East San Joaquin
WATER QUALITY COALITION
1201 L Street Modesto, CA 95354
www.esjcoalition.org

September 23, 2014

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

Re: R*esubmittal of the 2014 Monitoring Plan Update for Waste Discharge Requirements General Order R5-2012-0116 for Growers in the Eastern San Joaquin River Watershed*

Dear Ms. Creedon,

The East San Joaquin Water Quality Coalition is resubmitting the 2014 Monitoring Plan Update (MPU) which has been updated to include: 1) additional rational for proposed monitoring, 2) in some cases, additional monitoring to capture a storm event, and 3) typo fixes. Table A, included at the beginning of the MPU, details all updates made since the original submission on August 1, 2014. An updated monitoring schedule in Excel is attached.

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 submitting false information, including the possibility of fines for knowing violations.

Submitted respectfully,

Parry Klassen
Executive Director
East San Joaquin Water Quality Coalition

Enclosure:
ESJWQC Monitoring Plan Update
ESJWQC Monitoring Schedule excel file

Monitoring Plan Update

2015 WY: October 2014 – September 2015

Submitted: August 1, 2014

Resubmitted: September 23, 2014

Irrigated Lands Regulatory Program
Central Valley Regional Water Quality Control

Table A. ESJWQC MPU update summary.

ESJWQC MPU submitted on August 1, 2014 and updated on September 23, 2014.

Item No.	Description of Update	Location; Page No.
Amended on September 23, 2014		**Pending approval**
	Table of Contents and Report	
	Updated page, table, and figure numbers.	
1	**Surface Water Monitoring Overview**	
	Included a description of the Coalition's storm event monitoring criteria.	Page 1
	Updated the monitoring schedule tables to include all changes made in the revised report.	Table 1 and Table 2; page 2-3 Appendix I
2	**Core Site Monitoring**	
	Updated Table 5 from 'no to 'yes' indicating that Dry Creek @ Wellsford Rd is adequately characterized for copper, lead, and molybdenum.	Page 11
	Updated Dry Creek @ Wellsford Rd verbiage to describe monitoring decision #5- no monitoring for copper, lead, and molybdenum.	Page 11
	Updated Table 7 to correct copper applications from greater than 1% to less than 1% acreage (answer in the table was 'yes', changed to 'no').	Page 14
	Updated Merced River to add copper to monitoring decision #5 subheader and verbiage.	Page 20
	Updated inconsistencies in total counts for metal samples collected from 2006-2014.	Tables 6, 8, 10, 14, 16; pages 13, 16, 19, 26, 29
3	**Represented Site Monitoring**	
	Hatch Drain @ Tuolumne Rd: • Added dimethoate monitoring during a storm event (between January and March) and removed August monitoring based on PUR data. • Added *C. dubia* toxicity monitoring in July 2015 based on an evaluation of PUR data. Added Figure 7. • Updated verbiage to provide a more detailed justification for not monitoring *P. promelas* toxicity during 2015 WY.	Verbiage; page 40 Figure 7; page 42
	Lateral 2 ½ near Keyes Rd: added monitoring for dimethoate during one storm event and August during the 2015 WY. Added Figure 8 for further PUR data analysis.	Verbiage; page 43 Figure 8; page 45
	Lateral 6 and 7 @ Central Ave: added monitoring for dimethoate during one storm event (between January and March).	Verbiage; page 50
	Lower Stevinson @ Faith Home Rd: added monitoring for dimethoate during one storm event (between January and March).	Verbiage; page 56
	Howard Lateral @ Hwy 140: added current PUR data (Figure 23) to justify no *C. dubia* toxicity monitoring.	Page 67 Figure 23; page 68
	Livingston Drain @ Robin Ave: added additional explanation for not monitoring toxicity to *C. dubia* and included Figure 26 and 27.	Verbiage; page 72 Figure 26, 27; page 73, 74
	Unnamed Drain @ Hwy 140: added a storm monitoring event for copper (between January and March). Included Figure 28.	Verbiage; page 75 Figure 28; page 76
4	**Management Plan Monitoring**	
	Updated verbiage to clarify that the Coalition will be conducting MPM according to the 2008 Management Plan until the 2014 Management Plan has been approved.	Page 81
	Lateral 5 ½ @ South Blaker Rd: • Updated verbiage to provide further explanation for conducting MPM for *S. capricornutum* toxicity. • Updated the exceedance table (Table 19), MPM schedule (Table 20) and verbiage, along with the monitoring schedule to include April toxicity monitoring during the 2015 WY (toxicity in April 2014 was previously overlooked).	Verbiage; page 113 Table 19; page 35 Table 20; page 85

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List of Acronyms and Terms

C	Core site
cfs	cubic feet per second
DDE	Dichlorodiphenyldichloroethylene
DO	Dissolved Oxygen
DPR	Department of Pesticide Regulation
DWSC	Deep Water Ship Channel
EPA	Environmental Protection Agency
ESJWQC	East San Joaquin Water Quality Coalition
ILRP	Irrigated Lands Regulatory Program
lbs	pounds
Order	Waste Discharge Requirements General Order for Growers within the Eastern San Joaquin River Watershed, Order R5-2012-0116
OP	Organophosphate
MPM	Management Plan Monitoring
MRP	Monitoring and Reporting Program
MRPP	Monitoring and Reporting Program Plan
pH	Power of Hydrogen
PUR	Pesticide Use Report
Regional Board	Central Valley Regional Water Quality Control Board
R	Represented site
SC	Specific Conductance
SQMP	Surface Water Quality Management Plan
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TOC	Total Organic Carbon
TSS	Total Suspended Solids
TMDL	Total Maximum Daily Load
WQTL	Water Quality Trigger Limit
WY	Water Year

SURFACE WATER MONITORING OVERVIEW

This Monitoring Plan Update (MPU) provides the schedules and the rationale for monitoring for the 2015 Water Year (WY). Results through June 2014 were evaluated to determine the 2015 WY monitoring schedule. And addendum to the 2014 MPU will be included in the Annual Report to assess the monitoring results from July through September from the 2014 WY. Monitoring will be performed by the East San Joaquin Water Quality Coalition (ESJWQC or the Coalition) as determined in the Waste Discharge Requirements General Order for Growers within the Eastern San Joaquin River Watershed, Order R5-2012-0116 (hereafter "Order"). The Coalition will perform three different types of monitoring during the 2015 WY:

- Core Site Monitoring,
- Represented Site Monitoring,
- Special Project Monitoring.

As described in the Monitoring and Reporting Program (MRP), Attachment B to the Order, surface water monitoring at Core sites will occur once a month and will include an assessment of field parameters, nutrients, pathogens, pesticides, metals, and toxicity to water column and sediment species. Appendix I is a table of all monitoring parameters and sites scheduled for the 2015 WY. Tables 1 and 2 list the constituents to be monitored and the frequency of monitoring for each Core and Represented site.

The Coalition attempts to sample two storm events per year. A storm monitoring event is defined as monitoring within three days of a rainfall event that exceeds 0.25 inches within 24 hours. Appendix I lists which constituents are scheduled for monitoring during storm events.

Monitoring at Represented sites may occur due to an exceedance of a Water Quality Trigger Limit (WQTL) at a Core site in the previous WY or based on an evaluation of Core site management plan constituents. The Coalition will evaluate the potential for similar risks or threats to water quality associated with management plan constituents at each of the Represented sites in that zone with the potential to monitor at the Represented sites the following WY.

Special Project Monitoring includes Management Plan Monitoring (MPM) and Diazinon and Chlorpyrifos Total Maximum Daily Load (TMDL) monitoring. Management Plan Monitoring will be conducted as part of the Coalition's management plan strategy to identify contaminant sources and evaluate effectiveness of newly implemented management practices. The ESJWQC monitors three of the six compliance locations for chlorpyrifos and diazinon during one storm event and once a month from May through September.

Table 1. ESJWQC 2015 WY monitoring schedule (field parameters, physical parameters, nutrients, bacteria, metals, and organophosphate pesticides).

A complete list of sites, analytes, and months to be monitored are listed in Appendix I. The MPM at Core sites coincides with monthly Core site monitoring.

ESJWQC 2015 WY Monitoring Schedule			Field Parameters				Physical Parameter			Nutrients			Bact-eria	Metals[1]				Pesticides												
																		Organophosphates												
Zone	Site Name	Monitor Type	Dissolved Oxygen	pH	Specific Conductance	Temperature	Suspended Solids	Total Organic Carbon	Turbidity	Nitrate + Nitrite (as N)	Soluble Orthophosphate	Total Ammonia (as N)	*E. coli*	Arsenic (Total)	Copper (Dissolved)	Lead (Dissolved)	Molybdenum (Total)	Azinphos-methyl	Chlorpyrifos	Demeton-s	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Malathion	Methamidophos	Methidathion	Parathion, methyl	Phorate	Phosmet
1	**Dry Creek @ Wellsford Rd**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**					**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
		M																	**4**											
	Mootz Drain downstream of Langworth Pond	M																	2											
2	**Prairie Flower Drain @ Crows Landing Rd**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**					**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
		M															**12**						**3**							
	Hatch Drain @ Tuolumne Rd	R																					2							
	Hilmar Drain @ Central Ave	M													4															
		R																					2							
	Lateral 2 ½ near Keyes Rd	M																	5											
		R																					2							
	Lateral 5 ½ @ South Blaker Rd	R																					3							
	Lateral 6 and 7 @ Central Ave	R																					4							
	Levee Drain @ Carpenter Rd	R																					1							
	Lower Stevinson @ Faith Home Rd	R																					4							
	Unnamed Drain @ Hogin Rd	R																					2							
	Westport Drain @ Vivian Rd	M																	4											
3	**Highline Canal @ Hwy 99**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**					**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
		M													**4**	**6**														
	Highline Canal @ Lombardy Rd	M													5	5														
	Mustang Creek @ East Ave	M													5															
4	**Merced River @ Santa Fe**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**					**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
		M														**2**			**3**											
	Black Rascal Creek @ Yosemite Rd	M														2			4											
	Canal Creek @ West Bellevue Rd	R																	2											
	Howard Lateral @ Hwy 140	M													5				5											
	Livingston Drain @ Robin Ave	M													8				6											
	Unnamed Drain @ Hwy 140	R													1															
5	**Duck Slough @ Gurr Rd**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**4**				**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
		M													**8**	**8**			**2**											
	Deadman Creek @ Gurr Rd	M																	4											
	Deadman Creek @ Hwy 59	M																	3											
	Miles Creek @ Reilly Rd	M													6	5			5		1									
6	**Cottonwood Creek @ Rd 20**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**					**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
		M													**12**	**3**														
	Ash Slough @ Ave 21	M													7															
	Berenda Slough along Ave 18 1/2	M													11				3											
	Dry Creek @ Rd 18	M													8	4			4											

C –Core site monitoring M –Management Plan Monitoring R- Represented site monitoring [1]Hardness (Dissolved) will be analyzed with dissolved metals

Table 2. ESJWQC 2015 WY monitoring schedule (pesticides: carbamates, herbicides, toxicity, and sediment parameters).

A complete list of sites, analytes, and months to be monitored are listed in Appendix I. The MPM at Core sites coincides with monthly Core site monitoring.

ESJWQC 2015 WY Monitoring Schedule			Pesticides														Water Column Toxicity			Sediment		
			Carbamates								Herbicides									Physical Parameter		Toxicity
Zone	Site Name	Monitor Type	Aldicarb	Carbaryl	Carbofuran	Diuron	Linuron	Methiocarb	Methomyl	Oxamyl	Atrazine	Cyanazine	Glyphosate	Paraquat	Simazine	Trifluralin	*Ceriodaphnia dubia*	*Pimephales promelas*	*Selenastrum capricornutum*	Grain size	Total Organic Carbon	*Hyalella azteca*
1	**Dry Creek @ Wellsford Rd**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**2**
		M																				**2**
	Mootz Drain downstream of Langworth Pond	M				2																
		R																				2
2	**Prairie Flower Drain @ Crows Landing Rd**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**2**
		M															**3**	**2**	**7**			**2**
	Hatch Drain @ Tuolumne Rd	M																	6			2
		R															1					
	Hilmar Drain @ Central Ave	M				2													3			2
	Lateral 2 ½ near Keyes Rd	R																	5			2
	Lateral 5 1/2 @ South Blaker Rd	M																	4			
		R				4											3	3				2
	Lateral 6 and 7 @ Central Ave	R				4											4	2	5			2
	Levee Drain @ Carpenter Rd	M															2		3			2
		R																3				1
	Lower Stevinson @ Faith Home Rd	M																	7			
		R				4											4	3				2
	Unnamed Drain @ Hogin Rd	M																	2			
		R				1											2	2				2
	Westport Drain @ Vivian Rd	M																	3			
		R																				2
3	**Highline Canal @ Hwy 99**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**12**
		M															**3**		**5**			**2**
	Highline Canal @ Lombardy Rd	M																	6			2
	Mustang Creek @ East Ave	R																				2
4	**Merced River @ Santa Fe**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**2**
		M															**4**					
	Black Rascal Creek @ Yosemite Rd	M															3					
	Canal Creek @ West Bellevue Rd	R															2					
	Livingston Drain @ Robin Ave	M																	3			
5	**Duck Slough @ Gurr Rd**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**12**
		M															**2**	**2**				**1**
	Deadman Creek @ Gurr Rd	M															3	7	2			
	Miles Creek @ Reilly Rd	M															2		3			1
6	**Cottonwood Creek @ Rd 20**	**C**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**12**	**12**	**12**	**12**	**12**	**2**	**2**	**2**
	Dry Creek @ Rd 18	M				4													3			2

C-Core site monitoring M-Management plan monitoring R-Represented site monitoring

CORE SITE MONITORING

For the 2015 WY, the Coalition will monitor within each of the six zones in the ESJWQC boundary for 12 months (October 2014 through September 2015) at the designated Core sites (Attachment B of the Order, page 4). Table 3 includes a list of Core sites within each zone that are to be monitored during the 2015 WY. This is the second year of monitoring for the Core sites listed in Table 3. After the 2015 WY, a second set of Core sites for each of the six zones will rotate in for two years of monitoring. If the concentration of a constituent exceeds the WQTL at a Core site, the Core site will be monitored for an additional third consecutive year (Attachment B of the Order, page 3). If a Core site is currently in a management plan or if the concentration of a constituent and the number of exceedances requires the Core site to be placed in a management plan, the site will also be evaluated for MPM. The flowchart in Figure 1 depicts the Core site monitoring strategy.

The Coalition will monitor physical parameters, nutrients, bacteria, water column and sediment toxicity, pesticides, and metals at each Core site as listed in Table 2, Attachment B of the Order (page 7). Table 4 lists all parameters to be monitored during the 2015 WY at Core sites.

Table 3. ESJWQC Core sites by zone.

Zone	Site Type	Site Name	Station Code	Latitude	Longitude
1	Core	Dry Creek @ Wellsford Rd	535XDCAWR	37.66000	-120.87526
2	Core	Prairie Flower Drain @ Crows Landing Rd	535XPFDCL	37.44187	-121.00331
3	Core	Highline Canal @ Hwy 99	535XHCHNN	37.41254	-120.75941
4	Core	Merced River @ Santa Fe	535XMRSFD	37.42705	-120.67353
5	Core	Duck Slough @ Gurr Rd	535XDSAGR	37.21408	-120.56126
6	Core	Cottonwood Creek @ Rd 20	545XCCART	36.86860	-120.18180

Figure 1. ESJWQC flowchart for the Core site monitoring strategy.

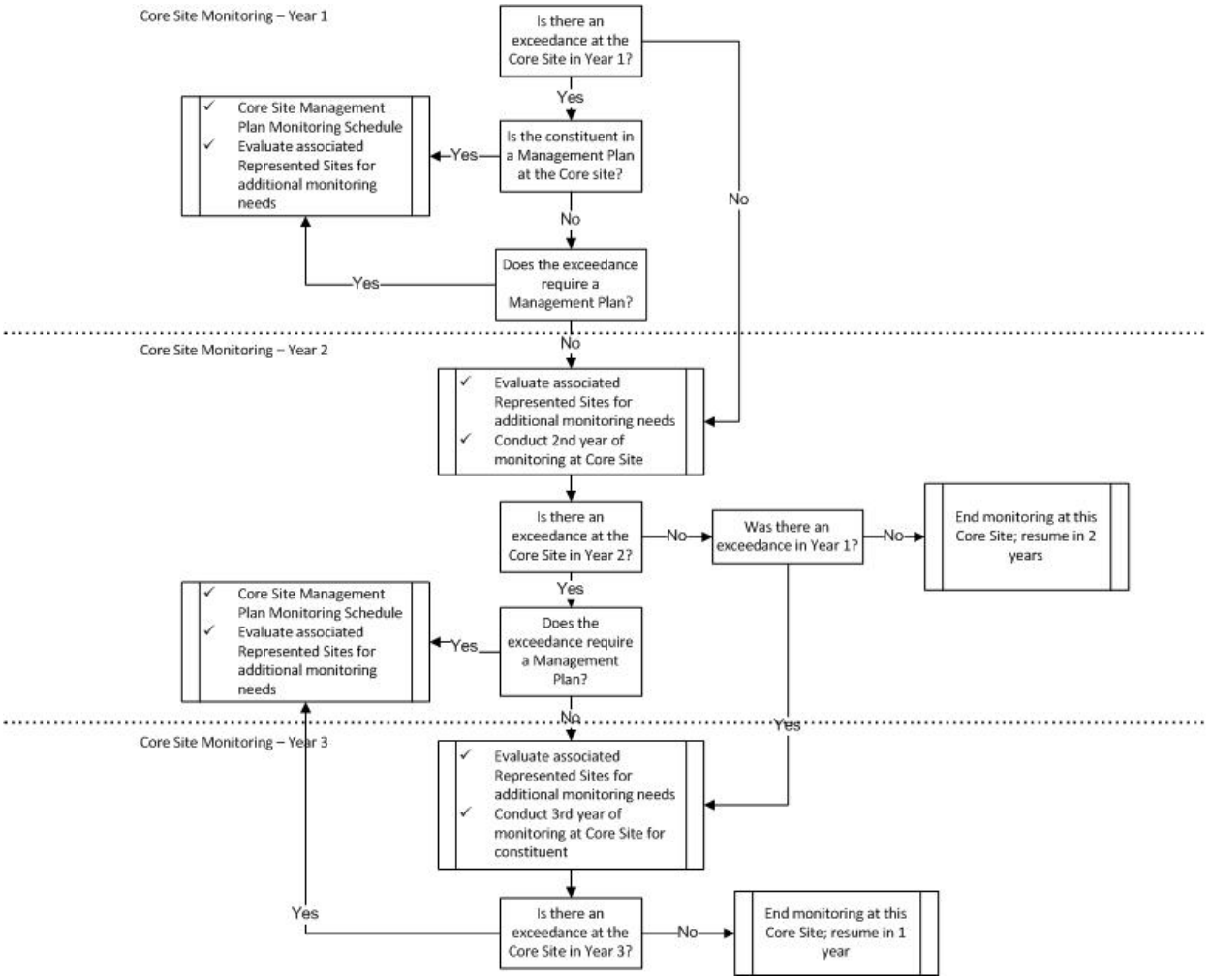


Table 4. ESJWQC parameters to be monitored at the Core sites for the 2015 WY.

Parameter Group		Measured Parameter	Monitoring Frequency
Water Column Sampling			
Photo		Photograph documentation	With every monitoring event
Physical Parameters		Estimated flow (cfs, field measure)	Monthly
		pH (field measure)	Monthly
		Electrical Conductivity (at 25°C, field measure)	Monthly
		Dissolved Oxygen (DO, field measure)	Monthly
		Temperature (field measure)	Monthly
		Turbidity	Monthly
		Total Suspended Solids (TSS)	Monthly
		Hardness (as $CaCO_3$)	Monthly[2]
		Total Organic Carbon (TOC)	Monthly
Bacteria		*E. coli*	Monthly
Water Column Toxicity Test		Algae - *Selenastrum capricornutum*	Monthly
		Water Flea - *Ceriodaphnia dubia*	Monthly
		Fathead Minnow - *Pimephales promelas*	Monthly
		Toxicity Identification Evaluation (TIE)[1]	As needed based on section III.C.4 of Attachment B
Pesticides	Carbamates	Aldicarb	Monthly
		Carbaryl	Monthly
		Carbofuran	Monthly
		Methiocarb	Monthly
		Methomyl	Monthly
		Oxamyl	Monthly
	Organophosphates	Azinphos-methyl	Monthly
		Chlorpyrifos	Monthly
		Diazinon	Monthly
		Dichlorvos	Monthly
		Dimethoate	Monthly
		Demeton-s	Monthly
		Disulfoton (Disyton)	Monthly
		Malathion	Monthly
		Methamidophos	Monthly
		Methidathion	Monthly
		Parathion-methyl	Monthly
		Phorate	Monthly
		Phosmet	Monthly
	Herbicides	Atrazine	Monthly
		Cyanazine	Monthly
		Diuron	Monthly
		Glyphosate	One storm, one irrigation event per year
		Linuron	Monthly
		Paraquat	One storm, one irrigation event per year
		Simazine	Monthly
		Trifluralin	Monthly
Metals		Arsenic	See Core Site Metals section below
		Boron	See Core Site Metals section below
		Cadmium	See Core Site Metals section below

Parameter Group	Measured Parameter	Monitoring Frequency
Metals	Copper	See Core Site Metals section below
	Lead	See Core Site Metals section below
	Molybdenum	See Core Site Metals section below
	Nickel	See Core Site Metals section below
	Selenium	See Core Site Metals section below
	Zinc	See Core Site Metals section below
Nutrients	Nitrate plus Nitrite as Nitrogen	Monthly
	Total Ammonia	Monthly
	Unionized Ammonia (calculated value)	Monthly
	Soluble Orthophosphate	Monthly
Sediment Sampling		
Sediment Toxicity	*Hyalella azteca*	March, September
Pesticides and Sediment Pesticides	Bifenthrin	As Needed[3]
	Cyfluthrin	As Needed[3]
	Cypermethrin	As Needed[3]
	Deltamethrin: Tralomethrin	As Needed[3]
	Esfenvalerate	As Needed[3]
	Lambda-Cyhalothrin	As Needed[3]
	Permethrin	As Needed[3]
	Fenpropathrin	As Needed[3]
	Chlorpyrifos	As Needed[3]
	Piperonyl butoxide (PBO)	As Needed[3]
	Total Organic Carbon	March, September
	Grain Size	March, September

[1] Specific TIE manipulations utilized in each test will be reported.
[2] Hardness is to be collected with dissolved metals.

Core Site Pesticides

According to the Order, section III.C, a list of pesticides to be monitored will be identified and developed through a process which will include input from qualified scientists and coordination with the Department of Pesticide Regulation (DPR). Until this process begins, the Coalition will monitor monthly for the actively registered pesticides listed in Table 4, with the exception of paraquat and glyphosate. The Coalition will continue to monitor for paraquat and glyphosate during one storm and one irrigation event in the 2015 WY.

Since the DPR list of actively registered pesticides does not include organochlorines or Group A pesticides, the Coalition will no longer monitor for these constituents. These constituents are legacy pesticides that have been banned for use in the United States and are no longer actively registered.

Endosulfan is the only exception; endosulfan is still registered by DPR. However, on November 10, 2010 the Environmental Protection Agency (EPA) issued a final order to cancel the product. There is one more year left where the product will be actively circulating in the phase-out (July 31, 2012 through July 31, 2016). There has never been any detection of the constituent since the Coalition began monitoring for endosulfan in 2008.

Core Site Metals

The metals listed in Table 2 of Attachment B of the Order were evaluated using the flowchart in Figure 2 to determine the timing and frequency of monitoring. The flowchart is a process that determines if each metal is to be monitored in the upcoming WY. The process evaluates past monitoring results and application history, if applicable, at each Core site and the results of the evaluation are used to establish the monitoring program for metals.

The flowchart is used to evaluate whether the metal is a constituent responsible for a 303d listing of the Core site waterbody in the zone. If the metal is the cause of a 303d listing and there is an approved TMDL, then the Coalition will monitor based on the schedule outlined in the TMDL or determined by the Regional Water Board. There is a TMDL for selenium discharges on the west side of the San Joaquin River basin and a TMDL for boron for the San Joaquin River segment between the Merced and Tuolumne Rivers. The boron TMDL is being addressed through the Basin Plan amendment process for the Control of Salt and Boron Discharges into the San Joaquin River. There is currently no required TMDL monitoring at any of the Core sites for either selenium or boron.

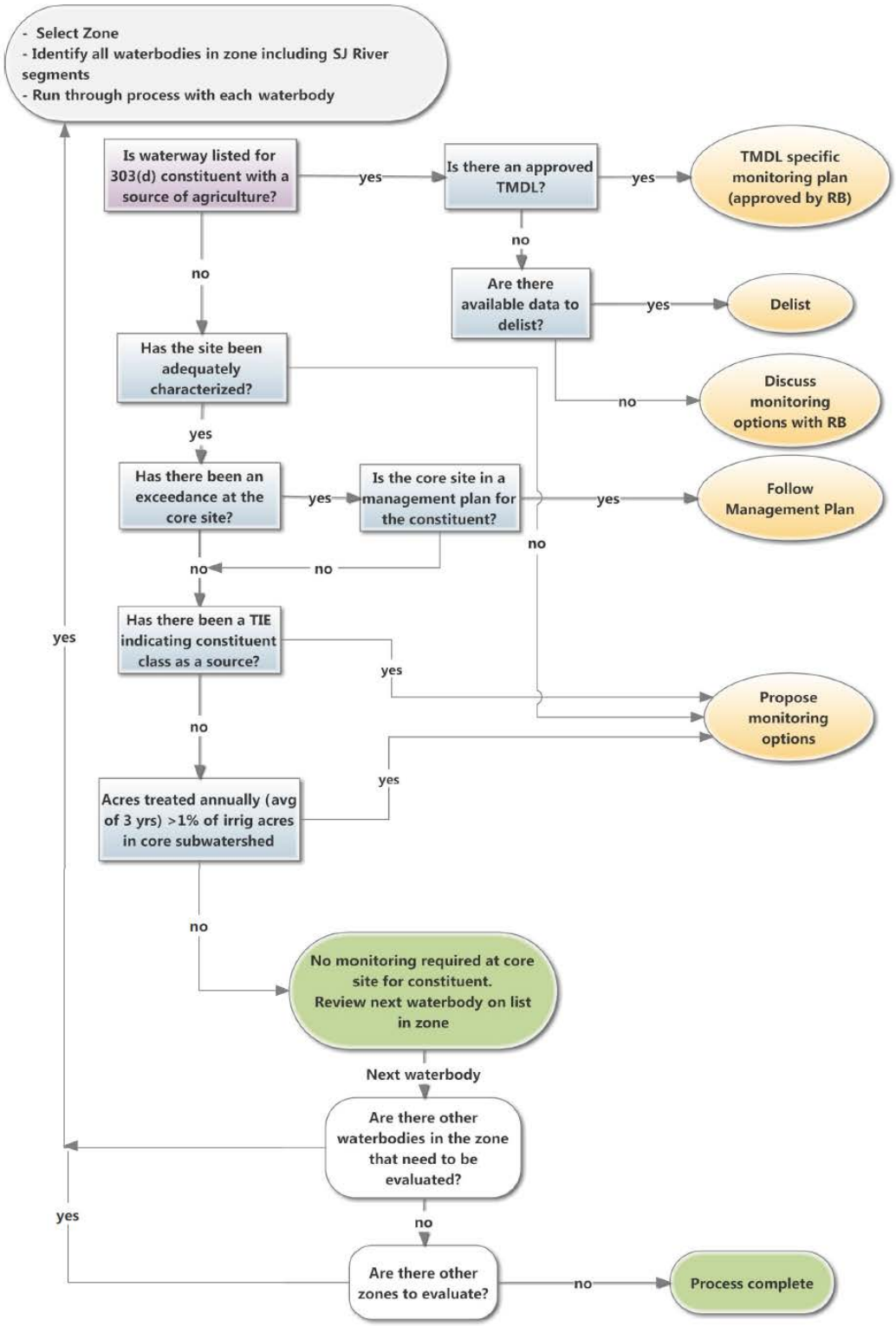
If there is no approved TMDL for the 303d listed metal the Coalition reviews past monitoring data and determines if sufficient data exist to propose delisting of the waterbody. If there are not sufficient data, the Coalition will develop monitoring options as determined by Figure 2 for discussion with the Central Valley Regional Water Quality Control Board (Regional Board). None of the Core site waterbodies are listed for metals on the 2010 California 303d List of Water Quality Limited Segments.

If a metal is not a cause of a 303d listing for the Core site waterbody, past monitoring results are reviewed to determine if the site has been adequately characterized, if there have been exceedances of a WQTL for the metal, or if toxicity test results indicate that the metal is the source of toxicity.

These evaluations lead to one of the following decisions:

- follow the monitoring as described in the ESJWQC Management Plan (characterization adequate, two or more exceedances in a 3 year period),
- develop a monitoring schedule based on past results and application data (characterization not adequate), or
- no monitoring is necessary (characterization adequate, no exceedances).

Figure 2. ESJWQC flowchart for the Core site metals monitoring strategy.



Dry Creek @ Wellsford Rd

Dry Creek @ Wellsford Rd is the Core site in Zone 1 and was scheduled for monitoring for the following metals in the 2014 WY during two storm and two irrigation events: arsenic, boron, dissolved cadmium, dissolved copper, dissolved lead, molybdenum, selenium, dissolved nickel and dissolved zinc. Water quality results evaluated include up through June data; the two irrigation events are scheduled for July and August 2014.

The decision for monitoring for metals at Dry Creek @ Wellsford Rd during the 2015 WY is outlined in Table 5. Metals monitoring results are listed in Table 6.

Table 5. Results of the flowchart analysis for Dry Creek @ Wellsford Rd outlined in Figure 2.
"X" indicates a monitoring decision.

Flowchart question	Arsenic	Boron	Cadmium	Copper	Lead	Molybdenum	Nickel	Selenium	Zinc
1. Is site on 303d list for constituent?	No	No	No	No	No	No	No	No	No
2. Has the site been adequately characterized?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Has there been an exceedance?	No	No	No	Yes	Yes	No	No	No	No
4. Is waterbody in a management plan for constituent?	No	No	No	No	No	No	No	No	No
5. Has there been a TIE indicating the constituent class as causal agent?	No	No	No	No	No	No	No	No	No
6. Acres treated > 1%?	No	No	No	Yes	No	No	No	No	No
Monitoring Decision									
1. TMDL-specific monitoring									
2. Delist from TMDL or discuss monitoring delist options									
3. Monitoring according to management plan									
4. Propose monitoring plan				X	X	X			
5. No monitoring	X	X	X				X	X	X

Monitoring Decision #5 - No monitoring

Arsenic, Boron, Cadmium, Copper, Lead, Molybdenum, Selenium, Nickel, and Zinc

The Coalition monitored for arsenic, boron, cadmium, selenium, nickel, and zinc from 2006 through 2008, 2011, and during two storm events in 2014; no exceedances of the WQTLs occurred (Table 6). The Coalition determined that no monitoring is necessary; arsenic, boron, cadmium, selenium, nickel, and zinc are not applied by agriculture and are not impairing the water quality in the Coalition area.

Copper and lead have been monitored at the site since 2006 and molybdenum has been monitored periodically since 2011. Only concentrations of total copper and total lead exceeded their respective hardness-based WQTLs in samples collected from Dry Creek @ Wellsford. The last exceedances of the WQTLs occurred in 2008. Since the Coalition began monitoring for the dissolved fraction of these metals in 2011, no exceedances occurred (Table 6). Lead is not applied by agriculture and, based on water quality results, lead is not being mobilized by agricultural practices. Copper was removed from the site's management plan in 2012 due to an improvement in water quality and no exceedances of the WQTL since 2008.

Table 6. Dry Creek @ Wellsford Rd site subwatershed dissolved and total metals monitoring results (2006-2014 WY).

Total Suspended Solids (TSS) results are included as a measurement of sediment mobilization. An exceedance of a WQTL is highlighted in blue. "NA" indicates that a constituent was not analyzed on that date.

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2006	May	5/18/2006	1.3	26	NA	<0.04	NA	5.1	NA	0.54	NA	NA	3.4	<0.7	NA	12	NA
2006	Jun	6/15/2006	0.8	14	NA	<0.02	NA	3.9	NA	0.64	NA	NA	2.3	<0.9	NA	11	NA
2006	Jul	7/13/2006	0.9	16	NA	<0.02	NA	3.1	NA	0.38	NA	NA	2	<0.9	NA	5	NA
2006	Aug	8/10/2006	1.1	16	NA	<0.02	NA	3.4	NA	0.48	NA	NA	2.4	<0.9	NA	6	NA
2006	Sep	9/14/2006	0.4	16	NA	<0.02	NA	3.5	NA	0.41	NA	NA	1.7	<0.9	NA	15	NA
2007	Feb	2/11/2007	1	20	NA	<0.02	NA	1.9	NA	0.19	NA	NA	1.7	<0.9	NA	7	NA
2007	Feb	2/28/2007	1.6	32	NA	0.03	NA	8.4	NA	2	NA	NA	4.1	<0.9	NA	14	NA
2007	Apr	4/17/2007	1.3	14	NA	<0.02	NA	5.1	NA	0.8	NA	NA	2.7	1	NA	7	NA
2007	May	5/15/2007	1.8	16	NA	<0.02	NA	6.1	NA	1	NA	NA	3.1	<0.9	NA	8	NA
2007	Jun	6/19/2007	2	22	NA	<0.04	NA	5.9	NA	0.93	NA	NA	3.7	NA	NA	7	NA
2007	Jul	7/17/2007	1.5	19	NA	<0.04	NA	3.9	NA	0.45	NA	NA	2.5	NA	NA	3	NA
2007	Aug	8/14/2007	1.4	24	NA	0.2	NA	5.3	NA	0.58	NA	NA	3.1	NA	NA	7	NA
2007	Sep	9/11/2007	1	21	NA	<0.04	NA	3.3	NA	0.34	NA	NA	2.5	NA	NA	6	NA
2008	Jan	1/24/2008	1.1	25	NA	<0.02	NA	12	NA	2.4	NA	NA	4.6	0.62	NA	18	NA
2008	Feb	2/26/2008	0.8	21	NA	0.05	NA	11	NA	1.8	NA	NA	4.1	0.46	NA	14	NA
2008	Apr	4/22/2008	1.1	21	NA	0.02	NA	4.7	NA	0.67	NA	NA	2.6	<0.22	NA	7	NA
2008	May	5/20/2008	1.5	20	NA	<0.06	NA	3.8	NA	0.83	NA	NA	2.4	0.96	NA	6	NA
2008	Jun	6/17/2008	1.2	19	NA	<0.06	NA	3.7	NA	0.69	NA	NA	2.5	0.7	NA	7	NA
2008	Jul	7/22/2008	1.3	20	NA	<0.06	NA	3.2	NA	0.42	NA	NA	2.1	0.23	NA	10	NA
2008	Aug	8/19/2008	1.2	18	NA	<0.06	NA	5.3	NA	0.6	NA	NA	2.4	<0.11	NA	7	NA
2008	Sep	9/23/2008	1	20	NA	<0.06	NA	2.3	NA	0.28	NA	NA	1.7	<0.11	NA	4	NA
2009	Dec	12/15/2009	NA	NA	NA	NA	NA	NA	<0.071	0.13	NA	NA	NA	NA	NA	NA	10
2010	Feb	2/23/2010	NA	NA	NA	NA	3.2	3.9	NA	NA	NA	NA	NA	NA	NA	NA	<2
2010	Apr	4/20/2010	NA	NA	NA	NA	2.8	4.3	NA	NA	NA	NA	NA	NA	NA	NA	13
2010	Jul	7/20/2010	NA	NA	NA	NA	NA	NA	0.15	0.52	NA	NA	NA	NA	NA	NA	18
2010	Aug	8/17/2010	NA	NA	NA	NA	NA	NA	0.11	0.46	NA	NA	NA	NA	NA	NA	7
2010	Sep	9/14/2010	NA	NA	NA	NA	NA	NA	0.14	0.51	NA	NA	NA	NA	NA	NA	8
2010	Oct	10/19/2010	NA	NA	NA	NA	NA	NA	0.18	0.48	NA	NA	NA	NA	NA	NA	2
2010	Nov	11/16/2010	NA	NA	NA	NA	NA	NA	0.13	0.27	NA	NA	NA	NA	NA	NA	9
2010	Dec	12/14/2010	NA	NA	NA	NA	NA	NA	<0.071	0.19	NA	NA	NA	NA	NA	NA	<2
2011	Jan	1/18/2011	0.6	25	<0.011	<0.011	1.5	2.4	<0.071	0.18	0.246	0.88	1.1	0.08	<0.7	1.2	<2
2011	Feb	2/17/2011	0.59	28	<0.011	<0.011	1.7	2.1	<0.071	0.08	0.43	0.95	1.1	<0.06	0.9	1.6	12
2011	Mar	3/15/2011	0.66	31	<0.011	<0.011	2	2.8	0.08	0.24	0.31	1.1	1.3	0.08	0.9	1.3	7
2011	Apr	4/19/2011	1	29	<0.04	<0.04	2.5	3.8	0.12	0.4	0.6	1.5	1.9	0.11	1.4	3.2	10
2011	May	5/10/2011	1	22	<0.04	<0.04	2	3.2	0.14	0.5	0.72	1.5	1.8	0.07	1.9	4.9	6
2011	Jun	6/14/2011	1.1	19	<0.04	<0.04	2.2	3.7	0.24	0.68	0.49	1.7	2.4	0.08	2.1	5.2	14

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2011	Jul	7/12/2011	1.2	27	<0.04	<0.04	2	3.5	0.21	0.69	0.73	1.8	2.8	0.07	0.9	3.9	14
2011	Aug	8/9/2011	1	21	<0.04	<0.04	1.9	3	0.15	0.45	0.79	1.6	2.2	0.08	1.5	3.5	12
2011	Sep	9/6/2011	NA	19	NA	NA	2.2	3	NA	NA	NA	1.5	1.9	<0.06	2.4	4	7
2011	Oct	10/11/2011	NA	15	NA	NA	2.1	3.3	NA	NA	NA	1.3	1.7	<0.06	1.3	3	5
2011	Nov	11/8/2011	NA	14	NA	NA	1.3	1.7	NA	NA	NA	0.64	0.8	<0.06	<0.8	1.9	2
2011	Dec	12/6/2011	NA	14	NA	NA	1.1	1.4	NA	NA	NA	0.73	0.8	<0.06	1	1.2	2
2012	Feb	2/7/2012	NA	NA	NA	NA	1.3	1.6	NA	NA	NA	NA	NA	NA	NA	NA	<2
2014	Feb	2/10/2014	2.3	34	<0.05	NA	<RL	NA	<0.03	NA	0.38	1.4	NA	<0.06	<RL	NA	135
2014	Mar	3/3/2014	2.0	32	<0.05	NA	1.2	NA	<0.03	NA	0.57	1.4	NA	<RL	<0.7	NA	54
Sample and Exceedance Summary																	
Samples collected in 2006			5	5	0	5	0	5	0	5	0	0	5	5	0	5	0
Samples collected in 2007			8	8	0	8	0	8	0	8	0	0	8	4	0	8	0
Samples collected in 2008			8	8	0	8	0	8	0	8	0	0	8	8	0	8	0
Samples collected in 2009			0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Samples collected in 2010			0	0	0	0	2	2	6	6	0	0	0	0	0	0	8
Samples collected in 2011			8	12	8	8	12	12	8	8	8	12	12	12	12	12	12
Samples collected in 2012			0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Samples collected in 2014 WY[1]			2	2	2	0	2	0	2	0	2	2	0	2	2	0	2
Total Samples Collected			**31**	**35**	**10**	**29**	**17**	**36**	**17**	**36**	**10**	**14**	**33**	**31**	**14**	**33**	**24**
Total Exceedances			**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% Exceedances			**0%**	**0%**	**0%**	**0%**	**0%**	**8.3%**	**0%**	**2.7%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

[1]Data included through June 2014.

Prairie Flower Drain @ Crows Landing Rd

Prairie Flower Drain @ Crows Landing Rd is the Core site in Zone 2 and was scheduled for monitoring for the following metals in the 2014 WY during two storm and two irrigation events: arsenic, boron, dissolved cadmium, dissolved copper, dissolved lead, selenium, dissolved nickel and dissolved zinc, in addition to monthly monitoring for molybdenum. Water quality results evaluated include up through June data; the two irrigation events are scheduled for July and August 2014.

The decision for monitoring for metals at Prairie Flower Drain @ Crows Landing Rd during the 2015 WY is outlined in Table 7. Metals monitoring results are listed in Table 8.

Table 7. Results of the flowchart analysis for Prairie Flower Drain @ Crows Landing Rd outlined in Figure 2.
"X" indicates a monitoring decision.

Flowchart question	Arsenic	Boron	Cadmium	Copper	Lead	Molybdenum	Nickel	Selenium	Zinc
1. Is site on 303d list for constituent?	No	No	No	No	No	No	No	No	No
2. Has the site been adequately characterized?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
3. Has there been an exceedance?	Yes	No	No	No	No	Yes	No	No	No
4. Is waterbody in a management plan for constituent?	No	No	No	No	No	Yes	No	No	No
5. Has there been a TIE indicating the constituent class as causal agent?	No	No	No	No	No	No	No	No	No
6. Acres treated > 1%?	No	No	No	No	No	No	No	No	No
Monitoring Decision									
1. TMDL-specific monitoring									
2. Delist from TMDL or discuss									
3. Monitoring according to						X			
4. Propose monitoring plan						X			
5. No monitoring	X	X	X	X	X		X	X	X

Monitoring Decision #3 - Monitoring according to a management plan

Molybdenum

Utilizing water quality data, rational provided in the 2013 MPU, and the flowchart in Figure 2, the Coalition will monitor molybdenum monthly during the 2015 WY to provide two consecutive years of monitoring. After that time, the Coalition will review the results and discuss possible monitoring strategies with Regional Board staff. Monitoring once a month during the 2015 WY should provide sufficient information to determine the frequency of any additional monitoring.

Monitoring Decision #5 - No monitoring

Arsenic, Boron, Selenium, Cadmium, Copper, Lead, Nickel, and Zinc

The Coalition monitored for arsenic, boron, cadmium, copper, lead, selenium, nickel, and zinc from 2006 through 2008, 2011, and during two storm events in 2014. No exceedances of the WQTLs occurred with the exception of one exceedance of arsenic WQTL in 2007 (Table 8). The Coalition determined that no monitoring is necessary for arsenic, boron, cadmium, lead, selenium, nickel, and zinc which are not applied by agriculture and copper is applied to less than 1% acreage in the subwatershed.

Table 8. Prairie Flower Drain @ Crows Landing Rd site subwatershed dissolved and total metals monitoring results (2006-2014 WY).

Total Suspended Solids (TSS) results are included as a measurement of sediment mobilization. An exceedance of a WQTL is highlighted in blue. "NA" indicates that a constituent was not analyzed on that date.

