Response to 'Review and Commnets on ESJWQC SAMR', 19 May, 2006

To respond fully to the comments provided on May 19, 2006, the Coalition will submit a revised Semi-Annual Monitoring Report. The report is being finalized, printed, and three-hole punched and will be sent to the Regional Board early next week and should arrive by June 26, 2006. In the meantime, responses to the individual items are provided below. Many of these are responses that indicate changes have been made to the document. Because many of the items below affect presentation style rather than compliance with the Waiver MRP, responses to these items indicate that changes will be made to future documents.

The Coalition appreciates the care and attention to detail provided by Regional Board staff. The goal of the Coalition is to develop the highest quality monitoring program possible and provide the results in a complete and straightforward manner. The comments provided in the review of the December 31, 2005 Semi-Annual Monitoring Report will improve the quality of future reports.

Response to specific comments/items

Item1:
The Regional Board should have received a letter from the ESJWQC on May 22, 2006 (via email) amending the NOI and authorizing Michael Johnson to sign documents submitted to the Regional Board.

Item2:
According to the requirements set in p. 22 (section C) of the "Monitoring & Reporting Program, Order No. 2005-0833, 15 August, 2005", this is not one of the required elements of the SAMR. However, the Coalition recognizes the value of an Executive Summary and will include this section in future reports.

Item3:
All of the information requested in Item 3 of the Regional Board's Review and Comments of the December 31, 2005 Semi-Annual Monitoring Report was included in various tables in the document and in the level 4 data. Our summary data tables were formatted to facilitate the evaluation of the sampling data and consequently we moved much of the data being requested into other tables. We have received the templates for the tables from the Regional Board staff and will change the format of the tables in future reports to provide the information in the format requested.

Item 4:
It is unclear why the original Exceedance Reports were not provided to the Regional Board but clearly were prepared at the time of the exceedance. Early in the reporting process, reports were sent to the coalition Board of Directors for forwarding. It is possible that some reports were not forwarded. Later, that practice was discontinued and

the Technical Program Manager wrote and sent all reports. Additionally, many of the exceedances were not provided to the coalition by the laboratories in a timely manner. One of the original laboratories has been terminated for several problems including incomplete QA testing and not reporting data in a timely manner. Finally, there remains some disagreement over the correct value to use as the standard by which exceedances are determined. We expect these issues to be discussed in the Technical Issues Committee as the process of adopting a new MRP continues. At this point, we believe we have adequately addressed the issues that resulted in the problems listed in Item 4.

Item 5:
During the course of the first year's monitoring, the focus of the Coalition was on developing a program focused on pesticides and toxicity. As such, we did not concentrate on exceedances of constituents such as dissolved oxygen and missed submitting exceedance reports when they were due. There are exceedances that were not reported. We corrected the oversight during the summer of 2005 irrigation season monitoring, and have reported all exceedances since that time. As a corrective measure, we have developed an Exceedance Tracker and reviewed all of the exceedances for 2005. Many of the exceedances listed in the item were reported to the Regional Board. All Hyalella exceedances were reported (please see table below). For E. coli, electrical conductivity and TDS exceedances, please refer to item 29 for dates on exceedance reports. All were reported.

For other exceedances, we respectfully disagree with the Regional Board as to the appropriate values to use for several constituents. See items below for specific details.

Below is the table of toxicity exceedances from the SAMR (Table 14) that shows dates exceedances reports were filed.

Site name	Sample Date	Sample Type Code	Species Name	Exceedance report
Bear Creek @ Kibby Rd	5/10/05	Grab	Ceriodaphnia dubia	5/14/05
Cottonwood Creek @ Rd 20	5/10/05	Integrated	Hyalella azteca	6/17/05
Cottonwood Creek @ Rd 20	5/10/05	FieldDup	Hyalella azteca	6/17/05
Dry Creek @ Wellsford Rd	2/15/05	Grab	Ceriodaphnia dubia	--
Dry Creek @ Wellsford Rd	5/11/05	Integrated	Hyalella azteca	6/17/05
Duck Slough @ Gurr Rd	5/10/05	Integrated	Hyalella azteca	6/17/05
Duck Slough @ Gurr Rd	7/12/05	Integrated	Hyalella azteca	9/19/05
Duck Slough @ Gurr Rd	7/12/05	Integrated	Hyalella azteca	9/19/05
Duck Slough @ Gurr Rd	9/21/05	Integrated	Hyalella azteca	10/18/05
Duck Slough @ Pioneer	7/12/05	Grab	Selenastrum capricornutum	6/20/05
Highline Canal @ Hwy 99	5/10/05	Grab	Ceriodaphnia dubia	5/14/05
Highline Canal @ Hwy 99	5/19/05	Grab	Ceriodaphnia dubia	5/18/05
Highline Canal @ Hwy 99	7/13/05	Integrated	Hyalella azteca	9/19/05
Highline Canal @ Hwy 99	9/21/05	Integrated	Hyalella azteca	10/18/05
Highline Canal @ Lombardy Rd.	5/10/05	Integrated	Hyalella azteca	6/17/05
Highline Canal @ Lombardy Rd.	5/10/05	Integrated	Hyalella azteca	6/17/05

Highline Canal @ Lombardy Rd.	7/13/05	Integrated	Hyalella azteca	9/19/05
Hilmar Drain @ Central Ave.	5/11/05	Grab	Ceriodaphnia dubia	5/18/05
Hilmar Drain @ Central Ave.	5/11/05	Integrated	Hyalella azteca	6/17/05
Hilmar Drain @ Central Ave.	9/21/05	Integrated	Hyalella azteca	10/18/05
Jones Drain @ Oakdale Rd	2/16/05	Grab	Selenastrum capricornutum	4/22/05
Jones Drain @ Oakdale Rd	8/17/05	Grab	Ceriodaphnia dubia	8/22/05
Merced River @ Santa Fe	3/21/05	Integrated	Selenastrum capricornutum	4/6/05
Prairie Flower Drain @ Crows Landing Rd.	7/13/05	Integrated	Hyalella azteca	9/19/05
Prairie Flower Drain @ Crows Landing Rd.	9/21/05	Integrated	Hyalella azteca	10/18/05

Item 6:
Map and text have been updated.

Item 7:
SAMR has been updated with Figure 2a.

Item 8:
SAMR has been updated.

Item 9:
SAMR has been updated.

Item 10:
SAMR has been updated.

Item 11:
Reference to Fig. 1 was located on p. 6; reference to Fig. 2-14 was located on p. 18; references to Tables 3-6 were located on pages 11-14.

