

San Joaquin County and Delta Water Quality Coalition

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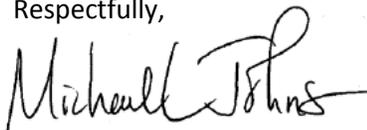
Pamela Creedon, Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Dear Ms. Creedon,

The San Joaquin County and Delta Water Quality Coalition (Coalition) is submitting a request to remove monitoring requirements for specific constituents from selected site subwatershed management plans and therefore from the site's Management Plan Monitoring (MPM) schedule. The Coalition's Management Plan process outline in the Coalition's original Management Plan (approved January 23, 2009, Figure 2) and updated in the Management Plan Update Report for 2010 (Figure 1, page 13) outlines that if the Coalition performs two to more years of Management Plan Monitoring with no exceedances, there is the opportunity to petition the Regional Board for removal of analytes from the subwatersheds management plan and MPM schedule.

The basis for the request follows two consecutive years of monitoring at a site subwatershed with no exceedances of the specific constituent indicating improved water quality due to implemented management practices by growers in the subwatershed. If approved, the Coalition will remove the constituents from management plans in French Camp Slough @ Airport Way (copper, lead, diazinon, diuron, *Ceriodaphnia dubia* and *Selenastrum capricornutum* water column toxicity), Grant Line Canal @ Clifton Court Rd (pH and chlorpyrifos), Grant Line Canal near Calpack Rd (chlorpyrifos), Kellogg Creek along Hoffman Ln (dissolved oxygen, copper, chlorpyrifos, *Ceriodaphnia dubia* and *Selenastrum capricornutum* water column toxicity), Littlejohns Creek @ Jack Tone Rd (diazinon and *Selenastrum capricornutum* water column toxicity), Lone Tree Creek @ Jack Tone Rd (dissolved oxygen and chlorpyrifos), Mokelumne River @ Bruella Rd (*Ceriodaphnia dubia* and *Selenastrum capricornutum* water column toxicity), Mormon Slough @ Jack Tone Rd (*Ceriodaphnia dubia* and *Selenastrum capricornutum* water column toxicity) and Sand Creek @ Hwy 4 Bypass (chlorpyrifos, diazinon, disulfoton, *Ceriodaphnia dubia* and *Selenastrum capricornutum* water column toxicity). However, the Coalition will monitor these locations for the specific constituents when the site rotates into Assessment Monitoring. Supporting documentation for this request is included in the following pages.

Respectfully,



Michael L. Johnson
Technical Program Manager

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INTRODUCTION

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 sufficient water quality data for a subset of subwatersheds has been collected on several constituents to document improved water quality. Therefore, the Coalition determined that there is sufficient evidence to request the removal of the 27 site specific constituents for the subwatersheds listed in Table 1.

Table 1. SJCDWQC site subwatershed, Assessment Monitoring history and constituents to remove from active management plan and MPM schedule.

SITE SUBWATERSHED	MOST RECENT ASSESSMENT MONITORING	FUTURE ASSESSMENT MONITORING	DISSOLVED OXYGEN (DO)*	PH	COPPER (TOTAL & DISSOLVED)	LEAD (TOTAL & DISSOLVED)	CHLORPYRIFOS	DIAZINON	DIURON	DISULFOTON	C. DUBIA	S. CAPRICORNUTUM
French Camp Slough @ Airport Way	2011	2014			X	X		X	X		X	X
Grant Line Canal @ Clifton Court Rd	2008†	after 2035		X			X					
Grant Line Canal near Calpack Rd	2008†	after 2035					X					
Kellogg Creek along Hoffman Ln	2008†	after 2035	X		X		X				X	X
Littlejohns Creek @ Jack Tone Rd	2008†	2021						X				X
Lone Tree Creek @ Jack Tone Rd	2008†	2026	X				X					
Mokelumne River @ Bruella Rd	2011	2014									X	X
Mormon Slough @ Jack Tone Rd	2008†	2017									X	X
Sand Creek @ Hwy 4 Bypass	2008†	NA					X	X		X	X	X
Total			2	1	2	1	5	3	1	1	5	6

*Field parameters will continue to be monitored during Assessment and Core Monitoring events.

†Site was monitored for Assessment Monitoring constituents under the 2006 MRPP where monitoring was not defined as Core or Assessment Monitoring.

NA-No Assessment Monitoring will occur in Zone 6 due to large urban influence.

To support the Coalition's request, data are provided for each constituent documenting improvement in water quality and outreach. For each site subwatershed, the Coalition provides the following:

- 1.) Constituent overview, monitoring history, summary of monitoring data relevant to specific constituents, potential sources of exceedances and review of available/applicable PUR data,
- 2.) Summary of outreach and management practice implementation,
- 3.) Schedule for future monitoring, and
- 4.) Justification for request to remove the constituent(s) and review of how the Coalition has met the requirements for removal as outlined in the Coalition's Management Plan Monitoring Strategy and Management Practice Evaluation flowchart (SJCDWQC Management Plan originally approved on January 23, 2009, Figure 2, page 22 and updated in the SJCDWQC Management Plan Update Report for 2010, Figure 1, page 13).

SUPPORTING DOCUMENTATION TO REMOVE SPECIFIC CONSTITUENTS FROM SITE SUBWATERSHED MANAGEMENT PLANS

French Camp Slough @ Airport Way

Constituents Requested to Remove from Management Plan:

- Copper (Total and Dissolved)
- Lead
- Diazinon
- Diuron
- *Ceriodaphnia dubia* water column toxicity
- *Selenastrum capricornutum* water column toxicity

Subwatershed Overview and Monitoring History

French Camp Slough @ Airport Way is the Core Monitoring location in Zone 2. Monitoring was initiated during the storm season of 2005 and has occurred continuously through fall 2012. Core constituents were monitored beginning in the fall of 2008 through the fall of 2010. Assessment Monitoring occurred in 2011 and is scheduled to occur again in 2014. Core Monitoring resumed at this location in 2012.