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2006	May	5/18/2006	8.8	420	NA	0.07	NA	10	NA	0.64	NA	NA	9.3	3	NA	11	NA
2006	Jun	6/15/2006	7.6	300	NA	0.04	NA	7.9	NA	0.52	NA	NA	7.5	3	NA	13	NA
2006	Jul	7/13/2006	4.2	150	NA	0.05	NA	7.3	NA	0.68	NA	NA	4.3	2	NA	14	NA
2006	Aug	8/10/2006	7.7	320	NA	0.04	NA	8.4	NA	0.49	NA	NA	7.3	2	NA	12	NA
2006	Sep	9/14/2006	5.4	170	NA	0.04	NA	8.8	NA	0.78	NA	NA	5.9	<0.9	NA	25	NA
2007	Feb	2/11/2007	9.6	420	NA	0.07	NA	8.5	NA	0.17	NA	NA	7.7	2	NA	11	NA
2007	Mar	3/1/2007	8	400	NA	0.05	NA	9.1	NA	<0.1	NA	NA	8.3	3	NA	3	NA
2007	Apr	4/17/2007	8.8	430	NA	0.04	NA	8.1	NA	0.12	NA	NA	6.6	3	NA	4	NA
2007	May	5/15/2007	9.6	400	NA	<0.02	NA	9.4	NA	<0.1	NA	NA	6.3	4	NA	3	NA
2007	Jun	6/19/2007	12	330	NA	0.05	NA	11	NA	0.35	NA	NA	8.7	NA	NA	7	NA
2007	Jul	7/17/2007	5.7	200	NA	<0.04	NA	6.5	NA	0.21	NA	NA	4.9	NA	NA	15	NA
2007	Aug	8/14/2007	4.6	130	NA	0.08	NA	9.6	NA	1	NA	NA	7	NA	NA	21	NA
2007	Sep	9/11/2007	4.2	200	NA	0.09	NA	6.6	NA	0.13	NA	NA	3.1	NA	NA	9	NA
2008	Jan	1/24/2008	6.8	360	NA	<0.02	NA	9.2	NA	0.28	NA	NA	6	1.1	NA	20	NA
2008	Feb	2/26/2008	7.7	440	NA	<0.02	NA	9.1	NA	0.02	NA	NA	6.5	1.4	NA	4	NA
2008	Apr	4/22/2008	8.4	390	NA	<0.02	NA	11	NA	0.32	NA	NA	7.9	1.1	NA	7	NA
2008	May	5/20/2008	9.3	330	NA	<0.06	NA	9	NA	0.32	NA	NA	6.3	1.8	NA	10	NA
2008	Jun	6/17/2008	6.9	290	NA	0.06	NA	9.6	NA	0.67	NA	NA	6.8	1.4	NA	15	NA
2008	Jul	7/22/2008	4.6	160	NA	<0.06	NA	7.1	NA	0.23	NA	NA	4.5	0.18	NA	6	NA
2008	Aug	8/19/2008	4.4	170	NA	<0.06	NA	4.4	NA	0.13	NA	NA	2.8	0.22	NA	4	NA
2008	Sep	9/23/2008	10	360	NA	<0.06	NA	8.3	NA	0.28	NA	NA	7.3	1	NA	5	NA
2011	Jan	1/18/2011	7.9	447	0.05	0.06	6.4	8.1	<0.071	0.08	25	5.1	5.5	0.48	4	6.1	8
2011	Feb	2/17/2011	7.6	375	0.02	0.02	6	7.1	<0.071	<0.071	21	4.1	4.7	0.43	1	1.6	20
2011	Mar	3/15/2011	6.8	390	0.02	0.03	6.1	6.7	<0.071	<0.071	19	4.2	4.3	0.36	0.96	2	14
2011	Apr	4/19/2011	4.6	207	<0.04	0.06	6.6	10	0.08	0.22	8.2	3	3.4	0.38	6.8	13	40.5
2011	May	5/10/2011	5.3	231	<0.04	<0.04	5.3	6.6	<0.03	0.08	11	3.3	3.7	0.32	1.7	2.8	13
2011	Jun	6/14/2011	6	288	<0.04	<0.04	4.6	6.1	<0.03	0.22	13	3.2	4	0.32	0.7	3.5	29
2011	Jul	7/12/2011	5.2	234	0.04	0.06	5.9	8.2	0.05	0.28	9.8	3.5	4.6	0.43	2.4	5.5	13
2011	Aug	8/9/2011	4.2	179	<0.04	0.05	3.3	4.9	0.04	0.19	6.9	2.1	2.5	0.24	2.5	5.6	12
2011	Sep	9/6/2011	NA	96	NA	NA	2.4	3.6	NA	NA	NA	1.3	1.8	0.16	2.4	5.8	22
2011	Oct	10/11/2011	NA	381	NA	NA	4.3	5.9	NA	NA	NA	4.3	4.8	0.38	5.8	2.9	18
2011	Nov	11/8/2011	NA	347	NA	NA	5.6	6.5	NA	NA	NA	4.2	4.7	0.37	<0.7	1.7	8
2011	Dec	12/6/2011	NA	344	NA	NA	6.4	7.4	NA	NA	NA	4.3	5.1	0.38	1.2	2	14
2013	Oct	10/15/2013	NA	NA	NA	NA	NA	14	NA	NA	14	NA	NA	NA	NA	NA	32
2013	Nov	11/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	18	NA	NA	NA	NA	NA	118
2013	Dec	12/10/2013	NA	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	NA	NA	44

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2014	Jan	1/14/2014	NA	NA	NA	NA	NA	NA	NA	NA	13	NA	NA	NA	NA	NA	214
2014	Feb	2/10/2014	7.1	270	<RL	NA	4.3	NA	<RL	NA	7.8	2.4	NA	<RL	17	NA	240
2014	Mar	3/3/2014	8.5	330	<0.05	NA	7.4	NA	<RL	NA	15	5.0	NA	<0.06	3.3	NA	221
2014	Apr	4/8/2014	NA	NA	NA	NA	NA	NA	NA	NA	17	NA	NA	NA	NA	NA	54
2014	May	5/13/2014	NA	NA	NA	NA	NA	NA	NA	NA	13	NA	NA	NA	NA	NA	59
2014	Jun	6/10/2014	NA	NA	NA	NA	NA	NA	NA	NA	5.5	NA	NA	NA	NA	NA	156
Sample and Exceedance Summary																	
Samples collected in 2006			5	5	0	5	0	5	0	5	0	0	5	5	0	5	0
Samples collected in 2007			8	8	0	8	0	8	0	8	0	0	8	4	0	8	0
Samples collected in 2008			8	8	0	8	0	8	0	8	0	0	8	8	0	8	0
Samples collected in 2011			8	12	8	8	12	12	8	8	8	12	12	12	12	12	12
Samples collected in 2013			0	0	0	0	0	1	0	0	3	0	0	0	0	0	3
Samples collected in 2014 WY[1]			2	2	2	0	2	0	2	0	6	2	0	2	2	0	6
Total Collected			**31**	**35**	**10**	**29**	**14**	**34**	**10**	**29**	**17**	**14**	**33**	**31**	**14**	**33**	**21**
Total Exceedances			**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**
% Exceedances			**3.4%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**59%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

[1]Data included through June 2014.

Highline Canal @ Hwy 99

Highline Canal @ Hwy 99 is the Core site in Zone 3 and was scheduled for monitoring for the following metals in the 2014 WY during two storm and two irrigation events: arsenic, boron, dissolved cadmium, dissolved copper, dissolved lead, molybdenum, selenium, dissolved nickel and dissolved zinc, in addition to MPM for copper and lead. Water quality results evaluated include up through June data; the two irrigation events are scheduled for July and August 2014.

The decision for monitoring for metals at Highline Canal @ Hwy 99 during the 2015 WY is outlined in Table 9. Metals monitoring results are listed in Table 10.

Table 9. Results of the flowchart analysis for Highline Canal @ Hwy 99 outlined in Figure 2.
"X" indicates a monitoring decision.

FLOWCHART QUESTION	ARSENIC	BORON	CADMIUM	COPPER	LEAD	MOLYBDENUM	NICKEL	SELENIUM	ZINC
1. Is site on 303d list for constituent?	No	No	No	No	No	No	No	No	No
2. Has the site been adequately characterized?	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
3. Has there been an exceedance?	No	No	No	Yes	Yes	No	No	No	No
4. Is waterbody in a management plan for constituent?	No	No	No	Yes	Yes	No	No	No	No
5. Has there been a TIE indicating the constituent class as causal agent?	No	No	No	Yes	Yes	No	No	No	No
6. Acres treated > 1%?	No	No	No	Yes	No	No	No	No	No
MONITORING DECISION									
1. TMDL-specific monitoring									
2. Delist from TMDL or discuss monitoring delist options									
3. Monitoring according to management plan				X	X				
4. Propose monitoring plan									
5. No monitoring	X	X	X	X	X	X	X	X	X

Monitoring Decision #3 - Monitoring according to a management plan

Copper and Lead

Dissolved copper and dissolved lead will be monitored based on the evaluation provided in the Management Plan Monitoring section of this report.

Monitoring Decision #5 - No monitoring

Arsenic, Boron, Cadmium, Molybdenum, Nickel, Selenium, and Zinc

The Coalition monitored for arsenic, boron, cadmium nickel, selenium, and zinc from 2006 through 2008, 2011, and 2014, and for molybdenum beginning in October 2008 through March 2009, 2011, and two storm events in 2014; no exceedances of the WQTLs occurred (Table 10). The Coalition determined that no monitoring is necessary; arsenic, boron, cadmium, selenium, nickel, molybdenum, and zinc are not applied by agriculture and are not impairing the water quality in the Coalition area.

Table 10. Highline Canal @ Hwy 99 site subwatershed dissolved and total metals monitoring results (2006-2014 WY).

Total Suspended Solids (TSS) results are included as a measurement of sediment mobilization. An exceedance of a WQTL is highlighted in blue. "NA" indicates that a constituent was not analyzed on that date.

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2006	May	5/17/2006	<0.2	6	NA	<0.04	NA	1.8	NA	0.42	NA	NA	1.2	<0.7	NA	3	NA
2006	Jun	6/14/2006	<0.3	6	NA	<0.02	NA	1.7	NA	0.38	NA	NA	1	<0.9	NA	8	NA
2006	Jul	7/12/2006	<0.3	6	NA	<0.02	NA	1.6	NA	0.48	NA	NA	1.2	<0.9	NA	11	NA
2006	Aug	8/9/2006	<0.3	4	NA	<0.02	NA	1.3	NA	0.39	NA	NA	0.9	<0.9	NA	6	NA
2006	Sep	9/13/2006	<0.3	7	NA	<0.02	NA	1.3	NA	0.24	NA	NA	0.8	<0.9	NA	19	NA
2007	Feb	2/11/2007	1.4	11	NA	<0.02	NA	3	NA	0.52	NA	NA	1.4	<0.9	NA	24	NA
2007	Feb	2/28/2007	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2007	Apr	4/17/2007	0.9	5	NA	0.08	NA	11	NA	5.1	NA	NA	2.9	<0.9	NA	34	NA
2007	May	5/15/2007	0.4	9	NA	<0.02	NA	1.4	NA	0.3	NA	NA	1	<0.9	NA	2	NA
2007	Jun	6/19/2007	0.6	5	NA	<0.04	NA	2.4	NA	0.5	NA	NA	1.3	NA	NA	3	NA
2007	Jul	7/17/2007	0.8	5	NA	<0.04	NA	3.2	NA	1	NA	NA	2	NA	NA	6	NA
2007	Aug	8/14/2007	0.46	10	NA	<0.04	NA	1.9	NA	0.44	NA	NA	1	NA	NA	7	NA
2007	Sep	9/11/2007	0.5	7	NA	<0.04	NA	1.5	NA	0.48	NA	NA	0.6	NA	NA	3	NA
2008	Jan	1/24/2008	5.2	82	NA	0.2	NA	37	NA	3.4	NA	NA	11	0.74	NA	36	NA
2008	Feb	2/26/2008	8.6	110	NA	0.096	NA	81	NA	1.1	NA	NA	10	0.85	NA	31	NA
2008	Apr	4/22/2008	0.4	6	NA	<0.02	NA	1.8	NA	0.3	NA	NA	1.1	<0.22	NA	3	NA
2008	Apr	4/29/2008	NA	NA	NA	NA	NA	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	May	5/20/2008	0.49	6	NA	<0.06	NA	1.6	NA	0.48	NA	NA	1.1	0.8	NA	3	NA
2008	Jun	6/3/2008	NA	NA	NA	NA	NA	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	Jun	6/17/2008	0.45	6	NA	<0.06	NA	1.2	NA	0.28	NA	NA	0.8	0.7	NA	3	NA
2008	Jul	7/8/2008	NA	NA	NA	NA	NA	1.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	Jul	7/22/2008	0.4	5	NA	<0.06	NA	1.2	NA	0.4	NA	NA	0.8	<0.11	NA	6	NA
2008	Aug	8/5/2008	NA	NA	NA	NA	NA	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	Aug	8/19/2008	0.4	5	NA	<0.06	NA	1	NA	0.18	NA	NA	0.6	<0.11	NA	2	NA
2008	Sep	9/23/2008	0.3	5	NA	<0.06	NA	1.1	NA	0.22	NA	NA	0.7	<0.11	NA	3	NA
2008	Oct	10/21/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008	Nov	11/11/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008	Dec	12/16/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2009	Jan	1/20/2009	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2009	Mar	3/17/2009	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2009	Nov	11/17/2009	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2010	Jan	1/19/2010	NA	NA	NA	NA	2.5	5.7	NA	NA	NA	NA	NA	NA	NA	NA	33
2010	Feb	2/23/2010	NA	NA	NA	NA	6.3	7.8	NA	NA	NA	NA	NA	NA	NA	NA	19
2010	Apr	4/20/2010	NA	NA	NA	NA	0.89	2.2	NA	NA	NA	NA	NA	NA	NA	NA	13
2010	Jun	6/15/2010	NA	NA	NA	NA	0.65	1.2	NA	NA	NA	NA	NA	NA	NA	NA	6
2010	Jul	7/20/2010	NA	NA	NA	NA	0.48	1.3	NA	NA	NA	NA	NA	NA	NA	NA	5
2010	Aug	8/17/2010	NA	NA	NA	NA	0.52	1.2	NA	NA	NA	NA	NA	NA	NA	NA	10
2010	Dec	12/14/2010	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2011	Jan	1/18/2011	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2011	Feb	2/17/2011	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2011	Mar	3/15/2011	0.44	6.7	<0.011	<0.011	1.1	2.1	0.09	0.34	0.33	0.77	1.1	<0.06	1.1	2.3	<2
2011	Apr	4/19/2011	0.39	6.7	<0.04	<0.04	0.97	1.3	0.07	0.2	0.28	0.75	0.75	0.08	0.95	1.2	<2
2011	May	5/10/2011	0.36	6.7	<0.04	<0.04	0.3	0.89	0.04	0.28	0.29	0.46	0.79	<0.06	<0.7	1.2	3
2011	Jun	6/14/2011	0.35	5.3	<0.04	<0.04	0.58	1.1	0.07	0.22	0.24	0.44	0.62	<0.06	<0.7	1.3	3
2011	Jul	7/12/2011	0.36	6.7	<0.04	<0.04	0.53	1.4	0.16	0.53	0.25	0.4	1	<0.06	<0.7	1.8	15
2011	Aug	8/9/2011	0.32	6.7	<0.04	<0.04	0.3	0.82	0.04	0.39	0.246	0.4	0.76	<0.06	<0.7	1.3	14
2011	Sep	9/6/2011	NA	5.7	NA	NA	0.51	5.2	NA	NA	NA	0.5	3.8	<0.06	<0.7	13	168
2011	Oct	10/11/2011	NA	4.7	NA	NA	0.11	0.88	NA	NA	NA	0.32	0.56	<0.06	<0.7	1.1	<2
2011	Nov	11/8/2011	NA	4.9	NA	NA	1.4	2.2	NA	NA	NA	0.56	0.94	<0.06	<0.7	2.1	4
2011	Dec	12/6/2011	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2012	Jan	1/10/2012	NA	NA	NA	NA	4.5	5.6	NA	NA	NA	NA	NA	NA	NA	NA	<2
2012	Feb	2/7/2012	NA	NA	NA	NA	3.8	4.7	0.14	0.33	NA	NA	NA	NA	NA	NA	2
2012	Mar	3/6/2012	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Jan	1/8/2013	NA	NA	NA	NA	11	19	NA	NA	NA	NA	NA	NA	NA	NA	NA
2013	Feb	2/12/2013	NA	NA	NA	NA	6.7	9.1	0.12	0.99	NA	NA	NA	NA	NA	NA	NA
2013	Apr	4/2/2013	NA	NA	NA	NA	1.2	2.5	0.08	0.59	NA	NA	NA	NA	NA	NA	NA
2013	May	5/14/2013	NA	NA	NA	NA	NA	NA	0.05	0.19	NA	NA	NA	NA	NA	NA	NA
2013	Jun	6/11/2013	NA	NA	NA	NA	0.54	1	0.04	0.18	NA	NA	NA	NA	NA	NA	NA
2013	Jul	7/9/2013	NA	NA	NA	NA	0.51	1.3	<0.03	0.34	NA	NA	NA	NA	NA	NA	32
2013	Aug	8/13/2013	NA	NA	NA	NA	<RL	0.77	<0.03	<RL	NA	NA	NA	NA	NA	NA	<2
2013	Dec	12/10/2013	NA	NA	NA	NA	Dry	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	Jan	1/14/2014	NA	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry
2014	Feb	2/10/2014	Dry	Dry	Dry	NA	Dry	NA	Dry	NA	Dry	Dry	NA	Dry	Dry	NA	Dry
2014	Mar	3/3/2014	1.6	25	<0.05	NA	7.1	NA	<RL	NA	1.1	3.7	NA	<RL	2.2	NA	17
2014	May	5/13/2014	NA	NA	NA	NA	NA	NA	0.08	NA	NA	NA	NA	NA	NA	NA	8
2014	Jun	6/10/2014	NA	NA	NA	NA	NA	NA	<0.03	NA	NA	NA	NA	NA	NA	NA	<2
Sample and Exceedance Summary																	
Samples collected in 2006			5	5	0	5	0	5	0	5	0	0	5	5	0	5	0
Samples collected in 2007			7	7	0	7	0	7	0	7	0	0	7	3	0	7	0
Samples collected in 2008			8	8	0	8	0	12	0	8	0	0	8	8	0	8	0
Samples collected in 2009			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Samples collected in 2010			0	0	0	0	6	6	0	0	0	0	0	0	0	0	6
Samples collected in 2011			6	9	6	6	9	9	6	6	6	9	9	9	9	9	9
Samples collected in 2012			0	0	0	0	2	2	1	1	0	0	0	0	0	0	2
Samples collected in 2013			0	0	0	0	6	6	6	6	0	0	0	0	0	0	2
Samples collected in 2014 WY[1]			1	1	1	0	1	0	3	0	1	1	0	1	1	0	3
Total Collected			**27**	**30**	**7**	**26**	**24**	**47**	**16**	**33**	**7**	**10**	**29**	**26**	**10**	**29**	**22**
Total Exceedances			**0**	**0**	**0**	**0**	**4**	**7**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% Exceedances			**0%**	**0%**	**0%**	**0%**	**17%**	**15%**	**0%**	**21%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

[1]Data included through June 2014.

Merced River @ Santa Fe

Merced River @ Santa Fe is the Core site in Zone 4 and was scheduled for monitoring for the following metals in the 2014 WY during two storm and two irrigation events: arsenic, boron, dissolved cadmium, dissolved copper, dissolved lead, molybdenum, selenium, dissolved nickel and dissolved zinc, in addition to MPM for lead. Water quality results evaluated include up through June data; the two irrigation events are scheduled for July and August 2014.

The decision for monitoring for metals Merced River @ Santa Fe during the 2015 WY is outlined in Table 11. Metals monitoring results are listed in Table 12.

Table 11. Results of the flowchart analysis for Merced River @ Santa Fe outlined in Figure 2.
"X" indicates a monitoring decision.

Flowchart question	Arsenic	Boron	Cadmium	Copper	Lead	Molybdenum	Nickel	Selenium	Zinc
1. Is site on 303d list for constituent?	No	No	No	No	No	No	No	No	No
2. Has the site been adequately characterized?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Has there been an exceedance?	No	No	No	Yes	Yes	No	No	No	No
4. Is waterbody in a management plan for constituent?	No	No	No	No	Yes[1]	No	No	No	No
5. Has there been a TIE indicating the constituent class as causal agent?	No	No	No	Yes	Yes	No	No	No	No
6. Acres treated > 1%?	No	No	No	Yes	No	No	No	No	No
Monitoring Decision									
1. TMDL-specific monitoring									
2. Delist from TMDL or discuss monitoring delist options									
3. Monitoring according to management plan					X				
4. Propose monitoring plan									
5. No monitoring	X	X	X	X		X	X	X	X

[1] Petition to be removed from the management plan, the Coalition will remove from the monitoring schedule if approved.

Monitoring Decision #3-Monitoring according to the management plan

Lead

Lead will be monitored based on the evaluation provided in the Management Plan Monitoring section of this report. The Coalition petitioned to remove lead from the Merced River @ Santa Fe management plan on June 5, 2014.

Monitoring Decision #5 - No monitoring

Arsenic, Boron, Cadmium, Copper, Molybdenum, Nickel, Selenium, and Zinc

The Coalition monitored for arsenic, boron, cadmium, copper, nickel, selenium, and zinc from 2006 through 2008, 2011, and 2014, and for molybdenum beginning in October 2008 through March 2009, 2011, and two storm events in 2014; no exceedances of the WQTLs occurred (Table 12). The Coalition determined that no monitoring is necessary; arsenic, boron, cadmium, selenium, nickel, molybdenum, and zinc are not applied by agriculture.

Table 12. Merced River @ Santa Fe site subwatershed dissolved and total metals monitoring results (2006-2014 WY).

Total Suspended Solids (TSS) results are included as a measurement of sediment mobilization. An exceedance of a WQTL is highlighted in blue. "NA" indicates that a constituent was not analyzed on that date. 2014 WY data included through June.

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2006	May	5/16/2006	0.5	4	NA	<0.02	NA	NA	NA	0.12	NA	NA	0.7	<0.9	NA	7	NA
2006	Jun	6/14/2006	<0.3	5	NA	<0.02	NA	0.9	NA	0.14	NA	NA	0.5	<0.9	NA	2	NA
2006	Jul	7/12/2006	0.6	5	NA	<0.02	NA	1.3	NA	0.19	NA	NA	0.6	<0.9	NA	3	NA
2006	Aug	8/9/2006	0.5	3	NA	<0.02	NA	0.8	NA	0.14	NA	NA	0.5	<0.9	NA	3	NA
2006	Sep	9/13/2006	<0.3	7	NA	<0.02	NA	1.4	NA	0.11	NA	NA	0.5	<0.9	NA	19	NA
2007	Feb	2/12/2007	1.1	9	NA	<0.02	NA	2.9	NA	0.82	NA	NA	1.7	<0.9	NA	14	NA
2007	Feb	2/28/2007	1.5	11	NA	<0.02	NA	3.4	NA	0.68	NA	NA	1.9	<0.9	NA	6	NA
2007	Apr	4/17/2007	1	5	NA	<0.02	NA	1.4	NA	0.12	NA	NA	0.47	<0.9	NA	2	NA
2007	May	5/15/2007	0.3	10	NA	<0.02	NA	0.9	NA	<0.1	NA	NA	0.4	<0.9	NA	<0.4	NA
2007	Jun	6/19/2007	1.1	5	NA	<0.04	NA	1.3	NA	0.1	NA	NA	0.4	NA	NA	2	NA
2007	Jul	7/17/2007	1.3	30	NA	<0.04	NA	1.4	NA	0.14	NA	NA	0.5	NA	NA	<0.7	NA
2007	Aug	8/14/2007	1	12	NA	<0.04	NA	1.5	NA	0.1	NA	NA	0.47	NA	NA	1	NA
2007	Sep	9/11/2007	0.6	8	NA	<0.04	NA	0.8	NA	0.07	NA	NA	0.4	NA	NA	<0.7	NA
2008	Jan	1/24/2008	1.7	17	NA	0.1	NA	22	NA	5.6	NA	NA	11	0.23	NA	38	NA
2008	Feb	2/26/2008	1	11	NA	0.03	NA	5.2	NA	1.2	NA	NA	3.2	0.65	NA	9	NA
2008	Apr	4/22/2008	0.8	7	NA	<0.02	NA	1.4	NA	0.15	NA	NA	0.6	<0.22	NA	2	NA
2008	May	5/20/2008	0.9	7	NA	<0.06	NA	0.8	NA	0.09	NA	NA	0.4	0.77	NA	1	NA
2008	Jun	6/17/2008	1	8	NA	<0.06	NA	1.1	NA	0.11	NA	NA	0.46	0.55	NA	4	NA
2008	Jul	7/22/2008	1.1	6	NA	<0.06	NA	0.8	NA	0.13	NA	NA	0.2	<0.11	NA	3	NA
2008	Aug	8/19/2008	0.9	6	NA	<0.06	NA	1.2	NA	0.13	NA	NA	0.5	0.12	NA	1	NA
2008	Sep	9/23/2008	0.6	5	NA	<0.06	NA	0.7	NA	0.09	NA	NA	0.3	<0.11	NA	1	NA
2008	Oct	10/21/2008	0.53	7	<0.011	<0.011	0.6	0.8	<0.071	<0.14	0.35	0.2	0.3	<0.06	<0.8	<0.8	<2
2008	Nov	11/11/2008	0.6	5	<0.011	<0.011	0.6	1.2	<0.071	0.3	0.38	0.3	0.6	<0.06	<0.8	2	<2
2008	Dec	12/16/2008	0.48	4	<0.011	<0.011	0.45	0.6	<0.071	<0.071	0.38	0.3	0.2	<0.06	<0.8	<0.8	<2
2009	Jan	1/20/2009	0.5	6	<0.011	<0.011	0.4	0.6	<0.071	<0.071	0.54	0.3	0.2	<0.06	<0.8	<0.8	<2
2009	Feb	2/7/2009	0.62	7	<0.011	<0.011	0.49	0.9	<0.071	0.11	0.59	0.4	0.46	<0.06	<0.8	1	<2
2009	Mar	3/17/2009	0.68	6.8	<0.011	<0.011	0.73	1	<0.071	0.1	0.67	0.43	0.42	0.14	1.2	0.9	<2
2009	Apr	4/21/2009	0.79	7.6	<0.011	<0.011	0.79	1.1	<0.071	0.1	0.68	0.51	0.44	0.09	<0.8	1.4	<2
2009	May	5/19/2009	NA	7.6	NA	NA	0.7	1	NA	NA	NA	0.53	0.42	0.09	<0.8	1.6	<2
2009	Jun	6/16/2009	NA	NA	NA	NA	0.58	0.9	NA	NA	NA	NA	NA	NA	NA	NA	<2
2009	Jul	7/21/2009	NA	NA	NA	NA	0.8	0.41	NA	NA	NA	NA	NA	NA	NA	NA	<1
2009	Aug	8/18/2009	NA	NA	NA	NA	0.76	1.1	NA	NA	NA	NA	NA	NA	NA	NA	<2
2009	Sep	9/22/2009	NA	NA	NA	NA	0.28	0.97	NA	NA	NA	NA	NA	NA	NA	NA	<2
2009	Oct	10/20/2009	NA	NA	NA	NA	0.61	0.82	NA	NA	NA	NA	NA	NA	NA	NA	<2
2009	Nov	11/17/2009	NA	NA	NA	NA	0.35	0.51	NA	NA	NA	NA	NA	NA	NA	NA	<2
2009	Dec	12/15/2009	NA	NA	NA	NA	0.54	0.6	NA	NA	NA	NA	NA	NA	NA	NA	<2

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2010	Jan	1/19/2010	NA	NA	NA	NA	1.6	9.4	NA	NA	NA	NA	NA	NA	NA	NA	150
2010	Feb	2/23/2010	NA	NA	NA	NA	0.78	1	NA	NA	NA	NA	NA	NA	NA	NA	<2
2010	Mar	3/23/2010	NA	NA	NA	NA	0.95	1.2	NA	NA	NA	NA	NA	NA	NA	NA	<2
2010	Apr	4/20/2010	NA	NA	NA	NA	0.84	1.1	NA	NA	NA	NA	NA	NA	NA	NA	<2
2010	May	5/18/2010	NA	NA	NA	NA	0.72	1.3	NA	NA	NA	NA	NA	NA	NA	NA	2
2010	Jun	6/15/2010	NA	NA	NA	NA	0.64	1.6	NA	NA	NA	NA	NA	NA	NA	NA	<2
2010	Jul	7/20/2010	NA	NA	NA	NA	0.59	1.2	<0.071	0.14	NA	NA	NA	NA	NA	NA	<2
2010	Aug	8/17/2010	NA	NA	NA	NA	0.49	0.72	<0.071	0.074	NA	NA	NA	NA	NA	NA	<2
2010	Sep	9/14/2010	NA	NA	NA	NA	0.67	1.2	<0.071	0.13	NA	NA	NA	NA	NA	NA	2
2010	Oct	10/19/2010	NA	NA	NA	NA	0.498	0.62	<0.071	<0.071	NA	NA	NA	NA	NA	NA	<2
2010	Nov	11/16/2010	NA	NA	NA	NA	0.38	0.53	0.09	<0.071	NA	NA	NA	NA	NA	NA	<2
2010	Dec	12/14/2010	NA	NA	NA	NA	0.28	0.56	<0.071	<0.071	NA	NA	NA	NA	NA	NA	<2
2011	Jan	1/18/2011	0.75	6.8	<0.011	<0.011	0.54	1.1	<0.071	0.1	0.44	0.44	0.61	0.1	<0.8	<0.8	<2
2011	Feb	2/17/2011	0.45	4.9	<0.011	<0.011	0.56	0.63	<0.071	0.08	0.4	0.33	0.37	<0.06	<0.8	<0.8	6
2011	Mar	3/15/2011	0.57	4.7	<0.011	<0.011	0.52	0.88	<0.071	0.08	0.41	0.36	0.48	0.1	<0.8	<0.8	4
2011	Apr	4/19/2011	0.54	5.5	<0.04	<0.04	0.52	0.7	<0.03	0.07	0.37	0.38	0.38	0.13	<0.7	<0.7	<2
2011	May	5/10/2011	0.59	5.3	<0.04	<0.04	0.21	0.495	<0.03	0.08	0.4	0.33	0.44	0.1	<0.7	<0.7	4
2011	Jun	6/14/2011	0.66	4.7	<0.04	<0.04	0.48	1.1	0.03	0.18	0.32	0.27	0.54	0.06	<0.7	1	2
2011	Jul	7/12/2011	0.51	6.7	<0.04	<0.04	0.49	0.74	<0.03	0.08	0.32	0.27	0.37	0.07	<0.7	<0.7	2
2011	Aug	8/9/2011	0.75	5.8	<0.04	<0.04	0.37	0.76	0.04	0.14	0.39	0.31	0.48	<0.06	<0.7	<0.7	4
2011	Sep	9/6/2011	NA	5.1	NA	NA	0.46	0.94	NA	NA	NA	0.28	0.34	<0.06	<0.7	1.3	<2
2011	Oct	10/11/2011	NA	3.7	NA	NA	0.08	0.7	NA	NA	NA	0.2	0.37	<0.06	<0.7	0.8	<2
2011	Nov	11/8/2011	NA	3.3	NA	NA	0.19	0.28	NA	NA	NA	0.1	0.14	<0.06	<0.7	<0.7	<2
2011	Dec	12/6/2011	NA	4.3	NA	NA	0.38	0.65	NA	NA	NA	0.18	0.2	<0.06	<0.7	<0.7	2
2014	Jan	1/14/2014	NA	NA	NA	NA	NA	NA	<0.03	<RL	NA	NA	NA	NA	NA	NA	<2
2014	Feb	2/10/2014	0.53	<RL	<0.05	NA	<RL	NA	<0.03	NA	0.48	<RL	NA	<0.06	<0.7	NA	3
2014	Mar	3/3/3014	0.61	<RL	<0.05	NA	0.70	NA	<0.03	NA	0.47	<RL	NA	<0.06	<0.7	NA	<2
Sample and Exceedance Summary																	
Samples collected in 2006			5	5	0	5	0	4	0	5	0	0	5	5	0	5	0
Samples collected in 2007			8	8	0	8	0	8	0	8	0	0	8	4	0	8	0
Samples collected in 2008			11	11	3	11	3	11	3	11	3	3	11	11	3	11	3
Samples collected in 2009			4	5	4	4	12	12	4	4	4	5	5	5	5	5	12
Samples collected in 2010			0	0	0	0	12	12	6	6	0	0	0	0	0	0	12
Samples collected in 2011			8	12	8	8	12	12	8	8	8	12	12	12	12	12	12
Samples collected in 2014 WY[1]			2	2	2	0	2	0	3	1	2	2	0	2	2	0	3
Total Collected			**38**	**43**	**17**	**36**	**41**	**59**	**24**	**43**	**17**	**22**	**41**	**39**	**22**	**41**	**42**
Total Exceedances			**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% Exceedances			**0%**	**0%**	**0%**	**0%**	**0%**	**1.7%**	**0%**	**4.6%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

[1]Data included through June 2014.

Duck Slough @ Gurr Rd

Duck Slough @ Gurr Rd is the Core site in Zone 5 and was scheduled for monitoring for the following metals in the 2014 WY during two storm and two irrigation events: arsenic, boron, dissolved cadmium, dissolved copper, dissolved lead, molybdenum, selenium, dissolved nickel and dissolved zinc, in addition to MPM for copper and lead. Water quality results evaluated include up through June data; the two irrigation events are scheduled for July and August 2014.

The decision for monitoring for metals at Duck Slough @ Gurr Rd during the 2015 WY is outlined in Table 13. Metals monitoring results are listed in Table 14.

Table 13. Results of the flowchart analysis for Duck Slough @ Gurr Rd outlined in Figure 2.
"X" indicates a monitoring decision.

FLOWCHART QUESTION	ARSENIC	BORON	CADMIUM	COPPER	LEAD	MOLYBDENUM	NICKEL	SELENIUM	ZINC
1. Is site on 303d list for constituent?	No	No	No	No	No	No	No	No	No
2. Has the site been adequately characterized?	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
3. Has there been an exceedance?	Yes	No	No	Yes	Yes	No	No	No	No
4. Is waterbody in a management plan for constituent?	No	No	No	Yes[1]	Yes	No	No	No	No
5. Has there been a TIE indicating the constituent class as causal agent?	No	No	No	No	No	No	No	No	No
6. Acres treated > 1%?	No	No	No	Yes	No	No	No	No	No
MONITORING DECISION									
1. TMDL-specific monitoring									
2. Delist from TMDL or discuss monitoring delist options									
3. Monitoring according to management plan				X	X				
4. Propose monitoring plan	X								
5. No monitoring		X	X			X	X	X	X

[1] Petition to be removed from the management plan, the Coalition will remove from the monitoring schedule if approved.

Monitoring Decision #3-Monitoring according to a management plan

Copper and Lead

Copper will be monitored based on the evaluation provided in the Management Plan Monitoring section of this report. Based on at least three years of monitoring for copper that occurred in both the Duck Slough @ Gurr Rd and the Duck Slough @ Hwy 99 site subwatersheds, the Coalition petitioned to remove copper from the site's management plan on June 5, 2014. Lead will be monitored based on the evaluation provided in the Management Plan Monitoring section of this report.

Monitoring Decision #4 – Propose Monitoring

Arsenic

Arsenic has been monitored from 2006 through 2014; from 2011 through 2014, monitoring frequency was four times during the year as specified in the 2011 revisions to the MRPP. During the 2014 WY, one

exceedance of the WQTL occurred in March (16 µg/L). The Coalition will continue to monitor for arsenic during two storm and two irrigation events in the 2015 WY.

Monitoring Decision #5 - No monitoring

Boron, Cadmium, Molybdenum, Nickel, Selenium, and Zinc

The Coalition monitored for boron, cadmium nickel, selenium, and zinc from 2006 through 2008, 2011, and 2014, and for molybdenum beginning in October 2008 through March 2009, 2011, and two storm events in 2014; no exceedances of the WQTLs occurred (Table 14). The Coalition determined that no monitoring is necessary; boron, cadmium, selenium, nickel, molybdenum, and zinc are not applied by agriculture.

Table 14. Duck Slough @ Gurr Rd site subwatershed dissolved and total metals monitoring results (2006-2014 WY).

Total Suspended Solids (TSS) results are included as a measurement of sediment mobilization. An exceedance of a WQTL is highlighted in blue. "NA" indicates that a constituent was not analyzed on that date.

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2006	May	5/17/2006	2.8	13	NA	<0.04	NA	2.9	NA	0.24	NA	NA	3	<0.7	NA	3	NA
2006	Jun	6/14/2006	6.6	54	NA	0.04	NA	120	NA	0.71	NA	NA	8.4	<0.9	NA	7	NA
2006	Jul	7/12/2006	5.3	27	NA	0.06	NA	14	NA	2.7	NA	NA	17	<0.9	NA	21	NA
2006	Aug	8/8/2006	2.5	25	NA	<0.02	NA	3.8	NA	0.55	NA	NA	3.7	<0.9	NA	9	NA
2006	Sep	9/13/2006	1.7	12	NA	<0.02	NA	4.1	NA	0.84	NA	NA	4.9	<0.9	NA	8	NA
2007	Feb	2/12/2007	7.3	16	NA	0.2	NA	47	NA	13	NA	NA	54	<0.9	NA	83	NA
2007	Feb	2/28/2007	3.3	9	NA	0.04	NA	11	NA	2.4	NA	NA	13	1	NA	22	NA
2007	Apr	4/24/2007	4.5	19	NA	<0.02	NA	4.6	NA	0.4	NA	NA	5	0.9	NA	6	NA
2007	May	5/29/2007	1.9	19	NA	<0.04	NA	5.3	NA	1	NA	NA	3.5	<0.98	NA	13	NA
2007	Jun	6/19/2007	NA	NA	NA	NA	NA	5.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	Jun	6/26/2007	1.5	11	NA	<0.04	NA	4.6	NA	1	NA	NA	3.2	NA	NA	8	NA
2007	Jul	7/24/2007	1.7	12	NA	<0.04	NA	4	NA	0.84	NA	NA	2.4	NA	NA	7	NA
2007	Jul	7/31/2007	NA	NA	NA	NA	NA	8.6	NA	NA	NA	NA	NA	NA	NA	14	NA
2007	Aug	8/21/2007	1.9	19	NA	<0.04	NA	4.8	NA	1.1	NA	NA	3.6	NA	NA	9	NA
2007	Sep	9/18/2007	3.1	18	NA	<0.04	NA	5.5	NA	1.1	NA	NA	5.6	NA	NA	7	NA
2008	Jan	1/25/2008	2.6	14	NA	0.07	NA	13	NA	2.7	NA	NA	13	0.81	NA	19	NA
2008	Feb	2/25/2008	2.7	15	NA	0.1	NA	17	NA	3.7	NA	NA	17	0.43	NA	25	NA
2008	Apr	4/29/2008	2.3	18	NA	<0.06	NA	2.7	NA	0.38	NA	NA	2.1	0.38	NA	4	NA
2008	May	5/27/2008	3.4	37	NA	<0.06	NA	7.1	NA	0.95	NA	NA	5.4	1	NA	10	NA
2008	Jun	6/24/2008	1.2	11	NA	<0.06	NA	4	NA	0.95	NA	NA	3	0.62	NA	8	NA
2008	Jul	7/29/2008	2.8	28	NA	<0.06	NA	5.4	NA	1.1	NA	NA	4.8	0.36	NA	12	NA
2008	Aug	8/26/2008	1.9	16	NA	<0.06	NA	3.5	NA	1.1	NA	NA	2.4	0.39	NA	6	NA
2008	Sep	9/30/2008	2.3	16	NA	<0.06	NA	6.1	NA	1.5	NA	NA	4.7	0.21	NA	10	NA
2008	Oct	10/21/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008	Nov	11/11/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008	Dec	12/16/2008	3.8	37	<0.011	<0.011	0.3	1.2	<0.071	0.26	2.1	0.4	1.1	0.24	<0.8	3	<2
2009	Jan	1/20/2009	3.7	39	<0.011	<0.011	0.2	0.4	<0.071	<0.071	2.3	0.2	0.2	0.21	<0.8	<0.8	<2
2009	Feb	2/7/2009	6.8	130	0.07	0.08	7.6	11	0.15	0.71	6.8	4.2	7	0.42	22	28	34
2009	Mar	3/17/2009	3.4	15	<0.011	0.02	4.6	6.3	0.08	0.7	1.3	3	4.5	0.19	1.1	3.1	<2
2009	Apr	4/21/2009	4.9	48	0.03	0.03	2.6	3.3	0.08	0.23	2.8	1.5	1.9	0.19	5.2	7.2	<2
2009	May	5/19/2009	NA	47	NA	NA	7.3	15	NA	NA	NA	3.6	11	0.31	5.5	20	84
2010	Jan	1/19/2010	NA	NA	NA	NA	2	12	NA	NA	NA	NA	NA	NA	NA	NA	190
2010	Feb	2/23/2010	NA	NA	NA	NA	4.4	5.4	NA	NA	NA	NA	NA	NA	NA	NA	3
2010	Jun	6/15/2010	NA	NA	NA	NA	1.2	3.3	NA	NA	NA	NA	NA	NA	NA	NA	32
2010	Jul	7/20/2010	NA	NA	NA	NA	1	3.6	NA	NA	NA	NA	NA	NA	NA	NA	38
2010	Dec	12/14/2010	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2011	Jan	1/18/2011	2.1	11	<0.011	<0.011	1.1	2.2	<0.071	0.24	1.1	1.5	2.3	0.3	<0.8	1.5	13
2011	Feb	2/17/2011	2.1	13	<0.011	<0.011	1.4	1.6	<0.071	0.13	1.2	1.3	1.7	0.14	<0.8	1	5
2011	Mar	3/15/2011	2.1	10	<0.011	0.011	1.3	1.9	<0.071	0.21	0.86	1.3	1.7	0.14	<0.8	0.9	6
2011	Apr	4/19/2011	1.5	13	<0.04	<0.04	1.5	3.3	0.07	0.44	0.67	1	2.6	0.19	0.8	3.1	18
2011	May	5/17/2011	1.1	12	<0.04	<0.04	0.85	2.6	0.06	0.5	0.61	0.66	2.4	0.1	0.9	4.8	42
2011	Jun	6/21/2011	2.6	14	<0.04	<0.04	1.5	8.5	0.06	1.7	0.74	1.3	9.1	0.15	<0.7	13	93

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2011	Jul	7/19/2011	0.81	8.6	<0.04	<0.04	0.89	3	0.06	0.71	0.42	0.63	2.1	0.07	<0.7	4.5	6
2011	Aug	8/16/2011	1.5	11	<0.04	<0.04	0.91	4	0.09	0.96	0.58	0.84	4.2	0.09	<0.7	5.6	42
2011	Sep	9/13/2011	NA	8.8	NA	NA	0.5	3.1	NA	NA	NA	0.58	3.1	NA	<0.7	5.2	44
2011	Oct	10/11/2011	NA	5.5	NA	NA	0.42	2.8	NA	NA	NA	0.44	2.6	<0.06	<0.7	4.4	34
2011	Nov	11/8/2011	NA	5.7	NA	NA	0.75	1.7	NA	NA	NA	0.58	1.8	<0.06	<0.7	2.1	5
2011	Dec	12/6/2011	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2012	Jan	1/10/2012	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2012	Feb	2/7/2012	NA	NA	NA	NA	7.5	11	NA	NA	NA	NA	NA	NA	NA	NA	54
2013	Jan	1/8/2013	NA	NA	NA	NA	3.1	6	0.17	1.1	NA	NA	NA	NA	NA	NA	NA
2013	Feb	2/12/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Feb	2/20/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Apr	4/2/2013	NA	NA	NA	NA	1.6	2.3	0.06	0.21	NA	NA	NA	NA	NA	NA	NA
2013	May	5/14/2013	NA	NA	NA	NA	1.3	2.8	0.06	0.46	NA	NA	NA	NA	NA	NA	NA
2013	Jun	6/11/2013	NA	NA	NA	NA	1.3	3.7	0.11	0.77	NA	NA	NA	NA	NA	NA	NA
2013	Jul	7/9/2013	NA	NA	NA	NA	0.88	7.9	<0.03	1.7	NA	NA	NA	NA	NA	NA	NA
2013	Aug	8/13/2013	NA	NA	NA	NA	2.2	12	0.21	2.6	NA	NA	NA	NA	NA	NA	NA
2013	Sep	9/10/2013	NA	NA	NA	NA	4.2	14	0.14	2.4	NA	NA	NA	NA	NA	NA	NA
2013	Dec	12/10/2013	NA	NA	NA	NA	4.2	6.4	NA	NA	NA	NA	NA	NA	NA	NA	26
2014	Jan	1/14/2014	NA	NA	NA	NA	Dry	Dry	Dry	Dry	NA	NA	NA	NA	NA	NA	Dry
2014	Feb	2/10/2014	5.7	47	<0.05	NA	1.2	NA	<0.03	NA	1.8	1.5	NA	<RL	NA	1.2	11
2014	Mar	3/3/2014	16	60	<0.05	NA	4.2	NA	<RL	NA	7.1	3.6	NA	<RL	NA	<RL	430
2014	Apr	4/8/2014	NA	NA	NA	NA	2.7	19	.07	4.1	NA	NA	NA	NA	NA	NA	76
2014	May	5/13/2014	NA	NA	NA	NA	2.1	NA	.09	NA	NA	NA	NA	NA	NA	NA	12
2014	Jun	6/10/2014	NA	NA	NA	NA	2.5	NA	<0.03	NA	NA	NA	NA	NA	NA	NA	120
Sample and Exceedance Summary																	
Samples collected in 2006			5	5	0	5	0	5	0	5	0	0	5	5	0	5	0
Samples collected in 2007			8	8	0	8	0	10	0	8	0	0	8	4	0	9	0
Samples collected in 2008			9	9	1	9	1	9	1	9	1	1	9	9	1	9	9
Samples collected in 2009			4	5	4	4	5	5	4	4	4	5	5	5	5	5	5
Samples collected in 2010			0	0	0	0	3	3	0	0	0	0	0	0	0	0	3
Samples collected in 2011			8	11	8	8	11	11	8	8	8	11	11	10	11	11	11
Samples collected in 2012			0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Samples collected in 2013			0	0	0	0	8	8	6	6	0	0	0	0	0	0	1
Samples collected in 2014 WY[1]			2	2	2	0	5	1	5	1	2	2	0	2	0	2	5
Total Collected			**36**	**40**	**15**	**34**	**34**	**53**	**24**	**41**	**15**	**19**	**38**	**35**	**17**	**41**	**35**
Total Exceedances			**1**	**0**	**0**	**0**	**1**	**8**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% Exceedances			**3%**	**0%**	**0%**	**0%**	**3%**	**15%**	**0%**	**10%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

[1]Data included through June 2014.

Cottonwood Creek @ Rd 20

Cottonwood Creek @ Rd 20 is the Core site in Zone 6 and was scheduled for monitoring for the following metals in the 2014 WY during two storm and two irrigation events: arsenic, boron, dissolved cadmium, dissolved copper, dissolved lead, molybdenum, selenium, dissolved nickel and dissolved zinc, in addition to MPM for copper and lead. Water quality results evaluated include up through June data; the two irrigation events are scheduled for July and August 2014. The decision for monitoring for metals at Cottonwood Creek @ Rd 20 during the 2015 WY is outlined in Table 15. Metals monitoring results are listed in Table 16.