Item 12:
Definition was located on p.11 below Table 2. However, at this point, the definition is no longer useful in the description of the monitoring program. Originally, we anticipated that some sites would be monitored only for a short period of time. The number of exceedances at these site now dictates that they be monitored for an extended period of time and they will not be rotated out of the monitoring program until some time in the future.

Item 13:
It was indicated on p. 33 that units were provided in table 10. In future reports, the units will be provided in each table.

Item 14:
In the revised SAMR, text has been added to p. 33 to clarify. In future reports, the entries will reflect that the values are less than or equal to the practical quantitation limits.

Item 15:

The Coalition will add list of acronyms at beginning of document to explain all of the acronyms that are used in the document.

Item 16:
The percent survival data for Ceriodaphnia and Pimephales in the tables is the percent survival in the ambient sample, and is not compared to the control in any way. It is not a measure that is a percent relative to the control survival. We have received templates for tables from Regional Board staff and will use those templates for future reporting of results. We will include the percent reduction in survival and growth relative to the control for all statistically significant reductions in Ceriodaphnia or Pimephales survival and algal growth.

Item 17:
The result has been corrected in the revised SAMR.

Item 18:
The original Exceedance Report was incorrect. The sample date on the COC is correct.

Item 19:
We have reviewed the COCs provided with the original report and found the duplicates. Those have been removed from the revised SAMR. We will review our scanned COCs in the future to eliminate the duplication of documents.

Item 20:
In future reports, all surrogate recovery information will be placed into the QC results section. All information about acceptable ranges for recoveries was provided in a separate (unnumbered) table on page 232 of the original SAMR in the section "Summary of Precision and Accuracy."

Item 21:
All information listed in the Item was provided in tables and the text. The templates received from the Regional Board for these data will allow us to provide them in future reports in the correct format. A discussion of the sampling results in the context of the QC results is provided in the SAMR.

Item 22:
We will attempt to provide consecutive page numbers for all documents appended to the SAMR in future documents.

Item 23:
We are unable to locate the amendment to the QAPP that addresses the recovery limits. A new QAPP for the monitoring is being completed and will be forwarded to the Regional Board as soon as possible. The recovery limits are addressed in the QAPP revision.

Item 24:
The correct TDS is 260 mg/L, not 760 mg/L. The revised SAMR has been corrected.

Item 25:
In future SAMRs, the TIE start and end dates will be provided.

Item 26:
The Coalition will provide an evaluation of whether monitoring objectives were met in future SAMRs.

Item 27:
All values between the PQL and MDL were qualified with a DNQ designation in Table 13, page 241. However, the explanation for the acronym was not provided in Table 13. In future SAMRs, the qualifier will be explained fully.

In Table 13, it lists the PQL for chlorpyrifos and diazinon as 0.05 µg/L. Although all laboratory reports list the PQL as 0.05 µg/L, this is incorrect. The PQLs (0.02 µg/L) required in MRP Order No. R5-2005-0833 were met for the entirety of the sampling seasons in 2005. A letter from the analytical laboratory will be appended to the revised SAMR to provide documentation. Apparently, the laboratory lowered their MDLs and PQLs, but failed to input those new numbers into the LIMS and all of their reports have been providing incorrect numbers. We caught the error in a recent data audit and brought it to the attention of the laboratory. They provided the letter and changed their reporting system so no confusion will occur in the future. However, the Level IV data reports for the 2006 winter storm season will still reflect the incorrect PQLs.

Item 28:
There is no indication in MRP Order No. R5-2005-0833 that these data are required or even desired in the SAMRs. The information requested is not currently available for past meetings, but the coalition will provide as much information as possible in future reports.

Item 29:
The table below is a summary of the table provided in the comments. The table only lists the sample dates that were identified as not having an exceedance report filed. No exceedances reports were filed for dissolved oxygen. As mentioned above, we were focused early in the program on pesticides and the data for field and physical parameters were not scrutinized sufficiently. We have corrected that problem and now report all exceedances. The remaining exceedances are addressed in the table. In most instances, we were able to identify an exceedance report that was filed. The date of the exceedance report is provided in the table. If no exceedance report was filed, the reason is provided in the last column.

Sample Date	Location	Analyte	Exceedance report date	Comments/Rationale
7/12/05	Ash Slough @ Ave 21	Chlorpyrifos	--	Since it was not an exceedances by the WQOs used in the report, 0.02 µg/L, it was not reported. See response to item 31.
8/16/05	"	Chlorpyrifos	--	Exceedance report missed.
7/12/05	Duck Slough @ Pioneer Rd	Chlorpyrifos	7/29/05	The amount reported was 0.026, not 0.018
2/15/05	Highline Canal @ Lombardy Rd	Chlorpyrifos	4/7/05	The actual data was a detection of 0.01 for Chlorpyrifos (Since it was not an exceedances by the WQOs used in the report, 0.02 µg/L, it was not reported). What was reported was an exceedances for Diazinon of 0.098 µg/L
6/15/05	Hilmar Drain @ Central Ave.	Conductivity	10/3/05	
7/13/05	Hilmar Drain @ Central Ave.	Conductivity	10/18/05	
8/16/05	Hilmar Drain @ Central Ave.	Conductivity	10/18/05	
9/21/05	Prairie Flower @ Crows Landing Rd	Conductivity	10/18/05	
Various	Various	E. coli	8/18/05 and 10/18/05	
7/13/05	Hilmar Drain @ Central Ave.	TDS	10/18/05	
8/16/05	Hilmar Drain @ Central Ave.	TDS	10/18/05	
9/21/05	Hilmar Drain @ Central Ave.	TDS	10/18/05	
7/13/05	Prairie Flower @ Crows Landing Rd	TDS	10/18/05	
8/17/05	Prairie Flower @ Crows Landing Rd	TDS	10/18/05	
9/21/05	Prairie Flower @ Crows Landing Rd	TDS	10/18/05	

Item 30:
After the test is completed and the lab is certain that the test acceptability criteria have been met, the TIE can be initiated. While in retrospect, it is clear that significant toxicity occurred on the 2nd or 3rd day of the test, because we are uncertain that the test is valid, the TIE can't be initiated until after the final day of the test. Usually this is on the next day after the test has been concluded. We reviewed the raw data reports from the laboratory and the database but were unable to determine the reason for the delay in the initiation of the test for the sample collected on 22 March 2005. There was a miscommunication between the laboratory and the coalition that delayed the initiation of the TIE. We have since initiated a decision process that allows the laboratory to initiate TIEs immediately after the test is complete and it is clear that the TIE trigger has been reached.

