

# Monitoring Plan Update

2016 WY

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*East San Joaquin Water Quality Coalition*



Irrigated Lands Regulatory Program  
Central Valley Regional Water Quality Control Board

Submitted August 1, 2015

**Table A. ESJWQC 2015 MPU amendments summary submitted on September 18, 2015.**

Item #	Description of Updates	Items Revised
1	The count for the 2016 WY for lead MPM at Cottonwood Creek @ Rd 20 was updated from two sampling events scheduled to three.	Table 1, page 2; Excel file
2	The monitoring schedule Excel file was updated to include MPM in March for dissolved copper at Berenda Slough; samples will be collected five times instead of four.	Table 1, page 2; Excel file
3	The monitoring schedule Excel file was updated to remove November MPM for Mustang Creek; it was incorrectly included.	Table 1, page 2; Excel file
4	The count for the 2016 WY for <i>C. dubia</i> toxicity MPM at Prairie Flower Drain was updated from five sampling events scheduled to six.	Table 2, page 3; Excel file
5	The count for the 2016 WY for <i>S. capricornutum</i> toxicity MPM at Lateral 5 ½ @ South Blaker Rd was updated from 5 MPM events to 0 MPM events.	Table 2, page 3
6	The missing <i>C. dubia</i> toxicity management plan at Miles Creek @ Reilly Rd was added.	Table 4, page 8
7	The compliance deadline for the <i>P. promelas</i> toxicity management plan at Prairie Flower Drain @ Crows Landing Rd was updated from 2022 to 2017.	Table 4, page 8
8	The column heading for Table 4 was updated from 'Petition for Completion in 2014 & 2015' to 'Petitioned for Completion in either 2014 or 2015'.	Table 4, page 8
9	Table 5 was added to indicate each management plan constituent that will require a source identification study and workplan, once the SQMP is approved.	Table 5, page 9
10	The text in the Core Site Pesticides section was update to include further explanation about why the Coalition will not monitor for Organochlorines or Group A pesticides during the 2016 WY.	Text, page 12
11	The monitoring dates for the 2016 WY for copper MPM at Highline Canal @ Hwy 99 were updated from January through August to January through April. Additional justification for the monitoring decision was added to the text.	Text, page 21; Table 1, page 2; Excel file
12	The total number of samples of dissolved copper collected at Highline Canal @ Hwy 99 was corrected from 32 to 30.	Table 11, page 23
13	An incorrectly listed exceedance of the WQTL for simazine at Dry Creek @ Wellsford Rd during the 2015 WY was removed.	Table 19, page 39
14	The monitoring schedule for the 2016 WY was updated for sediment toxicity MPM at Levee Drain @ Carpenter Rd; MPM will be conducted in March only. Sediment monitoring in September is not required and the text has been updated with justification for monitoring in March only.	Text, page 51; Table 2, page 3; Excel file
15	Monitoring during June 2015 for dimethoate at Lower Stevinson @ Faith Home Rd was added to the text to indicate all of the months of monitoring during the 2015 WY.	Text, page 52
16	The monitoring dates for the 2016 WY for chlorpyrifos MPM at Westport Drain @ Vivian Rd were updated to include January.	Text, page 61; Table 1, page 2; Excel file.
17	Clarification was added to explain the Coalition's process for addressing the DDE management plan at Mustang Creek @ East Ave.	Text, page 67
18	The monitoring dates for the 2016 WY for malathion MPM at Duck Slough @ Gurr Rd was updated to include February through April to match the monitoring schedule; the total sampling events were updated from five to three.	Table 1, page 2; Text, page 88
19	The months of past exceedances of the WQTL for chlorpyrifos at Duck Sough @ Gurr Rd were corrected from June to July in the text.	Text, page 88

Item #	Description of Updates	Items Revised
20	The text was updated with justification for sediment toxicity MPM at Duck Slough @ Gurr Rd during September only.	Text, page 92
21	Updated figures to include missing 'Dry' sampling events for the 2015 WY at Ash Slough @ Ave 21, Berenda Slough along Ave 18 1/2, Cottonwood Creek @ Rd 20, Deadman Creek @ Gurr Rd, Howard Lateral @ Hwy 140, and Livingston Drain @ Robin Ave, and Prairie Flower Drain @ Crows Landing Rd.	Figure 17, 18, 26-29, 32, 36, 38, 40; pages 55, 56, 74-78, 84, 91, 96, 99
22	Monitoring at Duck Slough @ Gurr Rd during two storms and two irrigation events for arsenic was added to the monitoring schedule.	Excel file
23	Monitoring for boron, cadmium, nickel, selenium, and zinc at Lateral 5 ½ @ South Blaker Rd and Canal Creek @ West Bellevue Rd was added to the monitoring schedule.	Excel file
24	Monitoring at McCoy Lateral @ Hwy 140 was removed from the monitoring schedule.	Excel file

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## LIST OF ACRONYMS

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AI	Active Ingredient
C	Core site
CalPIP	California Pesticide Information Portal
CVRWQCB	Central Valley Regional Water Quality Control Board (Regional Board)
DDE	Dichlorodiphenyldichloroethylene
DO	Dissolved Oxygen
DPR	Department of Pesticide Regulation
DWSC	Deep Water Ship Channel
ESJWQC	East San Joaquin Water Quality Coalition
ILRP	Irrigated Lands Regulatory Program
MPM	Management Plan Monitoring
MRP	Monitoring and Reporting Program
pH	Power of Hydrogen
PUR	Pesticide Use Report
R	Represented site
SC	Specific Conductance
SQMP	Surface Water Quality Management Plan
TIE	Toxicity Identification Evaluation
TOC	Total Organic Carbon
TSS	Total Suspended Solids
TMDL	Total Maximum Daily Load
WDR	Waste Discharge Requirements General Order for Growers within the Eastern San Joaquin River Watershed, Order R5-2012-0116 (The Order)
WQTL	Water Quality Trigger Limit
WY	Water Year

## LIST OF UNITS

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cfs	cubic feet per second
lbs	pounds
L	liter
mg	milligrams
μg	microgram

## SURFACE WATER MONITORING OVERVIEW

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This Monitoring Plan Update (MPU) provides the schedules and the rationale for monitoring in the 2016 Water Year (WY). Results through June 2015 were evaluated to determine the 2016 WY monitoring schedule. An addendum to the 2015 MPU will be included in the 2016 Annual Report to assess the monitoring results and PUR data from July through September from the 2015 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-R3 (hereafter the “Order” or WDR). The Coalition will perform monitoring at Core and Represented sites during the 2016 WY, including Management Plan Monitoring (MPM).

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### NORMAL MONITORING

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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 an Excel workbook submitted with the MPU that includes the monitoring parameters and sites scheduled for monitoring in the 2016 WY, including the MPM schedule. Table 1 and Table 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 additional 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 or Represented site in the previous water year, or based on an evaluation of Core site management plan constituents. The Coalition evaluates the potential for similar risks or threats to water quality associated with Core site management plan constituents at each of the Represented sites. Depending on the outcome of this evaluation, there is the potential the Coalition will monitor for that constituent at the Represented site.

**Table 1. ESJWQC 2016 WY monitoring frequency (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 2016 WY MONITORING SCHEDULE			FIELD PARAMETERS				PHYSICAL PARAMETERS			NUTRIENTS			BACTERIA	METALS <sup>1</sup>								ORGANOPHOSPHATES																
Zone	Site Name	Monitoring Type	Dissolved Oxygen	pH	Specific Conductance	Temperature	Suspended Solids	Total Organic Carbon	Turbidity	Nitrate + Nitrite (as N)	Orthophosphate	Total Ammonia (as N)	<i>E. coli</i>	Arsenic (Total)	Boron (Total)	Cadmium (Dissolved)	Copper (Dissolved)	Lead (Dissolved)	Molybdenum (Total)	Nickel (Dissolved)	Selenium (Total)	Zinc (Total)	Azinphos-methyl	Chlorpyrifos	Demeton-s	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Malathion	Methamidophos	Methodathion	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	12	12
		M																							4													
	Mootz Drain downstream of Langworth Pond	M																						2														
2	Lateral 5 1/2 @ South Blaker Rd	C	12	12	12	12	12	12	12	12	12	12	12	4 <sup>2</sup>	4 <sup>2</sup>	4 <sup>2</sup>	5	4 <sup>2</sup>	4 <sup>2</sup>	4 <sup>2</sup>	4 <sup>2</sup>	4 <sup>2</sup>	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Hilmar Drain @ Central Ave	M														2																						
	Lateral 2 ½ near Keyes Rd	M																						5														
	Prairie Flower Drain @ Crows Landing Rd	M																									5											
	Unnamed Drain @ Hogin Rd	R																									1											
	Westport Drain @ Vivian Rd	M																							3													
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	12	
		M															4	6						3														
	Highline Canal @ Lombardy Rd	M															6	5																				
	Mustang Creek @ East Ave	M															4																					
4	Canal Creek @ West Bellevue Rd	C	12	12	12	12	12	12	12	12	12	12	12	4 <sup>2</sup>	4 <sup>2</sup>	4 <sup>2</sup>	4	4 <sup>2</sup>	4 <sup>2</sup>	4 <sup>2</sup>	4 <sup>2</sup>	4 <sup>2</sup>	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Black Rascal Creek @ Yosemite Rd	M																2						4														
	Howard Lateral @ Hwy 140	M															7							4														
	Livingston Drain @ Robin Ave	M															4							4														
	Merced River @ Santa Fe	M																	2						5													
	Unnamed Drain @ Hwy 140	R															1																					
5	Miles Creek @ Reilly 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	12	
		M															2	5						5		1												
	Deadman Creek @ Gurr Rd	M																						6														
	Deadman Creek @ Hwy 59	M																						5														
	Duck Slough @ Gurr Rd	M												4		5	3						2					3										
6	Dry Creek @ Rd 18	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	12	
		M															11	4						4														
	Ash Slough @ Ave 21	M															5									3												
	Berenda Slough along Ave 18 1/2	M															5																					
	Cottonwood Creek @ Rd 20	M														4	3																					
<b>Grand Total</b>			<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>12</b>	<b>8</b>	<b>8</b>	<b>69</b>	<b>38</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>72</b>	<b>123</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>78</b>	<b>72</b>	<b>75</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>		

C –Core site  
M –Management Plan Monitoring  
R- Represented site

<sup>1</sup> Hardness will be analyzed with dissolved metals.  
<sup>2</sup> Monitoring will occur during two storm and two irrigation events.

**Table 2. ESJWQC 2016 WY monitoring frequency (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 2016 WY MONITORING SCHEDULE			PESTICIDES														WATER COLUMN TOXICITY			SEDIMENT			
Zone	Site Name	Monitoring Type	Carbamates									Herbicides					<i>P. promelas</i>	<i>S. capricornutum</i>	Grain size	Total Organic Carbon	<i>H. azteca</i> <sup>2</sup>		
			Aldicarb	Carbaryl	Carbofuran	Diuron	Linuron	Methiocarb	Methomyl	Oxamyl	Atrazine	Cyanazine	<sup>1</sup> Glyphosate	<sup>1</sup> Paraquat	Simazine	Trifluralin						<i>C. dubia</i>	
1	Dry Creek @ Wellsford Rd	C	12	12	12	12	12	12	12	12	12	12	12	2	2	12	12	12	12	2	2	2	
		M															2				2	2	2
	Mootz Drain downstream of Langworth Pond	M				2																	
2	Lateral 5 1/2 @ South Blaker Rd	C	12	12	12	12	12	12	12	12	12	12	2	2	12	12	12	12	12	2	2	2	
		M																					
	Hatch Drain @ Tuolumne Rd	M																	6	2	2	2	
		R															1						
	Hilmar Drain @ Central Ave	M				2													3	2	2	2	
		Lateral 2 ½ near Keyes Rd	M																4				
	Lateral 6 and 7 @ Central Ave	R				6														2	2	2	
		Levee Drain @ Carpenter Rd	M														2		3	1	1	1	
	Lower Stevinson @ Faith Home Rd	R				6																	
		Prairie Flower Drain @ Crows Landing Rd	M														6	2	8	2	2	2	
Unnamed Drain @ Hogin Rd	R				1																		
Westport Drain @ Vivian Rd	M				1													3					
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	2	
		M															3		6	2	2	2	
	Highline Canal @ Lombardy Rd	M																6	2	2	2		
4	Canal Creek @ West Bellevue Rd	C	12	12	12	12	12	12	12	12	12	12	2	2	12	12	12	12	12	2	2	2	
		M																	5				
	Black Rascal Creek @ Yosemite Rd	M														3							
	Howard Lateral @ Hwy 140	M																	3				
	Livingston Drain @ Robin Ave	M																					
Merced River @ Santa Fe	M														4								
5	Miles Creek @ Reilly Rd	C	12	12	12	12	12	12	12	12	12	12	2	2	12	12	12	12	12	2	2	2	
		M															2		3	1	1	1	
	Deadman Creek @ Gurr Rd	M														3	7	2					
Duck Slough @ Gurr Rd	M														3	2	3				1		
6	Dry Creek @ Rd 18	C	12	12	12	12	12	12	12	12	12	12	2	2	12	12	12	12	12	2	2	2	
		M				4													3	2	2	2	
Grand Total			72	72	72	90	72	72	72	72	72	72	12	12	72	72	94	83	109	25	25	26	

C-Core site

M-Management plan monitoring

R-Represented site

<sup>1</sup>Monitoring will occur during one storm and one irrigation event.

<sup>2</sup>Sediment samples collected in March and September only.

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## SPECIAL PROJECT MONITORING

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The Coalition will conduct site specific monitoring to address parameters associated with a Total Maximum Daily Load (TMDL), and MPM to address sites in a management plan.

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### Management Plan Monitoring

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Management Plan Monitoring is conducted as part of the Coalition’s management plan strategy to identify contaminant sources and evaluate the effectiveness of newly implemented management practices. The Coalition will conduct MPM based on the monitoring strategy proposed in the 2014 Surface Water Quality Management Plan (SQMP; submitted May 1, 2014 and resubmitted March 10, 2015).

The Coalition revised the management plan strategy based on the compliance deadline in the Order (Section XII, Page 36) and utilized the flowchart in Figure 1 to determine which sites require focused outreach and MPM. The flowchart is used to evaluate management plans that will reach the compliance deadline in the next three years and new management plans, or reinstated management plans, initiated due to exceedances in the previous water year. The Coalition’s management plan strategy will help to determine what action is required to remain in compliance with the deadline and address all constituents in a management plan accordingly. Table 3 includes the scenarios based on the evaluation of the management plan strategy described in the flowchart and the monitoring decision. For any exceedances of WQTLs for pesticides, the Coalition will begin sourcing, outreach, and monitoring activities within three years from the need to develop a management plan. Table 4 lists each site in a management plan for constituents with known agricultural sources, each constituent’s compliance deadline, and the decision to conduct MPM based on the flowchart results. Management Plan Monitoring will not be conducted for constituents requiring source identification and workplans including field parameters (DO, pH, and SC), nutrients (ammonia and nitrate/nitrite), legacy pesticides, and bacteria (*E. coli*), as proposed in the SQMP; monitoring will be determined in the workplans. Table 5 lists the management plan constituents requiring source identification and workplans.

**Table 3. Evaluation and monitoring decision based on the strategy outlined in flowchart.**

EVALUATION	MONITORING DECISION
10 year deadline is not within the next three years and the management plan was initiated prior to the 2016 WY.	Continue MPM.
10 year deadline is not within the next three years and a management plan for applied pesticides or toxicity was reinstated in the 2016 WY.	Resume MPM.
Constituent was petitioned to be removed.	Continue MPM until approved for removal.
10 year deadline is not within the next three years for newly initiated management plans.	MPM will begin in conjunction with outreach.
10 year deadline is within the next three years for an applied pesticide or toxicity.	Additional focused outreach within next three years and continued MPM.

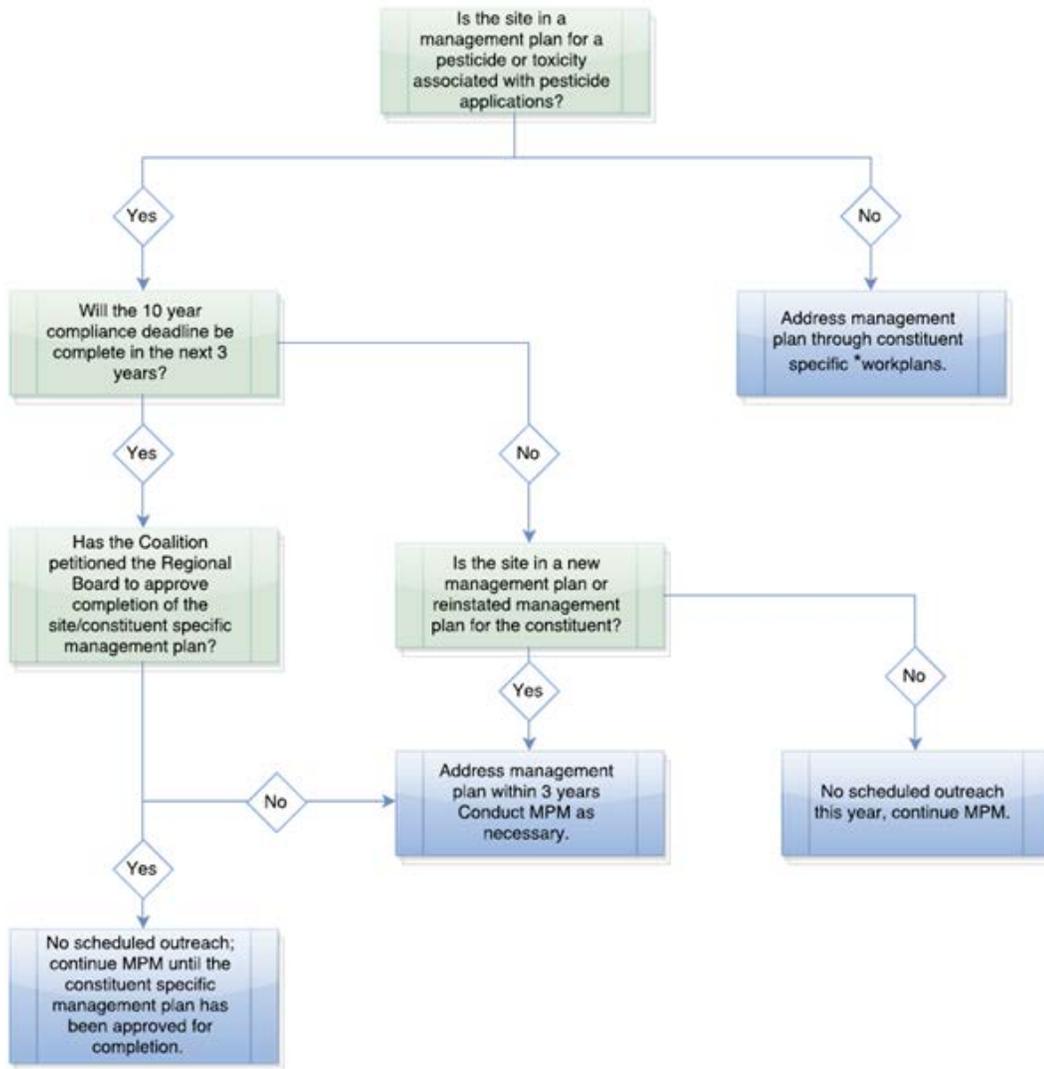
The Coalition will conduct MPM at Core sites according to the frequency outlined in Attachment B, section III.A.1 of the Order; all management plan constituents will be monitored monthly at the Core sites, with the exception of sediment toxicity and metals (Table 1 and 2). Management Plan Monitoring

will be conducted at Represented sites 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 2014 for each month. Below each figure is a table noting the months of past sampling and exceedances by year. In the same figure is a sum of use from 2006 through 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.

Figure 1. 2016 Management plan strategy flowchart.



\*Workplan timelines are proposed in the SQMP (submitted May 1, 2014 and resubmitted March 10, 2015).

**Table 4. ESJWQC results of the management plan strategy flowchart analysis for the 2016 WY.**

Sites listed in alphabetical order, constituents listed by deadline. Red text indicates the site was reinstated in a management plan for that constituent for the 2016 WY. The MPM schedule by month is included in Appendix I.

SITE	CONSTITUENT	10YR COMPLIANCE DEADLINE	10 YEAR DEADLINE: NEXT 3 YRS	PETITIONED FOR COMPLETION IN EITHER 2014 OR 2015	ADDRESS WITHIN 3 YRS	2016 FOCUSED OUTREACH	2016 MPM
Berenda Slough along Ave 18 1/2	Chlorpyrifos	2017	X	X			X
Black Rascal Creek @ Yosemite Rd	Chlorpyrifos	2017	X	X			X
	<i>C. dubia</i> toxicity	2018	X	X			X
Deadman Creek @ Gurr Rd	Chlorpyrifos	2017	X	X			X
	<i>P. promelas</i> toxicity	2018	X		X		X
	<i>S. capricornutum</i> toxicity	2019		X			X
	<i>C. dubia</i> toxicity	2020					X
Deadman Creek @ Hwy 59	Chlorpyrifos	2017	X	X			X
Dry Creek @ Rd 18	Chlorpyrifos	2017	X	X			X
	Diuron	2019					X
	<i>S. capricornutum</i> toxicity	2019					X
	<i>H. azteca</i> toxicity	2019					X
Dry Creek @ Wellsford Rd	Chlorpyrifos	2016	X		X	X	X
	<i>C. dubia</i> toxicity	2017	X	X		X	X
	<i>H. azteca</i> toxicity	2019				X	X
Duck Slough @ Gurr Rd	<i>H. azteca</i> toxicity	2016	X		X	X	X
	<i>C. dubia</i> toxicity	2017	X		X	X	X
	Chlorpyrifos	2025				X	X
	<i>P. promelas</i> toxicity	2025				X	X
	Malathion	2026				X	X
	<i>S. capricornutum</i> toxicity	2026				X	X
Hatch Drain @ Tuolumne Rd	<i>H. azteca</i> toxicity	2018	X		X		X
	<i>S. capricornutum</i> toxicity	2019			X		X
Highline Canal @ Hwy 99	<i>C. dubia</i> toxicity	2017	X	X		X	X
	<i>H. azteca</i> toxicity	2017	X	X		X	X
	<i>S. capricornutum</i> toxicity	2019			X	X	X
	Chlorpyrifos	2026			X	X	X
Highline Canal @ Lombardy Rd	<i>H. azteca</i> toxicity	2017	X	X			X
	<i>S. capricornutum</i> toxicity	2017	X	X			X
Hilmar Drain @ Central Ave	Diuron	2018	X	X			X
	<i>S. capricornutum</i> toxicity	2018	X	X			X
	<i>H. azteca</i> toxicity	2019					X
Howard Lateral @ Hwy 140	Chlorpyrifos	2021					X
Lateral 2 1/2 near Keyes Rd	Chlorpyrifos	2020					X
	<i>S. capricornutum</i> toxicity	2026					X
Lateral 5 1/2 @ South Blaker Rd	<i>S. capricornutum</i> toxicity	2025					
	<i>S. capricornutum</i> toxicity	2026					
	<i>C. dubia</i> toxicity	2024					X
Levee Drain @ Carpenter Rd	<i>S. capricornutum</i> toxicity	2025					X
	<i>H. azteca</i> toxicity	2025					X
	Chlorpyrifos	2018	X	X	X		X
Livingston Drain @ Robin Ave	<i>S. capricornutum</i> toxicity	2019					X
	<i>S. capricornutum</i> toxicity	2025					
Lower Stevinson @ Faith Home Rd	<i>S. capricornutum</i> toxicity	2025					
Merced River @ Santa Fe	<i>C. dubia</i> toxicity	2015	X	X			X
	Chlorpyrifos	2018	X	X			X
Miles Creek @ Reilly Rd	Chlorpyrifos	2018	X		X		X
	<i>C. dubia</i> toxicity	2019		X			X
	<i>H. azteca</i> toxicity	2019			X		X
	<i>S. capricornutum</i> toxicity	2019			X		X
	Diazinon	2024				X	

SITE	CONSTITUENT	10YR COMPLIANCE DEADLINE	10 YEAR DEADLINE: NEXT 3 YRS	PETITIONED FOR COMPLETION IN EITHER 2014 OR 2015	ADDRESS WITHIN 3 YRS	2016 FOCUSED OUTREACH	2016 MPM
Mootz Drain downstream of Langworth Pond	Chlorpyrifos	2020					X
	Diuron	2021					X
Prairie Flower Drain @ Crows Landing Rd	<i>H. azteca</i> toxicity	2017	X		X	X	X
	<i>P. promelas</i> toxicity	2017		X		X	X
	<i>C. dubia</i> toxicity	2018	X		X	X	X
	<i>S. capricornutum</i> toxicity	2019			X	X	X
	Dimethoate	2022			X	X	X
	Chlorpyrifos	2026			X	X	X
Westport Drain @ Vivian Rd	Chlorpyrifos	2018	X		X		X
	<i>S. capricornutum</i> toxicity	2019			X		X

**Table 5. Management plan constituents requiring a source study or workplan.**

As proposed in the SQMP (Page 17). Workplans will be developed once the SQMP is approved. Grey shaded cells indicate the management plan was petition to be complete on 6/5/2014 (approval pending). Blue shaded cells indicate the management plan was petition to be complete on 8/24/2015 (approval pending).

Constituent	Ash Slough @ Ave 21	Bear Creek @ Kibby Rd	Berenda Slough along Ave 18 1/2	Black Rascal Creek @ Yosemite Rd	Cottonwood Creek @ Rd 20	Deadman Creek @ Gurr Rd	Deadman Creek @ Hwy 59	Dry Creek @ Rd 18	Dry Creek @ Wellsford Rd	Duck Slough @ Gurr Rd	Hatch Drain @ Tuolumne Rd	Highline Canal @ Hwy 99	Highline Canal @ Lombardy Rd	Hilmar Drain @ Central Ave	Howard Lateral @ Hwy 140	Lateral 2 1/2 near Keyes Rd	Levee Drain @ Carpenter Rd	Livingston Drain @ Robin Ave.	McCoy Lateral @ Hwy 140	Merced River @ Santa Fe	Miles Creek @ Reilly Rd	Mootz Drain downstream of Langworth Pond	Mustang Creek @ East Ave	Prairie Flower Drain @ Crows Landing Rd	Rodden Creek @ Rodden Rd	Unnamed Drain @ Hwy 140	Westport Drain @ Vivian Rd
DO			X	X	X	X	X	X	X	X				X			X		X	X	X	X	X			X	X
pH		X		X		X	X	X	X	X		X	X	X	X	X		X	X							X	
SC						X				X	X			X	X		X						X	X			X
TDS						X			X		X			X	X		X		X	X			X	X			X
Ammonia						X								X			X					X		X			
Nitrate											X			X			X						X	X			X
<i>E. coli</i>		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X	X
Arsenic						X	X				X																
Copper*	X		X		X			X		X		X	X	X	X			X	X		X		X				
Lead*				X	X			X		X		X	X					X	X		X						
Molybdenum																							X				
DDE																							X				

\*MPM is conducted at sites in a management plan for copper and lead.

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## Total Maximum Daily Load Monitoring

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The ESJWQC will monitor parameters that are part of an adopted TMDL with a source of agriculture, in accordance with adopted Basin Plan provisions or as directed by the Executive Officer. Currently these include the San Joaquin River Deep Water Ship Channel (DWSC) DO; 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*

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The ESJWQC and the Westside Coalition collaborated to develop a monitoring plan for assessing compliance with concentration based loads of chlorpyrifos and diazinon at the six compliance points in the Lower San Joaquin River identified in the Basin Plan Amendment. The ESJWQC conducts monitoring to assess compliance at three of the six compliance points: 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 (January or February) and monthly from May through September.

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## MONITORING AT CORE SITES

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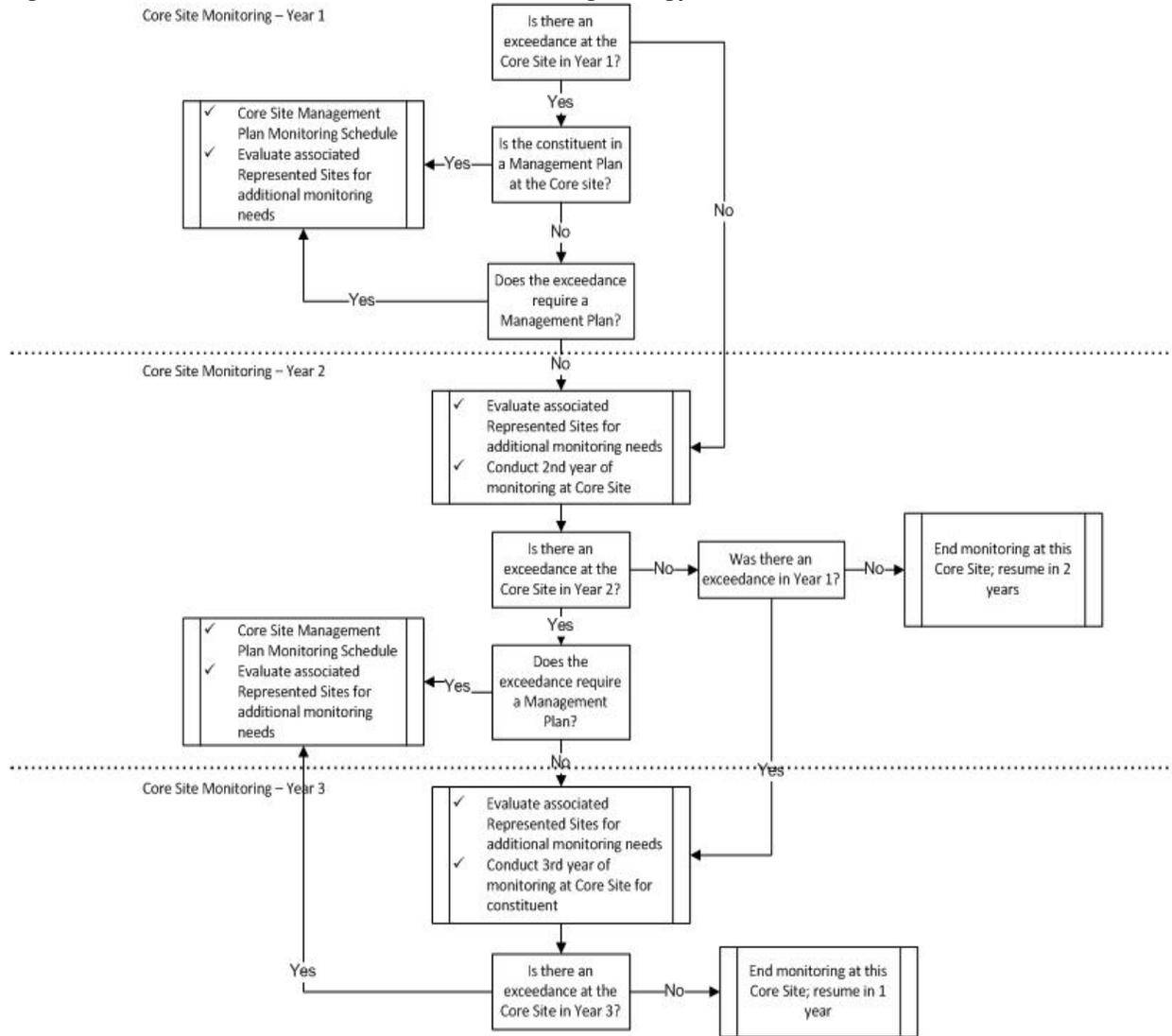
For the 2016 WY, the Coalition will monitor within each of the six zones in the ESJWQC boundary for 12 months (October 2015 through September 2016) at the designated Core sites (Attachment B of the Order, Page 4). The ESJWQC requested the approval of the Core sites listed in Table 6 be monitored during the 2016 WY, rotating with the Core sites listed in the WDR every two years (approved June 15, 2015). 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 2 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 7 lists all parameters to be monitored during the 2016 WY at Core sites.

**Table 6. ESJWQC 2016 WY 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	Lateral 5 1/2 @ South Blaker Rd	535LFHASB	37.45827	-120.96730
3	Core	Highline Canal @ Hwy 99	535XHCHNN	37.41254	-120.75941
4	Core	Canal Creek @ West Bellevue Rd	535CCAWBR	37.36090	-120.54940
5	Core	Miles Creek @ Reilly Rd	535XMCARR	37.25830	-120.47524
6	Core	Dry Creek @ Rd 18	545XDCARE	36.98180	-120.22056

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



**Table 7. ESJWQC parameters to be monitored at the Core sites for the 2016 WY.**

PARAMETER GROUP	MEASURED PARAMETER	MONITORING FREQUENCY	
<b>Water Column Sampling</b>			
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 <sub>3</sub> )	Monthly <sup>1</sup>	
	Total Organic Carbon (TOC)	Monthly	
Bacteria	<i>E. coli</i>	Monthly	
Water Column Toxicity Test	Algae - <i>Selenastrum capricornutum</i>	Monthly	
	Water Flea - <i>Ceriodaphnia dubia</i>	Monthly	
	Fathead Minnow - <i>Pimephales promelas</i>	Monthly	
	Toxicity Identification Evaluation (TIE) <sup>2</sup>	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

PARAMETER GROUP	MEASURED PARAMETER	MONITORING FREQUENCY
Metals	Arsenic	See Core Site Metals section below
	Boron	See Core Site Metals section below
	Cadmium	See Core Site Metals section below
	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
Nutrients	Zinc	See Core Site Metals section below
	Nitrate plus Nitrite as Nitrogen	Monthly
	Total Ammonia	Monthly
	Unionized Ammonia (calculated value)	Monthly
	Soluble Orthophosphate	Monthly
<b>Sediment Sampling</b>		
Toxicity	<i>Hyaella azteca</i>	March, September
Sediment Pesticides	Bifenthrin	As Needed <sup>3</sup>
	Cyfluthrin	As Needed <sup>3</sup>
	Cypermethrin	As Needed <sup>3</sup>
	Deltamethrin: Tralomethrin	As Needed <sup>3</sup>
	Esfenvalerate	As Needed <sup>3</sup>
	Lambda-Cyhalothrin	As Needed <sup>3</sup>
	Permethrin	As Needed <sup>3</sup>
	Fenpropathrin	As Needed <sup>3</sup>
	Chlorpyrifos	As Needed <sup>3</sup>
Piperonyl butoxide (PBO)	As Needed <sup>3</sup>	
Physical Parameters	Total Organic Carbon (sediment)	March, September
	Grain Size	March, September

<sup>1</sup> Hardness is to be collected with dissolved metals.

