

# San Joaquin County and Delta Water Quality Coalition

San Joaquin County and Delta Water Quality Coalition

P.O. Box 2357

Lodi, CA 95247-2357

(209) 472-7127 ext. 118

June 9, 2014

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

Dear Ms. Creedon,

The San Joaquin County and Delta Water Quality Coalition (SJCDWQC or Coalition) is submitting a request to remove specific constituents from selected site subwatershed management plans and from the site's Management Plan Monitoring (MPM) schedule. The Management Plan process is outlined in the Coalition's original Management Plan (approved January 23, 2009, Figure 2) and updated in the Management Plan Update Report submitted in 2010 (Figure 1, page 13). The WDR (R5-2014-0029), Appendix MRP-1, Page 9 outlines that there is the opportunity to petition the Regional Board for removal of constituents from the Management Plan if the following four conditions are met:

1. Demonstration through evaluation of monitoring data that the water quality problem is no longer occurring (i.e., 3 or more years with no exceedances during the times of the year when previous exceedances occurred) or demonstrated compliance with the Order's surface and groundwater receiving water limitations.
2. Documentation of third-party education and outreach to applicable Members in the watershed where water quality impairment occurred.
3. Documentation of Member implementation of management practices that address the water quality exceedances.
4. Demonstration that the management practices implemented by Members are effective in addressing the water quality problem.

The bases for the request is 1) three years of monitoring at a site subwatershed with no exceedances of a specific constituent indicating improved water quality in the applicable site subwatersheds, and 2) reevaluation of WQTLs for specific conductivity (SC). If approved, the Coalition will remove site specific constituents from management plans in:

- Grant Line Canal @ Clifton Court Rd (chlorpyrifos)
- Kellogg Creek along Hoffman Ln (SC and *S. capricornutum* water column toxicity)
- Mormon Slough @ Jack Tone Rd (*C. dubia* and *S. capricornutum* water column toxicity)
- Roberts Island @ Whisky Slough Pump (pH, chlorpyrifos, diuron, and *C. dubia* water column toxicity)
- Sand Creek @ Hwy 4 Bypass (disulfoton and *S. capricornutum* water column toxicity)
- Terminous Tract Drain @ Hwy 12 (chlorpyrifos)
- Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (SC)

In addition, the Coalition has reevaluated the WQTL for SC based on the Basin Plan section for SC which refers to the San Francisco Bay/Sacramento-San Joaquin Delta Basin Plan. The San Francisco

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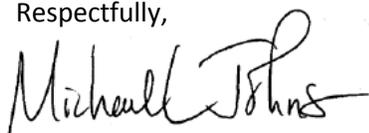
Lodi, CA 95247-2357

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Bay/Sacramento-San Joaquin Delta Basin Plan (Table 2, Page 13) indicates the WQTL for SC should be based on the seasonal criteria of 700  $\mu\text{mhos/cm}$  from April through August, and 1,000  $\mu\text{mhos/cm}$  from September through March. The Coalition has always used the 700  $\mu\text{mhos/cm}$  WQTL and some sites had measurements of SC reported as exceedances and were placed in management plans when the 1000  $\mu\text{mhos/cm}$  WQTL should have been used. The letter below includes details for sites where an update to the WQTL for SC would affect the management plan status of the constituent; sites were assessed on a case-by-case scenario. Specific conductivity is a field parameter and it is monitored at all sites during every monitoring event regardless of its management plan status.

Supporting documentation for this request is included in the following pages.

Respectfully,



Michael L. Johnson

Technical Program Manager

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## INTRODUCTION

Management Plan Monitoring (MPM) is conducted as part of the Coalition’s management plan strategy to identify contaminant sources and evaluate the effectiveness of management practices in improving water quality. When sources of water quality impairments are identified, the constituents causing impairments are listed in the site’s management plan. Management plans are required as a result of a single exceedance of the Water Quality Trigger Limit (WQTL) of a Total Maximum Daily Load (TMDL) constituent (dissolved oxygen (DO) specific conductance (SC), boron, chlorpyrifos, and diazinon), or more than one exceedance of a WQTL for other constituents.

When a constituent becomes the focus of the SJCDWQC Management Plan, the Coalition initiates actions to address the exceedances including focused outreach and additional Management Plan Monitoring (MPM) during months of past exceedances. The SJCDWQC Management Plan includes a flow chart which describes the process by which the Coalition conducts monitoring, source identification, as well as outreach and evaluation of implemented management practices. In 2007, the Coalition initiated general outreach to growers including information about management practices that could be implemented to reduce the impact of agriculture on water quality. Initial focused outreach began in 2008 and water quality data for a subset of subwatersheds has been collected for several constituents to document improved water quality. Therefore, the Coalition determined that there is sufficient evidence to request the removal of 13 site specific constituents in the seven site subwatersheds listed in Table 1.

**Table 1. SJCDWQC management plan completion sites and constituents.**

SITE SUBWATERSHED	2014 MONITORING	FUTURE MONITORING	YEARS OF FOCUSED OUTREACH	PH*	SC*	CHLORPYRIFOS	DIURON	DISULFOTON	C. DUBIA Toxicity	S. CAPRICORNUTUM Toxicity	TOTAL
Grant Line Canal @ Clifton Court Rd	MPM	TBD	2010-2012			X					1
Kellogg Creek along Hoffman Ln	MPM	TBD	2012-2014		X					X	2
Mormon Slough @ Jack Tone Rd	MPM	Represented	2012-2014						X	X	2
Roberts Island @ Whiskey Slough Pump	Assessment, MPM	Core	2013-2015	X		X	X		X		4
Sand Creek @ Hwy 4 Bypass	MPM	TBD	2012-2014					X		X	2
Terminus Tract Drain @ Hwy 12	Core, MPM	Core	2011-2013			X					1
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	MPM	Represented	2008-2010		X						1
<b>Total</b>				<b>1</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>13</b>

\*Field parameters will continue to be monitored during all monitoring events.  
 MPM- Management Plan Monitoring  
 TBD- To be determined

This request includes monitoring results through March 2014 with the exception of field parameters and toxicity (results through May 2014). The Coalition will report all monitoring results for January through September 2014 in the May 2015 Annual Report.

To support the Coalition’s request, data are provided for each constituent documenting improvement in water quality due to successful outreach and education. The section key below outlines the requirements for management plan completion and corresponding sections per each site subwatershed as stated in the WDR:

**Section Key**

REQUIREMENTS FOR MANAGEMENT PLAN COMPLETION: AS OUTLINED IN THE WASTE DISCHARGE REQUIREMENTS GENERAL ORDER (WDR OR GENERAL ORDER) FOR GROWERS WITHIN THE SAN JOAQUIN COUNTY AND DELTA AREA THAT ARE MEMBERS OF A THIRD-PARTY GROUP (ORDER NO. R5-2014-0029)	SECTION NAME/LOCATION – ANNUAL REPORT
1. Demonstration through evaluation of monitoring data that the water quality impairment is no longer occurring (i.e., 3 or more years with no exceedances during the times of the year when previous exceedances occurred) or demonstrated compliance with the WDR’s surface and groundwater receiving water limitations.	<ul style="list-style-type: none"> <li>• Subwatershed Overview and Monitoring History,</li> <li>• Constituent Monitoring Results and Sourcing (including review of PUR data)</li> </ul>
2. Documentation of education and outreach to applicable members in the watershed where water quality impairment occurred.	<ul style="list-style-type: none"> <li>• Summary of Outreach</li> </ul>
3. Documentation of member implementation of management practices that address the water quality exceedance.	<ul style="list-style-type: none"> <li>• Management Practices Implemented</li> </ul>
4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment.	<ul style="list-style-type: none"> <li>• Justification for Removal- review of how the Coalition has met the requirements for removal as outlined in the WDR, Appendix MRP-1, Pages 8 and 9.</li> <li>• Future Monitoring</li> </ul>

## SUPPORTING DOCUMENTATION FOR MANAGEMENT PLAN COMPLETION

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### GRANT LINE CANAL @ CLIFTON COURT RD

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1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring
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#### **Constituents Requested to Remove from Management Plan:**

- Chlorpyrifos

#### *Subwatershed Overview and Monitoring History*

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The Grant Line Canal @ Clifton Court Rd site subwatershed is located within the Roberts Island @ Whiskey Slough Pump Zone (Zone 4). Monitoring began in the storm season of 2005 and continued through the storm and irrigation seasons of 2006 and 2008 respectively. Management Plan Monitoring was established in 2007 and occurred during the irrigation season (April through September). Normal storm and irrigation monitoring occurred for chlorpyrifos in 2007 and 2008. The site was not sampled during 2009; however, MPM for chlorpyrifos occurred in 2010, 2011, 2012, 2013, and 2014.

The Coalition began general outreach and education in the site subwatershed in 2007. Focused outreach occurred from 2010 through 2012. The Coalition identified growers with the greatest likelihood of contributing to the water quality impairments. The Coalition contacted targeted growers in 2010 to document existing management practices, and encouraged the implementation of additional management practices. The Coalition followed up with targeted growers in 2011 to determine which additional management practices were implemented.

#### *Constituent Monitoring Results and Sourcing*

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##### **Chlorpyrifos**

The Regional Board established a TMDL for chlorpyrifos for the SJCDWQC region (Lower San Joaquin River Chlorpyrifos and Diazinon TMDL). Consequently, chlorpyrifos is considered one of the highest priority constituents under the Coalition's Management Plan. There have been six exceedances of the WQTL for chlorpyrifos in the Grant Line Canal @ Clifton Court Rd site subwatershed, in 2005 (March), 2007 (February (two times) and September), 2008 (January), and 2010 (September).

Since the last exceedance of the WQTL for chlorpyrifos in September 2010, Grant Line Canal @ Clifton Court Rd has been monitored for chlorpyrifos 15 times for MPM during months of past exceedances. No exceedances of the WQTL for chlorpyrifos have occurred during any MPM event since September 2010. The PUR data indicate that since 2007 there has been a steep decline in chlorpyrifos applications. No applications of chlorpyrifos occurred from 2008 through 2009. There was only one application of chlorpyrifos in 2010 (March; 25 lbs AI to 55 ac of alfalfa) which was not associated with the September 2010 exceedance. The PUR data indicate only 51 pounds (lbs) AI of chlorpyrifos were applied in 2011

(across 110 acres (ac) of alfalfa); in 2012, 336 lbs AI were applied (across 333 ac of asparagus), and in 2013, 336 lbs AI were applied (across 334 ac of asparagus and corn). Although applications of chlorpyrifos increased slightly between 2011 and 2013, no exceedances of the WQTL for chlorpyrifos and no toxicity to *C. dubia* occurred during these years. The end of three years of monitoring with no exceedances was September 2013. In addition, the Coalition monitored for chlorpyrifos three months in 2014 (January through March) with no exceedances.

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## 2. Documentation of education and outreach to members where water quality impairment occurred

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### *Summary of Outreach*

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The Coalition initiated general outreach in 2007 and has taken several actions to address water quality impairments in the Grant Line Canal @ Clifton Court Rd site subwatershed. The Coalition conducted focused outreach in 2010 to document current management practices and discuss water quality impairments. The Coalition followed up with the two targeted members in the subwatershed to assess if recommended and/or new practices were implemented.

The Coalition continues to provide outreach to all members within the site subwatershed. Through grower notifications and meetings, the Coalition informs members of water quality results, management practices to eliminate water quality impairments, availability of funding for management practice implementation, results of studies of management practice efficacy, and management practice implementation and tracking activities. In addition, Grant Line Canal @ Clifton Court Rd remains a priority subwatershed for other constituents and outreach continues with growers who have the greatest likelihood of contributing to exceedances.

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## 3. Documentation of member implementation of management practices to address the water quality exceedance

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The complete analysis of management practices implemented in the Grant Line Canal @ Clifton Court Rd site subwatershed was reported in the SJCDWQC 2011 MPUR. Results from that analysis are described in the section below.

In 2010, the Coalition contacted two targeted growers representing 2,176 acres in the site subwatershed. Management practices were documented for 100% of the acreage identified as having direct drainage. Grower meetings were conducted in 2010 and 100% of targeted members returned surveys with their management practice information. Follow-up surveys were sent in early 2011 and 100% of follow-up surveys were returned.

The entirety of the subwatershed was determined to have direct drainage (259 acres) based on GIS analysis. One-hundred percent of the parcels with direct drainage are enrolled in the Coalition and 2 members representing all of the direct drainage acreage filled out surveys with current management practice information. Due to the small size of the subwatershed, the parcels owned by these two

members extend beyond its boundaries; a total of 2,176 acres have had current and additional management practices implemented in 2009 and 2010. Figures 1-3 are based on this total enrolled irrigated acreage owned by these two members.

