitoring Program.

This semi-annual monitoring report represents the 13th monitoring report submitted by the Westside Coalition since its inception in 2004. The monitoring program (as revised by the MRP Order) is designed to be a dynamic program that aggressively tracks known water quality issues and conducts broad assessment monitoring to identify new issues (see the MRP Order). The monitoring program is also designed to support the activities of the Management Plan and the Focused Watershed plans. The results of the monitoring program are reported twice annually (June and November).

2. Develop and Implement Focused Watershed Plan.

A Focused Plan for the Ingram and Hospital Creek watersheds was developed and submitted to the Regional Board on October 23, 2008 followed by a Focused Plan for the Westley Wasteway, Del Puerto Creek, and Orestimba Creek in February 2011. The Westside Coalition is in the process of developing a Focused Plan for the Salt Slough watershed (including Poso Slough), which is expected to be submitted during the Summer of 2011. Since that time, the Westside Coalition has implemented a number of activities. A detailed update of the focused plan activities is included in **Attachment 6.**

3. Compile Management Practice Inventory.
A management plan survey for the Ingram and Hospital creek watersheds was completed in 2010. A new survey for the Del Puerto Creek, Westley Wasteway, and Orestimba Creek watersheds was distributed during the Fall of 2010 and 100% of the circulated surveys have been received. See **Attachment 6**.

4. Develop Subwatershed Maps.
The Westside Coalition submitted subwatershed maps for the major watersheds within its boundaries in 2008. These maps were based on known drainage patterns and available mapping information. As part of the focused plans, the Westside Coalition collected highly detailed drainage information on the Ingram and Hospital creek subwatersheds. Draft maps for the Westley Wasteway, Del Puerto Creek, Orestimba Creek, and Salt Slough subwatersheds have been developed and will be updated as more detailed information becomes available. **See Attachment 6**.

5. Determine Regional Pesticide Use.
Pesticide use report data is collected from the agricultural commissioners in the various counties occupied by the Westside Coalition. Data for the complete 2010/11 non-irrigation season is not available and use trends from the previous season was used to develop the data presented in **Tables 7** and **8** of this report. In addition to general trends analysis, specific regional pesticide use data is periodically reviewed to attempt to compare with pesticide detections through the monitoring program. Limitations with pesticide use reporting data completeness and availability limit the usefullnes of this data for that purpose.

6. Continue Participation in the Dissolved Oxygen Study.
On January 27, 2005 the Central Valley Regional Water Quality Control Board adopted Resolution R5-2005-0005 which included a TMDL directed to the point and non-point discharges that contribute to the dissolved oxygen impairment in the Stockton deepwater Ship Channel (DO TMDL). As part of the DO TMDL certain studies were required. The San Joaquin Valley Drainage Authority received funds from the State Water Resources Control Board to undertake these studies (Recipient Agreement ERP-02D-P63). These studies were completed in June of 2008. The project established a series of monitoring stations, developed a DO model, characterized the fate of algae and nutrients, developed linkages between flow, algae, nutrients and dissolved oxygen. Additional studies were proposed to connect the results of this effort to downstream impacts. This work is ongoing. The Westside Coalition has maintained the monitoring sites within boundaries of the Westside Coalition to maintain the data availability. The Westside Coalition also is prepared to continue to participate in the DO TMDL as further actions are developed.

7. Analyze results of E. coli study and map/inventory potential sources.
In 2007 the Westside Coalition, along with other coalitions, participated in a study to help determine the possible cause of various E. coli exceedances. Although the study was not completely conclusive, it indicated that the majority of E. coli bacteria were likely human in origin. As part of the focused plan, the management practice inventory surveys will collect information on manure usage and locations of known septic systems. The Westside Coalition is

also in the process of mapping rural residences within the subwatershed. It is assumed that rural residences will have septic systems that could potentially leach into creeks and drains.

Additionally, the Westside Coalition reviewed collected data on E. coli results for the period of 2008 through 2010 for all sites and provided a summary of this data in the November 2010 SAMR. Currently there is insufficient data to suggest any real trend or source for E. coli.

8. Continue Reporting and Outreach.

Coalition outreach during this period consisted of a Pest Control Advisors / Certified Crop Advisor meetings, monthly updates to the Westside Coalition management committee and one on one meetings with coalition members. A Coalition update newsletter written for an August 2011 grower meeting was also distributed at the meeting. Outreach was conducted per the tabulation in **Table 12**.

During this reporting period, a meeting targeting PCAs and CCAs was held in the region on November 9 at the Westley Fire Station (several grower members also attended). This event was held to crop advisors and members on the water quality exceedances from the summer months in the northern Coalition region and to raise awareness of the upcoming winter dormant orchard spray season. Presentations included updates on water and sediment monitoring results in each of the watersheds with focus on the July 2010 results which showed numerous exceedances of chlorpyrifos. Also reviewed was management plans for priority watersheds (Ingram and Hospital Creeks). A presentation on management practices focused on the latest information on BMP studies conducted in the region as well as other BMPs applicable to manage sediment and pesticide runoff. Crop advisors were encouraged to discuss with their growers who had irrigation drainage to adopt practices to protect surface water which include a number of options based on their crop and farming conditions. Those practices include irrigation drainage return systems, sediment ponds for containing irrigation drainage, managed vegetation in drainage ditches and use of PAM in irrigation water. Also reviewed was new proposed groundwater regulations under the Long Term Irrigated Lands Program

During this reporting period, a Consultant (CURES) from the Westside Coalition continued holding meeting with individual landowners with farming operations along Ingram, Hospital and Orestimba Creeks. In those meetings was discussed the pesticide and sediment problems identified in the waterways. Also potential mitigation practices that could be used to solve the problems including use of PAM in irrigation water, holding drainage water in sediment ponds or recirculating drainage water to other fields. Also discussed was potential funding sources available to assist in installing or maintaining the practices including funds provided by the Westside Coalition and AWEP funds from Natural Resources Conservation Service.

Table 12 lists the general grower and individual landowner outreach meetings held in the reporting period for Ingram, Hospital, Orestimba, Del Puerto Creeks watersheds and local stakeholder meetings where Coalition information/updates were provided by Westside Coalition Staff and CURES. Agendas and handouts for outreach meeting are included below.

Table 12: Outreach Meetings

Date	Group	Location	Description	Approximate Attendance
Monthly	Meetings of Coalition Steering Committee	Los Banos	Review monitoring, budgeting and management plan implementation	20
9/2/10	Individual Operator Tailgate Meeting	Westley	Discussed BMP options for orchards draining into Hospital Creek	2
9/8/10	West Stanislaus Resource Conservation District mtg	Patterson	Update on pesticide exceedances; BMP grant funding availability	10
9/17/10	Pest Control Advisor lunch meeting	Westley	Update on pesticide exceedances in July; discussed BMP options for orchards draining into Hospital Creek	5
9/21/10	Individual Grower Meeting (3)	Westley	Discussed BMP options for row crop fields draining into Hospital Creek	6
10/5/10	Individual Grower Meeting	Westley	Discussed BMP options for row crop, orchards draining into Orestimba Creek	2
11/9/10	PCA/CCA grower meeting	Westley	Discussed BMP options for row crop fields draining into Ingram, Hospital, Westside Coalition creeks Creek, San Joaquin River	35
11/10/10	West Stanislaus Resource Conservation District meeting	Patterson	Update on pesticide exceedances; individual grower meeting status	10
1/18/11	Individual Landowner Meeting	Westley	Discussed BMP options for row crop fields draining into Ramona Lake/San Joaquin River	2
1/28/11	Individual Landowner Meeting	Westley	Discussed BMP options for row crop fields draining into Ramona Lake/San Joaquin River	4
2/7/11	Individual Landowner Meeting	Westley	Discussed BMP options for row crop fields draining into Ramona Lake/San Joaquin River	2
2/18/11	Individual Landowner Meeting	Westley	Discussed BMP options for row crop fields draining into Ramona Lake/San Joaquin River	2

In both general grower meetings and individual member meetings, landowners and operators with irrigation drainage are encouraged to adopt practices to protect surface water that include a number of options based on their crop and farming conditions. Those practices include irrigation drainage return systems, sediment ponds for containing irrigation drainage, managed vegetation

in drainage ditches and use of PAM in irrigation water. The Coalition has collaborated with work in priority watersheds also continued in the reporting period with continuation of mapping parcels adjacent to Ingram, Hospital and Orestimba Creeks, identifying crops grown in the watersheds and scheduling individual meetings with growers who may have used pesticides associated with the exceedances in the waterways. A number of growers with parcels along Ingram and Hospital Creeks were contacted and scheduled for individual meetings that began in March 2010 and continue into 2011. In preparation for the meetings, pesticide use information from the Stanislaus County Agricultural Commissioners office is compiled and examined to see if use reports could be correlated to exceedances in the waterways. Due to the method of reporting pesticide applications based on Township, Section and Range (TSR) versus Assessor Parcels Numbers (APN) used to identify member parcels, exact correlations were not possible in many cases. However, the effort enables the Coalition to focus its resources on identifying the sources of agricultural discharge within the priority subwatersheds that could lead to water quality impairments.

Grant Funding

The Westside Coalition continued to offer grant funding in 2010 to its members totaling more $30,000 for construction of new tailwater silt ponds or to maintain existing ponds. The program funds 75% of the costs of any single project, up to a maximum of $6,000 per project. Two projects was funded this winter affecting 350 acres in the Del Puerto Creek subwatershed.

Shortly before the reporting period began (August 14) was the deadline for the third round of funding for the USDA Agricultural Water Enhancement Program (AWEP), a program managed by the Natural Resource Conservation Service. This round is part of the USDA program that began in August 2009 that provides up to $2 million annually in grants though 2014 for projects intended to improve water quality in waterways in Stanislaus and Merced counties. Numerous Westside Coalition members were reportedly selected to receive funds (USDA does not release information on recipients of funds). The Coalition was a collaborator on the funding application to USDA developed by CURES, who is assisting with grower outreach in the Westside Coalition and other regions on AWEP funding availability throughout the 5-year grant period. High priority projects to be funded by AWEP include conversion to drip irrigation, adding irrigation drainage sediment basins and irrigation tailwater recirculation systems as well as other water quality related practices installed on fields currently draining into the waterways. Larger community (multi-farm/group project) systems can also be funded. The payment rate is approximately 50% of the statewide average cost for an installation. Growers who operate along any waterway in the Westside Coalition region were eligible for funding. One landowner along Hospital Creek was considered “high priority” during the application process and received funding under the program to install drip irrigation in fields previously with a furrow system and irrigation drainage. The conversion to drip irrigation eliminated the irrigation drainage from those fields.