French Camp Slough @ Airport Way site subwatershed is one of the Coalition's third set of high priority subwatersheds (focused outreach 2011-2013). Management Plan Monitoring for high priority constituents began in 2007, resumed in 2010 (Year 0 of focused outreach) and continued through 2012 (Year 2 of focused outreach) during months of past exceedances. Carbamates, organochlorines, and organophosphates were sampled during all 2009 events to provide additional data to evaluate the high priority subwatersheds at upstream locations (Littlejohns Creek @ Jack Tone Rd, Lone Tree Creek @ Jack Tone Rd, and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd). During 2011, all constituents were monitored monthly as a part of Assessment Monitoring and high priority MPM constituents were assessed during months of past exceedances including copper, lead, diazinon, diuron, *C. dubia* and *S. capricornutum*. The Coalition also conducted MPM during 2011 and 2012 at the upstream locations: Littlejohns Creek, Lone Tree Creek, and Unnamed Drain to Lone Tree Creek.

General outreach and education in the French Camp Slough @ Airport Way subwatershed began in 2007. Additionally, the Coalition established a list of targeted growers for outreach. The Coalition contacted these targeted growers in 2011 to document current management practices and encourage the implementation of additional management practices to address water quality concerns.

Constituent Monitoring Results and Sourcing

Copper

Copper is routinely used by agriculture on a number of crops and may be found in surface waters as a result of applications. In October 2008, the Coalition began monitoring for both the total and dissolved

copper fractions to better characterize copper contamination and more accurately estimate the bioavailable fraction in the water column. Copper exceeded the hardness based WQTL 12 times in the subwatershed in 2006 (May, June, July and August), and 2007 (February, May, June, July and August). All of the copper exceedances were based on the total fraction and occurred before the Coalition began monitoring for both the total and dissolved fractions.

Since the last exceedances of copper occurred in August 2007, copper has been monitored at French Camp Slough @ Airport Way subwatershed 29 times. Normal irrigation monitoring in 2008 occurred to evaluate copper concentrations and resulted in no exceedances. In 2009, Core Monitoring took place; the site was not scheduled for copper MPM again until 2010. In 2010, 2011, and 2012, MPM for copper occurred during months of past exceedances and resulted in no exceedances. During 2011, Assessment Monitoring was scheduled and copper was monitored monthly; no exceedances occurred at the site during any of the 2011 monitoring events. The PUR data indicate a decrease in copper applications and acres treated in the site subwatershed since 2005. The amount of copper applied within the subwatershed decreased from 2010 (1534 lbs AI across 16,873 acres) to 2011 (1320 lbs AI across 15,633 acres). The end of two consecutive years of monitoring during months of past exceedances was February 2012.

Lead

Lead is a legacy contaminant from various sources, such as old applications of lead arsenate pesticides, deposition from leaded gasoline, and disposal of lead-containing products including paints, electronic components, and batteries. Since lead arsenate pesticide use was banned before the PUR system was initiated, no data exist for sourcing old agricultural applications of lead. Given the number of potential sources and since lead is no longer applied for agricultural use, the Coalition categorizes lead as a low priority constituent (priority E). Lead exceeded the hardness based WQTL twice in French Camp Slough, once in 2006 (May) and once in 2007 (June).

Both of the lead exceedances were based on measurement of the total fraction and occurred before the Coalition began monitoring for both total and dissolved fractions. The Coalition is not required to conduct MPM on priority E constituents; however, since the last lead exceedance occurred, the subwatershed has been sampled for lead 24 times (including monthly Assessment Monitoring in 2011 and 2012 MPM); six of those samples were collected during months of past exceedances (May and June). During 2007 and 2008, Normal Monitoring occurred during the storm and irrigation seasons and lead was analyzed monthly at that time. No exceedances of the lead WQTL occurred in samples collected during the remainder 2007, 2008, 2011 Assessment Monitoring, or 2012 MPM. The end of two consecutive years of monitoring during months of past exceedances was June 2012.

Diazinon

The Regional Board established a TMDL for diazinon for the SJCDWQC region (Lower San Joaquin River Chlorpyrifos and Diazinon TMDL); consequently, diazinon is considered one of the highest priority

constituents under the Coalition's Management Plan. Two exceedances of the diazinon WQTL occurred in the site subwatershed during 2007 (February) and 2008 (January) storm events.

Since the most recent diazinon exceedance, French Camp Slough @ Airport Way has been monitored for diazinon 35 times; three of those samples were collected during storm events. Diazinon has been monitored during the storm and irrigation seasons of 2008, MPM in 2009, during monthly Assessment Monitoring in 2011, and MPM in 2012. No exceedances occurred. The PUR data indicate that since 2009 there has been a steady decrease in diazinon applications and acres treated in the French Camp Slough @ Airport Way site subwatershed. Since the last exceedance in January 2008, the largest amount of diazinon applied was in 2009 (50 lbs AI across 3043 acres), the lowest amount applied was in 2011 (20lbs AI across 301 acres). The end of two consecutive years of monitoring in months of past exceedances was February 2012.

Diuron

Diuron is a soluble herbicide applied throughout the year, and is considered to be a high priority constituent under the Coalition's management plan. Exceedances of the diuron WQTL occurred two times at the French Camp Slough @ Airport Way site subwatershed, both exceedances were from samples collected during storm events; once during 2007 (February) and once during 2008 (January).

Since the most recent diuron exceedance in 2008, French Camp Slough @ Airport Way has been sampled for diuron 23 times; three of those samples were collected during storm events. In addition to MPM during months of past exceedances, this location was sampled monthly during 2008 irrigation monitoring (April through September) and during monthly Assessment Monitoring in 2011. The Coalition conducted MPM for diuron in January and February of 2012. There have been no exceedances of diuron in samples collected during any of the sampling events after the last exceedance. The end of two consecutive years of monitoring in months of past exceedances was February 2012.

***Ceriodaphnia dubia* water column toxicity**

There were two instances of *C. dubia* toxicity in the French Camp Slough @ Airport Way site subwatershed, once in 2006 (March, 0% survival compared to the control) and once in 2007 (February, 0% survival compared to the control). Unspecified non-polar organics were determined to be the cause of the toxicity in 2006, the TIE on the 2007 toxic sample indicated a metabolically-activated organic compound (or multiple compounds) was the cause of the toxicity. In addition, both chlorpyrifos and diazinon exceeded their respective WQTLs during the February 2007 sampling event. Toxicity was not persistent during the resampling events.

The Coalition monitored French Camp Slough @ Airport Way 28 times for *C. dubia* toxicity since the February 2007 toxicity, including five times during months of past exceedances. The end of two consecutive years of monitoring in months of past exceedances was March 2012.