Both members recorded that they had tailwater runoff. Neither member indicated if water left their farm but water management on Delta Islands is such that eventually water not used by crops is eventually pumped to the Delta. The distribution of management practices implemented in the subwatershed as of 2009 were split between reducing runoff water volume using irrigation management, reducing the use of pesticides such as chlorpyrifos, and treating ditches with PAM (34%,34% and 33% of acreage, respectively; Figure 1). In 2009, one or more management practices specific to runoff management and/or pesticide application were used on approximately 40% of the direct drainage acreage enrolled in the Coalition.

Growers indicated that they intended to reduce runoff water volume on 42% of their acreage, and they intended to reduce the use of pesticides causing exceedances on 42% of acres (Figure 2). Additionally, 16% of acreage was to be treated with PAM or other materials in 2010. Follow up surveys from 100% of growers indicates that all intended management practices were implemented (Figure 3).

**Figure 1. Grant Line Canal @ Clifton Court Rd 2009 management practices from 2010 surveys.**

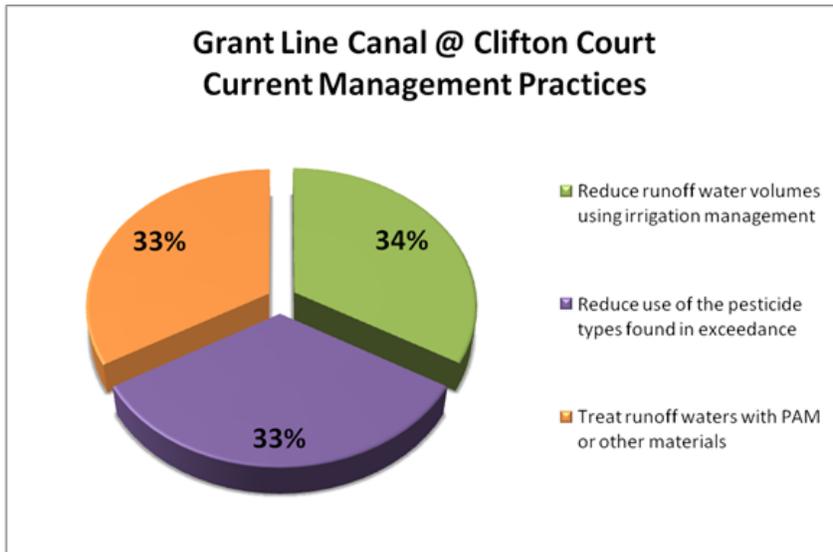


Figure 2. Grant Line Canal @ Clifton Court Rd 2010 management practices (to be implemented).

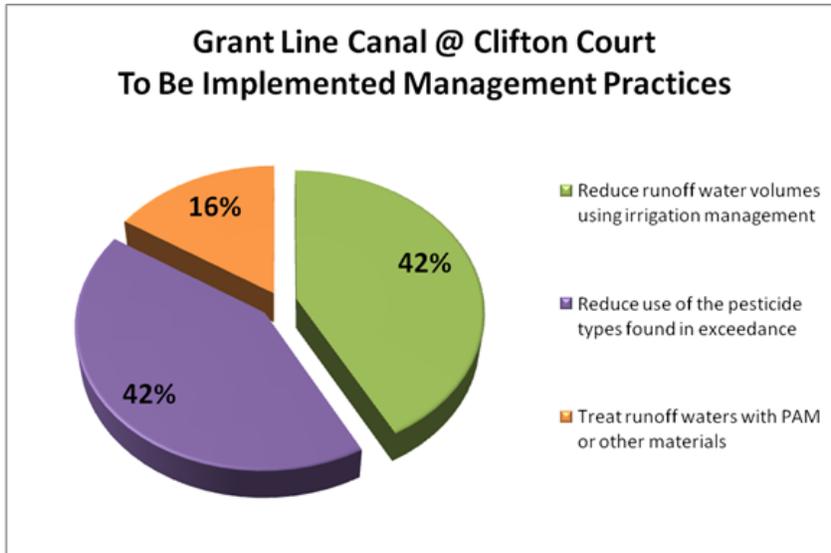
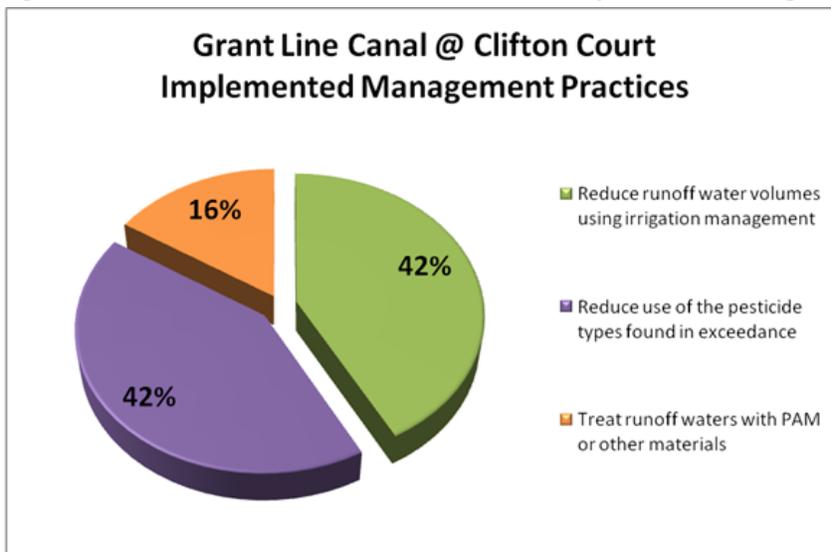


Figure 3. Grant Line Canal @ Clifton Court Rd 2010 implemented management practices from 2011 follow-ups.



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4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

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*Justification to Remove Constituents from Grant Line Canal @ Clifton Court Rd*

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The Coalition's focused management practice outreach and tracking strategy is effective at improving water quality. Monitoring results indicate three years of monitoring with no exceedances of the WQTL for chlorpyrifos. Based on focused outreach surveys and follow-up results, targeted growers in the site subwatershed implemented management practices and improved water quality as reflected by the absence of exceedances of chlorpyrifos. Therefore, the Coalition requests that chlorpyrifos be removed from the Grant Line Canal @ Clifton Court Rd site subwatershed management plan and MPM schedule. Management Plan Monitoring in 2014 will continue for other constituents.

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### *Future Monitoring*

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Grant Line Canal @ Clifton Court Rd is located within Zone 4. During 2014, MPM will occur according to the schedule outlined in the 2014 MPUR; MPM is scheduled for chlorpyrifos, and toxicity to *S. capricornutum* and *H. azteca* based on months of past exceedances. Field parameters (DO, pH, and SC) will be measured during every monitoring event. Monitoring after October 2014 is to be determined.

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## KELLOGG CREEK ALONG HOFFMAN LN

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### 1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring

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#### **Constituents Requested to Remove from Management Plan:**

- Specific conductivity (SC)
- *Selenastrum capricornutum* water column toxicity

#### *Subwatershed Overview and Monitoring History*

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Kellogg Creek along Hoffman Ln site subwatershed is located within the Roberts Island @ Whiskey Slough Pump Zone (Zone 4). Normal Monitoring was initiated at Kellogg Creek @ Hwy 4 in the storm season of 2005 and continued for three seasons, ending with the storm season of 2006. Kellogg Creek @ Hwy 4 (which is downstream of the Kellogg Creek along Hoffman Ln) is no longer sampled because of large urban inputs.

The Kellogg Creek along Hoffman Ln site subwatershed monitoring location was established during an upstream sampling event in September 2005 to isolate the source of toxicity. Monitoring at Kellogg Creek along Hoffman Ln replaced Kellogg Creek @ Hwy 4 in 2007. Management Plan Monitoring was initiated in 2007; no monitoring occurred from 2009 through 2010; monitoring resumed from 2011 through 2014 for management plan constituents.

The Coalition began general outreach and education in the Kellogg Creek along Hoffman Ln site subwatershed in 2007. Focused outreach in Kellogg Creek along Hoffman Ln began in 2012 and will continue through 2014. The Coalition identified growers with the greatest likelihood of contributing to the water quality impairments. The Coalition contacted targeted growers in 2012 to document existing management practices, and to encourage the implementation of additional management practices. The Coalition followed up with targeted growers in 2013 to determine which additional management practices were implemented.

#### *Constituent Monitoring Results and Sourcing*

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##### **Specific Conductance (SC)**

Exceedances of SC can be caused by various factors, including tidal flux and determining the exact source(s) of exceedances is impossible. The Regional Board has established a TMDL for SC in waterways to which SJCDWQC drains. The Basin Plan refers to the San Francisco Bay/Sacramento-San Joaquin Delta Basin Plan (Table 2, Page 13) for the WQTL requirements for SC and indicates the WQTL for SC should be based on the seasonal criteria of 700  $\mu\text{mhos/cm}$  (April through August), and 1,000  $\mu\text{mhos/cm}$  (September through March).

A total of 13 measurements of SC have been reported as exceedances in Kellogg Creek. Eight occurred at Kellogg Creek @ Hwy 4 in 2005 (February, March, July, and twice during August sample and

resample), and in 2006 (February, March, and April). The remaining five exceedances reported were from Kellogg Creek along Hoffman Ln in 2006 (February, March, and April) in 2011 (March), and in 2014 (March). Of the 13 total reported exceedances of the WQTL of 700 µmhos/cm for SC, three measurements of SC were not above the 1000 µmhos/cm WQTL for the months of September through March as outlined in the Basin Plan. Table 2 lists the three measurements of SC that should not be considered exceedances. The remaining measurements of SC were exceedances based on the Basin Plan seasonal WQTL criteria, however; the exceedances occurred in 2005 at Kellogg Creek @ Hwy 4 and in 2006 at Kellogg Creek along Hoffman Ln. The Coalition has monitored Kellogg Creek along Hoffman Ln 37 times since the last exceedance in April 2006 and no measurement was above the Basin Plan seasonal objectives for SC. The most recent measurement of SC reported as an exceedance was March 2014 (804 µmhos/cm); however, according to the Basin Plan, this measurement is not an exceedance of the 1000 µmhos/cm criteria for the months of September through March. Therefore, the Coalition requests that SC be removed from the Kellogg Creek along Hoffman Ln management plan because there has been more than three years of monitoring with no exceedances of the Basin Plan objectives for SC. Specific conductivity is a field parameter and it is monitored at all sites during every monitoring event regardless of its management plan status.

**Table 2. Reported and reevaluated exceedances for SC based on WQTL criteria in Basin Plan.**

Previously reported SC measurements were based on the 700 µmhos/cm only; SC WQTLs based on the Basin Plan requirements should be 700 µmhos/cm (April through August), and 1,000 µmhos/cm (September through March).

MONITORING SITE	SAMPLE DATE	EXCEEDANCE REPORTED FOR SC
Kellogg Creek @ Hwy 4	2/23/2005	990
Kellogg Creek along Hoffman Ln	3/8/2011	740
	3/5/2014	804

***Selenastrum capricornutum* water column toxicity**

There have been five instances of *S. capricornutum* toxicity in samples collected from the two sites on Kellogg Creek, once in August 2005 at Kellogg Creek @ Hwy 4, and in both the sample and resample during the April and May 2008 monitoring events at Kellogg Creek along Hoffman Ln. The August 2005 (44% growth compared to control) sample lost toxicity before the TIE could identify the cause; toxicity was not persistent in the resample. Both the April and May 2008 TIEs for Kellogg Creek along Hoffman Ln samples indicated non-polar organic and cationic chemical(s) to be the cause of toxicity; however, no exceedances of copper or other herbicides coincided with these events.

Since the last toxicity in May 2008, the Coalition has monitored Kellogg Creek along Hoffman Ln 15 times for *S. capricornutum* toxicity with no toxicity. The PUR data indicate a decline in herbicide use across the subwatershed. The year of highest use of herbicides (diuron and simazine) in the site subwatershed was 2008 (371 lbs AI on 424 ac of fruit and nut orchards), the year with the highest use of copper was 2010 (3879 lbs AI on 1918 ac of fruit and nut orchards and tomatoes). The year with the lowest use of diuron and simazine was 2013 (16 lbs AI on 15 ac walnuts and peppers); the year with the lowest use of copper was 2008 (125 lbs AI on 21 ac of fruit orchards). No exceedances of these constituents coincided with any of the *S. capricornutum* toxicities. There have been more than three years of monitoring with no *S. capricornutum* toxicity (2011 through May 2014). The end of three years of monitoring with no

exceedances was August 2013; the Coalition monitored for algae toxicity during April and May 2014 and no toxicity occurred.