A table outlining all toxicity exceedances and the rationale for initiation of TIEs and re-sampling is provided as an attachment to this response.

Item 31:
The Coalition does not agree that the value used for reporting an exceedance of chlorpyrifos should be 0.015 µg/L for 2 reasons:

1. The value selected is a 4-day continuous average rather than a 1-hour average. Given the sampling design which is a single grab sample rather than a continuous compositing of repeated samples, a 1-hour standard appears more appropriate.
2. The value selected by the Regional Board is below the required PQL for chlorpyrifos, and consequently, we are unable to accurately quantify the concentration of chlorpyrifos down to 0.015 µg/L.

Item 32:
No response necessary.

Item 33:
All *E. coli* batches were run with a control positive, control negative and sterility check. These data are reported in attached lab reports and met data quality objectives. There is currently no method to enter this data into a SWAMP-comparable database as SWAMP does not require these to be reported. No laboratory blanks or laboratory duplicates were run with any of the batches. The lab analyzing for *E. col*i with was not accustomed to running a laboratory blank since both a control positive and negative are run for enzyme substrate validation. A sterility check is done within the lab after a few laboratory batches are run however this was never recorded in an excel file and reported. Lab duplicates were not conducted since the amount of water collected in the field was exactly 100 mL- the amount of water needed to run the *E. coli* test. The pre-packaged bottles are filled with enough acid for 100 mL even though the jar can hold more. There is not enough water collected in the jar to split the sample and do a duplicate analysis. These issues were not corrected until the storm sampling of 2005/2006 due to a delay in the receipt of laboratory reports and data. In the storm season following the December 2005 semi-annual report all *E. coli* jars were filled to the top to allow for laboratory duplicates (acidification only needed if chlorine is in the water) and the lab ran a sterility check (lab blank) for each batch of samples.

Item 34:
The study is to be initiated this summer. The Regional Board needs to understand that the objective of the study is to identify the organisms responsible for the E. coli in the surface waters. If it is clear that the E. coli originates with animal waste, the next step would be to identify all locations in the watershed in which animal waste could enter the system. At that point, all of the potential sources listed in the comment will be examined for their contribution to the problem.

The work plan and QAPP have been submitted to Regional Board and we are awaiting a response to determine if study is acceptable. The Coalition will now also use an *E. coli* WQO of 235 MPN/100mL.

Item 35:
The laboratory used to analyze pesticides for the ESJWQC reported their reporting limit (RL or PQL) as 0.1 µg/L for all samples collected in 2005. This was overlooked since we received data from an MDL (minimum detection limit) study conducted in early 2005 to lower their MDLs to those required by the QAPP. It was noted recently that although the MDLs were reported correctly the RLs were not reported correctly (see item #27). We have since received a letter from the laboratory confirming that the RLs were reported incorrectly and that they indeed meet the specifications of the QAPP. All Cypermethrin RLs reported for 2005 should have been recorded as 0.05 µg/L. We are currently working with the lab to receive another document giving us permission to update the database with the correct RLs.

Item 36:
It is unclear why the Regional Board is using 0.03 µg/L assigned as an interim criterion by CDFG. The CDFG document states that the analysis performed is simply an assessment as a preliminary step in the development and promulgation of water quality standards. Although they recommend 0.03 µg/L as an interim standard, their recommendation should not be used as the standard until properly vetted by the Regional Board. Also, the analysis indicates that there were insufficient data available to make the 0.03 µg/L level anything other than an interim value. Until such time as sufficient data are available, the 0.03 µg/L value should not be used as a water quality objective.

Item 37:
The coalition will use the 7.0 mg/L value as the standard for determining exceedances starting in June 2006.

Item 38:
Changes have been made to the table and will be used in all future reporting.

Item 39:
See response to item 30. Again, a TIE cannot be initiated until the test has been completed and the test acceptability criteria have been met. The TIE that we typically employ is a standard TIE targeted at pesticides. However, if the pesticides are not present and the toxicity persists, we employ techniques capable of identifying additional causes including metals and ammonia. It the toxicity in the original sample is not persistent, very little can be done. We have reviewed the laboratory's procedures for sample storage, hold times, and initiating TIEs in a timely manner, and with the one exception noted in the comment, the laboratory is well within industry standards. There are simply tests in which the toxicity is not persistent. The Coalition does not have sites that are consistently problematic with respect to pesticides such that initiating TIEs on samples prior to the conclusion of the standard toxicity test would be warranted.

Item 40:
Changes have been made in the revised SAMR.

Item 41:
We have added Table 33b to clarify.

Item 42:
We contacted the laboratory about their procedures. To that point in time, all tests used 2 replicates rather than 4 replicates. Their response to our inquiry is:

"The pages of the EPA manual that address replicates for the acute fathead minnow test are page 43 (Section 9.4.2), page 45 (Section 9.8.1), and page 55 (summary of test conditions table for the fathead minnow test). Briefly, the acute manual (EPA-821-R-02-012) requires 2 replicates for "effluent" tests and 4 replicates for "receiving water" tests. It is important to note that the EPA manual states in Section 1.1 (page 1) that "This manual describes acute toxicity tests for use in the National Pollutant Discharge Elimination System (NPDES) Permits Program to identify effluents and receiving waters containing toxic materials in acutely toxic concentrations".

The EPA manual does not define if irrigation runoff and stormwater runoff (ambient waters) would be classified as an effluent or a receiving water. Many people would likely argue that "runoff" should be tested as an effluent, with the downstream water body being the receiving water. As there is clearly room for various interpretations of the testing requirements, we contacted Theresa Norberg-King, an EPA scientist involved with writing the EPA manuals, in the Spring 2005 with the very same question that Dana is asking. Theresa concurred that the manual was was not entirely clear on this issue, and indicated that a conservative approach would be to use the receiving water requirement of 4 replicates for the ambient water monitoring of irrigation and stormwater runoff. Based on Theresa's advice, we immediately began performing acute fathead minnow tests of ambient waters with 4 replicates.

In regards to her comment that "the coalition must provide staff with an amended lab report that provides accurate information on the outcome of the test", the lab report was accurate as to the performance of the test, and the statistics are readily performed on a sample with 2 or 4 replicates. The statistics indicated that the sample was not toxic."

Item 43:
A brief discussion of the results in the context of the QC data is provided in the revised SAMR.