Selenastrum capricornutum water column toxicity

Water column toxicity to *S. capricornutum* is indicative of herbicides, algaecides and/or fungicides in surface waterways. *S. capricornutum* toxicity occurred twice at French Camp Slough @ Airport Way, once in 2005 (February storm) and once in 2008 (April irrigation). The February 2005 toxicity (79% growth compared to control) was not persistent in the resample. The April 2008 toxicity was not persistent in the resample; the TIE indicated non-polar organic and cationic chemical(s) were the cause of toxicity. No exceedances of copper or herbicides coincided with the two toxicities.

There have been two consecutive years of monitoring with no *S. capricornutum* toxicity since the most recent instance in April 2008. The Coalition has monitored French Camp Slough @ Airport Way 20 times for *S. capricornutum* toxicity since the April 2008 toxicity; five of those were during months of past exceedances. The end of two consecutive years of monitoring in months of past exceedances was February 2012.

Outreach

The Coalition initiated general outreach in 2007 in the French Camp Slough @ Airport Way site subwatershed and conducted grower meetings in 2011 with 12 targeted growers in the subwatershed to review each grower's operation, document existing management practices and discuss water quality concerns. The Coalition encouraged growers to evaluate their farming operations and management practices were recommended if they could be effective in reducing agricultural discharges. Additionally, the subwatersheds upstream were or are currently high priority subwatersheds (Littlejohns Creek in 2010-2012, Lone Tree Creek in 2008-2010, and Unnamed Drain to Lone Tree Creek in 2008-2010). Growers in those watersheds have been contacted to review their operations to determine management practice strategies to improve how irrigation return flows are managed. All targeted growers were contacted again in 2012 to determine if recommended and/or new practices were implemented.

Future Monitoring

Management Plan Monitoring will continue to take place for high priority constituents during months of past exceedances through 2013 to assess water quality. French Camp Slough @ Airport Way returns to Assessment Monitoring every third year, the next year being 2014. During this time, the Coalition will monitor monthly for copper and lead (total and dissolved), diazinon, diuron and toxicity to *C. dubia* and *S. capricornutum*.

Justification to Remove Constituents from French Camp Slough @ Airport Way Management Plan

Management Plan Monitoring results demonstrate two consecutive years with no exceedances of the WQTLs for copper, lead, diazinon, diuron, and toxicity to *C. dubia* and *S. capricornutum*. Therefore, the Coalition requests that copper, lead, diazinon, diuron, and toxicity to *C. dubia* and *S. capricornutum* be removed from the French Camp Slough @ Airport Way management plan and MPM schedule.

Grant Line Canal @ Clifton Court Rd

Constituents Requested to Remove from Management Plan:

- pH
- Chlorpyrifos

Subwatershed Overview and Monitoring History

Grant Line Canal @ Clifton Court Rd site subwatershed is an Assessment Monitoring location 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. Assessment Monitoring under the current 2008 MRPP is scheduled to occur after 2035.

Grant Line Canal @ Clifton Court Rd is one of the Coalition's second set of high priority management plan subwatersheds (focused outreach 2010-2012). Management Plan Monitoring for high priority constituents was established in 2007 and occurred during the irrigation season (April through September). Normal storm and irrigation monitoring occurred for pH and chlorpyrifos in 2007 and 2008. The site was not sampled during 2009; however, MPM for chlorpyrifos resumed in 2010, 2011, and 2012 during months of past exceedances. Since pH is a field parameter, it is monitored during every event at the site.

The Coalition contacted targeted growers in 2010 to document existing management practices and encourage the implementation of additional management practices designed to address water quality impairments. The Coalition followed up with targeted growers in 2011 to determine which additional management practices were implemented.

Constituent Monitoring Results and Sourcing

pH

Exceedances of the pH WQTL can be caused by various factors and determining the exact source(s) of exceedances is impossible. The Regional Board has not yet established a TMDL for pH in waterways to which the SJCDWQC region drains; therefore, given the difficulty of sourcing exceedances, pH is categorized as one of the lowest priority constituents. There were seven pH exceedances at Grant Line Canal @ Clifton Court Rd in 2006 (April, May, August and September), 2007 (February and March), and 2008 (September).

All field parameters, including pH, are measured during every monitoring event (Core Monitoring, Assessment Monitoring, and MPM). Therefore, monitoring for pH occurred at Grant Line Canal @ Clifton Court Rd during each sampling event and will continue for all events in the future. Although pH is not considered a high priority constituent and the Coalition does not conduct MPM specifically for pH, MPM occurred for other constituents during the months of January through September from 2010 through 2012 and pH was measured during each sampling event. There have been no exceedances of pH since September 2008 over 19 events. Although pH has not been monitored during the month of

April for two consecutive years; as of September 2012, there have been two or more consecutive years of MPM with no exceedances of pH during other months of MPM.

Chlorpyrifos

There were six exceedances of the chlorpyrifos WQTL, in 2005 (March), 2007 (February and September), 2008 (January), and 2010 (September). Since the most recent chlorpyrifos exceedance in September 2010, Grant Line Canal @ Clifton Court Rd has been monitored for chlorpyrifos eight times; one of those samples was collected during a storm event and all eight were collected during months of past exceedances. Chlorpyrifos was monitored during the storm and irrigation seasons of 2008 and during MPM in 2010, 2011, and 2012; no exceedances of chlorpyrifos occurred at Grant Line Canal @ Clifton Court Rd during any MPM event since the last exceedance. The PUR data indicate that since 2007 there has been a steady decrease in chlorpyrifos applications and acres treated in the site subwatershed with no applications occurring in 2008 or 2009. In fact, there was only one application of chlorpyrifos in March 2010 (0.50 lbs AI to 55 acres) and two applications in 2011 during March and September (0.92 lbs AI across 110 acres). The end of two consecutive years of monitoring in months of past exceedances was September 2012.

Outreach

The Coalition initiated general outreach in 2007 and since the Grant Line Canal @ Clifton Court Rd became high priority in 2010, the Coalition has actively engaged in grower outreach and education to address the highest priority management plan constituents. The Coalition conducted grower meetings and followed up with the two targeted members in the subwatershed. During meetings, the Coalition focused on management practices and the assessment of current and expected future implementation of additional management practices.

Future Monitoring

Grant Line Canal @ Clifton Court Rd is scheduled for Assessment Monitoring after 2035 under the current MRPP. All other priority constituents in the Grant Line Canal @ Clifton Court Rd management plan will continue to be monitored for MPM during months of past exceedances.