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## 2. Documentation of education and outreach to members where water quality impairment occurred

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### *Summary of Outreach*

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The Coalition initiated general outreach in 2007 and has taken several actions to address water quality impairments in the Kellogg Creek along Hoffman Ln site subwatershed. Grower meetings with 10 targeted members in Kellogg Creek occurred during 2012 to discuss water quality concerns, review each grower's operation, and document existing management practices. Management practices were recommended if they could be effective in reducing agricultural discharges. The Coalition followed up with the two targeted members in the subwatershed to assess if recommended and/or new practices were implemented in 2013.

The Coalition continues to provide outreach to all members within the Kellogg Creek along Hoffman Ln site subwatershed. Through grower notifications and meetings, the Coalition informs members of water quality results, management practices to eliminate water quality impairments, availability of funding for management practice implementation, results of studies of management practice efficacy, and management practice implementation and tracking activities. In addition, Kellogg Creek along Hoffman Ln remains a priority subwatershed for other constituents and outreach continues with growers who have the greatest likelihood of contributing to exceedances.

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## 3. Documentation of member implementation of management practices to address the water quality exceedance

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The complete analysis of management practices implemented in the Kellogg Creek along Hoffman Ln site subwatershed was reported in the SJCDWQC 2014 MPUR. Results from that analysis are described in the section below.

In 2012, the Coalition contacted 10 targeted growers farming 402 acres in the Kellogg Creek along Hoffman Ln site subwatershed. Management practices were documented for 8% of the acreage identified as having direct drainage. Grower meetings were conducted in 2012 and 100% of targeted members returned surveys with their management practice information. A full summary of their management practices (2011) and management practices they planned to implement (2012) can be found in the 2013 MPUR, pages 61-65. Follow-up surveys were sent in early 2013 and 100% of follow-up surveys were returned.

Table 3 includes the number of targeted growers and member acreage associated with practices to be implemented (documented in initial surveys) compared to the number of growers and member acreage with newly implemented practices (documented in follow-up surveys). Not all practices were implemented that were planned to be implemented such as installing a retention pond (1 member) or

treating waters with materials such as PAM (2 members, Table 3). Many times a delay in implementation can be due to lack of funding and/or a change in other practices that serve the same purpose and therefore make the planned practice redundant and unnecessary. For example, one member indicated that they planned to treat runoff water with PAM however in their follow-up survey they instead reduced the volume of water used in irrigation. In some cases, a member implemented additional practices that were not planned based on their survey responses and therefore the Percent Implemented Compared to Planned percentage in Table 3 is greater than 100%. An example is reducing the amount of tailwater during an irrigation event; one member with 32 acres implemented this practice even though they did not indicate that they planned to on their survey. One member representing 15 irrigated acres indicated management practices would be implemented in 2012, however; the follow-up survey was returned blank. Since the grower's initial survey indicated four out of the five management practices were currently implemented, only one planned management practice (treating runoff waters with PAM or other materials) was not newly implemented in 2012.

A final analysis of the follow-up surveys indicates that the two most implemented practices were: 1) reducing runoff water volume (42% of the acreage with new practices) and 2) installing sprinkler or micro irrigation (34% of the acreage with new practices, Figure 4). When comparing the acreage associated with planned management practices and the acreage associated with the implemented management practices, these two practices had the highest percentage implementation (105% and 99% respectively, Table 3). Other management practices implemented in 2012 included reducing the use of the targeted pesticide and using center grass rows, waterways or filter strips (Figure 4). Of the acreage associated with members contacted in Kellogg Creek along Hoffman Ln, 88% is associated with increased irrigation management and 72% is associated with the installation of sprinkler or micro irrigation (Table 3). The continued and newly implemented management practices have been successful in improving the water quality in the Kellogg Creek along Hoffman Ln site subwatershed; chlorpyrifos, copper, and toxicity to *C. dubia* have been removed from the site's management plan due to three years of no exceedances or toxicity.

**Table 3. Growers and acreage of 2012 planned and newly implemented practices in the Kellogg Creek along Hoffman Ln site subwatershed.**

Results are based on initial surveys and follow-up surveys.

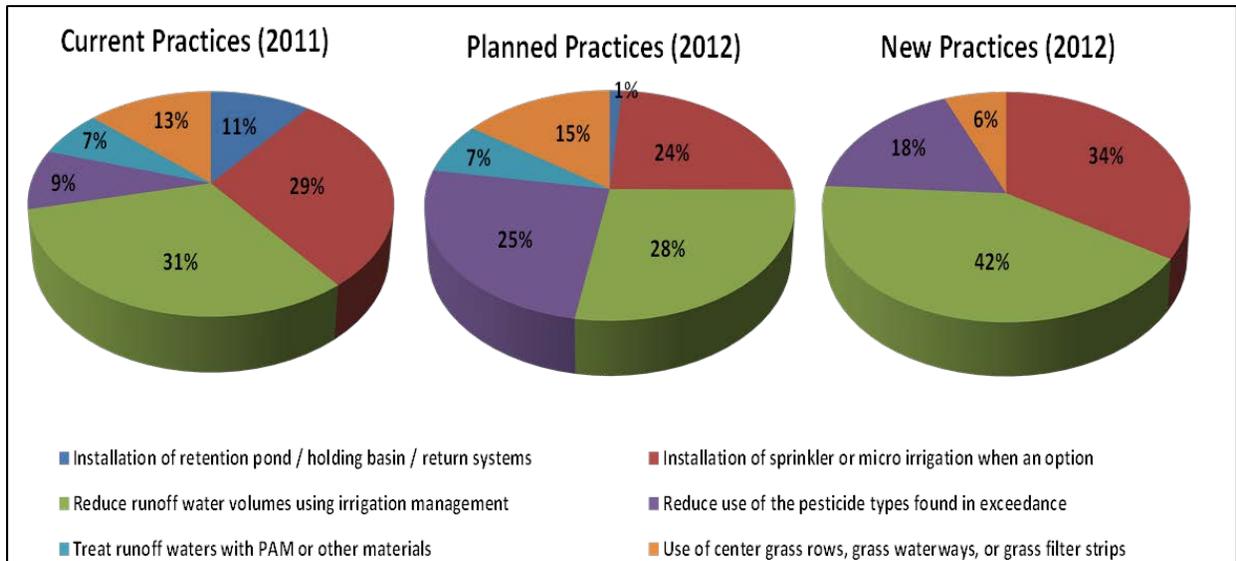
MANAGEMENT PRACTICE	GROWERS: PLANNED PRACTICES IN 2012 <sup>1</sup>	ACREAGE: PLANNED PRACTICES IN 2012	GROWERS: IMPLEMENTED PRACTICE IN 2012 <sup>1</sup>	ACREAGE: NEWLY IMPLEMENTED PRACTICE IN 2012	PERCENT ACREAGE WITH IMPLEMENTED PRACTICES COMPARED TO PLANNED	PERCENT IMPLEMENTED COMPARED TO DIRECT DRAINAGE ACREAGE <sup>2</sup>
Installation of retention pond / holding basin / return systems	1	15	0	0	0%	0%
Installation of sprinkler or micro irrigation when an option	5	293	3	290	99%	72%
Reduce runoff water volumes using irrigation management	8	339	8	356	105%	88%
Reduce use of the pesticide types found in exceedance	8	308	5	152	49%	37%
Treat runoff waters with PAM or other materials	2	89	0	0	0%	0%
Use of center grass rows, grass waterways, or grass filter strips	3	186	1	52	28%	12%

<sup>1</sup>Growers can select multiple management practice categories.

<sup>2</sup>Based on 402 member acres targeted within direct drainage.

**Figure 4. Kellogg Creek along Hoffman Ln summary of management practices.**

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices for each survey response.



#### 4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

##### *Justification to Remove Constituents from Kellogg Creek along Hoffman Ln*

The Coalition’s focused management practice outreach and tracking strategy is effective at improving water quality. Management Plan Monitoring results indicate more than three years of monitoring with no *S. capricornutum* toxicity. Based on focused outreach surveys and follow-up results, targeted growers in the Kellogg Creek along Hoffman Ln site subwatershed implemented management practices and improved water quality as reflected by the absence of *S. capricornutum* toxicity. Therefore, the Coalition requests that *S. capricornutum* toxicity be removed from the Kellogg Creek @ Hoffman Ln management plan and MPM schedule.

Based on the Basin Plan seasonal criteria for SC objectives, there have been no exceedances of the WQTLs for SC in Kellogg Creek along Hoffman Ln since April 2006. The Coalition therefore requests that the constituent be removed from the Kellogg Creek along Hoffman Ln management plan.

##### *Future Monitoring*

Kellogg Creek along Hoffman Ln is located in Zone 4. During 2014, MPM will occur according to the schedule outlined in the 2014 MPUR; MPM is scheduled for toxicity to *S. capricornutum* and *H. azteca* through September 2014. Field parameters (DO, pH, and SC) will be measured during every monitoring event. Monitoring after October 2014 is to be determined.

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## MORMON SLOUGH @ JACK TONE RD

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### 1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring

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#### **Constituents Requested to Remove from Management Plan:**

- *Ceriodaphnia dubia* water column toxicity
- *Selenastrum capricornutum* water column toxicity

#### *Subwatershed Overview and Monitoring History*

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Normal Monitoring began at Mormon Slough @ Jack Tone Rd during the irrigation season of 2006 and continued through September 2008. The site was not sampled from 2009 to 2010; however, MPM occurred in 2007, 2008, 2011, 2012, and 2013 during months of past exceedances.

The Coalition began general outreach and education in the Mormon Slough @ Jack Tone Rd site subwatershed in 2007. Focused outreach in Mormon Slough @ Jack Tone Rd began in 2012 and will continue through 2014. The Coalition identified growers with the greatest likelihood of contributing to the water quality impairments. These growers were contacted in 2012 to document existing management practices, and encouraged the implementation of additional management practices. The Coalition followed up with targeted growers in 2013 to determine which additional management practices were implemented.

#### *Constituent Monitoring Results and Sourcing*

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##### ***Ceriodaphnia dubia* water column toxicity**

*C. dubia* water column toxicity is indicative of pesticides, such as chlorpyrifos and diazinon. *C. dubia* toxicity has occurred in samples collected from Mormon Slough @ Jack Tone Rd twice, in 2007 (September, 0% survival compared to the control) and 2008 (May, 0% compared to the control). Toxicity was not persistent in either of the resampling events. The TIE results from the 2007 toxicity indicated that the toxicity was caused by non-polar organic chemicals. The May 2008 TIE was inconclusive due to lost toxicity. Exceedances of chlorpyrifos occurred during both toxic sampling events in September 2007 (0.210 µg/L) and May 2008 (0.066 µg/L). No exceedances of the WQTL for chlorpyrifos have occurred since September 2011 (did not result in toxicity to *C. dubia*).

Since the last toxicity in May 2008, the Coalition has monitored Mormon Slough @ Jack Tone Rd seven times for *C. dubia* toxicity with no toxicity (monitoring from September 2008 through May 2014). Furthermore, since the last exceedance of chlorpyrifos in September 2011, the Coalition has monitored for chlorpyrifos eight times with no exceedances of the WQTL. The Coalition is scheduled to monitor for chlorpyrifos in May, July, August and September 2014 as part of MPM. If no exceedances of the WQTL for chlorpyrifos occur, September 2014 will be the end of three years of monitoring required to complete the management plan for that constituent and the Coalition will request approval to remove the constituent from the site's management plan.

The PUR data indicate chlorpyrifos use in the Mormon Slough @ Jack Tone Rd site subwatershed has fluctuated with a general declining trend since the 2008 toxicity. The year with the highest use of chlorpyrifos was 2010 (16,011 lbs on 7300 acres of alfalfa and walnuts); the year of lowest use was 2013 (2583 lbs AI on 2470 acres of fruit and nut orchards). Exceedances of the WQTL for chlorpyrifos coincided with both of the *C. dubia* toxicities in 2007 and 2008. The PUR data indicate that aerial applications of chlorpyrifos were made during years with chlorpyrifos exceedances. There have been other exceedances of the WQTL for chlorpyrifos that did not coincide with toxicity at the site. Furthermore, since outreach began, there has only been one aerial application of chlorpyrifos.

The decline in exceedances of the WQTL for chlorpyrifos and *C. dubia* toxicity are a direct result of Coalition outreach and growers implementing effective management practices. The Coalition is scheduled to monitor the site in 2014 for *C. dubia* toxicity (May and September); lab data for the May samples have been received and toxicity to *C. dubia* did not occur. Monitoring for chlorpyrifos is scheduled for May, and July through September. The Coalition will report any exceedances of the WQTL for chlorpyrifos to the Regional Board. The end of three years of monitoring with no *C. dubia* toxicity was May 2013; since May 2013, the Coalition monitored September 2013 and May 2014 with no instance of toxicity.