Item 44:
Beginning in the spring of 2006, all sites will be sampled for the constituents listed in the comment with the exception of selenium and boron. We will review our monitoring program to determine if we need to modify our monitoring at the sites not currently monitored for selenium and boron.

Item 45:
Dormant season sediment sampling took place during the winter of 2006.

Item 46:
The coalition will review their monitoring strategy along with the data from sites with upstream and downstream sampling locations to determine if a change in approach is warranted. If the Coalition determines that a change in strategy is necessary, it will file an amendment to the current MRP.

Item 47
The lack of discharge is due to a miscommunication with the field crews supplied by the laboratory. They understood flow to mean a single measurement of velocity, which could not be used to calculate discharge. As such, flow was collected at all sites at every sample event, but insufficient data were collected to allow the calculation of discharge. The problem has been solved and the field crews do currently collect sufficient flow measurements to calculate discharge.

Item 48:
We did not perform re-sampling for any of the Hyalella toxicity tests because we assume that at the periods of time the sediment was collected, there would be little movement of the sediment and the toxicity would be persistent.

Identification of sources of sediment toxicity is currently impossible, particularly in an agricultural setting. Because we are unable to obtain an understanding of the sediment chemistry, the cause of the toxicity in sediment remains unknown and consequently, the source of the toxicity cannot be determined. Even if the cause of the toxicity was known, it is unclear that the source could be identified as the chemical causing the toxicity does not necessarily have to originate at the same location as the sediment in which it is found. As a result, upstream sampling to detect sources will not be fruitful. Even if an upstream site was found to be toxic, there is no reason to believe that the sediment from the upstream location has been resuspended and delivered to the downstream location.

Item 49:
During the sampling of this site, it became apparent that the site was an active methamphetamine dump site. The site was isolated and experienced very little traffic. After a few visits, the evidence of recent visits and freshly disposed drug paraphernalia made the field crew extremely uncomfortable and they feared for their safety. At that point, the decision was made to abandon the site despite the exceedances that had occurred. While water quality exceedances are important, they are not as important as worker safety and the coalition will not place any person in a position where they might experience harm. We informed the Regional Board that the site was no longer sampled due to worker safety issues, and we have since submitted a modified MRP Plan that no longer includes August Road Drain. What the Coalition did not do was contact the Executive Officer to request permission. We did not know this was required, and until the comments were received on this SAMR, we had never been informed that this was necessary.

Item 50:
The list was updated and submitted in revised MRP and WER.

Item 51:
Those pesticides are now included in the current monitoring plan and are being analyzed for across all sites.

Item 52:
More discussion will be provided in future SAMRs. The use of the term data quality objectives was taken from item 13 on page 14 of the MRP Order No. 2005-0833 list of items to be included in the semi-annual monitoring reports submitted by coalition groups. We will define our terms much more carefully in the future. We have changed the term Data Quality Objective to Laboratory Performance Criteria. Future reports will include a discussion of the objectives listed in Attachment A as well as Laboratory Performance Criteria.

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May 14, 2005

William Croyle
Diana Messina
Irrigated Lands Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Sacramento, CA 95670-6114

Dear Bill and Diana,
Late in the afternoon of May 13, we received notification from our toxicity testing laboratory that significant toxicity has been detected at two sites during the first irrigation season sampling event.

Samples collected at Highline Canal at Highway 99 and Bear Creek at Kibby Road both experienced what will be significant toxicity to *Ceriodaphnia*. Survival in the control was 95%; survival in the Highline Canal sample was 25% and survival in the Bear Creek sample was 5%, both at 48 hours into the test. Both tests will be completed to determine the total extent of the toxicity. As reflected in the recent TIC discussion, we are initiating TIEs immediately on these samples, and new samples will be collected within the next few days to determine persistence. We will keep you updated on the progress of the toxicity testing.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

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1201 L Street
Modesto, CA 95354
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May 18, 2005

William Croyle
Diana Messina
Irrigated Lands Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Sacramento, CA 95670-6114

Dear Bill and Diana,
Today we received notification from our toxicity testing laboratory that significant toxicity has been detected at an additional site during the first irrigation season sampling event.

Samples collected at Hilmar Drain at Central Avenue experienced significant toxicity to *Ceriodaphnia*. Survival in the control was 90%; survival in the sample was 70%. The reduction in survival was found at the end of the 4-day toxicity test. As reflected in the recent TIC discussion, we are not initiating a TIE on this sample, and a new sample will be collected tomorrow to determine persistence. We will keep you updated on the progress of the toxicity testing.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

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Revised East San Joaquin Water Quality Coalition Semi-Annual Report of Monitoring and Outreach Activities

June 26, 2006

Prepared by
Michael L. Johnson, Ph.D.

Table of Contents

Description of Watershed

The East San Joaquin Water Quality Coalition (ESJWQC) region includes Stanislaus, Merced, Madera, Tuolumne, and Mariposa Counties and the portion of Calaveras County that drains into the Stanislaus River. Although exact acreage is difficult to estimate due to rapidly changing land use, the coalition region contains approximately 1,200,000 acres of irrigated agriculture (Table 1 and Figure 1).

Table 1. Irrigated lands in ESJWQC - Stanislaus, Merced, Madera, Tuolumne, Calaveras and Mariposa Counties. Data from 2001 California Department of Water Resources (http://www.landwateruse.water.ca.gov/annualdata/landuse/2001/landuselevels.cfm)

County Name	Irrigated Land Area (acres)
Calaveras	2,100
Madera	295,000
Mariposa	1,300
Merced	510,500
Stanislaus	378,700
Tuolumne	1,300
Total acres	1,188,900

The watershed that drains into the Coalition area is bordered by the crest of the Sierra Nevada on the east and the San Joaquin River on the west, the Stanislaus River on the North to the San Joaquin River on the South. There are five major water bodies and drainages in the watershed: Chowchilla River, Merced River, Tuolumne Rive, San Joaquin River and Stanislaus River. These rivers are all tributaries of the San Joaquin River and drain from east to west. Typically, only the Stanislaus, Merced, and Tuolumne Rivers maintain flow during the summer months; flow in the Chowchilla River is intermittent to nonexistent as the irrigation season progresses into the fall. The remaining water bodies are either intermediate or small in size, and the majority of those water bodies drain directly to the San Joaquin River. Although many start in the Sierra Nevada foothills, many others originate in the Valley itself and flow west to the San Joaquin River.