9. Analyze for Correlation Between Low DO and Other Parameters.

The Westside Coalition has performed a preliminary review of the low DO measurements and other data. A summary of this review was included in the November 2009 Semi-Annual Monitoring Report.

10. Continue Participation in the Salinity TMDL Program.
The Westside Coalition is actively engaged in the Central Valley Salinity Alternatives for Long-term Sustainability (CVSALTS) process and is an active member of the Central Valley Salinity Coalition that has been organized to facilitate the funding of the CVSALT effort. The Coalition's participation includes both monetary contributions and a substantial commitment of staff time.

Specific actions by the Westside Coalition to support the CVSALT efforts include: (1) Coalition representative's consistent participation in the CVSALT committees and sub-committees including serving as chair of the Economic and Social Impact Committee. (2) Consistent participation and economic contributions to the Central Valley Salinity Coalition, including representative serving as president of the CV Salinity Coalition. In addition the San Joaquin Valley Drainage Authority is providing contracting and contract administration services for the CVSALT effort. The Westside Coalition has committed to substantial resources to help ensure that the CVSALT effort results in an effective and efficient salinity management program for the Central Valley.

11. Track Changes in Water Quality.
Water quality changes are tracked through the Westside Coalition's monitoring program (see the MRP Order). Water quality data is reported and summarized twice annually.

Other Activities.

- **Regional Tailwater Return Systems:** As was reported in prior monitoring reports, a number of regional tailwater ponds and recirculation systems have been constructed recently in the Patterson Subarea of the Westside Coalition. These systems have shown significant impact in improving water quality in the receiving waterbody, but also increased water management flexibility. Two additional tailwater return system projects have been identified in the Ingram and Hospital Creek watershed areas, and potential funding programs for these are being sought.

- **Conversion to high efficiency irrigation systems:** Several of the districts within the Westside Coalition have implemented grant and loan programs to assist growers in upgrading their irrigation systems. An update of growers converting to high-efficiency irrigation systems will be provided after the 2011 irrigation season. The benefits of high-efficiency irrigation systems were described in the November 2010 SAMR.

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 5**. 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. The Management Plan and Focused Watershed Plan also outline approaches that will be implemented

to address the highlighted issues. A number of preliminary conclusions can be made from the data collected so far:

- **Sediment Toxicity:** Sediment toxicity tests were performed on 10 samples collected in September (Event 71). Significant toxicity was measured at four sites (See **Tables 9** and **10**). These samples were tested for a variety of pesticides as well as total organic carbon (TOC) and percent solids, the results of which were compared to literature values for the purpose of determining the probable cause of toxicity in each sample.

    - Hospital Creek: likely causes of toxicity were lambda-cyhalothrin (8.32 toxic units) and bifenthrin (0.82 toxic units). Other detected pesticides (including chlorpyrifos) had low toxic units and would have a negligible effect on sample toxicity.
    - Ingram Creek: likely causes of toxicity were lambda-cyhalothrin (6.4 toxic units) and bifenthrin (0.38 toxic units). Other detected pesticides (including chlorpyrifos) had low toxic units and would have a negligible effect on sample toxicity.
    - Westley Wasteway: likely causes of toxicity were lambda-cyhalothrin (1.1 toxic units), bifenthrin (1.1 toxic units) and esfenvalerate (0.48 toxic units). Other detected pesticides (including chlorpyrifos) had low toxic units and would have a negligible effect on sample toxicity.
    - Del Puerto Creek: likely cases of toxicity were lambda-cyhalothrin (2.4 toxic units), bifenthrin (2.3 toxic units), and chlorpyrifos (6.3 toxic units). Other detected pesticides had low toxic units and would have a negligible effect on sample toxicity.

Lambda-cyhalothrin and bifenthrin are pyrethroids used on a variety of crops and are also common in commercial and residential applications. Pesticide use data for Stanislaus County (2010 irrigation season) show several applications of lambda-cyhalothrin within the four affected subwatersheds for a variety of crops including: alfalfa, apricots, almonds, tomatoes, and walnuts. There were no reported agricultural uses of binfenthrin within the portion of the Westside Coalition in Stanislaus County for the 2010 irrigation season. Esfenvalerate is a pyrethroid used on a variety of fruit and nut crops. There were nine reported applications of esfenvalerate within the Westley Wasteway subwatershed during the 2010 irrigation season for tomatoes, almonds, apricots, and cherries.

Chlorpyrifos is an organophosphate insecticide used on a variety of crops. Chlorpyrifos is one of the few organophosphate pesticides with the tendency to bind with suspended sediment and contributing to sediment toxicity. During the 2010 irrigation season, chlorpyrifos applications within the Del Puerto Creek subwatershed were reported on alfalfa and walnuts a total of three times.

The Westside Coalition believes the best way to reduce sediment toxicity will be through the management of sediment discharges at the farm level. Sedimentation ponds and tailwater return ponds, along with grower awareness of the issue will likely reduce the amount of sediment load leaving the farm and depositing in the waterways. The

Coalition's Management Plan and Focused Watershed Plan include management approaches to address sediment toxicity.

Figure 4 shows the number statistically significant observations during the Fall sediment sampling (which typically occurs in September). The Fall 2010 sediment results measured approximately the same number of observed toxicity as the previous year. Note also that the measured survival at Del Puerto Creek at Highway 33, although statistically significant, was greater than 80%. Fall measurements of statistically significant toxicity in 2009 and 2010 remain below the 2005-2008 trend.

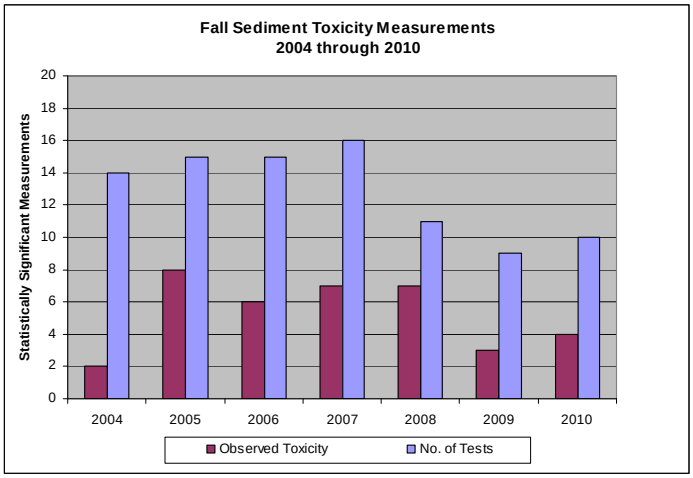


Figure 4: Fall Sediment Toxicity Measurements

- **Aquatic Toxicity:** During the non-irrigation season, samples were collected and tested for aquatic toxicity to *Ceriodaphnia dubia*, fathead minnow, and algae in accordance with the Monitoring Order at four sites during regular monthly sample collections (Mud Slough, Salt Slough at Lander Avenue, San Joaquin River at Lander Avenue, and Los Banos Creek at Highway 140), and at all flowing sites during rain events. There were two rain event sample collections during this report period, and a total of 158 aquatic toxicity tests were performed, including 18 field duplicates. A total of four incidences of statistically significant toxicity were observed during the two rain events – one for *Ceriodaphnia dubia* and three for algae. **Attachment 2** provides monitoring results for all of the sites that measured significant toxicity, including a discussion of the TIE and dilution series findings. Diuron was present in all of the results toxic to algae and likely contributed to the observed toxicity. The cause of the *Ceriodaphnia dubia* toxicity is not known. For comparison, during the 2009/10 non-irrigation season ten samples measured significant aquatic toxicity, of which four could be tied to pesticides.

- **Pesticide Analyses:** During this reporting period, total of five different pesticides were detected for a total of 45 detections. Twenty detections exceeded the established RWQV, however half of these exceedances were caused by legacy pesticides like DDT. During this report period, aquatic toxicity to algae was measured three times, all of which contained elevated levels of diuron in the sample. **Figure 5** shows the acres and types crops treated with diuron during the 2009/10 non-irrigation season.

  Diuron is a broad-spectrum herbicide commonly used by both agriculture and municipalities (for road-side weed control). Acreage data for right-of-way and other

municipal uses is not available. Pesticide use data for this report period is not yet available.

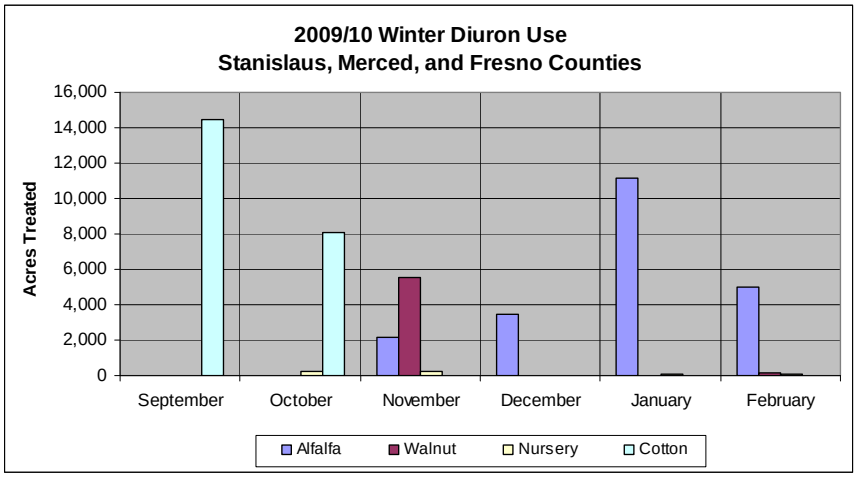


Figure 5: 2009/10 Non-Irrigation Season Diuron Use

- **Chlorpyrifos and Diazinon TMDL Program.** In addition to its monthly monitoring program, the Westside Coalition also participates in the San Joaquin River Chlorpyrifos and Diazinon TMDL program. The Westside Coalition collects water samples for chlorpyrifos and diazinon analysis at the San Joaquin River at Sack Dam, Lander Avenue, and Las Palmas Avenue (near the PID pumps) and collaborates with the Eastside Coalition in the development of the TMDL monitoring report and outreach activities.

- **General Chemistry and Field Observations:** The monitoring results for field and general chemistry tests were generally similar to previous non-irrigation seasons. EC/TDS measured the largest number of exceedances for this reporting period (67 and 71 exceedances, respectively). Bacteria continues to be a leading source of exceedances (54 for E. Coli during this period). Other constituent exceedances include dissolved oxygen (9 exceedances), and boron (11 exceedances). Dissolved cadmium, copper, lead, nickel, and zinc results were compared to the calculated RWQV (based on site water hardness) and no exceedances was measured during this reporting period. 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 or the Delta-Mendota Canal).