#### ***Selenastrum capricornutum* water column toxicity**

*S. capricornutum* water column toxicity may be the result of copper or herbicides (such as diuron and simazine) in the water column. There have been four occurrences of *S. capricornutum* toxicity at Mormon Slough @ Jack Tone Rd, once in 2007 (July, 61% compared to the control), and three times in 2008 (April 18%, with resample 25% and May 4% compared to the control). The TIEs concluded that non-polar organic and cationic metals were the cause of the April 2008 toxicity and cationic metals were the cause of the May 2008 toxicity although no exceedances of metals or herbicides coincided with the toxicities in 2007 or 2008. Toxicity was persistent in only one resample collected in April 2008.

Since the last toxicity in May 2008, the Coalition has monitored for *S. capricornutum* toxicity at Mormon Slough @ Jack Tone Rd 15 times (through May 2014) with no toxicity. The PUR data indicate from 2009 through 2013 the use of herbicides (diuron, glyphosate, and simazine) and copper has fluctuated in the site subwatershed. The year with the highest use of diuron, glyphosate, and simazine was 2012 (6056 lbs AI across 4365 ac of almonds, grapes, pears, and walnuts); the lowest use was in 2010 (1032 lbs AI across 923 ac of grapes and walnuts). The year with the highest use of copper was 2012 (111,131 lbs AI across 33,152 ac of fruit and nut orchards and tomato crops); the lowest use was 2013 (47,511 lbs AI across 15,999 ac of fruit and nut orchards). No exceedances of the WQTLs for these constituents coincided with any *S. capricornutum* toxicity. The end of three years of monitoring with no toxicity was July 2013. Furthermore, the Coalition has monitored for *S. capricornutum* toxicity in April and May 2014 and toxicity did not occur.

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## 2. Documentation of education and outreach to members where water quality impairment occurred

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### *Summary of Outreach*

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The Coalition initiated general outreach in 2007 and has taken several actions to address water quality impairments in the Mormon Slough @ Jack Tone Rd site subwatershed. Grower meetings with 29 targeted members occurred in 2012 to discuss water quality impairments, review each grower's operation, document existing management practices, and recommend additional practices. The Coalition followed up with the two targeted members in the subwatershed to assess if recommended and /or new practices were implemented in 2013.

The Coalition continues to provide outreach to all members within the site subwatershed. Through grower notifications and meetings, the Coalition informs members of water quality results, management practices to eliminate water quality impairments, availability of funding for management practice implementation, results of studies of management practice efficacy, and management practice implementation and tracking activities. In addition, Mormon Slough @ Jack Tone Rd remains a priority subwatershed for other constituents and outreach continues with growers who have the greatest likelihood of contributing to exceedances.

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## 3. Documentation of member implementation of management practices to address the water quality exceedance

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The complete analysis of management practices implemented in the Mormon Slough @ Jack Tone Rd site subwatershed was reported in the SJCDWQC 2014 MPUR. Results from that analysis are described in the section below.

In 2012, the Coalition contacted 29 targeted growers farming 1,789 acres in the Mormon Slough @ Jack Tone Rd site subwatershed. Grower meetings were conducted in 2012 and 100% of targeted members returned surveys with their management practice information. A full summary of existing management practices (2011) and management practices to be implemented (2012) can be found in the 2013 MPUR, pages 66-70. Growers in the site subwatershed were sent a follow-up survey in early 2013 and all follow-up surveys have been returned.

A majority of the practices that were planned to be implemented were documented in follow-up surveys as actually implemented except for treating tailwater with PAM (Table 4). Management practices were documented for 43% of the acreage identified as having direct drainage (Figure 5). Both members who indicated that they planned to treat tailwater with PAM (or similar materials) did not do so in 2012 (Table 4). Instead, these two growers reduced tailwater volume, reduced the use of targeted pesticides, and used center grass rows, waterways, or filter strips. Overall, 88% of all planned management practices were implemented in 2012. Six growers indicated on their initial survey that they already used one or more management practices and did not plan on implementing any new management practices in 2012.

A final analysis of follow-up surveys indicate that reducing the use of the chlorpyrifos and reducing tailwater volume were the most commonly implemented practices occurring on 51% and 31% of the acreage with new management practices, respectively (Figure 5). Installation of sprinklers or micro irrigation was the third most implemented practice (15%) and the use of center grass rows, waterways or filter strips made up the remaining 3% of newly implemented management practices (Figure 5). Of the direct drainage acreage associated with members contacted in the site subwatershed, 70% is associated with reduced use of pesticides such as chlorpyrifos and 63% is associated with irrigation management, including installing sprinkler or micro irrigation (Table 4). The existing and newly implemented management practices have been successful in improving the water quality in the Mormon Slough @ Jack Tone Rd site subwatershed.

**Table 4. Growers and acreage of 2012 planned and newly implemented practices in the Mormon Slough @ Jack Tone Rd site subwatershed.**

Results are based on initial surveys and follow-up surveys.

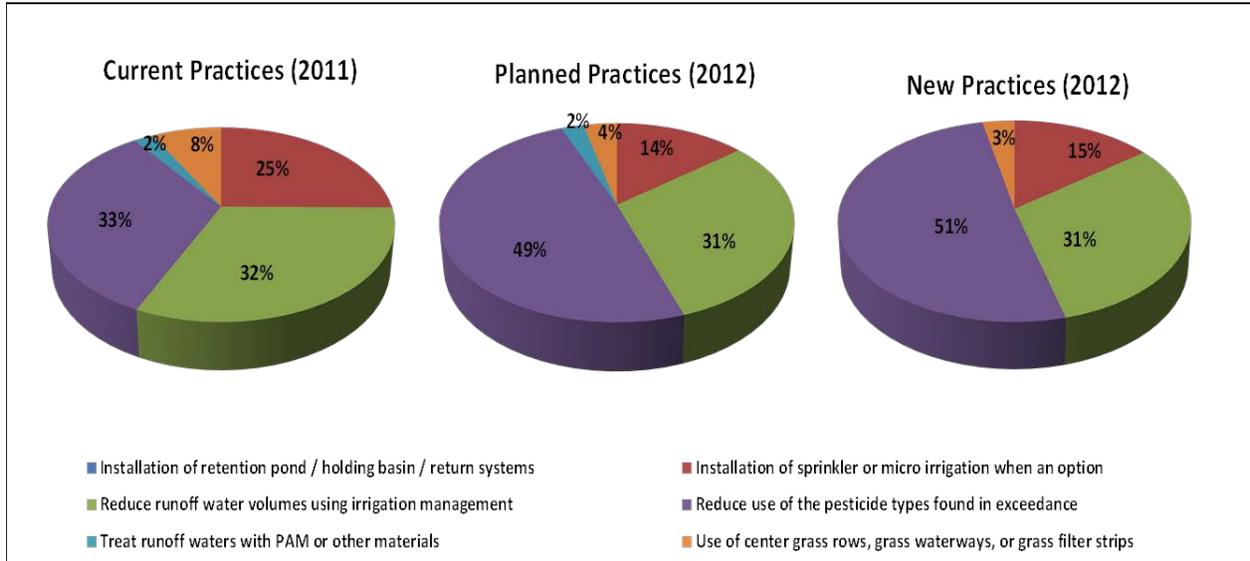
MANAGEMENT PRACTICE	GROWERS: PLANNED PRACTICES IN 2012 <sup>1</sup>	ACREAGE: PLANNED PRACTICES IN 2012	GROWERS: NEWLY IMPLEMENTED PRACTICE IN 2012 <sup>1</sup>	ACREAGE: NEWLY IMPLEMENTED PRACTICE IN 2012 <sup>+</sup>	PERCENT ACREAGE WITH IMPLEMENTED PRACTICES COMPARED TO PLANNED	PERCENT IMPLEMENTED COMPARED TO DIRECT DRAINAGE ACREAGE <sup>2</sup>
Installation of retention pond / holding basin / return systems	0	0	0	0	NA	NA
Installation of sprinkler or micro irrigation when an option	4	362	3	359	99%	20%
Reduce runoff water volumes using irrigation management	11	784	10	773	99%	43%
Reduce use of the pesticide types found in exceedance	22	1,255	22	1,255	100%	70%
Treat runoff waters with PAM or other materials	2	63	0	0	0%	0%
Use of center grass rows, grass waterways, or grass filter strips	4	93	3	81	88%	5%

<sup>1</sup>Growers can select multiple management practice categories.

<sup>2</sup>Based on 402 member acres targeted within direct drainage.

**Figure 5. Mormon Slough @ Jack Tone Rd summary of management practices.**

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices for each survey response.



#### 4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

##### *Justification to Remove Constituents from Mormon Slough @ Jack Tone Rd*

The Coalition’s focused management practice outreach and tracking strategy is effective at improving water quality. The results of MPM demonstrate three years of monitoring with no *C. dubia* or *S. capricornutum* water column toxicity, which indicates improved grower awareness of the offsite movement of agricultural constituents and/or newly implemented management practices. Based on focused outreach surveys and follow-up results, targeted growers in the site subwatershed implemented management practices and improved water quality as reflected by the absence of toxicity for both *C. dubia* and *S. capricornutum*. Furthermore, the PUR data indicate a general decline in applications of pesticides in the site subwatershed. Therefore, the Coalition requests that both *C. dubia* and *S. capricornutum* water column toxicity be removed from the Mormon Slough @ Jack Tone Rd management plan and MPM schedule.

##### *Future Monitoring*

Mormon Slough @ Jack Tone Rd is located in Zone 2; and is scheduled to be a Represented Site beginning in October 2014. As required in the WDR, when water quality impairments are identified at the Core site (French Camp Slough @ Airport Way), the Represented site will be evaluated and potentially monitored to determine whether the water quality impairment is also occurring in the Represented site subwatershed. During 2014, MPM will occur according to the schedule outlined in the 2014 MPUR; MPM is scheduled for chlorpyrifos and toxicity to *C. dubia* and *S. capricornutum*.

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## ROBERTS ISLAND @ WHISKEY SLOUGH PUMP

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### 1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring

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#### Constituents Requested to Remove from Management Plan:

- pH
- Chlorpyrifos
- Diuron
- *Ceriodaphnia dubia* water column toxicity

#### *Subwatershed Overview and Monitoring History*

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Roberts Island @ Whiskey Slough Pump is one of the Core sites in Zone 4. Monitoring was initiated during the storm season of 2005 and has occurred continuously since then. Since October 2008, Assessment Monitoring has occurred at the site every third year. Assessment Monitoring occurred in 2011 and is scheduled during 2014.

Roberts Island @ Whiskey Slough Pump replaced Roberts Island Drain along House Rd and Roberts Island Drain @ Holt Rd as the Core site for Zone 4 because the site is more representative of drainage from the entire island. The Roberts Island @ Whiskey Slough Pump management plan includes constituents that were listed in both the Roberts Island @ Holt Rd and Roberts Island Drain along House Rd management plans.

The Coalition began general outreach and education in 2007. Focused outreach and education in the Roberts Island @ Whiskey Slough Pump began in 2013 and will continue through 2015. The Coalition identified growers with the greatest likelihood of contributing to water quality impairments. The Coalition contacted these targeted growers in 2013 to document existing management practices, and to encourage the implementation of additional management practices. The Coalition is in the process of following up with targeted growers in 2014 to determine which additional management practices were implemented.

#### *Constituents Requested to Remove from Management Plan*

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##### **pH**

Exceedances of water quality objectives for field parameters such as pH are impossible to track and source. Parameters such as pH are non-conserved, meaning they change as water moves downstream. The pH of a waterbody results from processes occurring in the water column and in the sediment. These processes can vary diurnally and seasonally. Photosynthesis and decomposition cause daily and seasonal variation in pH.

There have been a total of four pH exceedances at sites on Roberts Island, three at Roberts Island Drain along House Rd in 2006 (June, July, and August), and one at Roberts Island Drain @ Holt Rd in 2011

(January). Since the January 2011 exceedance at Roberts Island Pump @ Holt Rd, pH has been monitored 41 times at sites on Roberts Island with no exceedances. There have been no exceedances of the WQTL for pH since the new monitoring location at Roberts Island @ Whiskey Slough Pump was established in 2012. The end of three years of monitoring with no exceedances was January 2014. In addition, the Coalition monitored the site from January through May 2014 with no exceedances of the WQTL for pH.

### **Chlorpyrifos**

There have been six exceedances of the WQTL for chlorpyrifos at sites on Roberts Island; four at Roberts Island Drain @ Holt Rd (September 2006, August 2008, January and February 2011), and two at Roberts Island Drain along House Rd (August and September 2008). Beginning in 2010, the Coalition designated the Core Monitoring location on Roberts Island as the Chlorpyrifos and Diazinon TMDL loading capacity site. Therefore, monitoring occurred monthly at the site for chlorpyrifos and diazinon. Since the last chlorpyrifos exceedance in February 2011, sites on Roberts Island have been monitored for chlorpyrifos 48 times through April 2014 (10 times at Roberts Island Drain @ Holt Rd, and 38 times at Roberts Island @ Whiskey Slough Pump) with no exceedances of the WQTL for chlorpyrifos.