<sup>2</sup> Specific TIE manipulations utilized in each test will be reported.

<sup>3</sup> Sediment pesticides will be analyzed if *H. azteca* survival is less than 80% compared to the control.

### 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 is finalized, the Coalition will monitor monthly at each Core site for the actively registered pesticides listed in Table 7, 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 2016 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. Mustang Creek @ East Ave is in a management plan for Dichlorodiphenyldichloroethylene (DDE) and therefore the Coalition will develop a workplan for that constituent 180 days upon the approval of the ESJWQC SQMP (submitted on May 1, 2014 and resubmitted on March 10, 2015).

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## Core Site Metals

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The metals listed in Table 2 of Attachment B of the Order were evaluated using the flowchart in Figure 3 to determine the timing and frequency of monitoring. The flowchart outlines a process that determines if each metal is to be monitored in the upcoming water year. The process includes evaluating past monitoring results and pesticide 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 determine 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).
- No monitoring is necessary (characterization adequate, no exceedances).

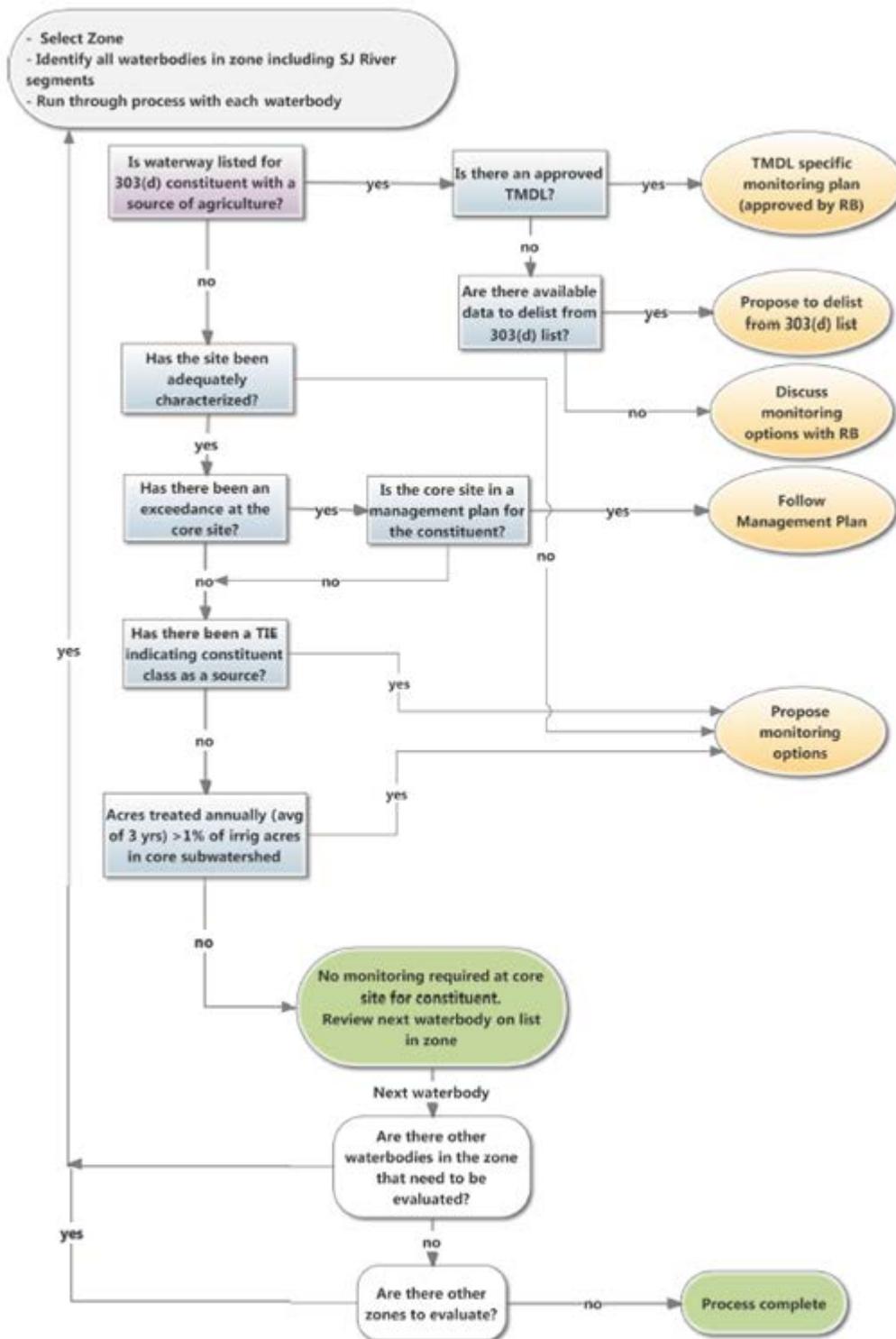
One of the questions in the flowchart is whether characterization of the concentration of the metal at the site is adequate. Adequacy is determined by having three years of monitoring of the constituent. For dissolved metals, not all sites have three years of monitoring, but there are multiple years of monitoring for the total phase of metals at all sites.

The relationship between total and dissolved phase concentrations has consequences for the determination of adequate characterization. The goal of adequate characterization is to establish that the concentration of the metal does not exceed the WQTL at any time and does not impair beneficial uses. The Coalition can use the combined history of monitoring for the total phase and the dissolved phase to demonstrate adequate characterization provided there are no exceedances of the WQTL for either the total or dissolved phase of any metal.

If a metal should be monitored based on Figure 3, the Coalition will monitor the total fraction for arsenic, boron, molybdenum, and selenium; and the dissolved phase for cadmium, copper, lead, nickel, and zinc.

The Coalition considered geologic conditions as part of the evaluation for metals applied to lands for irrigated agricultural purposes. Metals used by agriculture tend to bind to sediments and become settled or concentrated in the bed of the waterbodies. These compounds can result in water contamination when the sediments are mobilized into the water column. The Coalition has developed a monitoring schedule of metals that includes monitoring during irrigation and storm events with high total suspended solids (high TSS events) in order to capture sediment-bound metals.

Figure 3. ESJWQC flowchart for the Core site metals monitoring strategy.



*Dry Creek @ Wellsford Rd*

Dry Creek @ Wellsford Rd is the Core site in Zone 1 for the 2016 WY. The decision to not monitor for metals at Dry Creek @ Wellsford Rd during the 2016 WY is outlined in Table 8 and discussed below. Monitoring results for metals at Dry Creek @ Wellsford Rd are listed in the Table 6 of the 2014 MPU (Pages 13-14).

**Table 8. Results of the flowchart analysis for Dry Creek @ Wellsford Rd outlined in Figure 3.**

“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
<b>Monitoring Decision</b>									
1. TMDL-specific monitoring									
2. Propose to delist from 303(d) list									
3. Monitoring according to management plan									
4. Propose monitoring plan in MPU									
5. No monitoring during the 2016 WY	X	X	X	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 (2014 MPU; 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 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 (2014 MPU, Table 6). Lead is not applied by agriculture and, based on water quality results, 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. The Coalition determined that no monitoring is necessary for copper or lead.

### *Lateral 5 ½ @ South Blaker Rd*

Lateral 5 ½ @ South Blaker Rd is the Core site in Zone 2 for the 2016 WY. The decisions to monitor for metals at Lateral 5 ½ @ South Blaker Rd during the 2016 WY is outlined in Table 9 and discussed below.

**Table 9. Results of the flowchart analysis for Lateral 5 ½ @ South Blaker Rd outlined in Figure 3.**

“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	No	No	No	No	No	No	No	No
3. Has there been an exceedance?	No	No	No	No	No	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
<b>Monitoring Decision</b>									
1. TMDL-specific monitoring									
2. Propose to delist from 303(d) list									
3. Monitoring according to management plan									
4. Propose monitoring plan in MPU	X	X	X	X	X	X	X	X	X
5. No monitoring during the 2016 WY									

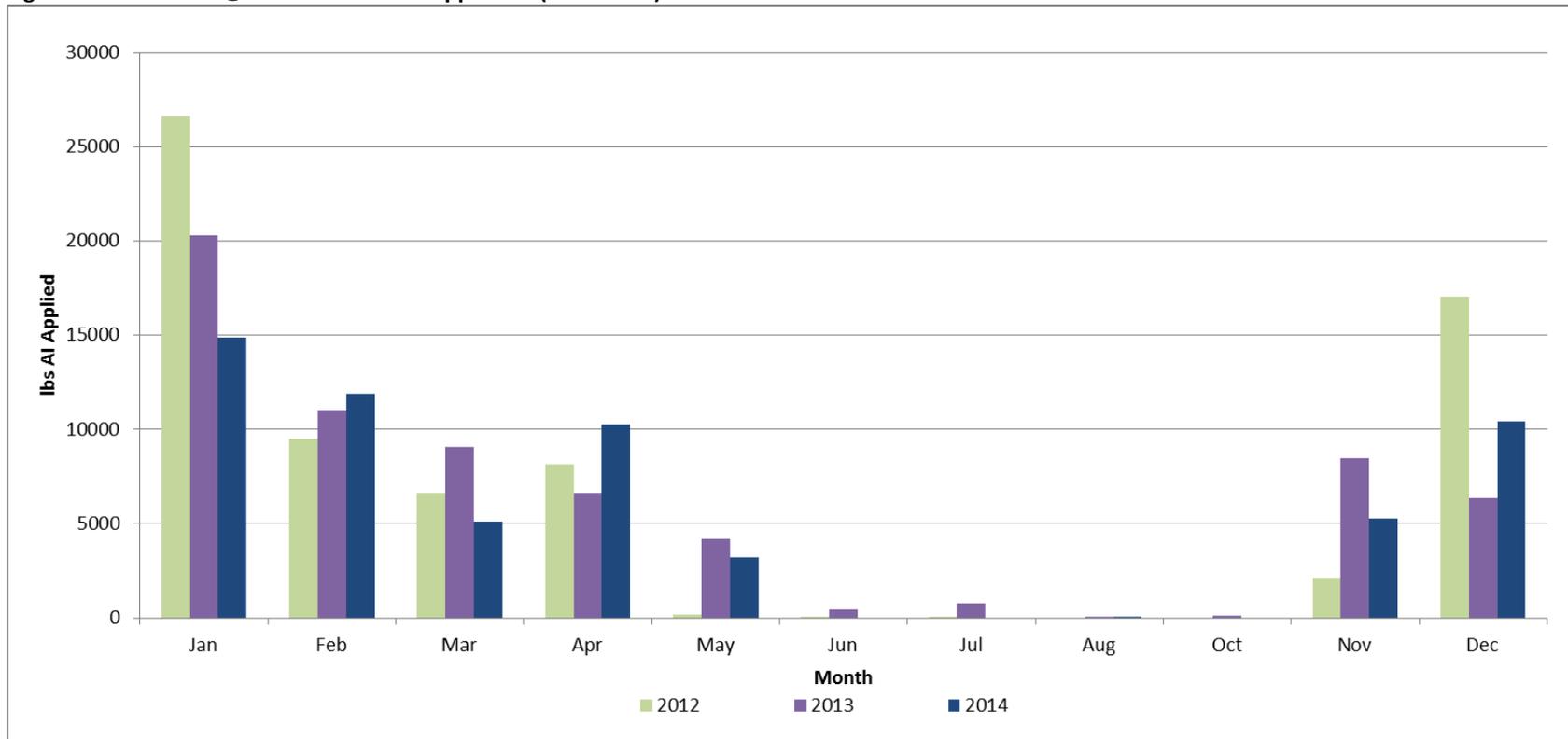
#### **Monitoring Decision #5 – Proposed monitoring plan**

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

Lateral 5 ½ @ South Blaker Rd is a new monitoring site; therefore it has only been monitored as a Represented site, and has not been monitored for metals. Since arsenic, boron, cadmium, lead, molybdenum, nickel, and selenium are not applied by agriculture, there is no way to differentiate months of potential risk for water quality impairments caused by these metals, if any. Zinc was applied in the site subwatershed in 2014 (23.6 lbs AI of Zinc phosphide), however this amount is not significant enough to impact water quality. Therefore, the Coalition will monitor for these metals during two storm and two irrigation events during the 2016 WY.

Copper applications occur in the subwatershed during the fall and winter months (Figure 4). The Coalition will monitor for dissolved copper in December through April, based on the months of highest use over the last three years, in addition to two storm and two irrigation events during the 2016 WY.

Figure 4. Lateral 5 ½ @ South Blaker Rd copper use (2012-2014).



## Highline Canal @ Hwy 99

Highline Canal @ Hwy 99 is the Core site in Zone 3 during the 2016 WY. The decisions to monitor for metals at Highline Canal @ Hwy 99 during the 2016 WY is outlined in Table 10 and discussed below. All monitoring results for metals at Highline Canal @ Hwy 99 are listed in Table 10 in the 2014 MPU; monitoring results for the 2015 WY are listed in Table 11.

**Table 10. Results of the flowchart analysis for Highline Canal @ Hwy 99 outlined in Figure 3.**

"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. Propose to delist from 303(d) list									
3. Monitoring according to management plan				X	X				
4. Propose monitoring plan in MPU									
5. No monitoring during the 2016 WY	X	X	X			X	X	X	X

### Monitoring Decision #3 - Monitoring according to a management plan

#### *Copper and Lead*

The Coalition will conduct MPM for dissolved copper during January through April, based on current PUR data and months of past exceedances (Figure 5). Despite past exceedances in June, July, and August 2008, the Coalition determined monitoring is not necessary during those months in the 2016 WY. The Coalition has monitored during June for four years and in July and August for five years with no exceedances of the WQTL. In addition, PUR data from the last three years indicate no use of products containing copper during the irrigation season. Applications of copper products have occurred in November and December; however, the site has been consistently dry during these months. The site was dry in November 2008, 2009, 2013, and the 2014 WY and in December 2008, 2010, 2011, and 2013. The Coalition determined monitoring for copper in November and December is not necessary.

The Coalition will conduct MPM for dissolved lead in February and April through August, based on months of past exceedances. The Coalition will petition to remove lead from the site's management plan in August 2015, based on three years of monitoring with no exceedances of the WQTL.

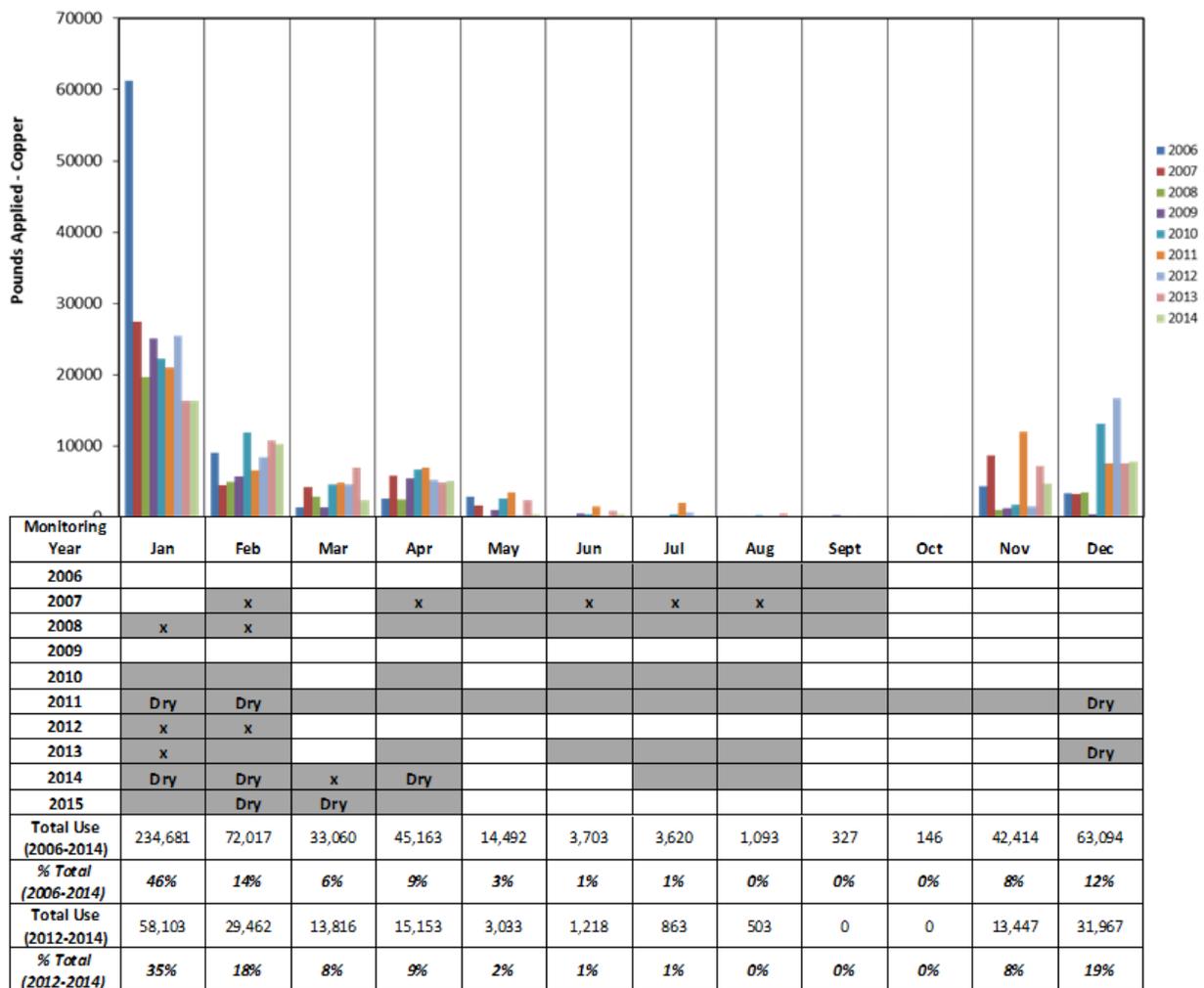
## Monitoring Decision #5 - No monitoring

### *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 11). 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.

**Figure 5. Highline Canal @ Hwy 99 2006-2014 copper use and monitoring.**

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. The PUR data through December 2014.



**Table 11. Highline Canal @ Hwy 99 site subwatershed dissolved and total metals monitoring results for the 2015 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)
2015	Jan	1/13/2015	NA	NA	NA	NA	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	145
2015	Feb	2/10/2015	NA	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA
2015	Mar	3/10/2015	NA	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2015	Apr	4/14/2015	NA	NA	NA	NA	0.85	NA	0.11	NA	NA	NA	NA	NA	NA	NA	NA
2015	May	5/12/2015	NA	NA	NA	NA	NA	NA	<0.03	NA	NA	NA	NA	NA	NA	NA	NA
2015	Jun	6/9/2015	NA	NA	NA	NA	NA	NA	<0.03	NA	NA	NA	NA	NA	NA	NA	6
<b>Sample Count Summary</b>																	
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	7
Samples collected in 2014 WY			3	3	3	1	3	0	5	0	3	3	0	3	3	0	5
Samples collected in 2015 WY <sup>1</sup>			0	0	0	0	4	0	4	0	0	0	0	0	0	0	2
<b>Exceedance Summary</b>																	
<b>Total Collected</b>			<b>9</b>	<b>12</b>	<b>9</b>	<b>7</b>	<b>30</b>	<b>23</b>	<b>22</b>	<b>13</b>	<b>9</b>	<b>12</b>	<b>9</b>	<b>12</b>	<b>12</b>	<b>9</b>	<b>31</b>
<b>Total Exceedances</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>7</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>% Exceedances</b>			<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>13%</b>	<b>30%</b>	<b>0%</b>	<b>54%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

<sup>1</sup>Data included through June 2015.

*Canal Creek @ West Bellevue Rd*

Canal Creek @ West Bellevue Rd is the Core site in Zone 2 for the 2016 WY. The decisions to monitor for metals at Canal Creek @ Bellevue Rd during the 2016 WY is outlined in Table 12 and discussed below.

**Table 12. Results of the flowchart analysis for Canal Creek @ West Bellevue Rd outlined in Figure 3.**

“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	No	No	No	No	No	No	No	No
3. Has there been an exceedance?	No	No	No	No	No	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
<b>Monitoring Decision</b>									
1. TMDL-specific monitoring									
2. Propose to delist from 303(d) list									
3. Monitoring according to management plan									
4. Propose monitoring plan in MPU	X	X	X	X	X	X	X	X	X
5. No monitoring during the 2016 WY									

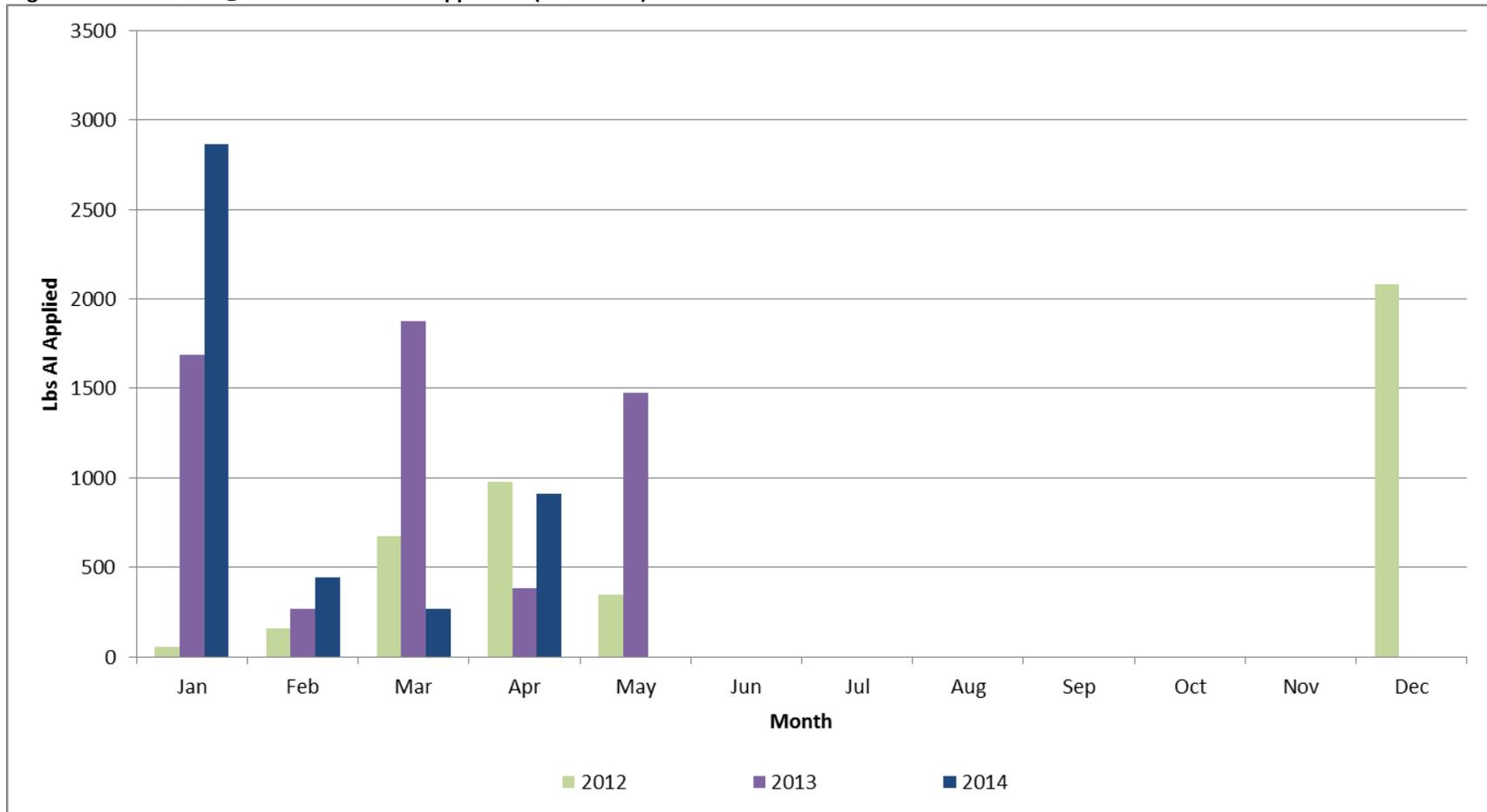
**Monitoring Decision #5 – Proposed monitoring plan**

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

Canal Creek @ West Bellevue Rd is a new monitoring site; therefore it has only been monitored as a Represented site, and has not been monitored for metals. Since arsenic, boron, cadmium, lead, molybdenum, nickel, and selenium are not applied by agriculture, there is no way to differentiate months of potential risk for water quality impairments caused by these metals, if any. Zinc was applied in the site subwatershed in 2014 (5.8 lbs AI of zinc phosphide), however this amount is not significant enough to impact water quality. The Coalition will monitor for these metals during two storm and two irrigation events during the 2016 WY.

Copper is applied in the subwatershed, with the highest months of applications occurring during the winter months (Figure 6). The Coalition will monitor for dissolved copper from January through April, in addition to two storm and two irrigation events during the 2016 WY.

Figure 6. Canal Creek @ West Bellevue Rd copper use (2012-2014).



*Miles Creek @ Reilly Rd*

Miles Creek @ Reilly Rd is the Core site in Zone 5 for the 2016 WY. The decisions to monitor for metals at Miles Creek @ Reilly Rd during the 2016 WY is outlined in Table 13 and discussed below. All metals monitoring results for Miles Creek @ Reilly Rd are listed in Table 14.

**Table 13. Results of the flowchart analysis for Miles Creek @ Reilly Rd outlined in Figure 3.**

“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
<b>Monitoring Decision</b>									
1. TMDL-specific monitoring									
2. Propose to delist from 303(d) list									
3. Monitoring according to management plan				X	X				
4. Propose monitoring plan in MPU									
5. No monitoring during the 2016 WY	X	X	X			X	X	X	X

**Monitoring Decision #3-Monitoring according to a management plan**

*Copper and Lead*

Copper and lead are in a management plan for the site subwatershed; MPM is scheduled for copper and lead in the 2016 WY. The Coalition will conduct MPM for dissolved copper during January and February, based on current PUR data. Exceedances of the WQTL for total copper occurred in May through August between 2007 and 2008, when no applications of copper were reported. The Coalition monitored during these months at least three years since the last exceedance; no exceedances occurred and no applications reported since 2011 (Figure 7). No monitoring is necessary during May through August 2016.

The Coalition will conduct MPM for dissolved lead in January, February, June, July, and August, based on months of past exceedances. The Coalition will petition to remove copper and lead from the site’s management plan in August 2015 based on three years of monitoring with no exceedances of the WQTL.

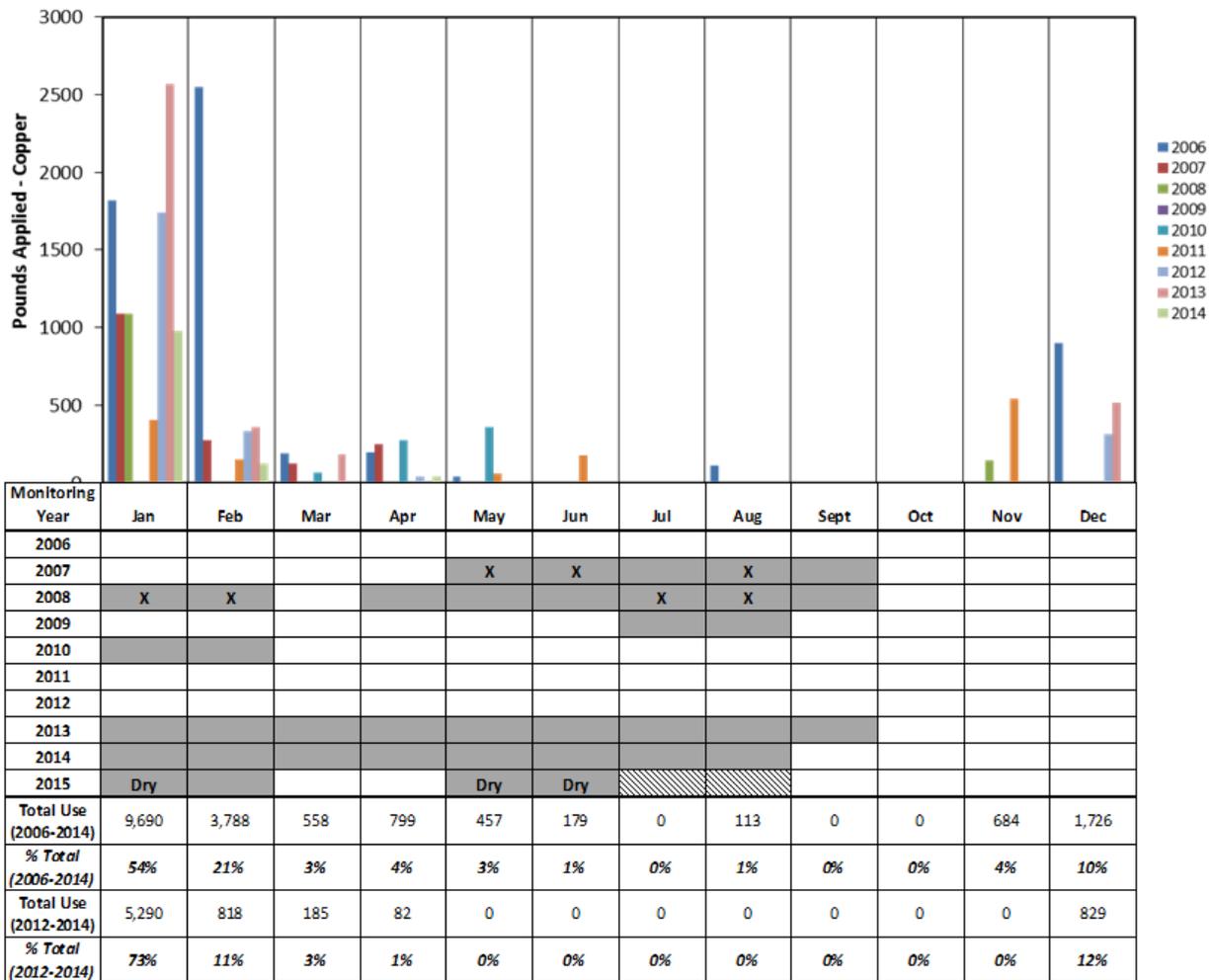
## Monitoring Decision #5 - No monitoring

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

The Coalition monitored for arsenic, boron, nickel, selenium, and zinc in 2007, 2008, and 2013, for cadmium in 2008, and for molybdenum in 2013; no exceedances of the WQTLs occurred (Table 14). The Coalition determined that no monitoring is necessary during the 2016 WY. Arsenic, boron, cadmium, selenium, nickel, molybdenum, and zinc are not applied by agriculture and are not impairing the water quality in the Coalition area.