Land Use

Irrigated agriculture is the predominant land use in the coalition region, although growth of the urban areas in the Valley has been a significant factor impacting water quality. James Parsons, Professor of Geography at the University of California, Berkeley in his 1987 Carl Sauer Memorial Lecture stated:

“To talk of the valley is to talk of agriculture. It could hardly be otherwise when five of the top ten agricultural counties in the U.S. are in the San Joaquin Valley, with Fresno, Kern and Tulare year after year ranking 1-2-3. This billion dollar outdoor hothouse is said to produce some 200 crops that are shipped in carload lots. Except for cotton, no crop accounts for more than ten percent of the total production or area cropped.”

and

“No one has successfully produced a map of the specialized crop districts of the San Joaquin Valley. The pattern is simply too complex, too much subject to rapid change. Water, soils, microclimate, pests, economic and historical parameters and the whims of judgment of individual farmers are all involved in the decision as to what to plant. Some crops, like almonds and alfalfa, are found almost everywhere. Others are sharply confined to restricted areas such as olives (Lindsay), cherries (Linden), asparagus (the Delta), carrots (Arvin), early potatoes (Shafter), tokay grapes (Lodi), bare-root roses (Wasco), and sweet potatoes (Atwater). Most of the orange growers are in a narrow thermal belt close to the mountains on the east side, centering on Porterville, Exeter and Woodlake. Patterson calls itself "the apricot capital of the world," Mendota "the cantaloupe city." Raisin grapes, chiefly Thompson seedless, are found especially on the sandy soils north and south of Fresno, table grapes around Lodi, Reedley and Delano. Cotton, with more than a million acres, is confined to the southern two-thirds of the valley, with most of it west of the SP railroad-Highway 99 axis. The northernmost gins are in Merced County.”

(Presented as Carl O. Sauer Memorial Lecture, Alumni House, University of California, Berkeley, April 30, 1986. Professor Parsons became Professor Emeritus at the university two months after this lecture.)

These observations summarize the rapidly changing landscape in the Central Valley. Add the rapid urbanization along the Highway 99 corridor and it is clear that attempting to summarize land use and land cover in the San Joaquin Valley is almost impossible.

Climate

Summer temperatures are usually hot in the valley, ranging from the mid 80’s to mid 90’s (^{o}F) for average high temperatures and the mid to upper 50’s (^{o}F) for average summer low temperatures. The upland areas are slightly cooler but generally remain hot throughout the summer. In the winter, temperatures are usually moderate in the valley with average high temperatures in the mid to upper 50’s and average low temperatures in the low 40’s. Annual precipitation on the valley floor in the Coalition region is variable but averages about 13-15 inches per year (City of Merced precipitation data). Rainfall occurs predominantly during the winter as is typical for a Mediterranean climate and rainfall is heterogeneously distributed throughout the winter period. There is also a significant gradient in rainfall from north to south in the coalition region, with the southernmost areas of the coalition experiencing significantly lower rainfall than the northernmost areas of the coalition region. Typical winters are characterized by several

small storms with one or two major storms providing the bulk of the precipitation for the winter. There appears to be no discernible pattern as to when during the winter these large storms occur.

Monitoring Objectives

The objectives of the ESJWQC monitoring program are to:

- Determine the concentration and load of waste in discharges to surface waters
- Evaluate compliance with existing narrative and numeric water quality objectives to determine if implementation of additional management practices is necessary to improve and/or protect water quality
- Assess the impact of waste discharges from irrigated agriculture to surface water
- Determine the degree of implementation of management practices to reduce discharge of specific wastes that impact water quality in watersheds within the coalition region
- Determine the effectiveness of management practices and strategies to reduce discharges of wastes that impact water quality

In order to achieve these objectives, the ESJWQC has established 13 initial sites at which to monitor water quality. Monitoring constituents include the list established by the Central Valley Regional Water Quality Control Board in its revised Monitoring and Reporting Plan (August 15, 2005). In addition, because diazinon and chlorpyrifos are listed as sources of water quality impairment for the major drainages in the coalition region, analysis of water samples for these two organophosphate pesticides is being conducted. And, because there is an increasing use of pyrethroids in the coalition region and because sediment toxicity test results from other studies indicate that sediment toxicity is becoming a significant factor in the coalition region, we are testing water for several pyrethroid insecticides.

Pesticides

Monitoring is conducted in both the winter and the summer. The winter sampling is designed to characterize the discharge from irrigated agriculture during rain event runoff. Agricultural activities during the winter are minimal, but dormant spraying of orchard crops is generally performed during the month of January after trees fully drop their leaves. The dormant spray season ends when trees initiate flowering which varies in timing from the upper regions of the valley to the lower regions. Dormant sprays have typically consisted of organophosphate pesticides, usually diazinon or chlorpyrifos, but recently have seen some shift to pyrethroid pesticides. Later during the winter, spraying can take place on early spring crops such as alfalfa, again using organophosphate pesticides such as chlorpyrifos. Consequently, one of our objectives is to characterize discharge from storm water runoff to determine the relative amount of dormant spray and early spring pesticide applications.

To characterize storm water runoff during the dormant season, we will collect water from a storm early in the winter when we could expect to see pesticides in the receiving waters. Because spraying occurs opportunistically throughout the months of January and February (until flowering), we will not attempt to sample the "first flush" storm in January. Rather, we will select a storm that occurs after several days of dry weather suitable for spraying. This storm may occur in January or early February depending on the weather and spray schedule. We will contact the county Agricultural Commissioners to determine when spraying starts. We will sample a second storm later in the winter when we would not expect to see runoff from dormant sprays, but rather runoff from applications to late winter/early spring crops such as alfalfa.