Table 15. Results of the flowchart analysis for Cottonwood Creek at Rd 20 outlined in Figure 2.
"X" indicates a monitoring decision.

FLOWCHART QUESTION	ARSENIC	BORON	CADMIUM	COPPER	LEAD	MOLYBDENUM	NICKEL	SELENIUM	ZINC
1. Is site on 303d list for constituent?	No	No	No	No	No	No	No	No	No
2. Has the site been adequately characterized?	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
3. Has there been an exceedance?	No	No	No	Yes	Yes	No	No	No	No
4. Is waterbody in a management plan for constituent?	No	No	No	Yes	Yes[1]	No	No	No	No
5. Has there been a TIE indicating the constituent class as causal agent?	No	No	No	No	No	No	No	No	No
6. Acres treated > 1%?	No	No	No	Yes	No	No	No	No	No
MONITORING DECISION									
1. TMDL-specific monitoring									
2. Delist from TMDL or discuss monitoring delist options									
3. Monitoring according to management plan				X	X				
4. Propose monitoring plan									
5. No monitoring	X	X	X			X	X	X	X

[1] Petition to be removed from the management plan, the Coalition will remove from the monitoring schedule if approved.

Monitoring Decision #3-Monitoring according to a management plan

Copper and Lead

Copper will be monitored based on the evaluation provided in the Management Plan Monitoring section of this report. Lead will be monitored based on the evaluation provided in the Management Plan Monitoring section of this report. The Coalition petitioned to remove lead from the site's management plan on June 5, 2014.

Monitoring Decision #5 - No monitoring

Arsenic, Boron, Cadmium, Molybdenum, Nickel, Selenium, and Zinc

The Coalition monitored for arsenic, boron, cadmium nickel, selenium, and zinc from 2006 through 2008, 2011, and 2014, and for molybdenum beginning in October 2008 through March 2009, 2011, and two storm events in 2014; no exceedances of the WQTLs occurred. In addition, the site is typically dry; from 2007 through 2014, the site was dry 39 times (17 of those events were in 2013 and 2014; Table 16). The Coalition determined that no monitoring is necessary; arsenic, boron, cadmium, selenium, nickel, molybdenum, and zinc are not applied by agriculture and are not impairing the water quality in the Coalition area.

Table 16. Cottonwood Creek at Rd 20 site subwatershed dissolved and total metals monitoring results (2006-2014 WY).

Total Suspended Solids (TSS) results are included as a measurement of sediment mobilization. An exceedance of a WQTL is highlighted in blue. "NA" indicates that a constituent was not analyzed on that date.

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2006	May	5/16/2006	1.2	32	NA	<0.04	NA	4.4	NA	0.42	NA	NA	0.8	<0.7	NA	4	NA
2006	Jun	6/13/2006	0.7	11	NA	<0.02	NA	8	NA	0.73	NA	NA	1.1	<0.9	NA	7	NA
2006	Jul	7/11/2006	1.1	16	NA	<0.02	NA	5.3	NA	0.52	NA	NA	1.1	<0.9	NA	5	NA
2006	Aug	8/8/2006	1.3	15	NA	<0.02	NA	4.1	NA	0.41	NA	NA	1.2	<0.9	NA	4	NA
2006	Sep	9/12/2006	0.8	20	NA	<0.02	NA	5.5	NA	0.52	NA	NA	1.1	<0.9	NA	20	NA
2007	Apr	4/24/2007	0.9	25	NA	<0.02	NA	3.9	NA	0.22	NA	NA	0.8	<0.9	NA	3	NA
2007	May	5/29/2007	0.8	28	NA	<0.04	NA	6.7	NA	0.35	NA	NA	0.9	<0.98	NA	5	NA
2007	Jun	6/19/2007	NA	NA	NA	NA	NA	6.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	Jun	6/26/2007	0.9	26	NA	<0.04	NA	4.3	NA	0.3	NA	NA	0.8	NA	NA	3	NA
2007	Jul	7/24/2007	1.2	27	NA	<0.04	NA	5.4	NA	0.55	NA	NA	0.8	NA	NA	6	NA
2007	Aug	8/21/2007	1	28	NA	<0.04	NA	5.2	NA	0.37	NA	NA	0.8	NA	NA	5	NA
2007	Sep	9/18/2007	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2007	Sep	9/25/2007	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008	Jan	1/25/2008	2.1	15	NA	<0.04	NA	24	NA	5.4	NA	NA	3.1	0.59	NA	30	NA
2008	Feb	2/25/2008	1.8	40	NA	0.02	NA	21	NA	1.9	NA	NA	3.1	0.41	NA	14	NA
2008	Mar	3/28/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008	Apr	4/29/2008	2	32	NA	<0.06	NA	8	NA	0.82	NA	NA	1.7	0.3	NA	10	NA
2008	May	5/27/2008	1.1	36	NA	<0.06	NA	4.9	NA	0.24	NA	NA	0.8	0.83	NA	3	NA
2008	Jun	6/24/2008	1.4	34	NA	<0.06	NA	4.5	NA	0.59	NA	NA	1	0.73	NA	4	NA
2008	Jul	7/29/2008	1.1	34	NA	<0.06	NA	4.8	NA	1	NA	NA	1.3	<0.11	NA	6	NA
2008	Aug	8/26/2008	0.8	27	NA	<0.06	NA	4.4	NA	0.6	NA	NA	0.8	<0.11	NA	5	NA
2008	Sep	9/30/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008	Oct	10/21/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008	Nov	11/11/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008	Dec	12/16/2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2009	Jan	1/20/2009	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2009	Mar	3/17/2009	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2009	Apr	4/21/2009	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2009	Jul	7/21/2009	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2009	Sep	9/22/2009	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2010	Feb	2/23/2010	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2010	Mar	3/23/2010	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2010	Apr	4/20/2010	NA	NA	NA	NA	3.1	4.2	NA	NA	NA	NA	NA	NA	NA	NA	5
2010	May	5/18/2010	NA	NA	NA	NA	3.6	5.1	NA	NA	NA	NA	NA	NA	NA	NA	2
2010	Jun	6/15/2010	NA	NA	NA	NA	3.2	10	NA	NA	NA	NA	NA	NA	NA	NA	60
2010	Jul	7/20/2010	NA	NA	NA	NA	2.8	5.6	NA	NA	NA	NA	NA	NA	NA	NA	9
2010	Aug	8/17/2010	NA	NA	NA	NA	5.3	6.6	NA	NA	NA	NA	NA	NA	NA	NA	13
2010	Sep	9/14/2010	NA	NA	NA	NA	3.5	8.5	NA	NA	NA	NA	NA	NA	NA	NA	17
2010	Nov	11/16/2010	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2010	Dec	12/14/2010	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2011	Jan	1/18/2011	1.1	29	<0.011	0.012	2.4	4.4	0.08	0.43	1.8	0.7	1.1	0.1	1	3.4	7
2011	Feb	2/17/2011	0.7	31	<0.011	<0.011	2.3	3.8	<0.071	0.33	1.9	0.42	0.61	0.07	<0.8	2.9	19
2011	Mar	3/15/2011	0.78	23	<0.011	<0.011	2.7	3.9	<0.071	0.29	1.5	0.48	0.6	0.07	<0.8	2.1	6
2011	Apr	4/19/2011	1.5	27	<0.04	<0.04	4.6	7.3	0.13	0.47	1.4	0.72	1	0.08	1.2	2.5	19
2011	May	5/17/2011	1.1	20	<0.04	<0.04	3.8	5.9	0.11	0.35	1.4	0.4	0.68	0.07	0.7	2	10

Year	Month	Date	As, Total (µg/L)	B, Total (µg/L)	Cd, Dissolved (µg/L)	Cd, Total (µg/L)	Cu, Dissolved (µg/L)	Cu, Total (µg/L)	Pb, Dissolved (µg/L)	Pb, Total (µg/L)	Mo, Total (µg/L)	Ni, Dissolved (µg/L)	Ni, Total (µg/L)	Se, Total (µg/L)	Zn, Dissolved (µg/L)	Zn, Total (µg/L)	TSS, Total (mg/L)
2011	Jun	6/21/2011	1.1	18	<0.04	<0.04	3.7	5.9	0.12	0.41	1.3	0.4	0.65	0.07	0.97	2.8	22
2011	Jul	7/19/2011	1	19	<0.04	<0.04	4.3	6.2	0.11	0.3	1.3	0.32	0.46	0.06	<0.7	1.5	20
2011	Aug	8/16/2011	0.88	19	<0.04	<0.04	3.4	6.4	0.12	0.42	1.3	0.3	0.57	<0.06	<0.7	2.3	21
2011	Sep	9/13/2011	NA	17	NA	NA	5.8	9.8	NA	NA	NA	0.24	0.48	NA	<0.7	2.5	9
2011	Oct	10/11/2011	NA	22	NA	NA	4.1	14	NA	NA	NA	0.43	2.9	0.07	0.9	14	241.5
2011	Nov	11/8/2011	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2011	Dec	12/6/2011	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2012	Jan	1/10/2012	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2012	Feb	2/7/2012	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2012	Mar	3/6/2012	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Jan	1/8/2013	NA	NA	NA	NA	13	18	0.28	1.4	NA	NA	NA	NA	NA	NA	20
2013	Feb	2/12/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Feb	2/20/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Mar	3/12/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Apr	4/2/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	May	5/14/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Jun	6/11/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Jul	7/9/2013	NA	NA	NA	NA	3.3	4.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
2013	Aug	8/13/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2013	Sep	9/10/2013	NA	NA	NA	NA	3.1	6.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
2013	Oct	10/15/2013	NA	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry
2013	Nov	11/12/2013	NA	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry
2013	Dec	12/10/2013	NA	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry
2014	Jan	1/14/2014	NA	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	NA	Dry
2014	Feb	2/10/2014	Dry	Dry	Dry	NA	Dry	NA	Dry	NA	Dry	Dry	NA	Dry	Dry	NA	Dry
2014	Mar	3/3/2014	Dry	Dry	Dry	NA	Dry	NA	Dry	NA	Dry	Dry	NA	Dry	Dry	NA	Dry
2014	Jun	6/10/2014	NA	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	NA	Dry
Sample and Exceedance Summary																	
Samples collected in 2006			5	5	0	5	0	5	0	5	0	0	5	5	0	5	0
Samples collected in 2007			5	5	0	5	0	6	0	5	0	0	5	2	0	5	0
Samples collected in 2008			7	7	0	7	0	7	0	7	0	0	7	7	0	7	0
Samples collected in 2009			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Samples collected in 2010			0	0	0	0	6	6	0	0	0	0	0	0	0	0	6
Samples collected in 2011			8	10	8	8	10	10	8	8	8	10	10	8	10	10	10
Samples collected in 2012			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Samples collected in 2013			0	0	0	0	3	3	1	1	0	0	0	0	0	0	1
Samples collected in 2014 WY[1]			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Collected			**25**	**27**	**8**	**25**	**19**	**37**	**9**	**26**	**8**	**10**	**27**	**22**	**10**	**27**	**17**
Total Exceedances			**0**	**0**	**0**	**0**	**7**	**12**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% Exceedances			**0%**	**0%**	**0%**	**0%**	**37%**	**32%**	**0%**	**12%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

[1]Data included through June 2014.

REPRESENTED SITE MONITORING

The Coalition evaluates the potential risk for water quality impairments at Represented sites when an exceedance of a WQTL occurs at an associated Core site (Attachment B of the Order, page 4). Table 17 includes a list of the Represented sites in each zone. From this list, sites were identified for monitoring during the 2015 WY based on the following criteria:

1. An exceedance of an applied pesticide, applied metal, or toxicity occurred at the Core site in the same zone during the 2014 WY,
2. The Core site is in a management plan for an applied pesticide, applied metal, or toxicity and monitoring at the Represented site is necessary to characterize potential discharge.

For the 2015 WY, the Coalition reviews Core site management plans and exceedances of the WQTLs for applied pesticides, applied metals, and toxicity through June 2014 to evaluate if monitoring at each Represented site is necessary.

Once Represented site monitoring is initiated, the Coalition monitors at the Represented site during the time of highest risk for exceedances of the WQTLs for that constituent for a minimum of two years. If two or more exceedances occur at the Represented site (or one exceedance for TMDL constituents), a management plan is initiated. The flowchart in Figure 3 depicts the Represented site monitoring strategy.

Water column toxicities were reviewed for potential sources by evaluating water quality results for pesticide detections and toxicity identification evaluation (TIEs) results. Applications of pesticides that could potentially contribute to toxicity were reviewed when the source was unknown. To simplify the review of the applications, chemicals were grouped into insecticides, herbicides, and metals. The chemicals are associated with the water column toxicity species that they are most likely to affect and applications are reviewed by group for all chemicals associated with the toxicity test species to assess when monitoring should occur (Table 18).

Table 19 lists the exceedances that occurred at Core and Represented sites during the 2014 WY through June 2014. Appendix I includes the 2015 WY monitoring schedule. Represented sites are not evaluated for lead or molybdenum because the constituents are not applied by agriculture; however, in some cases, the Coalition will conduct MPM for these constituents (see MPM schedule; Table 20).

Table 17. ESJWQC Represented site locations by zone.

Zone	Site Type	Site Name	Station Code	Latitude	Longitude
1	Represented	Mootz Drain Downstream of Langworth Pond	535XMDDLP	37.70539	-120.89569
1	Represented	Rodden Creek @ Rodden Rd	535XRCARD	37.79053	-120.80886
2	Represented	Hatch Drain @ Tuolumne Rd	535XHDATR	37.51498	-121.01229
2	Represented	Hilmar Drain @ Central Ave	535XHDACA	37.39058	-120.95820
2	Represented	Lateral 2 1/2 near Keyes Rd	535LTHNKR	37.54766	-121.08509
2	Represented	Lateral 5 1/2 @ South Blaker Rd	535LFHASB	37.45827	-120.96730
2	Represented	Lateral 6 and 7 @ Central Ave	535LSSACA	37.39779	-120.95960
2	Represented	Levee Drain @ Carpenter Rd	535XLDACR	37.48062	-121.03106
2	Represented	Lower Stevinson @ Faith Home Rd	535LSAFHR	37.37248	-120.92324
2	Represented	Unnamed Drain @ Hogin Rd	535XUDAHR	37.43120	-120.99475
2	Represented	Westport Drain @ Vivian Rd	535XWDAVR	37.53682	-121.04861
3	Represented	Highline Canal @ Lombardy Rd	535XHCALR	37.45547	-120.72181
3	Represented	Mustang Creek @ East Ave	535XMCAEA	37.49180	-120.68390
4	Represented	Bear Creek @ Kibby Rd	535XBCAKR	37.31230	-120.41535
4	Represented	Black Rascal Creek @ Yosemite Rd	535BRCAYR	37.33202	-120.39435
4	Represented	Canal Creek @ West Bellevue Rd	535CCAWBR	37.36090	-120.54940
4	Represented	Howard Lateral @ Hwy 140	535XHLAHO	37.30790	-120.78200
4	Represented	Livingston Drain @ Robin Ave	535XLDARA	37.31693	-120.74229
4	Represented	McCoy Lateral @ Hwy 140	535XMLAHO	37.30968	-120.78771
4	Represented	Unnamed Drain @ Hwy 140	535XUDAHO	37.31331	-120.89218
5	Represented	Deadman Creek @ Gurr Rd	535XDCAGR	37.19514	-120.56147
5	Represented	Deadman Creek @ Hwy 59	535DMCAHF	37.19755	-120.48763
5	Represented	Miles Creek @ Reilly Rd	535XMCARR	37.25830	-120.47524
6	Represented	Ash Slough @ Ave 21	545XASAAT	37.05448	-120.41575
6	Represented	Berenda Slough along Ave 18 1/2	545XBSAAE	37.01820	-120.32650
6	Represented	Dry Creek @ Rd 18	545XDCARE	36.98180	-120.22056

Figure 3. ESJWQC flowchart for the Represented site monitoring strategy.

Table 18. Active ingredient groupings associated with toxicity testing.

Chemical Group	Chemical Name	*C. dubia*	*P. promelas*	*S. capricornutum*
HERBICIDE	2,4-D, DIMETHYLAMINE SALT			X
HERBICIDE	4-(2,4-DB), DIMETHYLAMINE SALT			X
HERBICIDE	BENSULIDE			X
HERBICIDE	BROMACIL			X
HERBICIDE	BROMOXYNIL OCTANOATE			X
HERBICIDE	CHLORTHAL-DIMETHYL			X
HERBICIDE	CLETHODIM			X
HERBICIDE	CLOMAZONE			X
HERBICIDE	CYCLOATE			X
HERBICIDE	CYHALOFOP BUTYLC			X
HERBICIDE	DIGLYCOLAMINE SALT OF 3,6-DICHLORO-O-ANISIC ACID			X
HERBICIDE	DIURON			X
HERBICIDE	EPTC			X
HERBICIDE	FLUMIOXAZIN			X
HERBICIDE	GLUFOSINATE-AMMONIUM			X
HERBICIDE	GLYPHOSATE			X
HERBICIDE	GLYPHOSATE, DIAMMONIUM SALT			X
HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT			X
HERBICIDE	GLYPHOSATE, MONOAMMONIUM SALT			X
HERBICIDE	GLYPHOSATE, POTASSIUM SALT			X
HERBICIDE	HEXAZINONE			X
HERBICIDE	LINURON			X
HERBICIDE	MCPA, DIMETHYLAMINE SALT			X
HERBICIDE	METAM-SODIUM	X	X	X
HERBICIDE	METRIBUZIN			X
HERBICIDE	MSMA			X
HERBICIDE	NAPROPAMIDE			X
HERBICIDE	NORFLURAZON			X
HERBICIDE	ORYZALIN			X
HERBICIDE	OXYFLUORFEN			X
HERBICIDE	PARAQUAT DICHLORIDE	X	X	X
HERBICIDE	PENDIMETHALIN			X
HERBICIDE	PROMETRYN			X
HERBICIDE	PROPANIL			X
HERBICIDE	SETHOXYDIM			X
HERBICIDE	SIMAZINE			X
HERBICIDE	S-METOLACHLOR			X
HERBICIDE	SODIUM CHLORATE			X
HERBICIDE	THIOBENCARB			X
HERBICIDE	TRIFLURALIN			X
INSECTICIDE	ABAMECTIN		X	
INSECTICIDE	ACEPHATE	X	X	
INSECTICIDE	ALDICARB	X	X	
INSECTICIDE	AZINPHOS-METHYL	X	X	
INSECTICIDE	BIFENAZATE	X	X	
INSECTICIDE	CARBARYL	X	X	
INSECTICIDE	CARBOFURAN	X	X	
INSECTICIDE	CHLOROPICRIN	X	X	X
INSECTICIDE	CHLORPYRIFOS	X	X	
INSECTICIDE	CYPERMETHRIN	X	X	
INSECTICIDE	DELTAMETHRIN	X	X	
INSECTICIDE	DIAZINON	X	X	

Chemical Group	Chemical Name	*C. dubia*	*P. promelas*	*S. capricornutum*
INSECTICIDE	DICAMBA, DIMETHYLAMINE SALT			X
INSECTICIDE	DICOFOL	X	X	
INSECTICIDE	DIFLUBENZURON	X	X	X
INSECTICIDE	DIMETHOATE	X	X	
INSECTICIDE	DISULFOTON	X	X	
INSECTICIDE	ETHOPROP	X	X	
INSECTICIDE	FENAMIPHOS	X	X	
INSECTICIDE	IMIDACLOPRID	X	X	
INSECTICIDE	INDOXACARB		X	
INSECTICIDE	KAOLIN	X	X	
INSECTICIDE	MALATHION	X	X	
INSECTICIDE	METHIDATHION	X	X	
INSECTICIDE	METHOMYL	X	X	
INSECTICIDE	METHOXYFENOZIDE	X	X	
INSECTICIDE	OXAMYL	X	X	
INSECTICIDE	PHOSMET	X	X	
INSECTICIDE	POTASSIUM N-METHYLDITHIOCARBAMATE	X	X	
INSECTICIDE	PROPARGITE	X	X	
INSECTICIDE	PYRIDABEN	X	X	
INSECTICIDE	SODIUM TETRATHIOCARBONATE	X	X	
INSECTICIDE	SPINOSAD	X	X	
INSECTICIDE	SPIROMESIFEN	X	X	X
INSECTICIDE	THIOPHANATE-METHYL	X	X	
INSECTICIDE	TRALOMETHRIN	X	X	
INSECTICIDE	(S)-CYPERMETHRIN	X	X	
INSECTICIDE	BIFENTHRIN	X	X	
INSECTICIDE	CYFLUTHRIN	X	X	
INSECTICIDE	ESFENVALERATE	X	X	
INSECTICIDE	FENPROPATHRIN	X	X	
INSECTICIDE	LAMBDA-CYHALOTHRIN	X	X	
INSECTICIDE	PERMETHRIN	X	X	
METALS	COPPER	X		X
METALS	COPPER HYDROXIDE	X		X
METALS	COPPER OXIDE (OUS)	X		X
METALS	COPPER OXYCHLORIDE	X		X
METALS	COPPER OXYCHLORIDE SULFATE	X		X
METALS	COPPER SULFATE (BASIC)	X		X
METALS	COPPER SULFATE (PENTAHYDRATE)	X		X
PYRETHROID	(S)-CYPERMETHRIN	X		
PYRETHROID	BIFENTHRIN	X		
PYRETHROID	CYFLUTHRIN	X		
PYRETHROID	ESFENVALERATE	X		
PYRETHROID	FENPROPATHRIN	X		
PYRETHROID	LAMBDA-CYHALOTHRIN	X		
PYRETHROID	PERMETHRIN	X		

Table 19. 2014 WY exceedances of the WQTL for applied pesticides, metals, and toxicity.

Data from October 2013 through June 2014, listed by zone, site type, and alphabetically by site. The WQTL is listed after each constituent.

Zone	Site Name	Sample Date	Site Type	Sample Type	Chlorpyrifos, > 0.015 µg/L	Copper (Dissolved), Variable[1]	Diuron, > 2 µg/L	Malathion, > 0 µg/L	*C. dubia*, %Control	*P. promelas*, %Control	*S. capricornutum*, %Control	*H. azteca*, % Control
1	Dry Creek @ Wellsford Rd	10/15/2013	Core	NM	0.016							
1	Mootz Drain downstream of Langworth Pd	3/4/2014	Represented	NM								88
2	Prairie Flower Drain @ Crows Landing Rd	10/15/2013	Core	MPM, NM							10	
2	Prairie Flower Drain @ Crows Landing Rd	12/10/2013	Core	MPM, NM							76	
2	Prairie Flower Drain @ Crows Landing Rd	3/3/2014	Core	NM (Non-contiguous)			2.1				23	
2	Hatch Drain @ Tuolumne Rd	3/4/2014	Represented	NM								56
2	Lateral 5 1/2 @ South Blaker Rd	10/15/2013	Represented	NM							26	
2	Lateral 5 1/2 @ South Blaker Rd	12/10/2013	Represented	NM							24	
2	Lateral 5 1/2 @ South Blaker Rd	3/5/2014	Represented	NM							61	
2	Lateral 5 ½ @ South Blaker Rd	4/8/2014	Represented	NM							79	
2	Lateral 6 and 7 @ Central Ave	12/10/2013	Represented	NM							31	
2	Levee Drain @ Carpenter Rd	12/10/2013	Represented	NM							74	
2	Levee Drain @ Carpenter Rd	3/4/2014	Represented	NM								76
2	Levee Drain @ Carpenter Rd	6/10/2014	Represented	NM							37	
2	Lower Stevinson @ Faith Home Rd	12/10/2013	Represented	NM							21	
2	Lower Stevinson @ Faith Home Rd	4/8/2014	Represented	NM							50	
2	Lower Stevinson @ Faith Home Rd	6/10/2014	Represented	NM							40	
3	Highline Canal @ Hwy 99	3/3/2014	Core	MPM, NM		7.1 (6.76)						
3	Highline Canal @ Hwy 99	6/10/2014	Core	NM							36	
3	Highline Canal @ Lombardy Rd	3/5/2014	Represented	NM		14 (8.34)						
3	Mustang Creek @ East Ave	12/10/2013	Represented	NM		42 (10.47)						
5	Duck Slough @ Gurr Rd	3/3/2014	Core	MPM, NM (Non-contiguous)	0.053				75	85		
5	Duck Slough @ Gurr Rd	4/8/2014	Core	NM				0.12				
5	Deadman Creek @ Gurr Rd	11/12/2013	Represented	NM					0			
5	Deadman Creek @ Gurr Rd	11/13/2013	Represented	NM						0		
5	Deadman Creek @ Gurr Rd	12/10/2013	Represented	NM						0		
6	Dry Creek @ Rd 18	2/10/2014	Represented	NM		12 (11.21)						

[1] Metal WQTL variable depending on hardness; calculated WQTL is listed in parenthesis.

Management plan constituents, monitoring results, and rational for Represented site monitoring are discussed below by zone. Figures 4-23 include Pesticide Use Report (PUR) results and exceedances used to evaluate Represented site monitoring.

Zone 1 - Dry Creek @ Wellsford Rd

Dry Creek @ Wellsford management plan constituents to be monitored in the 2015 WY:

- chlorpyrifos
- *H. azteca* sediment toxicity

These management plan constituents were monitored during the 2014 WY, one exceedance of the WQTL for chlorpyrifos occurred in October 2013. The Coalition reviewed the current PUR data for applications of chlorpyrifos and only one application occurred within the 30 day time frame associated with this exceedance (163 lbs AI across 162 acres of alfalfa). The recent exceedance was due to non-member applications and there have been no exceedances associated with member applications since 2010. The Coalition petitioned to remove chlorpyrifos from the site's management plan on June 5, 2014 and is waiting for approval from the Regional Board.

Mootz Drain downstream of Langworth Pond

2015 WY Monitoring Schedule

Mootz Drain downstream of Langworth Pond is in a management plan for chlorpyrifos. Monitoring for sediment toxicity to *H. azteca* occurred during the 2014 WY; toxicity occurred in March (Table 20). Represented site monitoring is scheduled for sediment toxicity to *H. azteca* in March and September 2015.

Rodden Creek @ Rodden Rd

2015 WY Monitoring Schedule

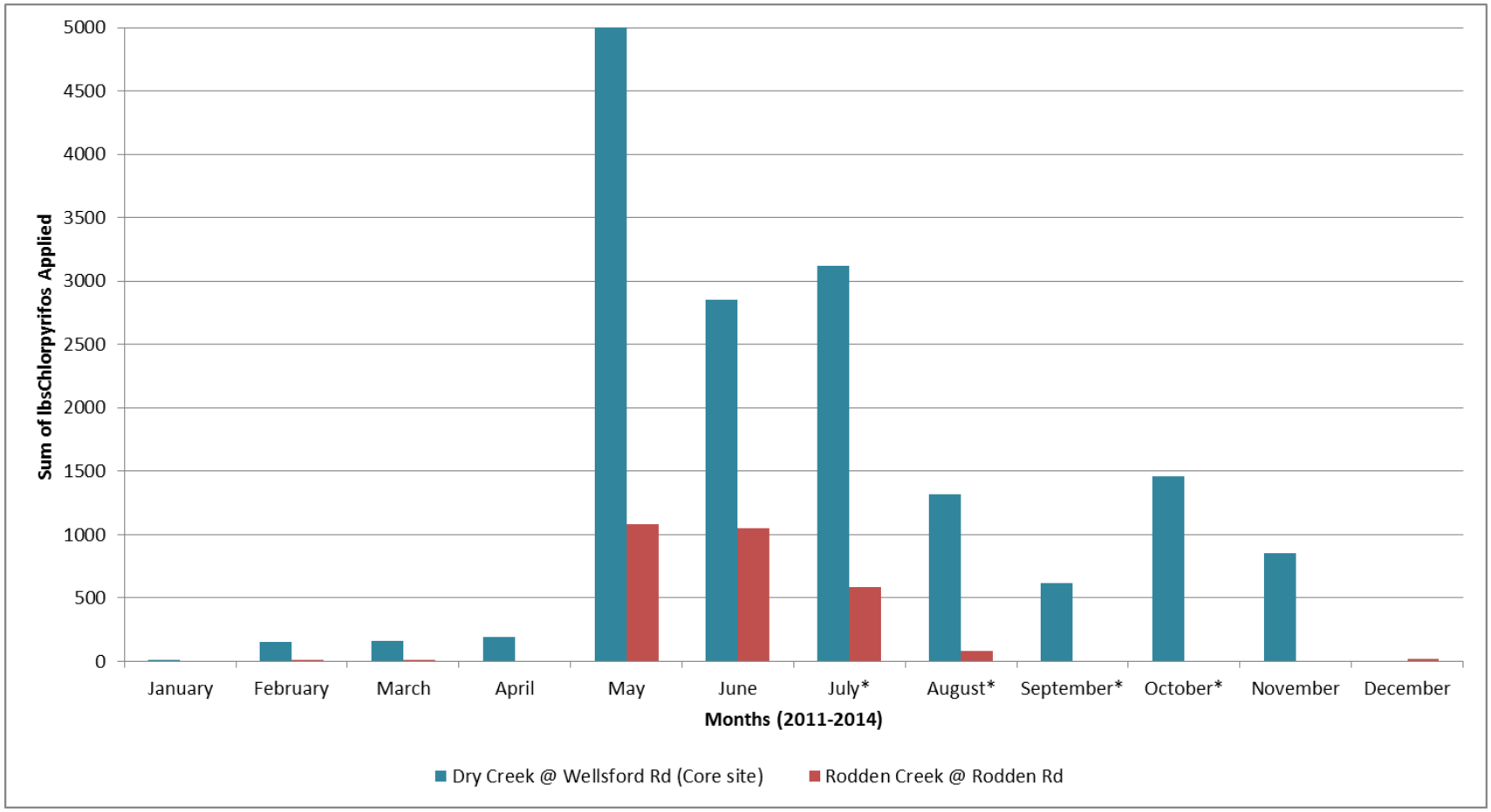
No Represented site monitoring is scheduled at Rodden Creek @ Rodden Rd during the 2015 WY.

Core Management Plan Constituents Not Being Monitored

Rodden Creek @ Rodden Rd was monitored for chlorpyrifos and *H. azteca* toxicity during 2011 and 2012; all chlorpyrifos results were non-detect and no sediment toxicity occurred. Due to two years of monitoring with no exceedances, the Coalition did not monitor for either constituent in the 2014 WY. According to the most recent PUR data, applications of chlorpyrifos mostly occur in the Rodden Creek @ Rodden Rd subwatershed during May through August, and are significantly less compared to the Core site (Figure 4). Therefore, The Coalition determined that no monitoring is necessary for chlorpyrifos or sediment toxicity at Rodden Creek @ Rodden Rd in the 2015 WY.

Figure 4. Zone 1 chlorpyrifos applications (2011-February 2014).

Asterisks indicate when exceedances occurred at the Core site.



Zone 2 - Prairie Flower Drain @ Crows Landing Rd

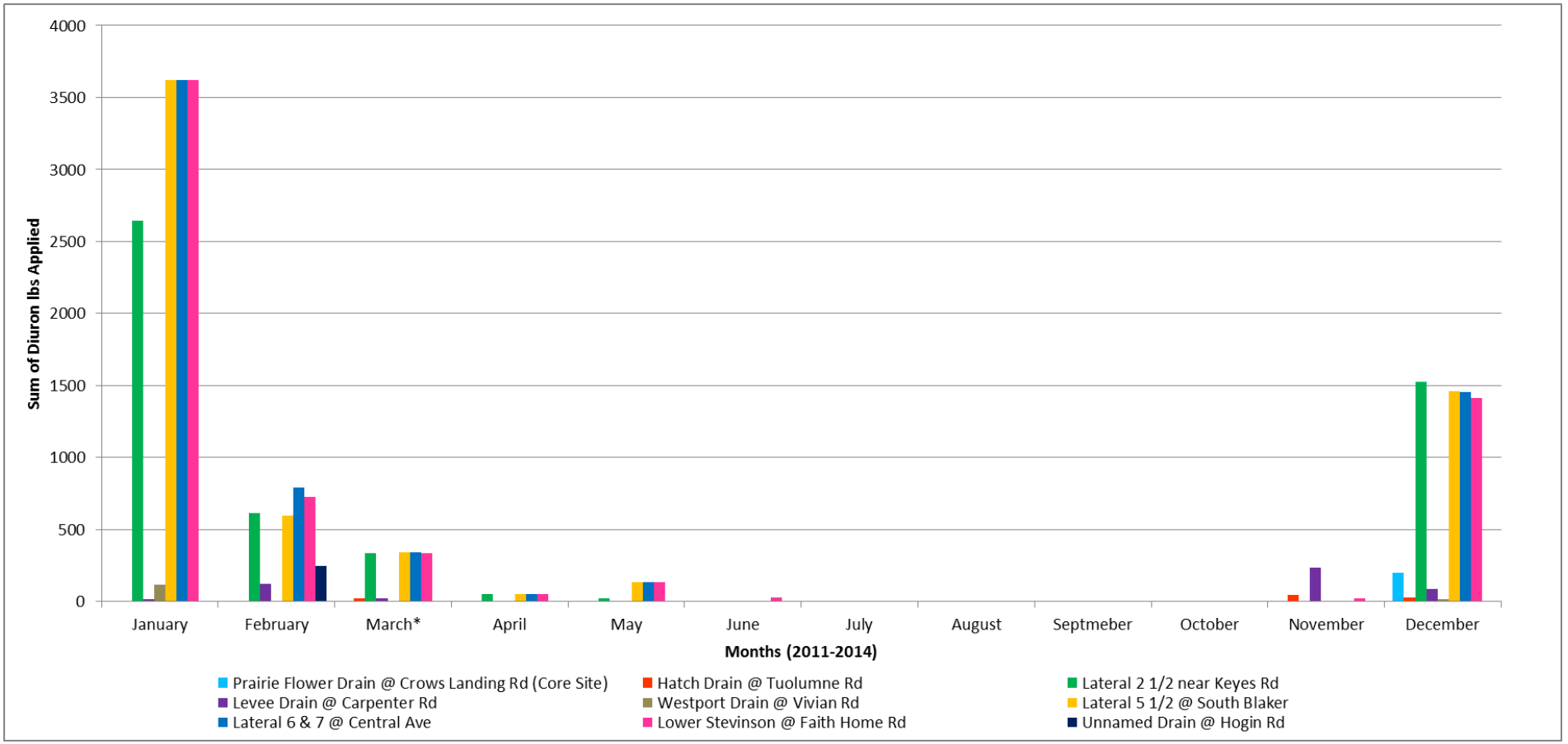
Prairie Flower Drain @ Crows Landing Rd management plan constituents to be monitored in the 2015 WY:

- dimethoate
- *C. dubia* water column toxicity
- *P. promelas* water column toxicity
- *S. capricornutum* water column toxicity
- *H. azteca* sediment toxicity

These management plan constituents were monitored during the 2014 WY and toxicity to *S. capricornutum* occurred in October and December during MPM; a third sample was toxic in March during Core site monitoring. Of the constituents monitored at Prairie Flower Drain that are not in a management plan, only one exceedance occurred. A sample collected in March 2014 exceeded the diuron WQTL (Table 19). Each Represented site within Zone 2 not in a management plan for diuron was evaluated based on monitoring history and PUR results included in Figure 5 to determine if monitoring is necessary during the 2015 WY. The Coalition petitioned to remove *H. azteca* sediment toxicity from the management plan on June 5, 2014.

Figure 5. Zone 2 diuron applications (2011–February 2014).

Asterisks indicate when an exceedance occurred at the Core site.



2015 WY Monitoring Schedule

Hatch Drain @ Tuolumne Rd is in a management plan for *S. capricornutum* toxicity and sediment toxicity to *H. azteca*.

Represented site monitoring occurred in the 2014 WY for dimethoate in June and July; no exceedances of the WQTL occurred. Figure 6 sums the pounds of dimethoate applied in Zone 2 compared to use in the Prairie Flower Drain @ Crows Landing Rd (Core site) subwatershed from 2011-February 2014. The Coalition will monitor for dimethoate during one storm event between January and March, and in July 2015 at Hatch Drain @ Tuolumne Rd based on an evaluation of PUR data and previous monitoring results.

Toxicity to *C. dubia* was detected at the Core site in 2006, 2007, and 2011. Based on TIE results, the toxicity was associated with chlorpyrifos and dimethoate. Hatch Drain @ Tuolumne Rd was monitored from May through September 2007 and January through October 2008; no toxicity or exceedances of the WQTL for chlorpyrifos occurred. The last three years of PUR data indicate the highest use of chlorpyrifos (824 lbs total) and dimethoate (170 lbs total) occurred during July in the Hatch Drain @ Tuolumne Rd subwatershed (Figure 7). The Coalition will monitor for toxicity to *C. dubia* in July 2015 based on the evaluation of the PUR data.

Core Management Plan Constituents Not Being Monitored

Toxicity to *P. promelas* was monitored once a month at Hatch Drain @ Tuolumne Rd from May through September 2007 and January through October 2008; no toxicity occurred.

Toxicity to *P. promelas* occurred at the Prairie Flower Drain @ Crows Landing Rd twice in July 2007 and once in April 2011. Toxicity to *P. promelas* has been associated with high ammonia concentrations which are most likely a result of dairy wastewater discharges within the Prairie Flower Drain subwatershed. Only one exceedance of ammonia occurred at Hatch Drain @ Tuolumne Rd in 2007 and did not result in toxicity to *P. promelas*. In comparison, there were 11 exceedances of ammonia at Prairie Flower Drain @ Crows Landing Rd, from 2006 through 2013, that coincided with two of the toxic events. The Coalition determined that *P. promelas* toxicity and ammonia monitoring at Hatch Drain @ Tuolumne is not necessary based on the monitoring results from 2007 and 2008, during which time there was only one exceedance of the ammonia WQTL and no toxicity to *P. promelas*.

2014 WY Core Site Exceedances

Hatch Drain @ Tuolumne Rd was monitored for diuron from May through September 2007 and January through September 2008; all results were non-detect. The PUR data indicate that very few applications of diuron occur at Hatch Drain @ Tuolumne Rd, and only during March, November, and December. The greatest amount applied occurred in November (43 lbs of AI from 2012 through 2013; Figure 5). Therefore, due to minimal applications and no detections in the water column during monitoring, the Coalition will not conduct monitoring for diuron at this location in the 2015 WY.

Figure 6. Zone 2 dimethoate applications (2011–February 2014).

Asterisks indicate when an exceedance of the WQTL for dimethoate occurred at the Core site.

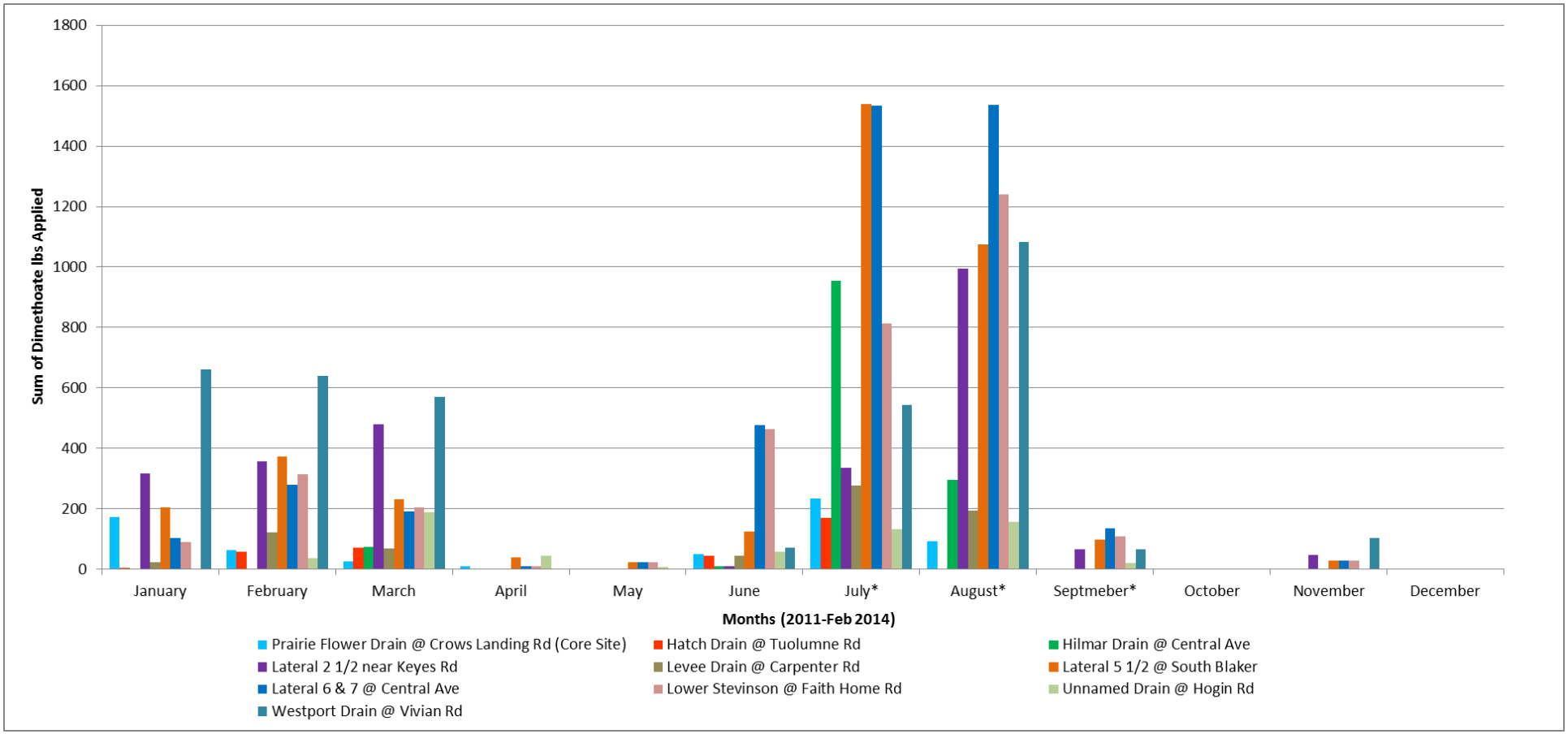
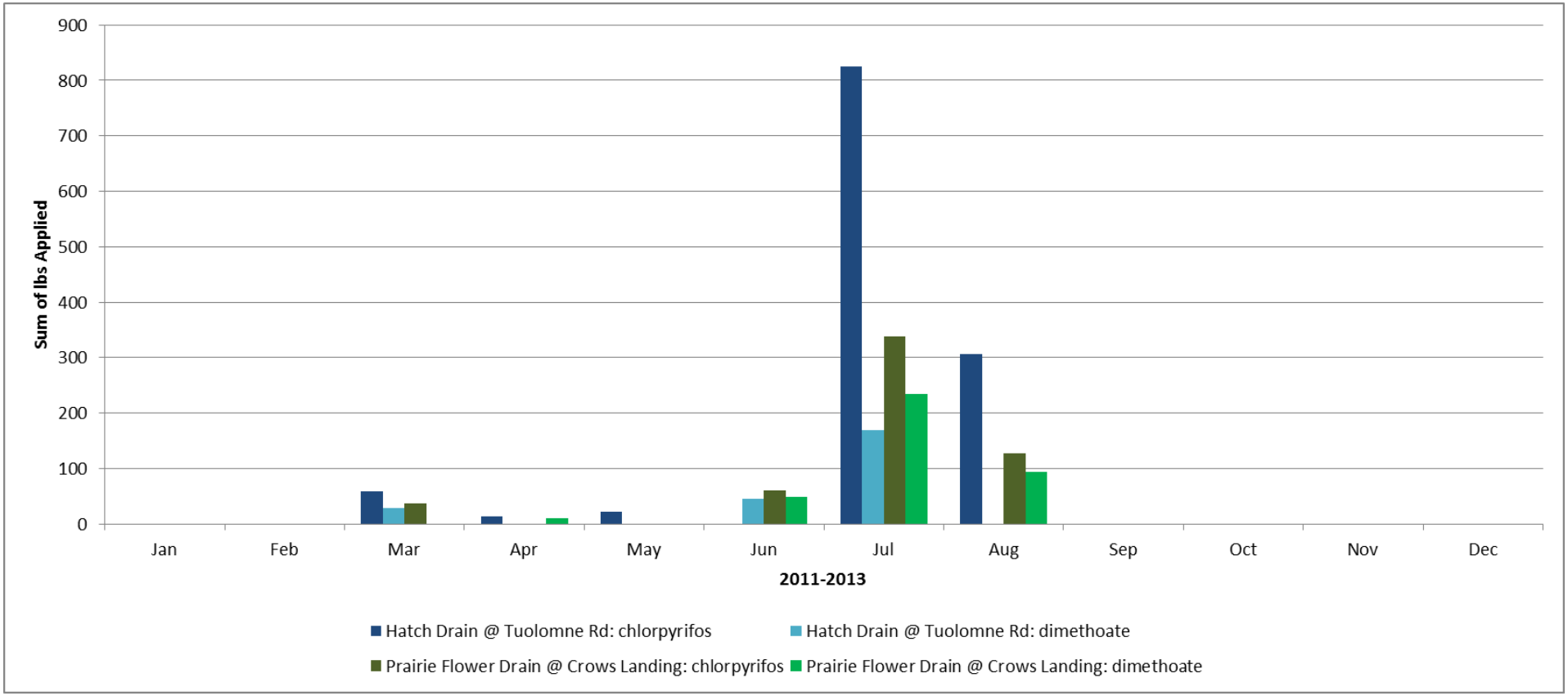


Figure 7. Hatch Drain @ Tuolumne and Core site PUR data for OP applications (2011–2013).