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

Grant Line Canal @ Clifton Court Rd MPM has resulted in two consecutive years of no exceedances of pH or chlorpyrifos. Therefore, the Coalition requests that both constituents be removed from the Grant Line Canal @ Clifton Court Rd management plan and MPM schedule. Management Plan Monitoring in 2013 will continue for other high priority constituents and the subwatershed is scheduled for monthly Assessment Monitoring beginning after 2035.

Grant Line Canal near Calpack Rd

Constituents Requested to Remove from Management Plan:

- Chlorpyrifos

Subwatershed Overview and Monitoring History

The Grant Line Canal near Calpack Rd site subwatershed is an Assessment Monitoring location 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. Assessment Monitoring is scheduled for after 2035.

Grant Line Canal near Calpack Rd is one of the Coalition's second set of high priority management plan subwatersheds (focused outreach 2010-2012). Management Plan Monitoring for high priority constituents was initiated in 2007 and occurred during the irrigation season (April through September). Normal storm and irrigation monitoring for chlorpyrifos occurred in 2007 and 2008. The site was not sampled during 2009; however, MPM for chlorpyrifos resumed in 2010, 2011 and 2012 during months of past exceedances.

The Coalition contacted targeted growers in 2010 to document currently implemented management practices and encourage the implementation of additional management practices designed to address water quality concerns. The Coalition followed up with targeted growers in 2011 to determine which additional management practices were implemented.

Constituent Monitoring Results and Sourcing

Chlorpyrifos

There were four exceedances of the chlorpyrifos WQTL at Grant Line Canal near Calpack Rd in 2005 (March, July and August) and 2006 (May). Since the most recent chlorpyrifos exceedance in May 2006, chlorpyrifos was monitored 32 times; four of those samples were collected during storm events (January 2008, two events in February 2007, and March 2012). Chlorpyrifos was monitored during the storm and irrigation seasons of 2008 and during MPM in 2010, 2011, and 2012 and no exceedances of chlorpyrifos occurred in any samples during MPM. The PUR data indicate that since 2007 there has been a steady decrease in chlorpyrifos applications and acres treated in the Grant Line Canal near Calpack Rd site subwatershed with no applications during 2008. In 2007 applications of chlorpyrifos occurred on 271 acres (4 lbs AI) in 2010 on 103 acres (3 lbs AI) and in 2011 on 73 acres (5.6 lbs AI) indicating a gradual decline in use due to grower awareness. The end of two consecutive years of monitoring in months of past exceedances was March 2012.

Outreach

The Coalition initiated general outreach in 2007 and since the site subwatershed became high priority in 2010, the Coalition has actively engaged in grower outreach and education. The Coalition conducted grower meetings and followed up with the two targeted members in the subwatershed and focused on

management practices and the assessment current and expected future implementation of additional management practices.

Future Monitoring

Grant Line Canal near Calpack Rd is scheduled for Assessment Monitoring after 2035 under the current MRPP. All other priority constituents in the Grant Line Canal near Calpack Rd management plan will continue to be monitored for MPM during months of past exceedances.

Justification to Remove Constituents from Grant Line Canal near Calpack Rd Management Plan

Management Plan Monitoring resulted in two consecutive years of no exceedances of chlorpyrifos; therefore, the Coalition requests that chlorpyrifos be removed from the Grant Line Canal near Calpack Rd management plan and MPM schedule. Management Plan Monitoring in 2013 will continue for other high priority constituents and the subwatershed is scheduled for monthly Assessment Monitoring beginning after 2035.

Kellogg Creek along Hoffman Ln

Constituents Requested to Remove from Management Plan:

- Dissolved Oxygen (DO)
- Copper (Total and Dissolved)
- Chlorpyrifos
- *Ceriodaphnia dubia* water column toxicity
- *Selenastrum capricornutum* water column toxicity

Subwatershed Overview and Monitoring History

Kellogg Creek along Hoffman Ln is an Assessment Monitoring location within the Roberts Island @ Whiskey Slough Pump Zone (Zone 4). 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 subwatershed monitoring location was established during an upstream sampling event in September 2005 to isolate the source of toxicity from agriculture. Assessment Monitoring is scheduled to occur after 2035.

The Kellogg Creek along Hoffman Ln site subwatershed is one of the Coalition's fourth set of high priority subwatersheds (focused outreach 2012-2014). Management Plan Monitoring for high priority constituents was initiated in 2007 and occurred during the irrigation season (April through September). Normal Monitoring for copper, chlorpyrifos, *C. dubia* and *S. capricornutum* toxicity occurred during the storm and irrigation seasons of 2007 and 2008. The site was not sampled during 2009 or 2010; however, MPM resumed in 2011 and 2012 during months of past exceedances including DO (March, April, May, July, August and September), copper (February and July), chlorpyrifos (February), *C. dubia* (February, March and April) and *S. capricornutum* (April, May and August).

The Coalition established a list of targeted growers in the subwatershed for outreach. The Coalition contacted these targeted growers in 2012 to document existing management practices and encourage the implementation of additional management practices to address water quality concerns.

Constituent Monitoring Results and Sourcing

DO

Exceedances of the DO WQTL can be caused by various factors (low flow, high biological oxygen demand and/or elevated water temperatures), and determining the exact source(s) of exceedances is impossible. The Regional Board established a TMDL for DO in waterways to which SJCDWQC drains. However, given the difficulty of sourcing exceedances, DO is categorized as one of the lowest priority constituents. There were 11 exceedances of the WQTL for DO, eight in Kellogg Creek along Hoffman Ln and three at Kellogg Creek @ Hwy 4.

Dissolved oxygen is measured as a field parameter during every monitoring event (Core Monitoring, Assessment Monitoring, and MPM). Therefore, monitoring for DO occurred during each monitoring event and will continue for all events in the future. There have been no exceedances of DO since August 2008 in a total of 16 events at Kellogg Creek along Hoffman Ln. As of September 2012, there have been two consecutive years of no exceedances.