The PUR data indicate chlorpyrifos use in the Roberts Island @ Whiskey Slough Pump site subwatershed has decreased since 2009. The year with the highest use of chlorpyrifos was 2012 (1230 lbs on 1667 acres of alfalfa, asparagus, and cotton) due to a pest outbreak; the lowest use was in 2010 (209 lbs AI on 258 acres of alfalfa, asparagus, and corn). No exceedances of chlorpyrifos occurred at Roberts Island @ Whiskey Slough Pump during the year of highest use. The end of three years of monitoring with no exceedances was February 2014. The site is an Assessment Monitoring location in 2014 and is monitored monthly for chlorpyrifos and no exceedances have occurred (lab results available through April 2014).

### **Diuron**

Diuron is a soluble herbicide applied throughout the year. Exceedances of the WQTL for diuron have occurred twice in samples collected from Roberts Island Drain @ Holt Rd, the first occurred in July 2007 and the second in January 2008.

Since the last exceedance of the WQTL for diuron in January 2008 (Roberts Island @ Holt Rd), sites on Roberts Island have been sampled for diuron 26 times (18 times at Roberts Island Drain @ Holt Rd and eight times at Roberts Island @ Whiskey Slough Pump; data through April 2014). In addition to MPM during months of past exceedances, this location was sampled monthly through September 2008 and during Assessment Monitoring in 2011 and through April 2014; with no exceedances. The PUR data indicate diuron use on Roberts Island has remained consistent since the January 2008 exceedance. The year with the highest use of diuron since the 2008 exceedance was 2013 (987 lbs on 594 acres of alfalfa and asparagus); the lowest use was in 2012 (183 lbs AI on 406 acres of asparagus and cotton). There have been no exceedances of diuron in samples collected during any of the sampling events since January 2008. The end of three years of monitoring with no exceedances was July 2013.

### ***Ceriodaphnia dubia* water column toxicity**

*C. dubia* water column toxicity is indicative of the presence of pesticides, such as chlorpyrifos and diazinon in the water column. *C. dubia* toxicity occurred in samples collected from sites at Roberts Island four times (including one resample), twice at Roberts Island Drain along House Rd (September 2008, 0% survival compared to the control in both sample and resample), and twice at Roberts Island Drain @ Holt Rd (July 2007, 0% survival compared to the control and March 2010, 75% survival compared to the control). Toxicity was persistent in the September 2008 resample collected from Roberts Island Drain along House Rd. Results from the TIEs indicate unspecified non-polar organics were the cause of the July 2007 toxicity from Roberts Island Drain @ Holt Rd and organophosphate insecticides were the cause of the September 2008 toxicity from Roberts Island Drain along House Rd. An exceedance of the WQTL for chlorpyrifos was associated with the September 2008 toxicity. Survival was greater than 50% compared to the control in the March 2010 toxic samples and a TIE was not required.

Since the last toxicity in March 2010, the Coalition has monitored sites on Roberts Island 26 times for *C. dubia* toxicity (21 times at Roberts Island Drain @ Holt Rd and five times at Roberts Island @ Whiskey Slough Pump through May 2014), with no instances of toxicity. As mentioned above, PUR data indicate chlorpyrifos use has decreased since the 2008 toxicity (with the exception of 2012 due to a pest outbreak). The year with the highest use of chlorpyrifos was 2012 (1230 lbs across 1667 ac of alfalfa, asparagus, and cotton) due to a pest outbreak; the lowest use was in 2010 (209 lbs AI across 258 ac of alfalfa, asparagus, and corn). The only time an exceedance of the WQTL for chlorpyrifos coincided with *C. dubia* toxicity was during the September 2008 sampling event. The end of three years of monitoring with no toxicity was March 2013. Since March 2013, the Coalition has monitored for *C. dubia* toxicity six additional times (results through May 2014) with no toxicity.

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## **2. Documentation of education and outreach to members where water quality impairment occurred**

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### ***Summary of Outreach***

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The Coalition initiated general outreach in 2007 and has taken several actions to address water quality impairments in the in the Roberts Island @ Whiskey Slough Pump site subwatershed. Grower meetings were held with 7 targeted growers during 2013 to discuss water quality impairments, review each grower's operation, and document existing management practices. Management practices were recommended if they could be effective in reducing agricultural discharges. The Coalition is in the process of following up with targeted growers to determine which additional management practices were implemented and those results will be reported in the Coalition's May 1, 2015 Annual Report.

The Coalition continues to provide outreach to all members within the site subwatershed. Through grower notifications and meetings, the Coalition informs members of water quality results, management practices to eliminate water quality impairments, availability of funding for management practice implementation, results of studies of management practice efficacy, and management practice implementation and tracking activities. In addition, Roberts Island @ Whiskey Slough Pump remains a

priority subwatershed for other constituents and outreach continues with growers who have the greatest likelihood of contributing to exceedances.

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### 3. Documentation of member implementation of management practices to address the water quality exceedance

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The complete analysis of management practices implemented in the site subwatershed will be reported in the SJCDWQC May 1, 2015 Annual Report. Results from the preliminary analysis are described in the section below.

In 2013, the Coalition contacted seven targeted growers representing 1,618 acres in the Roberts Island @ Whiskey Slough Pump site subwatershed. Management practices were documented for 12% of the acreage identified as having direct drainage. One hundred percent of the contacted growers returned an initial survey, and all but one grower indicated they were going to implement new practices in 2013. Growers in the Roberts Island @ Whiskey Slough Pump site subwatershed were sent a follow-up survey on February 14, 2014. The Coalition received three out of six follow-up surveys as of March 31, 2014 and growers indicated management practices were implemented in 2013; all follow-up results will be reported in the 2015 MPUR.

Survey responses by members in the site subwatershed indicate that 852 acres have irrigation runoff leaving their fields, 1,100 acres have storm water runoff leaving the fields, and one member farming 517 acres did not respond (No Response, Figure 6). The most common existing management practices in 2012 include reducing the use of the pesticides causing exceedances and reducing runoff water volume (Figure 7). In 2012, all targeted members in the Roberts Island @ Whiskey Slough Pump site subwatershed were implementing runoff management or pesticide application management. Six out of the seven members contacted indicated on the initial surveys that they planned to implement one or more management practices in 2013 (Table 5).

Returned initial surveys from three out of six growers indicate that growers plan to implement new management practices in 2013. The most common practices planned for implementation in 2013 include reducing the use of the pesticides causing exceedances and reducing runoff water volume (Figure 7).

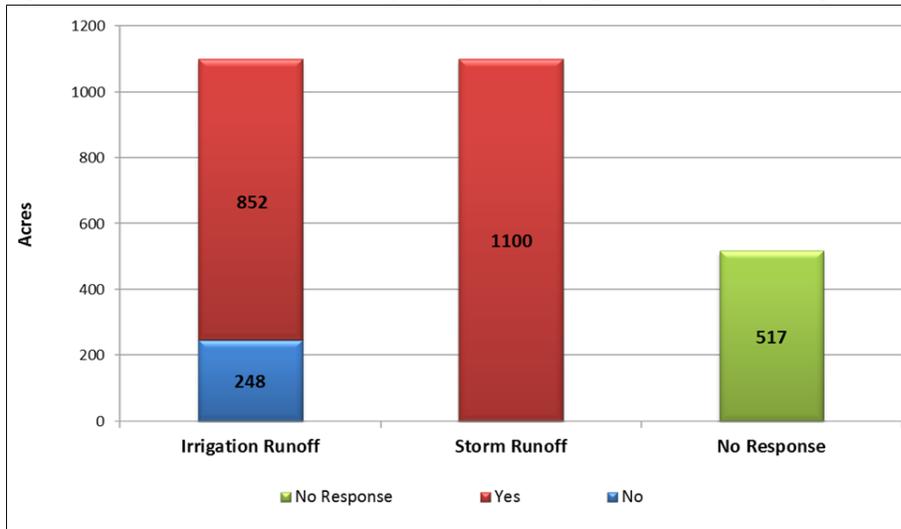
**Table 5. Growers and preliminary acreage of 2013 planned practices in Roberts Island @ Whiskey Slough Pump site subwatershed.**

Results are based on initial surveys.

MANAGEMENT PRACTICE	GROWERS: CURRENT PRACTICES IN 2012 <sup>1</sup>	ACREAGE: CURRENT PRACTICES IN 2012	GROWERS: PLANNED PRACTICES IN 2013 <sup>1</sup>	ACREAGE: PLANNED PRACTICES IN 2013
Installation of retention pond / holding basin / return systems	1	61	0	0
Installation of sprinkler or micro irrigation when an option	1	128	1	128
Reduce runoff water volumes using irrigation management	7	1617	6	1014
Reduce use of the pesticide types found in exceedance	6	1559	6	1014
Use of center grass rows, grass waterways, or grass filter strips	1	120	2	637
Treat runoff waters with PAM or other materials	0	0	0	0

<sup>1</sup>Growers can select multiple management practice categories

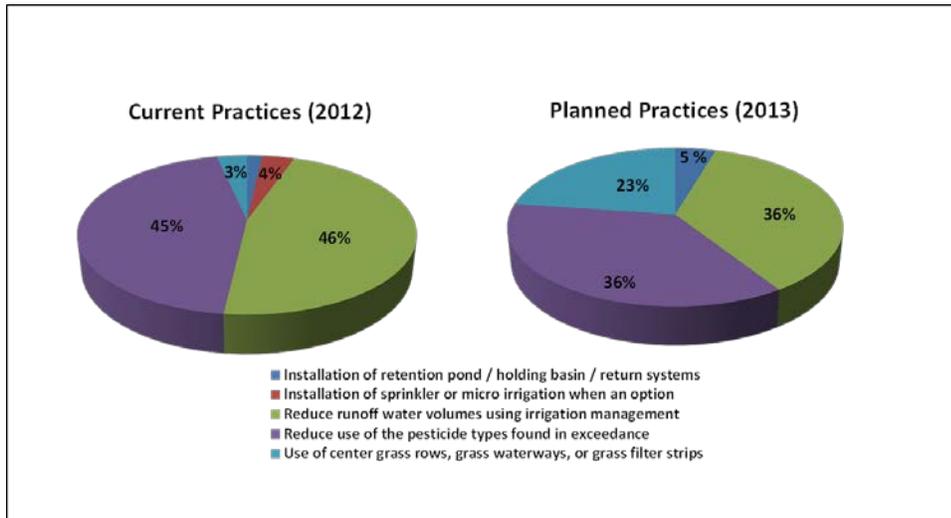
**Figure 6. Roberts Island @ Whiskey Slough Pump targeted member acreage with irrigation or storm runoff.**



No Response-grower left questions asking if storm water runoff or irrigation tailwater leaves their field blank.

**Figure 7. Roberts Island @ Whiskey Slough Pump summary of management practices.**

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices for each survey response.



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#### 4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

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##### *Justification to Remove Constituents from Roberts Island @ Whiskey Slough Pump*

The Coalition's focused management practice outreach and tracking strategy is effective at improving water quality. Management Plan Monitoring results indicate three years of monitoring with no exceedances of the WQTLs for pH, chlorpyrifos, and diuron, as well as no toxicity to *C. dubia*. Based on focused outreach surveys and follow-up results, targeted growers in the Roberts Island @ Whiskey Slough Pump site subwatershed implemented management practices and water quality has improved. Therefore, the Coalition requests that pH, chlorpyrifos, diuron, and water column toxicity to *C. dubia* be removed from the Roberts Island @ Whiskey Slough Pump management plan and MPM schedule.

##### *Future Monitoring*

Roberts Island @ Whiskey Slough Pump is one of the Core sites in Zone 4. During 2014, Assessment Monitoring is scheduled at the site through September and MPM will occur according to the schedule outlined in the 2014 MPUR; MPM is scheduled for chlorpyrifos, diuron and toxicity to *C. dubia*, *S. capricornutum* and *H. azteca* through September 2014. Field parameters (DO, pH, and SC) will be measured during every monitoring event. Monitoring after October 2014 is to be determined. Core sites will be monitored comprehensively on a recurring basis to track trends in surface water quality and identify water quality impairments.

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## SAND CREEK @ HWY 4 BYPASS

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### 1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring

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#### **Constituents Requested to Remove from Management Plan:**

- Disulfoton
- *Selenastrum capricornutum* water column toxicity

#### *Subwatershed Overview and Monitoring History*

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Sand Creek @ Hwy 4 Bypass is the only remaining sampling location in the Contra Costa Zone (Zone 6). The site is not scheduled for Assessment Monitoring due to a large amount of urban influence. Normal Monitoring began in the irrigation season of 2006 and continued through the irrigation season of 2008. No monitoring occurred at this location during 2009 through 2010; MPM began during 2011 and has continued since.