Hilmar Drain @ Central Ave

2015 WY Monitoring Schedule

Hilmar Drain @ Central Ave is in a management plan for diuron, *H. azteca* sediment toxicity, and *S. capricornutum* toxicity. Represented site monitoring occurred for dimethoate in the 2014 WY, through June; no exceedances occurred. Represented site monitoring will continue for a second year at Hilmar Drain @ Central Ave for dimethoate in July and August 2015 based on an evaluation of PUR data and previous monitoring results; the greatest amount of use occurs in July and August (Figure 6).

Core Management Plan Constituents Not Being Monitored

Based on the evaluation of the site's monitoring history (provided in the 2013 MPU; page 51) and current PUR data, no monitoring is necessary for *C. dubia* or *P. promelas toxicity* at Hilmar Drain @ Central Ave. Toxicity to *C. dubia* was monitored 32 times from 2005 through 2008 at Hilmar Drain @ Central Ave; toxicity occurred once in 2005. *P. promelas* toxicity was monitored from 2005 through 2008 and no toxicity occurred.

2014 WY Core Site Exceedances

Hilmar Drain @ Central Ave is in a management plan for diuron; the monitoring schedule for diuron is discussed in the Management Plan Monitoring section of this report.

Lateral 2 ½ near Keyes Rd

2015 WY Monitoring Schedule

Lateral 2 ½ near Keyes Rd was monitored for dimethoate from October through November 2008, monthly in 2009 and 2010, in April and July 2011, and April 2012; all results were non-detect. The PUR data indicate an increase in use of dimethoate over the last three years; applications occurred in January and February 2014 for the first time and use is increasing during March and August. According to the monitoring history, the site is typically dry during January through March (Figure 8). The Coalition will monitor Lateral 2 ½ near Keyes Rd for dimethoate during one storm event during January through March, and during August 2015.

Lateral 2 ½ near Keyes Rd was monitored for sediment toxicity to *H. azteca* and for *S. capricornutum* toxicity during the 2014 WY; there have been no toxic samples. Represented site monitoring will continue for a second year for sediment toxicity to *H. azteca* (March and September) and for *S. capricornutum* toxicity (February, May through August). Months of monitoring for algae toxicity are based on an evaluation of herbicide and metal applications and monitoring results (Figure 9).

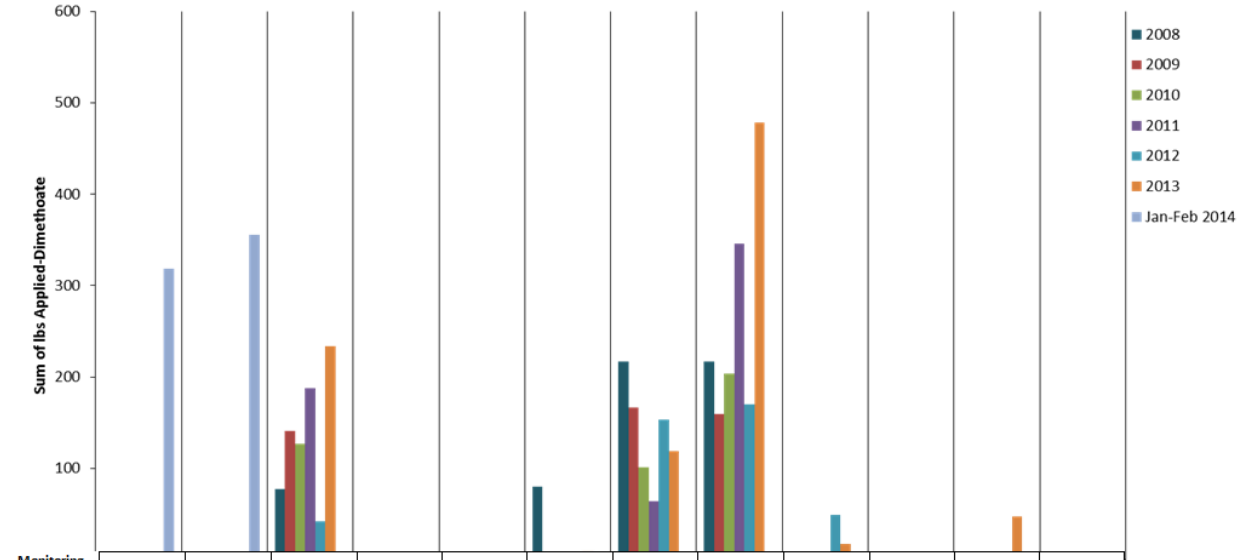
Core Management Plan Constituents Not Being Monitored

Based on the evaluation of the site's monitoring history (provided in the 2013 MPU; pages 51-52) no monitoring is necessary for *C. dubia* toxicity or *P. promelas* toxicity during the 2015 WY. Monthly monitoring for *C. dubia* and *P. promelas* toxicity occurred from October through November 2008, April through October 2009 and March through October 2010; no toxicity occurred.

2014 WY Core Site Exceedances

Monitoring occurred monthly for diuron at Lateral 2 ½ near Keyes Rd from 2008 through 2010; 17 samples were collected and all results were non-detect. The site was dry from December 2008 through March 2009, November 2009 through February 2010, and November through December 2010. The PUR data from the last three years indicate the highest diuron applications occur in the site subwatershed in January, February, and December (Figure 5); however, according to the three years of monitoring history, the site is typically dry during these months. The Coalition determined that monitoring for diuron at Lateral 2 ½ near Keyes Rd is not necessary for the 2015 WY due to lack of flow during the months of applications and previous monitoring results with no diuron detections.

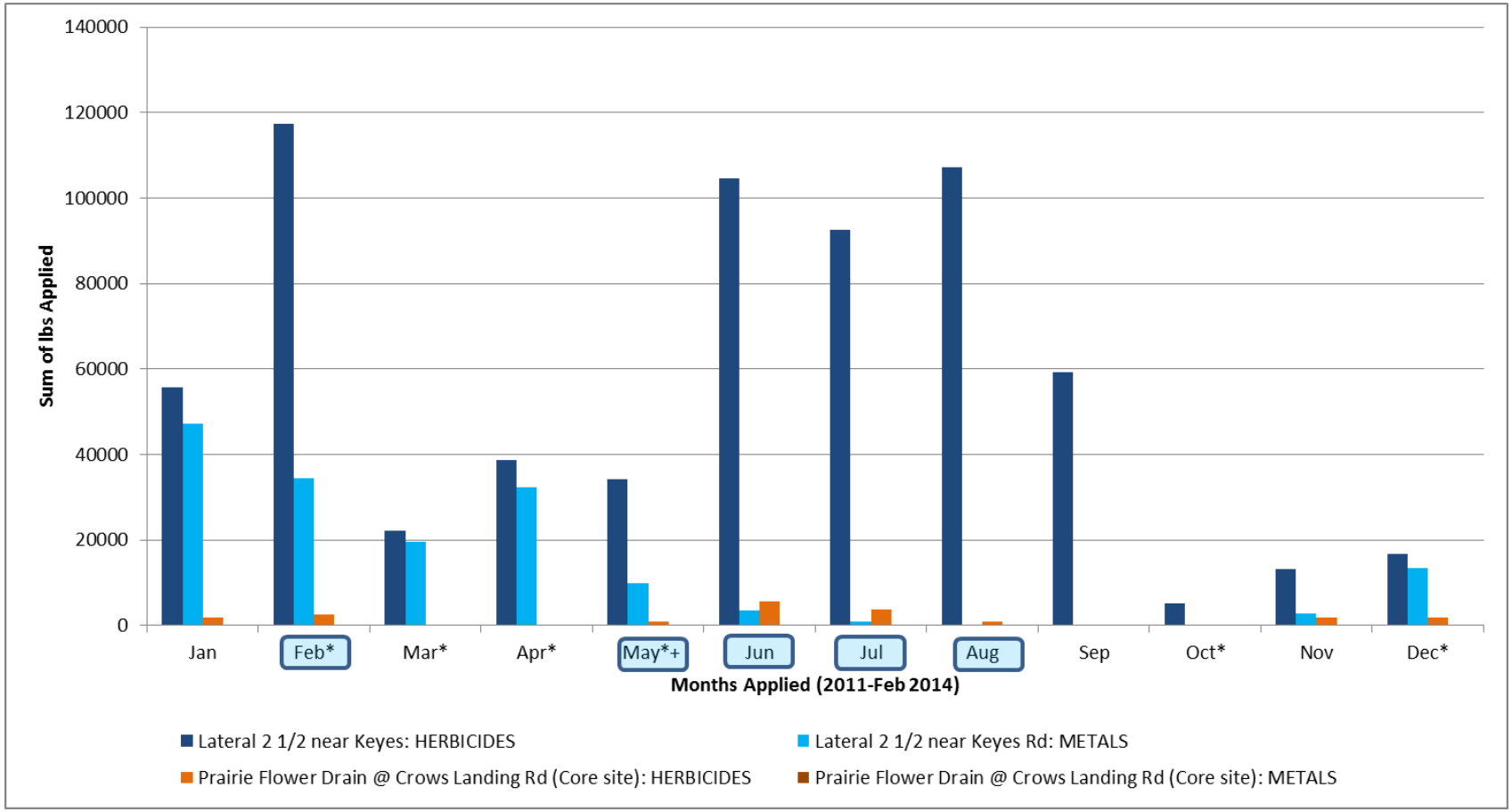
Figure 8. Lateral 2 ½ near Keyes Rd dimethoate use and monitoring (2008-February 2014).



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2008												Dry
2009	Dry	Dry	Dry								Dry	Dry
2010	Dry	Dry									Dry	Dry
2011												
2012												
2013												
2014												
Total Use (2008-2013)	318	355.8	808.6	0	0	89.7	819.9	1574	72.7	0	46.9	0
% Total (2008-2013)	*8%*	*9%*	*20%*	*0%*	*0%*	*2%*	*20%*	*39%*	*2%*	*0%*	*1%*	*0%*
Total Use (2011-Feb 2014)	318	355.8	463.2	0	0	9.6	335.8	993.7	66.8	0	46.9	0
% Total (2011-Feb 2014)	*8%*	*9%*	*18%*	*0%*	*0%*	*<1%*	*13%*	*38%*	*<1%*	*0%*	*2%*	*0%*

Figure 9. Lateral 2 ½ near Keyes Rd PUR data for herbicide and metal use (2011-February 2014).

Asterisk indicates when toxicity to *S. capricornutum* occurred at the Core site, [+] indicates when toxicity to *S. capricornutum* occurred at the Represented site. Highlighted months indicate when Represented site monitoring will occur for *S. capricornutum*.



Lateral 5 ½ @ South Blaker Rd

2015 WY Monitoring Schedule

Lateral 5 ½ @ South Blaker Rd was monitored for dimethoate, *C. dubia* toxicity, *P. promelas* toxicity, *S. capricornutum* toxicity, and sediment toxicity to *H. azteca* during the 2014 WY. The 2014 WY was the first year of monitoring at Lateral 5 ½ @ South Blaker Rd and therefore the site has not been fully characterized for the Core site management plan constituents: dimethoate, toxicity to *C. dubia, S. capricornutum*, *P. promelas,* and sediment toxicity to *H. azteca.* In the 2014 WY samples were toxic to *S. capricornutum* in October, December, March, and April. Lateral 5 ½ @ South Blaker Rd is in a management plan for *S. capricornutum* toxicity; the monitoring schedule for *S. capricornutum* is discussed in the Management Plan Monitoring section of this report.

Based on the evaluation of the water quality results from the 2014 WY and a review of the 2013 PUR data, Represented site monitoring will continue for a second year for: dimethoate (January-March, July, August; Figure 6), toxicity to *C. dubia* (March, July, August; Figure 10), toxicity to *P. promelas* (May, July, August; Figure 11), and sediment toxicity to *H. azteca* (March, September) during the 2015 WY.

2014 WY Core Site Exceedances

Since the site has not been previously monitored for diuron and the largest number of diuron applications occurs from December through March, the Coalition will monitor for diuron from December through March during the 2015 WY (Figure 5). Lateral 5 ½ @ South Blaker Rd is in a management plan for *S. capricornutum* toxicity; the monitoring schedule for *S. capricornutum* is discussed in the Management Plan Monitoring section of this report.

Figure 10. Lateral 5 ½ @ South Blaker Rd and Core site PUR data for insecticide, metal, and pyrethroid applications (2011-February 2014).

Asterisk indicates when toxicity to *C. dubia* occurred at the Core site. Highlighted months indicate when Represented site monitoring will occur for *C. dubia*.

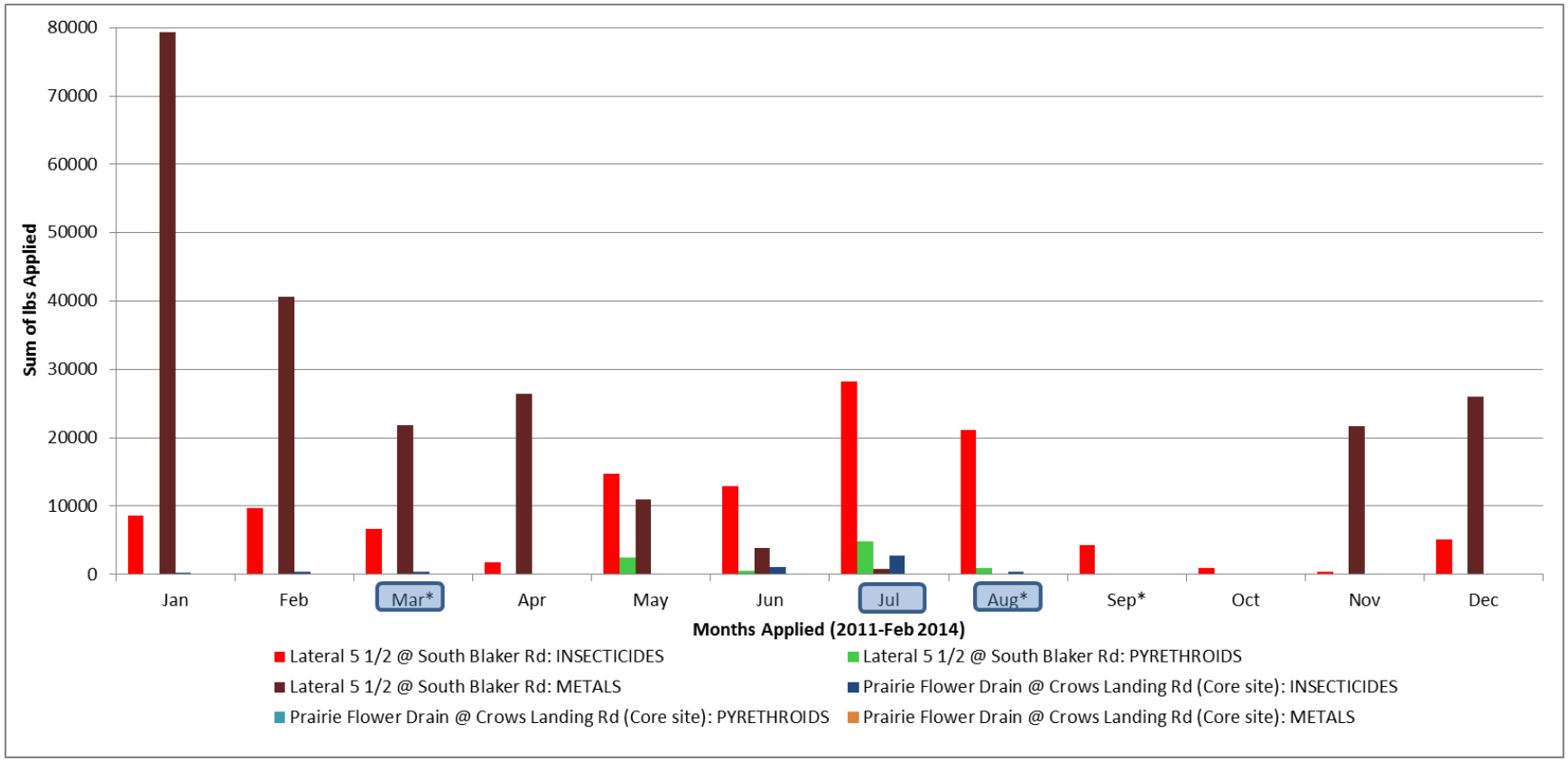
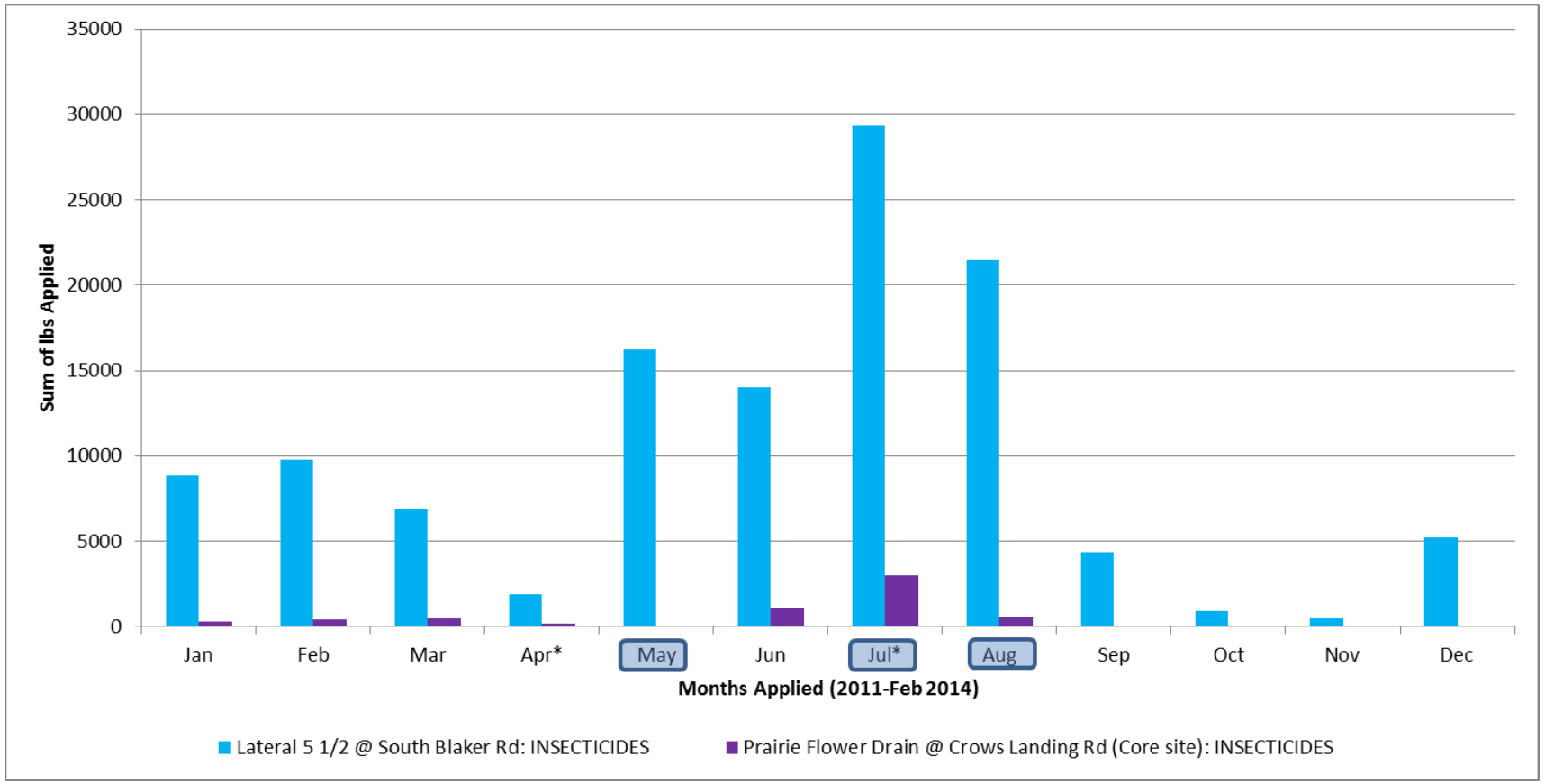


Figure 11. Lateral 5 ½ @ South Blaker Rd and Core site PUR data for insecticide use (2011-February 2014).

Asterisk indicates when toxicity to *P. promelas* occurred at the Core site. Highlighted months indicate when Represented site monitoring will occur for *P. promelas*.



Lateral 6 and 7 @ Central Ave

2015 WY Monitoring Schedule

Lateral 6 and 7 @ Central Ave was monitored for dimethoate, *C. dubia* toxicity, *P. promelas* toxicity, *S. capricornutum* toxicity, and sediment toxicity to *H. azteca* during the 2014 WY. The only exceedance to occur during the 2014 WY was toxicity to *S. capricornutum* occurred in December.

The 2014 WY was the first year of monitoring at Lateral 6 and 7 @ Central Ave and therefore the site has not been fully characterized for the Core site management plan constituents: dimethoate, toxicity to *C. dubia, S. capricornutum*, *P. promelas,* and sediment toxicity to *H. azteca.* Based on the evaluation of the site's monitoring history (provided in the Addendum to the 2013 MPU; page 23) and a review of the 2013 PUR data, monitoring will at Lateral 6 and 7 @ Central Ave for: dimethoate (one storm event during January through March, June-August; Figure 6), toxicity to *C. dubia* (March, April, July, August; Figure 12), toxicity to *P. promelas* (April, July; Figure 13), toxicity to *S. capricornutum* (December-February, April, August; Figure 14), and sediment toxicity to *H. azteca* (March, September).

2014 WY Core Site Exceedances

Since the site has not been previously monitored for diuron and the highest diuron applications occur from December through March, the Coalition will monitor for diuron at Lateral 6 and 7 @ Central Ave from December through March during the 2015 WY (Figure 5).

Figure 12. Lateral 6 and 7 @ Central Ave and Core site PUR data for insecticide and metal use (2011-February 2014).

Asterisk indicates when toxicity to *C. dubia* occurred at the Core site. Highlighted months indicate when Represented site monitoring will occur for *C. dubia*.

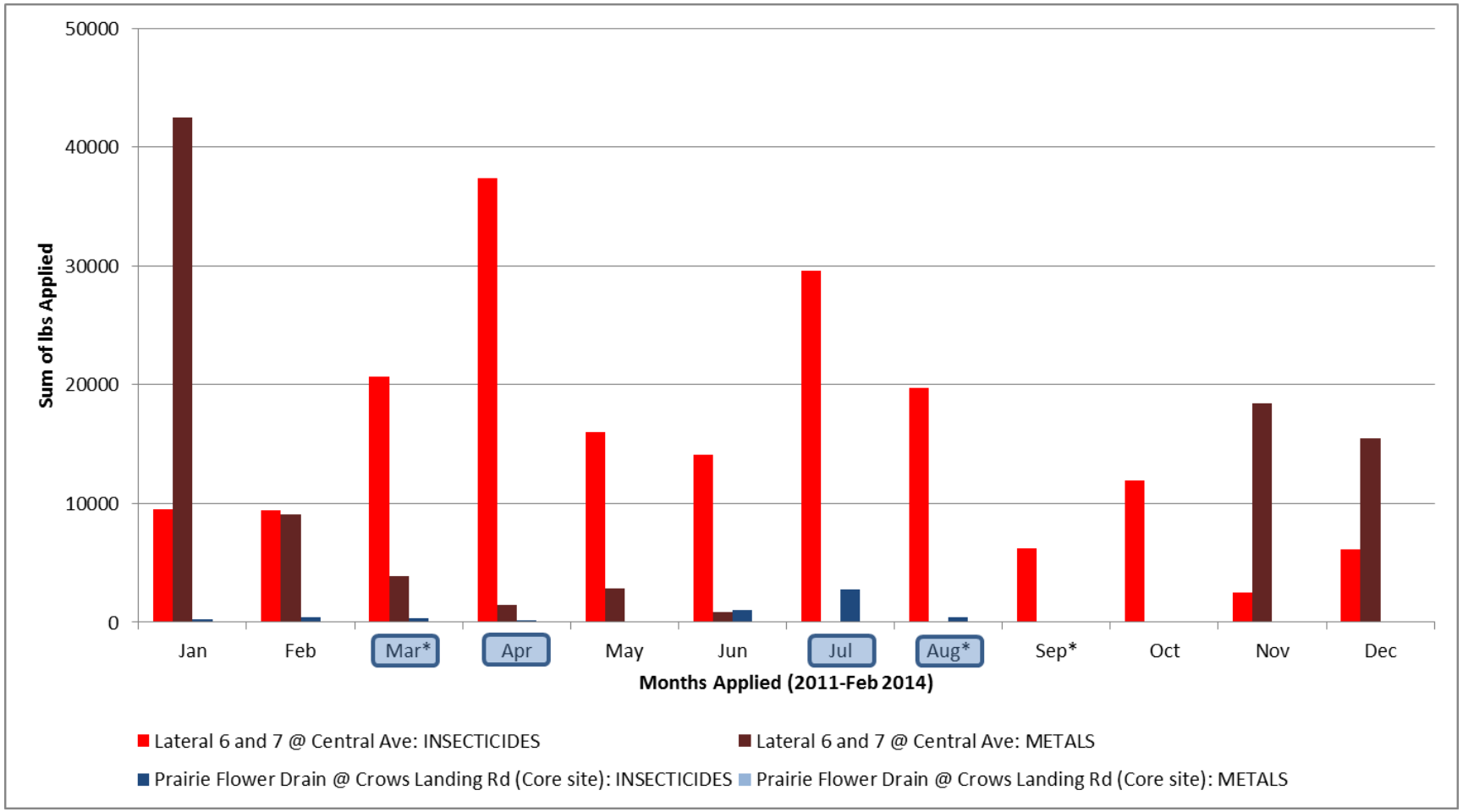


Figure 13. Lateral 6 and 7 @ Central Ave and Core site PUR data for insecticide use (2011-February 2014).

Asterisk indicates when toxicity to *P. promelas* occurred at the Core site. Highlighted months indicate when Represented site monitoring will occur for *P. promelas*.

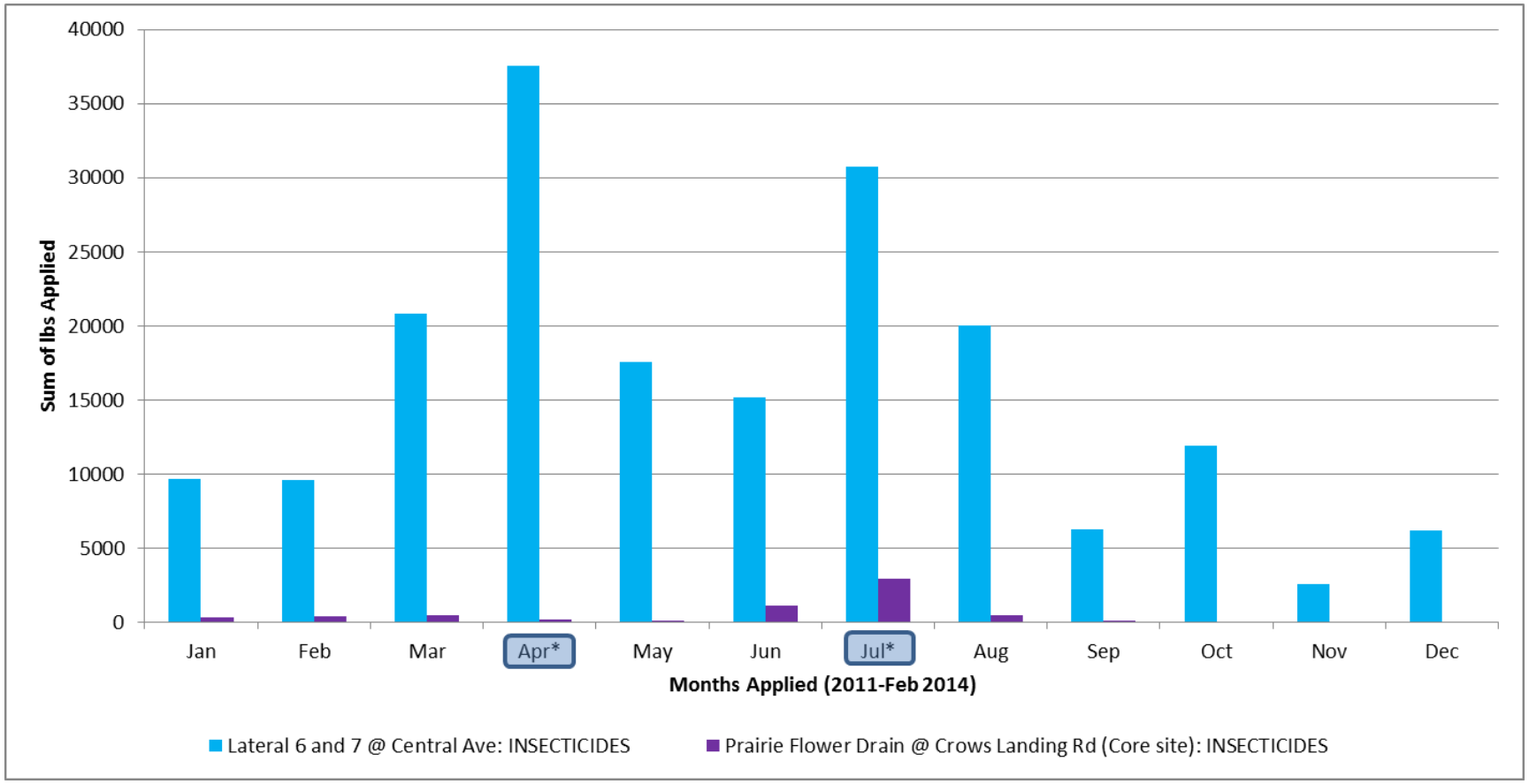
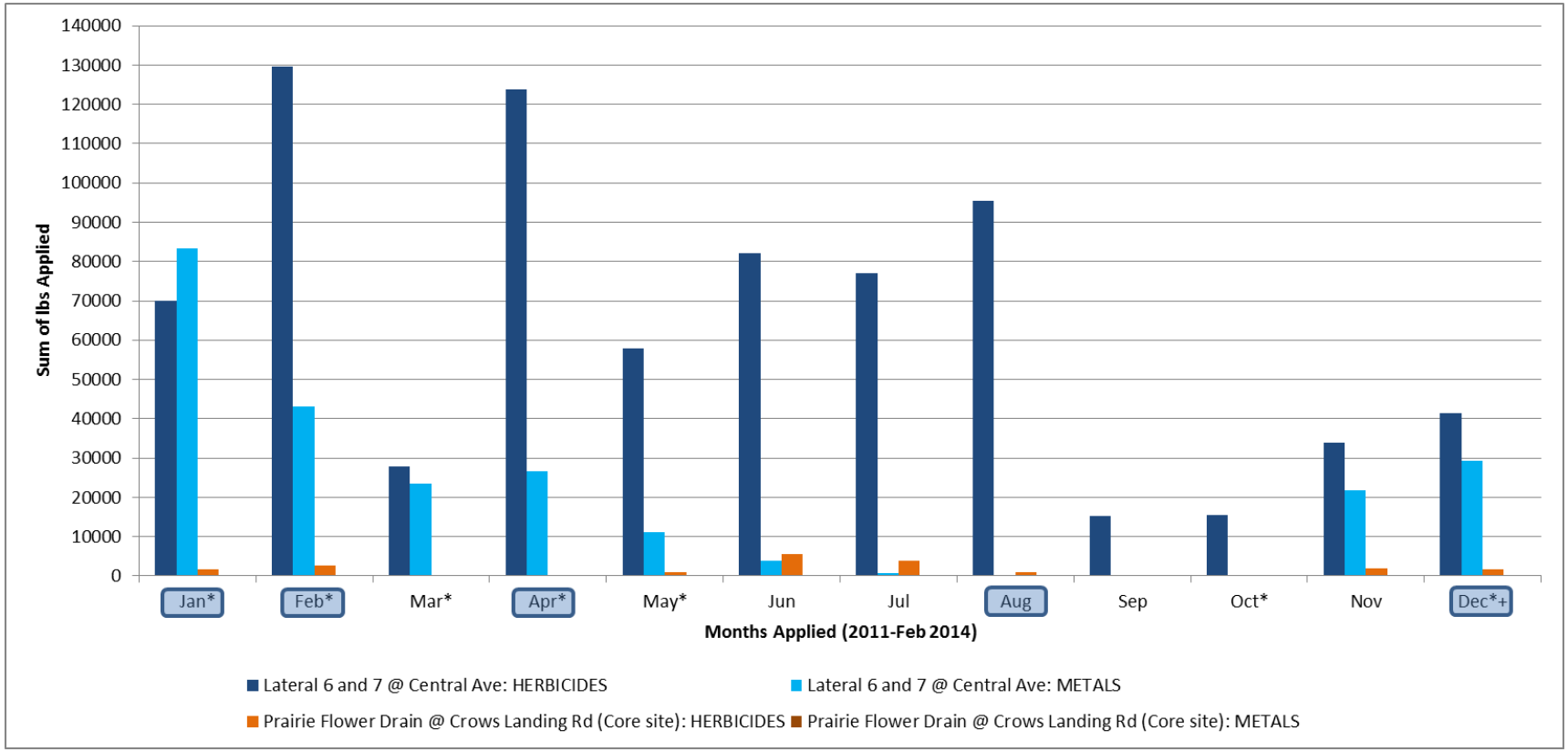


Figure 14. Lateral 6 and 7 @ Central Ave PUR data for herbicide and metal use (2011-February 2014).

Asterisk indicates when toxicity to *S. capricornutum* occurred at the Core site, + indicates when toxicity to *S. capricornutum* occurred at the Represented site. Highlighted months indicate when Represented site monitoring will occur for *S. capricornutum*.



2015 WY Monitoring Schedule

Levee Drain @ Carpenter Rd is in a management plan for *C. dubia* toxicity, *S. capricornutum* toxicity, and sediment toxicity to *H. azteca*. Levee Drain @ Carpenter Rd was monitored during the 2014 WY for dimethoate, *C. dubia* toxicity, *P. promelas* toxicity, *S. capricornutum* toxicity, and sediment toxicity to *H. azteca*. Toxicity to *S. capricornutum* occurred in December, February, and June; sediment toxicity occurred in March.

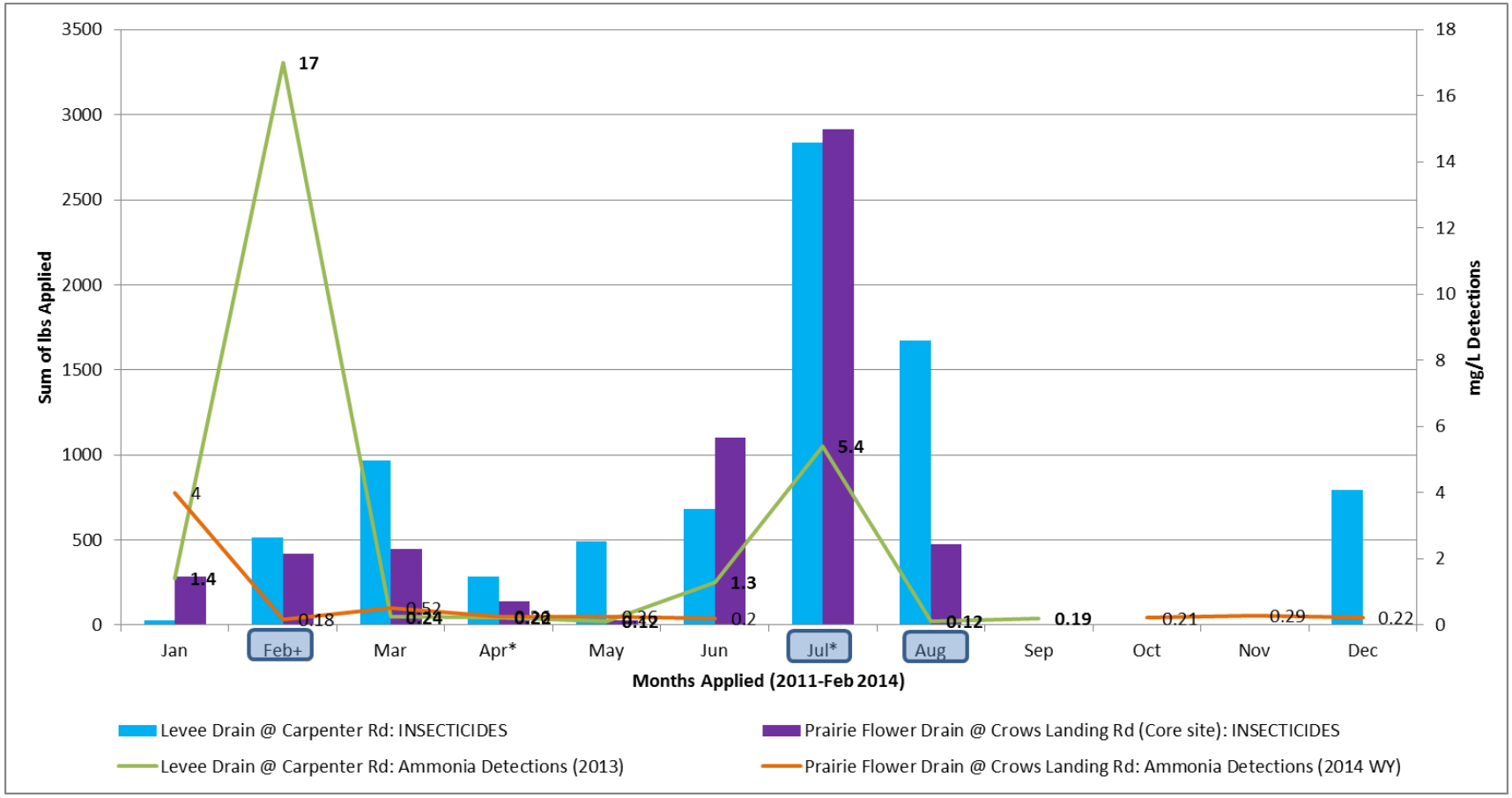
Levee Drain @ Carpenter has not been fully characterized for the Core site management plan constituents: dimethoate and toxicity to *P. promelas.* Based on the evaluation of the site's monitoring history (provided in the Addendum to the 2013 MPU; page 27) and a review of the 2013 PUR data, monitoring will continue for a second year at Levee Drain @ Carpenter Rd for dimethoate in July (Figure 6) and toxicity to *P. promelas* (February, July, August; Figure 15).

2014 WY Core Site Exceedances

Levee Drain @ Carpenter Rd was monitored for diuron monthly in 2012 and from January through September 2013; there were no exceedances of the WQTL Current PUR data indicate that applications of diuron in the site subwatershed are low; a total of 236 pounds (lbs) applied during November over the last three years, and very few applications from December through March (Figure 5). Toxicity to *S. capricornutum* occurred in February and December 2013 (toxicity was lost in the February sample and no TIE was conducted on the December sample) and June 2014 (herbicides were the most likely cause of toxicity for the June sample); however very low applications of diuron occurred in February and December and none in June. The Coalition determined that monitoring for diuron is not necessary at Levee Drain @ Carpenter Rd during the 2015 WY.

Figure 15. Levee Drain @ Carpenter Rd and Core site PUR data for insecticide use (2011-February 2014).

Asterisk indicates when toxicity to *P. promelas* occurred at the Core site, + indicates when toxicity to *P. promelas* occurred at the Represented site. Highlighted months indicate when Represented site monitoring will occur for *P. promelas*.



2015 WY Monitoring Schedule

Lower Stevinson @ Faith Home Rd is in a management plan for *S. capricornutum* toxicity. Lower Stevinson @ Faith Home Rd was monitored for dimethoate, *C. dubia* toxicity, *P. promelas* toxicity, *S. capricornutum* toxicity, and sediment toxicity to *H. azteca* through June of the 2014 WY. Toxicity to *S. capricornutum* occurred in December, April, and June.

The 2014 WY was the first year of monitoring at Lower Stevinson @ Faith Home Rd and therefore the site has not been fully characterized for the Core site management plan constituents: dimethoate, toxicity to *C. dubia, S. capricornutum*, *P. promelas,* and sediment toxicity to *H. azteca.* Based on the evaluation of the site's monitoring history (provided in the Addendum to the 2013 MPU; page 31) and a review of the 2013 PUR data, monitoring will continue for a second year for: dimethoate (one storm event during January through March, June-August; Figure 6), toxicity to *C. dubia (*March, April, July, August; Figure 16) and *P. promelas* (March, April, July; Figures 17), and sediment toxicity to *H. azteca* (March, September).

2014 WY Core Site Exceedances

Since the site has not been previously monitored for diuron and the largest number of diuron applications occurs from December through March, the Coalition will monitor for diuron at the site during the 2015 WY from December through March (Figure 5).

Figure 16. Lower Stevinson @ Faith Home Rd and Core site PUR data for insecticide, metals, and pyrethroid use (2011-February 2014).

Asterisk indicates when toxicity to *C. dubia* occurred at the Core site. Highlighted months indicate when Represented site monitoring will occur for *C. dubia*.

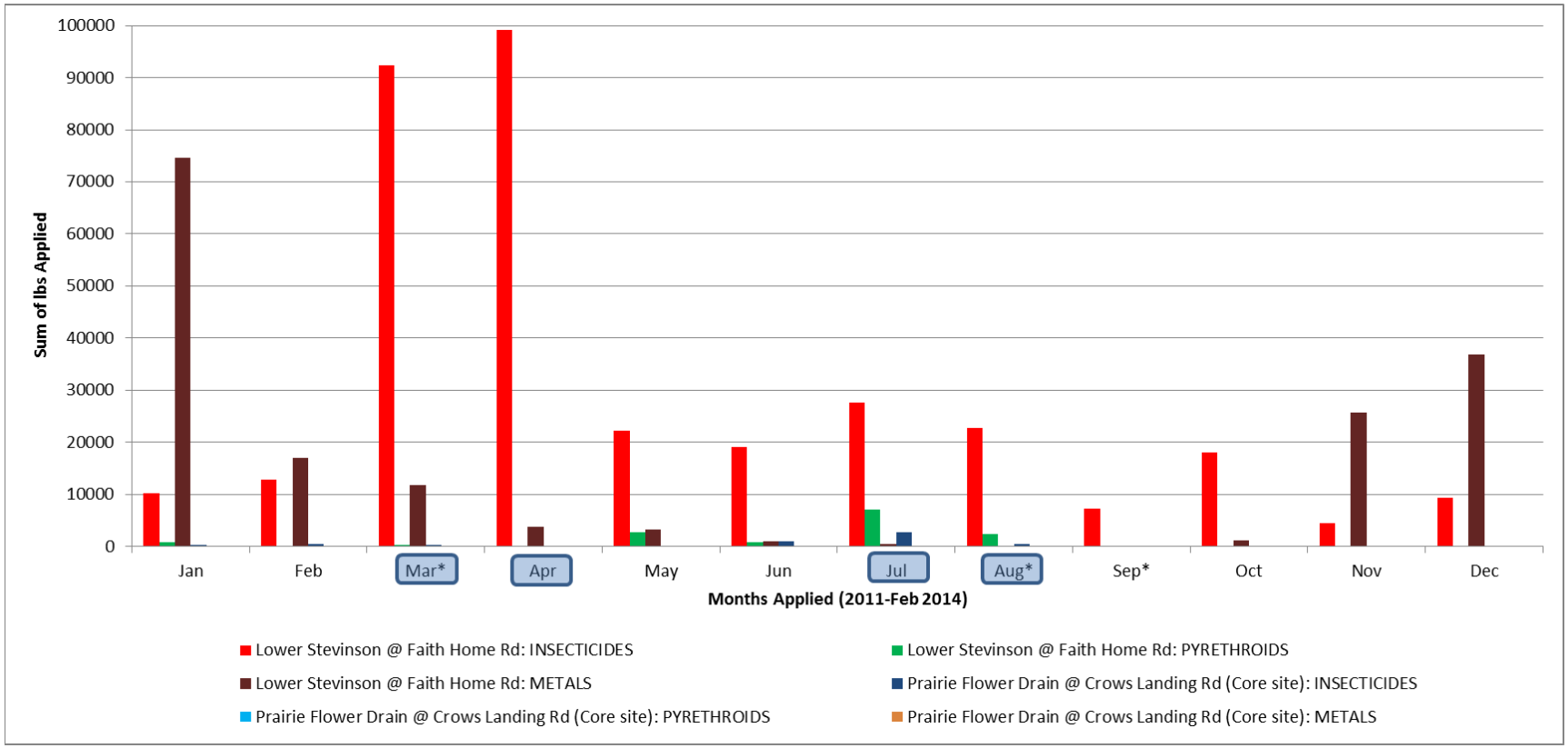
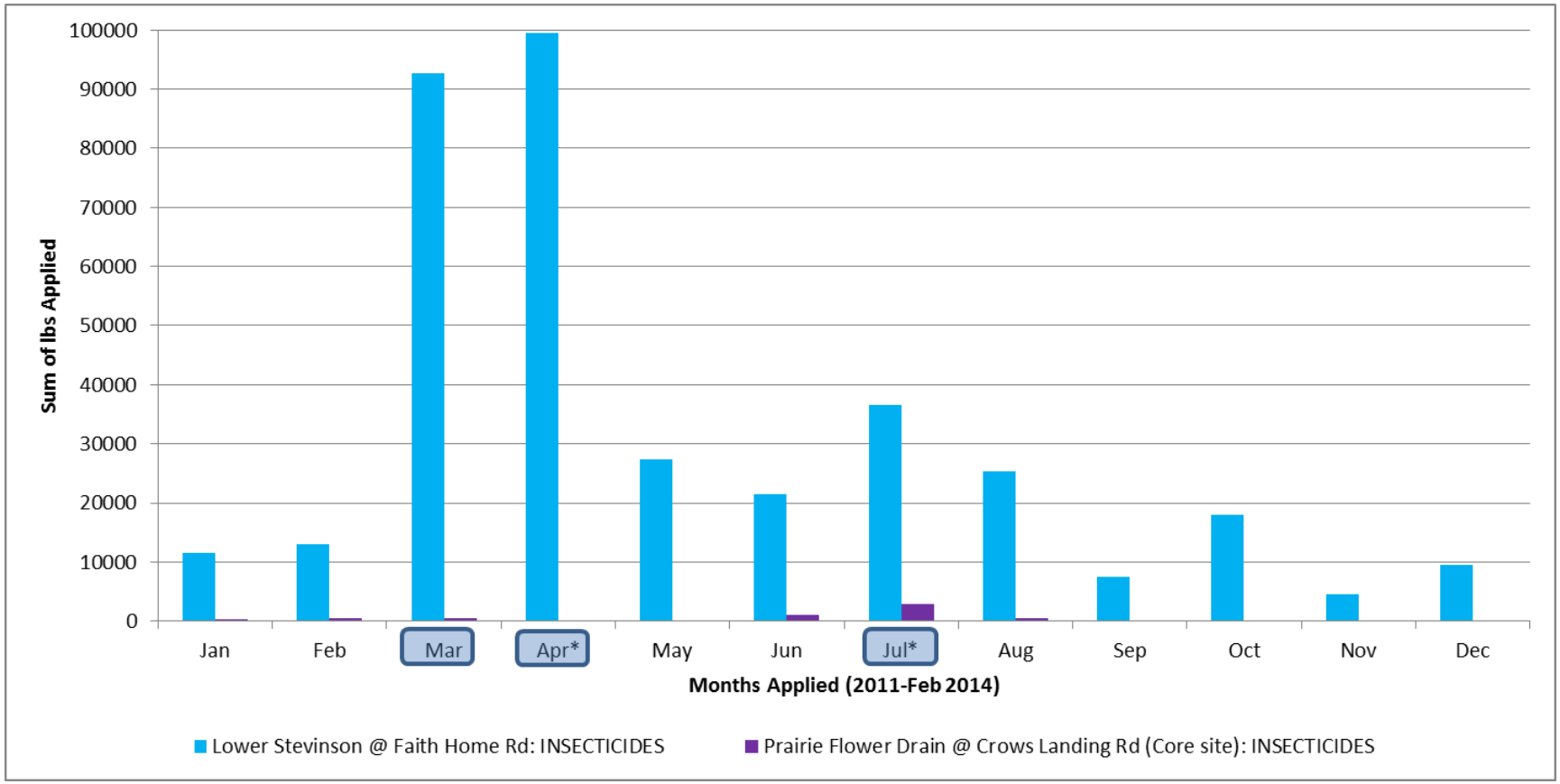


Figure 17. Lower Stevinson @ Faith Home Rd and Core site PUR data for insecticide use (2011-February 2014).