**Figure 7. 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. The PUR data through December 2014.



**Table 14. Miles Creek @ Reilly Rd site subwatershed dissolved and total metals monitoring results (2006-2015 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)
2007	May	5/29/2007	2.1	15	NA	NA	NA	4.3	NA	0.71	NA	NA	3.3	NA	NA	4	NA
2007	Jun	6/26/2007	2.2	14	NA	NA	NA	5.8	NA	1	NA	NA	4.7	NA	NA	7	NA
2007	Jul	7/24/2007	2	12	NA	NA	NA	4.6	NA	0.88	NA	NA	3.4	NA	NA	8	NA
2007	Aug	8/21/2007	1.4	15	NA	NA	NA	5.2	NA	0.85	NA	NA	4.2	NA	NA	7	NA
2007	Sep	9/18/2007	1.5	16	NA	NA	NA	4.5	NA	0.9	NA	NA	3.8	NA	NA	7	NA
2008	Jan	1/25/2008	2.2	19	NA	NA	NA	15	NA	3.2	NA	NA	12	0.7	NA	22	NA
2008	Feb	2/25/2008	4	27	NA	0.2	NA	34	NA	7.7	NA	NA	26	0.74	NA	68	NA
2008	Apr	4/29/2008	2.7	16	NA	NA	NA	3.7	NA	0.77	NA	NA	3.1	0.35	NA	6	NA
2008	May	5/7/2008	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	May	5/27/2008	2.2	18	NA	NA	NA	2.6	NA	0.53	NA	NA	2.2	0.82	NA	4	NA
2008	Jun	6/3/2008	NA	NA	NA	NA	NA	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	Jun	6/24/2008	1.8	13	NA	NA	NA	6.2	NA	1.5	NA	NA	5.1	0.58	NA	11	NA
2008	Jul	7/29/2008	1.6	13	NA	0.07	NA	7.5	NA	1.7	NA	NA	6	0.33	NA	13	NA
2008	Aug	8/5/2008	NA	NA	NA	NA	NA	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	Aug	8/26/2008	1.9	16	NA	<0.06	NA	7.5	NA	2	NA	NA	5.9	0.3	NA	14	NA
2008	Sep	9/30/2008	2.2	19	NA	NA	NA	4.1	NA	0.8	NA	NA	3.2	0.3	NA	6	NA
2009	Jul	7/21/2009	NA	NA	NA	NA	1.5	3.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
2009	Aug	8/18/2009	NA	NA	NA	NA	1.6	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
2010	Jan	1/19/2010	NA	NA	NA	NA	1.7	8.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
2010	Feb	2/23/2010	NA	NA	NA	NA	2.8	7.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
2013	Jan	1/8/2013	NA	20	NA	NA	4.3	11	0.27	2.3	NA	3.7	9.1	0.22	1.4	14	126
2013	Feb	2/12/2013	NA	42	NA	NA	2.5	4.3	0.03	0.53	NA	2.2	3.4	0.16	0.8	4.5	24
2013	Feb	2/20/2013	2.2	38	NA	NA	1.9	4.9	0.04	0.79	1.5	2.6	5.2	0.08	0.7	5.5	46
2013	Mar	3/12/2013	NA	47	NA	NA	1.9	19	NA	NA	NA	2.5	17	0.19	1.4	29	318
2013	Apr	4/2/2013	2.5	22	NA	NA	1.1	10	0.06	0.6	0.95	1.5	2.9	0.09	0.8	4.9	25
2013	May	5/14/2013	NA	18	NA	NA	1.3	3	NA	NA	NA	1.5	2.4	0.09	NA	3.5	22
2013	Jun	6/11/2013	NA	20	NA	NA	2	5	0.11	0.91	NA	2	3.7	0.1	NA	5.4	29
2013	Jul	7/9/2013	2.2	24	NA	NA	1.4	3.8	0.1	0.94	0.76	1.6	3.6	0.08	NA	5.3	24
2013	Aug	8/13/2013	1.3	9.4	NA	NA	0.76	2.5	0.08	0.56	0.45	0.84	2.2	0.09	0.5	4.1	15
2013	Sep	9/10/2013	NA	13	NA	NA	1.4	2.6	NA	NA	NA	1	2.2	0.07	1	4	12
2014	Jan	1/14/2014	NA	NA	NA	NA	2.1	3.4	0.03	0.17	NA	NA	NA	NA	NA	NA	NA
2014	Feb	2/10/2014	NA	NA	NA	NA	0.92	1.6	NA	0.2	NA	NA	NA	NA	NA	NA	NA
2014	Mar	3/5/2014	NA	NA	NA	NA	2.2	3.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	Apr	4/8/2014	NA	NA	NA	NA	2.7	19	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	May	5/13/2014	NA	NA	NA	NA	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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	Jun	6/10/2014	NA	NA	NA	NA	0.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	Jul	7/8/2014	NA	NA	NA	NA	0.76	NA	0.09	NA	NA	NA	NA	NA	NA	NA	NA
2014	Aug	8/12/2014	NA	NA	NA	NA	0.87	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA
2015	Jan	1/13/2015	NA	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2015	Feb	2/10/2015	NA	NA	NA	NA	0.92	1.6	<0.03	0.2	NA	NA	NA	NA	NA	NA	NA
2015	May	5/12/2015	NA	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2015	Jun	6/9/2015	NA	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA
<b>Sample Count Summary</b>																	
Samples collected in 2007			5	5	0	0	0	5	0	5	0	0	5	0	0	5	0
Samples collected in 2008			8	8	0	3	0	11	0	8	0	0	8	8	0	8	0
Samples collected in 2009			0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
Samples collected in 2010			0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
Samples collected in 2013			4	10	0	0	10	10	7	7	4	10	10	10	7	10	10
Samples collected in 2014 WY			0	0	0	0	8	4	3	2	0	0	0	0	0	0	0
Samples collected in 2015 WY <sup>1</sup>			0	0	0	0	4	0	4	0	0	0	0	0	0	0	0
<b>Exceedance Summary</b>																	
<b>Total Collected</b>			<b>17</b>	<b>23</b>	<b>0</b>	<b>3</b>	<b>26</b>	<b>34</b>	<b>14</b>	<b>22</b>	<b>4</b>	<b>10</b>	<b>23</b>	<b>18</b>	<b>7</b>	<b>23</b>	<b>10</b>
<b>Total Exceedances</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>% Exceedances</b>			<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>21%</b>	<b>0%</b>	<b>23%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

<sup>1</sup>Data included through June 2015.

*Dry Creek @ Rd 18*

Dry Creek @ Rd 18 is the Core site in Zone 6 for the 2016 WY. The decisions to monitor for metals during the 2016 WY is outlined in Table 15 and discussed below. Metals monitoring results for Dry Creek @ Rd 18 are listed in Table 16.

**Table 15. Results of the flowchart analysis for Dry Creek @ Rd 18 outlined in Figure 3.**

"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	Yes
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	No	No	No	No	No	No
6. Acres treated > 1%?	No	No	No	Yes	No	No	No	No	No
<b>Monitoring Decision</b>									
1. TMDL-specific monitoring									
2. Propose to delist from 303(d) list									
3. Monitoring according to management plan				X	X				
4. Propose monitoring plan in MPU									
5. No monitoring during the 2016 WY	X	X	X			X	X	X	X

**Monitoring Decision #3-Monitoring according to a management plan**

*Copper and Lead*

Copper and lead are in a management plan for the site subwatershed; MPM is scheduled for the 2016 WY. The Coalition will conduct MPM for dissolved copper November through September, based on current PUR data and months of past exceedances (Figure 8).

The Coalition will conduct MPM for dissolved lead in May, June, August, and September, based on months of past exceedances. The Coalition will petition to remove lead from the site’s management plan in August 2015 based on three years of monitoring with no exceedances of the WQTL.

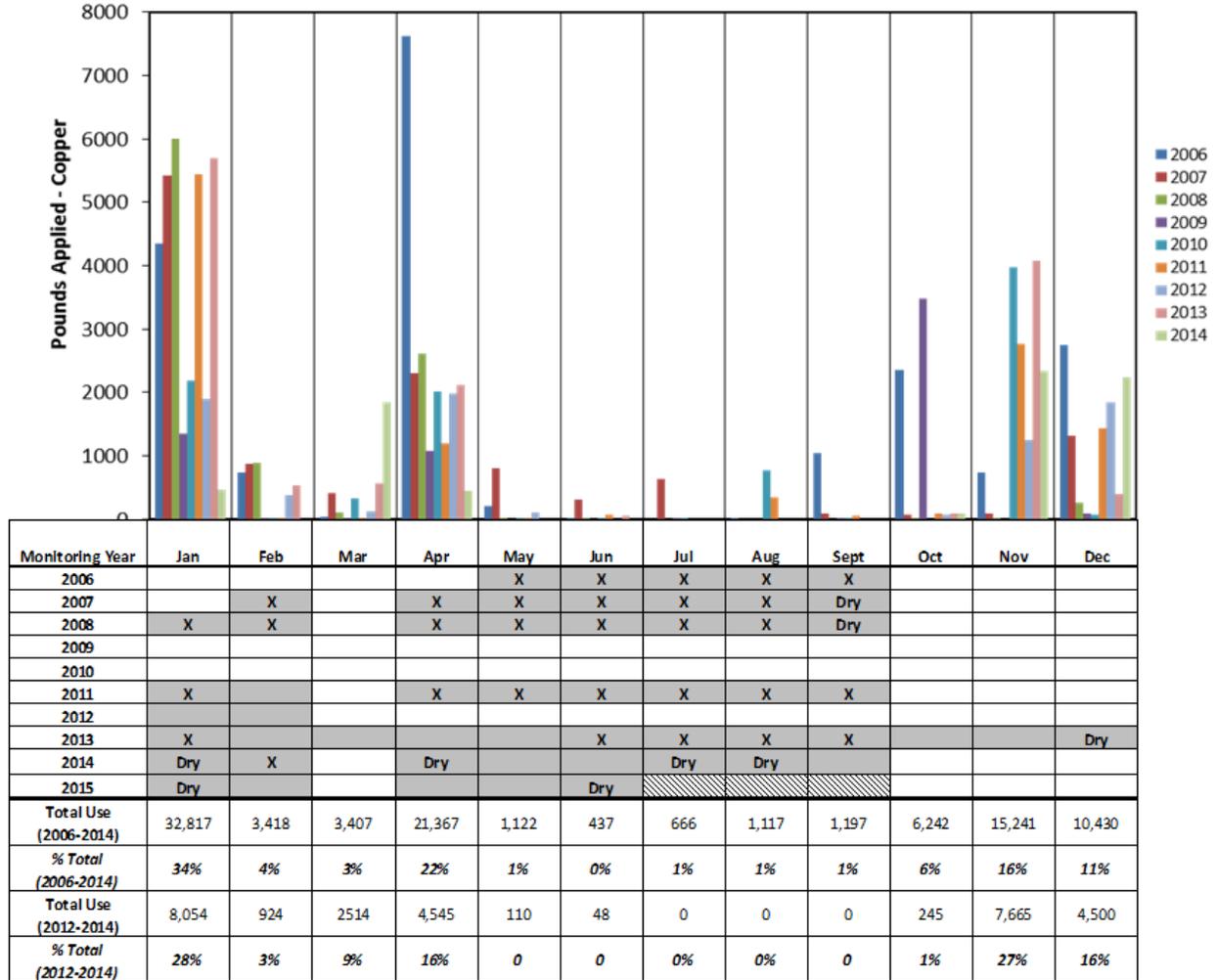
**Monitoring Decision #5 - No monitoring**

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

The Coalition monitored for a arsenic, boron, cadmium, selenium, nickel, molybdenum, and zinc at various times from 2006 through 2013; one exceedance of the WQTL for zinc occurred in 2006 (Table 16). The Coalition determined that no monitoring is necessary during the 2016 WY. Arsenic, boron, cadmium, selenium, nickel, molybdenum, and zinc are not applied by agriculture and are not impairing the water quality in the Coalition area.

**Figure 8. 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. The PUR data through December 2014.



**Table 16. Dry Creek @ Rd 18 site subwatershed dissolved and total metals monitoring results (2006-2015 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	1.7	11	NA	NA	NA	4.3	NA	0.36	NA	NA	0.6	NA	NA	4	NA
2006	Jun	6/13/2006	0.5	7	NA	NA	NA	6.3	NA	0.27	NA	NA	0.5	NA	NA	6	NA
2006	Jul	7/11/2006	0.9	8	NA	NA	NA	4.1	NA	0.26	NA	NA	0.5	NA	NA	3	NA
2006	Aug	8/8/2006	0.8	6	NA	NA	NA	4.6	NA	0.25	NA	NA	0.6	NA	NA	4	NA
2006	Sep	9/12/2006	0.6	9	NA	NA	NA	6.1	NA	0.31	NA	NA	0.6	NA	NA	18	NA
2007	Feb	2/11/2007	1.9	19	NA	0.05	NA	14	NA	0.7	NA	NA	1.6	NA	NA	10	NA
2007	Apr	4/24/2007	2.5	56	NA	0.03	NA	17	NA	0.2	NA	NA	2	NA	NA	17	NA
2007	May	5/29/2007	1.6	24	NA	NA	NA	4.7	NA	0.21	NA	NA	0.5	NA	NA	2	NA
2007	Jun	6/19/2007	NA	NA	NA	NA	NA	4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	Jun	6/26/2007	1.7	23	NA	NA	NA	3.6	NA	0.12	NA	NA	0.3	NA	NA	2	NA
2007	Jul	7/24/2007	1.4	19	NA	NA	NA	5.6	NA	0.22	NA	NA	0.3	NA	NA	2	NA
2007	Jul	7/31/2007	NA	NA	NA	NA	NA	4.5	NA	NA	NA	NA	NA	NA	NA	2	NA
2007	Aug	8/21/2007	1.4	17	NA	NA	NA	5.5	NA	0.34	NA	NA	0.46	NA	NA	3	NA
2007	Aug	8/28/2007	NA	NA	NA	NA	NA	4.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	Jan	1/25/2008	1.4	30	NA	NA	NA	20	NA	1.1	NA	NA	2.8	0.64	NA	15	NA
2008	Feb	2/25/2008	1.4	28	NA	0.02	NA	33	NA	0.35	NA	NA	2.7	0.5	NA	5	NA
2008	Apr	4/29/2008	1.8	31	NA	NA	NA	6.8	NA	0.2	NA	NA	0.5	0.14	NA	3	NA
2008	May	5/27/2008	1.8	36	NA	NA	NA	5	NA	0.2	NA	NA	0.4	0.25	NA	2	NA
2008	Jun	6/24/2008	1.5	19	NA	NA	NA	4	NA	0.12	NA	NA	0.3	0.56	NA	2	NA
2008	Jul	7/29/2008	1.3	14	NA	NA	NA	5.9	NA	0.15	NA	NA	0.3	NA	NA	3	NA
2008	Aug	8/26/2008	1.4	13	NA	NA	NA	5.1	NA	0.36	NA	NA	0.5	0.33	NA	8	NA
2008	Sep	9/30/2008	NA	NA	NA	NA	Dry	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA
2011	Jan	1/18/2011	NA	NA	NA	NA	12	15	NA	NA	NA	NA	NA	NA	NA	NA	NA
2011	Feb	2/17/2011	NA	NA	NA	NA	11	14	NA	NA	NA	NA	NA	NA	NA	NA	NA
2011	Apr	4/19/2011	NA	NA	NA	NA	3.9	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
2011	May	5/17/2011	NA	NA	NA	NA	2.9	4.8	0.05	0.17	NA	NA	NA	NA	NA	NA	NA
2011	Jun	6/21/2011	NA	NA	NA	NA	4.8	6.6	0.06	0.11	NA	NA	NA	NA	NA	NA	NA
2011	Jul	7/19/2011	NA	NA	NA	NA	4.3	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
2011	Aug	8/16/2011	NA	NA	NA	NA	5	7.4	NA	0.09	NA	NA	NA	NA	NA	NA	NA
2011	Sep	9/13/2011	NA	NA	NA	NA	4.6	7.1	0.03	0.08	NA	NA	NA	NA	NA	NA	NA
2012	Jan	1/10/2012	NA	NA	NA	NA	1.4	2.3	NA	NA	NA	NA	NA	NA	NA	NA	NA

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)
2012	Feb	2/7/2012	NA	NA	NA	NA	7.4	9.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
2013	Jan	1/8/2013	NA	51	NA	NA	11	14	NA	NA	NA	2	2.5	0.1	3.7	8.1	8
2013	Feb	2/12/2013	NA	24	NA	NA	8.6	11	NA	NA	NA	0.33	0.38	0.32	NA	1.8	4
2013	Feb	2/20/2013	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	NA	NA	NA	Dry	Dry	Dry
2013	Mar	3/12/2013	NA	31	NA	NA	8.1	14	NA	NA	NA	0.66	1.5	0.26	NA	5.4	32
2013	Apr	4/2/2013	2.7	21	NA	NA	9.8	13	0.04	0.23	1.7	0.92	1.1	0.24	0.6	3	2
2013	May	5/14/2013	NA	25	NA	NA	6.2	8.7	0.05	0.23	NA	0.8	1.1	0.21	1.3	1.6	6
2013	Jun	6/11/2013	NA	27	NA	NA	6.8	8.2	0.08	0.15	NA	0.37	0.2	NA	0.8	1.5	NA
2013	Jul	7/9/2013	1.8	25	NA	NA	3.7	5.1	0.04	0.09	1.4	0.23	0.22	NA	NA	NA	2
2013	Aug	8/13/2013	1.5	19	NA	NA	3	4.7	0.04	0.11	1.2	0.29	0.21	NA	1.2	1.1	NA
2013	Sep	9/10/2013	NA	18	NA	NA	2.3	4.9	0.04	0.28	NA	0.24	0.42	NA	0.7	2.1	NA
2013	Oct	10/15/2013	NA	NA	NA	NA	2.5	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
2013	Nov	11/12/2013	NA	NA	NA	NA	0.7	42	NA	NA	NA	NA	NA	NA	NA	NA	NA
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	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	Feb	2/10/2014	NA	NA	NA	NA	12	15	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	Apr	4/8/2014	NA	NA	NA	NA	Dry	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	May	5/13/2014	NA	NA	NA	NA	2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	Jun	6/10/2014	NA	NA	NA	NA	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	Jul	7/8/2014	NA	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	Aug	8/12/2014	NA	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA
2014	Sep	9/9/2014	NA	NA	NA	NA	6.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2015	Jan	1/13/2015	NA	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2015	Feb	2/10/2015	NA	NA	NA	NA	2.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2015	Apr	4/14/2015	NA	NA	NA	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2015	May	5/12/2015	NA	NA	NA	NA	4.5	NA	0.07	NA	NA	NA	NA	NA	NA	NA	NA
2015	Jun	6/9/2015	NA	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA

**Sample Count Summary**

Samples collected in 2006	5	5	0	0	0	5	0	5	0	0	5	5	0	5	0
Samples collected in 2007	6	6	0	2	0	9	0	6	0	0	6	0	0	7	0
Samples collected in 2008	7	7	0	1	0	7	0	7	0	0	7	6	0	7	0
Samples collected in 2011	0	0	0	0	8	8	3	4	0	0	0	0	0	0	
Samples collected in 2012	0	0	0	0	2	2	0	0	0	0	0	0	0	0	

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)
Samples collected in 2013			3	9	0	0	9	9	6	6	3	9	9	5	6	8	6
Samples collected in 2014 WY			0	0	0	0	6	3	0	0	0	0	0	0	0	0	0
Samples collected in 2015 WY <sup>1</sup>			0	0	0	0	5	0	2	0	0	0	0	0	0	0	0
<b>Exceedance Summary</b>																	
<b>Total Collected</b>			<b>21</b>	<b>27</b>	<b>0</b>	<b>3</b>	<b>30</b>	<b>43</b>	<b>11</b>	<b>28</b>	<b>3</b>	<b>9</b>	<b>27</b>	<b>16</b>	<b>6</b>	<b>27</b>	<b>6</b>
<b>Total Exceedances</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>21</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>% Exceedances</b>			<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>43%</b>	<b>49%</b>	<b>0%</b>	<b>18%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>17%</b>	<b>4%</b>	<b>0%</b>

<sup>1</sup>Data included through June 2015.

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## MONITORING AT REPRESENTED SITES

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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. For the 2016 WY, the Coalition reviewed Core site management plans and exceedances of the WQTLs for applied pesticides, applied metals, and toxicity through June 2015 based on the following criteria:

- An exceedance of an applied pesticide, applied metal, or toxicity occurred at the Core site in the same zone during the 2015 WY,
- 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.
- An exceedance of an applied pesticide, applied metal, or toxicity occurred at the Represented site during the 2015 WY.

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 9 depicts the Represented site monitoring strategy.

Table 18 lists the exceedances that occurred at Core and Represented sites during the 2015 WY through June 2015. Appendix I includes the 2016 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 (Appendix I).

Core site management plan constituents not applied by agriculture including ammonia, nitrate, *E. coli*, and metals (arsenic, lead, and molybdenum), are not easily sourced, and will not be evaluated for monitoring at Represented sites during the 2016 WY. The Coalition is in the process of developing workplans to determine the sources of these constituents and measured parameters (DO, pH, SC) that can't be easily sourced. The workplans will address these constituents for the whole Coalition region and will determine the necessity and frequency of monitoring at all sites.

**Table 17. ESJWQC Represented site locations by zone monitored in the 2016 WY.**

<b>ZONE</b>	<b>SITE TYPE</b>	<b>SITE NAME</b>	<b>STATION CODE</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
1	Represented	Mootz Drain Downstream of Langworth Pond	535XMDDL	37.70539	-120.89569
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 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	Prairie Flower Drain @ Crows Landing Rd	535XPFDC	37.44187	-121.00331
2	Represented	Unnamed Drain @ Hugin Rd	535XUDADR	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	Black Rascal Creek @ Yosemite Rd	535BRCAJR	37.33202	-120.39435
4	Represented	Howard Lateral @ Hwy 140	535XHLAHO	37.30790	-120.78200
4	Represented	Livingston Drain @ Robin Ave	535XLDARA	37.31693	-120.74229
4	Represented	Merced River @ Santa Fe	535XMRSFD	37.42705	-120.67353
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	Duck Slough @ Gurr Rd	535XDSAGR	37.21408	-120.56126
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	Cottonwood Creek @ Rd 20	545XCCART	36.86860	-120.18180

**Figure 9. ESJWQC flowchart for the Represented site monitoring strategy.**



**Table 18. 2015 WY exceedances of the WQTL for applied pesticides, metals, and toxicity.**

Data from October 2014 through June 2015 listed by zone, site type, and alphabetically by site. The WQTL is listed after each constituent.

ZONE	SITE NAME	SAMPLE DATE	2015 WY SITE TYPE	SAMPLE TYPE	COPPER (DISSOLVED), VARIABLE <sup>1</sup>	CHLORPYRIFOS, > 0.015 µg/L	DIMETHOATE, > 1µg/L	MALATHION, > 0 µg/L	C. DUBIA, %CONTROL	S. CAPRICORNUTUM, %CONTROL	H. AZTECA, % CONTROL
2	Prairie Flower Drain @ Crows Landing Rd	2/10/2015	Core	MPM, NM						75	
2	Prairie Flower Drain @ Crows Landing Rd	3/10/2015	Core	MPM, NM		4.200			0		0
2	Prairie Flower Drain @ Crows Landing Rd	4/14/2015	Core	NM		0.200			0		
2	Prairie Flower Drain @ Crows Landing Rd	5/12/2015	Core	NM		0.200			0	85	
2	Prairie Flower Drain @ Crows Landing Rd	6/9/2015	Core	NM		0.061			70	72	
2	Lateral 2 ½ near Keyes Rd	6/9/2015	Represented	NM						68	
2	Lateral 5 1/2 @ South Blaker Rd	10/14/2014	Represented	MPM						71	
2	Lateral 5 1/2 @ South Blaker Rd	3/10/2015	Represented	MPM, NM						8	
2	Lateral 6 and 7 @ Central Ave	12/3/2014	Represented	NM						56	
2	Lateral 6 and 7 @ Central Ave	1/13/2015	Represented	NM						2	
2	Lower Stevinson @ Faith Home Rd	6/9/2015	Represented	MPM						42	
2	Unnamed Drain @ Hogin Rd	3/10/2015	Represented	NM			8.4				
3	Highline Canal @ Hwy 99	1/13/2015	Core	MPM, NM, Non-contiguous		0.070					
3	Mustang Creek @ East Ave	12/3/2014	Represented	MPM, Non-contiguous	18.0 (6.44)						
4	Howard Lateral @ Hwy 140	2/10/2015	Represented	MPM, Non-contiguous	5.7 (1.57)						
4	Livingston Drain @ Robin Ave	12/3/2014	Represented	MPM	4.8 (2.07)						
5	Duck Slough @ Gurr Rd	3/10/2015	Core	MPM, NM				2.0	0		
5	Duck Slough @ Gurr Rd	6/9/2015	Core	MPM, NM, Non-contiguous					75	37	

<sup>1</sup> Metal WQTL variable depending on hardness; calculated WQTL is listed in parenthesis.

The rationale for monitoring at Represented sites is discussed below by zone, including MPM for constituents in a management plan. Figure 10 through Figure 39 include Pesticide Use Report (PUR) results and exceedances used to evaluate monitoring. Available PUR data are provided to the Coalition from each of the County Agricultural Commissioner’s offices. Products recorded in the database are evaluated for applications relevant to exceedances of WQTLs. PUR data used for this report are for applications through December 2014 and are considered preliminary until received from California Pesticide Information Portal (CalPIP); CalPIP data are available for pesticides applied through December 2012.

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**Zone 1 - Dry Creek @ Wellsford Rd**

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The management plan constituents for the Core site listed in Table 19 will be monitored monthly, with the exception of *H. azteca* sediment toxicity, which will be monitored in March and September. The Coalition petitioned to remove toxicity to *C. dubia* from the Core site management plan on June 5, 2014 and will petition to remove sediment toxicity to *H. azteca* in August 2015.

The Represented site in Zone 1 will be monitored based on an evaluation of exceedances that occurred at either the Core site (including Core site management plan constituents) or at the Represented site, as discussed below.

**Table 19. Zone 1 management plan constituents and 2015 WY exceedances.**

Core site is bolded. ‘X’ indicates one or more exceedances occurred during the 2015 WY and ‘M’ indicates a management plan for that constituent.

SITE NAME	DO	PH	E. COLI	AMMONIA	CHLORPYRIFOS	DIURON	C. DUBIA	H. AZTECA
<b>Dry Creek @ Wellsford Rd</b>	<b>X<sup>M</sup></b>	<b>M</b>	<b>X<sup>M</sup></b>		<b>M</b>		<b>M</b>	<b>M</b>
Mootz Drain downstream of Langworth Pond	X <sup>M</sup>	M	M	M	M	M		

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*Mootz Drain downstream of Langworth Pond*

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**Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Mootz Drain downstream of Langworth Pond for chlorpyrifos and diuron during the 2016 WY.

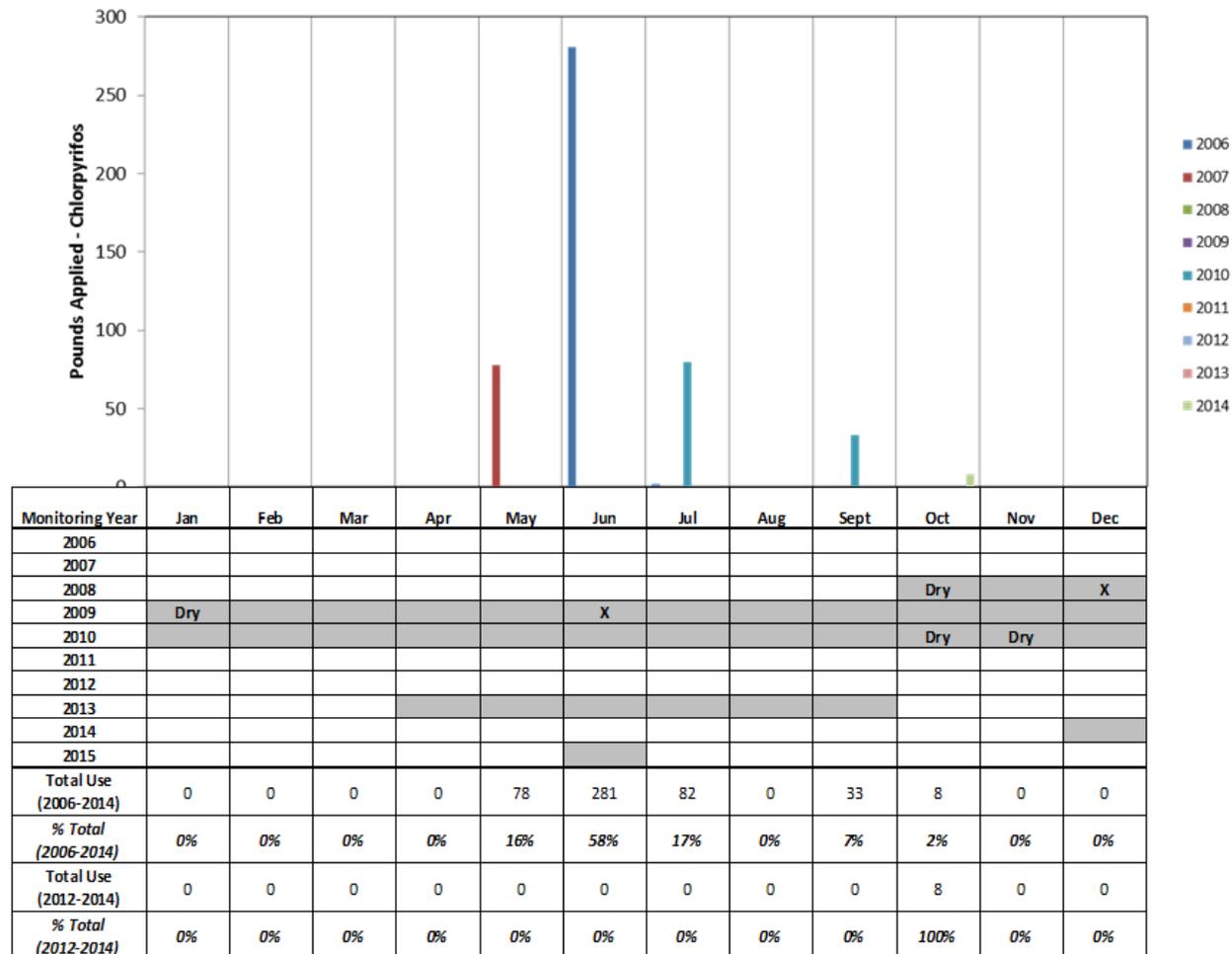
*Chlorpyrifos*

Management Plan Monitoring for chlorpyrifos will occur in December and June at Mootz Drain downstream of Langworth Pond in the 2016 WY, based on months of past exceedances. Past exceedances of the WQTL for chlorpyrifos occurred at Mootz Drain @ Langworth Rd in December 2008 and June 2009; however, no applications coincided with either exceedance. No applications have been reported in December and the last application in June occurred in 2006 (Figure 10). The PUR data from 2006 through December 2014 indicate the only applications in the last four years occurred in October

2014; however, the single application to 17 acres of walnuts on October 1, 2014 was minimal (8 lbs of Active Ingredient (AI)). The Coalition will petition to remove chlorpyrifos from the site’s management plan in August 2015, based on three years of monitoring with no exceedances and no significant use reported over the last four years.

**Figure 10. 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). The PUR data through December 2014.

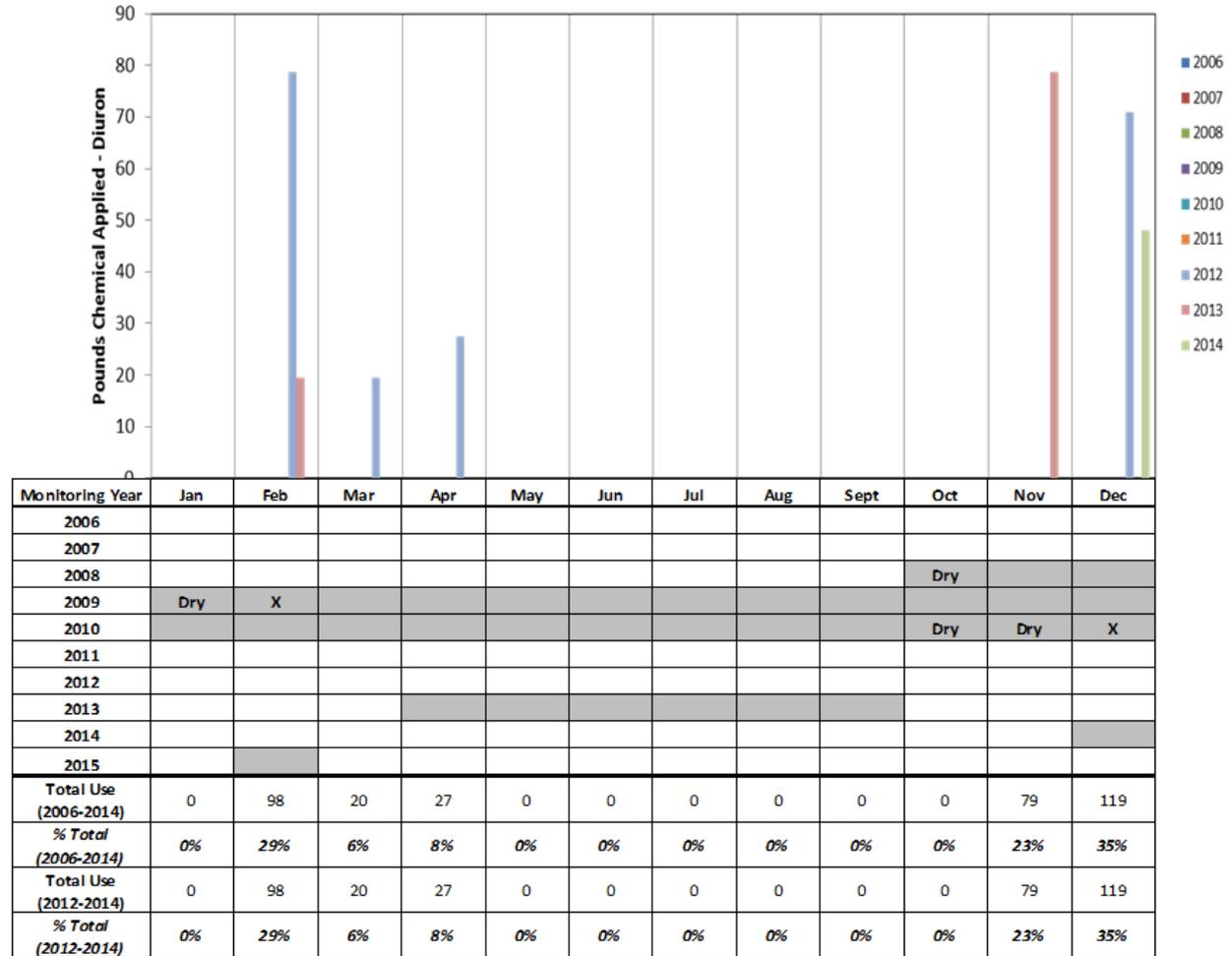


*Diuron*

Management Plan Monitoring for diuron will occur in December and February 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 December 2014; very few applications have occurred over the last three years, and all applications were less than 80 lbs AI. The highest amount applied occurred during February and December, coinciding with the months of past exceedances (Figure 11).