Copper

Exceedances of the hardness based copper WQTL occurred three times in the Kellogg Creek along Hoffman Ln subwatershed, in 2007 (February and July) and 2008 (July). Since the last exceedances of copper in July 2008, copper has been monitored seven times; four of the seven samples were collected during months of past exceedances. Normal irrigation monitoring in 2008 (after the July exceedance) did not result in any exceedances of the copper WQTL. In 2011 and 2012, MPM for copper during months of past exceedances did not result in any exceedances of copper. The PUR data indicate a general decrease in copper use in the subwatershed from 2005 through 2009, but increased again in 2010 with the greatest amount of copper use in 2010 (208 lbs AI across 2841 acres). Use declined again in the subwatershed during 2011 (196 lbs AI across 2372 acres). Over the years, the greatest amount of copper use in this subwatershed has been in April through May; even though copper exceedances occurred in February and July. The end of two consecutive years of monitoring during months of past exceedances was July 2012.

Chlorpyrifos

One exceedance of the chlorpyrifos WQTL occurred at the downstream location (Kellogg Creek @ Hwy 4) during February 2005. Since the chlorpyrifos exceedance, the site has been monitored for chlorpyrifos 25 times (including two dry events); five of those samples were collected during storm events. Chlorpyrifos was monitored during the storm and irrigation seasons of 2007 and 2008 and during MPM in 2011 and 2012. No exceedances of chlorpyrifos occurred in any samples collected during the remainder of 2007, 2008, 2011 or 2012. The PUR data indicate that since 2009 there has been an extreme decline in chlorpyrifos use and acres treated in the in Kellogg Creek along Hoffman Ln site subwatershed. Since the exceedance in February 2005, the largest amount of chlorpyrifos applied was in 2008 (50 lbs AI across 2877 acres) while the lowest amount applied was in 2010 (9 lbs AI across 148 acres). The end of two consecutive years of monitoring in months of past exceedances was February 2007; however, the Coalition conducted MPM in February 2011 and 2012.

***Ceriodaphnia dubia* water column toxicity**

There were three instances of *C. dubia* toxicity in Kellogg Creek, once at Kellogg Creek @ Hwy 4 in 2005 (February, 0% survival compared to the control) and twice at Kellogg Creek along Hoffman Ln; once in 2006 (March, 10% compared to the control) and once in 2007 (April, 50% compared to the control). Unspecified non-polar organic contaminants and organophosphate pesticides were responsible for the toxicity in 2005 and an exceedance of chlorpyrifos occurred during the same event but toxicity was not persistent in that resample. The cause of the toxicity could not be determined for the March 2006 and

April 2007 samples because the samples lost toxicity before the TIE was initiated and toxicity was not persistent in the resamples.

The Coalition has monitored Kellogg Creek along Hoffman Ln 19 times (including two dry events) for *C. dubia* toxicity since the April 2007 toxicity. The end of two consecutive years of monitoring in months of past exceedances was April 2012.

***Selenastrum capricornutum* water column toxicity**

S. capricornutum toxicity occurred five times in Kellogg Creek, once at Kellogg Creek @ Hwy 4 in 2005 (August) and in both sample and resample at Kellogg Creek along Hoffman Ln in 2008 (April and May). The August 2005 (44% growth compared to control) sample lost toxicity before a TIE could be initiated and toxicity was not persistent in the resample. Both the April and May 2008 TIEs indicated non-polar organic and cationic chemical(s) to be the cause of toxicity. No exceedances of copper or other herbicides coincided with the toxic samples.

There have been two consecutive years of monitoring with no *S. capricornutum* toxicity. The Coalition monitored Kellogg Creek along Hoffman Ln 10 times for *S. capricornutum* toxicity since the May 2008 toxicity. The end of two consecutive years of monitoring during months of past exceedances was August 2012.

Outreach

The Coalition initiated general outreach in 2007. Grower meetings with 11 targeted members in Kellogg Creek occurred during 2012 to review each grower's operation, document existing management practices and discuss water quality concerns. The Coalition encouraged growers to evaluate their farming operations in order to avoid offsite movement of pesticides. Management practices were recommended if they could be effective in reducing agricultural discharges. Follow up with targeted members will occur in 2013 to determine if additional management practices were implemented and if any are planned to be implemented during the 2013 irrigation season.

Future Monitoring

Management Plan Monitoring will continue to take place for high priority constituents during months of past exceedances through 2014 as necessary to assess the effect of outreach on water quality. Kellogg Creek along Hoffman Ln will rotate into Assessment Monitoring under the current MRPP after 2035.

Justification to Remove Constituents from Kellogg Creek along Hoffman Ln Management Plan

Management Plan Monitoring results demonstrate two consecutive years of no exceedances of the WQTLs for DO, copper, chlorpyrifos, and toxicity to *C. dubia* and *S. capricornutum*. Therefore, the Coalition requests that copper, chlorpyrifos, and toxicity to *C. dubia* and *S. capricornutum* be removed from the Kellogg Creek @ Hoffman Ln management plan and MPM schedule.

Littlejohns Creek @ Jack Tone Rd

Constituents Requested to Remove from Management Plan:

- Diazinon

Subwatershed Overview and Monitoring History

Littlejohns Creek @ Jack Tone Rd site subwatershed is an Assessment Monitoring location in the French Camp Slough @ Airport Way Zone (Zone 2). Sampling was initiated at Littlejohns Creek @ Jack Tone Rd during the irrigation season of 2004 and has continued through 2008. Assessment Monitoring under the current 2008 MRPP at Littlejohns Creek @ Jack Tone Rd is scheduled to occur in 2021.

The Littlejohns Creek @ Jack Tone Rd site subwatershed is one of the Coalition's second set of high priority management plan subwatersheds (focused outreach 2010-2012). Additional MPM occurred in 2007 at Littlejohns Creek @ 26 Mile Rd and upstream irrigation monitoring took place in 2008 at Littlejohns Creek @ Escalon Bellota Rd. The Littlejohns Creek @ Jack Tone Rd site subwatershed management plan was established in 2007 and MPM for high priority management plan constituents has occurred from the 2007 irrigation season through 2012 during months of past exceedances (with the exception of 2009 when no monitoring took place at the site). High priority MPM began in 2010 and has continued through 2012. Additionally, samples were collected for diazinon in 2010 (June-December) as part of a Department of Pesticide Regulation (DPR) grant to reduce the impact of agricultural discharge on water quality. The DPR grant monitoring continued through February 2011; therefore, samples were collected for diazinon in January and February of 2011.

The Coalition established a list of growers with the greatest likelihood of contributing to the water quality impairments. These targeted growers were contacted in 2009 and 2010 to document existing management practices and encourage the implementation of additional management practices. The Coalition followed up with targeted growers in 2011 to determine which additional management practices were implemented. Furthermore, the Coalition expanded its outreach efforts to growers with recent reported use of pesticides in the subwatershed during 2012.