Asterisk indicates when toxicity to *P. promelas* occurred at the Core site. Highlighted months indicate when Represented site monitoring will occur for *P. promelas*.



2015 WY Monitoring Schedule

Unnamed Drain @ Hogin Rd was monitored during the 2014 WY for dimethoate, toxicity to *C. dubia*, *P. promelas* and *S. capricornutum*, and sediment toxicity to *H. azteca*, through June.

The 2014 WY was the first year of monitoring at Unnamed Drain @ Hogin Rd and therefore the site has not been fully characterized for the Core site management plan constituents: dimethoate, toxicity to *C. dubia, S. capricornutum*, *P. promelas,* and sediment toxicity to *H. azteca.* Based on the evaluation of the site's monitoring history (provided in the Addendum to the 2013 MPU; page 35) and a review of the 2013 PUR data, monitoring will continue for a second year for: dimethoate (March, August; Figure 6), toxicity to *C. dubia* and *P. promelas* (July, August; Figures 18-19), toxicity to *S. capricornutum* (February, July; Figure 20), and sediment toxicity to *H. azteca* (March, September).

2014 WY Core Site Exceedances

Since the site has not been previously monitored for diuron and the only diuron applications occur during February, the Coalition will monitor for diuron at the site during the 2015 WY in February (Figure 5).

Figure 18. Unnamed Drain @ Hogin Rd and Core site PUR data for insecticide and pyrethroid use (2011-February 2014).

Asterisk indicates when toxicity to *C. dubia* occurred at the Core site. Highlighted months indicate when Represented site monitoring will occur for *C. dubia*.

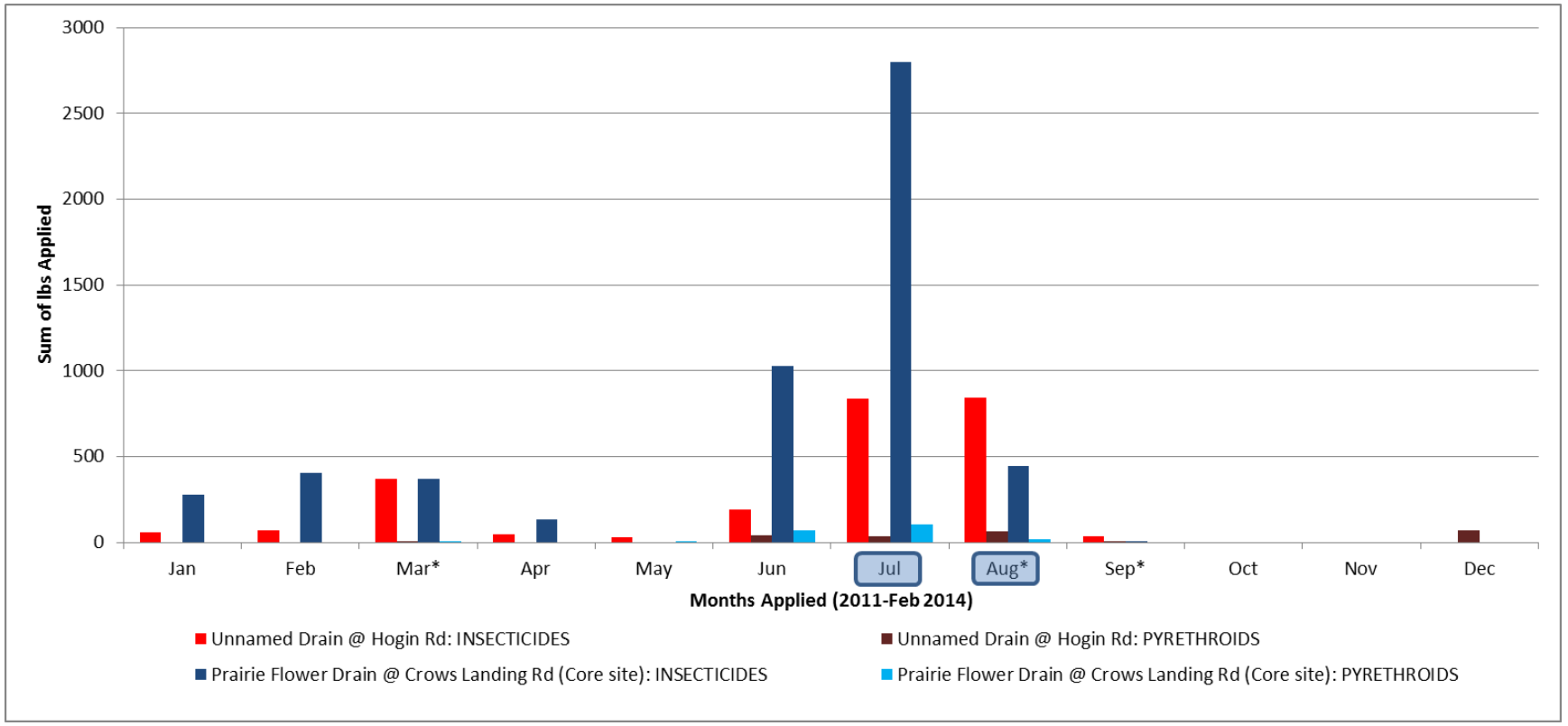


Figure 19. Unnamed Drain @ Hogin Rd and Core site PUR data for insecticide use (2011-February 2014).

Asterisk indicates when toxicity to *P. promelas* occurred at the Core site. Highlighted months indicate when Represented site monitoring will occur for *P. promelas*.

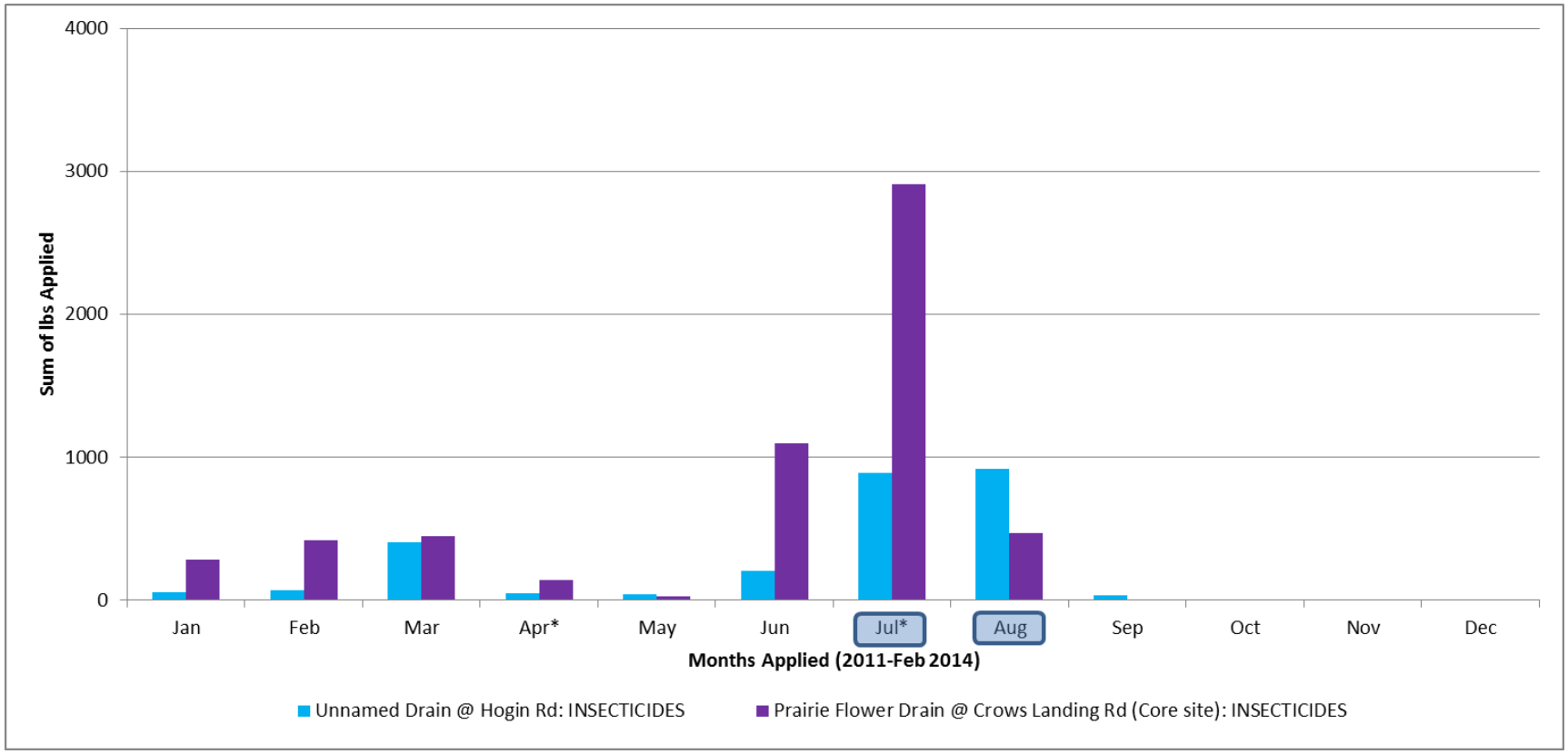
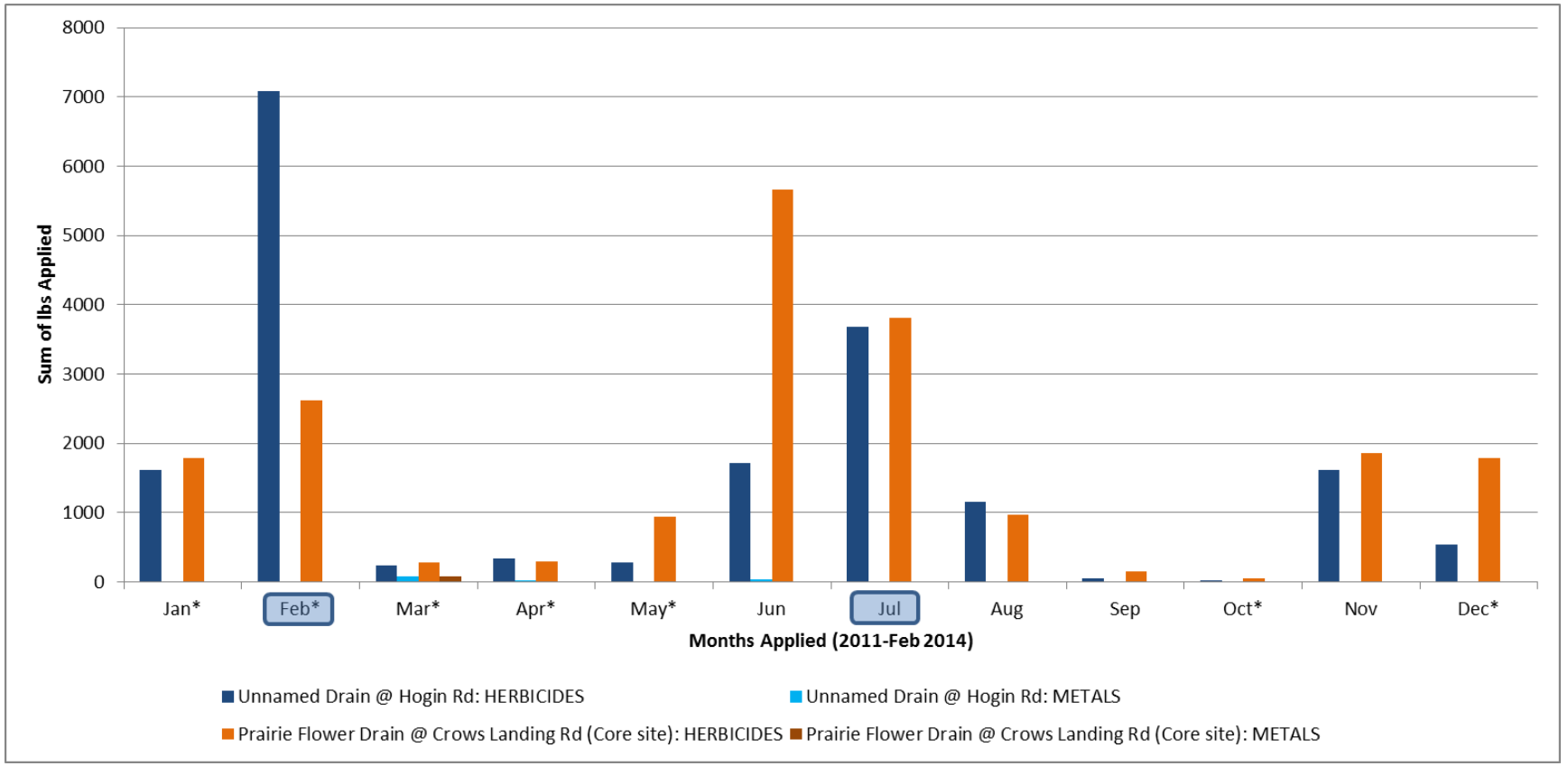


Figure 20. Unnamed Drain @ Hogin Rd PUR data for herbicide and metal use (2011-February 2014).

Asterisk indicates when Core site MPM occurs for *S. capricornutum*. Highlighted months indicate when Represented site monitoring will occur for *S. capricornutum.*



2015 WY Monitoring Schedule

Westport Drain @ Vivian Rd is in a management plan for *S. capricornutum* toxicity. The site was monitored during the 2014 WY for toxicity to *S. capricornutum* and sediment toxicity to *H. azteca*; no toxicity occurred through June. Represented site monitoring will continue for a second year for sediment toxicity to *H. azteca* during March and September.

Core Management Plan Constituents Not Being Monitored

Based on the evaluation of the site's monitoring history (provided in the 2013 MPU; page 52) and current PUR data, no monitoring is necessary for dimethoate, toxicity to *C. dubia,* or toxicity to *P. promelas* at Westport Drain @ Vivian Rd during the 2015 WY. Westport Drain @ Vivian Rd was monitored once a month for dimethoate from May through September 2007 and January through September 2008; all results were non-detect. C. *dubia* toxicity and *P. promelas* toxicity were monitored monthly from May through September 2007 and January through September 2008; no toxicity occurred.

2014 WY Core Site Exceedances

Westport Drain has been monitored for diuron from May through September 2007 and January through September 2008; all results were non-detect. In addition, PUR data indicate that very few applications of diuron occur in the subwatershed, 115 pounds applied in January over the last three years and only 14 pounds applied in December (Figure 5). Therefore, the Coalition determined that monitoring for diuron is not necessary at Westport Drain @ Vivian Rd during the 2015 WY.

Zone 3 - Highline Canal @ Hwy 99

Highline Canal @ Hwy 99 management plan constituents to be monitored in the 2015 WY:

- copper
- lead
- *C. dubia* toxicity
- *S. capricornutum* toxicity
- *H. azteca* sediment toxicity

These management plan constituents were monitored during the 2014 WY. One exceedance of the WQTL for dissolved copper occurred in March during MPM and toxicity to *S. capricornutum* occurred in June during Core site monitoring (Table 19).

The Coalition petitioned to remove toxicity to *C. dubia* and sediment toxicity to *H. azteca* from the management plan on June 5, 2014.

Highline Canal @ Lombardy Rd

2015 WY Monitoring Schedule

Highline Canal @ Lombardy Rd is in a management plan for copper, toxicity to *S. capricornutum,* and sediment toxicity to *H. azteca*. The Coalition received approval to remove toxicity to *C. dubia* from the site's management plan on October 15, 2013 as a result of two consecutive years of monitoring with no *C. dubia* water column toxicity. The Coalition petitioned to remove sediment toxicity from the site's management plan on June 5, 2014. Therefore, no Represented site monitoring is necessary at Highline Canal @ Lombardy during the 2015 WY.

Mustang Creek @ East Ave

2015 WY Monitoring Schedule

Mustang Creek @ East Ave is in a management plan for copper. The site was monitored during the 2014 WY for copper and sediment toxicity to *H. azteca*. As of June, the site has been dry three times and the waterbody has been non-contiguous three times. MPM for copper will continue in the 2015 WY and Represented site monitoring will continue for sediment toxicity to *H. azteca* in March and September.

Core Management Plan Constituents Not Being Monitored

Based on the evaluation of the site's monitoring history (provided in the Addendum to the 2013 MPU; page 39) and current PUR data, no monitoring is necessary for *C. dubia* and *S. capricornutum* toxicity during the 2015 WY (Figures 21-22). The site was monitored for toxicity to *C. dubia* and *S. capricornutum* 54 times from 2006 through 2010, and in 2013; however, the site was dry 33 of those times. A single toxicity to *C. dubia* occurred in January 2008 and toxicity to *S. capricornutum* occurred in February 2008. The site is typically dry during the months of high applications of organophosphates and herbicides and therefore water quality is not affected by runoff from these applications.

Figure 21. Mustang Creek @ East Ave and Core site PUR data for insecticide and pyrethroid use (2011-February 2014).

Asterisk indicates when toxicity to *C. dubia* occurred at the Core site, + indicates when toxicity to *C. dubia* occurred at the Represented site. Highlighted months indicate when Represented site monitoring will occur for *C. dubia*.

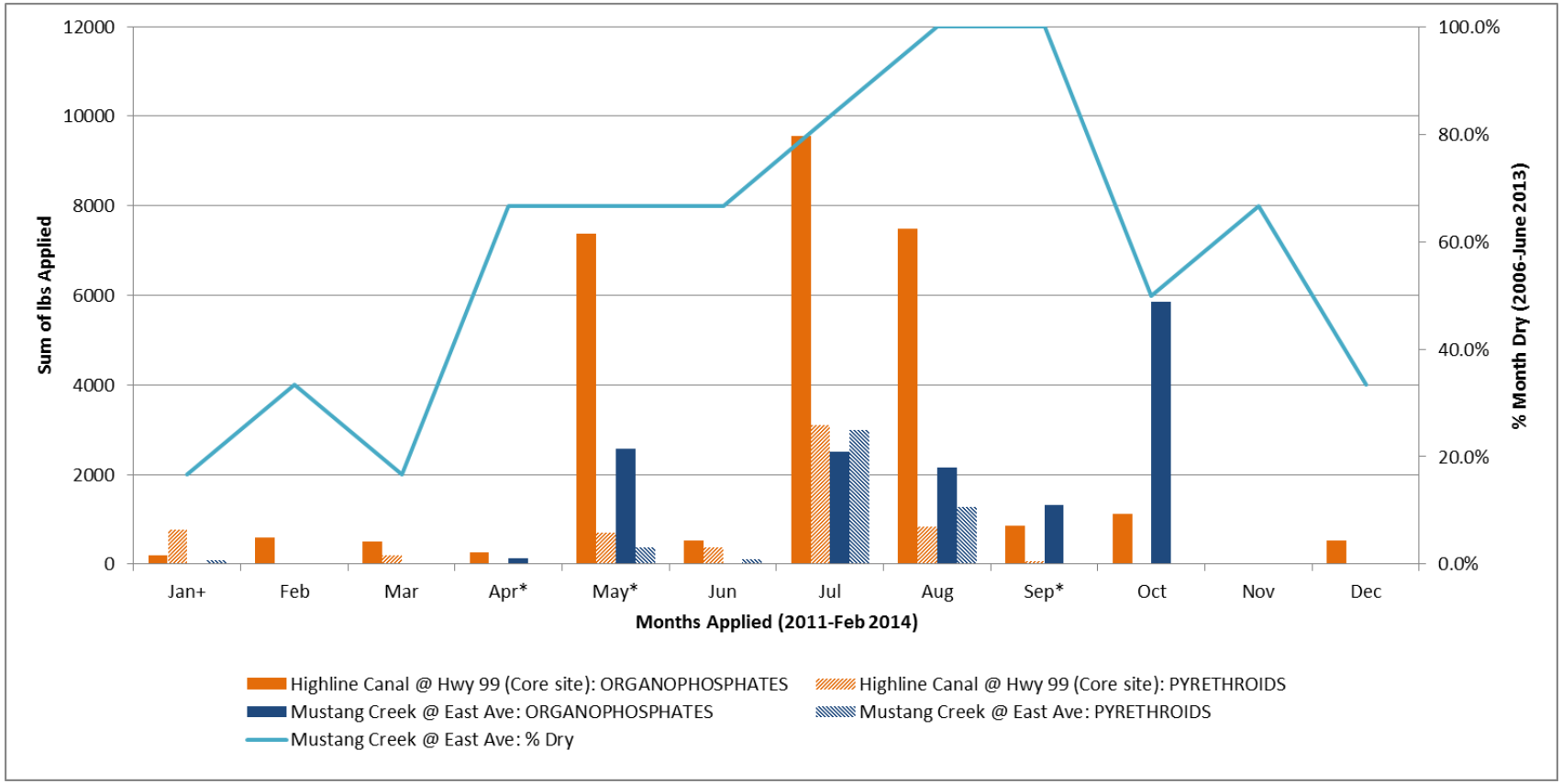
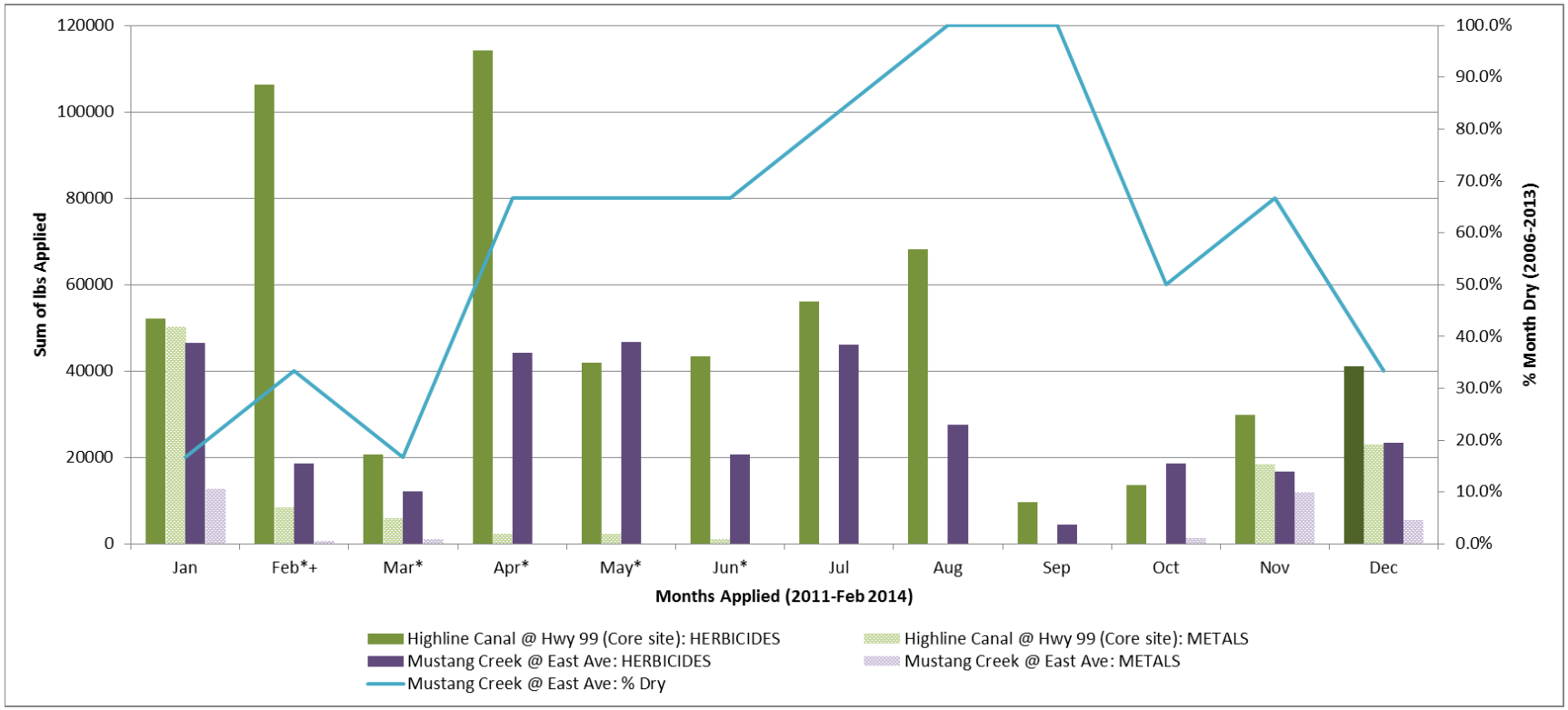


Figure 22. Mustang Creek @ East Ave and Core site PUR data for herbicide and metal use (2011-February 2014).

Asterisk indicates when Core site MPM occurs for *S. capricornutum*. Highlighted months indicate when Represented site monitoring will occur for *S. capricornutum.*



Zone 4 - Merced River @ Santa Fe

Merced River @ Santa Fe management constituents to be monitored in the 2015 WY:

- chlorpyrifos
- lead
- *C. dubia* toxicity

These management plan constituents were monitored during the 2014 WY and no exceedances or toxicity occurred. The Coalition petitioned to remove chlorpyrifos, lead, and toxicity to *C. dubia* from the site's management plan on June 5, 2014.

Bear Creek @ Kibby Rd

Chlorpyrifos and *C. dubia* toxicity were removed from the Bear Creek @ Kibby Rd management plan in 2012; no Represented site monitoring is necessary during the 2015 WY.

Black Rascal @ Yosemite Rd

2015 WY Monitoring Schedule

Black Rascal Creek @ Yosemite Rd is in a management plan for chlorpyrifos and toxicity to *C. dubia*, therefore monitoring will be determined by the management plans.

Howard Lateral @ Hwy 140

2015 WY Monitoring Schedule

Howard Lateral @ Hwy 140 is in a management plan for chlorpyrifos, therefore monitoring will be determined by the management plan.

Core Management Plan Constituents Not Being Monitored

Based on the evaluation of the site's monitoring history (provided in the 2013 MPU; page 56) and current PUR data, no monitoring is necessary for *C. dubia* toxicity at Howard Lateral @ Hwy 140 during the 2015 WY. Toxicity to *C. dubia* was monitored once a month in 2009 and 2010; no toxicity occurred. The most recent Core site toxicity to *C. dubia* in 2008 was associated with organophosphates. The PUR data from 2010 through 2013 indicate low organophosphate use in the Howard Lateral @ Hwy 140 site subwatershed compared to Merced River @ Santa Fe. Less than 1000 lbs AI were applied in 2013 within the Howard Lateral @ Hwy 140 subwatershed compared to over 8,000 lbs applied in 2013 at the Core site (Figure 23). The Coalition determined that toxicity monitoring for *C. dubia* is not necessary for the 2015 WY due to low applications and previous monitoring results.

Figure 23. Howard Lateral @ Hwy 140 and Core site organophosphate use (2011-2013).

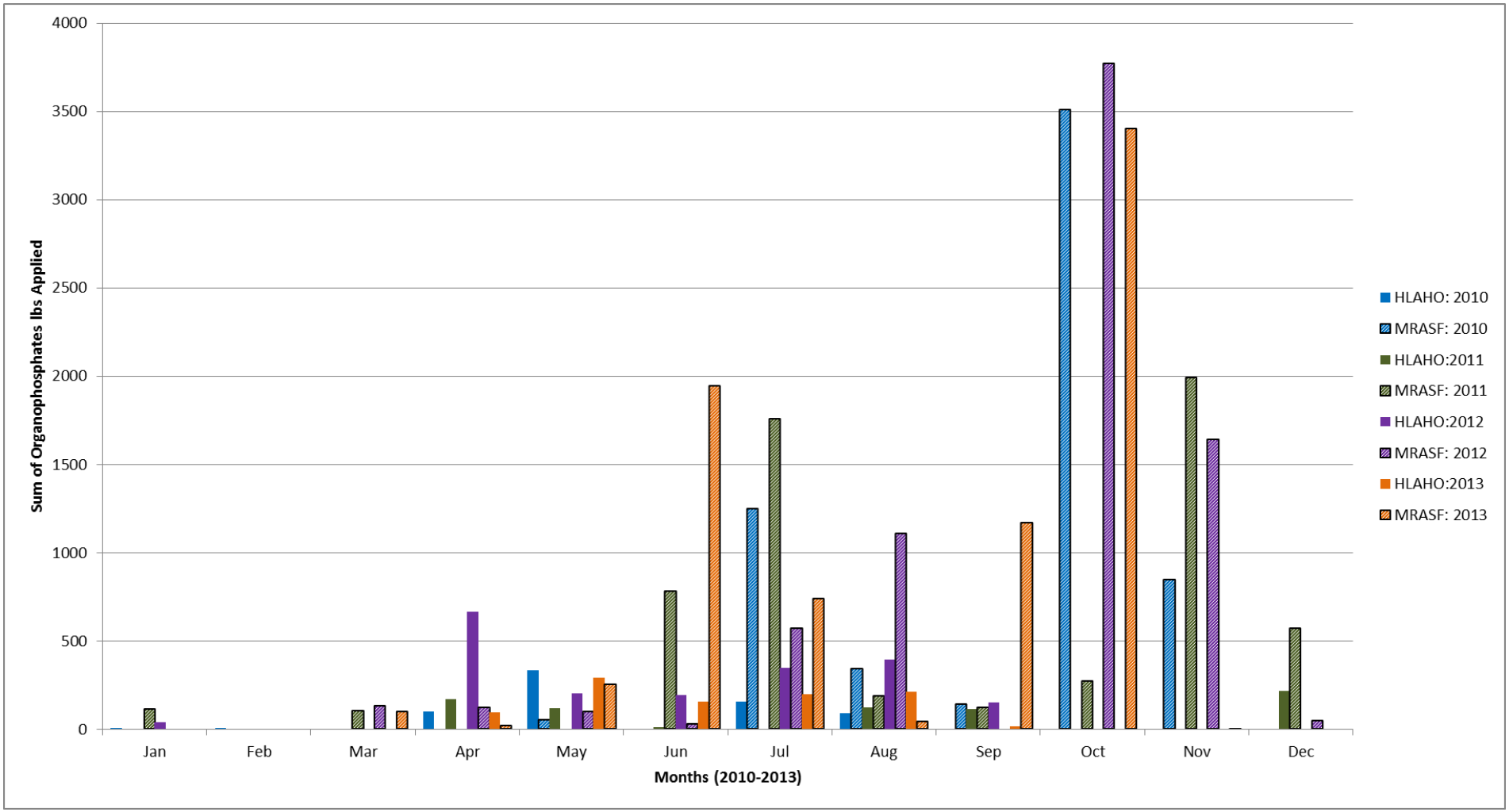
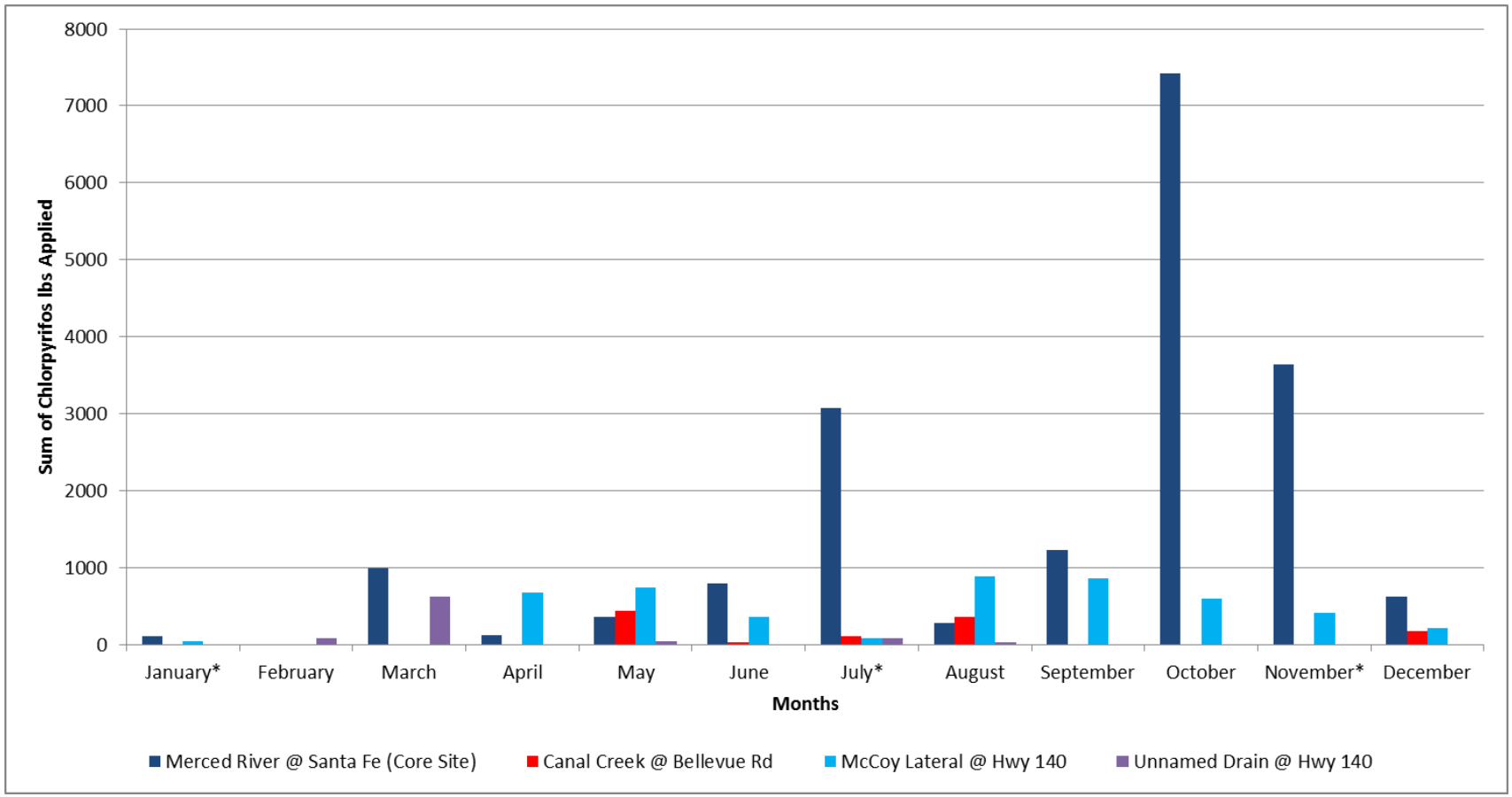


Figure 24. Zone 4 chlorpyrifos use (2011-February 2014).

Asterisk indicates when exceedances of the WQTL for chlorpyrifos occurred at the Core site.



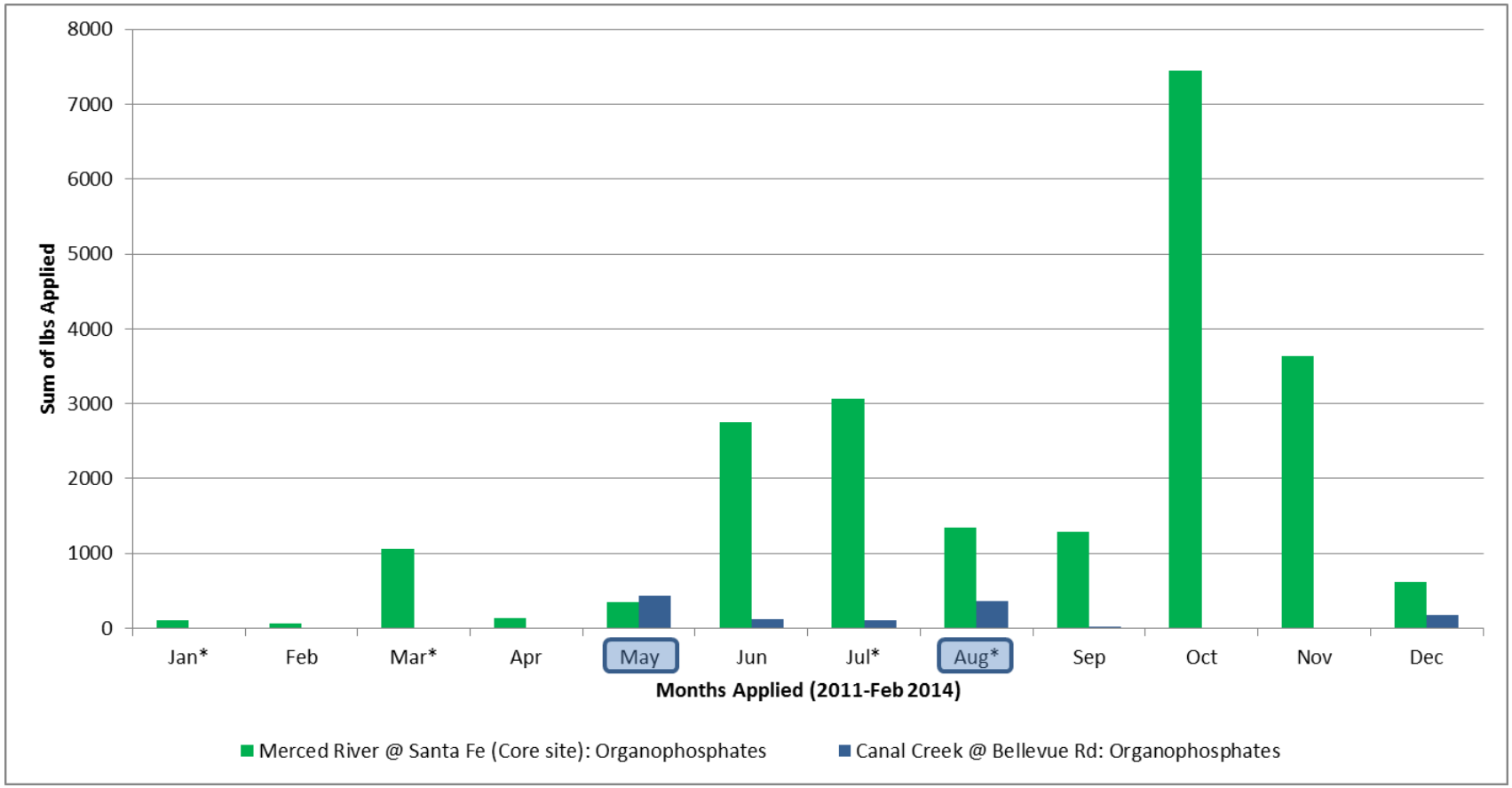
2015 WY Monitoring Schedule

Canal Creek @ Bellevue Rd was monitored during the 2014 WY for chlorpyrifos and toxicity to *C. dubia*. As of June, no exceedances or toxicity occurred.

The 2014 WY was the first year of monitoring at Canal Creek @ Bellevue Rd and therefore the site has not been fully characterized for the Core site management plan constituents. Based on the evaluation of the site's monitoring history (provided in the Addendum to the 2013 MPU; page 43) and a review of the 2013 PUR data, monitoring will continue for a second year at Canal Creek @ Bellevue Rd for chlorpyrifos (May, August; Figure 24) and toxicity to *C. dubia* (May, August; Figure 25).

Figure 25. Canal Creek @ West Bellevue Rd and Core site organophosphate use (2011-February 2014).

Asterisk indicates when toxicity to *C. dubia* occurred at the Core site. Highlighted months indicate when Represented site monitoring will occur for *C. dubia*.



2015 WY Monitoring Schedule

The only Core site management plan constituent also in a management plan at Livingston Drain @ Robin Ave is chlorpyrifos; MPM is scheduled during the 2015 WY.

Core Management Plan Constituents Not Being Monitored

Toxicity to *C. dubia* was monitored once a month from May through September 2007 and from January through September 2008; no toxicity occurred. The most recent toxicity to *C. dubia* at the Core site in 2008 was associated with organophosphates. Livingston Drain @ Robin Ave was monitored for chlorpyrifos in January and from April through August 2014; no exceedances occurred and the site was dry in April, May, and June. Overall, PUR data from the last four years (2010-2013) indicate low organophosphate use in the subwatershed. The majority of organophosphates applied in the subwatershed are chlorpyrifos applications to almonds and alfalfa (98% of total lbs applied from 2010-2013; Figure 27). Chlorpyrifos is currently in a management plan for Livingston Drain @ Robin Ave and MPM is occurring during times of high use, including January, February, April, and July through August 2015. Therefore, monitoring for toxicity to *C. dubia* is not necessary during the 2015 WY. The Coalition will continue to monitor for chlorpyrifos during the 2015 WY, and if no exceedances of the WQTL occur, will petition to remove it from the site's management plan.

Figure 26. Livingston Drain @ Robin Ave organophosphate use (2010- 2013).

(D) indicates if the site was dry at least once during 2010 through 2013.