**Figure 11. 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). The PUR data through December 2014.



**Monitoring decision based on exceedances at the Core site**

The Coalition evaluated the Core site management plan constituents not in a management plan at Mootz Drain downstream of Langworth Pond: *C. dubia* toxicity and sediment toxicity to *H. azteca*.

*C. dubia* toxicity

The Coalition analyzed for *C. dubia* toxicity at Mootz Drain from 2009 through 2013; 29 samples were collected and no toxicity occurred. Therefore, *C. dubia* toxicity monitoring is not necessary during the 2016 WY.

*H. azteca* sediment toxicity

Sediment toxicity occurred in samples collected at Mootz Drain downstream of Langworth Pond in March 2014. The site is scheduled to be monitored for a third consecutive year for sediment toxicity to *H. azteca* in March and September 2016.

## Zone 2 – Lateral 5 ½ @ South Blaker Rd

Lateral 5 ½ @ South Blaker Rd is in a management plan for pH, SC, and *S. capricornutum* toxicity (Table 20). The management plan constituents for the Core site will be monitored monthly.

The Represented sites in Zone 2 will be monitored based on an evaluation of exceedances that occurred at either the Core site (including Core site management plan constituents) or at the Represented site, as discussed below.

**Table 20. Zone 2 management plan constituents and 2015 WY exceedances.**

Core site is bolded. 'X' indicates one or more exceedances occurred during the 2015 WY and 'M' indicates a management plan for that constituent.

SITE NAME	DO	pH	SC	E. COLI	AMMONIA	NITRATE + NITRITE	COPPER	MOLYBDENUM	CHLORPYRIFOS	DIURON	DIMETHOATE	C. DUBIA	P. PROMELAS	S. CAPRICORNUTUM	H. AZTECA
<b>Lateral 5 ½ @ South Blaker Rd</b>	X	X <sup>M</sup>	X <sup>M</sup>											X <sup>M</sup>	
Hatch Drain @ Tuolumne Rd	X <sup>M</sup>		X <sup>M</sup>	M		M								M	M
Hilmar Drain @ Central Ave	X <sup>M</sup>	M	X <sup>M</sup>	M	M	M	M			M				M	M
Lateral 2 ½ near Keyes Rd		X <sup>M</sup>	M						M					X <sup>M</sup>	
Lateral 6 and 7 @ Central Ave	M	X <sup>M</sup>	X <sup>M</sup>											X <sup>M</sup>	
Levee Drain @ Carpenter Rd	X <sup>M</sup>		X <sup>M</sup>	M	M	M						M		M	M
Lower Stevinson @ Faith Home Rd	X <sup>M</sup>	X <sup>M</sup>	X <sup>M</sup>											X <sup>M</sup>	
Prairie Flower Drain @ Crows Landing Rd	X <sup>M</sup>	M	X <sup>M</sup>	X <sup>M</sup>	X <sup>M</sup>	X <sup>M</sup>		X <sup>M</sup>	X <sup>M</sup>		M	X <sup>M</sup>	M	X <sup>M</sup>	X <sup>M</sup>
Unnamed Drain @ Hogan Rd	X <sup>M</sup>		X <sup>M</sup>								X				
Westport Drain @ Vivian Rd	X <sup>M</sup>	X	X <sup>M</sup>	M		M			M					M	

### *Hatch Drain @ Tuolumne Rd*

#### Monitoring decision based on exceedances at the Represented site

Management Plan Monitoring is scheduled at Hatch Drain @ Tuolumne Rd for toxicity to *S. capricornutum* and *H. azteca* sediment toxicity during the 2016 WY.

#### *S. capricornutum* toxicity

Samples collected from Hatch Drain @ Tuolumne Rd have been toxic to *S. capricornutum* seven times in January, February, April, May, July, and August 2008 and again in July 2014. The TIE conducted on the July 2014 sample indicated that ammonia was the cause of toxicity; however samples were not analyzed for ammonia concentrations during July 2014. The Coalition will conduct MPM for *S. capricornutum* toxicity in January, February, April, May, July, and August 2016.

### *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 2016.

### **Monitoring decision based on exceedances at the Core site**

Samples collected at Hatch Drain @ Tuolumne Rd were analyzed for toxicity to *C. dubia* from May through September 2007 and January through October 2008; 13 samples were collected and no toxicity occurred. The Coalition monitored for toxicity to *C. dubia* in July 2015 at Hatch Drain @ Tuolumne Rd based on high applications of organophosphates in July; preliminary results indicate the July sample was not toxic to *C. dubia*. The Coalition will monitor for a second consecutive year in July 2016.

The Coalition monitored for dimethoate at Hatch Drain @ Tuolumne Rd in June and July in the 2014 WY, February during a storm event, and in July in the 2015 WY; no exceedances occurred. The 2015 WY will conclude two consecutive years of required monitoring; if no exceedances occur, monitoring for dimethoate in the 2016 WY will not be necessary.

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### *Hilmar Drain @ Central Ave*

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### **Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Hilmar Drain @ Central Ave for copper, diuron, *S. capricornutum* toxicity, and *H. azteca* sediment toxicity.

### *Copper*

The Coalition will conduct MPM for copper during February and March for the 2016 WY. The PUR data indicate that copper use has been declining since 2010; in 2014, the only applications occurred during February and March (Figure 12). The Coalition will petition to remove copper from the site's management plan in August 2015. July 2016 is not included in the MPM schedule; copper is not applied in the site subwatershed from May through December, and therefore no applications of copper coincided with the July 2006 exceedance. July 2015 will be the end of three years of monitoring with no exceedances of the WQTL.

### *Diuron*

The Coalition will conduct MPM for diuron during months of past exceedances in April and June, for the 2016 WY. The Coalition reviewed PUR data from 2006 through 2014 and determined no additional MPM is necessary; diuron applications have not occurred since 2011 (Figure 13). The Coalition will petition to remove diuron from the site's management plan in August 2015 due to over three years of monitoring with no exceedances of the WQTL.

### *S. capricornutum* toxicity

*Selenastrum capricornutum* toxicity occurred in samples collected from the Hilmar Drain @ Central Ave in July 2006, April 2007, April 2008, and September 2008. A single toxicity coincided with an exceedance

of the hardness based WQTL of copper in samples collected in July 2007. Additionally, toxicity coincided with two exceedances of the WQTL for diuron on April 17, 2007 and April 29, 2009. The TIEs conducted on the July 2007 and April 2008 samples lost all toxicity and therefore were inconclusive. Management Plan Monitoring for *S. capricornutum* toxicity will continue in April, July, and September for the 2016 WY; diuron will also be tested during MPM in April. Since the last toxicity in September 2008, the Coalition has monitored Hilmar Drain @ Central Ave nine times with no toxicity to *S. capricornutum*; therefore, the Coalition will petition to remove *S. capricornutum* toxicity from the site's management plan in August 2015.

#### *H. azteca* sediment toxicity

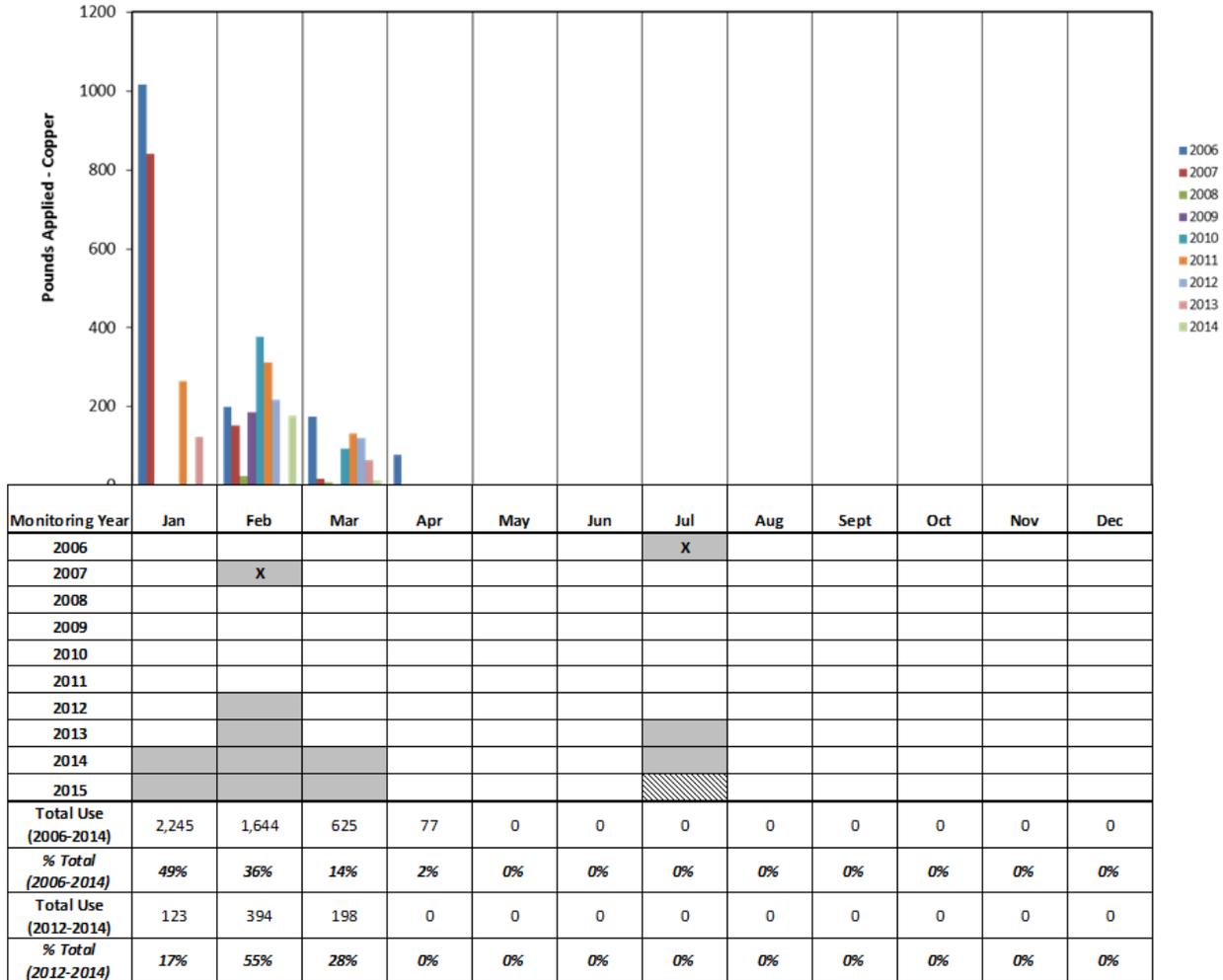
Sediment toxicity monitoring is conducted twice a year – once during the storm season and once during the irrigation season. The Coalition will conduct MPM for *H. azteca* sediment toxicity in March and September.

#### **Monitoring decision based on exceedances at the Core site**

The Coalition monitored for dimethoate at Hilmar Drain @ Central Ave in July and August in the 2014 WY, and will be monitored in July and August of the 2015 WY. No exceedances occurred in the 2014 WY. The 2015 WY will conclude two consecutive years of required monitoring; if no exceedances occur, monitoring for dimethoate in the 2016 WY will not be necessary.

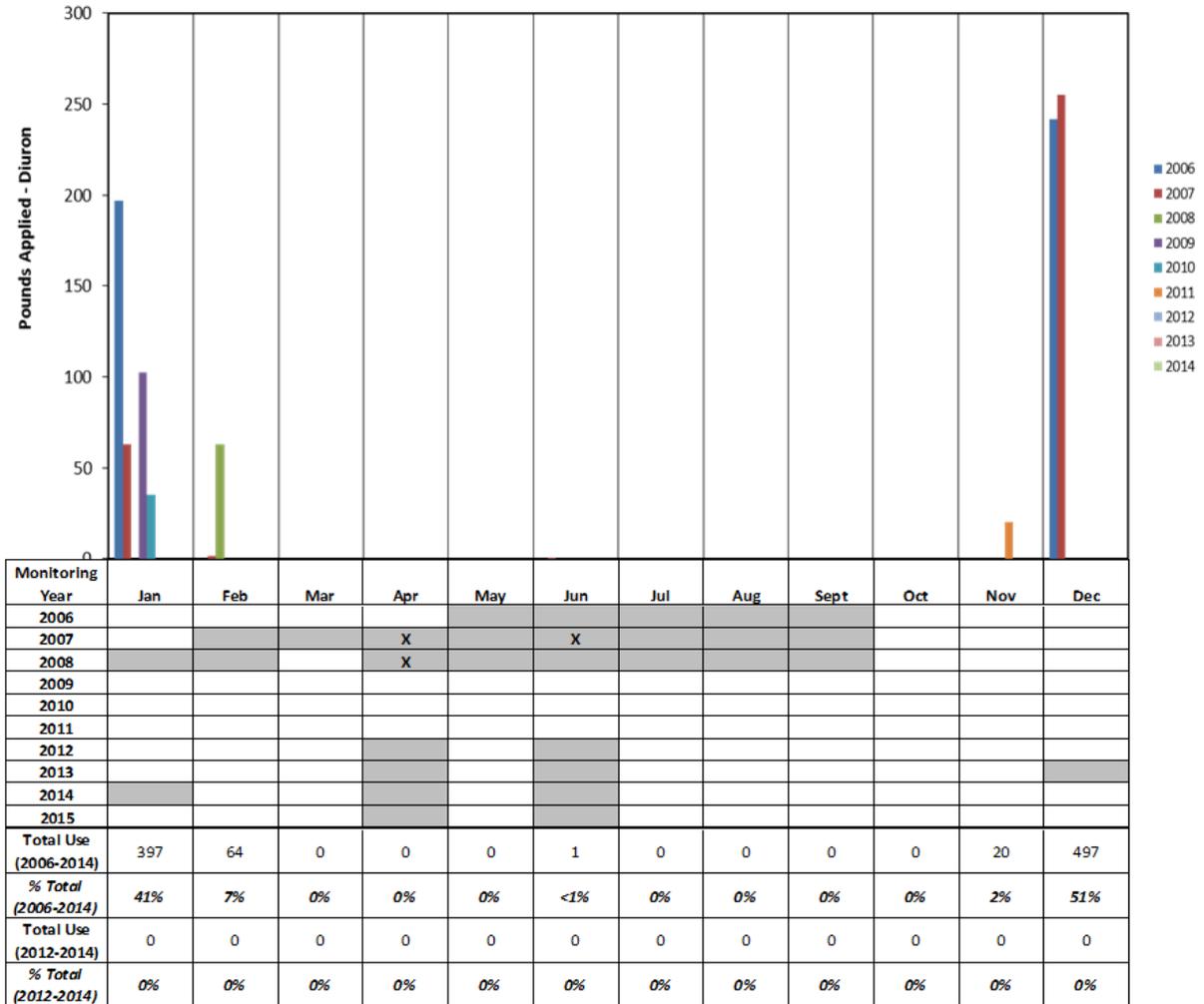
**Figure 12. Hilmar Drain @ Central Ave 2006-2014 copper use and monitoring.**

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



**Figure 13. Hilmar Drain @ Central Ave 2006-2014 diuron use and monitoring.**

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. The PUR data through December 2014.



**Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring for chlorpyrifos and *S. capricornutum* toxicity is scheduled at Lateral 2 ½ near Keyes Rd during the 2016 WY.

*Chlorpyrifos*

The Coalition will conduct MPM for chlorpyrifos during months of past exceedances in April and July, for the 2016 WY. In addition, the Coalition added May, June, and August to the MPM schedule in order to characterize the water quality in the site subwatershed during months of highest chlorpyrifos use (Figure 14).

*S. capricornutum* toxicity

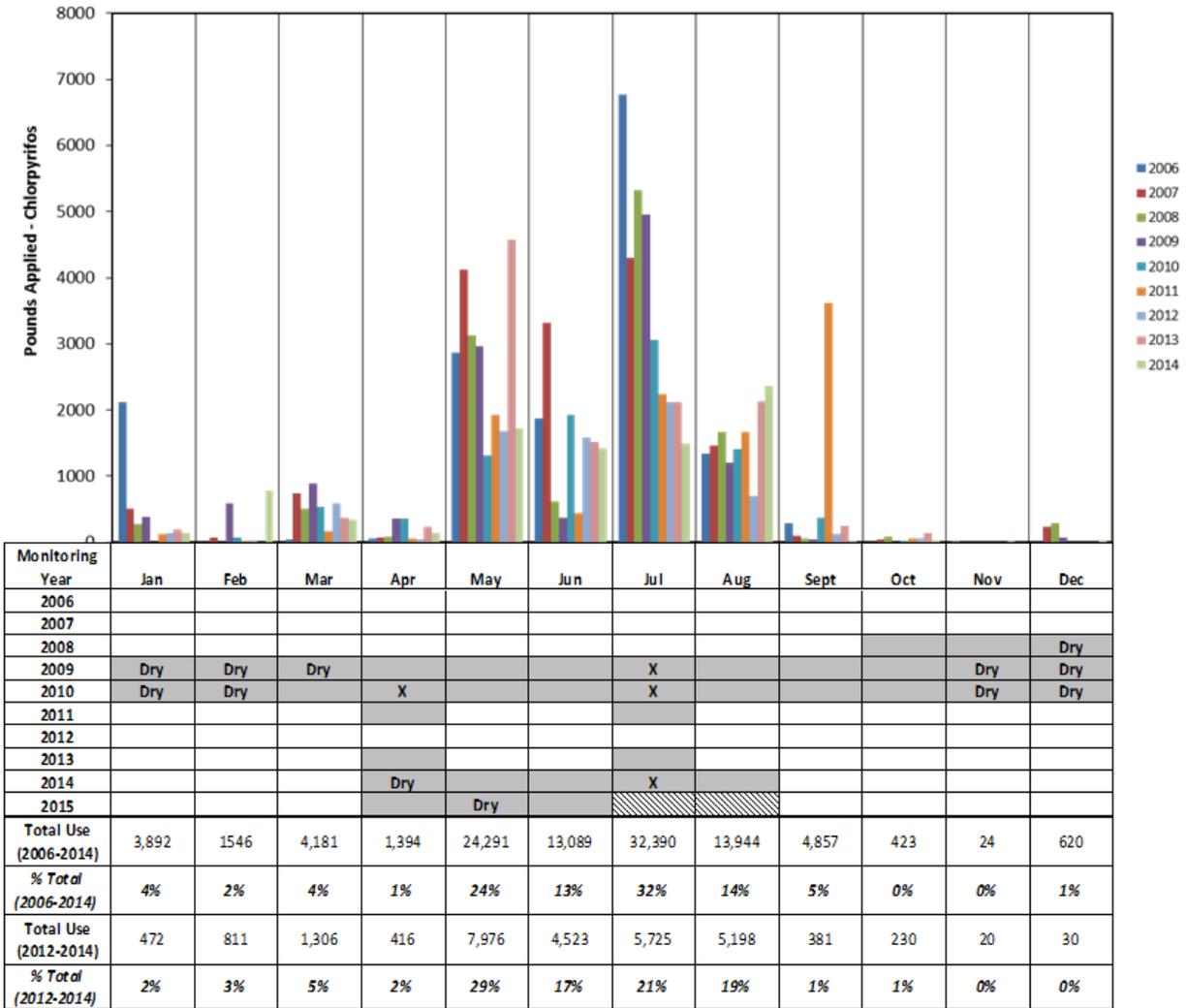
The Coalition collected samples to test for *S. capricornutum* toxicity from 2008 through 2010, and during the 2014 WY and 2015 WY in February and May through July. Samples were toxic in May 2009 (56% growth compared to the control), June 2015 (68% growth compared to the control), and preliminary laboratory reports indicate toxicity occurred in July 2015 (66% growth compared to the control). Toxic samples collected in June 2015 resulted in a management plan for *S. capricornutum* at Lateral 2 ½ near Keyes Rd. Starting in the 2016 WY, MPM will occur in May through August.

**Monitoring decision based on exceedances at the Core site**

The Coalition monitored for *H. azteca* sediment toxicity for two consecutive years in the 2014 WY and 2015 WY, and toxicity did not occur. If samples collected in September 2015 are not toxic, no monitoring is necessary during the 2016 WY.

**Figure 14. 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. The PUR data through December 2014.



### **Monitoring decision based on exceedances at the Represented site**

Samples were collected and analyzed for toxicity to *S. capricornutum* at Lateral 6 and 7 @ Central Ave during the 2014 WY and 2015 WY. Samples collected in December 2013, December 2014, and January 2015 were toxic to *S. capricornutum*, resulting in a management plan at Lateral 6 and 7 @ Central Ave. The TIE conducted on the December 2013 sample indicates that toxicity was not persistent and the TIE for the January 2015 sample could not determine the cause of toxicity. Lateral 6 and 7 @ Central Ave was monitored for diuron in December through March in the 2015 WY and results were non-detect.

Monitoring will continue for toxicity to *S. capricornutum* once focused outreach is initiated in the site subwatershed, as described in the Management Plan Monitoring section.

### **Monitoring decision based on exceedances at the Core site**

#### *Dimethoate*

The Coalition monitored for dimethoate at Lateral 6 and 7 @ Central Ave in June through August in the 2014 WY and in February and June in the 2015 WY (monitoring is scheduled for July and August 2015); no exceedances occurred. If samples collected in July and August 2015 and analyzed for dimethoate do not exceed the WQTL, no monitoring will be necessary during the 2016 WY.

#### *Diuron*

The Coalition monitored for diuron at Lateral 6 and 7 @ Central Ave from December through March in the 2015 WY; no exceedances occurred. The Coalition will monitor for diuron at Lateral 6 and 7 @ Central Ave for a second year during the 2016 WY from December through May, due to algae toxicity occurring during the winter months at the site, in December and January, and applications occurring over the last three years (Figure 15).

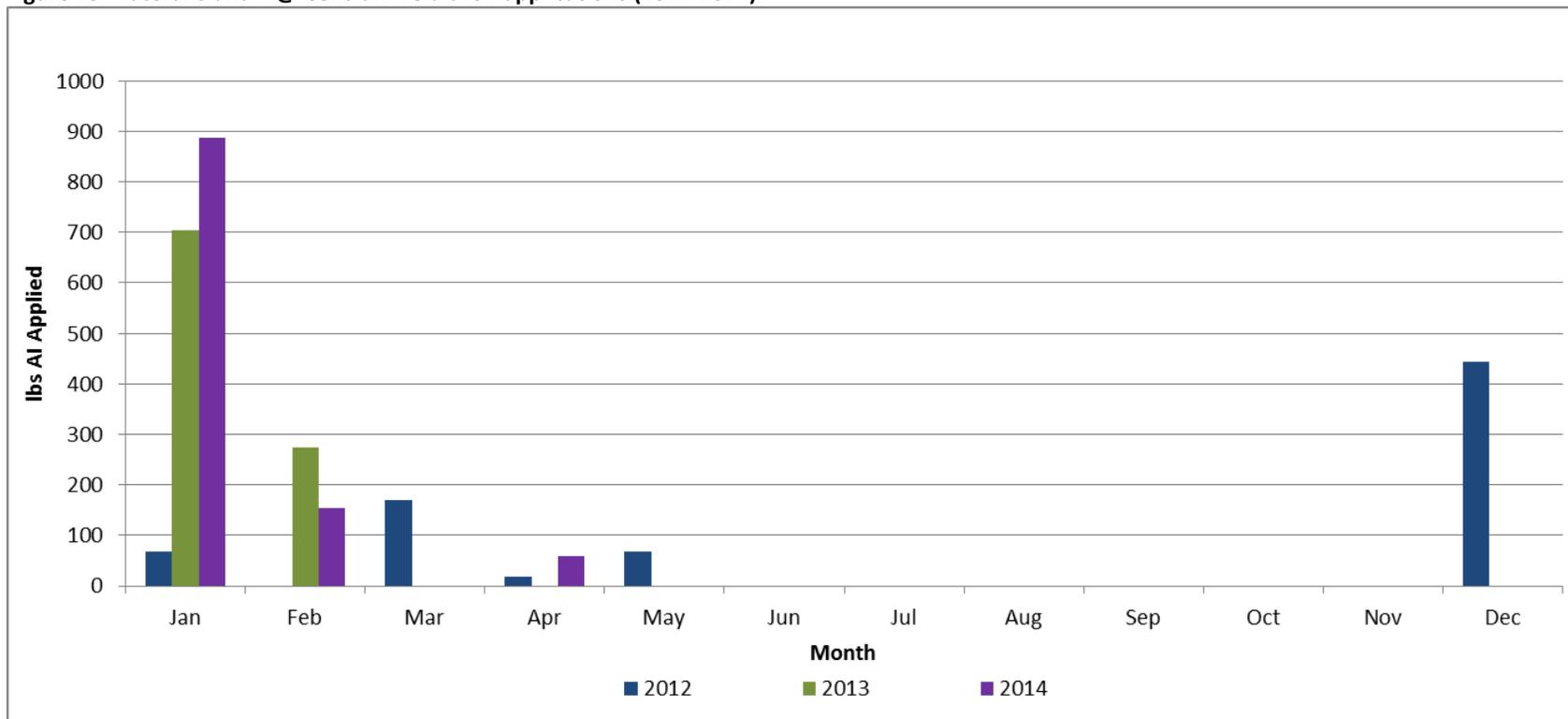
#### *Water column toxicity*

The Coalition monitored for *C. dubia* and *P. promelas* toxicity for two consecutive years in the 2014 WY and 2015 WY; samples collected through April 2015 were not toxic. If samples collected in July and August 2015 are not toxic, no monitoring will be necessary for *C. dubia* and *P. promelas* toxicity during the 2016 WY.

#### *H. azteca sediment toxicity*

Samples were collected and analyzed for sediment toxicity to *H. azteca* in the 2014 WY and 2015 WY; one sample was toxic in September 2014. The Coalition will monitor for a third consecutive year during March and September of the 2016 WY.

Figure 15. Lateral 6 and 7 @ Central Ave diuron applications (2012-2014).



### **Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Levee Drain @ Carpenter Rd during the 2016 WY for toxicity to *C. dubia*, *S. capricornutum*, and *H. azteca* sediment toxicity.

#### *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 2016 WY.

#### *S. capricornutum* toxicity

Levee Drain @ Carpenter Rd was monitored for toxicity to *S. capricornutum* from January 2012 through June 2013, February, June, and July 2014, and during MPM in December, February, and June in the 2015 WY. Samples collected in February 2013 and in December and June of the 2014 WY were toxic to algae. The TIE conducted on the February 2013 sample (0% growth compared to the control) indicated that the sample lost all toxicity prior to the evaluation. The TIE conducted on the June 2014 sample (37% growth compared to the control) indicated that non-polar organics were the cause of toxicity; however, samples were not collected for chemistry analysis (applications of diuron have not occurred at the site in June). The Coalition will conduct MPM for toxicity to *S. capricornutum* in December, February, and June based on past toxicity.

#### *H. azteca* sediment toxicity

Sediment toxicity occurred at Levee Drain @ Carpenter Rd in March 2012 and March 2014; therefore the Coalition will conduct MPM for sediment toxicity in March during the 2016 WY.

### **Monitoring decision based on exceedances at the Core site**

#### *Dimethoate*

The Coalition monitored for dimethoate in July 2014 at Levee Drain @ Carpenter Rd, based on an evaluation of PUR data; the sample did not exceed the WQTL. Dimethoate is scheduled to be monitored in July 2015 for a second consecutive year. If the July 2015 sample does not exceed the WQTL for dimethoate, no monitoring is necessary during the 2016 WY.

#### *P. promelas* toxicity

The Coalition monitored for *P. promelas* toxicity in February and July in the 2014 WY, and February in the 2015 WY (monitoring is scheduled for July and August 2015). If samples collected in July and August 2015 are not toxic, no monitoring will be necessary for *P. promelas* toxicity during the 2016 WY.

### **Monitoring decision based on exceedances at the Represented site**

Samples were collected and analyzed for *S. capricornutum* toxicity in the 2014 WY and 2015 WY. Samples collected in December, April, and June of the 2014 WY were toxic to *S. capricornutum*, resulting in a management plan at Lower Stevinson @ Faith Home Rd. The TIE conducted on the December 2013 sample indicate the source of toxicity was not persistent and the TIE conducted on the June 2014 sample indicate that non-polar organics and cationic metals were the source of toxicity, with non-polar organics contributing more to toxicity over cationic metals. However, samples were not collected for chemistry analysis in June 2014.

Monitoring will continue for toxicity to *S. capricornutum* once focused outreach is initiated in the site subwatershed, as described in the Management Plan Monitoring section.

### **Monitoring decision based on exceedances at the Core site**

#### *Dimethoate*

The Coalition monitored for dimethoate at Lower Stevinson @ Faith Home Rd from June through August 2014 and in February and June 2015 (monitoring is scheduled for July and August 2015); all results were non-detect. If samples collected in July and August 2015 do not result in an exceedance of the WQTL for dimethoate, no monitoring will be necessary during the 2016 WY.

#### *Diuron*

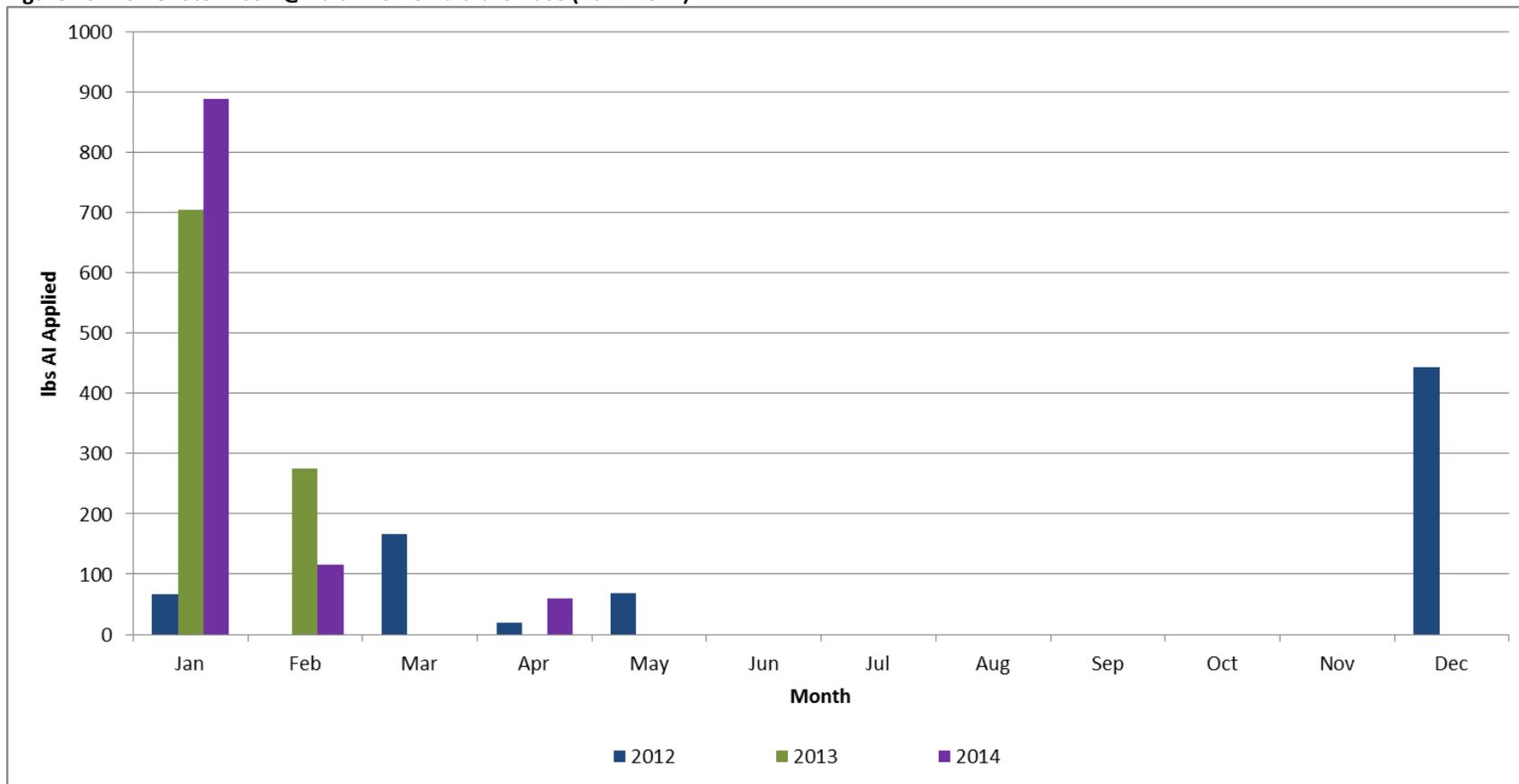
The Coalition will monitor for diuron at Lower Stevinson @ Faith Home Rd for a second consecutive year in the 2016 WY. The Coalition will monitor from December through May; due to algae toxicity occurring during the winter months at the site, the Coalition will include all months diuron applications occurred over the last three years (Figure 16).