SECTION 10: 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 that there is a problem. Meetings are then to 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 15**).

SECTION 11: CONCLUSIONS AND RECOMMENDATIONS

The Westside Coalition's monitoring program has identified constituents of concern (see **Attachments 2** and **5**). The Westside Coalition has submitted a Management Plan and Focused Watershed Plan to address the water quality concerns discovered by previous monitoring. Implementation of these plans has begun.

The Westside Coalition monitoring program has accumulated data from 70 regular monitoring events and 10 rain events. Data from this reporting period has verified previously identified water quality issues but has also showed some indications of an improving trend in water quality (see **Section 9**). As part of the Management Plan submitted in 2008, the Westside Coalition developed a tally of exceedances by constituent for the data collected between July 2004 through August 2007 (approximately three years). In comparison with the same sites over the most recent three year period (March 2008 through February 2009), there are some promising improvements:

- Chlorpyrifos exceedances reduced by 17 and diazinon exceedances reduced by 13. Over the most recent three year period, only three diazinon exceedances have been measured.
- Measurement of sediment toxicity reduced by 16.
- E. coli exceedances reduced by 133.

A complete tally of exceedances by site and constituent is included in **Attachment 6**.

Attachment 1
Sampling Event Details

Event 71	Map	Caltest		APPL	PER				
September, 2010	Desig.	Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Cr at River Road	HCARR				x				
Ingram Cr at River Road	ICARR	x	x		x				
Westley Wasteway near Cox Road	WWNCR	x	x		x				
Del Puerto Cr near Cox Road	DPCCR	x	x		x				
Del Puerto Cr at Hwy 33	DPCHW				x				
Ramona Lake near Fig Avenue	ROLFA	x	x		x				
Marshall Road Drain near River Road	MRDRR	x	x						
Orestimba Cr at River Road	OCARR	x	x		x				
Orestimba Cr at Hwy 33	OCAHW				x				
Newman Wasteway near Hills Ferry Road	NWHFR	x	x		x				
San Joaquin River at Lander Avenue	SJRLA	x	x	x		x		x	
Mud Slough u/s San Luis Drain	MSUSL	x	x	x		x			
Salt Slough at Lander Avenue	SSALA	x	x	x		x		x	
Salt Slough at Sand Dam	SSASD								
Los Banos Creek at Highway 140	LBCHW	x	x	x		x			
Los Banos Creek at China Camp Road	LBCCC	x	x		x				
Turner Slough near Edminster Road	TSAER	x	x						
Blewett Drain near Highway 132	VH132	**No Flow**							
Poso Slough at Indiana Avenue	PSAIA	x	x						
Los Banos Creek at Sunset Ave	LBCSA	**No Flow**							
Little Panoche Cr at Western Boundary	LPCWB	**No Flow**							
Little Panoche Cr at San Luis Canal	LPCSL	**No Flow**							
Russell Ave. Drain at San Luis Canal	RADSL	**No Flow**							
San Joaquin River at Sack Dam	SJRSD	x	x	x					
San Joaquin River at PID Pumps	SJRPP	x	x	x					
Delta Mendota Canal at Del Puerto WD	DMCDP	x	x	x					

Event 72	Map	Caltest		APPL	PER				
October, 2010	Desig.	Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Cr at River Road	HCARR								
Ingram Cr at River Road	ICARR	x	x						
Westley Wasteway near Cox Road	WWNCR	x	x						
Del Puerto Cr near Cox Road	DPCCR	x	x						
Del Puerto Cr at Hwy 33	DPCHW								
Ramona Lake near Fig Avenue	ROLFA	x	x						
Marshall Road Drain near River Road	MRDRR	**No Flow**							
Orestimba Cr at River Road	OCARR	**No Flow**							
Orestimba Cr at Hwy 33	OCAHW								
Newman Wasteway near Hills Ferry Road	NWHFR	x	x						
San Joaquin River at Lander Avenue	SJRLA	x	x	x		x		x	
Mud Slough u/s San Luis Drain	MSUSL	x	x	x		x			
Salt Slough at Lander Avenue	SSALA	x	x	x		x		x	
Salt Slough at Sand Dam	SSASD								
Los Banos Creek at Highway 140	LBCHW	x	x	x		x			
Los Banos Creek at China Camp Road	LBCCC	x	x						
Turner Slough near Edminster Road	TSAER	x	x						
Blewett Drain near Highway 132	VH132	x	x						
Poso Slough at Indiana Avenue	PSAIA	x	x						
Los Banos Creek at Sunset Ave	LBCSA	**No Flow**							
Little Panoche Cr at Western Boundary	LPCWB	**No Flow**							
Little Panoche Cr at San Luis Canal	LPCSL	**No Flow**							
Russell Ave. Drain at San Luis Canal	RADSL	**No Flow**							
San Joaquin River at Sack Dam	SJRSD	x	x	x					
San Joaquin River at PID Pumps	SJRPP	x	x	x					
Delta Mendota Canal at Del Puerto WD	DMCDP	x	x	x					

Event 73	Map	Caltest		APPL	PER				
November, 2010	Desig.	Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Cr at River Road	HCARR								
Ingram Cr at River Road	ICARR	x	x						
Westley Wasteway near Cox Road	WWNCR	**No Access**							
Del Puerto Cr near Cox Road	DPCCR	x	x						
Del Puerto Cr at Hwy 33	DPCHW								
Ramona Lake near Fig Avenue	ROLFA	x	x						
Marshall Road Drain near River Road	MRDRR	x	x						
Orestimba Cr at River Road	OCARR	**No Flow**							
Orestimba Cr at Hwy 33	OCAHW								
Newman Wasteway near Hills Ferry Road	NWHFR	x	x						
San Joaquin River at Lander Avenue	SJRLA	x	x	x		x		x	
Mud Slough u/s San Luis Drain	MSUSL	x	x	x		x			
Salt Slough at Lander Avenue	SSALA	x	x	x		x		x	
Salt Slough at Sand Dam	SSASD								
Los Banos Creek at Highway 140	LBCHW	x	x	x		x			
Los Banos Creek at China Camp Road	LBCCC	x	x						
Turner Slough near Edminster Road	TSAER	x	x						
Blewett Drain near Highway 132	VH132	**No Flow**							
Poso Slough at Indiana Avenue	PSAIA	x	x						
Los Banos Creek at Sunset Ave	LBCSA	**No Flow**							
Little Panoche Cr at Western Boundary	LPCWB	**No Flow**							
Little Panoche Cr at San Luis Canal	LPCSL	**No Flow**							
Russell Ave. Drain at San Luis Canal	RADSL	**No Flow**							
San Joaquin River at Sack Dam	SJRSD	x	x	x					
San Joaquin River at PID Pumps	SJRPP	x	x	x					
Delta Mendota Canal at Del Puerto WD	DMCDP	x	x	x					

Event 74	Map	Caltest		APPL	PER				
December, 2010	Desig.	Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Cr at River Road	HCARR								
Ingram Cr at River Road	ICARR	x	x						
Westley Wasteway near Cox Road	WWNCR	**No Access**							
Del Puerto Cr near Cox Road	DPCCR	x	x						
Del Puerto Cr at Hwy 33	DPCHW								
Ramona Lake near Fig Avenue	ROLFA	x	x						
Marshall Road Drain near River Road	MRDRR	**No Flow**							
Orestimba Cr at River Road	OCARR	x	x						
Orestimba Cr at Hwy 33	OCAHW								
Newman Wasteway near Hills Ferry Road	NWHFR	x	x						
San Joaquin River at Lander Avenue	SJRLA	x	x	x		x		x	
Mud Slough u/s San Luis Drain	MSUSL	x	x	x		x			
Salt Slough at Lander Avenue	SSALA	x	x	x		x		x	
Salt Slough at Sand Dam	SSASD								
Los Banos Creek at Highway 140	LBCHW	x	x	x		x			
Los Banos Creek at China Camp Road	LBCCC	x	x						
Turner Slough near Edminster Road	TSAER	x	x						
Blewett Drain near Highway 132	VH132	**No Flow**							
Poso Slough at Indiana Avenue	PSAIA	x	x						
Los Banos Creek at Sunset Ave	LBCSA	**No Flow**							
Little Panoche Cr at Western Boundary	LPCWB	**No Flow**							
Little Panoche Cr at San Luis Canal	LPCSL	**No Flow**							
Russell Ave. Drain at San Luis Canal	RADSL	**No Flow**							
San Joaquin River at Sack Dam	SJRSD	x	x	x					
San Joaquin River at PID Pumps	SJRPP	x	x	x					
Delta Mendota Canal at Del Puerto WD	DMCDP	x	x	x					

Rain Event 11	Map	Caltest		APPL	PER				
December 2010, January 2011	Desig.	Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Cr at River Road	HCARR	x	x	x		x	x	x	
Ingram Cr at River Road	ICARR	x	x	x		x	x	x	
Westley Wasteway near Cox Road	WWNCR	**No Access**							
Del Puerto Cr near Cox Road	DPCCR	x	x	x		x	x	x	
Del Puerto Cr at Hwy 33	DPCHW	x	x	x		x	x	x	
Ramona Lake near Fig Avenue	ROLFA	x	x	x		x	x	x	
Marshall Road Drain near River Road	MRDRR	x	x	x		x	x	x	
Orestimba Cr at River Road	OCARR	x	x	x		x	x	x	
Orestimba Cr at Hwy 33	OCAHW	x	x	x		x	x	x	
Newman Wasteway near Hills Ferry Road	NWHFR	x	x	x		x	x	x	
San Joaquin River at Lander Avenue	SJRLA	x	x	x		x	x	x	
Mud Slough u/s San Luis Drain	MSUSL	x	x	x		x	x	x	
Salt Slough at Lander Avenue	SSALA	x	x	x		x	x	x	
Salt Slough at Sand Dam	SSASD	x	x	x		x	x	x	
Los Banos Creek at Highway 140	LBCHW	x	x	x		x	x	x	
Los Banos Creek at China Camp Road	LBCCC	x	x	x		x	x	x	
Turner Slough near Edminster Road	TSAER	**No Access**							
Blewett Drain near Highway 132	VH132	**No Flow**							
Poso Slough at Indiana Avenue	PSAIA	x	x	x		x	x	x	
Los Banos Creek at Sunset Ave	LBCSA	**No Flow**							
Little Panoche Cr at Western Boundary	LPCWB	**No Flow**							
Little Panoche Cr at San Luis Canal	LPCSL	**No Flow**							
Russell Ave. Drain at San Luis Canal	RADSL	**No Flow**							
San Joaquin River at Sack Dam	SJRSD	x	x	x					
San Joaquin River at PID Pumps	SJRPP	x	x	x					
Delta Mendota Canal at Del Puerto WD	DMCDP	x	x	x					