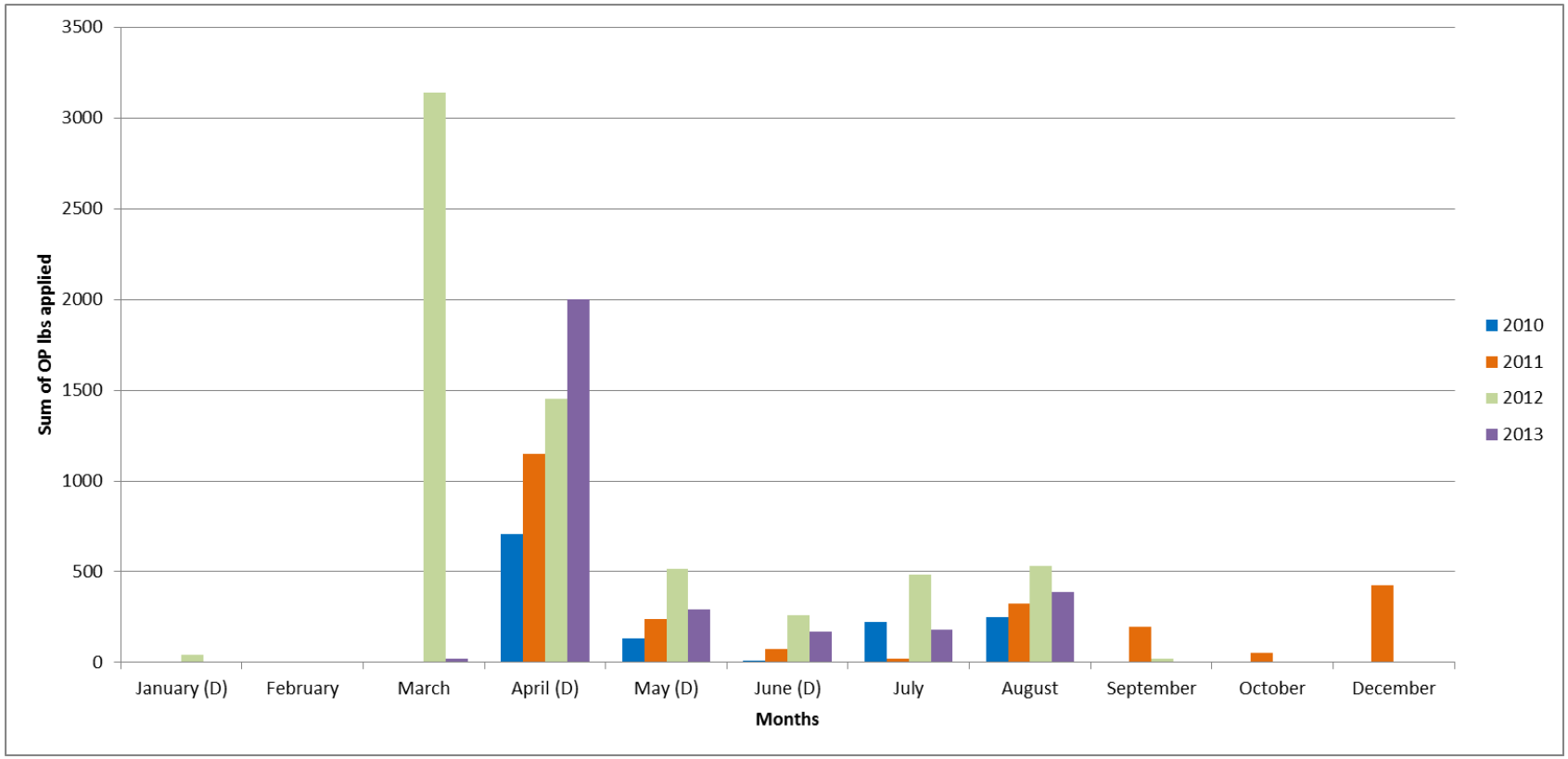
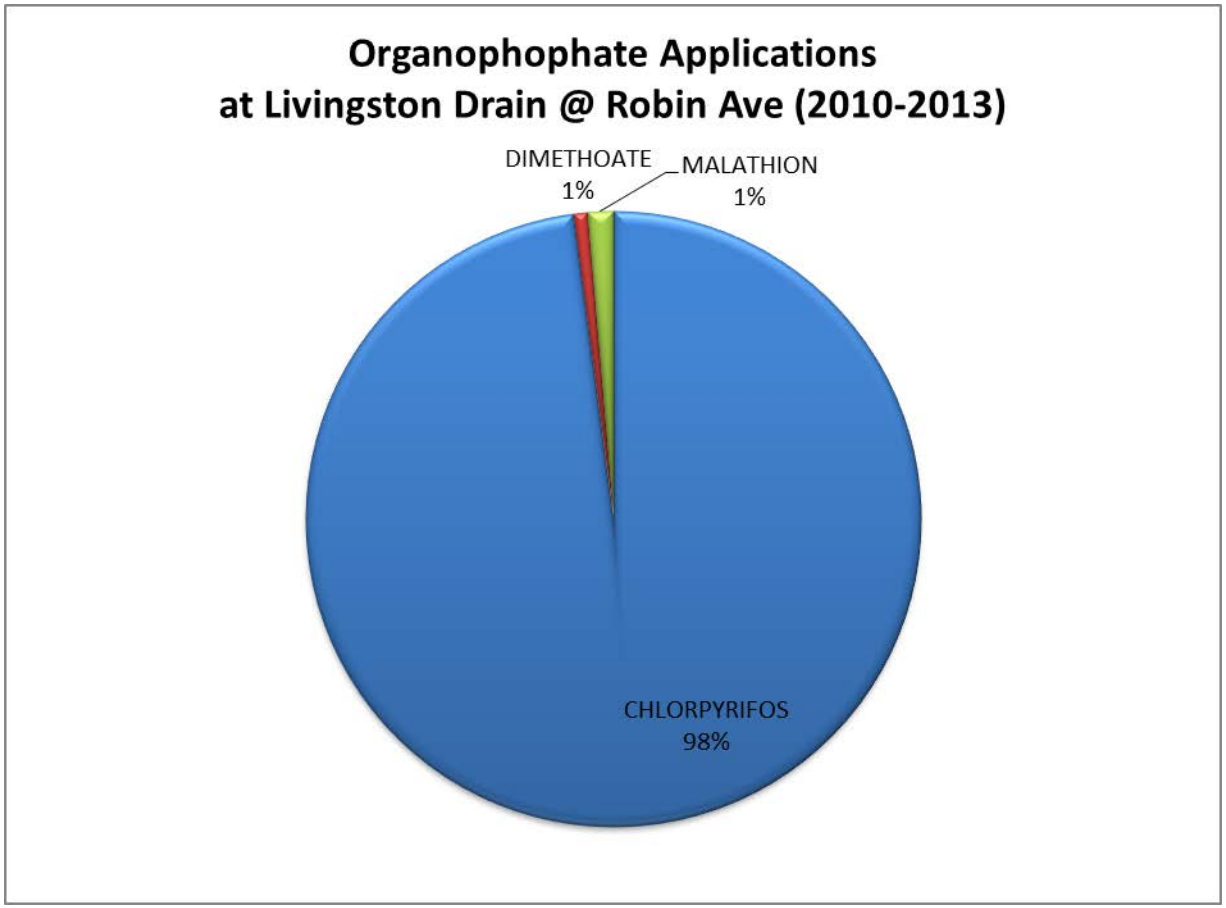


Figure 27. Livingston Drain @ Robin Ave organophosphate comparison of the total lbs applied (2010- 2013).



McCoy Lateral @ Hwy 140

Core Management Plan Constituents Not Being Monitored

None of the Core site management plan constituents are in a management plan at McCoy Lateral @ Hwy 140. The Coalition monitored once a month for chlorpyrifos and *C. dubia* toxicity in January and April through November in 2011, March through September and December in 2012; no exceedances of the WQTL or toxicity occurred. Applications of chlorpyrifos occur during the irrigation and winter seasons in the site subwatershed (Figure 24); however, because no exceedances of the WQTL or toxicity to *C. dubia* have occurred at the site, the Coalition determined that no monitoring is necessary during the 2015 WY.

Unnamed Drain @ Hwy 140

2015 WY Monitoring Schedule

Unnamed Drain @ Hwy 140 was monitored for one year of Assessment Monitoring in 2013 prior to the new Order. A single exceedance of the copper WQTL occurred in January 2013 which did not trigger a management plan. Since a second year of Assessment Monitoring did not occur, the Coalition evaluated copper use within the subwatershed to determine if monitoring for copper in the 2015 WY should occur.

In 2013, January was the only month in which copper applications occurred and concentrations exceeded the WQTL (Figure 28). However, the copper applications all occurred after the sampling date. Before January 2013, the last applications occurred in 2006. Although use has not been high, the Coalition will monitor for copper during a storm event (between January and March) to verify that copper applications are not adversely affecting water quality.

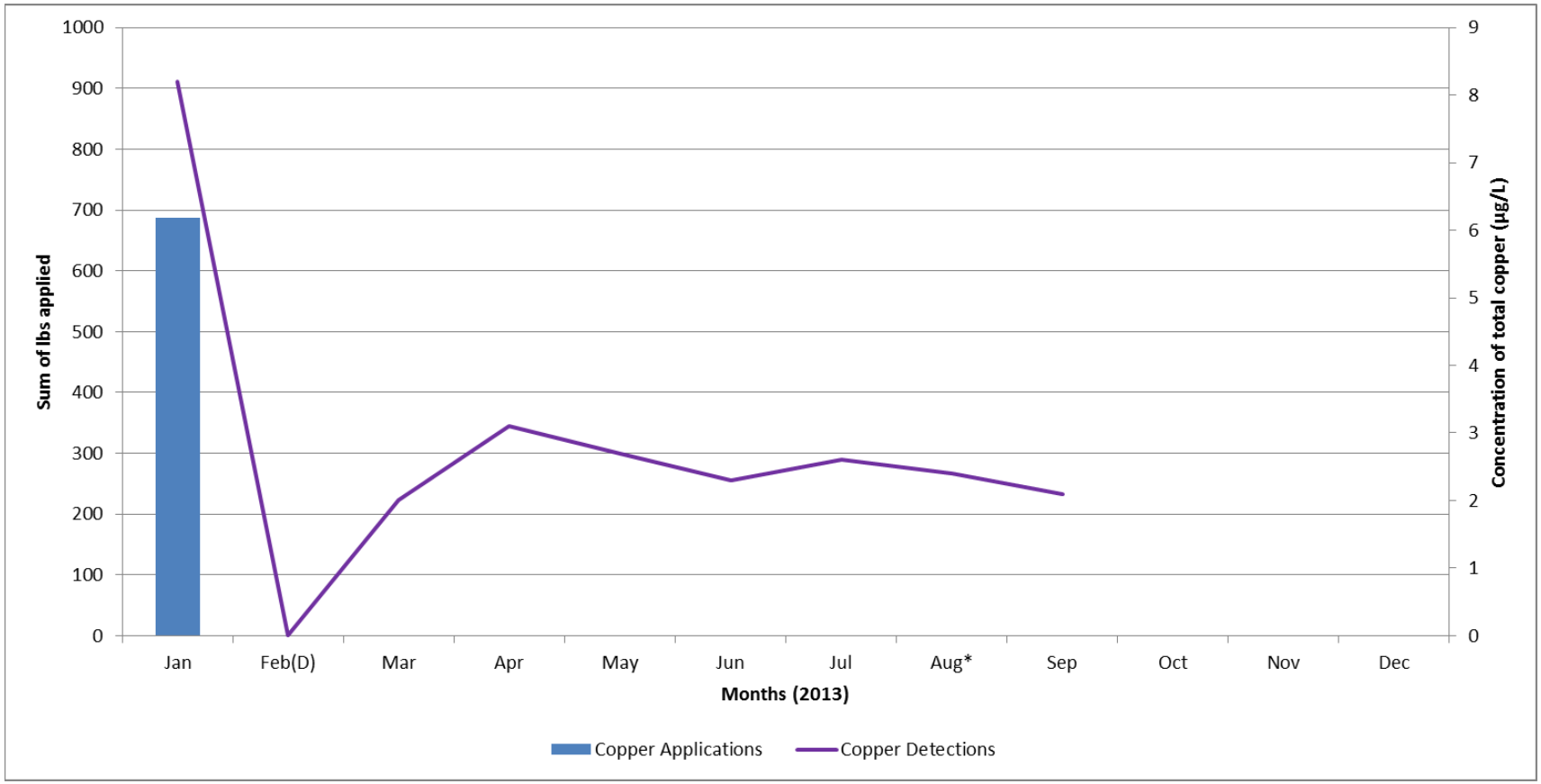
Core Management Plan Constituents Not Being Monitored

None of the Core site management plan constituents are in a management plan at Unnamed Drain @ Hwy 140. Unnamed Drain @ Hwy 140 was monitored for chlorpyrifos during 2013 Assessment Monitoring; all results were non-detect. The PUR data indicate that few applications of chlorpyrifos occur at Unnamed Drain @ Hwy 140; a total of 153 pounds of AI from January 2010 through August 2013 (Figure 28) were applied. Therefore, due to minimal applications of chlorpyrifos, no detections of chlorpyrifos during 2013, and no exceedances of the WQTL occurring at the Core site through June 2014, the Coalition will not conduct monitoring for chlorpyrifos at this location in the 2015 WY.

Unnamed Drain @ Hwy 140 was monitored for toxicity to *C. dubia* during 2013 Assessment Monitoring and in January 2014; no toxicity occurred. Toxicity to *C. dubia* occurred at the Core site during the months of January, March, July, and August from 2004 through 2008. The January 2008 TIE results indicated organophosphates were the cause of the *C. dubia* toxicity. It is likely that the concentrations of chlorpyrifos (0.59 mg/L) and diazinon (0.01 mg/L) detected in the sample resulted in the mortality to *C. dubia.* As mentioned above, the amount of chlorpyrifos applied within Unnamed Drain @ Hwy 140 subwatershed is minimal. In addition, none of the samples collected through June 2014 at the Core site were toxic to *C. dubia* or had detections of chlorpyrifos. Therefore the Coalition will not conduct monitoring for *C. dubia* at Unnamed Drain @ Hwy 140 in the 2015 WY.

Figure 28. Unnamed Drain @ Hwy 140 copper use and detections (2013).

Asterisk indicates when an exceedance of the WQTL occurred. (D) indicates when the site was dry.



Zone 5 - Duck Slough @ Gurr Rd

Duck Slough @ Gurr Rd management plan constituents to be monitored in the 2015 WY:

- copper
- lead
- *C. dubia* toxicity
- *P. promelas* toxicity
- *H. azteca* sediment toxicity

These management plan constituents were monitored during the 2014 WY. Of the constituents monitored at Duck Slough @ Gurr Rd that are not in a management plan, only one exceedance occurred. A sample collected in April 2014 exceeded the malathion WQTL (Table 19). Each Represented site within Zone 5 not in a management plan for malathion was evaluated to determine if monitoring is necessary during the 2015 WY.

The Coalition petitioned to remove copper from the site's management plan on June 5, 2014.

Deadman Creek @ Gurr Rd

2015 WY Monitoring Schedule

Deadman Creek @ Gurr Rd is in a management plan for toxicity to *C. dubia* and toxicity to *P. promelas*. No Represented site monitoring is scheduled for the 2015 WY.

Core Management Plan Constituents Not Being Monitored

The Coalition received approval to remove copper from the Deadman Creek @ Gurr Rd management plan in 2012. The Coalition determined no sediment toxicity monitoring is necessary at Deadman Creek @ Gurr Rd during the 2015 WY. Sediment samples were collected and tested for *H. azteca* toxicity in August 2004, August 2006, March and August 2007 and 2008, April and August 2009, and March and September 2010; no toxicity occurred.

2014 WY Core Site Exceedances

Deadman Creek @ Gurr Rd was monitored for malathion from 2006 through 2010; 49 samples were collected and all results were non-detect except for a single exceedance of the WQTL in August 2006 (0.19 µg/mL). Current PUR data indicate applications of malathion occur at the site from February through April, June, and July; no applications have occurred during August over the last three years (Figure 29). The Coalition determined monitoring for malathion is not necessary at Deadman Creek @ Gurr Rd during the 2015 WY.

Deadman Creek @ Hwy 59

2015 WY Monitoring Schedule

No Represented site monitoring is scheduled for Deadman Creek @ Hwy 59 during the 2015 WY.

Core Management Plan Constituents Not Being Monitored

Based on the evaluation of the site's monitoring history (provided in the 2013 MPU; page 57) and current PUR data, no monitoring is necessary for copper, *C. dubia* toxicity, *P. promelas* toxicity, or *H. azteca* sediment toxicity during the 2015 WY. Copper was monitored monthly from April through September 2008, and monthly in 2011 and 2012; no exceedances occurred. *C. dubia* toxicity and *P. promelas* toxicity were monitored in 2006 through 2008 and every month in 2011 and 2012; 43 samples were collected for each species and tested, no toxicity occurred. Sediment toxicity to *H. azteca* was monitored in 2006, 2007, and 2008. Sediment toxicity to *H. azteca* occurred once in 2008; however, the site was resampled the following week and toxicity was not persistent. Monitoring continued in 2011 and 2012 and no toxicity to *H. azteca* occurred.

2014 WY Core Site Exceedances

Deadman Creek @ Hwy 59 was monitored for malathion from 2006 through 2012; 43 samples were collected and all results were non-detect. The PUR data indicate similar use trends compared to the Core site (Figure 29); however, because no exceedances of the WQTL occurred at Deadman Creek @ Hwy 59, the Coalition will not monitor for malathion during the 2015 WY.

Miles Creek @ Reilly Rd

2015 WY Monitoring Schedule

Miles Creek @ Reilly Rd is in a management plan for copper, toxicity to *C. dubia,* and sediment toxicity to *H. azteca*. No Represented site monitoring is scheduled for Miles Creek @ Reilly Rd during the 2015 WY.

Core Management Plan Constituents Not Being Monitored

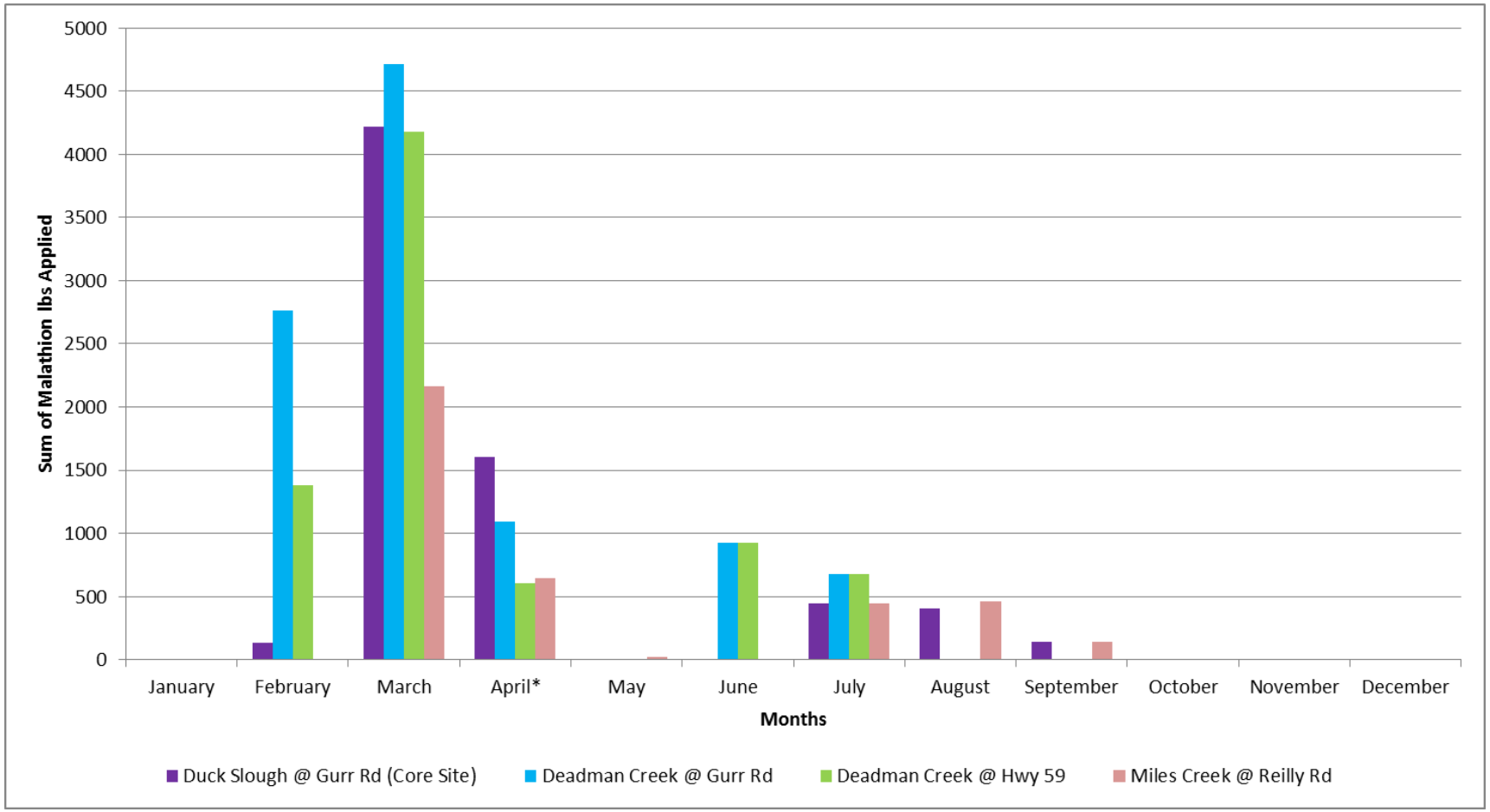
P. promelas toxicity was monitored in 2007 through 2008 and monthly in 2013; 23 samples were collected and tested, no toxicity occurred.

2014 WY Core Site Exceedances

Miles Creek @ Reilly Rd was monitored for malathion from May through September 2007, January through September 2008, and January through September 2013; 23 samples were collected and all results were non-detect with the exception of one result below the reporting limit. Applications of malathion in the Miles Creek @ Reilly Rd subwatershed are the lowest in the zone (Figure 29). The Coalition determined monitoring for malathion is not necessary at the site during the 2015 WY.

Figure 29. Zone 5 malathion use (2011-February 2014).

Asterisk indicates when an exceedance occurred at the Core site.



Zone 6 - Cottonwood Creek @ Rd 20

Cottonwood Creek @ Rd 20 management constituents to be monitored in the 2015 WY:

- chlorpyrifos
- copper
- lead

These management plan constituents were monitored during the 2014 WY and no exceedances have occurred through June 2014. The Coalition petitioned to remove lead from the site's management plan on June 5, 2014.

Ash Slough @ Ave 21

2015 WY Monitoring Schedule

Ash Slough @ Ave 21 is in a management plan for copper and MPM will continue during the 2015 WY. Chlorpyrifos was approved to be removed from the Ash Slough @ Ave 21 management plan in 2012. No Represented site monitoring is necessary at the Ash Slough @ Ave 21 during the 2015 WY.

Berenda Slough along Ave 18 ½

2015 WY Monitoring Schedule

Berenda Slough along Ave 18 ½ is in a management plan for chlorpyrifos and copper; MPM will continue during the 2015 WY. No Represented site monitoring is necessary at the site during the 2015 WY.

Dry Creek @ Rd 18

2015 WY Monitoring Schedule

Dry Creek @ Rd 18 is in a management plan for chlorpyrifos and copper; MPM will continue during the 2015 WY. The Coalition petitioned to remove chlorpyrifos from the site's management plan on June 5, 2014. No Represented site monitoring is necessary at the site during the 2015 WY.

SPECIAL PROJECT MONITORING

In addition to Core and Represented site monitoring, the Coalition will conduct site specific monitoring to address parameters associated with a TMDL, and MPM to address sites in a management plan.

Management Plan Monitoring

The Coalition will continue to conduct MPM based on the monitoring strategy outlined in the 2008 Management Plan (revised in 2010) until the Regional Board approves the 2014 Surface Water Quality Management Plan (SQMP), submitted on May 1, 2014. Management Plan Monitoring is conducted as part of the Coalition's management plan strategy to identify contaminant sources and evaluate effectiveness of newly implemented management practices. Table 20 is the 2015 WY Core and Represented site MPM schedule. Core site MPM will be conducted according to the frequency outlined in Attachment B, section III.A.1 of the Order; all management plan constituents will be monitored on a monthly basis at the Core sites. Represented site MPM will be conducted on a frequency designed to be representative of discharge of the management plan constituent based on PUR data and past exceedances. Therefore, the following process was used to determine the frequency of MPM at Represented sites:

- determine months of past exceedances for applied pesticides, metals, and toxicity,
- determine months of high use and seasonal trends using PUR data then compare those trends with water quality data.

Each site subwatershed section below includes 1) a discussion of management plan constituents (applied pesticides, metals, or toxicity) that will be monitored, and 2) an evaluation of monitoring frequency (past exceedances and PUR evaluations). Each site subwatershed section also includes MPM constituent specific figures based on the PUR data of the pounds applied from 2006 through February 2014 for each month. Below each figure of use is a table noting the months of past sampling and exceedances by year, through June 2014. In the same figure is a sum of use from 2006 through February 2014. The PUR data from 2013 and 2014 are preliminary and has been received directly from County Agricultural Commissioners. More recent data was not available at the time of this report. All of this information was utilized in determining the monthly MPM frequency.

Table 20. ESJWQC Management Plan Monitoring schedule (listed alphabetically by site).

Shaded cells indicate additional months of MPM based on PUR data. "X" indicates scheduled MPM.

Site Name	Site Type	Year	Month	Copper, Dissolved	Lead, Dissolved	Molybdenum, Total	Chlorpyrifos	Diazinon	Dimethoate	Diuron	*C. dubia*	*P. promelas*	*S. capricornutum*	*H. azteca*
Ash Slough @ Ave 21	Represented	2015	January	X										
Ash Slough @ Ave 21	Represented	2015	April	X										
Ash Slough @ Ave 21	Represented	2015	May	X										
Ash Slough @ Ave 21	Represented	2015	June	X										
Ash Slough @ Ave 21	Represented	2015	July	X										
Ash Slough @ Ave 21	Represented	2015	August	X										
Ash Slough @ Ave 21	Represented	2015	September	X										
Berenda Slough along Ave 18 1/2	Represented	2014	October	X										
Berenda Slough along Ave 18 1/2	Represented	2014	November	X										
Berenda Slough along Ave 18 1/2	Represented	2014	December	X										
Berenda Slough along Ave 18 1/2	Represented	2015	January	X										
Berenda Slough along Ave 18 1/2	Represented	2015	February	X										
Berenda Slough along Ave 18 1/2	Represented	2015	April	X			X							
Berenda Slough along Ave 18 1/2	Represented	2015	May	X										
Berenda Slough along Ave 18 1/2	Represented	2015	June	X										
Berenda Slough along Ave 18 1/2	Represented	2015	July	X			X							
Berenda Slough along Ave 18 1/2	Represented	2015	August	X										
Berenda Slough along Ave 18 1/2	Represented	2015	September	X			X							
Black Rascal Creek @ Yosemite Rd	Represented	2015	April		X									
Black Rascal Creek @ Yosemite Rd	Represented	2015	May				X				X			
Black Rascal Creek @ Yosemite Rd	Represented	2015	July				X				X			
Black Rascal Creek @ Yosemite Rd	Represented	2015	August				X				X			
Black Rascal Creek @ Yosemite Rd	Represented	2015	September		X		X							
Cottonwood Creek @ Rd 20	Core	2014	October	X										
Cottonwood Creek @ Rd 20	Core	2014	November	X										
Cottonwood Creek @ Rd 20	Core	2014	December	X										
Cottonwood Creek @ Rd 20	Core	2015	January	X	X									
Cottonwood Creek @ Rd 20	Core	2015	February	X	X									
Cottonwood Creek @ Rd 20	Core	2015	March	X										
Cottonwood Creek @ Rd 20	Core	2015	April	X										
Cottonwood Creek @ Rd 20	Core	2015	May	X										

Site Name	Site Type	Year	Month	Copper, Dissolved	Lead, Dissolved	Molybdenum, Total	Chlorpyrifos	Diazinon	Dimethoate	Diuron	*C. dubia*	*P. promelas*	*S. capricornutum*	*H. azteca*
Cottonwood Creek @ Rd 20	Core	2015	June	X	X									
Cottonwood Creek @ Rd 20	Core	2015	July	X										
Cottonwood Creek @ Rd 20	Core	2015	August	X										
Cottonwood Creek @ Rd 20	Core	2015	September	X										
Deadman Creek @ Gurr Rd	Represented	2014	November								X	X		
Deadman Creek @ Gurr Rd	Represented	2014	December									X		
Deadman Creek @ Gurr Rd	Represented	2015	January									X		
Deadman Creek @ Gurr Rd	Represented	2015	February								X	X	X	
Deadman Creek @ Gurr Rd	Represented	2015	March				X				X	X		
Deadman Creek @ Gurr Rd	Represented	2015	April				X							
Deadman Creek @ Gurr Rd	Represented	2015	May									X		
Deadman Creek @ Gurr Rd	Represented	2015	June									X		
Deadman Creek @ Gurr Rd	Represented	2015	July										X	
Deadman Creek @ Gurr Rd	Represented	2015	August				X							
Deadman Creek @ Gurr Rd	Represented	2015	September				X							
Deadman Creek @ Hwy 59	Represented	2015	April				X							
Deadman Creek @ Hwy 59	Represented	2015	August				X							
Deadman Creek @ Hwy 59	Represented	2015	September				X							
Dry Creek @ Rd 18	Represented	2014	October				X							
Dry Creek @ Rd 18	Represented	2014	November							X				
Dry Creek @ Rd 18	Represented	2014	December							X				
Dry Creek @ Rd 18	Represented	2015	January	X						X			X	
Dry Creek @ Rd 18	Represented	2015	February	X			X			X			X	
Dry Creek @ Rd 18	Represented	2015	March											X
Dry Creek @ Rd 18	Represented	2015	April	X			X							
Dry Creek @ Rd 18	Represented	2015	May	X	X								X	
Dry Creek @ Rd 18	Represented	2015	June	X	X									
Dry Creek @ Rd 18	Represented	2015	July	X			X							
Dry Creek @ Rd 18	Represented	2015	August	X	X									
Dry Creek @ Rd 18	Represented	2015	September	X	X									X
Dry Creek @ Wellsford Rd	Core	2014	October				X							
Dry Creek @ Wellsford Rd	Core	2015	March											X
Dry Creek @ Wellsford Rd	Core	2015	July				X							

Site Name	Site Type	Year	Month	Copper, Dissolved	Lead, Dissolved	Molybdenum, Total	Chlorpyrifos	Diazinon	Dimethoate	Diuron	*C. dubia*	*P. promelas*	*S. capricornutum*	*H. azteca*
Dry Creek @ Wellsford Rd	Core	2015	August				X							
Dry Creek @ Wellsford Rd	Core	2015	September				X							X
Duck Slough @ Gurr Rd	Core	2014	October									X		
Duck Slough @ Gurr Rd	Core	2015	January	X	X									
Duck Slough @ Gurr Rd	Core	2015	February	X	X						X			
Duck Slough @ Gurr Rd	Core	2015	March				X				X	X		
Duck Slough @ Gurr Rd	Core	2015	April	X	X									
Duck Slough @ Gurr Rd	Core	2015	May	X	X									
Duck Slough @ Gurr Rd	Core	2015	June	X	X									
Duck Slough @ Gurr Rd	Core	2015	July	X	X		X							
Duck Slough @ Gurr Rd	Core	2015	August	X	X									
Duck Slough @ Gurr Rd	Core	2015	September	X	X									X
Hatch Drain @ Tuolumne Rd	Represented	2015	January										X	
Hatch Drain @ Tuolumne Rd	Represented	2015	February										X	
Hatch Drain @ Tuolumne Rd	Represented	2015	March											X
Hatch Drain @ Tuolumne Rd	Represented	2015	April										X	
Hatch Drain @ Tuolumne Rd	Represented	2015	May										X	
Hatch Drain @ Tuolumne Rd	Represented	2015	July										X	
Hatch Drain @ Tuolumne Rd	Represented	2015	August										X	
Hatch Drain @ Tuolumne Rd	Represented	2015	September											X
Highline Canal @ Hwy 99	Core	2015	January	X										
Highline Canal @ Hwy 99	Core	2015	February	X	X								X	
Highline Canal @ Hwy 99	Core	2015	March	X							X		X	X
Highline Canal @ Hwy 99	Core	2015	April	X	X								X	
Highline Canal @ Hwy 99	Core	2015	May		X						X		X	
Highline Canal @ Hwy 99	Core	2015	June		X								X	
Highline Canal @ Hwy 99	Core	2015	July		X									
Highline Canal @ Hwy 99	Core	2015	August		X									
Highline Canal @ Hwy 99	Core	2015	September								X			X
Highline Canal @ Lombardy Rd	Represented	2015	January	X										
Highline Canal @ Lombardy Rd	Represented	2015	February	X	X								X	
Highline Canal @ Lombardy Rd	Represented	2015	March	X									X	X
Highline Canal @ Lombardy Rd	Represented	2015	April										X	

Site Name	Site Type	Year	Month	Copper, Dissolved	Lead, Dissolved	Molybdenum, Total	Chlorpyrifos	Diazinon	Dimethoate	Diuron	C. dubia	P. promelas	S. capricornutum	H. azteca
Highline Canal @ Lombardy Rd	Represented	2015	May	X	X								X	
Highline Canal @ Lombardy Rd	Represented	2015	June		X									
Highline Canal @ Lombardy Rd	Represented	2015	August	X	X								X	
Highline Canal @ Lombardy Rd	Represented	2015	September		X								X	X
Hilmar Drain @ Central Ave	Represented	2015	January	X										
Hilmar Drain @ Central Ave	Represented	2015	February	X										
Hilmar Drain @ Central Ave	Represented	2015	March	X										X
Hilmar Drain @ Central Ave	Represented	2015	April							X			X	
Hilmar Drain @ Central Ave	Represented	2015	June							X				
Hilmar Drain @ Central Ave	Represented	2015	July	X									X	
Hilmar Drain @ Central Ave	Represented	2015	September										X	X
Howard Lateral @ Hwy 140	Represented	2014	October	X										
Howard Lateral @ Hwy 140	Represented	2015	January	X										
Howard Lateral @ Hwy 140	Represented	2015	February	X										
Howard Lateral @ Hwy 140	Represented	2015	April	X			X							
Howard Lateral @ Hwy 140	Represented	2015	May				X							
Howard Lateral @ Hwy 140	Represented	2015	June				X							
Howard Lateral @ Hwy 140	Represented	2015	July	X			X							
Howard Lateral @ Hwy 140	Represented	2015	August				X							
Lateral 2 1/2 near Keyes Rd	Represented	2015	April				X							
Lateral 2 1/2 near Keyes Rd	Represented	2015	May				X							
Lateral 2 1/2 near Keyes Rd	Represented	2015	June				X							
Lateral 2 1/2 near Keyes Rd	Represented	2015	July				X							
Lateral 2 1/2 near Keyes Rd	Represented	2015	August				X							
Lateral 5 1/2 @ South Blaker Rd	Represented	2014	October										X	
Lateral 5 1/2 @ South Blaker Rd	Represented	2014	December										X	
Lateral 5 1/2 @ South Blaker Rd	Represented	2015	March										X	
Lateral 5 1/2 @ South Blaker Rd	Represented	2015	April										X	
Levee Drain @ Carpenter Rd	Represented	2014	December										X	
Levee Drain @ Carpenter Rd	Represented	2015	February								X		X	
Levee Drain @ Carpenter Rd	Represented	2015	March											X
Levee Drain @ Carpenter Rd	Represented	2015	June										X	
Levee Drain @ Carpenter Rd	Represented	2015	July								X			

Site Name	Site Type	Year	Month	Copper, Dissolved	Lead, Dissolved	Molybdenum, Total	Chlorpyrifos	Diazinon	Dimethoate	Diuron	*C. dubia*	*P. promelas*	*S. capricornutum*	*H. azteca*
Levee Drain @ Carpenter Rd	Represented	2015	September											X
Livingston Drain @ Robin Ave	Represented	2014	December	X										
Livingston Drain @ Robin Ave	Represented	2015	January	X			X							
Livingston Drain @ Robin Ave	Represented	2015	February	X			X						X	
Livingston Drain @ Robin Ave	Represented	2015	March	X										
Livingston Drain @ Robin Ave	Represented	2015	April				X						X	
Livingston Drain @ Robin Ave	Represented	2015	May	X									X	
Livingston Drain @ Robin Ave	Represented	2015	June	X			X							
Livingston Drain @ Robin Ave	Represented	2015	July	X			X							
Livingston Drain @ Robin Ave	Represented	2015	August				X							
Livingston Drain @ Robin Ave	Represented	2015	September	X										
Lower Stevinson @ Faith Home Rd	Represented	2014	December										X	
Lower Stevinson @ Faith Home Rd	Represented	2015	January										X	
Lower Stevinson @ Faith Home Rd	Represented	2015	February										X	
Lower Stevinson @ Faith Home Rd	Represented	2015	April										X	
Lower Stevinson @ Faith Home Rd	Represented	2015	June										X	
Lower Stevinson @ Faith Home Rd	Represented	2015	July										X	
Lower Stevinson @ Faith Home Rd	Represented	2015	August										X	
Merced River @ Santa Fe	Core	2014	November				X							
Merced River @ Santa Fe	Core	2015	January		X		X				X			
Merced River @ Santa Fe	Core	2015	February		X									
Merced River @ Santa Fe	Core	2015	March								X			
Merced River @ Santa Fe	Core	2015	July				X				X			
Merced River @ Santa Fe	Core	2015	August								X			
Miles Creek @ Reilly Rd	Represented	2015	January	X	X						X			
Miles Creek @ Reilly Rd	Represented	2015	February	X	X			X					X	
Miles Creek @ Reilly Rd	Represented	2015	March				X							
Miles Creek @ Reilly Rd	Represented	2015	April										X	
Miles Creek @ Reilly Rd	Represented	2015	May	X										
Miles Creek @ Reilly Rd	Represented	2015	June	X	X		X						X	
Miles Creek @ Reilly Rd	Represented	2015	July	X	X		X							
Miles Creek @ Reilly Rd	Represented	2015	August	X	X		X							
Miles Creek @ Reilly Rd	Represented	2015	September				X				X			X

Site Name	Site Type	Year	Month	Copper, Dissolved	Lead, Dissolved	Molybdenum, Total	Chlorpyrifos	Diazinon	Dimethoate	Diuron	*C. dubia*	*P. promelas*	*S. capricornutum*	*H. azteca*
Mootz Drain Downstream of Langworth	Represented	2014	December				X			X				
Mootz Drain Downstream of Langworth	Represented	2015	February							X				
Mootz Drain Downstream of Langworth	Represented	2015	March											
Mootz Drain Downstream of Langworth	Represented	2015	June				X							
Mustang Creek @ East Ave	Represented	2014	October	X										
Mustang Creek @ East Ave	Represented	2014	December	X										
Mustang Creek @ East Ave	Represented	2015	January	X										
Mustang Creek @ East Ave	Represented	2015	February	X										
Mustang Creek @ East Ave	Represented	2015	March	X										
Prairie Flower Drain @ Crows Landing Rd	Core	2014	October			X							X	
Prairie Flower Drain @ Crows Landing Rd	Core	2014	November			X								
Prairie Flower Drain @ Crows Landing Rd	Core	2014	December			X							X	
Prairie Flower Drain @ Crows Landing Rd	Core	2015	January			X							X	
Prairie Flower Drain @ Crows Landing Rd	Core	2015	February			X							X	
Prairie Flower Drain @ Crows Landing Rd	Core	2015	March			X					X		X	X
Prairie Flower Drain @ Crows Landing Rd	Core	2015	April			X						X	X	
Prairie Flower Drain @ Crows Landing Rd	Core	2015	May			X							X	
Prairie Flower Drain @ Crows Landing Rd	Core	2015	June			X								
Prairie Flower Drain @ Crows Landing Rd	Core	2015	July			X			X			X		
Prairie Flower Drain @ Crows Landing Rd	Core	2015	August			X			X		X			
Prairie Flower Drain @ Crows Landing Rd	Core	2015	September			X			X		X			X
Westport Drain @ Vivian Rd	Represented	2015	January				X							
Westport Drain @ Vivian Rd	Represented	2015	February										X	
Westport Drain @ Vivian Rd	Represented	2015	March				X							
Westport Drain @ Vivian Rd	Represented	2015	April										X	
Westport Drain @ Vivian Rd	Represented	2015	May										X	
Westport Drain @ Vivian Rd	Represented	2015	July				X							
Westport Drain @ Vivian Rd	Represented	2015	August				X							

Ash Slough @ Ave 21

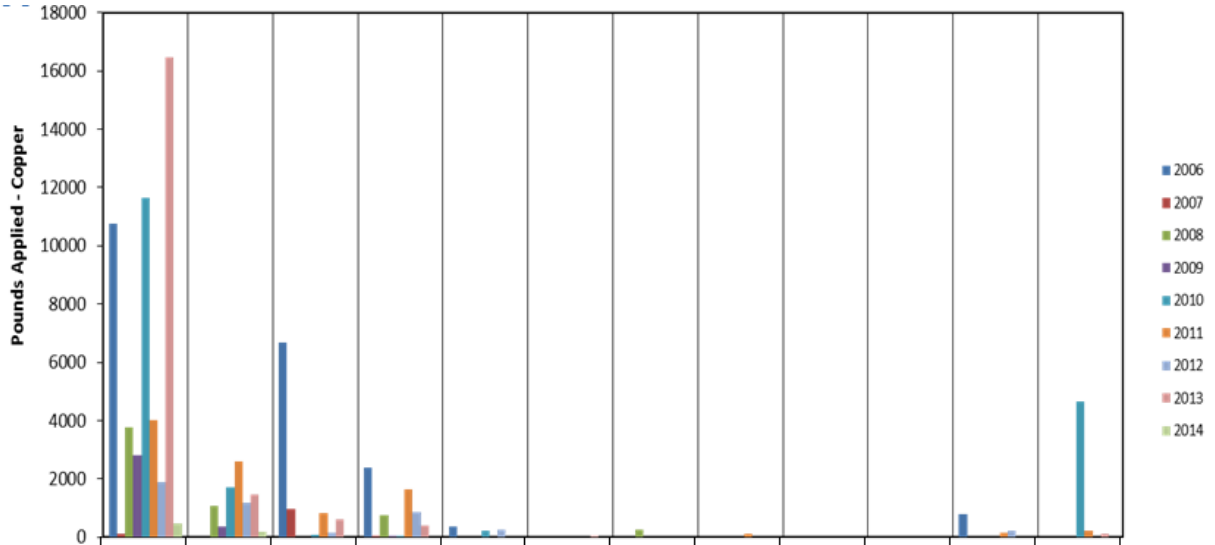
Ash Slough @ Ave 21 is currently in a management plan for copper (Table 20). Chlorpyrifos, lead and *E. coli* were approved for removal on May 30, 2012.

Copper

The Coalition will conduct MPM for copper at Ash Slough @ Ave 21 during past months of exceedances for the 2015 WY while focused outreach is occurring in the site subwatershed. In addition, the Coalition will include MPM in January. Past exceedances of the WQTL for copper have occurred at Ash Slough @ Ave 21 in May through September 2006, May 2009, and April 2010. The site has been dry during every sampling event aside from the months when the exceedances occurred. In addition, the PUR data indicate very little to no use of copper during the months of past exceedances; in the last three years, the highest amount of copper use occurred in January which accounted for 67% of the total pounds applied (Figure 30). Therefore, it is likely that past exceedances were due to non-agriculture sources.

Figure 30. Ash Slough @ Ave 21 2006-2014 copper use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate where monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006					X	X	X	X	X			
2007				Dry	Dry	Dry	Dry	Dry	Dry			
2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2009	Dry	Dry	Dry	Dry	X	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2010	Dry	Dry	Dry	X	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2011												
2012												
2013												
2014	Dry	Dry		Dry	Dry	Dry						
Total Use (2006-2014)	51,925	8,589	9,331	6,160	817	47	248	124	0	0	1,162	5,023
% Total (2006-2014)	*62%*	*10%*	*11%*	*7%*	*1%*	*<1%*	*<1%*	*<1%*	*0%*	*0%*	*1%*	*6%*
Total Use (2011-2014)	22,831	5,453	1,607	2,900	256	47	0	124	0	0	377	356
% Total (2011-2014)	*67%*	*16%*	*5%*	*9%*	*1%*	*<1%*	*0%*	*<1%*	*0%*	*0%*	*1%*	*1%*

Management Plan Monitoring is scheduled during the 2015 WY at Berenda Slough @ Ave 18 ½ for chlorpyrifos and copper (Table 20).

Chlorpyrifos

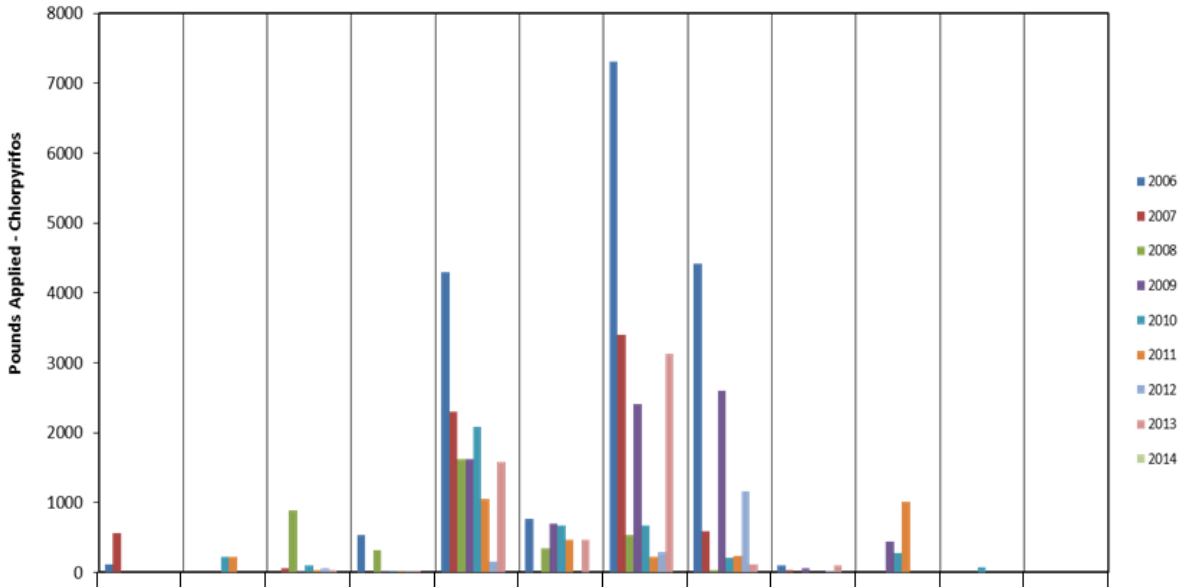
The Coalition will conduct MPM for chlorpyrifos during the 2015 WY in April, July, and September, during months of past exceedances. Chlorpyrifos has been analyzed in samples collected during irrigation months, May through September 2006 through 2008, and monthly during Assessment Monitoring in 2011 and 2012; 50 monitoring events occurred and the site was dry for 24 events. The highest amount of use over the last three years occurred in May, July, and August, 27%, 35%, and 14% of the total pounds applied, respectively (Figure 31). However, there has not been an exceedance of the chlorpyrifos WQTL in May or August since monitoring began. The Coalition determined no additional MPM is necessary.