The Coalition began general outreach and education in the site subwatershed in 2007. Focused outreach began in 2012 and will continue through 2014. The Coalition identified growers with the greatest likelihood of contributing to the water quality impairments. The Coalition contacted one targeted grower in 2012 to document existing management practices, and to encourage the implementation of additional management practices designed to address water quality impairments. The Coalition followed up with the targeted grower in 2013 to determine which additional management practices were implemented.

#### *Constituent Monitoring Results and Sourcing*

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##### **Disulfoton**

Disulfoton is an organophosphate pesticide that is no longer registered for agricultural use in the United States and is therefore considered a legacy pesticide. There have been three exceedances the WQTL for disulfoton at the site; all three exceedances occurred in 2008 (May, June, and August). Since the last exceedance in August 2008, Sand Creek @ Hwy 4 Bypass has been monitored for disulfoton 10 times during MPM in 2011, 2012, and 2013 with no exceedances.

The U.S. Environmental Protection Agency (EPA) announced the cancellation of the product on September 23, 2009 due to its toxicity and persistence; the cancellations for most uses of the product were effective December 31, 2009. Two other disulfoton products were cancelled December 31, 2010 but disulfoton was legal for selling and for distribution until June 30, 2011. Therefore, no PUR data for disulfoton applications is available for review after June 30, 2011. The PUR data for San Creek @ Hwy 4 Bypass indicate zero applications of the constituent in the site subwatershed. There have been no exceedances of the WQTL for disulfoton since August 2008 and no detections since September 2008 in samples collected from Sand Creek @ Hwy 4 Bypass. The end of three years of monitoring with no exceedances was August 2013.

### ***Selenastrum capricornutum* water column toxicity**

There have been three instances of *S. capricornutum* toxicity (including one resampling event) in samples collected from Sand Creek @ Hwy 4 Bypass, all toxicities occurred in 2008 (April sample 44% and resample 54% and August 38% compared to the control). Toxicity during the April event was persistent in the resample. The TIE indicated the April toxicity was due to non-polar organic chemicals and the cause of the August toxicity could not be determined. The only exceedances to coincide with the toxic samples were legacy pesticides (DDD, DDE, DDT, dieldrin, and disulfoton) in August 2008.

Since the August 2008 toxicity, the Coalition has monitored Sand Creek @ Hwy 4 Bypass nine times for *S. capricornutum* toxicity and no toxicity occurred. There is very little agriculture in the site subwatershed and therefore very few pesticides used. The PUR data indicate very little use of herbicides in the site subwatershed that could be associated with any *S. capricornutum* toxicity. The only applications of chemicals that could affect algal growth were copper applications in 2013 (100 lbs AI across 150 ac of peppers, cherries, and tomatoes); no toxicity to *S. capricornutum* occurred during 2013. August 2013 ended three years of monitoring with no toxicity.

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## **2. Documentation of education and outreach to members where water quality impairment occurred**

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### ***Summary of Outreach***

The Coalition initiated general outreach in 2007 and has taken several actions to address water quality impairments in the site subwatershed. In 2012, a meeting was conducted with one grower to review the grower's operation, document existing management practices, and discuss water quality impairments. Management practices were recommended. The Coalition followed up with the targeted member in 2013 to assess if recommended and/or new practices were implemented.

The Coalition continues to provide outreach to all members within the site subwatershed. Through grower notifications and meetings, the Coalition informs members of water quality results, management practices to eliminate water quality impairments, availability of funding for management practice implementation, results of studies of management practice efficacy, and management practice implementation and tracking activities. In addition, Sand Creek @ Hwy 4 Bypass remains a priority subwatershed for other constituents and outreach continues with growers who have the greatest likelihood of contributing to exceedances.

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## **3. Documentation of member implementation of management practices to address the water quality exceedance**

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The complete analysis of management practices implemented in the Sand Creek @ Hwy 4 Bypass site subwatershed was reported in the SJCDWQC 2014 MPUR. Results from that analysis are described in the section below.

In 2012, the Coalition contacted a single member farming 116 acres in the site subwatershed. Management practices on 3% of the acreage identified as having direct drainage were documented. A majority of the land use upstream of the monitoring location is not irrigated agriculture; this site is not included in the SJCDWQC MRPP list of rotating Assessment Monitoring locations for this reason. The grower returned a survey with current management practices and management practices planned for 2012. A full summary of 2011 current management practices and management practices to be implemented (2012) can be found in the 2013 MPUR, pages 71-75. The Grower was sent a follow-up survey in early 2013 and the survey has been returned.

The grower in the site subwatershed indicated that in 2012 he intended to implement five of the six management practices (Table 6). The only recommended management practice the grower did not plan to implement in 2012 was the installation of a retention pond/holding basin/return system. On the follow-up survey returned in January 2013, the grower indicated that they implemented three out of the five practices planned. A final analysis of the follow-up survey indicates that the grower installed a sprinkler or micro irrigation system, reduced runoff water volume using irrigation management, and reduced use of the pesticide types found in exceedances on 100% of the reported acres (Table 6 and Figure 8). The continued and newly implemented management practice along with three years of focused outreach and education in the subwatershed have been successful in improving the water quality in the Sand Creek @ Hwy 4 Bypass site subwatershed; chlorpyrifos, diazinon, and toxicity to *C. dubia* have been removed from the site’s management plan due to three years of no exceedances or toxicity.

**Table 6. Growers and acreage of 2012 planned and newly implemented practices in the Sand Creek @ Hwy 4 Bypass site subwatershed.**

Results are based on initial surveys and follow-up surveys.

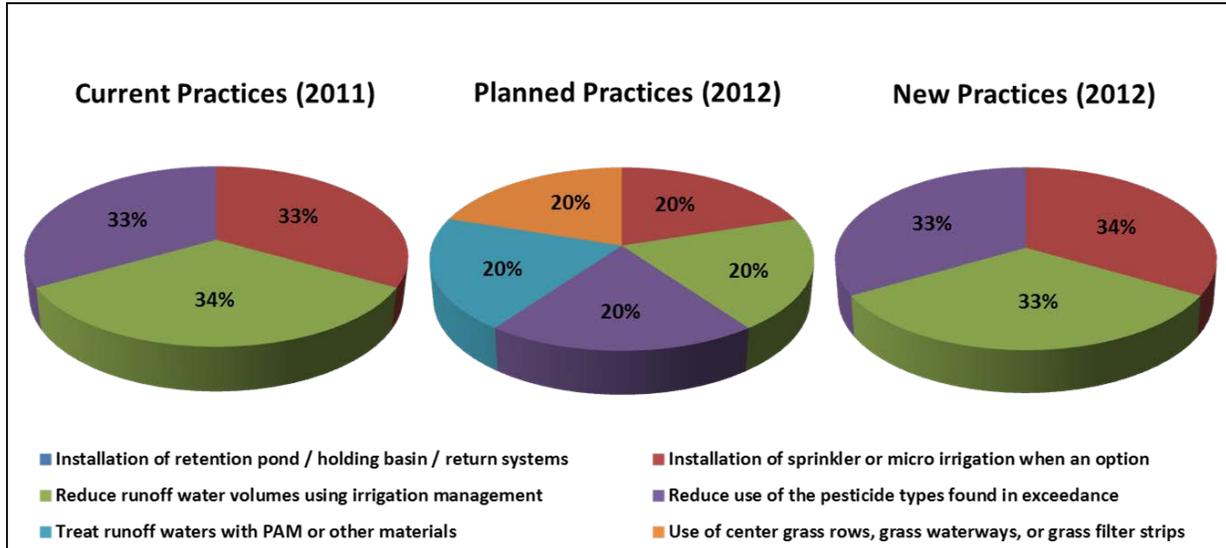
MANAGEMENT PRACTICE	GROWERS: PLANNED PRACTICES IN 2012 <sup>1</sup>	ACREAGE: PLANNED PRACTICES IN 2012	GROWERS: NEWLY IMPLEMENTED PRACTICE IN 2012 <sup>1</sup>	ACREAGE: NEWLY IMPLEMENTED PRACTICE IN 2012 <sup>1</sup>	PERCENT ACREAGE WITH IMPLEMENTED PRACTICES COMPARED TO PLANNED	PERCENT IMPLEMENTED COMPARED TO DIRECT DRAINAGE ACREAGE <sup>2</sup>
Installation of retention pond / holding basin / return systems	0	0	0	0	NA	NA
Installation of sprinkler or micro irrigation when an option	1	116	1	116	100%	100%
Reduce runoff water volumes using irrigation management	1	116	1	116	100%	100%
Reduce use of the pesticide types found in exceedance	1	116	1	116	100%	100%
Treat runoff waters with PAM or other materials	1	116	0	0	0%	0%
Use of center grass rows, grass waterways, or grass filter strips	1	116	0	0	0%	0%

<sup>1</sup>Growers can select multiple management practice categories.

<sup>2</sup>Based on 402 member acres targeted within direct drainage.

**Figure 8. Sand Creek @ Hwy 4 Bypass summary of management practices.**

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices for each survey response.




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4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

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*Justification to Remove Constituents from Sand Creek @ Hwy 4 Bypass*

The Coalition’s focused management practice outreach and tracking strategy is effective at improving water quality. Management Plan Monitoring results indicate three years of monitoring with no exceedances of disulfoton and no *S. capricornutum* water column toxicity. Based on focused outreach surveys and follow-up results, the targeted grower in the site subwatershed implemented management practices resulting in improved water quality. Therefore, the Coalition requests that these constituents be removed from the Sand Creek @ Hwy 4 Bypass management plan and MPM schedule.

*Future Monitoring*

Sand Creek @ Hwy 4 Bypass is located in Zone 6 where there is high urban influence. During 2014, MPM will occur according to the schedule outlined in the 2014 MPUR; MPM is scheduled for dieldrin, disulfoton and toxicity to *S. capricornutum* and *H. azteca*. Monitoring after October 2014 is to be determined.

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## TERMINOUS TRACT DRAIN @ HWY 12

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### 1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring

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#### **Constituents Requested to Remove from Management Plan:**

- Chlorpyrifos

#### *Subwatershed Overview and Monitoring History*

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Terminus Tract Drain @ Hwy 12 is one of the Core sites located in Zone 3. Monitoring was initiated at the site during the storm season of 2005. Two additional sites within the Terminus Tract Drain subwatershed (Delta Drain-Terminus Tract off Glasscock Rd and Delta Drain-Terminus Tract off Guard Rd) were monitored during the storm and irrigation events of 2005 through 2006, beginning in February 2005 and continuing through April of 2006. The Coalition determined in 2006 that the downstream monitoring location at Terminus Tract Drain @ Hwy 12 was representative of all of the irrigation drainage on Terminus Tract; consequently, monitoring at the two upstream locations was discontinued.

Monitoring at Terminus Tract Drain @ Hwy 12 took place in the fall of 2008 and continued through 2009 (January through December) and in 2011 (January through December) for Core Monitoring constituents under the 2008 MRPP. Assessment Monitoring occurred at the site in 2010 and 2013; MPM occurred from 2010 through 2014.

The Coalition began conducting outreach and education in the Terminus Tract Drain @ Hwy 12 site subwatershed in 2007. Focused outreach in the site subwatershed occurred from 2011 through 2013. The Coalition identified growers with the greatest likelihood of contributing to water quality impairments. The Coalition contacted these growers in the winter of 2011 to document current management practices and to encourage the implementation of additional management practices. The Coalition followed up with targeted growers in 2012 to determine which additional management practices were implemented.

#### *Constituent Monitoring Results and Sourcing*

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##### **Chlorpyrifos**

There have been three exceedances of the chlorpyrifos WQTL on Terminus Tract. Two occurred in 2008 (August and September) and a third in 2011 (September). Since the most recent chlorpyrifos exceedance in September 2011, Terminus Tract Drain @ Hwy 12 has been monitored for chlorpyrifos 14 times with no exceedances.

Since the last exceedance in September 2011, there have been no detections of chlorpyrifos in any samples collected from the site. The PUR data indicate chlorpyrifos use in the site subwatershed has

increased slightly since the 2011 exceedance; yet there have been no detections of chlorpyrifos in samples collected since September 2011. The pounds of AI applied increased from 2012 (364 lbs AI across 529 ac of alfalfa and asparagus) through 2013 (543 lbs across 584 ac of alfalfa, corn and asparagus). No toxicity was associated with any of the monitoring events with chlorpyrifos exceedances. The end of three years of monitoring with no exceedances was September 2013.

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## 2. Documentation of education and outreach to members where water quality impairment occurred

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### *Summary of Outreach*

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The Coalition initiated general outreach in 2007 and has since taken several actions to address water quality impairments in the Terminous Tract Drain subwatershed. The Coalition conducted focused outreach in 2011 with the four targeted growers to document current management practices and discuss water quality impairments. The Coalition followed up with the four targeted members in the subwatershed to assess if recommended and /or new practices were implemented.