Event 75	Map	Caltest		APPL	PER				
January, 2011	Desig.	Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Cr at River Road	HCARR								
Ingram Cr at River Road	ICARR	**No Flow**							
Westley Wasteway near Cox Road	WWNCR	x	x						
Del Puerto Cr near Cox Road	DPCCR	**No Flow**							
Del Puerto Cr at Hwy 33	DPCHW								
Ramona Lake near Fig Avenue	ROLFA	**No Access**							
Marshall Road Drain near River Road	MRDRR	**No Flow**							
Orestimba Cr at River Road	OCARR	x	x						
Orestimba Cr at Hwy 33	OCAHW								
Newman Wasteway near Hills Ferry Road	NWHFR	x	x						
San Joaquin River at Lander Avenue	SJRLA	x	x	x		x		x	
Mud Slough u/s San Luis Drain	MSUSL	x	x	x		x			
Salt Slough at Lander Avenue	SSALA	x	x	x		x		x	
Salt Slough at Sand Dam	SSASD								
Los Banos Creek at Highway 140	LBCHW	x	x	x		x			
Los Banos Creek at China Camp Road	LBCCC	x	x						
Turner Slough near Edminster Road	TSAER	x	x						
Blewett Drain near Highway 132	VH132	**No Flow**							
Poso Slough at Indiana Avenue	PSAIA	x	x						
Los Banos Creek at Sunset Ave	LBCSA	**No Flow**							
Little Panoche Cr at Western Boundary	LPCWB	**No Flow**							
Little Panoche Cr at San Luis Canal	LPCSL	**No Flow**							
Russell Ave. Drain at San Luis Canal	RADSL	**No Flow**							
San Joaquin River at Sack Dam	SJRSD	x	x	x					
San Joaquin River at PID Pumps	SJRPP	x	x	x					
Delta Mendota Canal at Del Puerto WD	DMCDP	x	x	x					

Event 76	Map	Caltest		APPL	PER				
February, 2011	Desig.	Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Cr at River Road	HCARR								
Ingram Cr at River Road	ICARR	**No Flow**							
Westley Wasteway near Cox Road	WWNCR	x	x						
Del Puerto Cr near Cox Road	DPCCR	x	x						
Del Puerto Cr at Hwy 33	DPCHW								
Ramona Lake near Fig Avenue	ROLFA	x	x						
Marshall Road Drain near River Road	MRDRR	**No Flow**							
Orestimba Cr at River Road	OCARR	x	x						
Orestimba Cr at Hwy 33	OCAHW								
Newman Wasteway near Hills Ferry Road	NWHFR	x	x						
San Joaquin River at Lander Avenue	SJRLA	x	x	x		x		x	
Mud Slough u/s San Luis Drain	MSUSL	x	x	x		x			
Salt Slough at Lander Avenue	SSALA	x	x	x		x		x	
Salt Slough at Sand Dam	SSASD								
Los Banos Creek at Highway 140	LBCHW	x	x	x		x			
Los Banos Creek at China Camp Road	LBCCC	x	x						
Turner Slough near Edminster Road	TSAER	x	x						
Blewett Drain near Highway 132	VH132	**No Flow**							
Poso Slough at Indiana Avenue	PSAIA	x	x						
Los Banos Creek at Sunset Ave	LBCSA	**No Flow**							
Little Panoche Cr at Western Boundary	LPCWB	**No Flow**							
Little Panoche Cr at San Luis Canal	LPCSL	**No Flow**							
Russell Ave. Drain at San Luis Canal	RADSL	**No Flow**							
San Joaquin River at Sack Dam	SJRSD	x	x	x					
San Joaquin River at PID Pumps	SJRPP	x	x	x					
Delta Mendota Canal at Del Puerto WD	DMCDP	x	x	x					

Rain Event 12	Map	Caltest		APPL	PER				
February, 2011	Desig.	Gen Phy	Drnk Wtr	Pest	Sed Tox	CD Tox	PP Tox	SC Tox	Dup?
Hospital Cr at River Road	HCARR	**No Flow**							
Ingram Cr at River Road	ICARR	**No Flow**							
Westley Wasteway near Cox Road	WWNCR	**No Access**							
Del Puerto Cr near Cox Road	DPCCR	x	x	x		x	x	x	
Del Puerto Cr at Hwy 33	DPCHW	x	x	x		x	x	x	
Ramona Lake near Fig Avenue	ROLFA	**No Flow**							
Marshall Road Drain near River Road	MRDRR	**No Flow**							
Orestimba Cr at River Road	OCARR	x	x	x		x	x	x	
Orestimba Cr at Hwy 33	OCAHW	x	x	x		x	x	x	
Newman Wasteway near Hills Ferry Road	NWHFR	x	x	x		x	x	x	
San Joaquin River at Lander Avenue	SJRLA	x	x	x		x	x	x	
Mud Slough u/s San Luis Drain	MSUSL	x	x	x		x	x	x	
Salt Slough at Lander Avenue	SSALA	x	x	x		x	x	x	
Salt Slough at Sand Dam	SSASD	x	x	x		x	x	x	
Los Banos Creek at Highway 140	LBCHW	x	x	x		x	x	x	
Los Banos Creek at China Camp Road	LBCCC	x	x	x		x	x	x	
Turner Slough near Edminster Road	TSAER	x	x	x		x	x	x	
Blewett Drain near Highway 132	VH132	**No Flow**							
Poso Slough at Indiana Avenue	PSAIA	x	x	x		x	x	x	
Los Banos Creek at Sunset Ave	LBCSA	**No Flow**							
Little Panoche Cr at Western Boundary	LPCWB	**No Flow**							
Little Panoche Cr at San Luis Canal	LPCSL	**No Flow**							
Russell Ave. Drain at San Luis Canal	RADSL	**No Flow**							
San Joaquin River at Sack Dam	SJRSD	x	x	x					
San Joaquin River at PID Pumps	SJRPP	x	x	x					
Delta Mendota Canal at Del Puerto WD	DMCDP	x	x	x					

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
Hospital Creek at River Road	12/21/2010	R11	Ceriodaphnia dubia	40	100	60%	%

Followup: TIE indicated that non-polar organic material(s) (pesticide) are likely the cause.

Field Data

DO	5.99	mg/l
EC	322	µmhos/cm
Est Depth		ft
Flow	0	cfs
pH	7.47	
Staff Gage	0.01	ft
Temp	12.82	c

Water Chemistry

Bromide	-0.01	ND	mg/L
Dissolved Organic Carbon	18		mg/L
E. coli	2400	>	MPN/100
Total Organic Carbon	18		mg/L
Dissolved Solids	470		mg/L
Hardness as CaCO3	130		mg/L
Suspended Solids	120		mg/L
Turbidity	95		NTU
Arsenic	8.4		µg/L
Boron	516		µg/L
Cadmium	0.12		µg/L
Cadmium (Dissolved)	0.04	DNQ	µg/L
Copper	39		µg/L
Copper (dissolved)	11		µg/L
Lead	11		µg/L
Lead (dissolved)	0.11	DNQ	µg/L
Nickel	45		µg/L
Nickel (dissolved)	4		µg/L
Selenium	0.26	DNQ	µg/L
Zinc	76		µg/L
Zinc (dissolved)	3		µg/L
Ammonia as N	0.32		mg/L
Nitrate + Nitrite as N	0.93		mg/L
Nitrogen, Total Kjeldahl	3		mg/L
OrthoPhosphate as P	1.1		mg/L
Phosphate as P	1.5		mg/L

Detected Pesticides

DDE(p,p')	0.017
Diuron	27
Prowl	1.2

DNQ = Estimated value, below reporting limit.
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	12/21/2010	R11	Selenastrum capricornutum	21,900	1,828,000	99%	cells/ml

Followup: Dilution series measured 4.29 toxic units. TIE indicated non-polar organic (pesticide) is likely the cause.

Field Data

DO	5.99	mg/l
EC	322	µmhos/cm
Est Depth		ft
Flow	0	cfs
pH	7.47	
Staff Gage	0.01	ft
Temp	12.82	c

Water Chemistry

Bromide	-0.01	ND	mg/L
Dissolved Organic Carbon	18		mg/L
E. coli	2400	>	MPN/100
Total Organic Carbon	18		mg/L
Dissolved Solids	470		mg/L
Hardness as CaCO3	130		mg/L
Suspended Solids	120		mg/L
Turbidity	95		NTU
Arsenic	8.4		µg/L
Boron	516		µg/L
Cadmium	0.12		µg/L
Cadmium (Dissolved)	0.04	DNQ	µg/L
Copper	39		µg/L
Copper (dissolved)	11		µg/L
Lead	11		µg/L
Lead (dissolved)	0.11	DNQ	µg/L
Nickel	45		µg/L
Nickel (dissolved)	4		µg/L
Selenium	0.26	DNQ	µg/L
Zinc	76		µg/L
Zinc (dissolved)	3		µg/L
Ammonia as N	0.32		mg/L
Nitrate + Nitrite as N	0.93		mg/L
Nitrogen, Total Kjeldahl	3		mg/L
OrthoPhosphate as P	1.1		mg/L
Phosphate as P	1.5		mg/L

Detected Pesticides

DDE(p,p')	0.017
Diuron	27
Prowl	1.2

DNQ = Estimated value, below reporting limit.
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	12/21/2010	R11	Selenastrum capricornutum	550,500	1,828,000	70%	cells/ml

Followup: TIE indicated that non-polar organic (pesticide) lilely the cause.

Field Data

DO	6.38	mg/l
EC	579	µmhos/cm
Est Depth		ft
Flow	0	cfs
pH	7.63	
Staff Gage	0.01	ft
Temp	12.27	c

Water Chemistry

Bromide	0.58	DNQ	mg/L
Dissolved Organic Carbon	8.3		mg/L
E. coli	2400	>	MPN/100
Total Organic Carbon	8		mg/L
Dissolved Solids	550		mg/L
Hardness as CaCO3	240		mg/L
Suspended Solids	91		mg/L
Turbidity	130		NTU
Arsenic	9.2		µg/L
Boron	636		µg/L
Cadmium	0.06	DNQ	µg/L
Cadmium (Dissolved)	0.01	DNQ	µg/L
Copper	15		µg/L
Copper (dissolved)	6.9		µg/L
Lead	6.4		µg/L
Lead (dissolved)	-0.071	ND	µg/L
Nickel	16		µg/L
Nickel (dissolved)	4.4		µg/L
Selenium	0.74	DNQ	µg/L
Zinc	27		µg/L
Zinc (dissolved)	2.7		µg/L
Ammonia as N	0.52		mg/L
Nitrate + Nitrite as N	7.1		mg/L
Nitrogen, Total Kjeldahl	1.8		mg/L
OrthoPhosphate as P	0.63		mg/L
Phosphate as P	0.76		mg/L

Detected Pesticides

DDE(p,p')	0.012
Diuron	8.5
Simazine	3.3

DNQ = Estimated value, below reporting limit.
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
Poso Slough at Indiana Ave	2/23/2011	R12	Selenastrum capricornutum	612,500	1,615,000	62%	cells/ml

Followup: TIE indicated dissolved, non-polar organic (pesticide) was likely the cause.