The Coalition monitored for *C. dubia* and *P. promelas* toxicity for two consecutive years; samples collected through April were not toxic. If samples collected in July and August 2015 are not toxic, no monitoring will be necessary for *C. dubia* and *P. promelas* toxicity during the 2016 WY.

#### *H. azteca sediment toxicity*

The Coalition monitored for *H. azteca* sediment toxicity for two consecutive years, and toxicity did not occur. If samples collected in September 2015 are not toxic, no monitoring is necessary during the 2016 WY.

Figure 16. Lower Stevinson @ Faith Home Rd diuron use (2012-2014).



## *Prairie Flower Drain @ Crows Landing Rd*

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### **Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Prairie Flower Drain @ Crows Landing Rd for the 2016 WY for chlorpyrifos, dimethoate, toxicity to *C. dubia*, *S. capricornutum*, and *H. azteca* sediment toxicity.

#### *Chlorpyrifos*

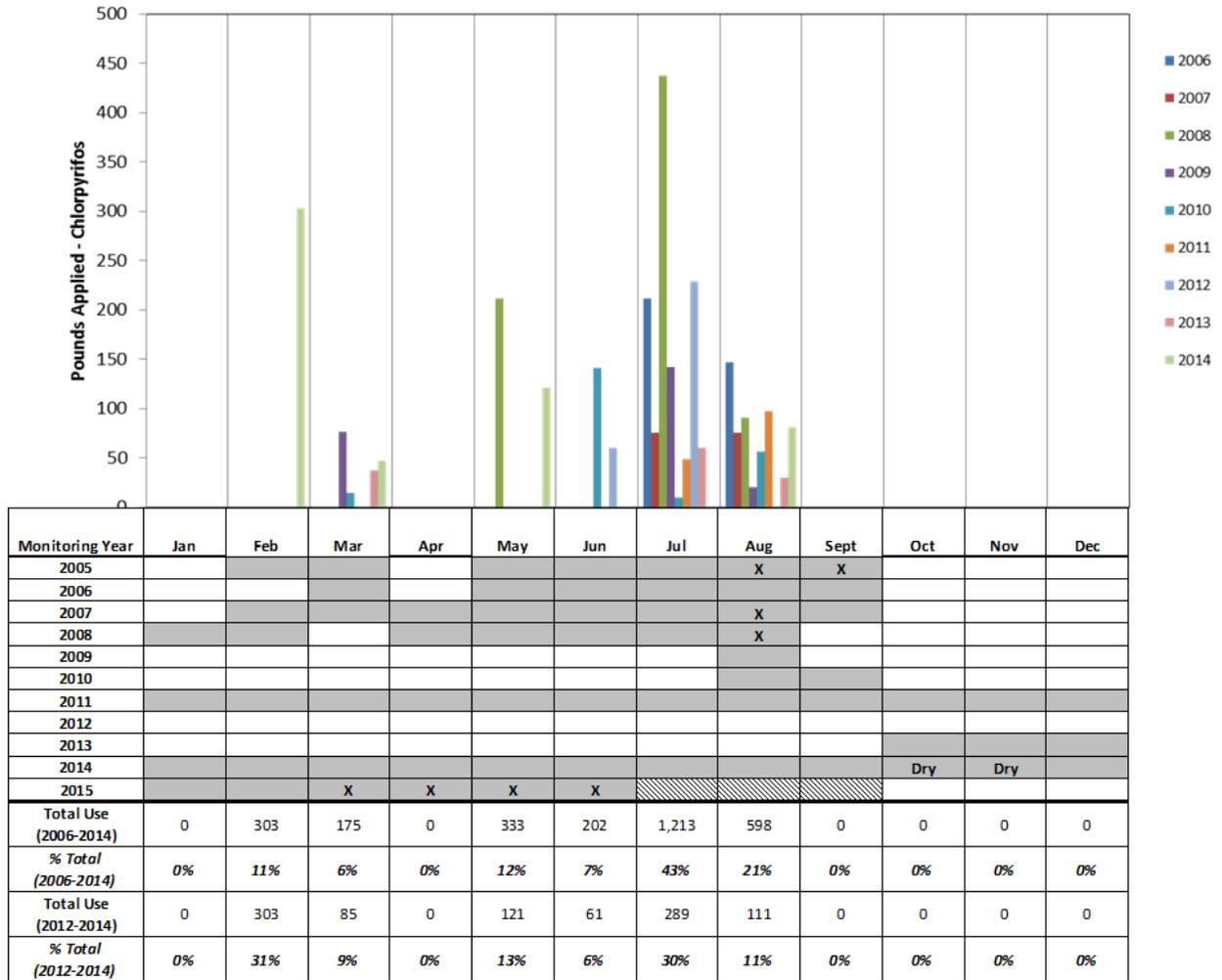
Prairie Flower Drain @ Crows Landing Rd was the Core site during the 2014 WY and 2015 WY and chlorpyrifos was monitored monthly. Samples collected in March through June 2015 exceeded the WQTL for chlorpyrifos; therefore the management plan will be reinstated for Prairie Flower Drain in the 2016 WY. Management Plan Monitoring is scheduled during months of high use and months of past exceedances; the Coalition will monitor for chlorpyrifos in February through September 2016 (Figure 17).

#### *Dimethoate*

Prairie Flower Drain @ Crows Landing Rd was the Core site during the 2014 WY and 2015 WY and dimethoate was monitored monthly; no exceedances occurred. The Coalition will continue to conduct MPM for dimethoate during the 2016 WY in January and February due to an increase in use and in July, August, and September due to past exceedances (Figure 18).

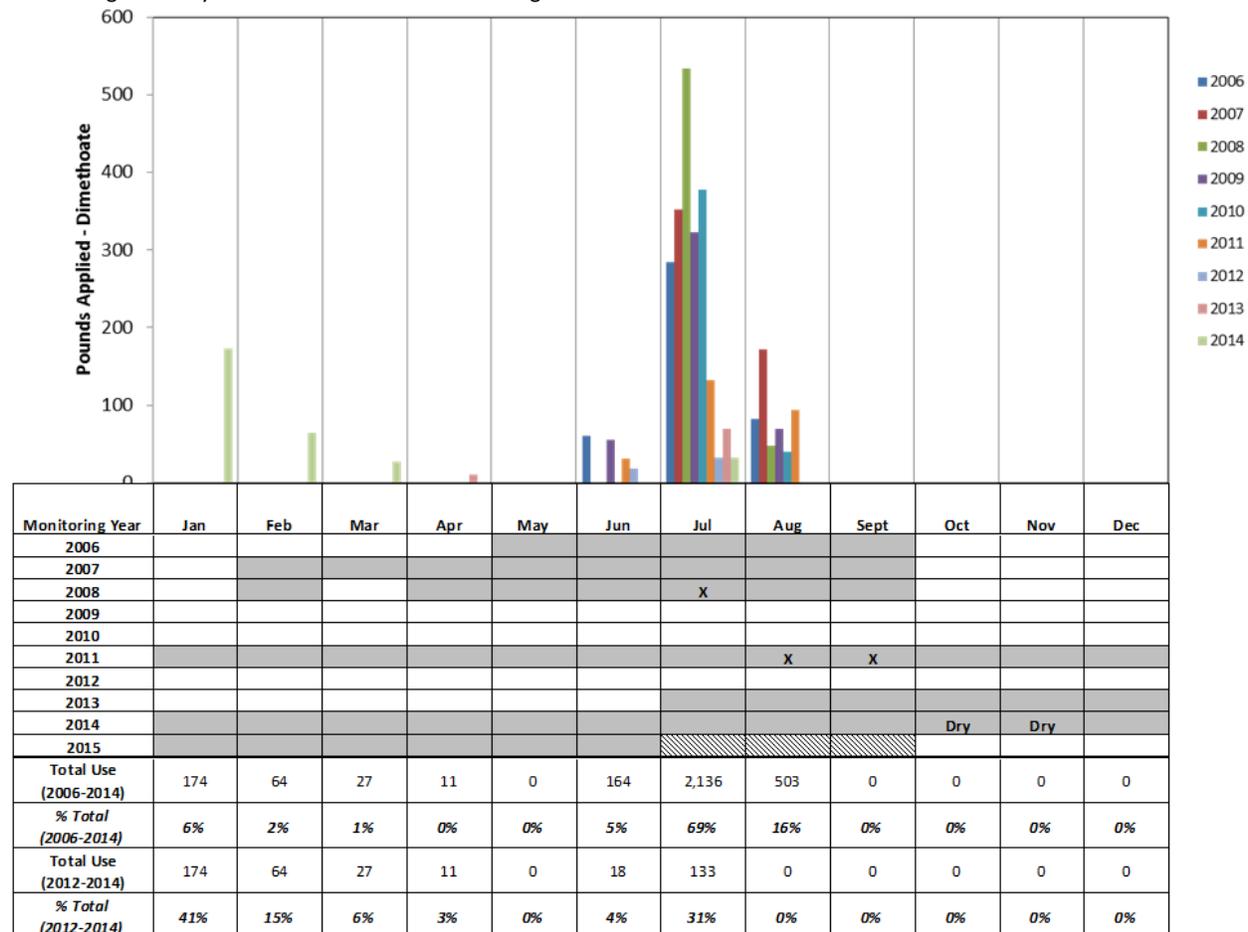
**Figure 17. Prairie Flower Drain @ Crows Landing Rd 2006-2014 chlorpyrifos use and monitoring.**

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



**Figure 18. Prairie Flower Drain @ Crows Landing Rd 2006-2014 dimethoate 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. The PUR data through December 2014.



*Molybdenum*

The Coalition monitored for total molybdenum in 2011, 2013, and monthly during the 2014 WY and 2015 WY (through June) and exceedances continued to occur. As described in the revised Management Plan (submitted May, 1 2015, revised March 10, 2015), the Coalition plans to submit a workplan 120 days after the Management Plan has been approved to address the sourcing and management of molybdenum. Since there are no registered products containing molybdenum currently in use in the Coalition area, and until a workplan is developed to determine the source of the exceedances, the Coalition will not monitor for molybdenum during the 2016 WY.

*C. dubia toxicity*

There have been eight samples collected from Prairie Flower Drain @ Crows Landing Rd that were toxic to *C. dubia*. Four of those samples were collected during the 2015 WY and were a result of high concentrations of chlorpyrifos in the waterbody (0.061-4.2 µg/L). The Coalition will continue to conduct MPM during the months of past toxicity, in March through June, August, and September 2016; MPM for

chlorpyrifos is also scheduled during these months. If samples continue to be toxic to *C. dubia* for the remaining months in the 2015 WY, the Coalition will add those months to the MPM schedule.

#### *P. promelas* toxicity

There have been two samples collected at the site that were toxic to *P. promelas*, in July 2006 and April 2011; both samples coincided with exceedances of the WQTL for ammonia. The Coalition will continue to conduct MPM for *P. promelas* toxicity in April and July during the 2016 WY. Toxicity to *P. promelas* has not occurred at the site since 2011; therefore, the Coalition will petition to remove it from the site's management plan in August 2015.

#### *S. capricornutum* toxicity

Samples were collected and tested for *S. capricornutum* toxicity monthly during the 2014 WY and 2015 WY (through June). Toxicity occurred in October and December 2013, March 2014, and February 2015. The TIEs conducted on the toxic samples could not determine the cause; however, exceedances of the WQTLs for ammonia, nitrate, and diuron occurred during months toxicity was present. The Coalition will continue to conduct MPM for *S. capricornutum* toxicity in October, and December through June during the 2016 WY.

#### *H. azteca* sediment toxicity

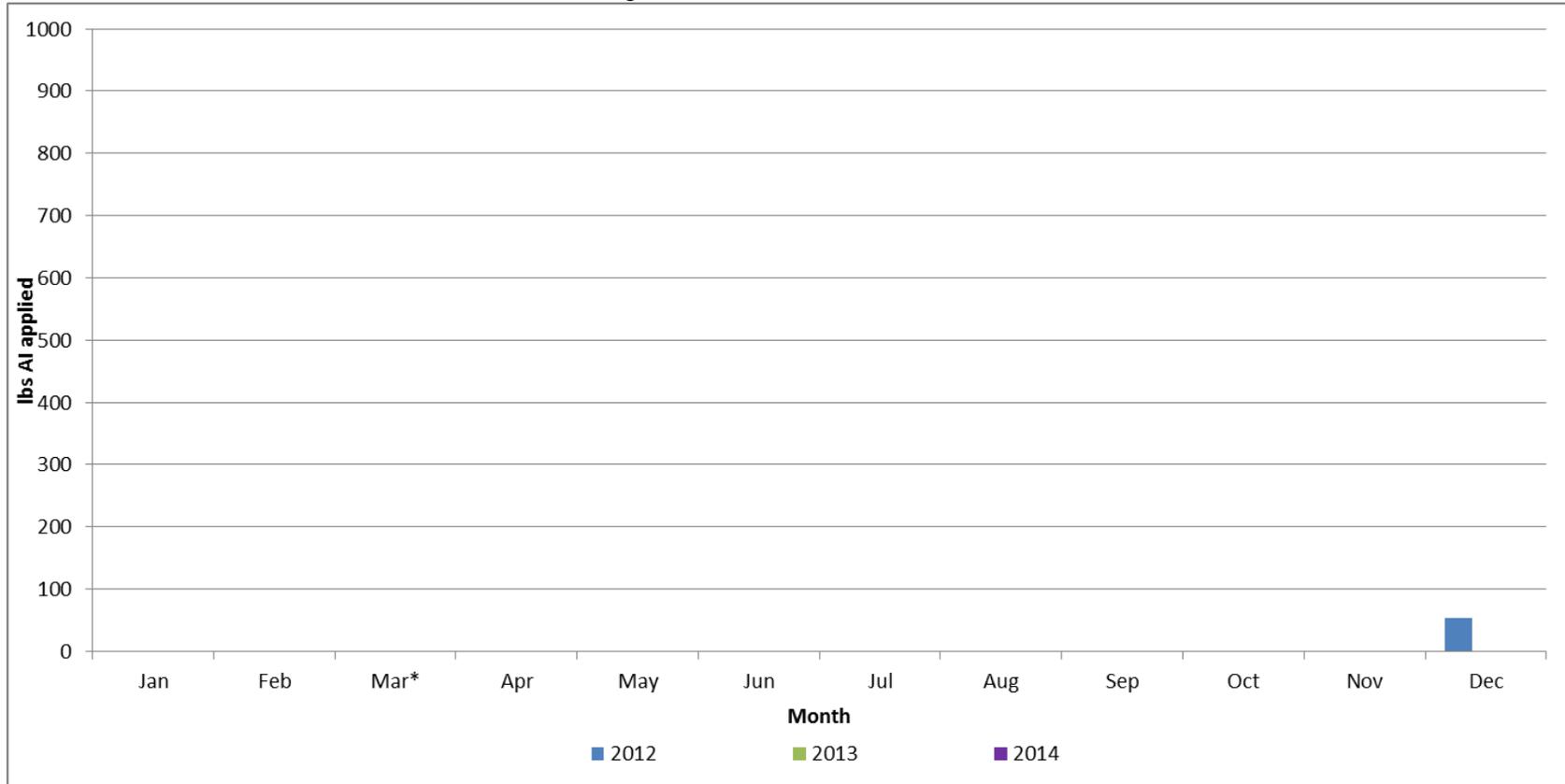
Sediment toxicity monitoring is conducted twice a year – once during the storm season and once during the irrigation season. The Coalition will continue to conduct MPM in March and September 2016 for *H. azteca* sediment toxicity.

#### **Monitoring decision based on exceedances at the Core site**

A single exceedance of the WQTL for diuron occurred at Prairie Flower Drain @ Crows Landing Rd in March 2014. Prairie Flower Drain has been monitored for diuron from 2006 through 2008, monthly in 2011, and monthly during the 2014 WY and 2015 WY (through June); 51 samples were collected, 41 were non-detect, and only one exceedance occurred. According to the PUR data, applications of diuron have not occurred in the site subwatershed since December 2012 (Figure 19). During the 2016 WY, diuron will be monitored in March at Prairie Flower Drain @ Crows Landing Rd for a third consecutive year.

**Figure 19. Prairie Flower Drain @ Crows Landing Rd diuron use (2012-2014).**

Asterisk indicates when the exceedance of the WQTL occurred during the 2014 WY.



**Monitoring decision based on exceedances at the Represented site**

Unnamed Drain @ Hogin Rd is in a management plan for the field parameters DO and SC only. No MPM is scheduled for the 2016 WY.

The Coalition monitored for dimethoate during the 2014 WY in July and August and in March for the 2015 WY. One exceedance of the WQTL occurred in March 2015; therefore, the Coalition will monitor for a third consecutive year. Figure 20 indicates the highest month of dimethoate use is in March over the last three years; the Coalition will monitor for dimethoate in March for the 2016 WY.

**Monitoring decision based on exceedances at the Core site**

*Diuron*

The Coalition monitored for diuron in February 2015 at Unnamed Drain @ Hogin Rd and concentrations did not exceed the WQTL. The Coalition will monitor for diuron for a second consecutive year in February during the 2016 WY; the last application of diuron occurred in February 2011.

*Water column toxicity*

The Coalition monitored for *C. dubia* in July and August 2014 and *P. promelas* toxicity in August 2014; samples were not toxic to either species. Monitoring is scheduled for a second year for *C. dubia* and *P. promelas* toxicity in July and August 2015. If samples collected in July and August are not toxic, no monitoring will be necessary for *C. dubia* and *P. promelas* toxicity during the 2016 WY.

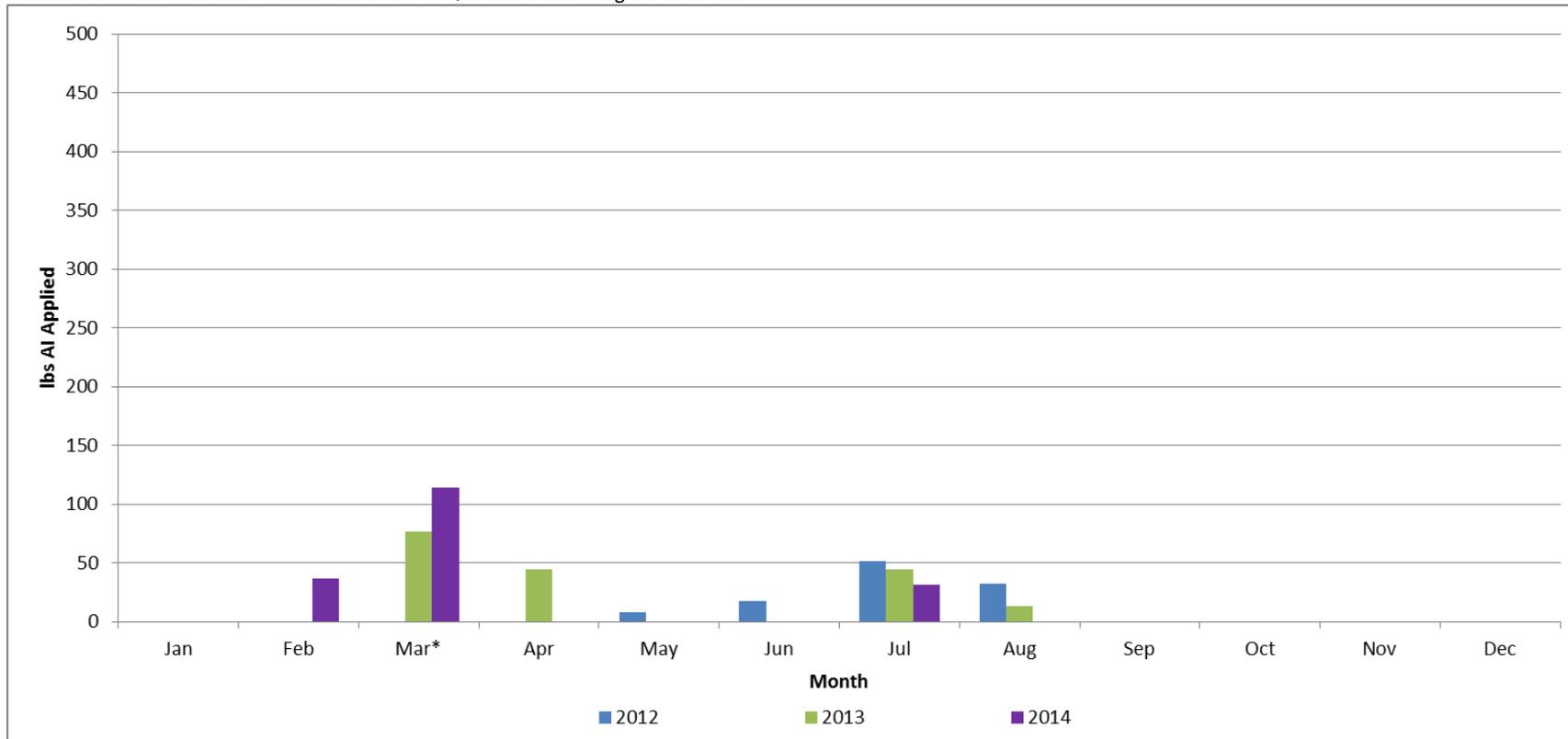
During the 2014 and 2015 WY, samples were collected and analyzed for toxicity to *S. capricornutum* at Unnamed Drain @ Hogin Rd during the months of highest use of herbicides and metals that are known to cause toxicity; all samples were not toxic to *S. capricornutum*. Samples will be collected and tested for *S. capricornutum* toxicity in July 2015; if samples are not toxic, July will complete two years of monitoring required with no toxicity. Therefore, *S. capricornutum* toxicity monitoring is not scheduled for the 2016 WY.

*H. azteca sediment toxicity*

The Coalition monitored for *H. azteca* sediment toxicity for two consecutive years, and no toxicity occurred. If samples collected in September 2015 are not toxic to *H. azteca*, no monitoring will be necessary during the 2016 WY.

**Figure 20. Unnamed Drain @ Hogin Rd dimethoate applications (2012-2014).**

Asterisk indicates when the exceedance of the WQTL occurred during the 2015 WY.



**Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Westport Drain @ Vivian Rd for chlorpyrifos and *S. capricornutum* toxicity during the 2016 WY.

*Chlorpyrifos*

Management Plan Monitoring for chlorpyrifos will occur in July and August based on exceedances of the WQTL that occurred in July 2007 and 2008, and due to consistent applications in August. According to current PUR data, applications of chlorpyrifos occurred in January 2014 for the first time since 2006; all applications, with the exception of two, were applied by dairy parcels to alfalfa and corn for fodder (Figure 21). Since the Coalition only monitored in January during 2008 and the 2015 WY, January will be added to the MPM schedule for the 2016 WY.

*S. capricornutum* toxicity

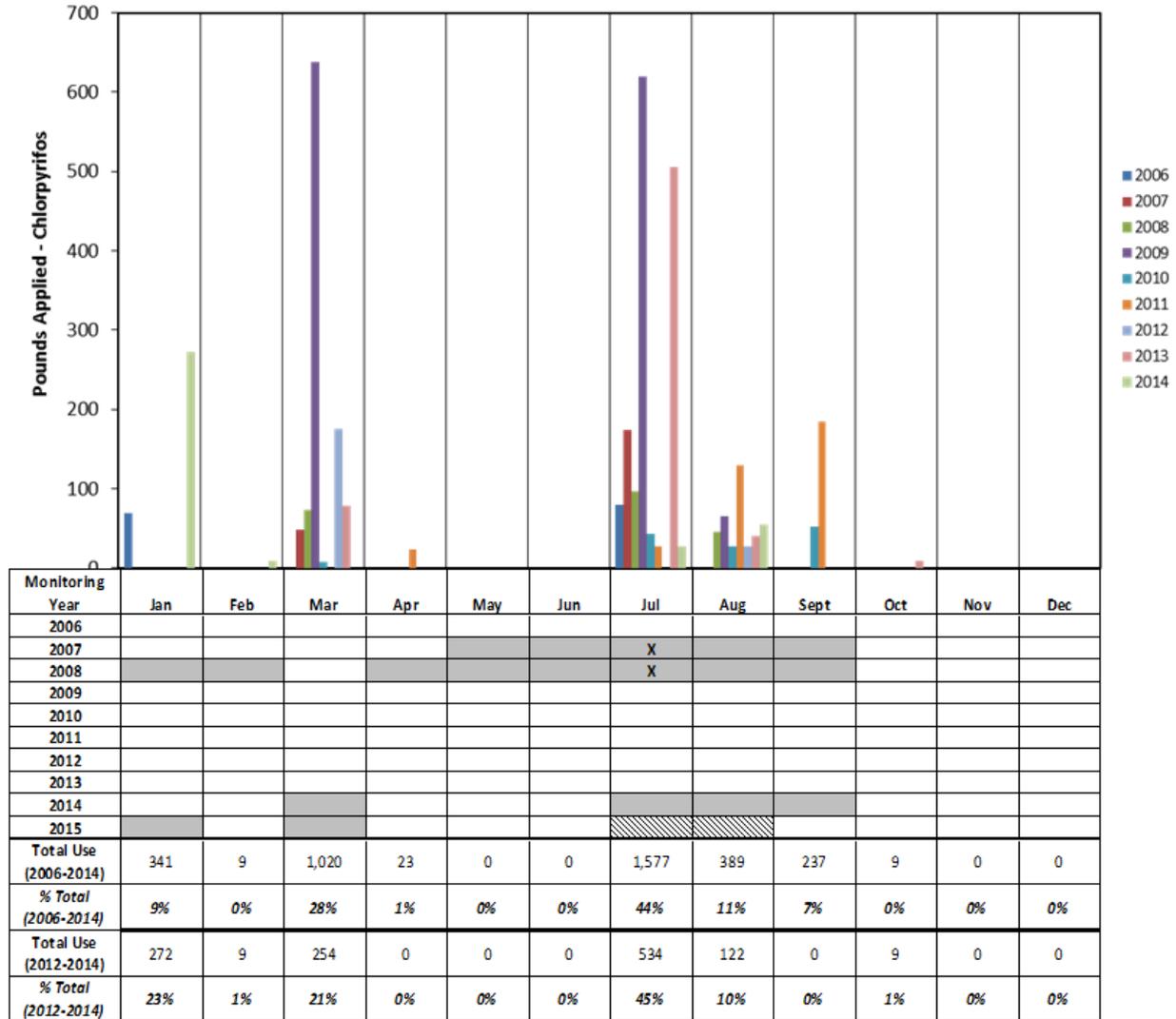
There have been three samples collected in May 2007 and February and April 2008 from Westport Drain @ Vivian Rd that were toxic to algae. Resamples were collected and toxicity was not persistent during all three events. The Coalition will continue to conduct MPM for *S. capricornutum* toxicity in February, April, and May during the 2016 WY based on months when past toxicity occurred.

**Monitoring decision based on exceedances at the Core site**

The Coalition monitored for *H. azteca* sediment toxicity for two consecutive years, and no toxicity occurred. If samples collected in September 2015 are not toxic to *H. azteca*, no monitoring will be necessary during the 2016 WY.

**Figure 21. Westport Drain @ Vivian 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. The PUR data through December 2014.



## Zone 3 - Highline Canal @ Hwy 99

The management plan constituents for the Core site listed in Table 21 will be monitored monthly, with the exception of sediment toxicity, which will be monitored in March and September. Copper and lead MPM is outlined in the Core Site Metals section. The Coalition petitioned to remove toxicity to *C. dubia* and sediment toxicity to *H. azteca* from the Core site management plan on June 5, 2014 and will petition to remove lead on in August 2015.

The Represented sites in Zone 3 will be monitored based on an evaluation of exceedances that occurred at either the Core site (including Core site management plan constituents) or at the Represented site, as discussed below.

**Table 21. Zone 3 management plan constituents and 2015 WY exceedances.**

Core site is bolded. 'X' indicates one or more exceedances occurred during the 2015 WY and 'M' indicates a management plan for that constituent.

SITE NAME	DO	PH	SC	E. COLI	NITRATE + NITRITE	COPPER	LEAD	CHLORPYRIFOS	C. DUBIA	S. CAPRICORNUTUM	H. AZTECA
<b>Highline Canal @ Hwy 99</b>	<b>X<sup>M</sup></b>	<b>X<sup>M</sup></b>	<b>X<sup>M</sup></b>	<b>M</b>		<b>M</b>	<b>M</b>	<b>X<sup>M</sup></b>	<b>M</b>	<b>M</b>	<b>M</b>
Highline Canal @ Lombardy Rd	X <sup>M</sup>	X <sup>M</sup>	X <sup>M</sup>	M		M	M			M	M
Mustang Creek @ East Ave	X <sup>M</sup>		M	M	M	X <sup>M</sup>					

### *Highline Canal @ Lombardy Rd*

#### Monitoring decision based on exceedances at the Represented site

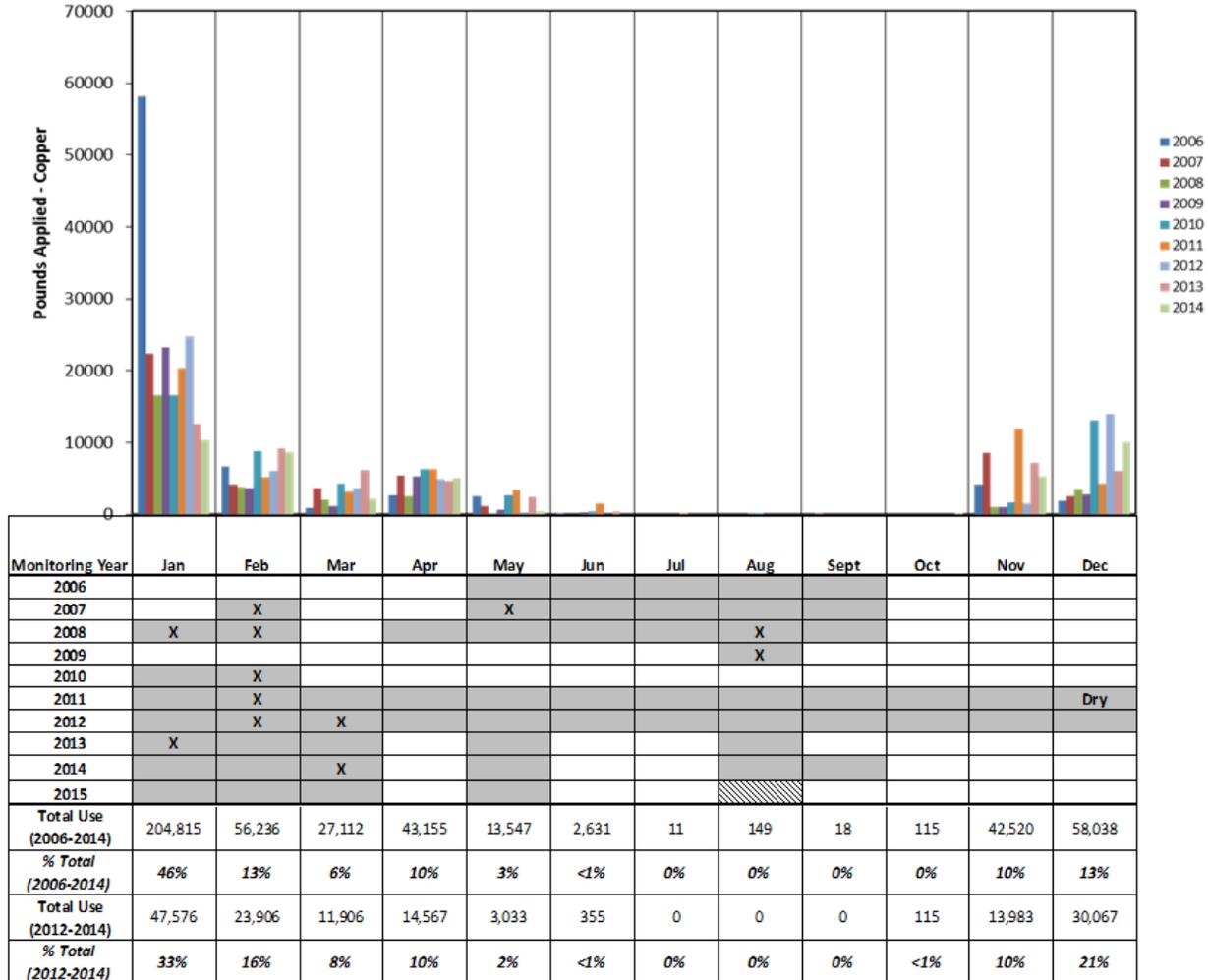
Management Plan Monitoring is scheduled at Highline Canal @ Lombardy Rd during the 2016 WY for copper, lead, *S. capricornutum* toxicity, and *H. azteca* sediment toxicity. The Coalition petitioned to remove *H. azteca* sediment toxicity from the site's management plan on June 5, 2014 and will petition to remove lead in August 2015.

#### *Copper*

Management Plan Monitoring for copper will occur at Highline Canal @ Lombardy Rd in December through May during the 2016 WY based on previous exceedances and months of high use. August is not included in the MPM schedule despite past exceedances; the Coalition monitored during the last four years in August without any exceedances of the hardness based WQTL for copper (Figure 22).