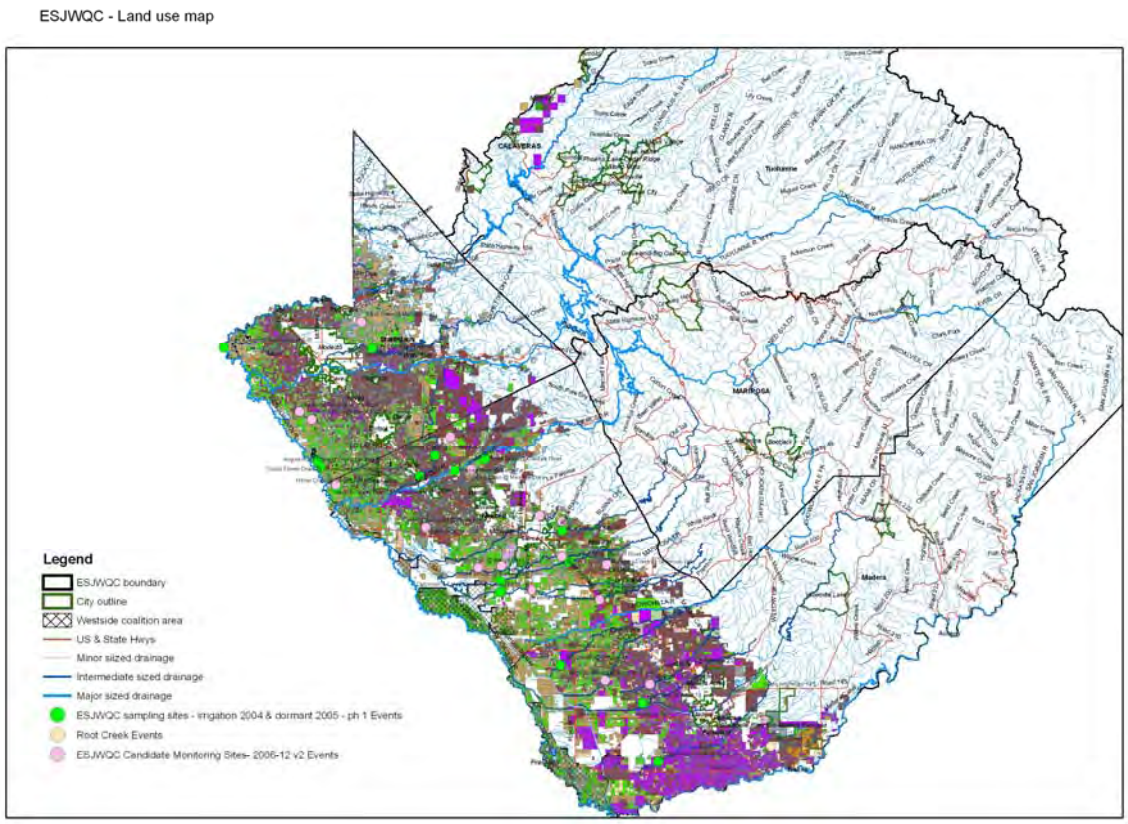
Summer pesticide applications occur during the irrigation season. After applications, pesticides can reach surface waters by either of two methods, direct drift from applications and movement in irrigation return flows. The most common type of irrigation that would result in movement of pesticides to surface waters is flood irrigation. Applications of pesticides are based on the pests that are present on the crops that summer and can vary from location to location, and year to year. There are pests that may be present from year to year (e.g., aphids on alfalfa), but the timing of applications is not consistent from year to year. Consequently, we cannot target sample collections during the irrigation season to the degree we can during the dormant season. Our sampling will take place monthly from the initiation of irrigation season. Irrigation is initiated in response to a lack of soil moisture and typically occurs in either April or May.

Monitoring during the 2005 included storm and irrigation season sampling as described above.

Additional Constituents

We have monitored physical parameters and drinking water parameters as outlined in Table 1 of the December 2003 version of the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands Monitoring and Reporting Program document. Beginning with the dormant season 2006, we will monitor all parameters as outlined in the August 15, 2005 version of the document.

Figure 1. Irrigated lands in Stanislaus, Merced, Madera, Tuolumne, Calaveras and Mariposa Counties. Please refer to Figure 14 for legend.



Sampling Sites Description

The sample sites and location of all sites monitored during the dormant season and the 2005 irrigation season are provided in Table 2. Thirteen sites are currently monitored during both seasons. Originally, all sites were designated as either core or rotating. The concept was that the rotating sites would not experience exceedances and would be changed every year or two. However, it is becoming apparent that there are a sufficient number of exceedances at all sites that there will be no rotation as it was originally envisioned. Consequently, all sites are viewed as long-term monitoring locations.

Table 2. Monitoring sites selected for sampling during Phase I.

Site name	LATITUDE	LONGITUDE
Ash Slough @ Avenue 21	37.0545	-120.4158
Bear Creek @ Kibby Rd	37.3128	-120.4138
Cottonwood Creek @ Road 20	36.8686	-120.1818
Dry Creek @ Road 18	36.9818	-120.2206
Dry Creek @ Wellsford Road	37.6602	-120.8743
Duck Slough @ Gurr Road	37.2142	-120.5596
Duck Slough @ Pioneer Road	37.2524	-120.3963
Highline Canal @ Hwy 99	37.4153	-120.7557
Highline Canal @ Lombardy Ave	37.4556	-120.7207
Hilmar Drain @ Central Ave	37.3906	-120.9582
Jones Drain @ Oakdale Road	37.4495	-120.6007
Merced River @ Santa Fe	37.4271	-120.6721
Prairie Flower Drain @ Crows Landing Road	37.4422	-121.0024

The ESJWQC proposed the following core sites in December 2004: Dry Creek @ Wellsford Road, Merced River @ Santa Fe, Highline Canal @ Lombardy Ave (dormant season only), Duck Slough @ Gurr Road, Ash Slough @ Avenue 21, Prairie Flower Drain @ Crows Landing Road, and Cottonwood Creek @ Road 20. The rationale for selecting these sites is that they represent irrigated agriculture from the northern to the southern edges and from the western to the eastern edges of the Coalition region. These sites represent natural water bodies and engineered drains and cover all of the major types of agriculture present in the Coalition region.

In addition to the core and rotational sites monitored during the 2005 dormant season and the 2005 irrigation season, additional sites have been proposed for monitoring over the next several years (Table 3). These sites have been added for completeness across the geographic range of the coalition region and to partition loads across subwatersheds.

Highline Canal @ Lombardy Road (9,196 irrigated acres) – The Highline Canal is a conveyance of the Turlock Irrigation District and carries both clean irrigation water and irrigation return flow. The main upstream tributary of the Highline Canal is Mustang Creek. The Highline Canal flows west and eventually drains into the Merced River.

Dairies are present upstream and the Mustang Creek, a major tributary during the dormant season, passes immediately to the southeast of the Turlock Airport. The main agricultural crop upstream is deciduous nuts (Table 4, Figure 2).

Duck Slough @ Gurr Road (17,116 irrigated acres) – This site is currently monitored and is proposed to be a core site. Located to the south and west of Merced, the site drains field crops immediately upstream and deciduous nuts farther upstream (Table 4, Figure 5). In addition, there is irrigated pasture upstream. We have recently learned that the city of Merced delivers treated water to Duck Slough a few miles upstream of the Gurr Road site. Duck Slough drains west flows eventually joining with Deadman's Creek in the western portion of the coalition region. It continues to flow west feeding with a series of duck ponds near the Eastside Bypass and eventually draining into Deep Slough.