Field Data

DO	10.51	mg/l
EC	721	µmhos/cm
Est Depth	3.62	ft
Flow	57	cfs
pH	7.65	
Staff Gage	5.67	ft
Temp	11.37	c

Water Chemistry

Bromide	0.043	DNQ	mg/L
Dissolved Organic Carbon	7.5		mg/L
E. Coli	580		MPN/100m
Total Organic Carbon	7.1		mg/L
Dissolved Solids	470		mg/L
Hardness (as CACO3)	180		mg/L
Suspended Solids	64		mg/L
Turbidity	51		NTU
Arsenic	14		ug/L
Boron	231		ug/L
Cadmium	0.1	DNQ	ug/L
Cadmium (dissolved)	0.01	DNQ	ug/L
Copper	8.5		ug/L
Copper (dissolved)	3.4		ug/L
Lead	1.8		ug/L
Lead (dissolved)	-0.071	ND	ug/L
Nickel	8.6		ug/L
Nickel (dissolved)	2.8		ug/L
Zinc	16		ug/L
Zinc (dissolved)	1.2		ug/L
Ammonia as N	0.31		mg/L
Nitrate + Nitrite as N	8.5		mg/L
Nitrogen, Total Kjeldahl	1.2		mg/L
OrthoPhosphate as P	0.59		mg/L
Phosphate as P	0.64		mg/L

Detected Pesticides

Diuron	16
Prowl	0.94

DNQ = Estimated value, below reporting limit.
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 Blank

Analyte/Species	Type	Event	QC Code	FB	QC Code	Units	% Difference	
Sample Date: 9/16/2010 Site: Salt Slough at Lander Ave								
Ammonia as N	General Chemistry	0.19		-0.04	ND	mg/L	NA	
Boron	General Chemistry	621		1.4	DNQ	µg/L	0%	
Bromide	General Chemistry	1.4		-0.01	ND	mg/L	NA	
Copper	General Chemistry	2.3		-0.06	ND	µg/L	NA	
Copper (Dissolved)	General Chemistry	0.61		-0.06	ND	µg/L	NA	
Dissolved Organic Carbon	General Chemistry	6		0.29	DNQ	mg/L	5%	
Dissolved Solids	General Chemistry	780		-4	ND	mg/L	NA	
E. coli	General Chemistry	69		-1	ND	MPN/100 mL	NA	
Hardness as CaCO3	General Chemistry	300		-1.7	ND	mg/L	NA	
Nickel	General Chemistry	3.9		-0.01	ND	µg/L	NA	
Nickel (dissolved)	General Chemistry	1.7		0.02	DNQ	µg/L	1%	
Nitrate + Nitrite as N	General Chemistry	0.39		-0.02	ND	mg/L	NA	
Nitrogen, Total Kjeldahl	General Chemistry	0.38		-0.07	ND	mg/L	NA	
OrthoPhosphate as P	General Chemistry	0.12		-0.006	ND	mg/L	NA	
Phosphate as P	General Chemistry	0.26		-0.01	ND	mg/L	NA	
Suspended Solids	General Chemistry	50		-2	ND	mg/L	NA	
Total Organic Carbon	General Chemistry	6		0.26	DNQ	mg/L	4%	
Turbidity	General Chemistry	26		-0.03	ND	NTU	NA	
Zinc	General Chemistry	5.4		-0.8	ND	µg/L	NA	
Zinc (dissolved)	General Chemistry	-0.8	ND	1		µg/L	NA	*
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA	
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	ug/L	NA	
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA	
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA	
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA	
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA	
Diuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/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	
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA	
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA	
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA	
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA	
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA	
Sample Date: 10/12/2010 Site: Salt Slough at Lander Ave								
Ammonia as N	General Chemistry	0.16		-0.04	ND	mg/L	NA	
Boron	General Chemistry	599		1	DNQ	µg/L	0%	
Bromide	General Chemistry	0.24	DNQ	-0.01	ND	mg/L	NA	
Copper	General Chemistry	2.4		0.63		µg/L	26%	*
Copper (Dissolved)	General Chemistry	0.9		0.32	DNQ	µg/L	36%	*
Dissolved Organic Carbon	General Chemistry	5		0.66		mg/L	13%	
Dissolved Solids	General Chemistry	740		-4	ND	mg/L	NA	
E. coli	General Chemistry	100		-1	ND	MPN/100 mL	NA	
Hardness as CaCO3	General Chemistry	210		4.7	DNQ	mg/L	2%	
Nickel	General Chemistry	4.5		0.04	DNQ	µg/L	1%	
Nickel (dissolved)	General Chemistry	1.5		0.09	DNQ	µg/L	6%	
Nitrate + Nitrite as N	General Chemistry	0.33		0.11		mg/L	33%	*
Nitrogen, Total Kjeldahl	General Chemistry	0.74		-0.07	ND	mg/L	NA	
OrthoPhosphate as P	General Chemistry	0.1		-0.006	ND	mg/L	NA	
Phosphate as P	General Chemistry	0.26		-0.01	ND	mg/L	NA	
Suspended Solids	General Chemistry	65		-2	ND	mg/L	NA	
Total Organic Carbon	General Chemistry	5.1		0.14	DNQ	mg/L	3%	
Turbidity	General Chemistry	36		-0.03	ND	NTU	NA	
Zinc	General Chemistry	7.3		-0.8	ND	µg/L	NA	
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA	
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	ug/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
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	ug/L	NA
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA
Diuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA
Sample Date:	**11/9/2010**	**Site:**	**Salt Slough at Lander Ave**				
Ammonia as N	General Chemistry	0.15		-0.04	ND	mg/L	NA
Boron	General Chemistry	544		0.9	DNQ	µg/L	0%
Bromide	General Chemistry	0.13	DNQ	-0.01	ND	mg/L	NA
Copper	General Chemistry	2.7		-0.06	ND	µg/L	NA
Copper (Dissolved)	General Chemistry	0.77		0.07	DNQ	µg/L	9%