**Figure 22. 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. The PUR data through December 2014.



*Lead*

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

*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 associated with algae toxicity (diuron, collected in February 2007). 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 in February, March, April, May, August, and September.

### *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.

### **Monitoring decision based on exceedances at the Core site**

The Coalition evaluated the Core site management plan constituents not in a management plan at Highline Canal @ Lombardy Rd: chlorpyrifos and toxicity to *C. dubia*.

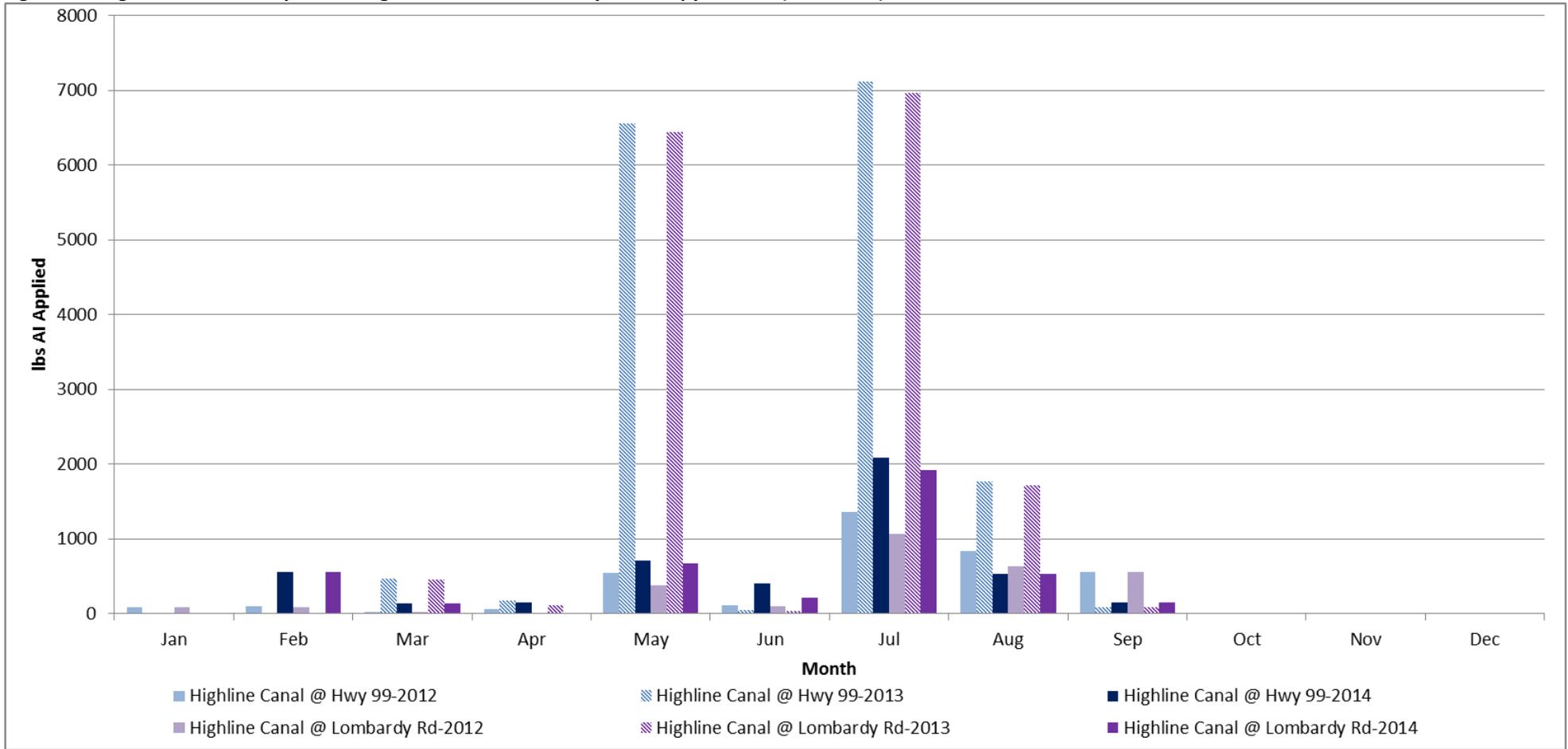
### *Chlorpyrifos*

The Coalition monitored for chlorpyrifos at Highline Canal @ Lombardy Rd from 2005 through 2013; Assessment Monitoring occurred in 2008, 2011, and 2012, and MPM occurred in 2013 and a total of 61 samples were collected. The Coalition received approval from the Regional Board to remove chlorpyrifos from the site's management plan on October 15, 2013. Figure 23 illustrates chlorpyrifos use over the last three years at Highline Canal @ Hwy 99 and Highline Canal @ Lombardy Rd. Chlorpyrifos applications are almost identical for each site; however, no exceedances of the WQTL have occurred at Highline Canal @ Lombardy Rd since 2010. The Coalition determined that monitoring for chlorpyrifos is not necessary during the 2016 WY.

### *C. dubia toxicity*

Toxicity to *C. dubia* has been monitored from 2006 through 2013; the last toxicity occurred in January 2008. The Coalition received approval from the Regional Board to remove *C. dubia* toxicity from the site's management plan on October 15, 2013. The Coalition determined that monitoring for *C. dubia* toxicity is not necessary during the 2016 WY.

Figure 23. Highline Canal @ Hwy 99 and Highline Canal @ Lombardy Rd chlorpyrifos use (2012-2014).



**Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Mustang Creek @ East Ave for dissolved copper for the 2016 WY.

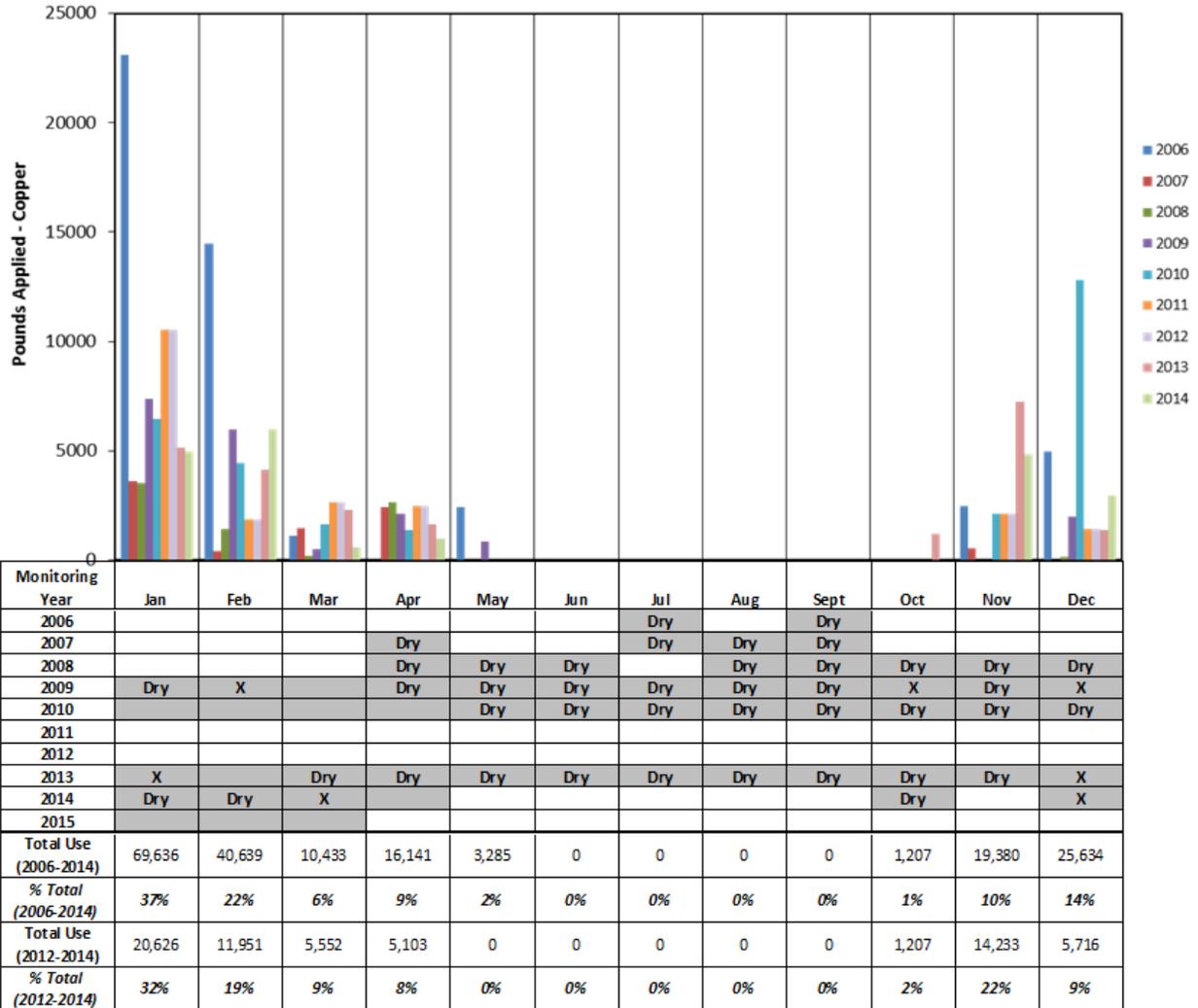
Mustang Creek @ East Ave is in a management plan for Dichlorodiphenyldichloroethylene (DDE). The Coalition monitored for DDE 12 times from 2006 through 2010; three exceedances of the WQTL occurred in February and June 2007 and December 2009. The constituent DDE is the breakdown product of a legacy pesticide (DDT) which is no longer registered for use by DPR. The Coalition will develop a source ID study and/or a workplan for DDE as detailed in the revised SQMP (SQMP, Table 17). Within 180 days of the SQMP approval, the Coalition will provide a workplan or propose a source ID study for DDE. Until then, the Coalition will not conduct MPM for DDE during the 2016 WY.

*Copper*

Based on a review of the most recent PUR data, applications of copper have decreased in the site subwatershed during the past three years (Figure 24). In addition, the site is an ephemeral waterbody and is consistently dry. During the 2016 WY, MPM for copper will occur from December through March due to past exceedances and months of high use. October is not included in the MPM schedule despite the past exceedance in 2009. The Coalition monitored for three years in October without any exceedances of the hardness based WQTL for copper; the site was dry each time (Figure 24).

**Figure 24. Mustang Creek @ East Ave 2006-2014 copper use and monitoring.**

Shaded cells represent months of past monitoring. "X" depicts months in which exceedances occurred. The PUR data through December 2014.



### Monitoring decision based on exceedances at the Core site

The Coalition evaluated the Core site management plan constituents not in a management plan at Mustang Creek @ East Ave: chlorpyrifos, toxicity to *C. dubia*, *S. capricornutum*, and *H. azteca*.

#### *Chlorpyrifos*

Chlorpyrifos exceeded the WQTL twice in samples collected from the Mustang Creek @ East Ave, during storm monitoring events in 2008 (January and February). Since the most recent chlorpyrifos exceedance in February 2008, Mustang Creek @ East Ave has been monitored for chlorpyrifos 33 times. Water was present in eight of 33 events with no detections of chlorpyrifos. The Coalition received approval to remove chlorpyrifos from the site's management plan in 2012. Therefore, the Coalition will not monitor chlorpyrifos during the 2016 WY.

#### *Water column toxicity*

Based on the evaluation of the site's monitoring history, no monitoring is necessary for *C. dubia* or *S. capricornutum* toxicity during the 2016 WY. 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.

#### *H. azteca sediment toxicity*

The Coalition monitored for *H. azteca* toxicity for two consecutive years; no toxicity occurred. The Coalition determined monitoring for *H. azteca* toxicity at Mustang Creek @ East Ave is not necessary during the 2016 WY.

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**Zone 4 – Canal Creek @ West Bellevue Rd**

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The only exceedance to occur at Canal Creek @ West Bellevue was an exceedance of the WQTL for DO; therefore, there are no management plan constituents for the Core site (Table 22). The constituents listed in Table 7 will be monitored monthly at Canal Creek @ West Bellevue Rd. The Represented sites in Zone 4 will be monitored based on an evaluation of exceedances that occurred at the Represented site, as discussed below.

**Table 22. Zone 4 management plan constituents and 2015 WY exceedances.**

Core site is bolded. 'X' indicates one or more exceedances occurred during the 2015 WY and 'M' indicates a management plan for that constituent.

SITE NAME	DO	pH	SC	E. COLI	COPPER	LEAD	CHLORPYRIFOS	C. DUBIA	S. CAPRICORNUTUM
<b>Canal Creek @ West Bellevue Rd</b>									
Bear Creek @ Kibby Rd		M		M					
Black Rascal Creek @ Yosemite Rd	X <sup>M</sup>	M		M		M	M	M	
Howard Lateral @ Hwy 140	X	M	X <sup>M</sup>	M	X <sup>M</sup>		M		
Livingston Drain @ Robin Ave		M		M	X <sup>M</sup>		M		M
McCoy Lateral @ Hwy 140		M			M				
Merced River @ Santa Fe	M			M		M	M	M	
Unnamed Drain @ Hwy 140	M	M	M	M					

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*Bear Creek @ Kibby Rd*

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**Monitoring decision based on exceedances at the Represented site**

Water quality impairments have not been present at Bear Creek @ Kibby Rd since 2012 and no exceedances of pesticides, metals, or toxicity have occurred since 2008. Therefore, no monitoring is necessary during the 2016 WY at Bear Creek @ Kibby Rd. If an exceedance occurs at the Core site, Bear Creek @ Kibby will be evaluated to ensure the water quality impairment is not occurring at the site, and monitoring will be scheduled accordingly.

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*Black Rascal Creek @ Yosemite Rd*

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**Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Black Rascal Creek @ Yosemite Rd for chlorpyrifos, lead, and toxicity to *C. dubia*. Due to at least three years of monitoring and no exceedances, the Coalition will

petition to remove chlorpyrifos, lead, and toxicity to *C. dubia* from the site's management plan in August 2015.

#### *Chlorpyrifos*

Chlorpyrifos has not been applied in the site subwatershed since 2012. Prior to 2012, there was very little use (Figure 25). The Coalition will continue to conduct MPM during months of past exceedances in May, and July through September during the 2016 WY.

#### *Lead*

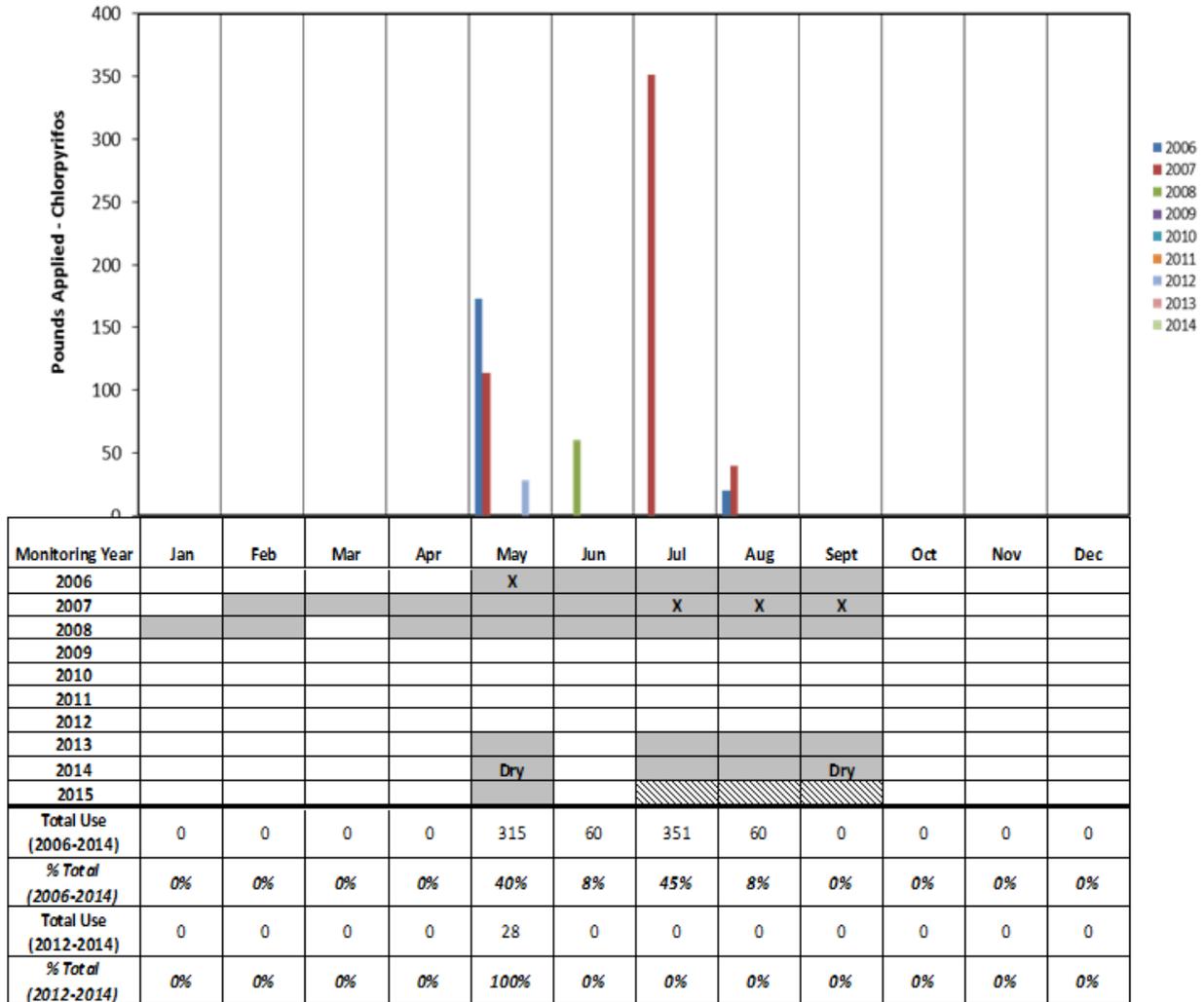
The Coalition monitored for total lead in 2008 and two exceedances occurred in April and September 2008. The Coalition conducted MPM for total and dissolved lead in 2013, and for dissolved lead in the 2014 WY and 2015 WY; no exceedances of the WQTL occurred. MPM for dissolved lead will continue in April and September during the 2016 WY.

#### *C. dubia toxicity*

Three samples collected in May, July, and August 2007 were toxic to *C. dubia*. The TIEs results for each sample indicated pyrethroid and organophosphates were the cause of the toxicity; exceedances of the WQTL for chlorpyrifos coincided with the July and August 2007 toxicity. The Coalition conducted MPM for toxicity to *C. dubia* and chlorpyrifos from 2013 through June 2015. No toxicity or exceedances of the WQTL for chlorpyrifos have occurred since 2007. The Coalition will continue to conduct MPM for toxicity to *C. dubia* in May, July, and August during the 2016 WY.

**Figure 25. 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. The PUR data through December 2014.



**Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Howard Lateral @ Hwy 140 for chlorpyrifos and dissolved copper.

*Chlorpyrifos*

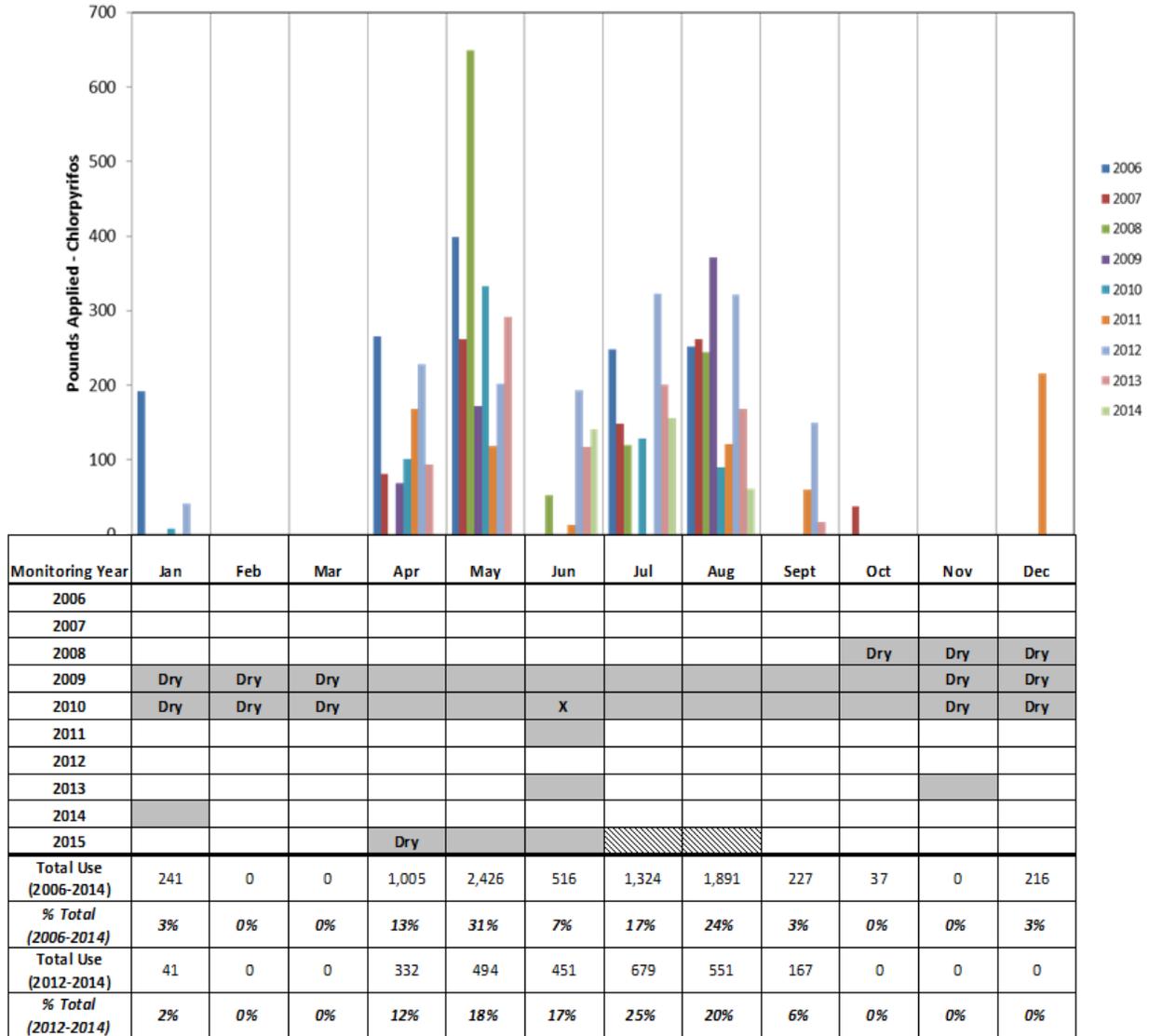
The Coalition monitored for chlorpyrifos from 2008 through 2010 during Assessment Monitoring and one exceedance of the WQTL occurred in June 2010. Due to three years of MPM with no exceedances of the WQTL for chlorpyrifos, the Coalition will petition to remove chlorpyrifos from the site's management plan in August 2015. The Coalition will continue MPM during the 2016 WY from May through August, based on current PUR data; May through August make up 80% of the total pounds applied from 2012 through 2014 (Figure 26).

*Copper*

The Coalition will conduct MPM for copper in October, December through April, and July during the 2016 WY based on months of past exceedances and current PUR data (Figure 27).

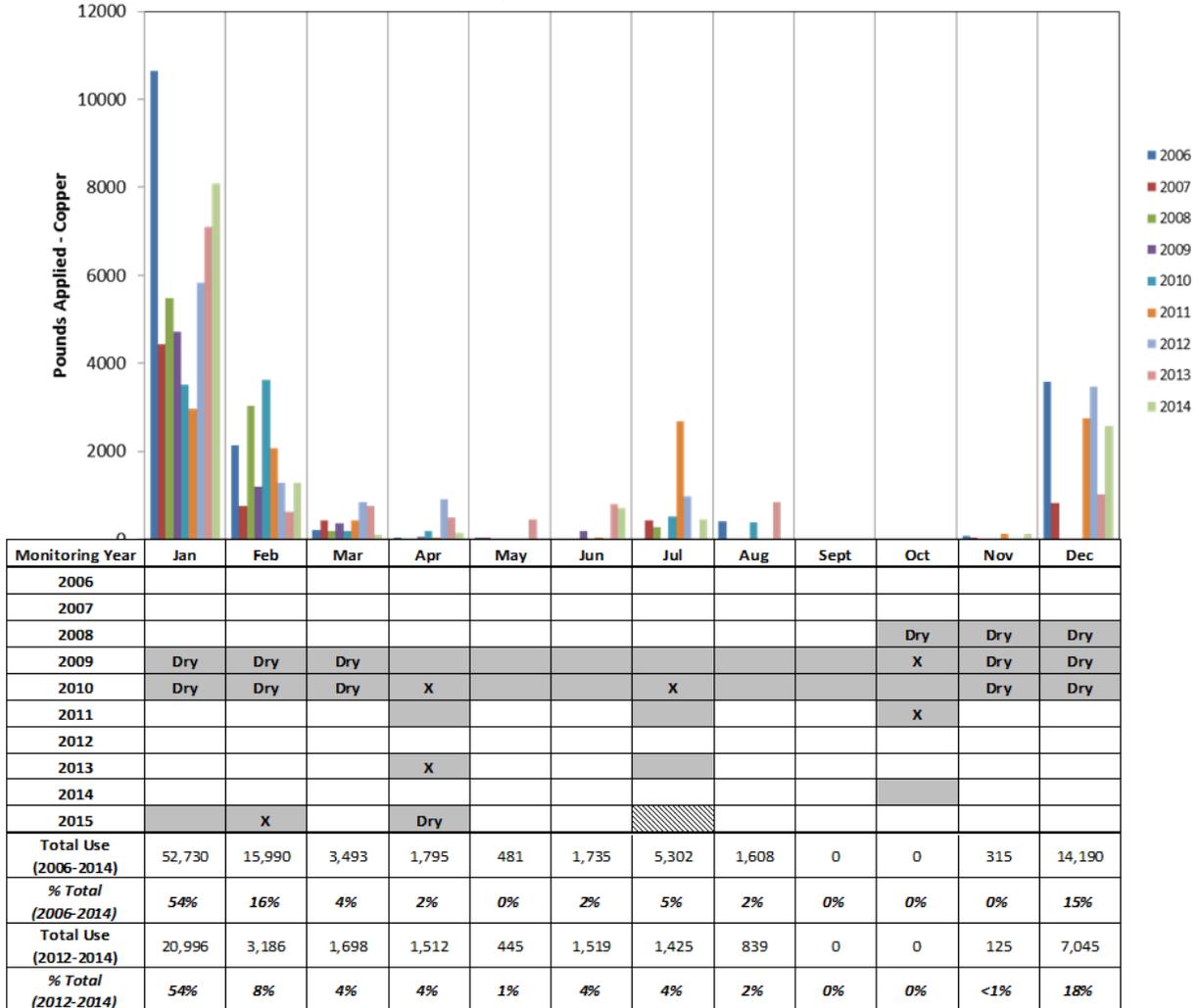
**Figure 26. Howard Lateral @ Hwy 140 2006-2014 chlorpyrifos use and monitoring.**

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



**Figure 27. 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. The PUR data through December 2014.



### **Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Livingston Drain @ Robin Ave for chlorpyrifos, copper, and toxicity to *S. capricornutum*.

#### *Chlorpyrifos*

The Coalition conducted MPM in 2011, 2013, the 2014 WY, and the 2015 WY (through June). The last exceedance of the WQTL for chlorpyrifos occurred in July 2008; therefore, the Coalition will petition to remove chlorpyrifos from the site's management plan in August 2015. The Coalition will continue MPM during the 2016 WY in February and June through August based on months of past exceedances and an evaluation of chlorpyrifos use in the site subwatershed. The Coalition determined no monitoring is necessary during March and April, despite having the highest amount of use in the last three years; the site was dry in April 2014 and 2015, and 2012 was the last year applications occurred in March. January is not included in the MPM schedule despite past exceedance in 2008; the Coalition monitored five years after 2008 without any exceedances of the WQTL (Figure 28).

#### *Copper*

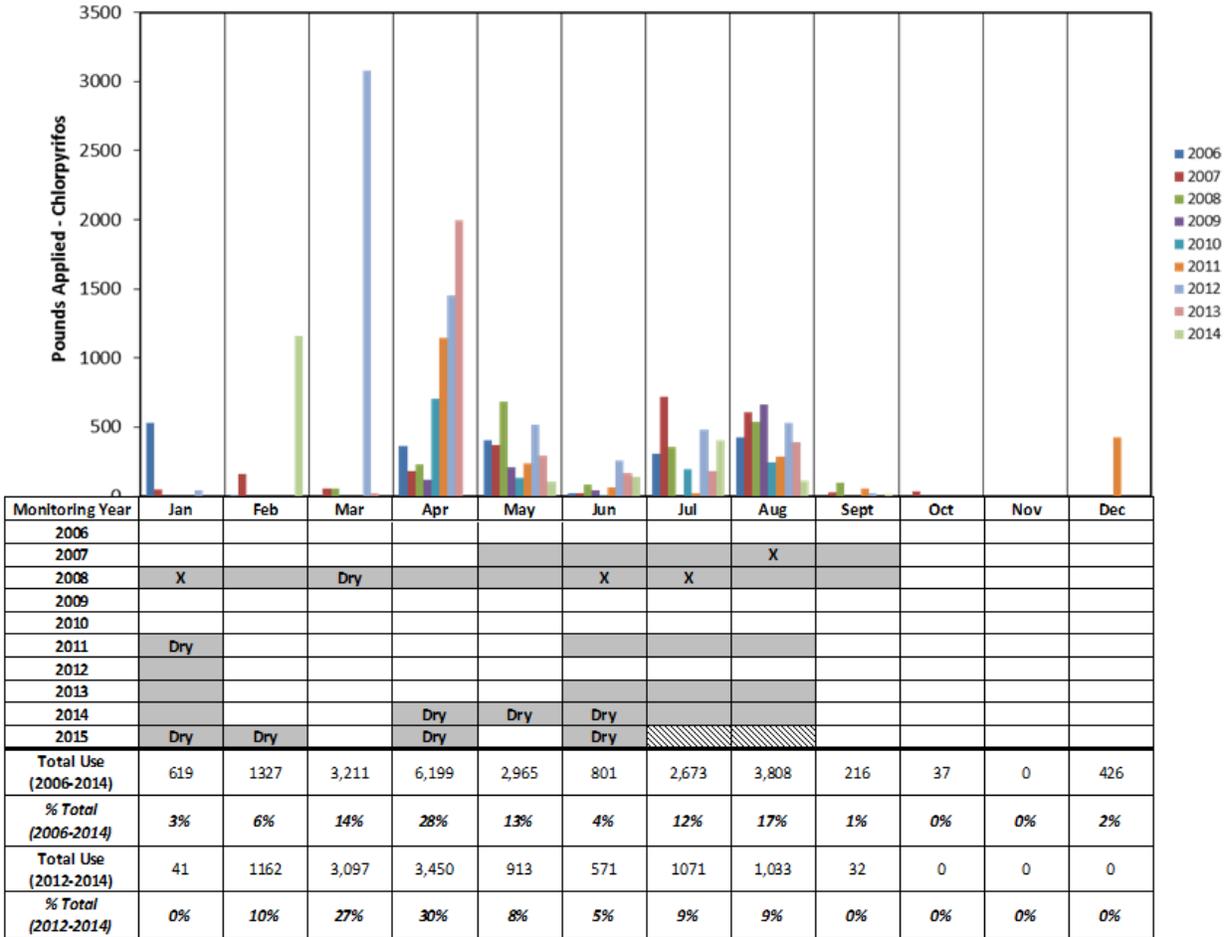
The Coalition will continue to conduct MPM for copper in December through March during the 2016 WY based on months of past exceedances and months of highest use. Exceedances of the WQTL for copper occurred in the months of May, June, July, and September between 2007 and 2011. However, the Coalition determined no monitoring is necessary in the 2016 WY during these months. The Coalition monitored for copper in May, June, July, and September over the past three years; the site was either dry or samples collected did not exceed the WQTL (Figure 29).

#### *S. capricornutum toxicity*

There have been four samples collected from Livingston Drain @ Robin Ave that were toxic to algae (including one resample). All four toxic samples were collected in February, April, and May 2008; no TIEs were required. The Coalition will continue to conduct MPM in February, April, and May during the 2016 WY. The Coalition will petition to remove toxicity to *S. capricornutum* from the site's management plan in August 2015.