Merced River @ Santa Fe (23,402 irrigated acres) – This water body is designated as a major water body and is 303d listed. It was selected as an integrator site for several of the drains and tributaries in the vicinity. The Merced River originates in the high Sierra and flows through the Sierra's encountering several dams and impoundments. The Merced River eventually drains into the San Joaquin River near Hatfield State Park. Upstream agriculture includes some field crops in the immediate vicinity of the river and deciduous nuts, primarily almonds (Table 6, Figure 12).

Dry Creek @ Wellsford Road (12,110 irrigated acres) – This site is in the northern part of the Coalition region and drains a combination of field crops, deciduous nuts, and vineyards (Table 5, Figure 4). Dry Creek drains into the Tuolumne River in Modesto and this site represents the closest accessible location to Modesto that collects agricultural drainage. There appear to be dairies upstream and the town of Waterford may provide some urban signal but the site appears to be sufficiently far from Waterford to be used as a core site (Table 5, Figure 10).

Ash Slough @ Avenue 21 (21,015 irrigated acres) – This site was used as a monitoring station during the 2004 irrigation season, although lack of flow did not allow samples to be collected. Agriculture upstream includes vineyards, field crops, and deciduous nuts (Table 5, Figure 6). Ash Creek flows just north of Chowchilla but there appears to be a buffer of agricultural land between Ash Slough and Chowchilla. As is true with most sites, there are dairies located upstream.

Prairie Flower Drain @ Crows Landing Road (2,610 irrigated acres) – Several drains exist in the western portion of the Coalition region and we are proposing Prairie Flower Drain as a core monitoring site. Relative to other drains in this part of the Coalition region, Prairie Flower Drain is longer and appears to drain a larger number of parcels of irrigated agriculture (Table 6, Figure 13). Dairies and feedlots are ubiquitous in this part of the Coalition region and this drain may receive runoff from several dairies immediately upstream. Upstream agriculture is field crops.

Cottonwood Creek @ Road 20 (113,424 irrigated acres) – This site is at the very southern edge of the Coalition region in Madera County and the creek drains into the Eastside

Bypass (Table 5, Figure 8). The immediate upstream agriculture is vineyards and there are deciduous nuts farther to the east. Unlike other sites, there are few dairies on Cottonwood Creek.

In addition to these core sites, the Coalition originally proposed monitoring rotating sites. However, for the reasons explained above, sites are now no longer stratified by core and rotating. The rationale for the selection of additional monitoring sites include broadening the geographic coverage, adding sites relatively close to current sites to partition loads among subwatersheds, or adding sites along the same water body to determine relative loading of constituents from upstream to downstream. All of these sampling strategies will allow the Coalition to better characterize discharge from irrigated agriculture and monitor the effectiveness of BMP implementation. These sites are described below.

Bear Creek @ Kibby Road (6,279 irrigated acres) – This watershed drains an eastern portion of the coalition region in Merced County. Bear Creek originates in the foothills of the Sierra's with Burn's Creek as one of the major tributaries. The Creek drains to the east just north of the towns of Planada, and eventually flows through Merced and eventually to the San Joaquin River. The primary irrigated agriculture in the watershed includes deciduous nuts, field crops, truck crops, and irrigated pasture (Table 5, Figure 7).

Duck Slough @ Pioneer Road (6,895 irrigated acres) – This site is located upstream of the Duck Slough @ Gurr Road site and was selected to determine relative contribution of water quality impairments in the upstream portion of the Duck Slough watershed. Duck Slough originates in the Sierra foothills and flows west eventually joining with Deadman's Creek in the western portion of the coalition region. The Pioneer Road site is located just east of Highway 99 south of Planada and Merced. Irrigated agriculture in the watershed is primarily deciduous nuts, with truck crops and irrigated pasture the next most common land uses (Table 4, Figure 4).

Highline Canal @ Highway 99 (14,585 irrigated acres not including Highline Canal @ Lombardy Road watershed) – This site was selected as a downstream companion site to the Highline Canal @ Lombardy Road site. Selected for the same reason that the Duck Slough sites were selected, this site allows a determination of the relative contribution of the upstream and downstream watersheds to water quality impairments. The sampling site is located just south of Delhi as the canal crosses the highway. The irrigated agriculture is primarily deciduous nuts, and these are located at the lower end of the watershed. A small number of vineyards are also present (Table 4, Figure 3).

Hilmar Drain @ Central Ave (1,658 irrigated acres) – This site is located toward the western edge of the coalition region near the San Joaquin River. This is a small watershed that is primarily field crops. This watershed also contains a large number of dairies. Hilmar Drain originates at Williams Ave and Washington Road and eventually drains into the San Joaquin River. The primary irrigated agriculture is field crops and irrigated pasture (Table 6, Figure 11).

Jones Drain @ Oakdale Road (2,140 irrigated acres) – This is a small watershed with the primary irrigated agriculture being deciduous nuts, field crops, and irrigated pasture (Table 6, Figure 12). The Jones Drain is located just south of the Merced River and joins with the Silva Drain and both eventually drain into the Merced River just upstream of the Merced River @ Santa Fe monitoring site.

Dry Creek @ Road 18 (15,448 irrigated acres) – This site was selected for monitoring during the middle of the 2005 irrigation season as a replacement site for Lone Willow Slough. (We learned that growers in the Lone Willow Slough watershed had joined the Westside Coalition.) This Dry Creek originates in the Sierra foothills and flows to the north of the city of Madera eventually draining into the San Joaquin River. Deciduous crops are the primary irrigated agriculture in the upper portion of the watershed, and vineyards predominate in the lower portions of the watershed. There are field crops scattered throughout the watershed (Table 5, Figure 9).

Table 3. Monitoring sites for the years 2007-12. The rationale for selecting each site, the total watershed size, and the dominant crops in the watersheds are provided. These sites are monitored in addition to the sites proposed above as the core sites.