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
Dissolved Organic Carbon	General Chemistry	5.4		0.3	DNQ	mg/L	6%
Dissolved Solids	General Chemistry	710		-4	ND	mg/L	NA
E. coli	General Chemistry	580		-1	ND	MPN/100 mL	NA
Hardness as CaCO3	General Chemistry	250		6		mg/L	2%
Nickel	General Chemistry	4.5		-0.01	ND	µg/L	NA
Nickel (dissolved)	General Chemistry	1.5		0.02	DNQ	µg/L	1%
Nitrate + Nitrite as N	General Chemistry	0.61		0.03	DNQ	mg/L	5%
Nitrogen, Total Kjeldahl	General Chemistry	0.92		-0.07	ND	mg/L	NA
OrthoPhosphate as P	General Chemistry	0.1		-0.006	ND	mg/L	NA
Phosphate as P	General Chemistry	0.24		-0.01	ND	mg/L	NA
Suspended Solids	General Chemistry	52		-2	ND	mg/L	NA
Total Organic Carbon	General Chemistry	5.4		0.45	DNQ	mg/L	8%
Turbidity	General Chemistry	31		-0.03	ND	NTU	NA
Zinc	General Chemistry	6.9		-0.8	ND	µg/L	NA
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	ug/L	NA
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA
Diuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/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
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA
Sample Date: 12/14/2010 Site: Salt Slough at Lander Ave							
Ammonia as N	General Chemistry	0.25		-0.04	ND	mg/L	NA
Boron	General Chemistry	819		-0.47	ND	µg/L	NA
Bromide	General Chemistry	0.14	DNQ	-0.01	ND	mg/L	NA
Copper	General Chemistry	3		-0.06	ND	µg/L	NA
Copper (Dissolved)	General Chemistry	0.55		-0.06	ND	µg/L	NA
Dissolved Organic Carbon	General Chemistry	5.5		0.19	DNQ	mg/L	3%
Dissolved Solids	General Chemistry	970		-4	ND	mg/L	NA
E. coli	General Chemistry	260		-1	ND	MPN/100 mL	NA
Hardness as CaCO3	General Chemistry	320		-1.7	ND	mg/L	NA
Nickel	General Chemistry	4.4		-0.01	ND	µg/L	NA
Nickel (dissolved)	General Chemistry	1.4		0.04	DNQ	µg/L	3%
Nitrate + Nitrite as N	General Chemistry	0.43		-0.02	ND	mg/L	NA
Nitrogen, Total Kjeldahl	General Chemistry	0.82		-0.07	ND	mg/L	NA
OrthoPhosphate as P	General Chemistry	0.077		-0.006	ND	mg/L	NA
Phosphate as P	General Chemistry	0.26		-0.01	ND	mg/L	NA
Suspended Solids	General Chemistry	68		-2	ND	mg/L	NA
Total Organic Carbon	General Chemistry	5.7		0.19	DNQ	mg/L	3%
Turbidity	General Chemistry	32		-0.03	ND	NTU	NA
Zinc	General Chemistry	7.3		-0.8	ND	µg/L	NA
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	ug/L	NA
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/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
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA
Diuron	Pesticide	0.22	DNQ	-0.20	ND	ug/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA
Sample Date: 12/21/2010 Site: Salt Slough at Lander Ave							
Ammonia as N	General Chemistry	0.22		-0.04	ND	mg/L	NA
Arsenic	General Chemistry	3.3		-0.008	ND	µg/L	NA
Boron	General Chemistry	782		-0.47	ND	µg/L	NA
Bromide	General Chemistry	0.18	DNQ	-0.01	ND	mg/L	NA
Cadmium	General Chemistry	0.02	DNQ	-0.011	ND	µg/L	NA
Cadmium (dissolved)	General Chemistry	-0.011	ND	-0.011	ND	µg/L	NA
Copper	General Chemistry	2.3		-0.06	ND	µg/L	NA
Copper (Dissolved)	General Chemistry	0.78		0.13	DNQ	µg/L	17%
Dissolved Organic Carbon	General Chemistry	6.7		0.26	DNQ	mg/L	4%
Dissolved Solids	General Chemistry	750		-4	ND	mg/L	NA
E. coli	General Chemistry	980		-1	ND	MPN/100 mL	NA
Hardness as CaCO3	General Chemistry	260		-1.7	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
Lead	General Chemistry	0.69		-0.071	ND	µg/L	NA
Lead (Dissolved)	General Chemistry	-0.071	ND	-0.071	ND	µg/L	NA
Nickel	General Chemistry	4.3		0.02	DNQ	µg/L	0%
Nickel (dissolved)	General Chemistry	1.7		0.02	DNQ	µg/L	1%
Nitrate + Nitrite as N	General Chemistry	0.72		0.041	DNQ	mg/L	6%
Nitrogen, Total Kjeldahl	General Chemistry	0.83		-0.07	ND	mg/L	NA
OrthoPhosphate as P	General Chemistry	0.15		-0.006	ND	mg/L	NA
Phosphate as P	General Chemistry	0.32		0.019		mg/L	6%
Selenium	General Chemistry	0.51	DNQ	-0.06	ND	µg/L	NA
Suspended Solids	General Chemistry	41		-2	ND	mg/L	NA
Total Organic Carbon	General Chemistry	6.7		0.21	DNQ	mg/L	3%
Turbidity	General Chemistry	30		-0.03	ND	NTU	NA
Zinc	General Chemistry	5.5		-0.8	ND	µg/L	NA
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA
Aldicarb	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Carbaryl	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Carbofuran	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	ug/L	NA
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA
Diuron	Pesticide	0.60		-0.20	ND	ug/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/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
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Methiocarb	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Methomyl	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Oxamyl	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA
Sample Date:	**1/11/2011**	**Site:**	**Salt Slough at Lander Ave**				
Ammonia as N	General Chemistry	0.27		-0.04	ND	mg/L	NA
Arsenic	General Chemistry	2.9		-0.008	ND	µg/L	NA
Boron	General Chemistry	916		-0.47	ND	µg/L	NA
Bromide	General Chemistry	0.093	DNQ	-0.01	ND	mg/L	NA
Cadmium	General Chemistry	0.02	DNQ	-0.011	ND	µg/L	NA
Cadmium (dissolved)	General Chemistry	0.01	DNQ	-0.011	ND	µg/L	NA
Copper	General Chemistry	1.7		-0.06	ND	µg/L	NA
Copper (Dissolved)	General Chemistry	0.78		0.11	DNQ	µg/L	14%
Dissolved Organic Carbon	General Chemistry	7.4		0.29	DNQ	mg/L	4%
Dissolved Solids	General Chemistry	1000		-4	ND	mg/L	NA
E. coli	General Chemistry	32		-1	ND	MPN/100 mL	NA
Hardness as CaCO3	General Chemistry	330		8		mg/L	2%
Lead	General Chemistry	0.31		-0.071	ND	µg/L	NA
Lead (Dissolved)	General Chemistry	-0.071	ND	-0.071	ND	µg/L	NA
Nickel	General Chemistry	3		-0.01	ND	µg/L	NA
Nickel (dissolved)	General Chemistry	1.8		0.04	DNQ	µg/L	2%
Nitrate + Nitrite as N	General Chemistry	1		0.039	DNQ	mg/L	4%
Nitrogen, Total Kjeldahl	General Chemistry	0.87		-0.07	ND	mg/L	NA
OrthoPhosphate as P	General Chemistry	0.1		-0.006	ND	mg/L	NA
Phosphate as P	General Chemistry	0.24		-0.01	ND	mg/L	NA
Selenium	General Chemistry	0.38	DNQ	-0.06	ND	µg/L	NA
Suspended Solids	General Chemistry	44		-2	ND	mg/L	NA
Total Organic Carbon	General Chemistry	6.6		0.19	DNQ	mg/L	3%
Turbidity	General Chemistry	45		-0.03	ND	NTU	NA
Zinc	General Chemistry	3.3		-0.8	ND	µg/L	NA
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	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
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	ug/L	NA
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA
Diuron	Pesticide	0.36	DNQ	-0.20	ND	ug/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA
Sample Date:	**2/8/2011**	**Site:**	**Salt Slough at Lander Ave**				
Ammonia as N	General Chemistry	0.3		-0.04	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	
Boron	General Chemistry	598		-0.47	ND	µg/L	NA	
Bromide	General Chemistry	-0.01	ND	-0.01	ND	mg/L	NA	
Copper	General Chemistry	3		-0.06	ND	µg/L	NA	
Copper (Dissolved)	General Chemistry	0.63		0.33	DNQ	µg/L	52%	*
Dissolved Organic Carbon	General Chemistry	4.6		0.32	DNQ	mg/L	7%	
Dissolved Solids	General Chemistry	740		-4	ND	mg/L	NA	
E. coli	General Chemistry	150		-1	ND	MPN/100 mL	NA	
Hardness as CaCO3	General Chemistry	240		-1.7	ND	mg/L	NA	
Nickel	General Chemistry	5.4		-0.01	ND	µg/L	NA	
Nickel (dissolved)	General Chemistry	1.2		0.05	DNQ	µg/L	4%	
Nitrate + Nitrite as N	General Chemistry	0.74		-0.02	ND	mg/L	NA	
Nitrogen, Total Kjeldahl	General Chemistry	0.83		-0.07	ND	mg/L	NA	
OrthoPhosphate as P	General Chemistry	0.064		-0.006	ND	mg/L	NA	
Phosphate as P	General Chemistry	0.23		-0.01	ND	mg/L	NA	
Suspended Solids	General Chemistry	82		4		mg/L	5%	
Total Organic Carbon	General Chemistry	4.6		0.2	DNQ	mg/L	4%	
Turbidity	General Chemistry	50		-0.03	ND	NTU	NA	
Zinc	General Chemistry	9.6		-0.8	ND	µg/L	NA	
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA	
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	ug/L	NA	
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA	
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA	
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA	
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA	
Diuron	Pesticide	0.67		-0.20	ND	ug/L	NA	
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA	
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/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
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA
Sample Date: 2/23/2011 Site: Salt Slough at Lander Ave							
Ammonia as N	General Chemistry	0.21		-0.04	ND	mg/L	NA
Arsenic	General Chemistry	6.7		0.01	DNQ	ug/L	0%
Boron	General Chemistry	732		-0.47	ND	ug/L	NA
Bromide	General Chemistry	0.072	DNQ	-0.01	ND	mg/L	NA
Cadmium	General Chemistry	0.03	DNQ	-0.011	ND	ug/L	NA
Cadmium (dissolved)	General Chemistry	-0.011	ND	-0.011	ND	ug/L	NA
Copper	General Chemistry	3.6		0.06	DNQ	ug/L	2%
Copper (dissolved)	General Chemistry	2.1		0.09	DNQ	ug/L	4%
Dissolved Organic Carbon	General Chemistry	7.4		0.22	DNQ	mg/L	3%
Dissolved Solids	General Chemistry	770		-4	ND	mg/L	NA
E. Coli	General Chemistry	38		-1	ND	MPN/100mL	NA
Hardness (as CACO3)	General Chemistry	270		-1.7	ND	mg/L	NA
Lead	General Chemistry	0.65		-0.071	ND	ug/L	NA
Lead (dissolved)	General Chemistry	-0.071	ND	-0.071	ND	ug/L	NA
Nickel	General Chemistry	4.8		-0.01	ND	ug/L	NA
Nickel (dissolved)	General Chemistry	2.4		0.06	DNQ	ug/L	3%
Nitrate + Nitrite as N	General Chemistry	4.9		0.1		mg/L	2%
Nitrogen, Total Kjeldahl	General Chemistry	1.2		-0.07	ND	mg/L	NA
OrthoPhosphate as P	General Chemistry	0.32		-0.006	ND	mg/L	NA
Phosphate as P	General Chemistry	0.44		-0.01	ND	mg/L	NA
Suspended Solids	General Chemistry	110		-1	ND	mg/L	NA
Total Organic Carbon	General Chemistry	7.3		0.31	DNQ	mg/L	4%
Turbidity	General Chemistry	37		-0.02	ND	NTU	NA
Zinc	General Chemistry	5.1		-0.8	ND	ug/L	NA
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	ug/L	NA
Aldicarb	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/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
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA
Azinphos methyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Carbaryl	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Carbofuran	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Chlordane, Alpha-	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Chlordane, gamma-	Pesticide	-0.006	ND	-0.006	ND	ug/L	NA
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA
Diuron	Pesticide	3.4		-0.20	ND	ug/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Methiocarb	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Methomyl	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Oxamyl	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA
Prowl	Pesticide	0.40		-0.04	ND	ug/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/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
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA