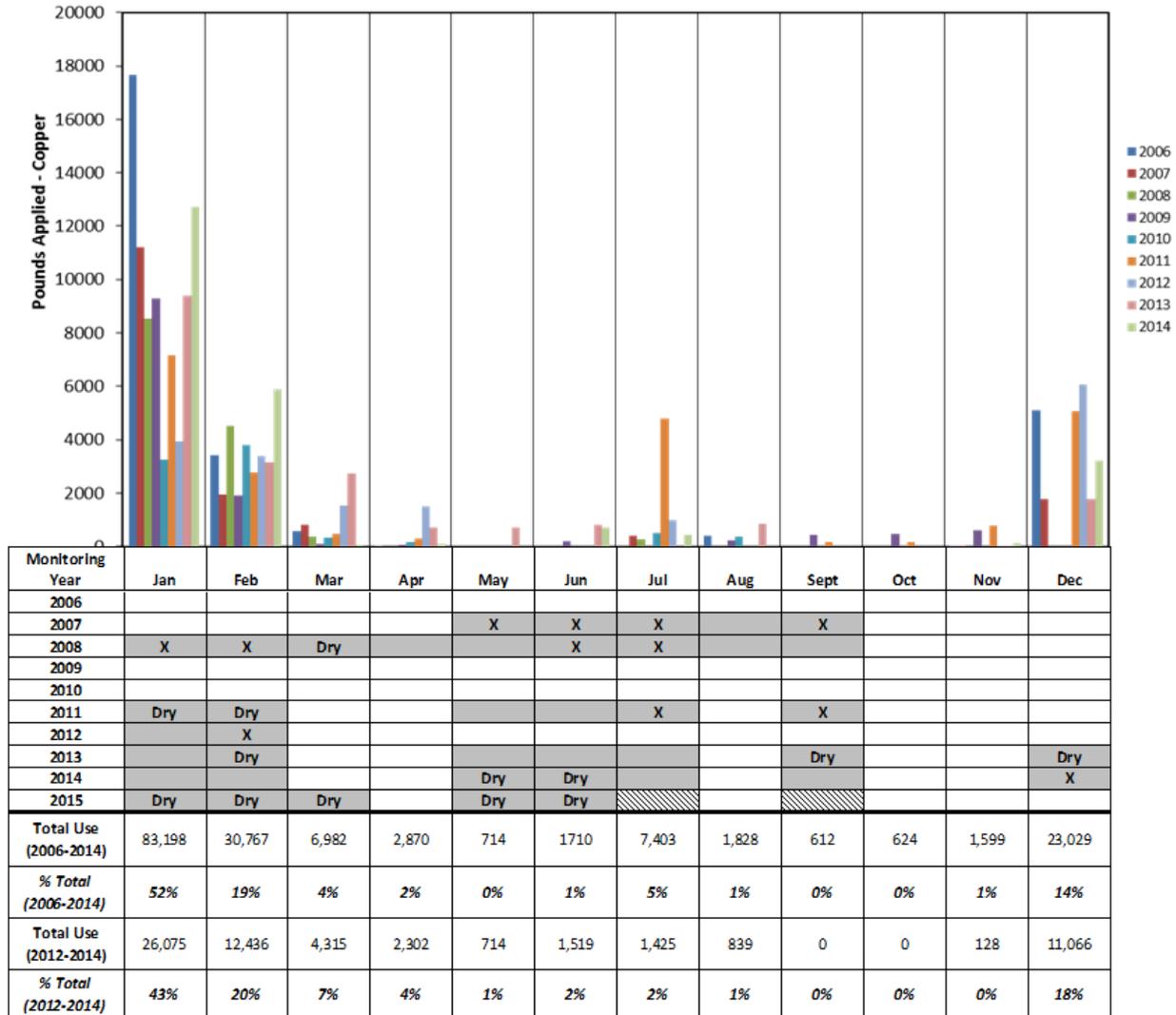
**Figure 28. Livingston Drain @ Robin Ave 2006-2014 chlorpyrifos use and monitoring.**

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



**Figure 29. 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. The PUR data through December 2014.



**Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled at Merced River @ Santa Fe for chlorpyrifos, lead, and toxicity to *C. dubia*.

*Chlorpyrifos*

The Coalition monitored for chlorpyrifos 75 times and three samples exceeded the WQTL; the last exceedance of the WQTL occurred in November 2008. The Coalition monitored for chlorpyrifos at Merced River @ Santa Fe for five years with no exceedances of the WQTL, demonstrating that chlorpyrifos is no longer impairing the water quality in the site subwatershed. The Coalition petitioned to remove chlorpyrifos from the site's management plan on June 6, 2014 (pending approval). The Coalition will continue MPM during the 2016 WY in October, November, and July through September based on the highest months of applications in the last three years. January is not included in the MPM schedule despite the past exceedance in 2008; the Coalition monitored six years after 2008 without any exceedances of the WQTL (Figure 30).

*Lead*

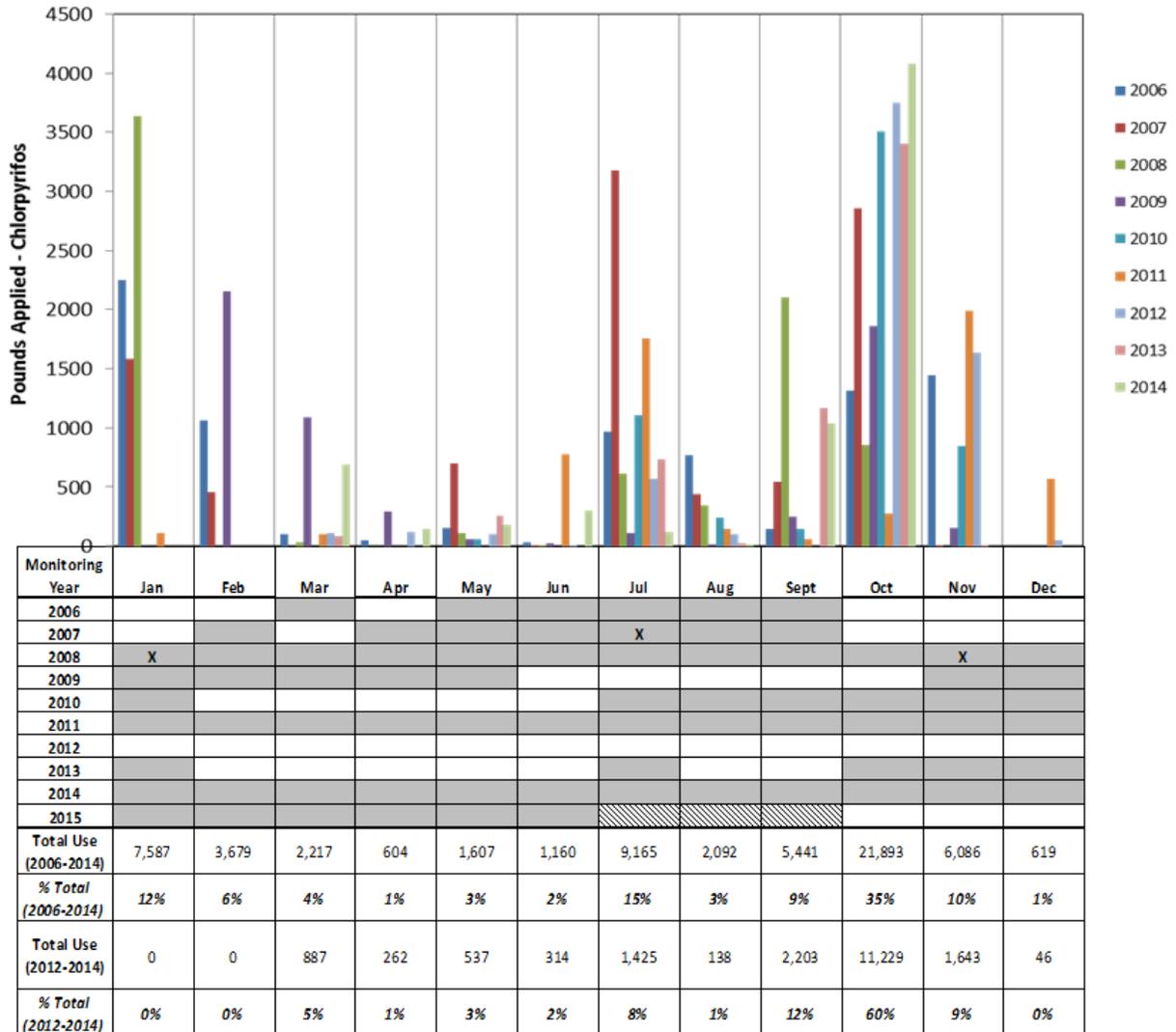
Lead is not currently applied by agriculture and therefore cannot be associated with PUR data. The only exceedances of the WQTL occurred in February 2007 and January 2008. The Coalition will conduct MPM for lead in January and February 2016. The Coalition petitioned to remove lead from the site's management plan on June 6, 2014 (pending approval).

*C. dubia toxicity*

The Coalition petitioned to remove toxicity to *C. dubia* from the site's management plan on June 6, 2014 (pending approval). The Coalition will continue MPM during the 2016 WY in January, March, July, and August, based on months when past toxicity occurred.

**Figure 30. Merced River @ Santa Fe 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. The PUR data through December 2014.



### *McCoy Lateral @ Hwy 140*

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McCoy Lateral @ Hwy 140 is in a management plan for pH and copper. However, no MPM is scheduled for the 2016 WY. Focused outreach has not been conducted in the site subwatershed yet; therefore, the Coalition will not schedule MPM until focused outreach begins in order to evaluate the effectiveness of implemented management practices.

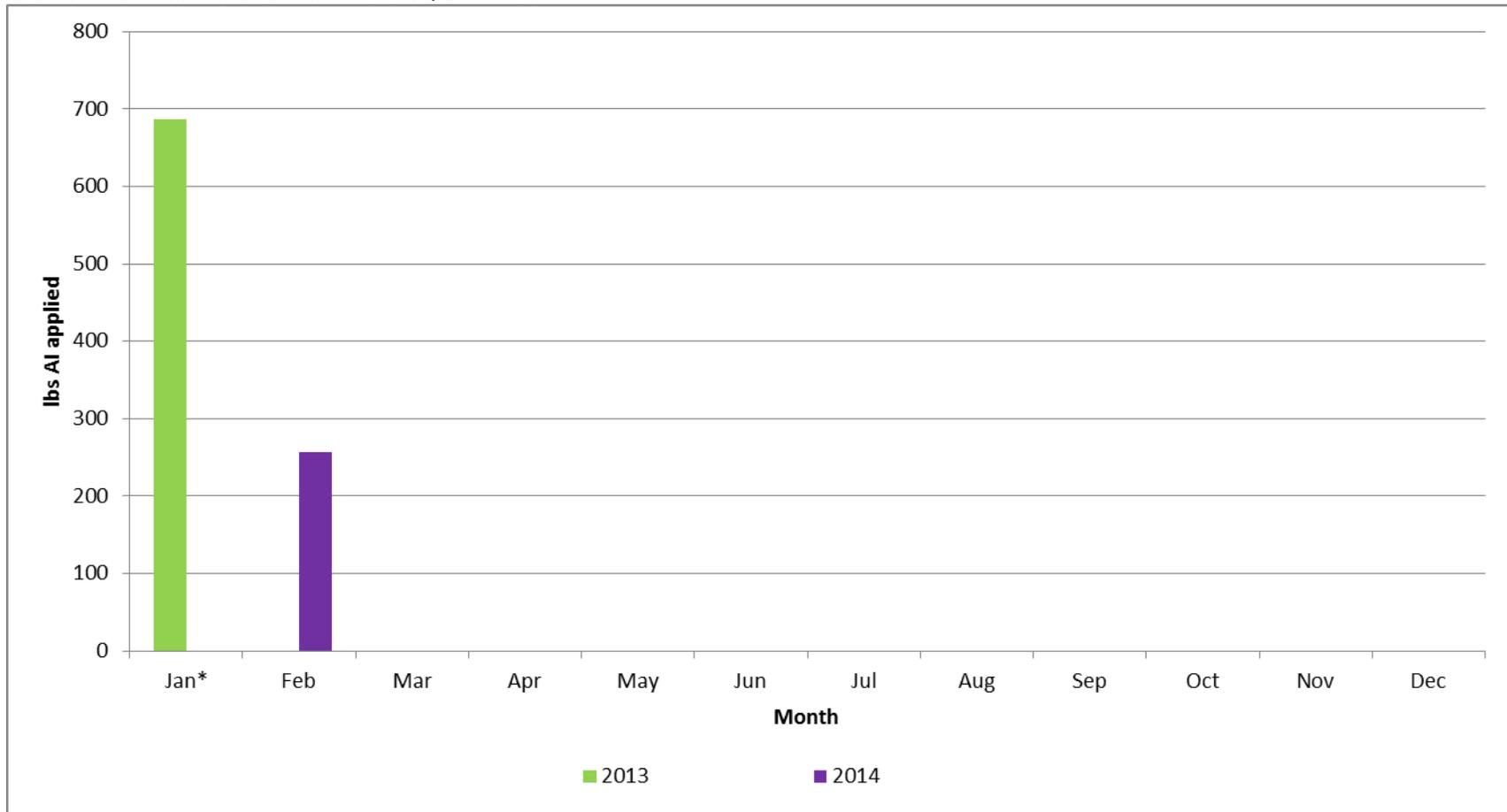
### *Unnamed Drain @ Hwy 140*

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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 monitored for dissolved copper during a storm event in February 2015. No exceedance of the hardness based WQTL for dissolved copper occurred. The only recent applications of copper occurred in January 2013 and February 2014 (Figure 31). The Coalition will monitor for a second consecutive year during a storm event in the 2016 WY.

**Figure 31. Unnamed Drain @ Hwy 140 copper use.**

Asterisk indicates when an exceedance of the WQTL occurred.



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## Zone 5 – Miles Creek @ Reilly Rd

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The management plan constituents for the Core site listed in Table 23 will be monitored monthly, with the exception of *H. azteca* sediment toxicity, which will be monitored in March and September. Copper and lead MPM is outlined in the Core Site Metals section. The Coalition will petition to remove chlorpyrifos, copper, lead, and *C. dubia* toxicity in August 2015, based on three years of monitoring with no exceedances.

The Represented sites in Zone 5 will be monitored based on an evaluation of exceedances that occurred at either the Core site (including Core site management plan constituents) or at the Represented site, as discussed below.

**Table 23. Zone 5 management plan constituents and 2015 WY exceedances.**

Core site is bolded. 'X' indicates one or more exceedances occurred during the 2015 WY and 'M' indicates a management plan for that constituent.

SITE NAME	DO	PH	SC	E. COLI	AMMONIA	COPPER	LEAD	CHLORPYRIFOS	DIAZINON	MALATHION	C. DUBIA	P. PROMELAS	S. CAPRICORNUTUM	H. AZTECA
<b>Miles Creek @ Reilly Rd</b>	<b>M</b>	<b>M</b>		<b>M</b>		<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>		<b>M</b>		<b>M</b>	<b>M</b>
Deadman Creek @ Gurr Rd	M	M	X <sup>M</sup>	M	M			M			M	M	M	
Deadman Creek @ Hwy 59	M			M				M						
Duck Slough @ Gurr Rd	M	X <sup>M</sup>	X <sup>M</sup>	X <sup>M</sup>	X <sup>M</sup>	M	M	M		X <sup>M</sup>	X <sup>M</sup>	M	X <sup>M</sup>	M

### *Deadman Creek @ Gurr Rd*

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#### Monitoring decision based on exceedances at the Represented site

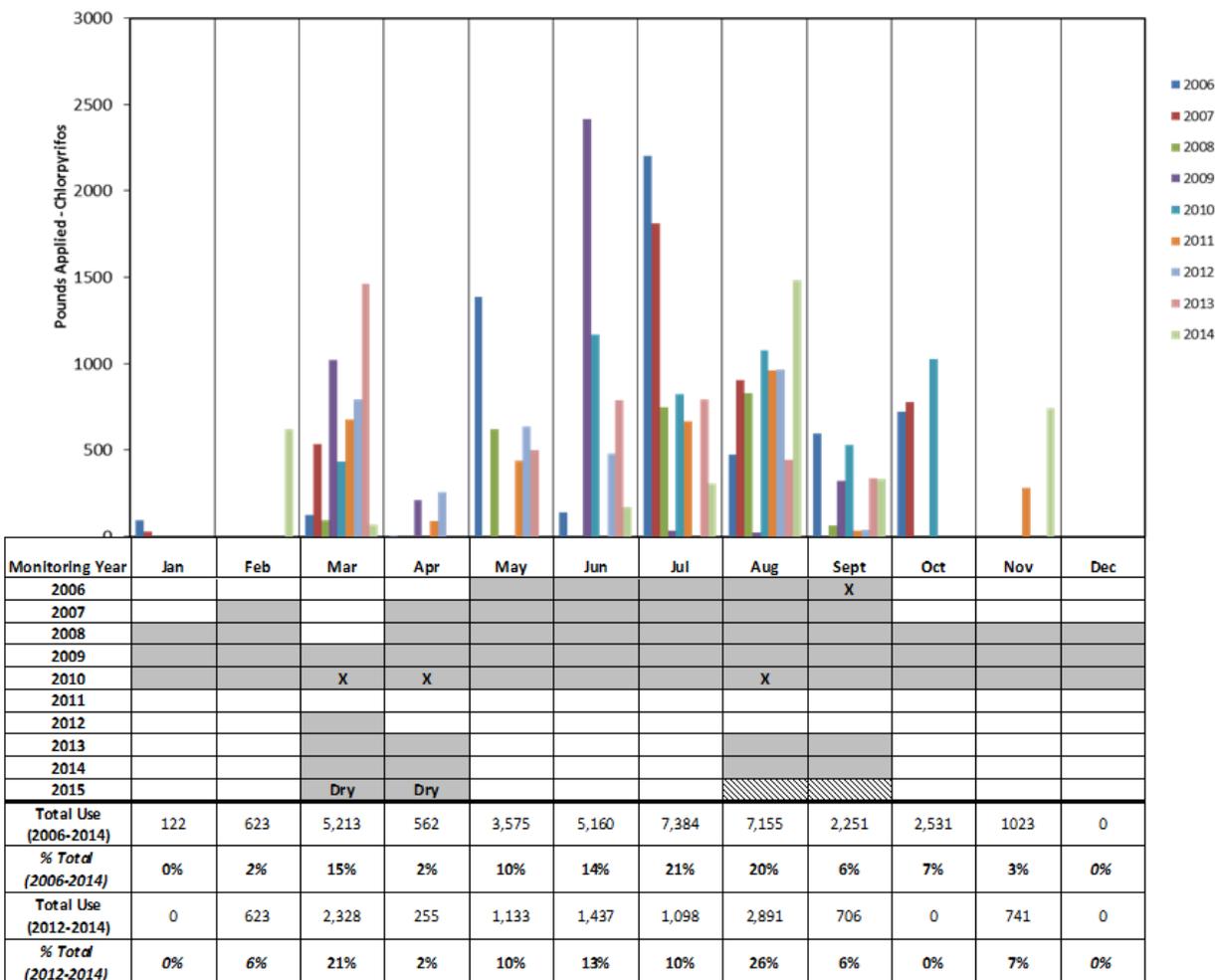
During the 2016 WY, MPM is scheduled for chlorpyrifos and toxicity to *C. dubia*, *P. promelas*, and *S. capricornutum*.

#### *Chlorpyrifos*

The Coalition will conduct MPM for chlorpyrifos during months of past exceedances (March, April, August, and September) for the 2016 WY. Based on an evaluation of PUR data, the Coalition added February and November to the MPM schedule due to increased use in 2014 (Figure 32).

**Figure 32. 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. The PUR data through December 2014.



*C. dubia* toxicity

Water column toxicity to *C. dubia* occurred five times (February 2009, March 2009 and 2010, and November 2010 and 2013). Exceedance level ammonia concentrations caused toxicity in four of the five samples. The Coalition will conduct MPM for *C. dubia* toxicity during months when past toxicity occurred, in November, February, and March during the 2016 WY.

*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. The Coalition will continue MPM for *P. promelas* toxicity during months when past toxicity occurred in November through March, May, and June during the 2016 WY.

### *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, in February and July 2016. The Coalition will petition to remove *S. capricornutum* toxicity from the site's management plan in August 2015.

### **Monitoring decision based on exceedances at the Core site**

The Coalition evaluated the Core site management plan constituents not in a management plan at Deadman Creek @ Gurr Rd: copper, diazinon, and sediment toxicity to *H. azteca*.

### *Copper*

The last exceedance of the WQTL for copper occurred in January 2008 for the total fraction. Since the January 2008 exceedance, copper has been monitored 36 times, 13 of those were during months of previous exceedances (January, February, April and May). No exceedances of the copper WQTL occurred. The Coalition received approval to remove copper from the site's management plan in 2012. Monitoring for copper is not scheduled during the 2016 WY.

### *Diazinon*

The Coalition monitored for diazinon at Deadman Creek @ Gurr Rd from 2004 through 2010; 51 samples were collected and all results were non-detect. In addition, no applications of diazinon occurred in the site subwatershed after 2011. The Coalition determined monitoring for diazinon during the 2016 WY is not necessary.

### *H. azteca* sediment toxicity

The Coalition determined no sediment toxicity monitoring is necessary at Deadman Creek @ Gurr Rd during the 2016 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.

### Monitoring decision based on exceedances at the Represented site

Management Plan Monitoring for chlorpyrifos is scheduled at Deadman Creek @ Hwy 59 in the 2016 WY.

#### *Chlorpyrifos*

The Coalition will conduct MPM for chlorpyrifos during months of past exceedances (April, August, and September) and will add February and October based on PUR data for the 2016 WY. The PUR data indicate that, overall, March and August are the months of greatest use, accounting for 22% and 25% of the total pounds applied over the last three years. However, current PUR data indicate the most applications of chlorpyrifos in 2014 occurred during February, August, and October (Figure 33). The Coalition will petition to remove chlorpyrifos from the site's management plan in August 2015, based on over three years of monitoring with no exceedances.

### Monitoring decision based on exceedances at the Core site

The Coalition evaluated the Core site management plan constituents not in a management plan at Deadman Creek @ Hwy 59: copper, diazinon, toxicity to *C. dubia* and *S. capricornutum*, and sediment toxicity to *H. azteca*.

#### *Copper*

The Coalition monitored for copper at Deadman Creek @ Hwy 59 in 2008, and 2011 through 2012; 50 samples were collected and analyzed for the total and dissolved fractions; no exceedances of the WQTL occurred. The Coalition determined monitoring for dissolved copper during the 2016 WY is not necessary.

#### *Diazinon*

The Coalition monitored for diazinon at Deadman Creek @ Hwy 59 from 2006 through 2012; 43 samples were collected, 41 samples were non-detect and no exceedances of the WQTL occurred. In addition, no applications of diazinon occurred in the site subwatershed after 2011. The Coalition determined monitoring for diazinon during the 2016 WY is not necessary.

#### *C. dubia toxicity*

Toxicity to *C. dubia* was monitored in 2006 through 2008 and every month in 2011 and 2012; 43 samples were collected and tested, no toxicity occurred. Therefore, monitoring for *C. dubia* toxicity is not scheduled during the 2016 WY.

#### *S. capricornutum toxicity*

Toxicity to *S. capricornutum* was in a management plan for Deadman Creek @ Hwy 59 from 2009 through 2013; the Coalition received approval from the Regional Board to remove it from the

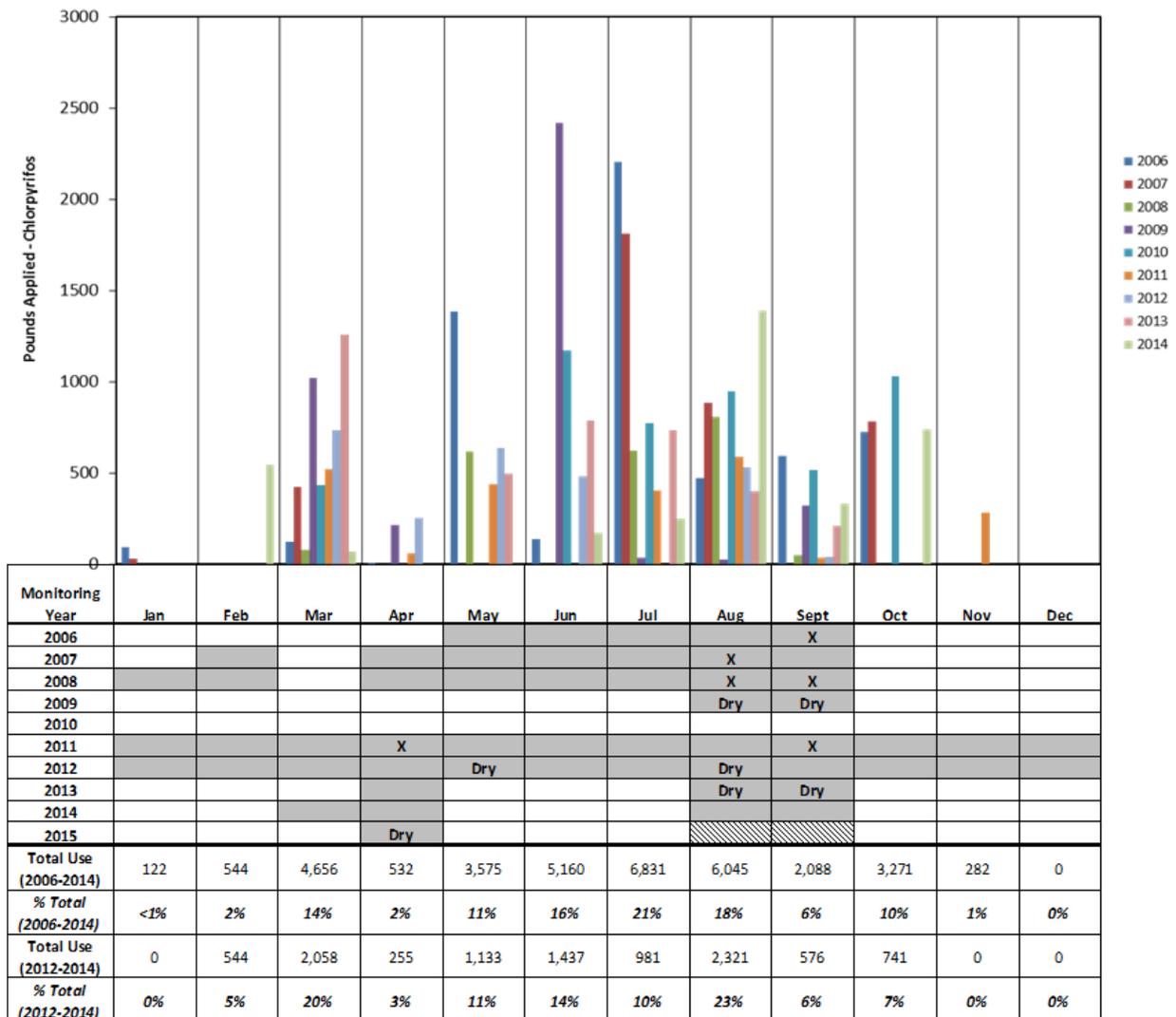
management plan on October 15, 2013. Monitoring for *S. capricornutum* toxicity is not necessary during the 2016 WY.

*H. azteca* sediment toxicity

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. Monitoring for *H. azteca* sediment toxicity is not necessary during the 2016 WY.

**Figure 33. 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. The PUR data through December 2014.



### **Monitoring decision based on exceedances at the Represented site**

Management Plan Monitoring is scheduled for chlorpyrifos, copper, lead, malathion, *C. dubia*, *P. promelas*, and *S. capricornutum* toxicity, and *H. azteca* sediment toxicity during the 2016 WY.

A single exceedance of the WQTL for arsenic occurred at Duck Slough @ Gurr Rd in March 2014 when the site was monitored as a Core site. The site was monitored for arsenic during two storm events (December, February) and two irrigation events are scheduled (July and August). The Coalition will monitor for a third consecutive year during two storm and two irrigation events during the 2016 WY.

#### *Chlorpyrifos*

Duck Slough @ Gurr Rd is the Core site during the 2014 WY and 2015 WY. The Coalition monitored for chlorpyrifos monthly during the 2014 WY and 2015 WY (through June), and one exceedance of the WQTL occurred in March 2014. The PUR data from the last three years indicate the months of highest use are March (15%), May (24%), and August (29%; Figure 34); however, the Coalition monitored for chlorpyrifos in May for eight years and in August for seven years with no exceedances. MPM will continue for chlorpyrifos during the 2016 WY in March and July due to past exceedances and months of high use. If exceedances of the WQTL continue to occur during the 2015 WY, the Coalition will add those months to the MPM schedule.

#### *Copper*

The Coalition monitored for copper from 2006 through the 2015 WY; the last exceedance of the hardness based WQTL occurred in May 2009. The Coalition petitioned to remove copper from the site's management plan in June 6, 2014 (pending approval) due to at least three years of monitoring during months of past exceedances (Figure 35). During the 2016 WY, the Coalition will monitor for dissolved copper January through May due to months of highest use and past exceedances. June and July are not included in the MPM schedule despite past exceedances that occurred in 2006 and 2007. The Coalition monitored for copper during June and July for five years after 2007 and no exceedances of the hardness based WQTL occurred.

#### *Lead*

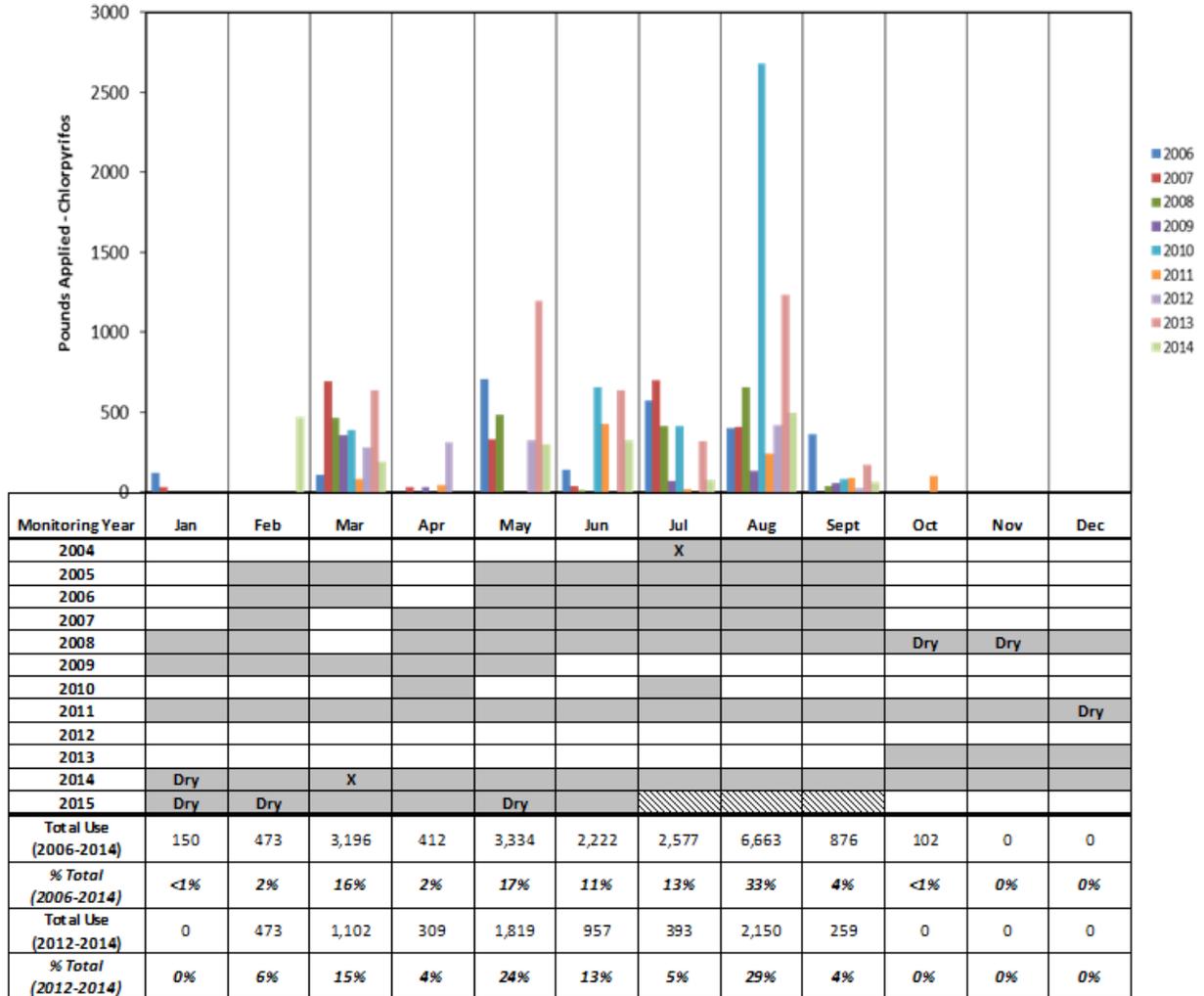
The Coalition will conduct MPM for lead during months of past exceedances in January, February, and June in the 2016 WY. The Coalition monitored for lead from 2006 through 2009, 2011, and 2013 through the 2015 WY; exceedances of the total fraction WQTL occurred four times, in 2007 and 2008. After the Coalition began monitoring for the dissolved fraction, no exceedances occurred. The Coalition will petition to remove lead from the site's management plan in August 2015.

#### *Malathion*

The second exceedance of the WQTL for malathion occurred in March 2015, resulting in a management plan. The Coalition will conduct MPM in February through April 2016 based on months of past exceedances and months of highest use (Figure 36).