The Coalition continues outreach and education within the site subwatershed. Through grower notifications and meetings, the Coalition informs members of water quality results, management practices to eliminate water quality impairments, availability of funding for management practice implementation, results of studies of management practice efficacy, and management practice implementation and tracking activities. In addition, Terminous Tract Drain @ Hwy 12 remains a priority subwatershed for other constituents and outreach continues with growers who have the greatest likelihood of contributing to exceedances.

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## 3. Documentation of member implementation of management practices to address the water quality exceedance

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The complete analysis of management practices implemented in the Terminous Tract Drain @ Hwy 12 site subwatershed was reported in the SJCDWQC 2013 MPUR. Results from that analysis are described in the section below.

In 2011, the Coalition contacted four targeted growers farming 1,778 acres within the Terminous Tract Drain @ Hwy 12 site subwatershed. Management practices were documented for 40% of the acreage identified as having direct drainage. Grower meetings were conducted during 2011 and 100% of targeted members returned surveys with current management practice information. A full summary of those management practices (2010) and management practices to be implemented (2011) can be found in the 2012 MPUR (pages 61-65). All four growers indicated that they intended to implement new management practices in 2011 and follow up surveys were sent to all growers in January 2012. The Coalition received 100% of follow up surveys.

A total of five recommended management practices were planned for implementation in 2011. However, according to follow up survey results, only three of the five were implemented (Figure 9).

Reducing water volume accounted for 50% acreage on which new management practices were implemented. Installation of sprinkler or micro irrigation and use of center grass rows, grass waterways, or grass filter strips make up the remaining 50% (Figure 9). Although use of center grass rows, grass waterways or grass filter strips only accounted for 14% of the newly implemented practices, they were implemented on 100% of planned acres. Reducing runoff water volume was also implemented on 100% of planned acres, and installation of sprinkler or micro irrigation was implemented on 71% of planned acres (Table 6). Of the acreage associated with members contacted in the Terminus Tract Drain @ Hwy 12 site subwatershed, 100% is associated with increased irrigation management and 71% is associated with installation of more efficient irrigation systems (Table 7).

**Table 7. Acreage of planned and newly implemented practices in the Terminus Tract Drain @ Hwy 12 site subwatershed.**

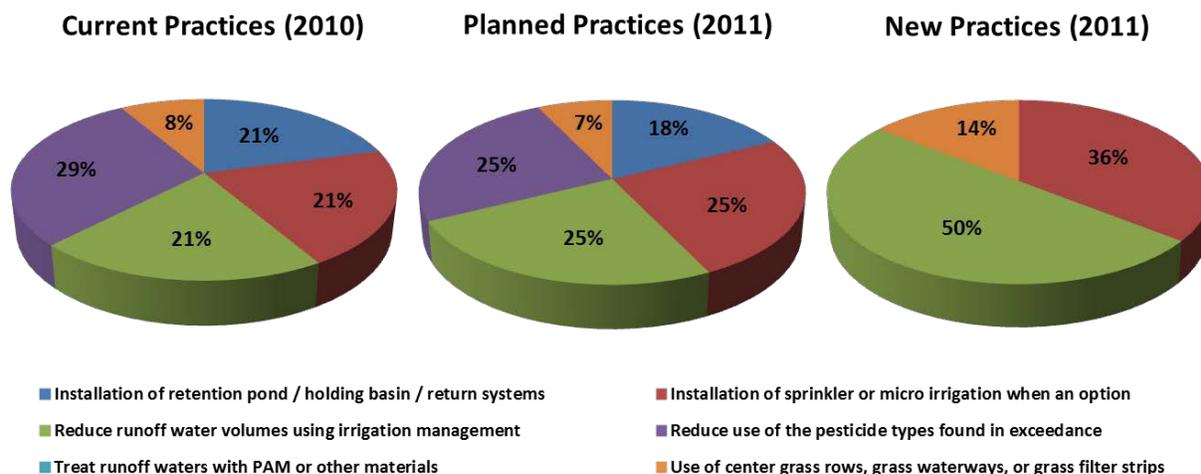
Results are based on initial surveys and follow up surveys.

MANAGEMENT PRACTICE	ACREAGE: PRACTICE TO BE IMPLEMENTED IN 2011	ACREAGE: NEWLY IMPLEMENTED PRACTICE IN 2011	PERCENT IMPLEMENTED COMPARED TO PLANNED	PERCENT IMPLEMENTED COMPARED TO DIRECT DRAINAGE ACREAGE <sup>1</sup>
Installation of retention pond / holding basin / return systems	1,263	0	0%	0%
Installation of sprinkler or micro irrigation when an option	1,778	1,263	71%	71%
Reduce runoff water volumes using irrigation management	1,778	1,778	100%	100%
Reduce use of the pesticide types found in exceedance	1,778	0	0%	0%
Treat runoff waters with PAM or other materials	0	0	NA	NA
Use of center grass rows, grass waterways, or grass filter strips	515	515	100%	29%

<sup>1</sup>Based on 1,778 contacted member acreage with direct drainage.

**Figure 9. Terminus Tract Drain @ Hwy 12 summary of management practices.**

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices for each survey response.



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#### 4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

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##### *Justification to Remove Constituents from Terminous Tract Drain @ Hwy 12*

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The Coalition's focused management practice outreach and tracking strategy is effective at improving water quality. Monitoring results indicate three years of monitoring with no exceedances of the WQTL for chlorpyrifos. Based on focused outreach surveys and follow-up results, targeted growers in the Terminous Tract Drain @ Hwy 12 site subwatershed implemented management practices and improved water quality as reflected by the absence of exceedances of chlorpyrifos. Therefore, the Coalition requests that chlorpyrifos be removed from the Terminous Tract Drain @ Hwy 12 site subwatershed management plan and MPM schedule. Management Plan Monitoring in 2014 will continue for other constituents.

##### *Future Monitoring*

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Terminous Tract Drain @ Hwy 12 is one of the Core sites in Zone 4. During 2014, MPM will occur according to the schedule outlined in the 2014 MPUR; MPM is scheduled for chlorpyrifos and toxicity to *H. azteca* through September 2014. Monitoring after October 2014 is to be determined. Core sites will be monitored comprehensively on a recurring basis to track trends in surface water quality and identify water quality impairments.

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## UNNAMED DRAIN TO LONE TREE CREEK @ JACK TONE RD

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### 1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring

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#### **Constituents Requested to Remove from Management Plan:**

- Specific Conductivity (SC)

#### *Subwatershed Overview and Monitoring History*

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Unnamed Drain to Lone Tree Creek @ Jack Tone Rd is a Represented site within the French Camp Slough @ Airport Way Zone (Zone 2). Monitoring began at the site during the irrigation season of 2006 and has continued through 2014. Management Plan Monitoring first began at Unnamed Drain to Lone Tree Creek during the 2007 irrigation season and has continued through 2014.

The Coalition began general outreach and education in the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed in 2007. Focused outreach in the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed occurred from 2008 through 2010. The Coalition identified growers with the greatest likelihood of contributing to the water quality impairments. The Coalition contacted these targeted growers in 2008 and 2009 to document current management practices and to encourage the implementation of additional management practices designed to address water quality impairments. The Coalition followed up with targeted growers in 2009 and 2010 to determine which additional management practices were implemented.

#### *Constituent Monitoring Results and Sourcing*

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##### **Specific Conductivity**

Three exceedances of the WQTL for SC have occurred in the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed; two exceedances of SC occurred in 2007 (March and May), and the third occurred in 2011 (March). Monitoring for SC occurred at Unnamed Drain to Lone Tree Creek @ Jack Tone Rd during every sampling event (34 events) since the last exceedances in March 2011 and no exceedances occurred. The end of three years of monitoring with no exceedances was March 2014.

Furthermore, the Coalition reevaluated the WQTL for SC based on the Basin Plan section for SC which refers to the San Francisco Bay/Sacramento-San Joaquin Delta Basin Plan. The Basin Plan (Table 2, Page 13) indicates the WQTL for SC should be based on the seasonal criteria of 700  $\mu\text{mhos/cm}$  from April through August, and 1,000  $\mu\text{mhos/cm}$  from September through March. Based on these criteria, only one of the three reported SC measurements would still be considered an exceedance (905  $\mu\text{mhos/cm}$ , May 2007); the other two measurements would no longer be considered exceedances (Table 8).

**Table 8. Reported and reevaluated exceedances for SC based on WQTL criteria in Basin Plan.**

Previously reported SC measurements were based on the 700 µmhos/cm only; SC WQTLs based on the Basin Plan requirements should be 700 µmhos/cm (April through August), and 1,000 µmhos/cm (September through March).

MONITORING SITE	SAMPLE DATE	EXCEEDANCE REPORTED FOR SC
Unnamed Drain @ Jack Tone Rd	3/6/2007	841
	3/8/2011	718

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## 2. Documentation of education and outreach to members where water quality impairment occurred

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### *Summary of Outreach*

The Coalition initiated general outreach in 2007 and has taken several actions to address water quality impairments in the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed. The Coalition’s strategy for outreach is to contact growers with the greatest likelihood of contributing to exceedances. The Coalition conducted focused outreach with 34 targeted growers in 2008 and 2009 to document current management practices and discuss water quality impairments. The Coalition followed up with 18 of the targeted members in the subwatershed to assess if recommended and /or new practices were implemented.

The Coalition continues to provide outreach to all members within the site subwatershed. Through notifications and grower meetings, members continue to be made aware of water quality results, relevant management practices that address water quality impairments, availability of funding for management practice implementation, results special studies of management practice efficacy, and management practice tracking and implementation actions. In addition, this subwatershed will continue to be monitored for other constituents of concern and focused outreach continues with growers with the greatest likelihood of contributing to those exceedances.

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## 3. Documentation of member implementation of management practices to address the water quality exceedance

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The complete analysis of management practices implemented in the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed was reported in the SJCDWQC 2011 MPUR; results from additional contacts in 2012 were included in the 2013 MPUR. Results from that analysis are described in the section below.

Sixty-five percent of the subwatershed (also known as Temple Creek, San Joaquin County portion) was identified as having direct drainage (19,417 of 29,892 acres) to the creek based on GIS analysis. Forty-one percent of the parcels with direct drainage are enrolled in the Coalition (7,994 acres) and 34 members farming 6,463 acres filled out surveys about existing management practices.

Of the members who filled out the surveys, 32% of the acres had tailwater runoff and 77% had storm water runoff (Figures 10 and 11). The most common existing management practice used by growers in

the subwatershed was reduced use of pesticides (27% of acres), followed closely by installing sprinkler or microspray irrigation (26% of acres), and reducing runoff water volume (20% of acres, Figure 12). Additional management practices included use of center grass rows, grass waterways or grass filter strips (15% of acres), and a retention pond, holding basin or return system (12% of acres, Figure 12). In 2008, a majority of the direct drainage acreage (68%) enrolled in the Coalition had one or more management practices specific to runoff management and/or pesticide application management.

Growers owning 10% of the acres indicated they would not implement any additional practices in 2009. Of the growers that indicated that they intended to implement additional practices in 2009, reduced pesticide use was to occur on 31% of the total acreage (Figure 13). Installation of sprinklers or micro irrigation was to occur on 25% of the acres, implementation of irrigation management was to occur on 18% of acres, installation of a retention pond, holding basin or return system was to occur on 12% of the acres, and center grass rows, grass waterways or grass filter strips were to be placed on 11% of the acres (Figure 13). Growers with 1% of the acres indicated that they do not make management practice decisions but would talk to the appropriate person about management practices.

Final results of the follow up surveys indicate that additional management practices were implemented on 3,934 acres with direct drainage to Lone Tree Creek (4,649 acres were reported in the 2010 MPUR. To ensure the proper person filled out a survey, multiple surveys were completed for a single member; the previous acreage figure is representative of the total number of surveys returned). Thirty-seven percent of the acres had the installation of sprinklers or micro irrigation, 31% of the acres had reduced pesticide applications, and 24% of the acres had reduced runoff water volume (Figure 14). The remaining eight percent of the acres had the installation of retention pond, holding basin, or return systems, or using center grass rows, grass waterways or grass filter strips (Figure 14).