Event = Event Sample Result FB = Field Blank Sample Result

Field Quality Control Samples

Field Duplicate and RPD Calculation

Analyte/Species	Type	Event	QC Code	FD	QC Code	Units	RPD	
Sample Date: 9/13/2010 Site: Los Banos Creek at China Camp Road								
Hyalella azteca	Sediment Toxicity	98.75		96.25		%	3%	
Sample Date: 9/16/2010 Site: Salt Slough at Lander Ave								
Ceriodaphnia dubia	Aquatic Toxicity	100		100		%	0%	
Selenastrum capricornutum	Aquatic Toxicity	4027000		3683000		cells/ml	9%	
Ammonia as N	General Chemistry	0.19		0.14		mg/L	30%	*
Boron	General Chemistry	621		643		µg/L	3%	
Bromide	General Chemistry	1.4		0.98	DNQ	mg/L	35%	*
Copper	General Chemistry	2.3		2.2		µg/L	4%	
Copper (Dissolved)	General Chemistry	0.61		0.71		µg/L	15%	
Dissolved Organic Carbon	General Chemistry	6		6		mg/L	0%	
E. coli	General Chemistry	69		84		MPN/100 mL	20%	
Hardness as CaCO3	General Chemistry	300		320		mg/L	6%	
Nickel	General Chemistry	3.9		4		µg/L	3%	
Nickel (dissolved)	General Chemistry	1.7		1.8		µg/L	6%	
Nitrate + Nitrite as N	General Chemistry	0.39		0.36		mg/L	8%	
Nitrogen, Total Kjeldahl	General Chemistry	0.38		0.71		mg/L	61%	*
OrthoPhosphate as P	General Chemistry	0.12		0.12		mg/L	0%	
Phosphate as P	General Chemistry	0.26		0.26		mg/L	0%	
Suspended Solids	General Chemistry	50		47		mg/L	6%	
Total Organic Carbon	General Chemistry	6		5.9		mg/L	2%	
Turbidity	General Chemistry	26		24		NTU	8%	
Zinc	General Chemistry	5.4		4.8		µg/L	12%	
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA	
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA	
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA	
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA	
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA	
Diuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/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	
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA	
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA	
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA	
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA	
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA	
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA	
Sample Date: 10/12/2010	**Site: Salt Slough at Lander Ave**							
Ceriodaphnia dubia	Aquatic Toxicity	100		100		%	0%	
Selenastrum capricornutum	Aquatic Toxicity	5133000		4695000		cells/ml	9%	
Ammonia as N	General Chemistry	0.16		0.19		mg/L	17%	
Boron	General Chemistry	599		622		µg/L	4%	
Bromide	General Chemistry	0.24	DNQ	0.24	DNQ	mg/L	0%	
Copper	General Chemistry	2.4		4.2		µg/L	55%	*
Copper (Dissolved)	General Chemistry	0.9		0.96		µg/L	6%	
Dissolved Organic Carbon	General Chemistry	5		5.1		mg/L	2%	
E. coli	General Chemistry	100		160		MPN/100 mL	46%	*
Hardness as CaCO3	General Chemistry	210		210		mg/L	0%	
Nickel	General Chemistry	4.5		4.8		µg/L	6%	
Nickel (dissolved)	General Chemistry	1.5		1.6		µg/L	6%	
Nitrate + Nitrite as N	General Chemistry	0.33		0.44		mg/L	29%	*
Nitrogen, Total Kjeldahl	General Chemistry	0.74		0.72		mg/L	3%	
OrthoPhosphate as P	General Chemistry	0.1		0.083		mg/L	19%	
Phosphate as P	General Chemistry	0.26		0.26		mg/L	0%	
Suspended Solids	General Chemistry	65		65		mg/L	0%	
Total Organic Carbon	General Chemistry	5.1		5		mg/L	2%	
Turbidity	General Chemistry	36		37		NTU	3%	

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
Zinc	General Chemistry	7.3		7.9		µg/L	8%
Zinc (dissolved)	General Chemistry	-0.8	ND	0.9	DNQ	µg/L	NA
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA
Diuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/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	
Sample Date: 11/9/2010	**Site: Salt Slough at Lander Ave**							
Ceriodaphnia dubia	Aquatic Toxicity	100		100		%	0%	
Selenastrum capricornutum	Aquatic Toxicity	4793000		4575000		cells/ml	5%	
Ammonia as N	General Chemistry	0.15		0.077	DNQ	mg/L	64%	*
Boron	General Chemistry	544		575		µg/L	6%	
Bromide	General Chemistry	0.13	DNQ	0.13	DNQ	mg/L	0%	
Copper	General Chemistry	2.7		2.5		µg/L	8%	
Copper (Dissolved)	General Chemistry	0.77		0.73		µg/L	5%	
Dissolved Organic Carbon	General Chemistry	5.4		5.4		mg/L	0%	
E. coli	General Chemistry	580		280		MPN/100 mL	70%	*
Hardness as CaCO3	General Chemistry	250		250		mg/L	0%	
Nickel	General Chemistry	4.5		4.2		µg/L	7%	
Nickel (dissolved)	General Chemistry	1.5		1.4		µg/L	7%	
Nitrate + Nitrite as N	General Chemistry	0.61		0.66		mg/L	8%	
Nitrogen, Total Kjeldahl	General Chemistry	0.92		1.1		mg/L	18%	
OrthoPhosphate as P	General Chemistry	0.1		0.11		mg/L	10%	
Phosphate as P	General Chemistry	0.24		0.25		mg/L	4%	
Suspended Solids	General Chemistry	52		50		mg/L	4%	
Total Organic Carbon	General Chemistry	5.4		5.3		mg/L	2%	
Turbidity	General Chemistry	31		31		NTU	0%	
Zinc	General Chemistry	6.9		6.4		µg/L	8%	
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA	
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA	
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA	
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	0.024		ug/L	NA	
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA	
Dieldrin	Pesticide	-0.005	ND	0.018		ug/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA	
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA	
Diuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Endosulfan I	Pesticide	-0.005	ND	0.015		ug/L	NA	
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endosulfan II	Pesticide	-0.004	ND	0.01		ug/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	
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Endrin	Pesticide	-0.007	ND	0.019		ug/L	NA	
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA	
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA	
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA	
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA	
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA	
Toxaphene	Pesticide	-0.380	ND	0.66		ug/L	NA	
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA	
Sample Date: 12/14/2010	**Site: Salt Slough at Lander Ave**							
Ceriodaphnia dubia	Aquatic Toxicity	95		100		%	5%	
Selenastrum capricornutum	Aquatic Toxicity	4818000		4945000		cells/ml	3%	
Ammonia as N	General Chemistry	0.25		0.11		mg/L	78%	*
Boron	General Chemistry	819		810		µg/L	1%	
Bromide	General Chemistry	0.14	DNQ	0.26	DNQ	mg/L	60%	*
Copper	General Chemistry	3		2.2		µg/L	31%	*
Copper (Dissolved)	General Chemistry	0.55		0.38	DNQ	µg/L	37%	*
Dissolved Organic Carbon	General Chemistry	5.5		5.5		mg/L	0%	
E. coli	General Chemistry	260		280		MPN/100 mL	7%	
Hardness as CaCO3	General Chemistry	320		320		mg/L	0%	
Nickel	General Chemistry	4.4		4.3		µg/L	2%	
Nickel (dissolved)	General Chemistry	1.4		1.5		µg/L	7%	
Nitrate + Nitrite as N	General Chemistry	0.43		0.41		mg/L	5%	
Nitrogen, Total Kjeldahl	General Chemistry	0.82		0.82		mg/L	0%	
OrthoPhosphate as P	General Chemistry	0.077		0.074		mg/L	4%	
Phosphate as P	General Chemistry	0.26		0.25		mg/L	4%	

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
Suspended Solids	General Chemistry	68		65		mg/L	5%
Total Organic Carbon	General Chemistry	5.7		5.7		mg/L	0%
Turbidity	General Chemistry	32		29		NTU	10%
Zinc	General Chemistry	7.3		6.3		µg/L	15%
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA
Diuron	Pesticide	0.22	DNQ	0.25	DNQ	ug/L	13%
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/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	
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA	
Sample Date: 12/21/2010 Site: Salt Slough at Lander Ave								
Ceriodaphnia dubia	Aquatic Toxicity	90		90		%	0%	
Pimephales promelas	Aquatic Toxicity	100		100		%	0%	
Selenastrum capricornutum	Aquatic Toxicity	4123000		4653000		cells/ml	12%	
Ammonia as N	General Chemistry	0.22		0.12		mg/L	59%	*
Arsenic	General Chemistry	3.3		3.3		µg/L	0%	
Boron	General Chemistry	782		829		µg/L	6%	
Bromide	General Chemistry	0.18	DNQ	0.035	DNQ	mg/L	135%	*
Cadmium	General Chemistry	0.02	DNQ	0.02	DNQ	µg/L	0%	
Cadmium (dissolved)	General Chemistry	-0.011	ND	-0.011	ND	µg/L	NA	
Copper	General Chemistry	2.3		2.7		µg/L	16%	
Copper (Dissolved)	General Chemistry	0.78		0.81		µg/L	4%	
Dissolved Organic Carbon	General Chemistry	6.7		6.7		mg/L	0%	
Hardness as CaCO3	General Chemistry	260		260		mg/L	0%	
Lead	General Chemistry	0.69		0.86		µg/L	22%	
Lead (Dissolved)	General Chemistry	-0.071	ND	-0.071	ND	µg/L	NA	
Nickel	General Chemistry	4.3		4.8		µg/L	11%	
Nickel (dissolved)	General Chemistry	1.7		1.8		µg/L	6%	
Nitrate + Nitrite as N	General Chemistry	0.72		0.75		mg/L	4%	
Nitrogen, Total Kjeldahl	General Chemistry	0.83		0.92		mg/L	10%	
OrthoPhosphate as P	General Chemistry	0.15		0.14		mg/L	7%	
Phosphate as P	General Chemistry	0.32		0.33		mg/L	3%	
Selenium	General Chemistry	0.51	DNQ	0.49	DNQ	µg/L	4%	
Suspended Solids	General Chemistry	41		42		mg/L	2%	
Total Organic Carbon	General Chemistry	6.7		6.5		mg/L	3%	
Turbidity	General Chemistry	30		30		NTU	0%	
Zinc	General Chemistry	5.5		7.3		µg/L	28%	*
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA	
Aldicarb	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA	
Carbaryl	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Carbofuran	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA	
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA	
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/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	
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA	
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA	
Diuron	Pesticide	0.60		0.70		ug/L	15%	
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA	
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Methiocarb	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Methomyl	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Oxamyl	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA	
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA	
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA	
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA	
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA	

Sample Date: 1/11/2011 Site: Salt Slough at Lander Ave

Ceriodaphnia dubia	Aquatic Toxicity	100		100		%	0%	
Selenastrum capricornutum	Aquatic Toxicity	4011000		3969000		cells/ml	1%	
Ammonia as N	General Chemistry	0.27		0.23		mg/L	16%	
Arsenic	General Chemistry	2.9		3.9		µg/L	29%	*
Boron	General Chemistry	916		914		µg/L	0%	
Bromide	General Chemistry	0.093	DNQ	0.37	DNQ	mg/L	120%	*
Cadmium	General Chemistry	0.02	DNQ	0.03	DNQ	µg/L	40%	*
Cadmium (dissolved)	General Chemistry	0.01	DNQ	0.02	DNQ	µg/L	67%	*
Copper	General Chemistry	1.7		5.3		µg/L	103%	*

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	
Copper (Dissolved)	General Chemistry	0.78		0.9		µg/L	14%	
Dissolved Organic Carbon	General Chemistry	7.4		7.2		mg/L	3%	
E. coli	General Chemistry	32		40		MPN/100 mL	22%	
Hardness as CaCO3	General Chemistry	330		330		mg/L	0%	
Lead	General Chemistry	0.31		1.8		µg/L	141%	*
Lead (Dissolved)	General Chemistry	-0.071	ND	-0.071	ND	µg/L	NA	
Nickel	General Chemistry	3		8.6		µg/L	97%	*
Nickel (dissolved)	General Chemistry	1.8		1.8		µg/L	0%	
Nitrate + Nitrite as N	General Chemistry	1		0.93		mg/L	7%	
Nitrogen, Total Kjeldahl	General Chemistry	0.87		1.5		mg/L	53%	*
OrthoPhosphate as P	General Chemistry	0.1		0.11		mg/L	10%	
Phosphate as P	General Chemistry	0.24		0.25		mg/L	4%	
Selenium	General Chemistry	0.38	DNQ	0.41	DNQ	µg/L	8%	
Suspended Solids	General Chemistry	44		43		mg/L	2%	
Total Organic Carbon	General Chemistry	6.6		6.7		mg/L	2%	
Turbidity	General Chemistry	45		23		NTU	65%	*
Zinc	General Chemistry	3.3		16		µg/L	132%	*
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA	
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA	
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA	
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA	
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA	
Diuron	Pesticide	0.36	DNQ	0.37	DNQ	ug/L	3%	
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA	
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/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	
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA	
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA	
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA	
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA	
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA	