Constituent Monitoring Results and Sourcing

Diazinon

A single exceedance of the diazinon WQTL occurred in the Littlejohns Creek @ Jack Tone Rd site subwatershed during the February 2007 storm event. Since the diazinon exceedance occurred, sampling for diazinon occurred 24 times (including DPR grant monitoring); two of those samples were collected during storm events. In addition to MPM during months of past exceedances; this location was sampled monthly during the irrigation season of 2008. The DPR grant monitoring for diazinon occurred from June 2010 through February 2011. The Coalition conducted MPM during months of past exceedances for diazinon in February of 2011 and 2012. No exceedances of diazinon occurred in any samples collected since February 2007. The PUR data indicate that use of diazinon in the subwatershed

is almost nonexistent. In 2010, the amount of diazinon applied was 9 lbs AI across 91 acres and in 2011, 6 lbs AI per acre across 73 acres. The end of two consecutive years of monitoring in months of past exceedances was February 2012.

Outreach

The Coalition initiated outreach in 2007 and took taken several actions to address water quality concerns in Littlejohns Creek @ Jack Tone Rd subwatershed. The Coalition conducted meetings with 16 growers in 2010 to review each grower's operation, document existing management practices, and discuss water quality concerns. The Coalition encouraged growers to evaluate their farming operations to eliminate offsite movement of pesticides. Follow up contacts occurred in 2011 to determine if recommended and/or new practices were implemented.

Future Monitoring

Littlejohns Creek @ Jack Tone Rd is scheduled for Assessment Monitoring in 2021 and monthly monitoring for diazinon will occur at that time. In 2013, MPM is scheduled for all other high priority constituents under current management plan at Littlejohns Creek @ Jack Tone Rd during months of past exceedances.

Justification to Remove Constituents from Littlejohns Creek @ Jack Tone Rd Management Plan

Management Plan Monitoring results indicate two consecutive years of no exceedances of diazinon. Therefore, the Coalition requests that diazinon be removed from the Littlejohns Creek @ Jack Tone Rd management plan and MPM schedule.

Lone Tree Creek @ Jack Tone Rd

Constituents Requested to Remove from Management Plan:

- Dissolved Oxygen (DO)
- Chlorpyrifos

Subwatershed Overview and Monitoring History

The Lone Tree Creek @ Jack Tone Rd site subwatershed is an Assessment Monitoring location in the French Camp Slough @ Airport Way Zone (Zone 2). Monitoring began during the irrigation season of 2004 and continued through 2008. Upstream monitoring took place at Lone Tree Creek @ Valley Home Rd and Lone Tree Creek @ Brennan Rd during the irrigation season of 2008 only. Assessment Monitoring under the current 2008 MRPP is scheduled to occur in 2026.

The Lone Tree Creek @ Jack Tone Rd site subwatershed is one of the Coalition's first set of high priority management plan subwatersheds (focused outreach 2008-2010). The site subwatershed management plan was established in 2007 and MPM for high priority constituents occurred from the 2007 irrigation season through 2012 during months of past exceedances. During 2010, additional samples were collected for chlorpyrifos as part of the DPR grant. The DPR grant monitoring began in June 2010 and continued through February 2011. Since DO is a field parameter, it is measured during every monitoring event.

The Coalition established a list of growers with the greatest likelihood of contributing to the water quality impairments. Targeted growers were contacted in 2008 and 2009 to document existing management practices and they were encouraged to implement additional management practices. The Coalition followed up with targeted growers in 2010 and 2011 to determine which additional management practices were implemented. Furthermore, the Coalition expanded its outreach efforts to growers with recent reported use of pesticides in the subwatershed during 2012.

Constituent Monitoring Results and Sourcing

DO

There were 18 exceedances of the WQTL for DO in the Lone Tree Creek @ Jack Tone Rd subwatershed during the months of January through September. The last exceedance of DO occurred in January 2010. Dissolved oxygen is measured as a field parameter at each site during every monitoring event (Core Monitoring, Assessment Monitoring, and MPM). Monitoring for DO occurred during each monitoring event and will continue for all sample collection events in the future. There have been no exceedances of DO since January 2010 in 28 monitoring events (including two storm events). As of January 2012, there have been two consecutive years of no exceedances.

Chlorpyrifos

There were nine exceedances of the chlorpyrifos WQTL in the site subwatershed in January (2008 and 2010), February (2007), July (2005, 2006, 2007 and 2010), and in August (2005 and 2009); the last exceedance occurred in July 2010. Since the July 2010 chlorpyrifos exceedance, the monitoring location was sampled for chlorpyrifos 11 times. In addition to MPM during months of past exceedances; this location was sampled monthly during the irrigation season of 2008. The DPR grant monitoring for chlorpyrifos occurred from June 2010 through February 2011. The Coalition conducted MPM during months of past exceedances in 2011 and 2012. No exceedances of diazinon occurred in any samples collected since July 2010. PUR data indicate that applications of diazinon in this subwatershed typically occur as dormant sprays in December, January, and February, with January receiving the most and largest applications. However, 2010 and 2011 PUR data indicate that diazinon use, number of applications, pounds applied, and acres treated per month significantly decreased, in particular during January (the month with peak use). Applications decreased from 2010 (159 lbs AI across 5756 acres) to 2011 (100 lbs AI across 3811 acres). The end of two consecutive years of monitoring in months of past exceedances was July 2012.

Outreach

The Coalition initiated outreach in 2007 and took several actions to address water quality concerns in the Lone Tree Creek @ Jack Tone Rd subwatershed. The Coalition conducted meetings with 43 members within the site subwatershed regarding implementing management practices that would improve the water quality.

Future Monitoring

Lone Tree Creek @ Jack Tone Rd is scheduled for Assessment Monitoring in 2026 under the current MRPP. In 2013, MPM for all other high priority constituents under current management plan at Lone Tree Creek @ Jack Tone Rd will continue during months of past exceedances.

Justification to Remove Constituents from Lone Tree Creek @ Jack Tone Rd Management Plan

The MPM results indicate two consecutive years of no exceedances for DO or chlorpyrifos. Therefore, the Coalition requests that DO and chlorpyrifos be removed from the Lone Tree Creek @ Jack Tone Rd management plan and MPM schedule.