Copper

The Coalition will conduct MPM for copper every month with the exception of March during the 2015 WY. In 2011, there were exceedances of the WQTL for copper every month except March. Over the last three years, the pounds applied of copper in March have decreased and amount to only 7% of the total pounds applied in the site subwatershed. In addition, the site was dry three out of the four monitoring events that occurred in March; therefore the Coalition determined no monitoring during March is necessary (Figure 32).

Figure 31. Berenda Slough@ Avenue 18 1/2 2006-2014 chlorpyrifos use and monitoring.

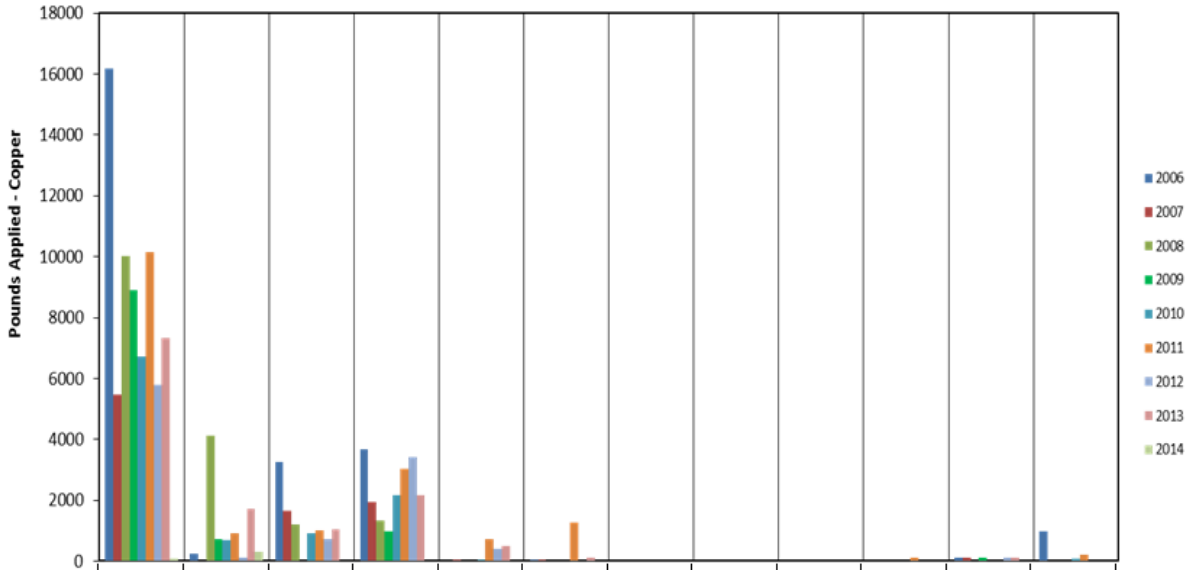
Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006							X		X			
2007				Dry			X		Dry			
2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry			
2009												
2010												
2011				X								
2012		Dry	Dry	Dry	Dry				Dry	Dry	Dry	Dry
2013				Dry					Dry			
2014				Dry	Dry	Dry						
Total Use (2006-2014)	673	447	1,179	935	14,710	3,405	17,972	9,354	317	1,733	69	0
% Total (2006-2014)	*1%*	*1%*	*2%*	*2%*	*29%*	*7%*	*35%*	*18%*	*1%*	*3%*	*<1%*	*0%*
Total Use (2011-2014)	0	224	126	34	2,797	929	3,651	1,507	121	1,012	0	0
% Total (2011-2014)	*0%*	*2%*	*1%*	*<1%*	*27%*	*9%*	*35%*	*14%*	*1%*	*10%*	*0%*	*0%*

Figure 32. Berenda Slough @ Avenue 18 1/2 2006-2014 copper use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry			
2009												
2010												
2011	X	X		X	X	X	X	X	X	X	X	X
2012		Dry	Dry	Dry	Dry	X	X		Dry	Dry	Dry	Dry
2013				Dry	Dry	Dry		Dry	Dry	Dry	Dry	Dry
2014	Dry	Dry	Dry	Dry	Dry	Dry						
Total Use (2006-2014)	70,646	8,804	9,786	18,661	1,694	1,408	0	0	0	108	576	1,246
% Total (2006-2014)	*63%*	*8%*	*9%*	*17%*	*1%*	*1%*	*0%*	*0%*	*0%*	*<1%*	*1%*	*1%*
Total Use (2011-2014)	23,359	3,037	2,749	8,569	1,626	1,351	0	0	0	101	242	213
% Total (2011-2014)	*57%*	*7%*	*7%*	*21%*	*4%*	*3%*	*0%*	*0%*	*0%*	*<1%*	*1%*	*1%*

Black Rascal Creek @ Yosemite Rd

Management Plan Monitoring is scheduled at Black Rascal Creek @ Yosemite Rd during the 2015 WY for chlorpyrifos, lead, and toxicity to *C. dubia* (Table 20).

Chlorpyrifos

The Coalition will conduct MPM for chlorpyrifos at Black Rascal Creek @ Yosemite Rd during months of past exceedances (May, July, August, and September) for the 2015 WY. Applications of chlorpyrifos have not been reported since May 2012 (Figure 33). If no exceedances of the WQTL occur in the 2015 WY, the Coalition will petition to remove chlorpyrifos from the site's management plan.

C. dubia toxicity

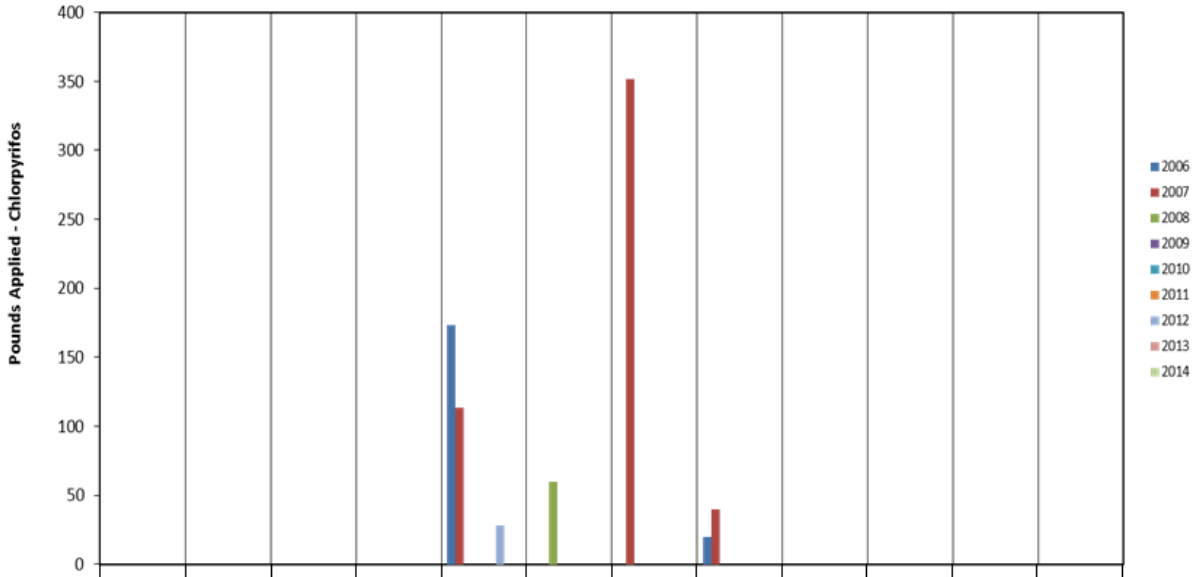
Water column toxicity to *C. dubia* occurred in samples collected from Black Rascal Creek @ Yosemite Rd in the months of May, July, and August. Chlorpyrifos was also detected at concentrations above the WQTL in the July and August samples and was the likely cause of the toxicity. The Coalition determined that monitoring in May, July, and August for *C. dubia* (months of chlorpyrifos applications and *C. dubia* toxicity) characterizes the constituent of concern.

Lead

Lead is not currently applied by agriculture and therefore cannot be associated with use. MPM for lead at Black Rascal Creek @ Yosemite Rd will be conducted during months of past exceedances, April and September.

Figure 33. Black Rascal Creek @ Yosemite Rd 2006-2014 chlorpyrifos use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006					X							
2007							X	X	X			
2008												
2009												
2010												
2011												
2012												
2013												
2014					Dry							
Total Use (2006-2014)	0	0	0	0	315	60	0	0	0	0	0	0
% Total (2006-2014)	*0%*	*0%*	*0%*	*0%*	*40%*	*8%*	*45%*	*8%*	*0%*	*0%*	*0%*	*0%*
Total Use (2011-2014)	0	0	0	0	28	0	0	0	0	0	0	0
% Total (2011-2014)	*0%*	*0%*	*0%*	*0%*	*100%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*

Management Plan Monitoring is scheduled for the 2015 WY at Deadman Creek @ Gurr Rd for chlorpyrifos, *C. dubia*, *P. promelas*, and *S. capricornutum* toxicity (Table 20).

Chlorpyrifos

The Coalition will conduct MPM for chlorpyrifos during months of past exceedances (March, April, August, and September) for the 2015 WY. Based on an evaluation of PUR data, the Coalition determined that no additional MPM is necessary. In the last three years, the largest number of applications occurred in March, July, and August. However, no exceedances of the WQTL occurred January through February, May through July, or October through December (Figure 34).

C. dubia toxicity

Water column toxicity to *C. dubia* occurred five times (February 2009, March 2009 and 2010, and November 2010 and 2013). The TIEs conducted on the toxic samples indicated that ammonia was the cause, with the exception of the March 2009 sample where it was concluded that pyrethroids were the cause. Four out of the five toxic samples collected had concentrations that exceeded the WQTL for ammonia; the most recent toxicity occurred during a sampling event when ammonia was not tested for in the water column. The Coalition will conduct MPM for *C. dubia* toxicity during months when past toxicity occurred (Table 20).

S. capricornutum toxicity

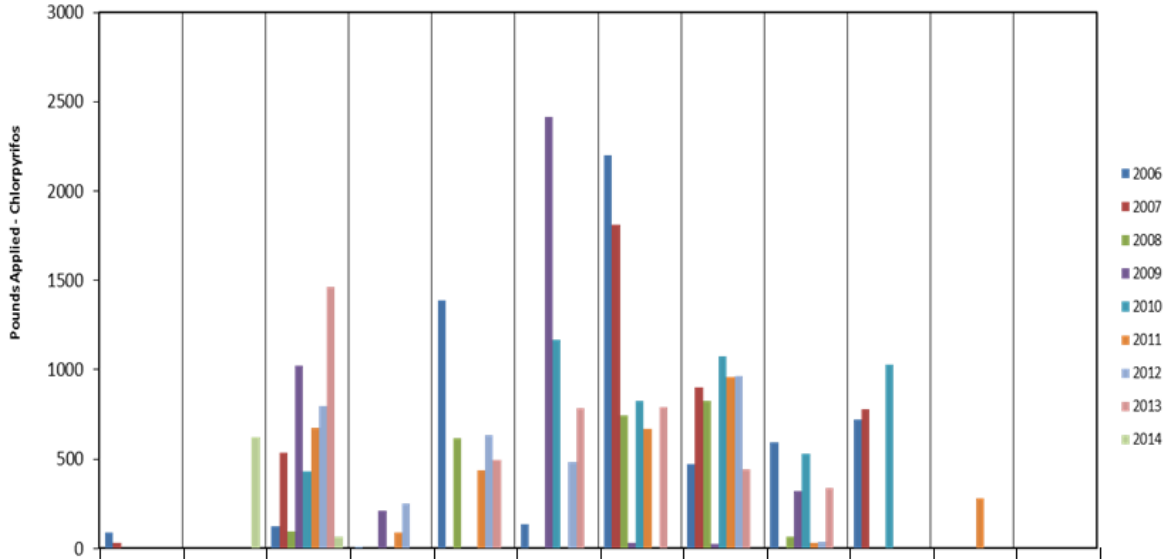
Water column toxicity to *S. capricornutum* occurred three times (July 2007, and February 2008 and 2009). Two of the TIEs conducted indicated that the samples lost all toxicity and the third TIE indicated ammonia was the cause of toxicity; the sample collected on the same day had concentrations that exceeded the WQTL for ammonia. The Coalition will conduct MPM for *S. capricornutum* toxicity during months when past toxicity occurred (Table 20).

P. promelas toxicity

Water column toxicity to *P. promelas* occurred during nine sampling events from 2006 through 2013. Five of the nine toxic samples were caused by high ammonia concentrations that exceeded the WQTL. Toxic samples from June 2006 and May 2007 lost all toxicity and no TIEs were conducted on toxic samples in January and December 2009. The Coalition will conduct MPM for *P. promelas* toxicity during months when past toxicity occurred (November-March, May, June; Table 20).

Figure 34. Deadman Creek @ Gurr Rd 2006-2014 chlorpyrifos use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006									X			
2007												
2008												
2009												
2010			X	X				X				
2011												
2012												
2013												
2014												
Total Use (2006-2014)	122	623	5,213	562	3,575	4,991	7,079	5,673	1,920	2,531	282	0
% Total (2006-2014)	<1%	2%	16%	2%	11%	15%	22%	17%	6%	8%	1%	*0%*
Total Use (2011-2014)	0	623	3,005	345	1,570	1,268	1,459	2,369	409	0	282	0
% Total (2011-2014)	*0%*	5%	27%	3%	14%	11%	13%	21%	4%	0%	2%	*0%*

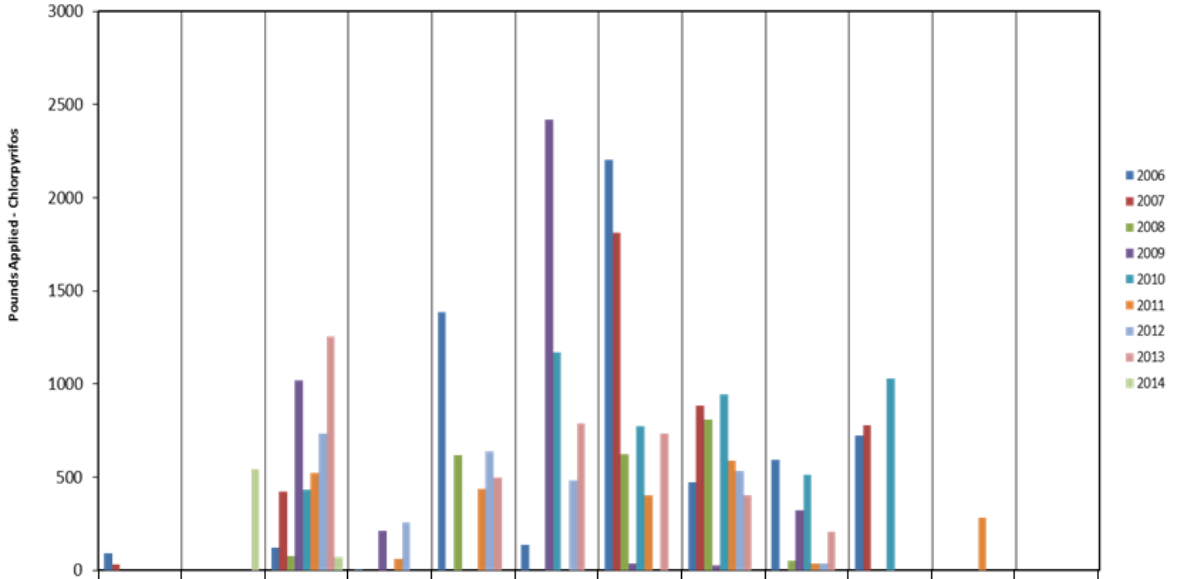
Management Plan Monitoring for chlorpyrifos is scheduled at Deadman Creek @ Hwy 59 in the 2015 WY (Table 20).

Chlorpyrifos

The Coalition will conduct MPM for chlorpyrifos during months of past exceedances (April, August, and September) for the 2015 WY. Current PUR data indicate that March is the month of greatest use, accounting for 27% of the total pounds applied over the last three years. The PUR data indicate highest use of chlorpyrifos in the site subwatershed occurs during March, May, June, and July; however; no exceedances of the WQTL occurred during those months therefore no additional months will be added for MPM. (Figure 35).

Figure 35. Deadman Creek @ Hwy 59 2006-2014 chlorpyrifos use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006									X			
2007								X				
2008								X	X			
2009								Dry	Dry			
2010												
2011				X					X			
2012					Dry			Dry				
2013								Dry	Dry			
2014												
Total Use (2006-2014)	122	544	4,656	532	3,575	4,991	6,583	4,656	1,758	2,531	282	0
% Total (2006-2014)	*<1%*	*2%*	*15%*	*2%*	*12%*	*17%*	*22%*	*15%*	*6%*	*8%*	*1%*	*0%*
Total Use (2011-2014)	0	544	2,580	315	1,570	1,268	1,135	1,520	279	0	282	0
% Total (2011-2014)	*0%*	*6%*	*27%*	*3%*	*17%*	*13%*	*12%*	*16%*	*3%*	*0%*	*3%*	*0%*

Dry Creek @ Rd 18

Management Plan Monitoring is scheduled at Dry Creek @ Rd 18 during the 2015 WY for chlorpyrifos, copper, diuron, lead, *H. azteca* sediment toxicity, and *S. capricornutum* toxicity. The Coalition petitioned to remove chlorpyrifos from the site's management plan on June 5, 2014.

Chlorpyrifos

The Coalition will conduct MPM for chlorpyrifos during months of past exceedances (February, April, and July) during the 2015 WY. In addition, the Coalition added MPM in October based on current PUR data which indicate 41% of the total pounds applied occur in the month of October (Figure 36).

Copper

The Coalition will conduct MPM for copper during months of past exceedances (January, February, and April through September) for the 2015 WY. The PUR data indicate from 2011 through February 2014, the months of greatest use are January, April, and November. The Coalition monitored from October through December 2013 since the Coalition had not previously monitored during those months when applications occur; no exceedances of the WQTL occurred and the site was dry in December (Figure 37). Therefore the Coalition determined that monitoring in January, February, and April through September will allow the Coalition to characterize the water quality in the site subwatershed.

Diuron

The Coalition will conduct MPM for diuron for the 2015 WY during months of past exceedances (January and February). In addition, the Coalition will evaluate if diuron use during November and December is potentially affecting the water quality by conducting MPM during those months. Diuron applications in November and December account for 31% and 38% of the total pounds applied in the subwatershed from 2011 through February 2014 (Figure 38).

Lead

Lead is not currently applied by agriculture and cannot be associated with use. The Coalition will conduct MPM for lead during months of past exceedances including May, June, August, and September (Table 20).

S. capricornutum toxicity

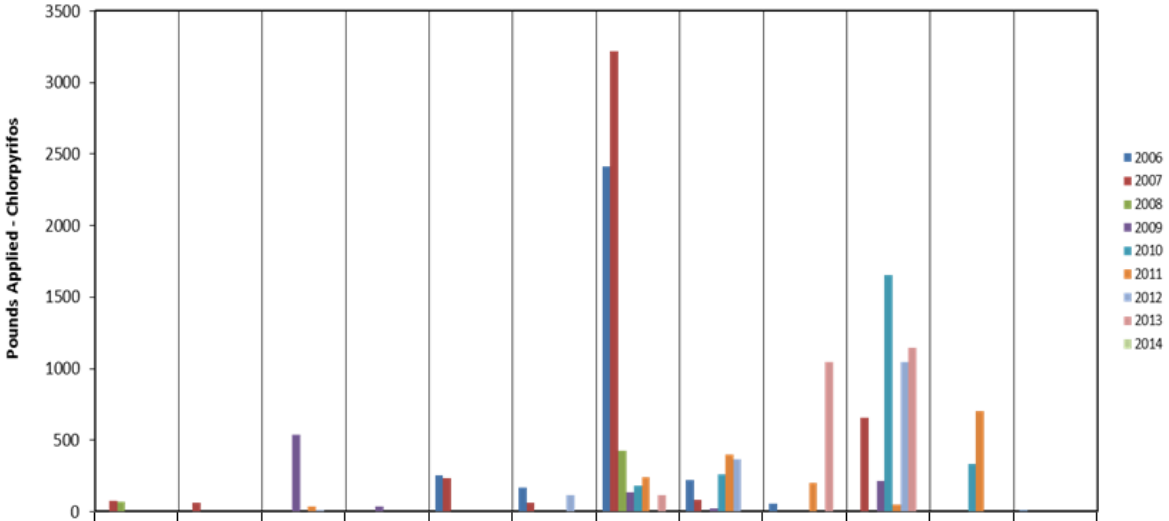
Five samples collected from Dry Creek @ Rd 18 were toxic to algae. The TIEs conducted on three of the toxic samples were inconclusive. Of the five toxic samples, two samples in January and February 2008 contained a concentration of diuron above the WQTL. The Coalition will continue to conduct MPM during January, February, and May which are the months when past toxicity occurred (Table 20).

H. azteca sediment toxicity

Sediment toxicity monitoring is conducted twice a year – once during the storm season and once during the irrigation season. The Coalition will conduct MPM for *H. azteca* sediment toxicity in March and September 2015.

Figure 36. Dry Creek @ Rd 18 2006-2014 chlorpyrifos use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.

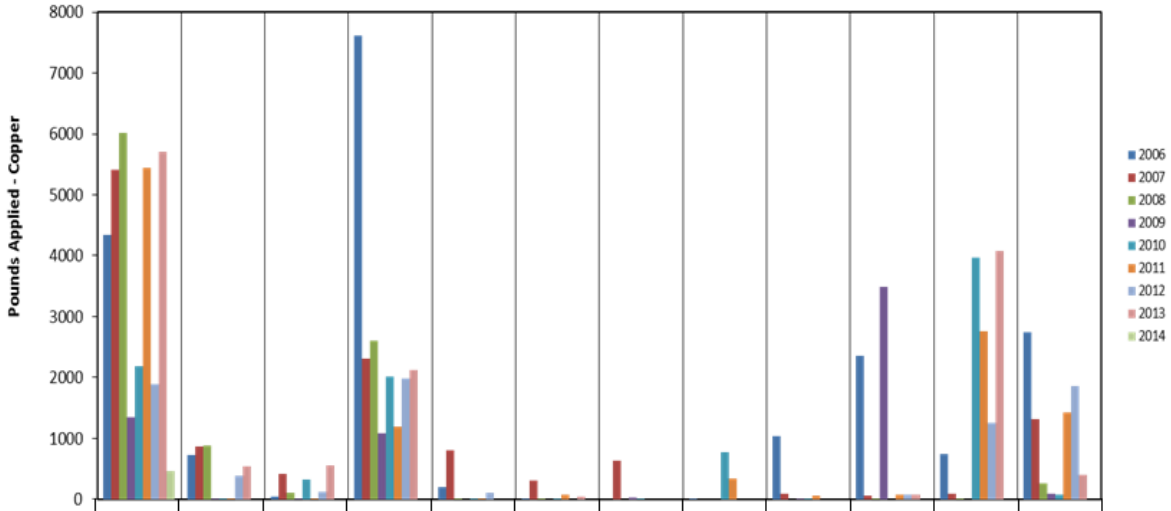


Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006							X					
2007				X					Dry			
2008		X							Dry			
2009												
2010												
2011												
2012												
2013												Dry
2014				Dry*								
Total Use (2006-2014)	144	61	591	37	492	345	6,725	1,348	1305	4,765	1,034	1
% Total (2006-2014)	*1%*	*<1%*	*4%*	*<1%*	*3%*	*2%*	*40%*	*8%*	*8%*	*28%*	*6%*	*<1%*
Total Use (2011-2014)	0	0	51	0	0	114	351	769	1247	2,240	701	0
% Total (2011-2014)	*0%*	*0%*	*1%*	*0%*	*0%*	*2%*	*6%*	*14%*	*23%*	*41%*	*13%*	*0%*

Dry* Water too shallow, no samples collected.

Figure 37. Dry Creek @ Rd 18 2006-2014 copper use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.

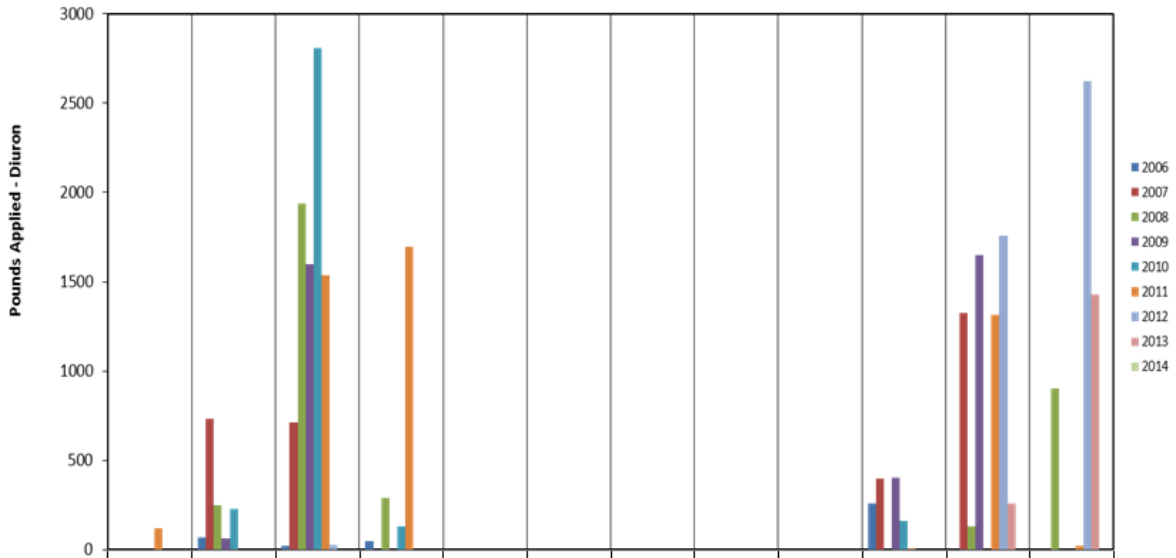


Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006					X	X	X	X	X			
2007		X		X	X	X	X	X	Dry			
2008	X	X		X	X	X	X	X	Dry			
2009												
2010												
2011	X			X	X	X	X	X	X			
2012												
2013	X					X	X	X	X			Dry
2014	Dry	X		Dry*								
Total Use (2006-2014)	32,817	3,418	1,568	20,927	1,122	437	666	1,117	1,197	6,159	12,905	8,187
% Total (2006-2014)	***36%***	***4%***	***2%***	***23%***	***1%***	***<1%***	***1%***	***1%***	***1%***	***7%***	***14%***	***9%***
Total Use (2011-2014)	13,500	926	679	5,299	111	123	0	345	60	245	8,096	3,685
% Total (2011-2014)	***41%***	***3%***	***2%***	***16%***	***<1%***	***<1%***	***0%***	***1%***	***<1%***	***1%***	***24%***	***11%***

Dry* Water too shallow, no samples collected.

Figure 38. Dry Creek @ Rd 18 2006-2014 diuron use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007									Dry			
2008	X	X							Dry			
2009												
2010												
2011												
2012												
2013	X											
2014	Dry											
Total Use (2006-2014)	120	1,338	8,641	2,159	0	0	0	0	0	1,217	6,434	4,978
% Total (2006-2014)	*<1%*	*5%*	*35%*	*9%*	*0%*	*0%*	*0%*	*0%*	*0%*	*5%*	*26%*	*20%*
Total Use (2011-2014)	120	0	1,562	1,696	0	0	0	0	0	2	3,329	4,075
% Total (2011-2014)	*1%*	*0%*	*14%*	*16%*	*0%*	*0%*	*0%*	*0%*	*0%*	*<1%*	*31%*	*38%*

Management Plan Monitoring is scheduled at Hatch Drain @ Tuolumne Rd during the 2015 WY for *H. azteca* sediment toxicity and *S. capricornutum* toxicity.

S. capricornutum toxicity

Sample collected from Hatch Drain @ Tuolumne Rd have been toxic to *S. capricornutum* six times in January, February, April, May, July, and August 2008. Toxicity was not persistent in two toxic samples from January and May. The TIE conducted on the February sample concluded that non-polar organics was the probable cause of toxicity; however, no herbicides exceeded the WQTL in February. The Coalition will conduct MPM for *S. capricornutum* toxicity during months when previous samples have been toxic (January, February, April, May, July, and August; Table 20).

H. azteca toxicity

Sediment toxicity monitoring is conducted twice a year – once during the storm season and once during the irrigation season. The Coalition will conduct MPM for *H. azteca* sediment toxicity in March and September.

Highline Canal @ Lombardy Rd

Management Plan Monitoring is scheduled at Highline Canal @ Lombardy Rd for the 2015 WY for copper, *H. azteca* sediment toxicity, and *S. capricornutum* toxicity. The Coalition petitioned to remove *H. azteca* sediment toxicity from the site's management plan on June 5, 2014.

Copper

Management Plan Monitoring for copper will occur at Highline Canal @ Lombardy Rd in January through March, May, and August during the 2015 WY based on previous exceedances. April, November, and December months are not included in the MPM schedule despite applications of products with copper. The Coalition monitored for three years in April (2007, 2011, 2012) and two years in November and December 2011 and 2012 without any exceedances of the hardness based WQTL for copper. Since there are months of copper use when no exceedances occurred and months of copper use when exceedances did occur, the Coalition concluded there may not be a correlation between copper applications and exceedances. For example, the two exceedance in August 2008 and 2009 occurred when no applications of copper were made, whereas April, November, and December show consistent copper use but monitoring resulted in no exceedances (Figure 39). Therefore, MPM will only occur during months in which past exceedances occurred.

Lead

Lead is not currently applied by agriculture and therefore cannot be associated with use. The Coalition will conduct MPM for lead during months of past exceedances including February, May, June, August, and September (Table 20).

S. capricornutum toxicity

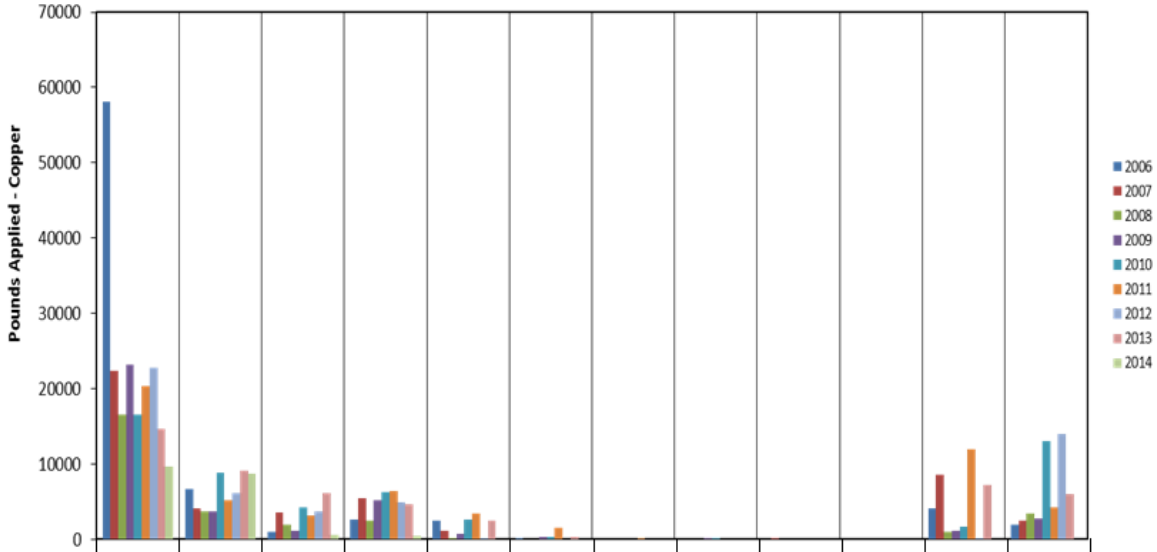
Samples collected from Highline Canal @ Lombardy Rd have been toxic to *S. capricornutum* six times since 2005. Of those six samples, only one sample had an exceedance of an herbicide WQTL (diuron, collected in February 2007) associated with the toxicity. Diuron is not in a management plan for this site since only one exceedance of the WQTL for diuron has occurred. The Coalition will conduct MPM for *S. capricornutum* toxicity during months when previous samples have been toxic (February, March, April, May, August, and September (Table 20).

H. azteca toxicity

Sediment toxicity monitoring is conducted twice a year – once during the storm season and once during the irrigation season. The Coalition will conduct MPM for *H. azteca* sediment toxicity in March and September.

Figure 39. Highline Canal @ Lombardy 2006-2014 copper use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007		X			X							
2008	X	X						X				
2009								X				
2010		X										
2011		X										Dry
2012		X	X									
2013	X											
2014			X									
Total Use (2006-2014)	204,321	56,302	25,589	38,598	13,161	2,631	36	149	18	0	35,812	47,901
% Total (2006-2014)	*48%*	*13%*	*6%*	*9%*	*3%*	*1%*	*<1%*	*<1%*	*<1%*	*0%*	*8%*	*11%*
Total Use (2011-2014)	67,438	29,174	13,605	16,365	6,110	1,832	11	0	0	0	19,242	24,157
% Total (2011-2014)	*38%*	*16%*	*8%*	*9%*	*3%*	*1%*	*<1%*	*0%*	*0%*	*0%*	*11%*	*14%*

Management Plan Monitoring is scheduled at Hilmar Drain @ Central Ave for the 2015 WY for copper, diuron, *H. azteca* sediment toxicity, and *S. capricornutum* toxicity (Table 20).

Copper

The Coalition will conduct MPM for copper during months of past exceedances (February and July) for the 2015 WY. In addition, the Coalition is extending MPM to included January and March to allow the Coalition to characterize the water quality in the site subwatershed (Figure 40).

Diuron

The Coalition will conduct MPM for diuron during months of past exceedances (April and June) for the 2015 WY. The Coalition reviewed PUR data from 2011 through February 2014 and determined no additional MPM is necessary (Figure 41).

S. capricornutum toxicity

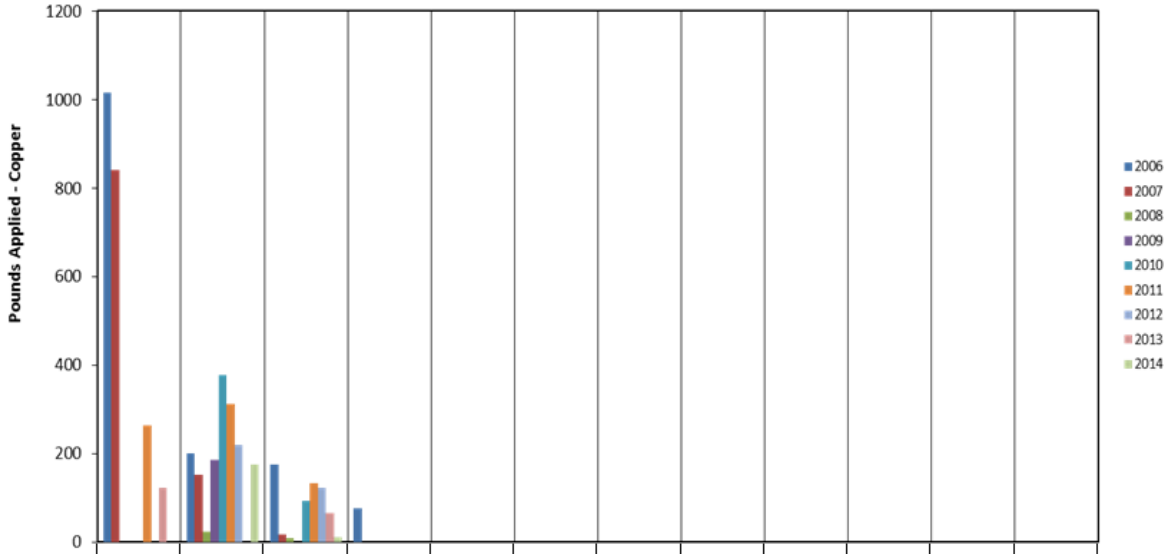
From 2006 through 2008 *S. capricornutum* toxicity occurred in samples collected during April, July, and September. Toxic samples collected in April 2007 and 2008 also had detections of diuron above the WQTL. Management Plan Monitoring will continue in April, July, and September for the 2015 WY; sample collection for toxicity to *S. capricornutum* in April will correspond with MPM for diuron.

H. azteca toxicity

Sediment toxicity monitoring is conducted twice a year – once during the storm season and once during the irrigation season. The Coalition will conduct MPM for *H. azteca* sediment toxicity in March and September.

Figure 40. Hilmar Drain @ Central Ave 2006-2014 copper use and monitoring.

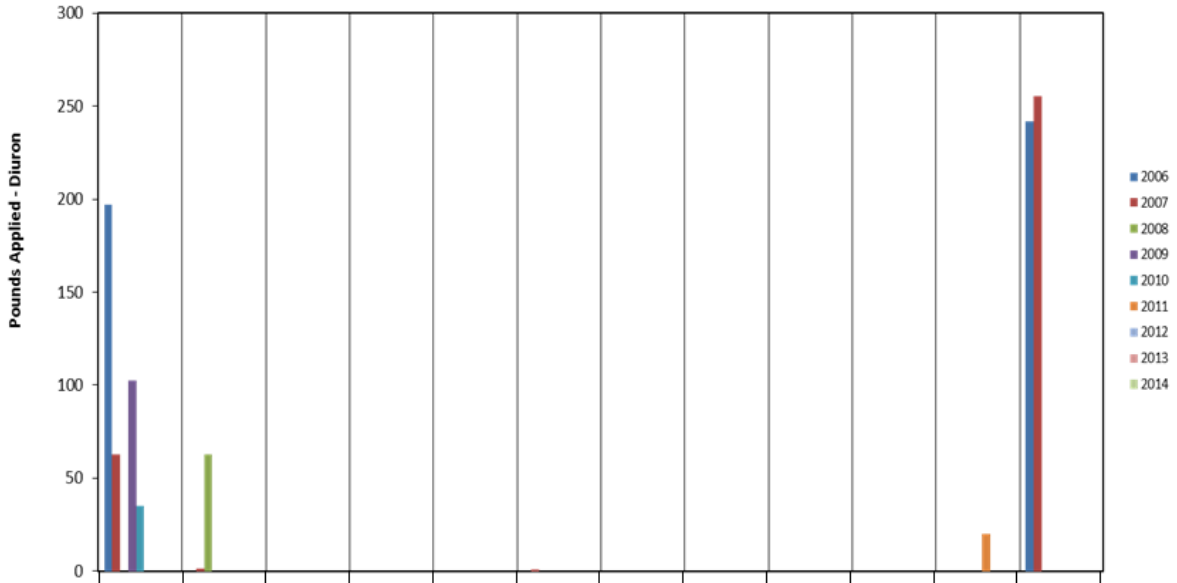
Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006							X					
2007		X										
2008												
2009												
2010												
2011												
2012												
2013												
2014												
Total Use (2006-2014)	2,245	1,644	625	77	0	0	0	0	0	0	0	0
% Total (2006-2014)	*49%*	*36%*	*14%*	*2%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Total Use (2011-2014)	388	707	330	0	0	0	0	0	0	0	0	0
% Total (2011-2014)	*27%*	*50%*	*23%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*

Figure 41. Hilmar Drain @ Central Ave 2006-2014 diuron use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007				X		X						
2008				X								
2009												
2010												
2011												
2012												
2013												
2014												
Total Use (2006-2014)	397	64	0	0	0	1	0	0	0	0	20	497
% Total (2006-2014)	*41%*	*7%*	*0%*	*0%*	*0%*	*<1%*	*0%*	*0%*	*0%*	*0%*	*2%*	*51%*
Total Use (2011-2014)	0	0	0	0	0	0	0	0	0	0	20	0
% Total (2011-2014)	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*100%*	*0*

Management Plan Monitoring is scheduled at Howard Lateral @ Hwy 140 for the 2015 WY for chlorpyrifos and copper (Table 20).

Chlorpyrifos

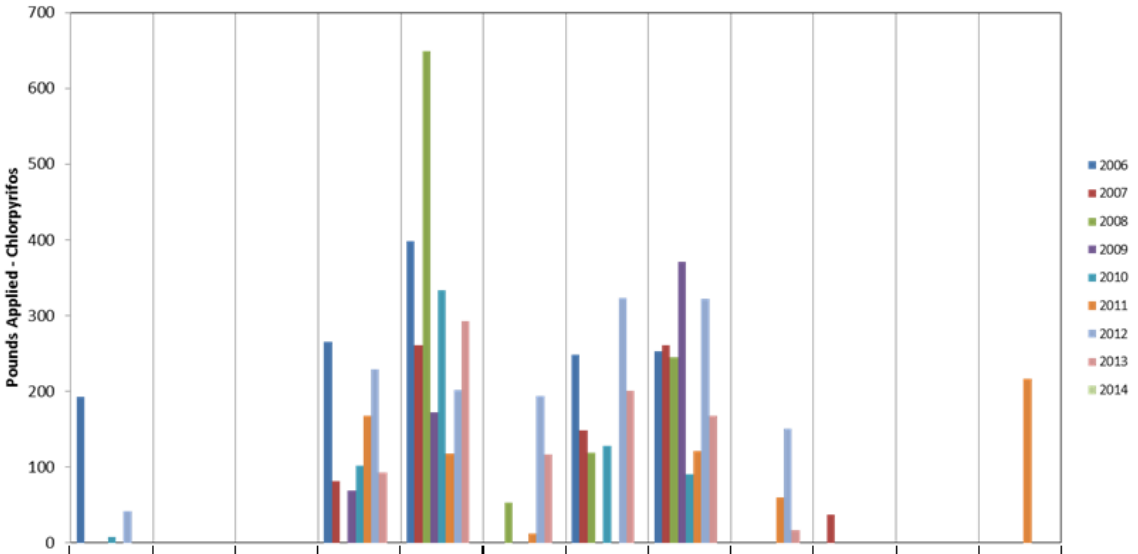
The Coalition will conduct MPM in June due to the exceedance of the WQTL that occurred in 2010. In addition, the Coalition evaluated the PUR data and extended MPM to April, May, July, and August due to high applications of chlorpyrifos during those months to evaluate the potential for discharge to impair water quality during times of high use (Figure 42).

Copper

The Coalition will conduct MPM for copper during months of past exceedances (October, April, and July) during the 2015 WY. In addition, the Coalition evaluated the current PUR data and extended MPM to include January and February. The Coalition monitored for copper from January through March in 2009 and 2010 and each event was dry; however, the site has not been monitored during those months since 2010 therefore the additional MPM months will allow the Coalition to further characterize the water quality in the site subwatershed (Figure 43).

Figure 42. Howard Lateral @ Hwy 140 2006-2014 chlorpyrifos use and monitoring.