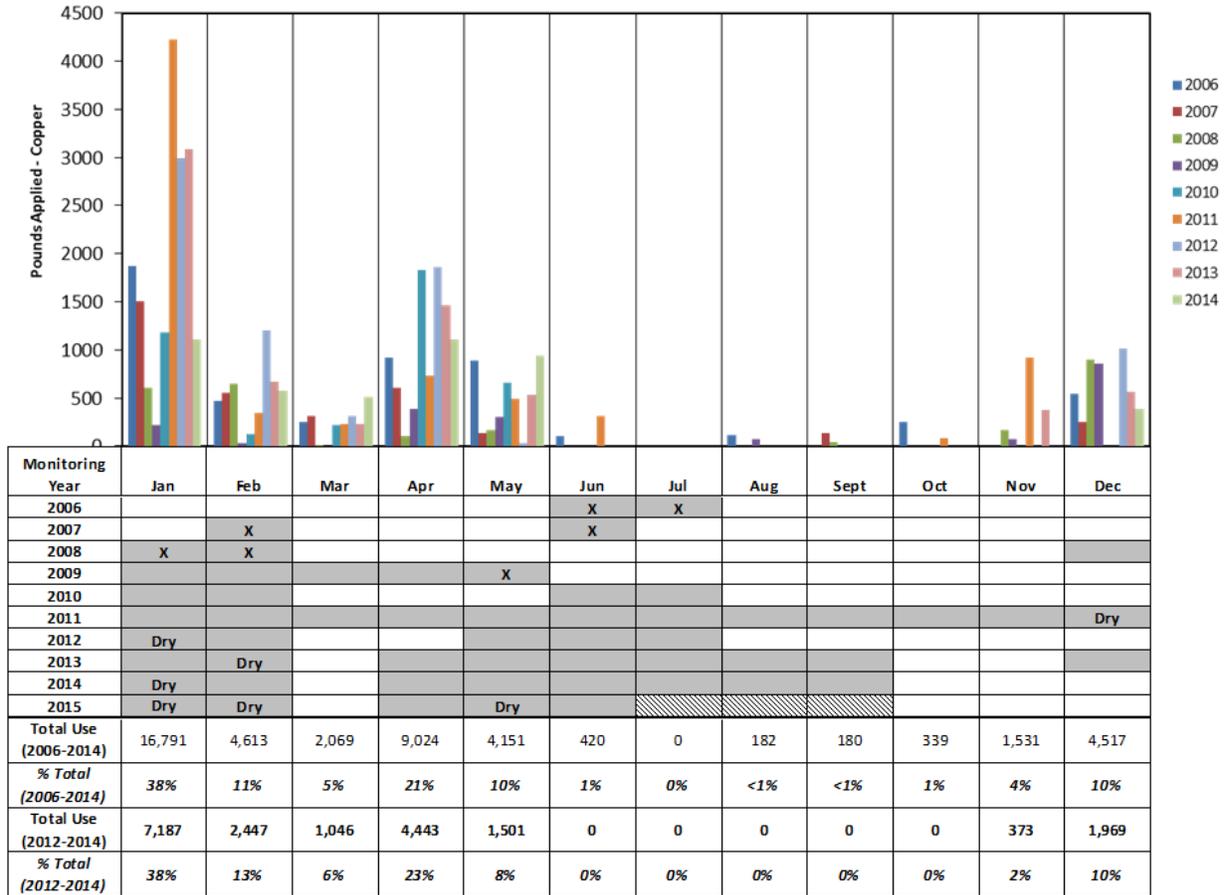
**Figure 34. Duck Slough @ Gurr Rd 2006-2014 chlorpyrifos use and monitoring.**

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



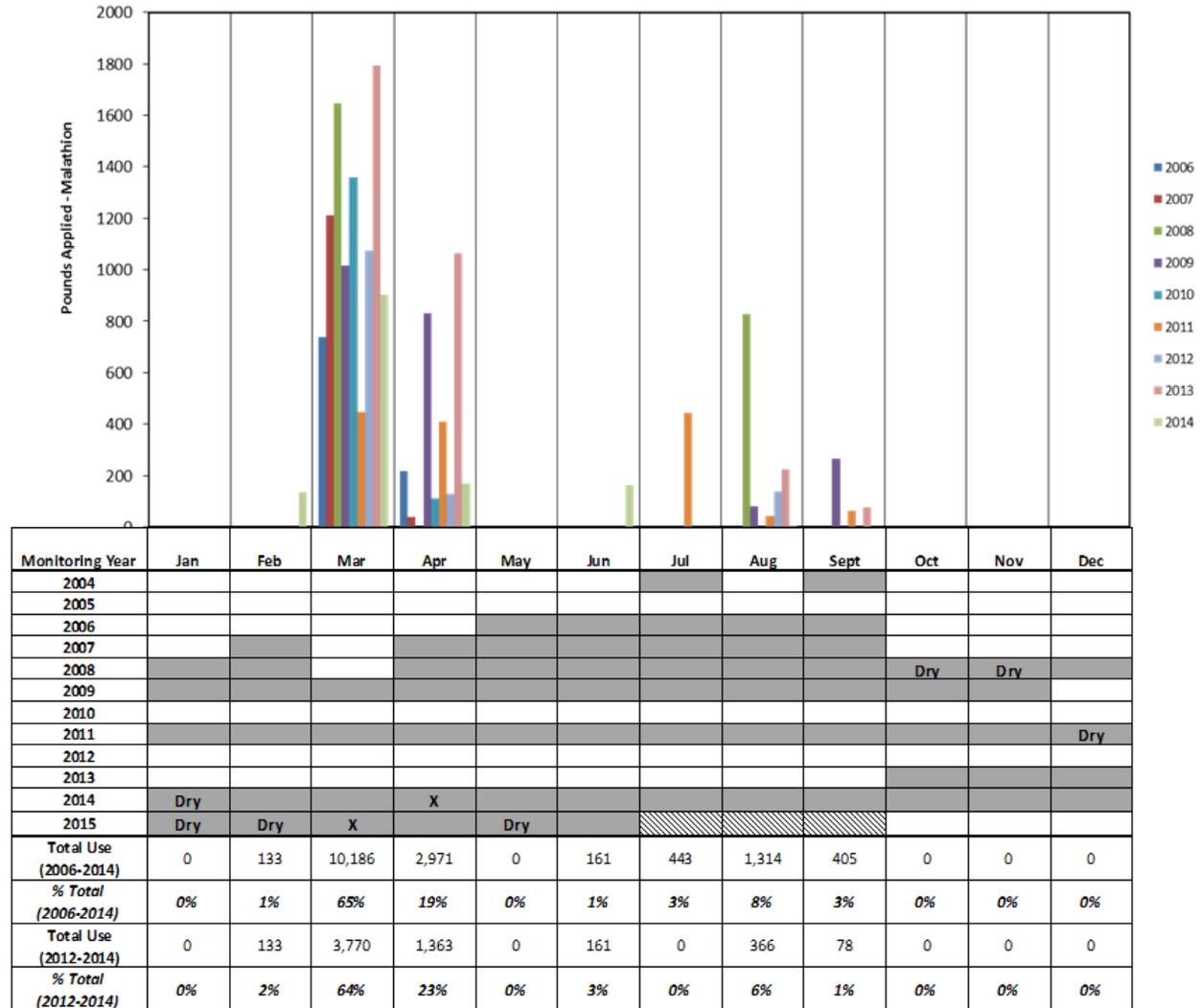
**Figure 35. Duck Slough @ Gurr Rd 2006-2014 copper use and monitoring.**

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



**Figure 36. Duck Slough @ Gurr Rd 2006-2014 malathion 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. The PUR data through December 2014.



*C. dubia* toxicity

The most recent toxic samples collected at Duck Slough @ Gurr Rd coincided with exceedances of the WQTLs for chlorpyrifos in March 2014 and malathion in March 2015. Samples collected in June 2015 also were toxic to *C. dubia*; no TIE was required and there were no associated chemistry exceedances. The Coalition will continue MPM for *C. dubia* toxicity during months when previous toxic samples were collected, in February, March, and June. MPM for chlorpyrifos will coincide with *C. dubia* toxicity MPM in March and for malathion in February and March 2016.

*S. capricornutum* toxicity

Samples collected in September 2004 and July 2007 were toxic to *S. capricornutum*. The Coalition received approval to remove *S. capricornutum* toxicity from the site’s management plan in May 2012, after three years of monitoring with no toxicity. The Coalition monitored for *S. capricornutum* toxicity

monthly during the 2014 WY and 2015 WY (through June); samples collected in June 2015 were toxic to *S. capricornutum* toxicity, resulting in a reinstated management plan (the sample lost all toxicity during the TIE). Management Plan Monitoring is scheduled in June, July, and September for the 2016 WY.

#### *P. promelas* toxicity

The Coalition monitored for *P. promelas* toxicity monthly during the 2014 WY and 2015 WY (through June); samples collected in March 2014 were toxic, resulting in a management plan. Prior to 2014, the last toxicity occurred in October 2011. No TIEs were required for either sample; however, samples also exceeded the WQTL for chlorpyrifos in March 2014. MPM is scheduled for *P. promelas* toxicity in October and March during the 2016 WY.

#### *H. azteca* sediment toxicity

Sediment toxicity occurred at Duck Slough @ Gurr Rd eight times from 2004 through 2013, in the late irrigation season between July and September. The Coalition will continue to conduct MPM for *H. azteca* sediment toxicity in September 2016.

#### **Monitoring decision based on exceedances at the Core site**

The Coalition evaluated the Core site management plan constituent not in a management plan at Duck Slough @ Gurr Rd: diazinon. The Coalition determined no monitoring is necessary for diazinon during the 2016 WY. The Coalition monitored for diazinon from 2004 through 2011, monthly during the 2014 WY, and through June in 2015 WY; all results were non-detect.

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## Zone 6 – Dry Creek @ Rd 18

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The management plan constituents for the Core site listed in Table 24 will be monitored monthly, with the exception of *H. azteca* sediment toxicity, which will be monitored in March and September. Copper and lead MPM is outlined in the Core Site Metals section. The Coalition petitioned to remove chlorpyrifos from the site’s management plan on June 5, 2014 and will remove lead in August 2015.

The Represented sites in Zone 6 will be monitored based on an evaluation of exceedances that occurred at either the Core site (including Core site management plan constituents) or at the Represented site, as discussed below.

**Table 24. Zone 6 management plan constituents and 2015 WY exceedances.**

Core site is bolded. ‘X’ indicates one or more exceedances occurred during the 2015 WY and ‘M’ indicates a management plan for that constituent.

SITE NAME	DO	PH	E. COLI	COPPER	LEAD	CHLORPYRIFOS	DIURON	S. CAPRICORNUTUM	H. AZTECA
<b>Dry Creek @ Rd 18</b>	<b>X<sup>M</sup></b>	<b>X<sup>M</sup></b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>
Ash Slough @ Ave 21				M					
Berenda Slough along Ave 18 ½	M		M	M		M			
Cottonwood Creek @ Rd 20	M		M	M	M				

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### *Ash Slough @ Ave 21*

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#### **Monitoring decision based on exceedances at the Represented site**

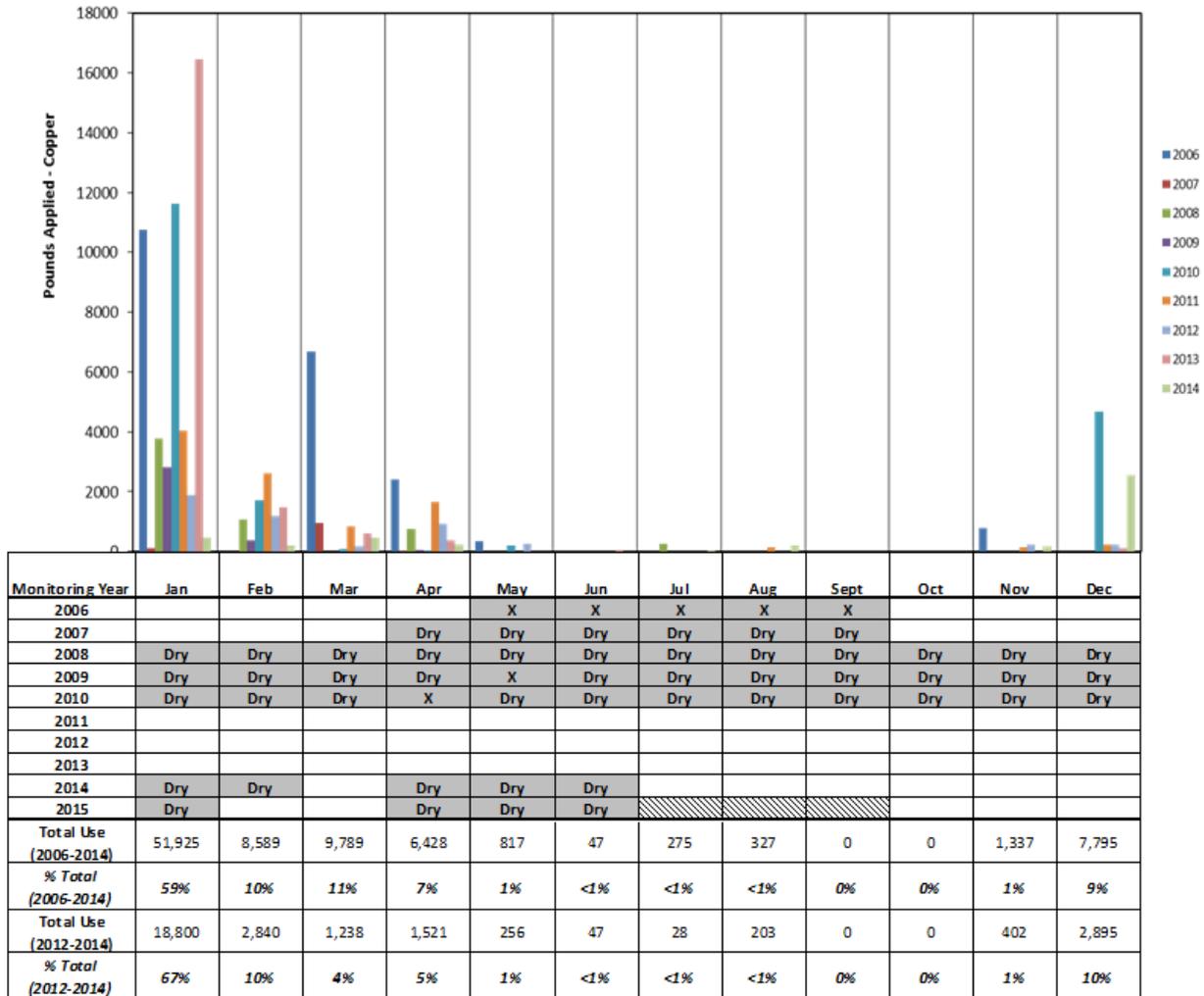
During the 2016 WY, MPM is scheduled for dissolved copper at Ash Slough @ Ave 21.

#### *Copper*

Past exceedances of the WQTL for total copper occurred in May through September 2006, and for dissolved copper in 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 December, January, and February (Figure 37). Therefore, it is likely that past exceedances were due to non-agriculture sources. The Coalition will conduct MPM for copper December through April for the 2016 WY.

**Figure 37. 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. The PUR data through December 2014.



### **Monitoring decision based on exceedances at the Core site**

The Coalition evaluated the Core site management plan constituents not in a management plan at Ash Slough @ Ave 21: chlorpyrifos, diuron, *S. capricornutum* toxicity, and sediment toxicity to *H. azteca*. Due to the improved water quality at the site and the number of times the site has been dry; the Coalition determined no additional monitoring is necessary during the 2016 WY.

#### *Chlorpyrifos*

The Coalition received approval to remove chlorpyrifos from the Ash Slough @ Ave 21 management plan on May 30, 2012.

#### *Diuron*

Assessment monitoring was conducted from 2008 through 2010 at Ash Slough @ Ave 21; the Coalition monitored 54 times and the site was dry for 34 of those events. No exceedances of the WQTL for diuron have occurred at the site.

#### *S. capricornutum toxicity*

The only toxicity to occur at the site was to *S. capricornutum* in February 2006. After February 2006, eight samples were tested for *S. capricornutum* toxicity from 2006 through 2010 and all samples were not toxic. In addition, from 2008 through May 2015 the site has been dry 50 times. Therefore, no monitoring for toxicity to *S. capricornutum* will occur during the 2016 WY.

#### *H. azteca sediment toxicity*

Due to no sediment toxicity at Ash Slough @ Ave 21 during Assessment Monitoring and the number of times the site has been dry, the Coalition determined no sediment toxicity monitoring is necessary during the 2016 WY.

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### *Berenda Slough along Ave 18 ½*

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### **Monitoring decision based on exceedances at the Represented site**

During the 2016 WY, MPM is scheduled for chlorpyrifos and copper at Berenda Slough @ Ave 18 ½.

#### *Chlorpyrifos*

Exceedances of the WQTL for chlorpyrifos occurred during July and September 2006, July 2007, and April 2011. Since 2011, the Coalition has monitored for chlorpyrifos for at least four years; no exceedances of the WQTL occurred (Figure 38). The Coalition will petition to remove chlorpyrifos from the site's management plan in August 2015.

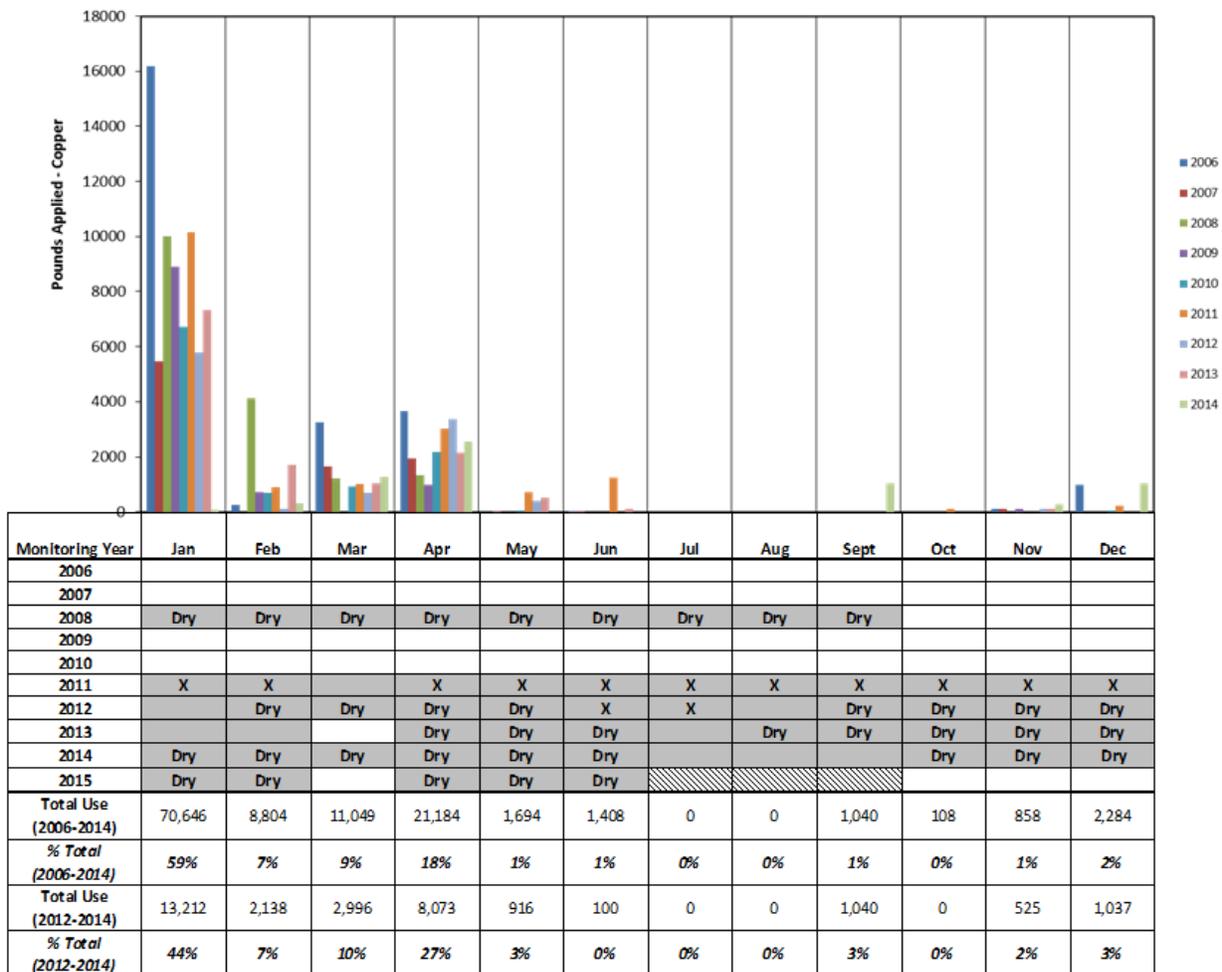
The Coalition will conduct MPM for chlorpyrifos during the 2016 WY in May, June, and July, when applications of chlorpyrifos have the greatest potential to impact water quality. April and September are not included in the MPM schedule despite past exceedances. The Coalition monitored in April for chlorpyrifos for four consecutive years after the 2011 exceedance and in September for six years after the 2006 exceedance; the site was dry during each event and therefore no exceedances occurred.

## Copper

In 2011, exceedances of the WQTL for dissolved copper occurred every month except March. The exceedances that occurred during the irrigation season were not associated with copper applications, demonstrating that exceedances of copper can be a result of non-agricultural sources. The Coalition monitored for dissolved copper monthly from 2012 through June 2015, with the exception of March 2013 and March 2015; no exceedances occurred (Figure 39). The Coalition will petition to remove copper from the site’s management plan in August 2015. During the 2016 WY, MPM is schedule in December through April during months of highest use.

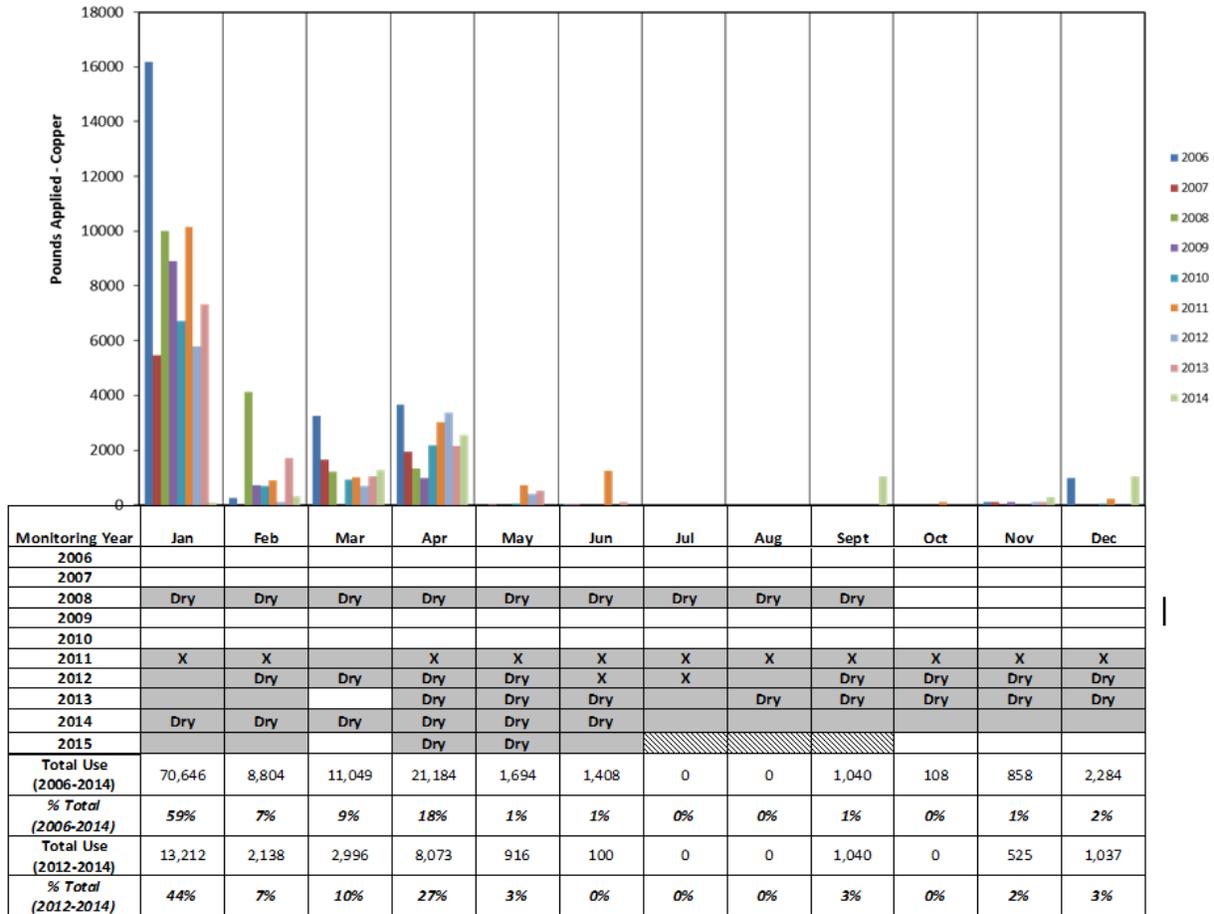
**Figure 38. Berenda Slough along Ave 18 ½ 2006-2014 chlorpyrifos use and monitoring.**

Shaded cells represent months of past monitoring. “X” depicts months in which exceedances occurred. Hatched cells indicate monitoring has not yet occurred. The PUR data through December 2014.



**Figure 39. Berenda Slough along Ave 18 ½ 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. The PUR data through December 2014.



### **Monitoring decision based on exceedances at the Core site**

The Coalition evaluated the Core site management plan constituents not in a management plan at Berenda Slough along Ave 18 ½: diuron, *S. capricornutum* toxicity, and sediment toxicity to *H. azteca*.

#### *Diuron*

Assessment Monitoring occurred at Berenda Slough along Ave 18 ½ from 2011 through 2012; no exceedances of the WQ TL for diuron occurred. In addition, the site is consistently dry; therefore, the Coalition determined monitoring is not necessary for diuron at the site during the 2016 WY.

#### *S. capricornutum toxicity*

*S. capricornutum* toxicity was approved for removal from the Berenda Slough along Ave 18 ½ management plan on May 30, 2012. Berenda Slough along Ave 18 ½ has been monitored from 2007 through the 2015 WY; 71 monitoring events occurred and the site was dry for 44 of those events, including every month monitored in the 2014 WY. Monitoring for toxicity to *S. capricornutum* is not scheduled for the 2016 WY.

#### *H. azteca sediment toxicity*

The site was monitored for sediment toxicity to *H. azteca* during Assessment Monitoring in 2011 and 2012; the site was drying during sediment monitoring, therefore no toxicity occurred. Monitoring for toxicity to *H. azteca* is not scheduled for the 2016 WY.

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### *Cottonwood Creek @ Rd 20*

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### **Monitoring decision based on exceedances at the Represented site**

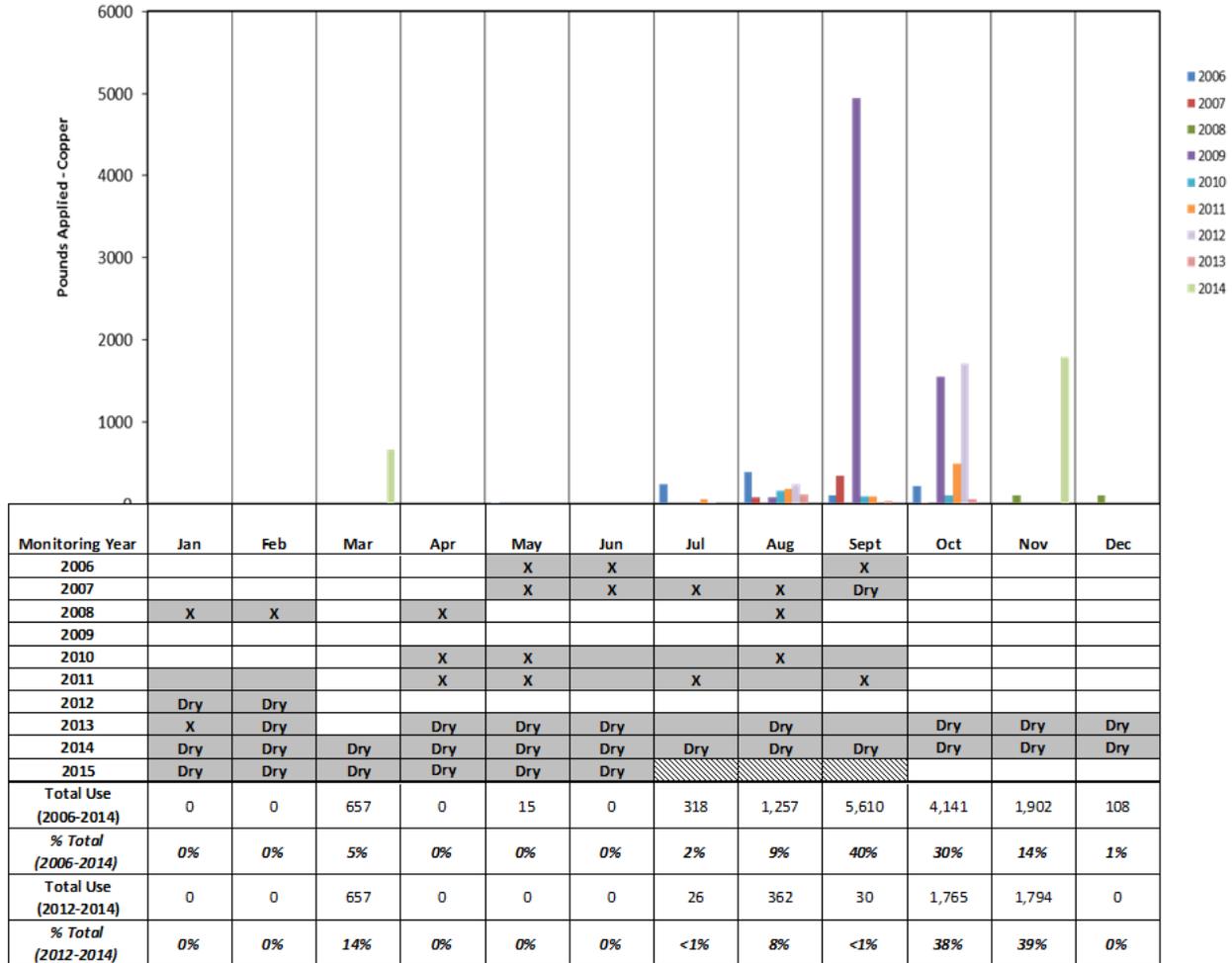
Management Plan Monitoring for copper and lead is scheduled at Cottonwood Creek @ Rd 20 in the 2016 WY.

#### *Copper*

From 2013 through June 2015, Cottonwood Creek @ Rd 20 was monitored for copper monthly, with the exception of March 2013. The site was dry 25 times and only one exceedance of the hardness based WQTL for dissolved copper occurred in January 2013. Over the last three years, applications of copper only occurred in March, August, October, and November; however, the site was dry during those months in the last two years (Figure 40). During the 2016 WY, MPM for copper will occur in October, November, January, and September.

**Figure 40. Cottonwood Creek @ Rd 20 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. The PUR data through December 2014.



### Lead

The last exceedance of the WQTL for lead occurred in February 2008. The Coalition petitioned to remove lead from the management plan on June 5, 2014 (approval pending). Lead is not currently applied by agriculture and therefore cannot be associated with PUR data. The Coalition will conduct MPM for lead during months of past exceedances in January, February, and June.

### Monitoring decision based on exceedances at the Core site

The Coalition evaluated the Core site management plan constituents not in a management plan at Cottonwood Creek @ Rd 20: chlorpyrifos, diuron, *S. capricornutum* toxicity, and sediment toxicity to *H. azteca*.

### Chlorpyrifos

Cottonwood Creek @ Rd 20 was monitored monthly during the 2014 WY and 2015 WY (through June) and was dry during every event. The last exceedance of the WQTL for chlorpyrifos occurred in 2010; the

Coalition received approval from the Regional Board to remove chlorpyrifos from the Cottonwood Creek @ Rd 20 management plan in October 2013. Due to the site consistently being dry and improved water quality, the Coalition determined monitoring for chlorpyrifos is not necessary during the 2016 WY.

#### *Diuron*

Cottonwood Creek @ Rd 20 was monitored for diuron from 2005 through 2013; 38 samples were collected and no exceedances of the WQTL occurred. In addition, the site is consistently dry; therefore, the Coalition determined monitoring is not necessary for diuron at the site during the 2016 WY.

#### *S. capricornutum toxicity*

One sample collected in April 2008 was toxic to *S. capricornutum*. The TIE results indicated toxicity was caused by cationic chemicals and non-polar organics; an exceedance of the WQTL for total copper coincided with the toxicity. The site was resampled in May 2008 and toxicity was persistent. Cottonwood Creek was monitored monthly for *S. capricornutum* toxicity during the 2014 WY and 2015 WY (through June) as the Core site in Zone 6. The site was dry during every monitoring event with the exception of June 2015. The Coalition determined monitoring for *S. capricornutum* toxicity is not necessary during the 2016 WY.

#### *H. azteca sediment toxicity*

Cottonwood Creek @ Rd 20 was monitored monthly during the 2014 WY and 2015 WY (through June) and dry during every event. The last sediment toxicity occurred in March 2008. The Coalition determined monitoring for sediment toxicity is not necessary during the 2016 WY.