Mokelumne River @ Bruella Rd

Constituents Requested to Remove from Management Plan:

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

Subwatershed Overview and Monitoring History

Mokelumne River @ Bruella Rd is the Core Monitoring location in Zone 1. Monitoring began in August 2004 during the first season of Coalition monitoring and has continued through 2012. In 2011, Assessment Monitoring took place and is scheduled to occur again in 2014. To determine the contribution of sources from upstream of the Mokelumne River fish hatchery, an upstream sampling location (Mokelumne River @ Fish Hatchery) was monitored for one event in September 2005.

The Mokelumne River @ Bruella Rd site subwatershed is one of the Coalition's third set of high priority subwatersheds (focused outreach 2011-2013). Management Plan Monitoring for high priority constituents took place in 2007, 2008, 2010 (Year 0), 2011 (Year 1), and 2012 (Year 2) during months of past exceedances. In 2011, all constituents were monitored monthly as a part of Assessment Monitoring and high priority constituents were monitored during 2012 MPM.

The Coalition established a list of targeted growers for outreach contact. The Coalition contacted these growers in 2011 to document existing management practices and 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

***Ceriodaphnia dubia* water column toxicity**

There were five instances of *C. dubia* toxicity in samples collected at Mokelumne River @ Bruella RD; in 2004 (September, 5% survival compared to the control), 2005 (March, 37% and June, 37% compared to the control), and 2006 (February, 5% and March resample, 5% compared to the control). The TIE results from the 2004 toxicity indicate that the addition of PBO to the sample increased toxicity implicating pyrethroids as the cause. The TIE results for both toxicities in 2005 were inconclusive because the samples lost toxicity. The 2006 toxicity was persistent in the resample but the TIE baseline analysis lost toxicity. No exceedances of metals or pesticides coincided with the five toxicities.

The Coalition has monitored Mokelumne River @ Bruella Rd 41 times for *C. dubia* toxicity since the last toxicity, including six storm events. The end of two consecutive years of monitoring in months of past exceedances was September 2012.

***Selenastrum capricornutum* water column toxicity**

S. capricornutum toxicity occurred 10 times (including three resampling events); in 2004 (August, 50% compared to the control), 2005 (March, 84% and May, 91% compared to the control), 2007 (July, 57% compared to the control), and 2008 (April 43%, with resample 18%, May 10%, with two resamples 27% and 72% respectively; and July, 82% compared to the control). No TIEs were initiated on the *S. capricornutum* toxicities. The August 2004 toxicity (50% growth compared to control) was not persistent in the resample. Only one exceedance of copper coincided with any of the toxic samples (July 2007).

Since July 2008, Mokelumne River @ Bruella Rd has been monitored 24 times for *S. capricornutum* toxicity. The end of two consecutive years of monitoring in months of past exceedances was March 2012.

Outreach

The Coalition began conducting general outreach and education in the Mokelumne River @ Bruella Rd site subwatershed in 2007. In 2011, individual meetings with 9 targeted growers occurred to review each grower's operation, document existing management practices and discuss water quality concerns. In 2012, follow up with targeted members occurred to determine if additional management practices were implemented in 2011 and if any were planned to be implemented in the 2012 irrigation season.

Future Monitoring

Mokelumne River @ Bruella Rd returns to Assessment Monitoring in 2014. Management Plan Monitoring will continue to take place for high priority constituents during months of past exceedances through 2013 as necessary to assess the effect of outreach on water quality.

Justification to Remove Constituents from Mokelumne River @ Bruella Rd Management Plan

The results of MPM demonstrate two consecutive years of no exceedances of the WQTLs for *C. dubia* and *S. capricornutum* water column toxicity. Therefore, the Coalition requests that *C. dubia* and *S. capricornutum* water column toxicity be removed from the Mokelumne River @ Bruella Rd management plan and MPM schedule. Mokelumne River @ Bruella Rd returns to Assessment Monitoring in 2014.

Mormon Slough @ Jack Tone Rd

Constituents Requested to Remove from Management Plan:

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

Subwatershed Overview and Monitoring History

Mormon Slough @ Jack Tone Rd is an Assessment Monitoring location in the French Camp @ Airport Way Zone (Zone 2). Monitoring at Mormon Slough @ Jack Tone Rd began in the irrigation season of 2006 and continued through 2008. Assessment Monitoring is scheduled to occur in 2017.

The Mormon Slough @ Jack Tone Rd site subwatershed is one of the Coalition's fourth set of high priority subwatersheds (focused outreach 2012-2014). Management Plan Monitoring for high priority constituents was initiated in 2007. Management Plan Monitoring for high priority constituents occurred in 2007, 2008, 2011 (Year 0), and 2012 (Year 1) during months of past exceedances.

The Coalition established a list of targeted growers for outreach contact. These growers were contacted in 2012 to document existing management practices and encourage the implementation of additional management practices. The Coalition will follow up with targeted growers in 2013 to determine which additional management practices were implemented.

Constituent Monitoring Results and Sourcing

***Ceriodaphnia dubia* water column toxicity**

C. dubia toxicity occurred at Mormon Slough @ Jack Tone Rd 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; however, 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).

The Coalition has monitored Mormon Slough @ Jack Tone Rd eight times for *C. dubia* toxicity since the last toxicity. The end of two consecutive years of monitoring in months of past exceedances was September 2012.

***Selenastrum capricornutum* water column toxicity**

S. capricornutum toxicity occurred 4 times at Mormon Slough @ Jack Tone Rd (including one resampling event), in 2007 (July, 61% compared to the control) and 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. Toxicity

was persistent in only one resample collected in April 2008. No exceedances of metals or herbicides coincided with the toxic events.

The Coalition has monitored Mormon Slough @ Bruella Rd 10 times for *S. capricornutum* toxicity since the May 2008 toxicity. The end of two consecutive years of monitoring in months of past exceedances was July 2012.

Outreach

The Coalition began conducting general outreach and education in the site subwatershed in 2007. In 2012, individual meetings with 34 targeted growers were conducted to review each grower's operation, document existing management practices and discuss water quality concerns. In 2013, follow up with targeted members will occur to determine if additional management practices were implemented in 2012 and if any were planned to be implemented in the 2013 irrigation season.

Future Monitoring

Mormon Slough @ Jack Tone Rd will begin Assessment Monitoring in 2017. Management Plan Monitoring will continue to take place for high priority constituents during months of past exceedances through 2014 as necessary to assess the effect of outreach on water quality.