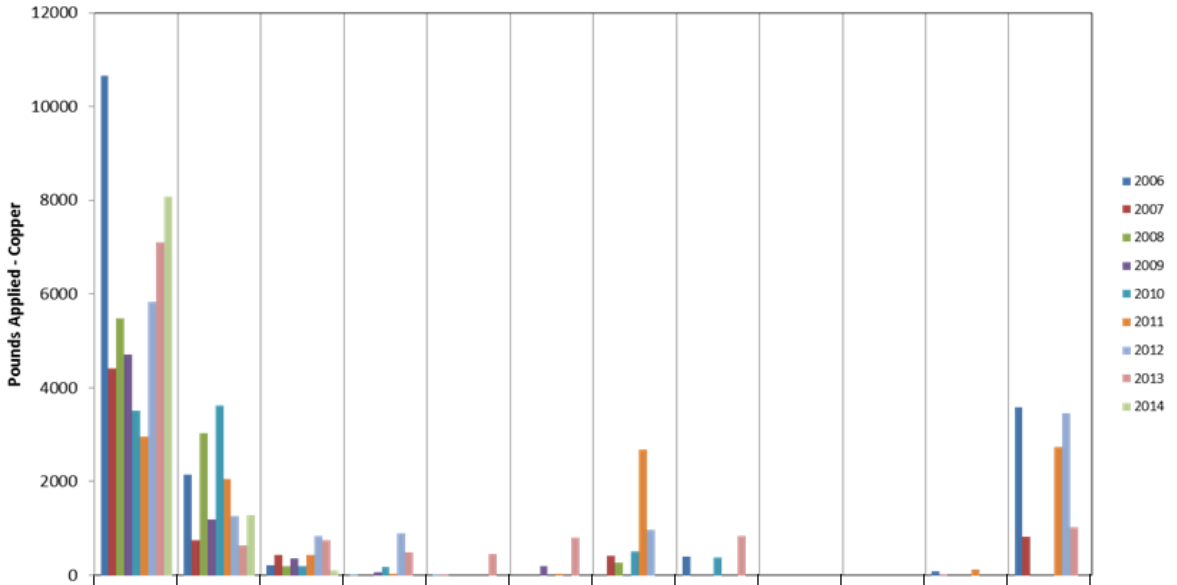
Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008										Dry	Dry	Dry
2009	Dry	Dry	Dry								Dry	Dry
2010	Dry	Dry	Dry			X					Dry	Dry
2011												
2012												
2013												
2014												
Total Use (2006-2014)	241	0	0	1,005	2,426	375	1,168	1,830	227	37	0	216
% Total (2006-2014)	*3%*	*0%*	*0%*	*13%*	*32%*	*5%*	*16%*	*24%*	*3%*	*<1%*	*0%*	*3%*
Total Use (2011-2014)	41	0	0	490	612	323	523	611	227	0	0	216
% Total (2011-2014)	*1%*	*0%*	*0%*	*16%*	*20%*	*11%*	*17%*	*20%*	*7%*	*0%*	*0%*	*7%*

Figure 43. Howard Lateral @ Hwy 140 2006-2014 copper use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008										Dry	Dry	Dry
2009	Dry	Dry	Dry							X	Dry	Dry
2010	Dry	Dry	Dry	X			X				Dry	Dry
2011										X		
2012												
2013				X								
2014												
Total Use (2006-2014)	52,730	15,990	3,493	1,663	481	1,023	4,852	1,608	0	0	190	11,630
% Total (2006-2014)	*56%*	*17%*	*4%*	*2%*	*1%*	*1%*	*5%*	*2%*	*0%*	*0%*	*<1%*	*12%*
Total Use (2011-2014)	23,959	5,248	2,132	1,404	445	832	3,659	839	0	0	114	7,226
% Total (2011-2014)	*52%*	*11%*	*5%*	*3%*	*1%*	*2%*	*8%*	*2%*	*0%*	*0%*	*<1%*	*16%*

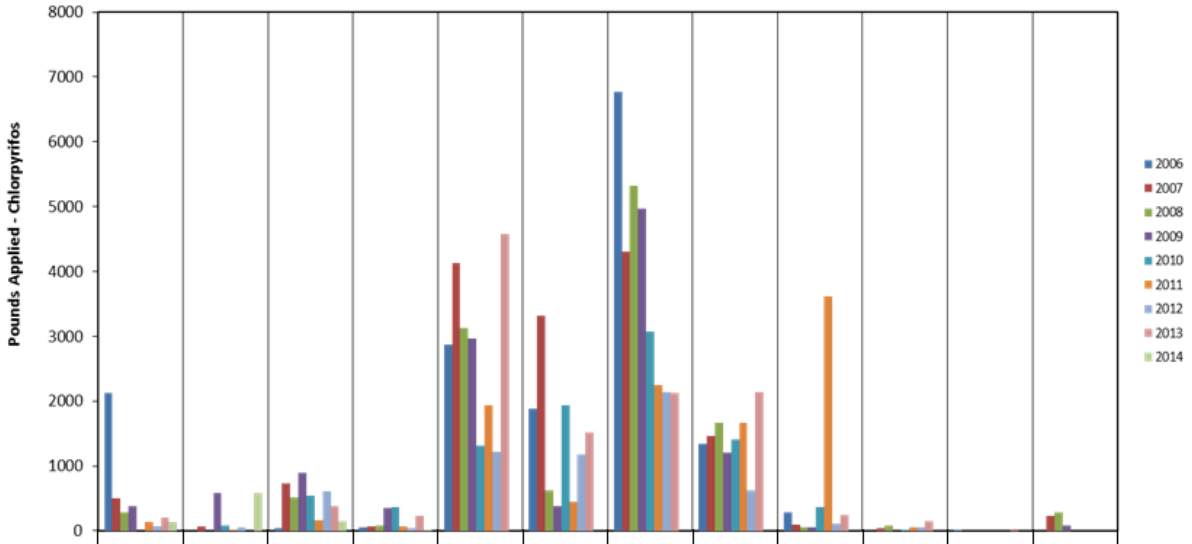
Management Plan Monitoring for chlorpyrifos is scheduled at Lateral 2 ½ near Keys Rd during the 2015 WY (Table 20).

Chlorpyrifos

The Coalition will conduct MPM for chlorpyrifos during months of past exceedances (April and July) for the 2015 WY. In addition, the Coalition extended the MPM schedule to include May, June, and August in order to characterize the water quality in the site subwatershed during months of highest chlorpyrifos use (Figure 44).

Figure 44. Lateral 2 ½ near Keyes Rd 2006-2014 chlorpyrifos use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008												Dry
2009	Dry	Dry	Dry				X				Dry	Dry
2010	Dry	Dry		X			X				Dry	Dry
2011												
2012												
2013												
2014				Dry*								
Total Use (2006-2014)	3,815	1373	4,005	1,269	22,104	11,261	30,921	11,508	4,825	388	24	590
% Total (2006-2014)	*4%*	*1%*	*4%*	*1%*	*24%*	*12%*	*34%*	*12%*	*5%*	*<1%*	*<1%*	*1%*
Total Use (2011-2014)	527	641	1,296	353	7,717	3,138	6,498	4,425	3,967	254	20	0
% Total (2011-2014)	*2%*	*2%*	*4%*	*1%*	*27%*	*11%*	*23%*	*15%*	*14%*	*1%*	*<1%*	*0%*

Dry*- too shallow, no samples collected.

Management Plan Monitoring for *S. capricornutum* toxicity is scheduled at Lateral 5 ½ @ South Blaker Rd for the 2015 WY (Table 20).

S. capricornutum toxicity

Samples collected in October and December 2013, and March and April 2014 were toxic to *S. capricornutum*. A TIE was conducted on the October sample (26% growth compared to the control) and the December sample (24% growth compared to the control). The TIEs conducted could not remove the toxicity and therefore the source was neither nonpolar organics nor cationic chemicals. The Coalition will conduct MPM for *S. capricornutum* toxicity during months of past toxicity (October, December, March, and April) and evaluate PUR data in the following years when a trend can be established since Lateral 5 ½ @ South Blaker Rd is a new site and the source of toxicity could not be determined.

Levee Drain @ Carpenter Rd

Management Plan Monitoring is scheduled at Levee Drain @ Carpenter Rd for the 2015 WY for toxicity to *C. dubia, S. capricornutum,* and *H. azteca* sediment toxicity (Table 20).

C. dubia toxicity

There have been two samples collected from Levee Drain @ Carpenter Rd that were toxic to *C. dubia* (February and July 2013). A TIE was conducted on the two toxic samples and both concluded that ammonia was the cause; exceedances of ammonia occurred in February (17 mg/L) and in July (5.4 mg/L). The Coalition will continue to conduct MPM for toxicity to *C. dubia* during February and July during the 2015 WY (Table 20).

S. capricornutum toxicity

Samples collected in the 2014 WY in December, February, and June were toxic to algae. A TIE was conducted on the February 2013 sample (0% growth compared to the control) and results indicated that the sample lost all toxicity prior to the evaluation. The TIE conducted on the June sample (37% growth compared to the control) indicated cationic metals and non-polar organics were the cause of toxicity. Levee Drain @ Carpenter Rd was monitored for toxicity to *S. capricornutum* from January 2012 through June 2013, February and June 2014, and is scheduled to be monitored in July 2014. For the 2015 WY, the Coalition will monitor for toxicity to *S. capricornutum* in December, February, and June due to past toxicity.

H. azteca toxicity

Sediment toxicity monitoring is conducted twice a year – once during the storm season and once during the irrigation season. Sediment toxicity to *H. azteca* occurred during the March months in 2012 and 2014 at Levee Drain @ Carpenter Rd. The Coalition will conduct MPM for *H. azteca* sediment toxicity during months of past toxicity (March 2015).

Livingston Drain @ Robin Ave

Management Plan Monitoring is scheduled at Livingston Drain @ Robin Ave for chlorpyrifos, copper and *S. capricornutum* during the 2015 WY.

Chlorpyrifos

During the 2015 WY, MPM for chlorpyrifos will occur in January, and June through August due to past exceedances of the WQTL. The Coalition reviewed current PUR data and added February and April to the MPM schedule. The only applications of chlorpyrifos during 2014 were in February. April accounts for 38% of the total pounds applied during the past three years. Although March accounts for 30% of the use in the past three years, the only use of chlorpyrifos in March occurred in 2012. Prior to 2012, use had declined to zero from 2004-2011 (Figure 45). Therefore, the Coalition determined that monitoring in January, February, April, and June through August will allow the Coalition to characterize the water quality in the site subwatershed.

Copper

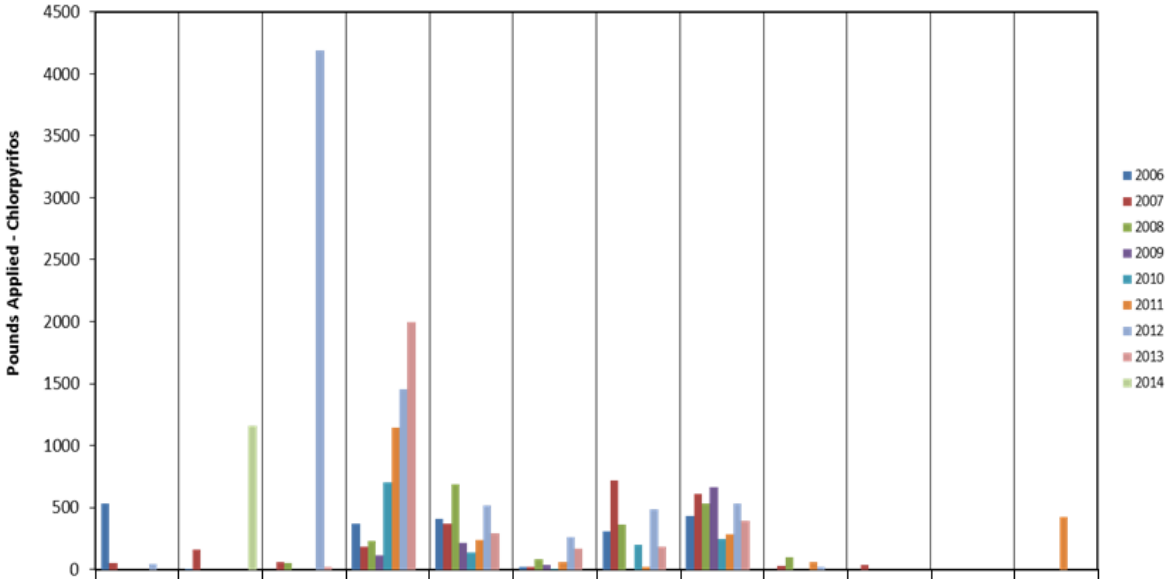
Management Plan Monitoring for copper will occur in January through February, May through July, and in September due to past exceedances. The Coalition extended the MPM schedule to include March and December in order to extend monitoring through the months of highest applications of copper over the last three years (Figure 46).

S. capricornutum toxicity

There have been four samples collected from Livingston Drain @ Robin Ave that were toxic to algae (including one resample). All four samples were collected in February, April, and May 2008; toxicity was not below the 50% growth compared to the control and therefore no TIEs were conducted. The Coalition will continue to conduct MPM during February, April, and May during months of past toxicity (Table 20).

Figure 45. Livingston Drain @ Robin Ave 2006-2014 chlorpyrifos use and monitoring.

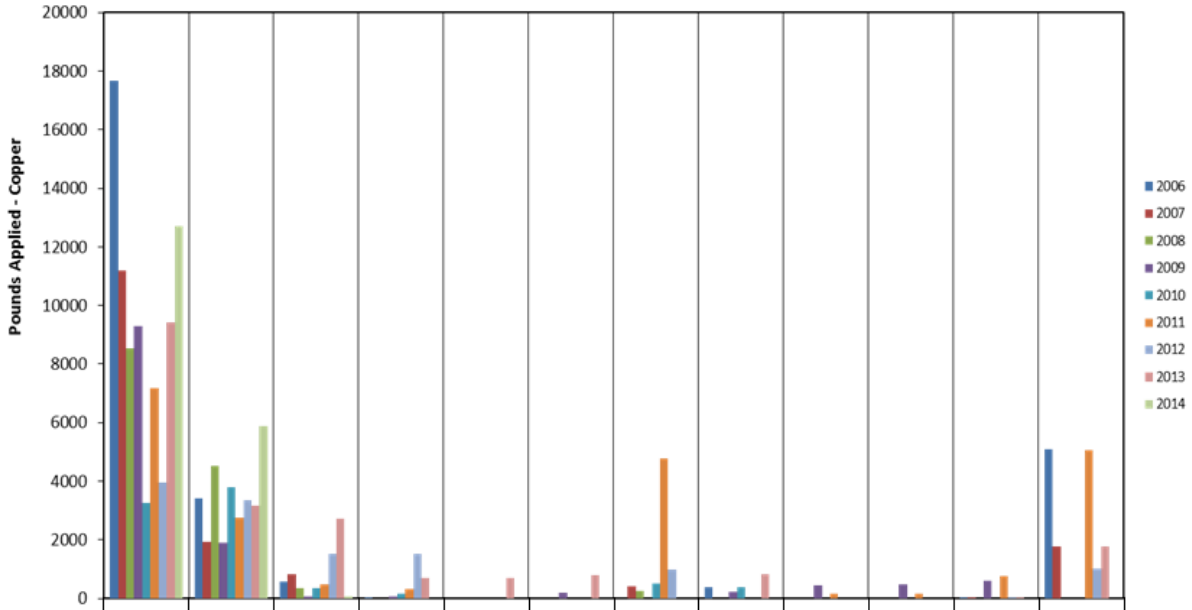
Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007								X				
2008	X		Dry			X	X					
2009												
2010												
2011	Dry											
2012												
2013												
2014				Dry	Dry	Dry						
Total Use (2006-2014)	619	1327	4,322	6,199	2,862	659	2,271	3,697	202	37	0	426
% Total (2006-2014)	*3%*	*6%*	*19%*	*27%*	*13%*	*3%*	*10%*	*16%*	*1%*	*<1%*	*0%*	*2%*
Total Use (2011-2014)	41	1162	4,208	4,597	1048	490	689	1,209	76	0	0	426
% Total (2011-2014)	*<1%*	*8%*	*30%*	*33%*	*8%*	*4%*	*5%*	*9%*	*1%*	*0%*	*0%*	*3%*

Figure 46. Livingston Drain @ Robin Ave 2006-2014 copper use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007					X	X	X		X			
2008	X	X	Dry			X	X					
2009												
2010												
2011	Dry	Dry					X		X			
2012		X										
2013		Dry							Dry			Dry
2014					Dry	Dry						
Total Use (2006-2014)	83,205	30,734	6,983	2,788	714	998	6,953	1,828	612	624	1,476	14,770
% Total (2006-2014)	*55%*	*20%*	*5%*	*2%*	*<1%*	*1%*	*5%*	*1%*	*<1%*	*<1%*	*1%*	*10%*
Total Use (2011-2014)	33,260	15,161	4,793	2,539	714	807	5,761	839	156	156	780	7,880
% Total (2011-2014)	*46%*	*21%*	*7%*	*3%*	*1%*	*1%*	*8%*	*1%*	*<1%*	*<1%*	*1%*	*11%*

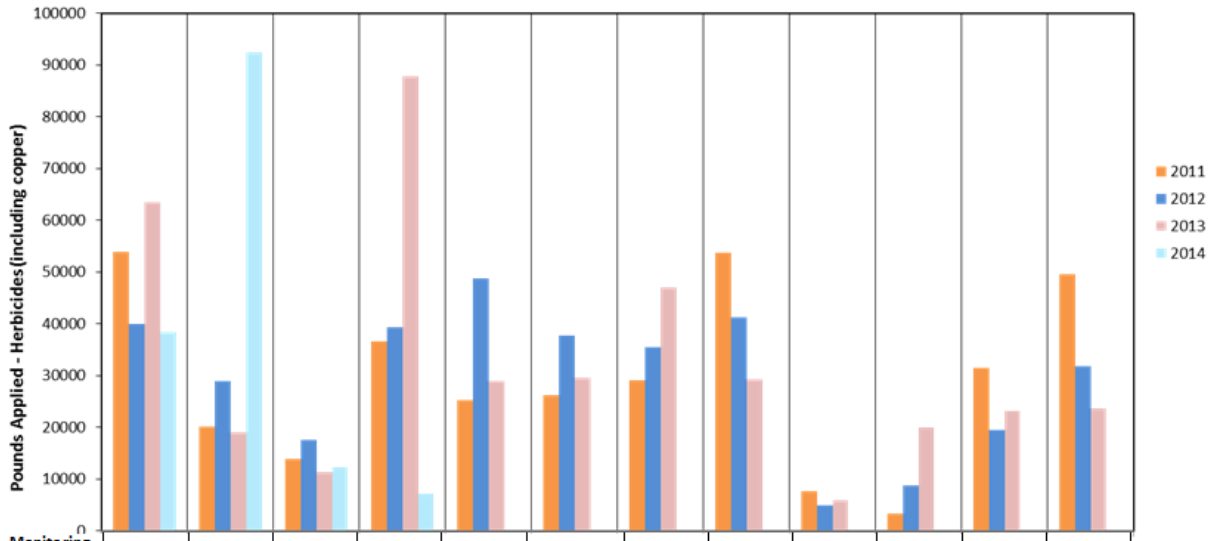
Management Plan Monitoring is scheduled at Lower Stevinson @ Faith Home Rd for *S. capricornutum* toxicity during the 2015 WY (Table 20).

S. capricornutum toxicity

Toxicity to S. capricornutum has occurred three times at Lower Stevinson @ Faith Home Rd during December, April, and June 2014. A TIE was conducted on the December toxic sample; however, the sample lost all toxicity. The 2014 WY was the first year of monitoring at Lower Stevinson @ Faith Home Rd. Because the Coalition does not have enough monitoring history and cannot determine the source of the 2014 toxicities, the Coalition evaluated current PUR data for herbicides and metals to determine months of monitoring (Figure 47). The Coalition will conduct MPM at Lower Stevinson @ Faith Home Rd in December, April, and June due to past toxicity and during January, February, July, and August based on applications of herbicides and metals in the site subwatershed over the last three years.

Figure 47. Lower Stevinson @ Faith Home Rd herbicide use (2011-February 2014).

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008												
2009												
2010												
2011												
2012												
2013												X
2014				X								
Total Use (2011-2014)	195516	160343	54922	170986	102956	93576	111653	124165	18385	32086	74051	105027
% Total (2011-2014)	*16%*	*13%*	*4%*	*14%*	*8%*	*8%*	*9%*	*10%*	*1%*	*3%*	*6%*	*8%*

Miles Creek @ Reilly Rd

Management Plan Monitoring is scheduled at Miles Creek @ Reilly Rd for the 2015 WY for chlorpyrifos, copper, diazinon, and lead, toxicity to *C. dubia* and *S. capricornutum,* and sediment toxicity to *H. azteca*.

Chlorpyrifos

Management Plan Monitoring for chlorpyrifos will occur in July, August, and September during the 2015 WY due to past exceedances. Based on current PUR data, the Coalition extended the MPM schedule to include March and June. Chlorpyrifos use during March and June accounts for 40% of pounds applied over the last three years (Figure 48). Chlorpyrifos use during May has been high in the past; however, no applications have occurred during May in the last three years. Therefore, the Coalition determined that monitoring in March, June through August, and September will allow the Coalition to characterize the water quality in the site subwatershed.

Copper

Management Plan Monitoring for copper will occur January, February, and May through August during the 2015 WY due to past exceedances. During the 2014 WY, the Coalition also monitored for copper in March and April in order to evaluate water quality in eight consecutive months accounting for 85% of copper use in the past three years; no exceedances occurred, and therefore the Coalition determined no additional monitoring is necessary during those months (Figure 49).

Diazinon

Management Plan Monitoring for diazinon will occur in February during the 2015 WY based on the single exceedance of the WQTL that occurred in February 2013. Before 2013, this site was monitored in 2007 and 2008 with no exceedances of the diazinon WQTL. From 2011 through February 2014, applications of diazinon occurred in February, September, and December; however applications were very low and less than 50 pounds of AI were applied (Figure 50).

Lead

Lead is not currently applied by agriculture and therefore cannot be associated with use. The MPM for lead at Miles Creek @ Reilly Rd will be conducted during months of past exceedances including January, February, June, July, and August (Table 20).

C. dubia toxicity

Management Plan Monitoring will occur in January and September during the 2015 WY based on months of past toxicity; toxicity to *C. dubia* occurred in September 2007 and again in January 2008. In September, samples with toxicity had a concentration of chlorpyrifos above the WQTL and in January there was a concentration of methidathion above the WQTL. Chlorpyrifos MPM also occurs in September; products containing methidathion are no longer registered.

S. capricornutum toxicity

Management Plan Monitoring will occur in February, April, and June to test for algae toxicity based on toxicity that occurred in 2007, 2008, and 2013. The June 2007 and February 2013 toxic samples lost all toxicity and therefore the toxicity could not be sourced. The TIE was conducted on the April 2008 toxic sample indicated that toxicity was caused by cationic chemicals and non-polar organics; however, no exceedances of the WQTL occurred. During the June 2007 sampling event, exceedances of the WQTL for copper and lead occurred.

H. azteca toxicity

Sediment toxicity monitoring is conducted twice a year, once during the storm season and once during the irrigation season. The Coalition will conduct MPM for *H. azteca* sediment toxicity in September based on previous water quality results.

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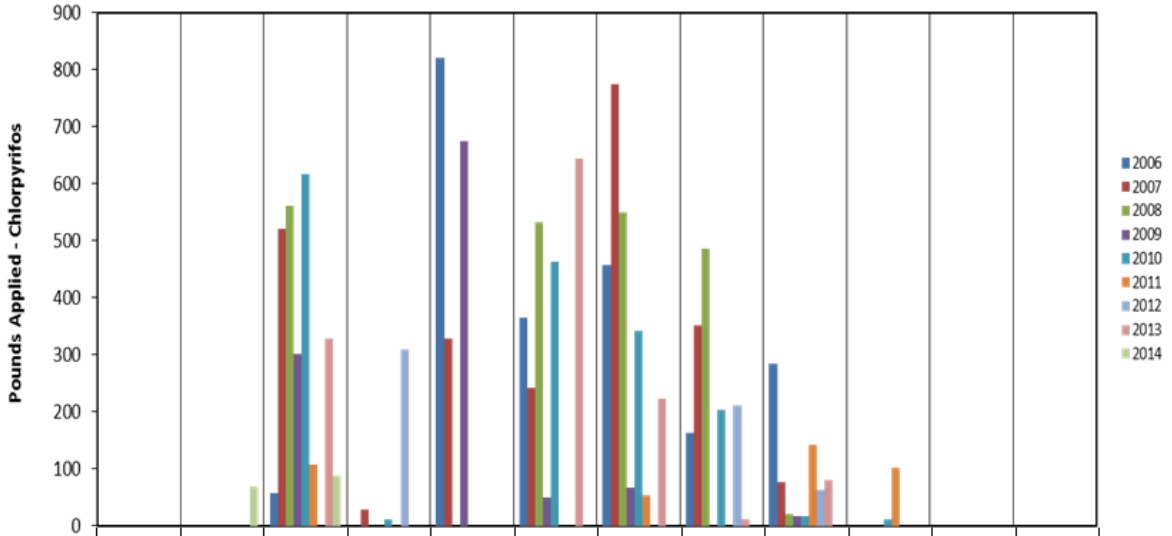
Figure 48. Miles Creek @ Reilly Rd 2006-2014 chlorpyrifos use and monitoring.

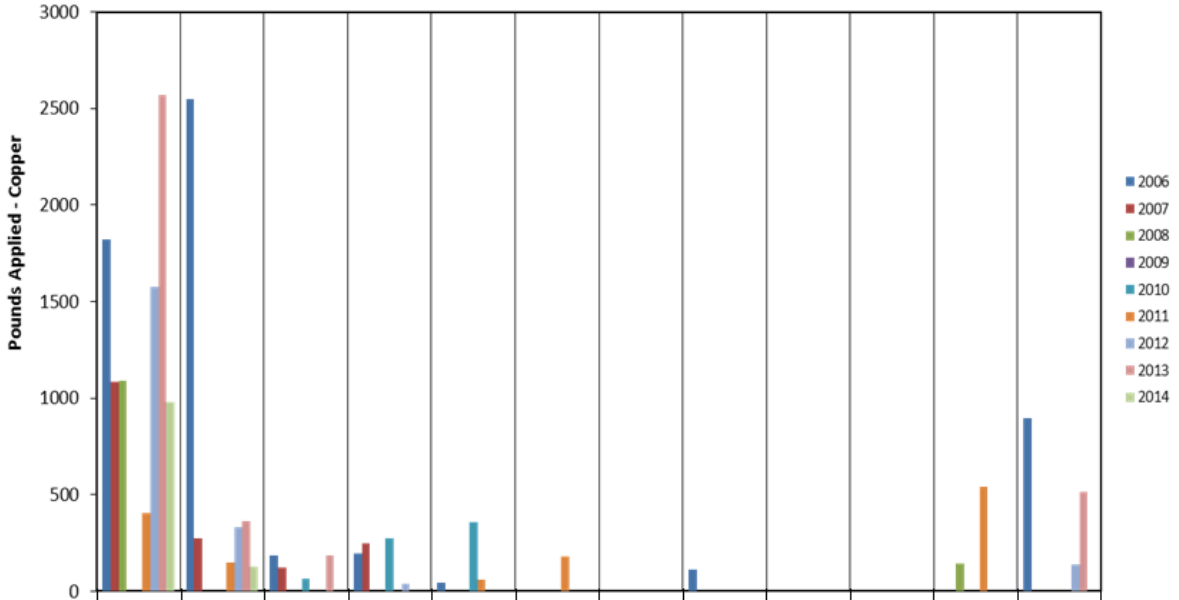
Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007									X			
2008							X	X				
2009							X					
2010												
2011												
2012												
2013												
2014												
Total Use (2006-2014)	0	68	2,576	349	1,823	2,295	2,465	1,426	697	113	0	0
% Total (2006-2014)	*0%*	*1%*	*22%*	*3%*	*15%*	*19%*	*21%*	*12%*	*6%*	*1%*	*0%*	*0%*
Total Use (2011-2014)	0	68	521	309	0	644	277	221	285	102	0	0
% Total (2011-2014)	*0%*	*3%*	*21%*	*13%*	*0%*	*27%*	*11%*	*9%*	*12%*	*4%*	*0%*	*0%*

Figure 49. Miles Creek @ Reilly Rd 2006-2014 copper use and monitoring.

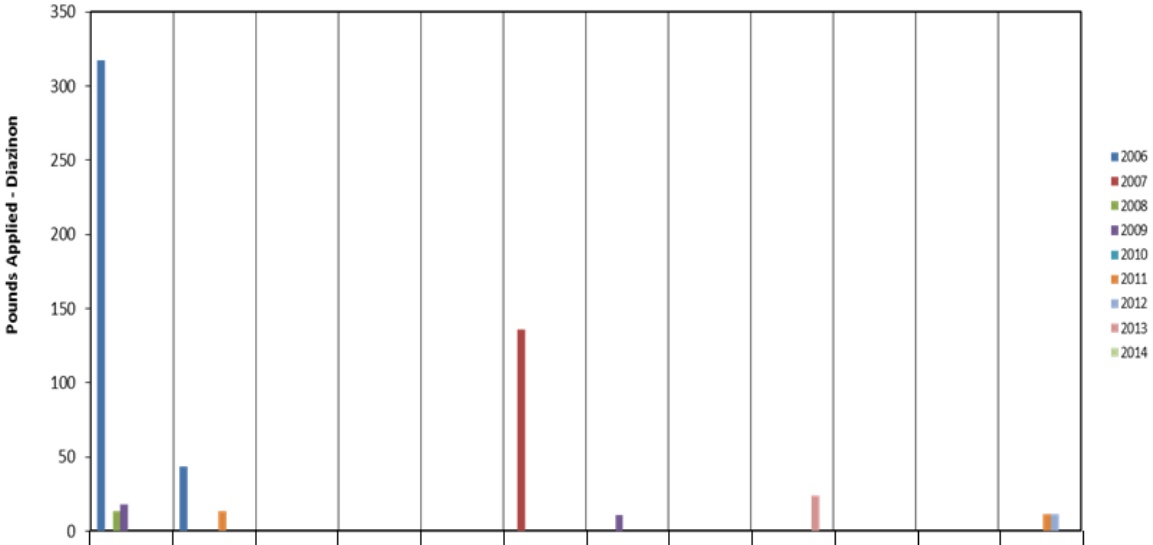
Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007					X	X		X				
2008	X	X					X	X				
2009												
2010												
2011												
2012												
2013												
2014												
Total Use (2006-2014)	9,525	3,788	558	757	457	179	0	113	0	0	684	1,549
% Total (2006-2014)	*54%*	*22%*	*3%*	*4%*	*1%*	*0%*	*1%*	*0%*	*0%*	*0%*	*4%*	*9%*
Total Use (2011-2014)	5,530	968	185	40	58	179	0	0	0	0	542	651
% Total (2011-2014)	*68%*	*12%*	*2%*	*<1%*	*1%*	*2%*	*0%*	*0%*	*0%*	*0%*	*7%*	*8%*

Figure 50. Miles Creek @ Reilly Rd 2006-2014 diazinon use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008												
2009												
2010												
2011												
2012												
2013		X										
2014												
Total Use (2006-2014)	349	57	0	0	0	136	11	0	24	0	0	23
% Total (2006-2014)	*58%*	*9%*	*0%*	*0%*	*0%*	*23%*	*2%*	*0%*	*4%*	*0%*	*0%*	*4%*
Total Use (2011-2014)	0	14	0	0	0	0	0	0	24	0	0	23
% Total (2011-2014)	*0%*	*23%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*39%*	*0%*	*0%*	*38%*

Mootz Drain downstream of Langworth Pond

Management Plan Monitoring is scheduled at Mootz Drain downstream of Langworth Pond during the 2015 WY for chlorpyrifos and diuron (Table 20).

Chlorpyrifos

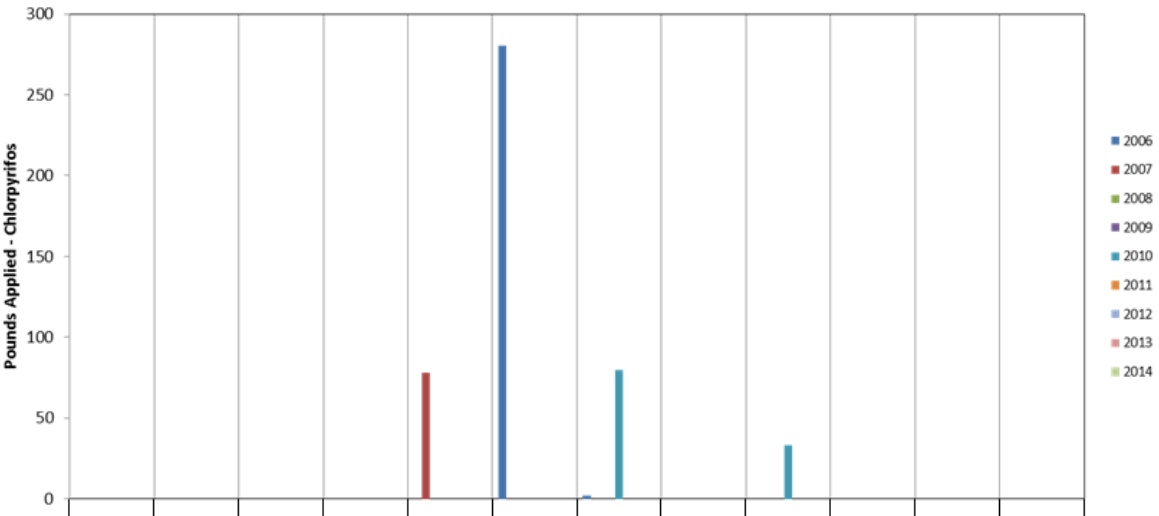
Management Plan Monitoring for chlorpyrifos will occur in June and December due to past exceedances at Mootz Drain @ Langworth Rd in 2009. The PUR data from 2006 through February 2014 indicate that chlorpyrifos has not been applied in the site subwatershed since 2010 (Figure 51). The Coalition will conduct MPM during the 2015 and 2016 WY to collect at least three years of monitoring data with no exceedances of the WQTL; if no exceedances occur, the Coalition will petition to remove chlorpyrifos from the site's management plan.

Diuron

Management Plan Monitoring for diuron will occur in February and December due to past exceedances in Mootz Drain (one at Mootz Drain @ Langworth Rd in February 2009 and one at Mootz Drain downstream of Langworth Pond in December 2010). The Coalition reviewed PUR data from 2006 through February 2014; very few applications have occurred over the last three years, all applications were less than 80 pounds AI. The highest amount applied occurred during February, March, April, November, and December. The only applications in March occurred in 2012 and totaled 20 pounds AI. Three years of monitoring at Mootz Drain in April 2009, 2010, and 2013, and in November 2008 through 2010 resulted in no exceedances (Figure 52). Therefore, the Coalition determined that monitoring in February and December will allow the Coalition to characterize the water quality in the site subwatershed.

Figure 51. Mootz Drain 2006-2014 chlorpyrifos use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred (upstream and downstream of Langworth Pond). Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.

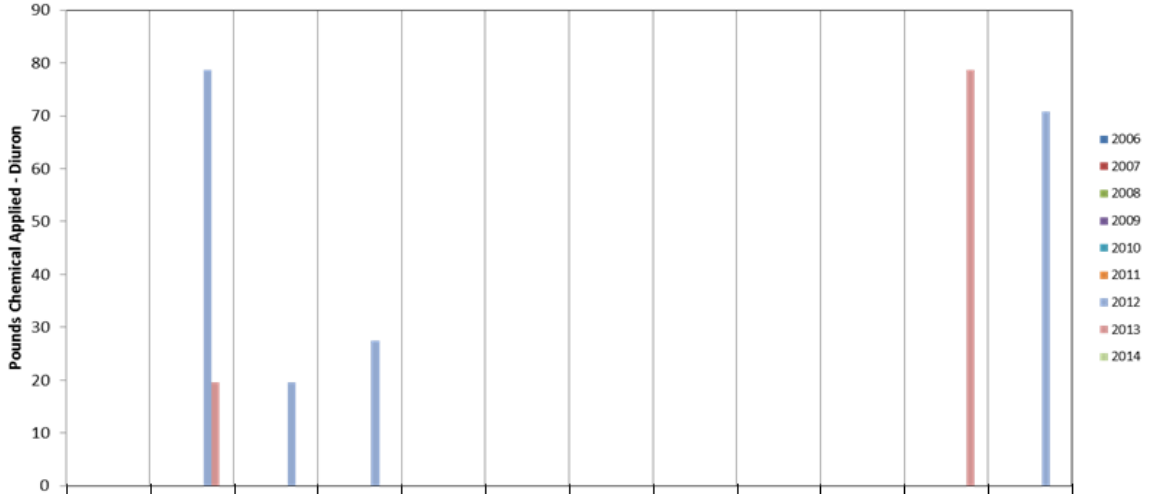


Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008										Dry		X
2009	Dry*					X						
2010										Dry	Dry	
2011												
2012												
2013												
2014												
Total Use (2006-2014)	0	0	0	0	78	281	82	0	33	0	0	0
% Total (2006-2014)	*0%*	*0%*	*0%*	*0%*	*16%*	*59%*	*17%*	*0%*	*7%*	*0%*	*0%*	*0%*
Total Use (2011-2014)	0	0	0	0	0	0	0	0	0	0	0	0
% Total (2011-2014)	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*

*Dry-No samples collected; unable to access site.

Figure 52. Mootz Drain 2006-2014 diuron use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred (upstream and downstream of Langworth Pond). Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008										Dry		
2009	Dry*	X										
2010										Dry	Dry	X
2011												
2012												
2013												
2014												
Total Use (2006-2014)	0	98	20	27	0	0	0	0	0	0	79	71
% Total (2006-2014)	*0%*	*33%*	*7%*	*9%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*27%*	*24%*
Total Use (2011-2014)	0	98	20	27	0	0	0	0	0	0	79	71
% Total (2011-2014)	*0%*	*33%*	*7%*	*9%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*27%*	*24%*

*Dry-No samples collected; unable to access site.

Mustang Creek @ East Ave

Mustang Creek @ East Ave is currently in a management plan for copper and MPM is scheduled for the 2015 WY (Table 20).

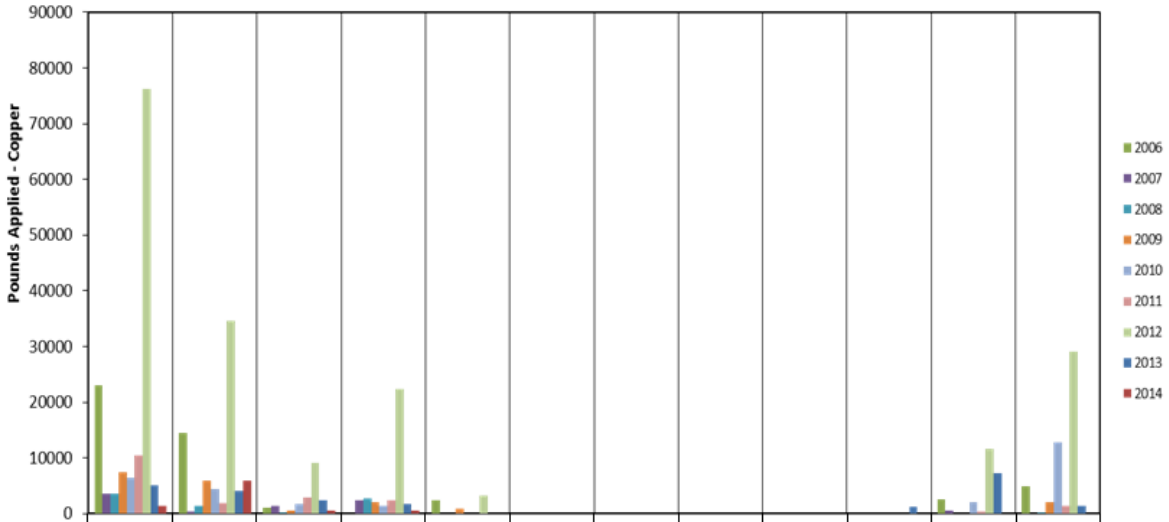
Mustang Creek @ East Ave is in a management plan for Dichlorodiphenyldichloroethylene (DDE). The Coalition monitored for DDE 12 times from 2006 through 2010; three exceedances of the WQTL occurred in February and June 2007 and December 2009. The constituent DDE is a legacy pesticide and not registered as active by DPR. The Coalition will develop a source ID study for non applied constituents that will be addressed in our 2015 Management Plan Update Report. Until then, The Coalition will not conduct MPM for DDE.

Copper

During the 2015 WY, MPM for copper will occur in October and from December through March due to past exceedances. Based on a review of the most recent PUR data, applications from November through April accounts for 98% of the pounds of copper applied in the site subwatershed during the past three years (Figure 53). However, the site is an ephemeral waterbody and is consistently dry; in 2013 the site was monitored monthly and was dry from March through November. Therefore, the Coalition determined that monitoring in October and December through March will allow the Coalition to characterize the water quality in the site subwatershed.

Figure 53. Mustang Creek @ East Ave 2006-2014 copper use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006							Dry		Dry			
2007				Dry			Dry	Dry	Dry			
2008				Dry	Dry	Dry		Dry	Dry	Dry	Dry	Dry
2009	Dry	X		Dry	Dry	Dry	Dry	Dry	Dry	X	Dry	X
2010					Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2011												
2012												
2013	X		Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	X
2014	Dry*	Dry*	X									
Total Use (2006-2014)	66,141	40,639	10,649	15,675	3,285	0	0	0	0	1207	12,731	22,697
% Total (2006-2014)	*38%*	*23%*	*6%*	*9%*	*2%*	*0%*	*0%*	*0%*	*0%*	*1%*	*7%*	*13%*
Total Use (2011-2014)	23,586	16,414	7,426	6,002	0	0	0	0	0	1207	9,701	15,604
% Total (2011-2014)	*30%*	*21%*	*9%*	*8%*	*0%*	*0%*	*0%*	*0%*	*0%*	*2%*	*12%*	*20%*

Dry* No sample collected, water too shallow.

Westport Drain @ Vivian Rd

Westport Drain @ Vivian Rd is currently in a management plan for chlorpyrifos and *S. capricornutum* toxicity; MPM is scheduled for the 2015 WY (Table 20).

Chlorpyrifos

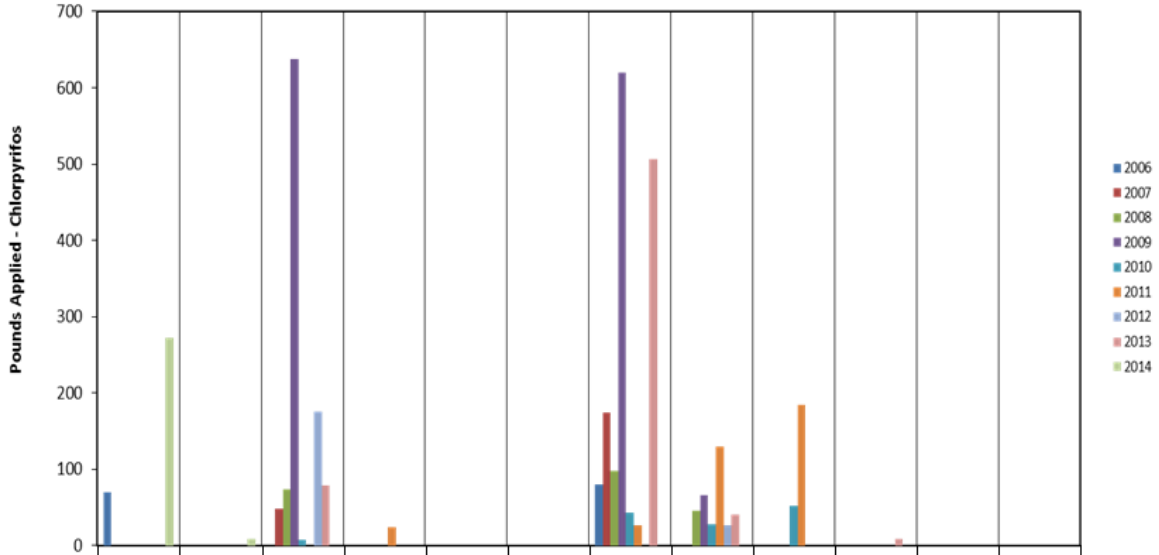
Management Plan Monitoring for chlorpyrifos will occur in July based on exceedances of the WQTL that occurred in July 2007 and 2008. In addition, the Coalition will add MPM in January, March, and August based on a review of the most recent PUR data; January, March, July, and August account for 84% of the pounds of chlorpyrifos applied in the site subwatershed over the past three years (Figure 54).

S. capricornutum toxicity

There have been three samples collected in May 2007 and February and April 2008 from Westport Drain @ Vivian Rd that were toxic to algae. Resamples were collected and toxicity was not persistent during all three events. The Coalition will continue to monitor *S. capricornutum* toxicity in February, April, and May during the 2015 WY due to the months when past toxicity occurred (Table 20).

Figure 54. Westport Drain @ Vivian Ave 2006-2014 chlorpyrifos use and monitoring.

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. PUR data through February 2014. PUR data through February 2014.



Monitoring Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007							X					
2008							X					
2009												
2010												
2011												
2012												
2013												
2014												
Total Use (2006-2014)	341	9	1,020	23	0	0	1,549	334	237	9	0	0
% Total (2006-2014)	*10%*	*0%*	*29%*	*1%*	*0%*	*0%*	*44%*	*9%*	*7%*	*<1%*	*0%*	*0%*
Total Use (2011-2014)	272	9	254	23	0	0	533	196	185	9	0	0
% Total (2011-2014)	*18%*	*1%*	*17%*	*2%*	*0%*	*0%*	*36%*	*13%*	*12%*	*1%*	*0%*	*0%*

Total Maximum Daily Load Monitoring

The ESJWQC will monitor in accordance with adopted Basin Plan provisions or as directed by the Executive Officer parameters that are part of an adopted TMDL with a source of agriculture. Currently these include the San Joaquin River Deep Water Ship Channel (DWSC) dissolved oxygen; San Joaquin River salt, boron, selenium, diazinon and chlorpyrifos. The ESJWQC utilizes existing monitoring data for all of the above TMDLs except for diazinon and chlorpyrifos.

Chlorpyrifos and Diazinon

The ESJWQC and the Westside San Joaquin River Watershed Coalition are implementing monitoring and reporting programs to comply with requirements for the San Joaquin River diazinon and chlorpyrifos TMDL established by the Basin Plan. To determine compliance with diazinon and chlorpyrifos at the six compliance points designated in the Basin Plan. The ESJWQC monitors three compliance locations on the San Joaquin River for chlorpyrifos and diazinon: San Joaquin River at Hills Ferry Rd, San Joaquin River at the Maze Blvd Bridge, and San Joaquin River at the Airport Way Bridge near Vernalis. These sites will be monitored once during the winter storm season and monthly from May through September.