Sample Date: 2/8/2011 Site: Salt Slough at Lander Ave

Selenastrum capricornutum	Aquatic Toxicity	4394000		4510000		cells/ml	3%	
Ammonia as N	General Chemistry	0.3		0.38		mg/L	24%	
Boron	General Chemistry	598		597		µg/L	0%	
Bromide	General Chemistry	-0.01	ND	-0.01	ND	mg/L	NA	
Copper	General Chemistry	3		3.1		µg/L	3%	
Copper (Dissolved)	General Chemistry	0.63		0.74		µg/L	16%	
Dissolved Organic Carbon	General Chemistry	4.6		4.5		mg/L	2%	
E. coli	General Chemistry	150		91		MPN/100 mL	49%	*
Hardness as CaCO3	General Chemistry	240		250		mg/L	4%	
Nickel	General Chemistry	5.4		5.6		µg/L	4%	
Nickel (dissolved)	General Chemistry	1.2		1.2		µg/L	0%	
Nitrate + Nitrite as N	General Chemistry	0.74		-0.02	ND	mg/L	NA	
Nitrogen, Total Kjeldahl	General Chemistry	0.83		0.38		mg/L	74%	*
OrthoPhosphate as P	General Chemistry	0.064		0.065		mg/L	2%	
Phosphate as P	General Chemistry	0.23		0.24		mg/L	4%	
Suspended Solids	General Chemistry	82		130		mg/L	45%	*
Total Organic Carbon	General Chemistry	4.6		4.7		mg/L	2%	
Turbidity	General Chemistry	50		55		NTU	10%	
Zinc	General Chemistry	9.6		9.7		µg/L	1%	
Zinc (dissolved)	General Chemistry	-0.8	ND	-0.8	ND	µg/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA	
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA	
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA	
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/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	
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA	
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA	
Diuron	Pesticide	0.67		0.59		ug/L	13%	
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA	
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA	
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA	
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA	
Prowl	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA	
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA	
Sample Date: 2/23/2011	**Site: Salt Slough at Lander Ave**							
Ceriodaphnia dubia	Aquatic Toxicity	100		95		%	5%	
Pimephales promelas	Aquatic Toxicity	100		100		%	0%	
Selenastrum capricornutum	Aquatic Toxicity	1680000		1695000		cells/ml	1%	
Ammonia as N	General Chemistry	0.21		0.12		mg/L	55%	*
Arsenic	General Chemistry	6.7		6.8		ug/L	1%	
Boron	General Chemistry	732		774		ug/L	6%	
Bromide	General Chemistry	0.072	DNQ	0.089	DNQ	mg/L	21%	
Cadmium	General Chemistry	0.03	DNQ	0.03	DNQ	ug/L	0%	
Cadmium (dissolved)	General Chemistry	-0.011	ND	-0.011	ND	ug/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	
Copper	General Chemistry	3.6		3.8		ug/L	5%	
Copper (dissolved)	General Chemistry	2.1		2.2		ug/L	5%	
Dissolved Organic Carbon	General Chemistry	7.4		7.1		mg/L	4%	
E. Coli	General Chemistry	38		52		MPN/100mL	31%	*
Hardness (as CACO3)	General Chemistry	270		260		mg/L	4%	
Lead	General Chemistry	0.65		0.68		ug/L	5%	
Lead (dissolved)	General Chemistry	-0.071	ND	-0.071	ND	ug/L	NA	
Nickel	General Chemistry	4.8		5		ug/L	4%	
Nickel (dissolved)	General Chemistry	2.4		2.6		ug/L	8%	
Nitrate + Nitrite as N	General Chemistry	4.9		5.1		mg/L	4%	
Nitrogen, Total Kjeldahl	General Chemistry	1.2		1.1		mg/L	9%	
OrthoPhosphate as P	General Chemistry	0.32		0.32		mg/L	0%	
Phosphate as P	General Chemistry	0.44		0.43		mg/L	2%	
Suspended Solids	General Chemistry	110		36		mg/L	101%	*
Total Organic Carbon	General Chemistry	7.3		7		mg/L	4%	
Turbidity	General Chemistry	37		27		NTU	31%	*
Zinc	General Chemistry	5.1		5.6		ug/L	9%	
Zinc (dissolved)	General Chemistry	-0.8	ND	0.9	DNQ	ug/L	NA	
Aldicarb	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Aldrin	Pesticide	-0.009	ND	-0.009	ND	ug/L	NA	
Atrazine	Pesticide	-0.07	ND	-0.07	ND	ug/L	NA	
Carbaryl	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Carbofuran	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Chlorpyrifos	Pesticide	-0.0026	ND	-0.0026	ND	ug/L	NA	
Cyanazine	Pesticide	-0.09	ND	-0.09	ND	ug/L	NA	
DDD(p,p')	Pesticide	-0.003	ND	-0.003	ND	ug/L	NA	
DDE(p,p')	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
DDT(p,p')	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Demeton-s	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Diazinon	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Dichlorvos	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Dicofol	Pesticide	-0.01	ND	-0.01	ND	ug/L	NA	
Dieldrin	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Dimethoate	Pesticide	-0.080	ND	-0.080	ND	ug/L	NA	
Disulfoton	Pesticide	-0.020	ND	-0.020	ND	ug/L	NA	
Diuron	Pesticide	3.4		3.4		ug/L	0%	
Endosulfan I	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endosulfan II	Pesticide	-0.004	ND	-0.004	ND	ug/L	NA	
Endosulfan Sulfate	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Endrin	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
EPTC	Pesticide	-0.03	ND	-0.03	ND	ug/L	NA	
HCH, alpha	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, beta	Pesticide	-0.008	ND	-0.008	ND	ug/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	
HCH, delta	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
HCH, gamma	Pesticide	-0.005	ND	-0.005	ND	ug/L	NA	
Heptachlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Heptachlor epoxide	Pesticide	-0.007	ND	-0.007	ND	ug/L	NA	
Linuron	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Malathion	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Methamidophos	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Methidathion	Pesticide	-0.04	ND	-0.04	ND	ug/L	NA	
Methiocarb	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Methomyl	Pesticide	-0.050	ND	-0.050	ND	ug/L	NA	
Methoxychlor	Pesticide	-0.008	ND	-0.008	ND	ug/L	NA	
Oxamyl	Pesticide	-0.20	ND	-0.20	ND	ug/L	NA	
Parathion, Ethyl	Pesticide	-0.02	ND	-0.02	ND	ug/L	NA	
Parathion, Methyl	Pesticide	-0.075	ND	-0.075	ND	ug/L	NA	
Phorate	Pesticide	-0.072	ND	-0.072	ND	ug/L	NA	
Phosmet	Pesticide	-0.06	ND	-0.06	ND	ug/L	NA	
Prowl	Pesticide	0.40		0.30		ug/L	29%	*
Simazine	Pesticide	-0.08	ND	-0.08	ND	ug/L	NA	
Toxaphene	Pesticide	-0.380	ND	-0.380	ND	ug/L	NA	
Trifluralin	Pesticide	-0.036	ND	-0.036	ND	ug/L	NA	

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

Attachment 4
Sediment Toxicity Follow-up Analyses

Sediment Toxicity Follow-up Analysis

Del Puerto Creek near Cox Road

Toxicity Results Hyalella azteca 0 %

Sample Event: 71 9/13/2010

Pesticide	Results	Units
Bifenthrin	11.8	ug/kg
Chlorpyrifos	11.1	ug/kg
Cyfluthrin, total	ND	ug/kg
Cyhalothrin, lambda, total	10.8	ug/kg
Cypermethrin, total	0.39	ug/kg
Deltamethrin:Tralomethrin	ND	ug/kg
Esfenvalerate:Fenvalerate	2.7	ug/kg
Fenpropathrin	ND	ug/kg
Permethrin, total	0.41	ug/kg

DNQ: Result is below the report limit and is estimated

Sediment Toxicity Follow-up Analysis

Hospital Creek at River Road

Toxicity Results Hyalella azteca 0 %

Sample Event: 71 9/13/2010

Pesticide	Results	Units
Bifenthrin	1.4	ug/kg
Chlorpyrifos	0.88	ug/kg
Cyfluthrin, total	ND	ug/kg
Cyhalothrin, lambda, total	10.7	ug/kg
Cypermethrin, total	ND	ug/kg
Deltamethrin:Tralomethrin	ND	ug/kg
Esfenvalerate:Fenvalerate	0.24 DNQ	ug/kg
Fenpropathrin	ND	ug/kg
Permethrin, total	ND	ug/kg

DNQ: Result is below the report limit and is estimated

Sediment Toxicity Follow-up Analysis

Ingram Creek at River Road

Toxicity Results Hyalella azteca 0 %

Sample Event: 71 9/13/2010

Pesticide	Results	Units
Bifenthrin	1.1	ug/kg
Chlorpyrifos	0.34	ug/kg
Cyfluthrin, total	ND	ug/kg
Cyhalothrin, lambda, total	15.9	ug/kg
Cypermethrin, total	ND	ug/kg
Deltamethrin:Tralomethrin	ND	ug/kg
Esfenvalerate:Fenvalerate	1.6	ug/kg
Fenpropathrin	ND	ug/kg
Permethrin, total	0.98	ug/kg

DNQ: Result is below the report limit and is estimated

Sediment Toxicity Follow-up Analysis

Westley Wasteway near Cox Road **Toxicity Results** Hyalella azteca 41.25 %

Sample Event: 71 9/13/2010

Pesticide	Results	Units
Bifenthrin	7.2	ug/kg
Chlorpyrifos	0.54	ug/kg
Cyfluthrin, total	2.6	ug/kg
Cyhalothrin, lambda, total	6.7	ug/kg
Cypermethrin, total	ND	ug/kg
Deltamethrin:Tralomethrin	ND	ug/kg
Esfenvalerate:Fenvalerate	9.6	ug/kg
Fenpropathrin	ND	ug/kg
Permethrin, total	0.99	ug/kg

DNQ: Result is below the report limit and is estimated