Justification to Remove Constituents from Mormon Slough @ Jack Tone Rd Management Plan

The results of MPM demonstrate two consecutive years of no exceedances of the WQTLs for *C. dubia* and *S. capricornutum* water column toxicity. Therefore, the Coalition requests the removal of *C. dubia* and *S. capricornutum* water column toxicity from the Mormon Slough @ Jack Tone Rd management plan and MPM schedule. Mormon Slough @ Jack Tone Rd begins Assessment Monitoring in 2017.

Sand Creek @ Hwy 4 Bypass

Constituents Requested to Remove from Management Plan:

- Chlorpyrifos
- Diazinon
- Disulfoton
- *Ceriodaphnia dubia* water column toxicity
- *Selenastrum capricornutum* water column toxicity

Subwatershed Overview and Monitoring History

Sand Creek @ Hwy 4 Bypass is the only remaining site in the Contra Costa Zone (Zone 6). No Assessment Monitoring is scheduled at the site due to a large amount of urban influence. Monitoring began in the irrigation season of 2006 and continued through the irrigation season of 2008.

Sand Creek @ Hwy 4 Bypass site subwatershed is one of the Coalition's fourth set of high priority subwatersheds (focused outreach 2012-2014). No monitoring occurred at this location during 2009 through 2010. Management Plan Monitoring occurred in 2011 (Year 0) and 2012 (Year 1) during months of past exceedances for chlorpyrifos (May and June), diazinon (January and July), disulfoton (May, June and August), *C. dubia* toxicity (May, June and July) and *S. capricornutum* toxicity (April and August).

The Coalition established a list of targeted growers for outreach contact and contacted these growers in 2012 to document existing management practices and encourage the implementation of additional management practices. The Coalition will follow up with targeted growers in 2013 to determine which additional management practices were implemented.

Constituent Monitoring Results and Sourcing

Chlorpyrifos

Exceedances of the chlorpyrifos WQTL occurred twice in 2006 (May and June). Since the last chlorpyrifos exceedance in June 2006, Sand Creek @ Hwy 4 Bypass has been monitored for chlorpyrifos 25 times. Monitoring for chlorpyrifos occurred during the storm and irrigation seasons of 2007 and 2008 and during MPM in 2011 and 2012. No exceedances of chlorpyrifos occurred in any samples during 2007, 2008, or 2012. The PUR data indicate that there have been no applications of chlorpyrifos in the site subwatershed. The end of two consecutive years of monitoring during months of past exceedances was June 2008; however, the Coalition elected to conduct MPM in 2011, and 2012.

Diazinon

Exceedances of the diazinon WQTL occurred twice during 2006 (July) and 2008 (January). Since the 2008 January diazinon exceedance, monitoring for diazinon has occurred 10 times. Diazinon has been monitored during the storm and irrigation seasons of 2008 and during MPM in 2011 and 2012. No exceedances of diazinon occurred in any samples since the last exceedance. The PUR data indicate that

there have been no diazinon applications in the Sand Creek @ Hwy 4 Bypass site subwatershed. The end of two consecutive years of monitoring in months of past exceedances was July 2012.

Disulfoton

Disulfoton is an organophosphate pesticide that is banned from agricultural use in the United States and is therefore considered a legacy pesticide. Disulfoton exceeded the WQTL three times at the Sand Creek @ Hwy 4 Bypass site subwatershed, all three exceedances occurred in 2008 (May, June and August). Since the most recent disulfoton exceedance in August 2008, Sand Creek @ Hwy 4 Bypass has been sampled for disulfoton seven times during 2011 and 2012 MPM in months of past exceedances. There were no exceedances of disulfoton in samples collected since the last exceedance.

***Ceriodaphnia dubia* water column toxicity**

There have been three instances of *C. dubia* toxicity in Sand Creek @ Hwy 4 Bypass; all occurred in 2006 monitoring events (May 16%, June 0% and July 0% compared to the control). The TIE results from the May 2006 toxicity indicate that toxicity was due to particulate-associated contaminants and non-polar organics. Toxicity could not be determined from the TIE results for the June toxicity; the TIE indicated the July toxicity was caused by metabolically activated compounds. Exceedances of chlorpyrifos, DDE, DDT, dieldrin coincided with the May and June 2008 toxicities and an exceedance of diazinon coincided with the July 2006 toxicity.

The Coalition monitored Sand Creek @ Hwy 4 Bypass 28 times for *C. dubia* toxicity since the last toxicity. The end of two consecutive years of monitoring during months of past exceedances was July 2008; however, the Coalition conducted monitoring for *C. dubia* during MPM in 2011 and 2012.

***Selenastrum capricornutum* water column toxicity**

S. capricornutum toxicity occurred 3 times (including one resampling event) in 2008 (April sample 44% and resample 54% and August 38% compared to the control). Toxicity during the April event was persistent; TIEs indicated that the *S. capricornutum* toxicity in April 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 pesticide exceedances (DDD, DDE, DDT, dieldrin and disulfoton) in August 2008.

There have been two consecutive years of monitoring with no *S. capricornutum* toxicity since August 2008. The Coalition monitored Sand Creek @ Hwy 4 Bypass five times for *S. capricornutum* toxicity since the August 2008 toxicity. The end of two consecutive years of monitoring in months of past exceedances was August 2012.

Outreach

The Coalition began conducting general outreach and education in the site subwatershed in 2007. In 2012, a meeting was conducted with one grower to review the growers operation, document existing management practices and discuss water quality concerns. In 2013, follow up with the targeted

member will occur to determine if additional management practices were implemented in 2012 and if any were planned to be implemented in the 2013 irrigation season.

Future Monitoring

Management Plan Monitoring will continue to take place for high priority constituents during months of past exceedances through 2013 as necessary to assess the effect of outreach on water quality.

Justification to Remove Constituents from Sand Creek @ Hwy 4 Bypass Management Plan

The results of MPM demonstrate two consecutive years of no exceedances of chlorpyrifos, diazinon, disulfoton, *C. dubia* and *S. capricornutum* water column toxicity. Therefore, the Coalition requests that these constituents be removed from the Sand Creek @ Hwy 4 Bypass management plan and MPM schedule. Sand Creek @ Hwy 4 Bypass is in Contra Costa Zone 6 and therefore no Assessment Monitoring is scheduled due to high urban influence in the zone.