**Figure 10. Percentage of acreage of priority members within Unnamed Drain to Lone Tree Creek with tailwater runoff.**

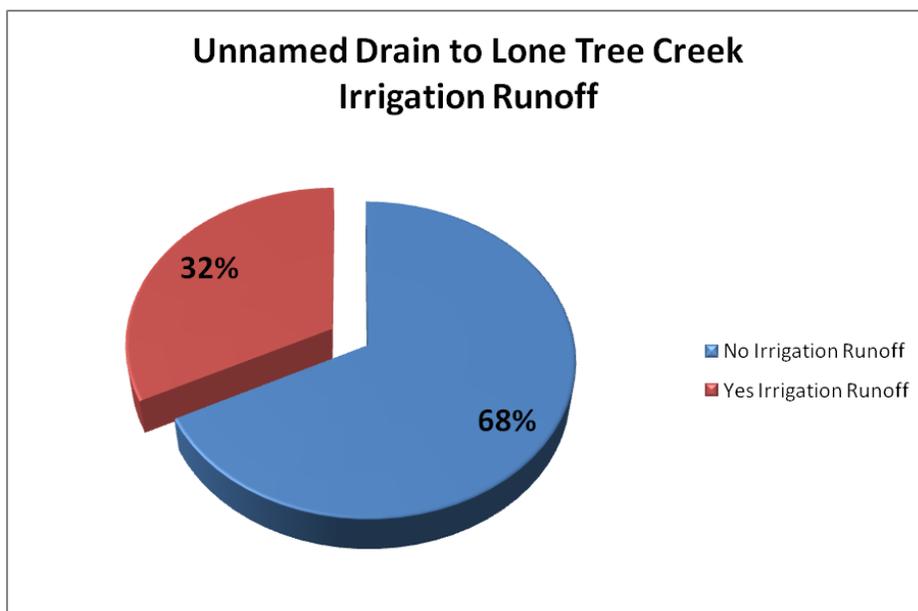


Figure 11. Percentage of acreage of priority members within Unnamed Drain to Lone Tree Creek with storm water runoff.

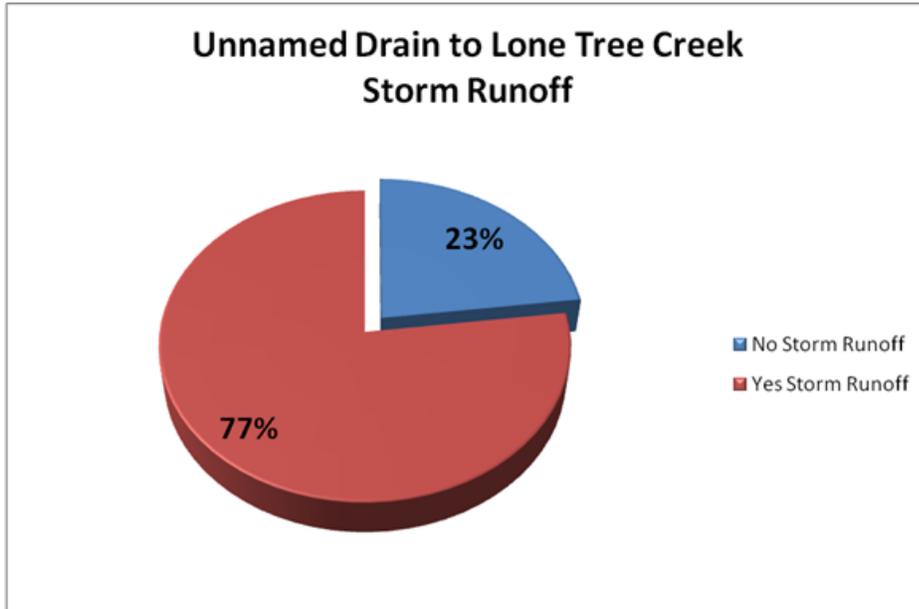
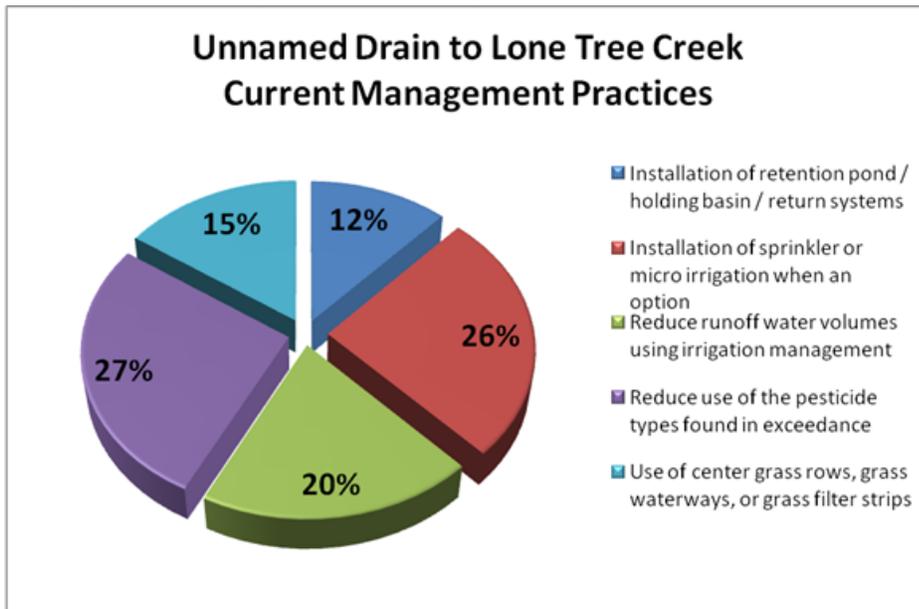
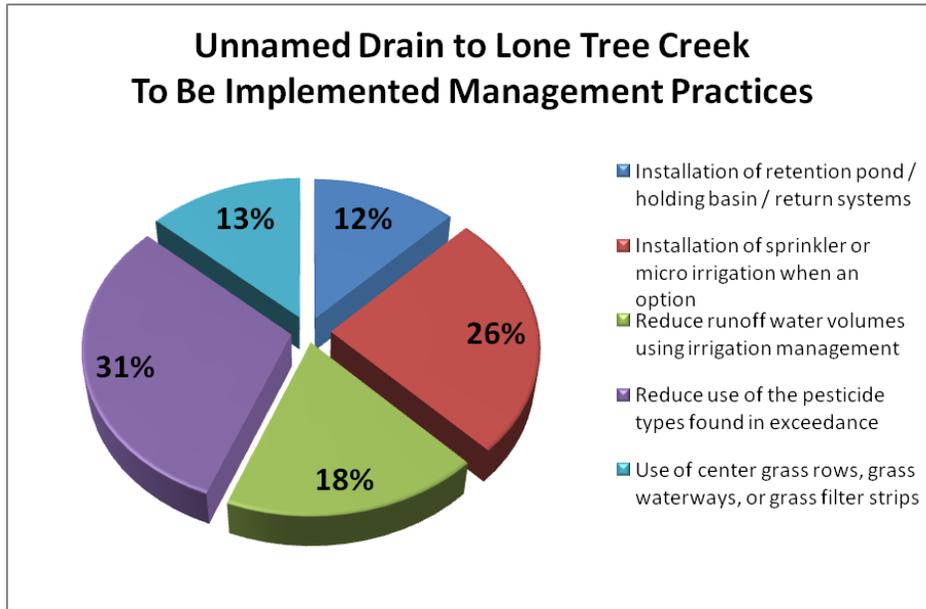


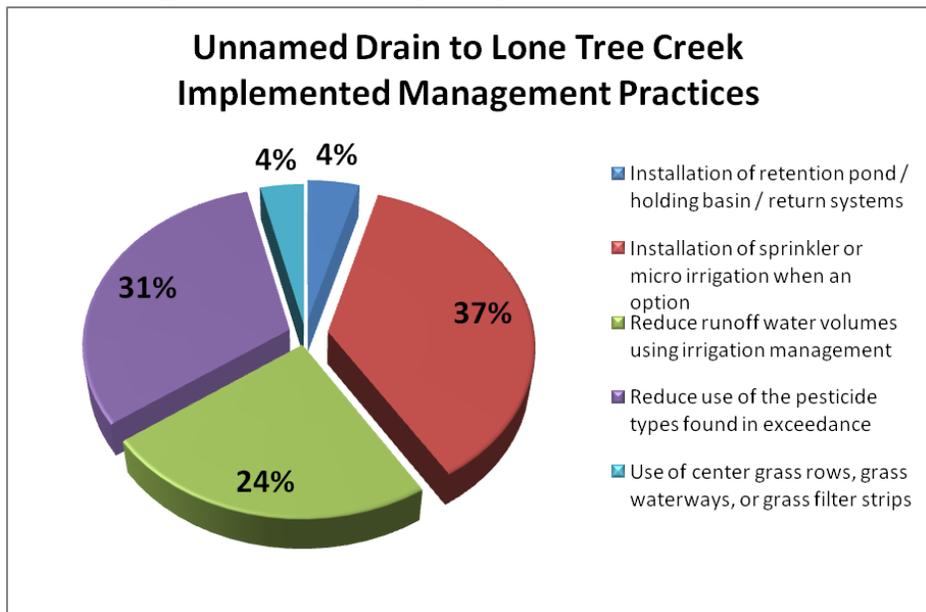
Figure 12. Unnamed Drain to Lone Tree Creek @ Jack Tone Rd 2008 management practices. Results based on priority member acreages from 2009 surveys.



**Figure 13. Unnamed Drain to Lone Tree Creek @ Jack Tone Rd 2009 management practices (to be implemented). Results based on priority member acreages from 2009 surveys.**



**Figure 14. Unnamed Drain to Lone Tree Creek Rd 2009 implemented practices. Results based on priority member acreages from 2010 follow up surveys.**



The Coalition identified seven growers farming 2,065 acres, in the first priority site subwatersheds and for additional focused outreach (Table 9). Growers were selected for additional outreach based on five factors:

1. The grower is a member of the Coalition
2. PUR data indicated the grower applied chlorpyrifos in 2010 or 2011
3. Applications of chlorpyrifos were associated with an exceedance of the WQTL for chlorpyrifos (applied no more than 30 days prior to an exceedance)
4. The parcels with chlorpyrifos use had the potential to drain into the creek or the potential for spray drift into the creek
5. The past survey results indicated additional management practices or improvements to management practices could be implemented

Topics discussed during the additional focused outreach meetings in 2012 included managing storm and irrigation runoff (including improving water infiltration, capturing and/or recycling runoff water, and treating irrigation water with PAM), reducing drift to water sources (including noting application conditions, equipment, product choice, buffer zones, and application method) as well as discontinuing, reducing, or changing the type of pesticide used. The growers were asked to fill out a survey; 100% of targeted growers returned the surveys by the end of May 2012.

**Table 9. First and second priority additional targeted member counts and acreages.**

If a member was already contacted once, the total counts the member and sums their acreage only once.

Unnamed Drain to Lone Tree Creek @ Jack Tone Rd Site Subwatershed	Count of Permittees	Count of Members	Sum of Acreage
<i>Previously Contacted in 2009</i>	1	1	1,201
<i>Not Previously Contacted</i>	1	1	37

Within the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatersheds one member was contacted to document additional management practice information (Table 9).

Analysis of the 2012 additional contact surveys indicate that the grower contacted in the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed is not currently applying chlorpyrifos but is currently implementing specific management practices (Table 10). The grower did not indicate that they planned on implementing any new management practices for the following year.

**Table 10. 2012 additional contacts survey responses.**

Values are percent of acreage contacted.

Question Type	Survey Question	Unnamed Drain to Lone Tree Creek (1,238 Acres)
Application and Irrigation	Currently applying chlorpyrifos	0%
	Spray drift into creek	97%
	Storm or irrigation runoff into the creek	97%
Current Management Practices (2012)	Installation of retention pond / holding basin / return systems	0%
	Installation of sprinkler or micro irrigation when an option	100%
	Reduce runoff water volumes using irrigation management	100%
	Reduce use of the pesticide types found in exceedance	100%
	Use of center grass rows, grass waterways, or grass filter strips	100%

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#### 4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

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##### *Justification to Remove Constituents from Unnamed Drain to Lone Tree Creek @ Jack Tone*

Monitoring results indicate three years of monitoring with no exceedances of the WQTL for SC, which indicates improved grower awareness of the offsite movement of agricultural constituents and/or newly implemented management practices. Two of the previously reported SC measurements should not be considered exceedances. Based on focused outreach surveys and follow-up results, targeted growers in the site subwatershed implemented management practices and improved water quality as reflected by the absence of exceedances of SC. Therefore, the Coalition requests that SC be removed from the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed management plan and MPM schedule. Management Plan Monitoring in 2014 will continue for other constituents.

##### *Future Monitoring*

Unnamed Drain to Lone Tree Creek @ Jack Tone Rd is located within Zone 2 and is scheduled for Represented site monitoring during the 2015 WY. When water quality impairments are identified at the Core site (French Camp Slough @ Airport Way), the Represented site will be evaluated and potentially monitored to determine whether the water quality problem is also occurring at the Represented site. During 2014, MPM will occur according to the schedule outlined in the 2014 MPUR; MPM is scheduled for copper, chlorpyrifos, diuron, and toxicity to *H. azteca*. Field parameters (DO, pH, and SC) will be measured during every monitoring event.