Rotational year	Rationale	Watershed Size in Acres	Crops in Watershed
2007-08			
Owens Creek @ Kibby Road	Geographic coverage	5,528	Field crops, orchards
Silva Drain @ Meadow Drive	Subwatershed (Merced River) load partitioning	461	Orchards (almonds), field crops
Mustang Creek @ East Ave*	Subwatershed (Merced River) load partitioning	8,801	Orchards
Mattos Drain @ Range Road	Additional drain	1,802	Field crops
Black Rascal Creek @ Kibby road	Geographic coverage	2,891	Field crops, orchards
2009-10			
Berenda Slough @ Dairyland Road	Geographic coverage	42,130	Field crops, orchards, vineyards
Mariposa Creek @ Simonson Way	Geographic coverage	526	Orchards
Deane Drain @ Gurr Road	Additional drain	4,887	Field crops
Cavill Drain @ McGee Road	Additional drain	14,131	Field crops
Dutchman Creek @ Highway 99	Geographic coverage	9,213	Field crops, orchards
Cottonwood Creek @ Sixmile road	Geographic coverage	780	Field crops
Hatch Drain @ Monte Vista Ave	Additional drain	1,557	Field crops, orchards
2011-2012			
Berenda Creek @ Road 19	Geographic coverage	20,845	Vineyards, orchards
Deadman Creek @ Highway 59	Geographic coverage	26,610	Field crops
Livingston Drain @ Robin Ave	Additional drain	2,874	Orchards
Western States Drain @ Central Ave	Additional drain	3,866	Field crops, orchards
Westport Drain @ Vivian Road	Additional drain	1,766	Field crops, orchards, vineyards

Table 4. Acreages of various land use types in the watersheds selected for monitoring during the 2005 dormant and 2005 irrigation seasons. The land uses are designated as irrigated/non-irrigated, and within each watershed, the total length of the hydrologic features in meters is provided as the row labeled hydrology. See text for descriptions of the watersheds.

Land Use	I/NI	Duck Slough @ Gurr Rd.	Duck Slough @ Pioneer Rd.	Highline Canal @ Lombardy	Highline Canal @ Hwy 99
Citrus	i	3,841.0	3,592.8	4,537.6	8,178.2
Deciduous nut and fruit	i				
Field crop	i	5,188.1	1,426.9	1,502.7	2,218.9
Field crop	n				
Grain and hay	i	1,034.7	229.9	605.7	605.7
Grain and hay	n	182.8	177.4	701.3	721.6
Idle	i	653.2	145.9	38.0	122.6
Wild vegetation	n	43,488.3	39,254.2	207.0	236.0
Water surface	n	119.1	53.9		5.0
Pasture	i	4,694.5	1,104.2	1,084.7	1,360.1
Pasture	n	47.5	37.7	306.3	437.5
Rice	i	474.7			
Feedlot, dairy, farmstead	n	591.6	120.5	293.1	413.7
Truck, nursery, berry	i	1,229.5	395.1		212.4
Urban	n	530.4	172.2	130.5	937.8
Golf course, cemetery, landscape	n	2.7		22.4	81.4
Vineyard	i			1,427.3	1,886.7
Total acres		**62,078.3**	**46,710.7**	**10,856.5**	**17,417.6**
Hydrology (m)		74,920.7	31,234.6	40,762.5	48,407.5

Table 5. Acreages of various land use types in the watersheds selected for monitoring during the 2005 dormant and 2005 irrigation seasons. The land uses are designated as irrigated/non-irrigated, and within each watershed, the total length of the hydrologic features in meters is provided as the row labeled hydrology. See text for descriptions of the watersheds.

Land Use	I/NI	Ash Slough @ Ave. 21	Bear Creek @ Kibby Rd.	Cottonwood Creek @ Rd. 20	Dry Creek @ Rd. 18	Dry Creek @ Wellsford Rd
Citrus	i		46.6	1,330.6	234.9	37.1
Deciduous nut and fruit	i	4,535.7	3,403.4	11,139.4	7,594.0	3,048.0
Field crop	i	4,233.9	738.3	5,391.1	899.6	2,498.0
Field crop	n					
Grain and hay	i	1,777.9	144.7	994.1	1,196.8	
Grain and hay	n	586.9		1,144.6		48.6
Idle	i	1,841.3	72.1	1,253.8	719.0	113.6
Wild vegetation	n	23,460.3	164.8	40,942.3	718.8	20,761.4
Water surface	n			419.3	11.9	47.8
Pasture	i	2,906.6	923.0	707.5	414.1	5,692.8
Pasture	n					
Rice	i					248.5
Feedlot, dairy, farmstead	n	204.2	87.9	651.9	357.9	590.0
Truck, nursery, berry	i	193.4	951.3	244.0	17.4	
Urban	n	3,829.6		7,904.9	1,968.3	157.5
Golf course, cemetery, landscape	n	18.2		146.5	28.9	
Vineyard	i	5,526.1		92,363.1	4,372.1	472.3
Total acres		**49,114.1**	**6,531.9**	**164,633.1**	**18,533.5**	**33,715.5**
Hydrology (m)		77,091.7	26,096.0	290,362.4	72,673.9	116,807.2

Table 6. Acreages of various land use types in the watersheds selected for monitoring during the 2005 dormant and 2005 irrigation seasons. The land uses are designated as irrigated/non-irrigated, and within each watershed, the total length of the hydrologic features in meters is provided as the row labeled hydrology. See text for descriptions of the watersheds.

Land Use	I/NI	Hilmar Drain @ Central Ave.	Jones Drain @ Oakdale Rd.	Merced River @ Santa Fe	Prairie Flower Drain @ Crows Landing Rd.
Citrus	i	31.7		45.4	3.8
Deciduous nut and fruit	i		1,209.1	11,903.5	
Field crop	i	1,038.0	289.6	4,749.0	1,558.8
Field crop	n			140.1	
Grain and hay	i			653.7	
Grain and hay	n			86.4	
Idle	i		370.9	141.1	
Wild vegetation	n		88.8	69,891.3	41.2
Water surface	n	13.9		214.2	22.0
Pasture	i	588.0	252.6	3,332.7	1,009.7
Pasture	n			97.1	
Rice	i				
Feedlot, dairy, farmstead	n	178.9	46.9	703.6	337.5
Truck, nursery, berry	i			400.8	37.6
Urban	n		102.0	78.8	26.9
Golf course, cemetery, landscape	n			176.6	
Vineyard	i		17.6	2,176.4	
Total acres		**1,850.5**	**2,377.4**	**94,790.8**	**3,037.4**
Hydrology (m)		5,205.0	6,493.4	162,288.4	9,985.0

Location Maps of Sample Sites and Land Use

Maps of all the sample sites and the land use upstream of the sites are provided below in Figures 2 – 13 with the legend in Figure 14. See text above for details of the sampling sites and land use.

Figure 2a. Map of all the sample sites in the coalition region..

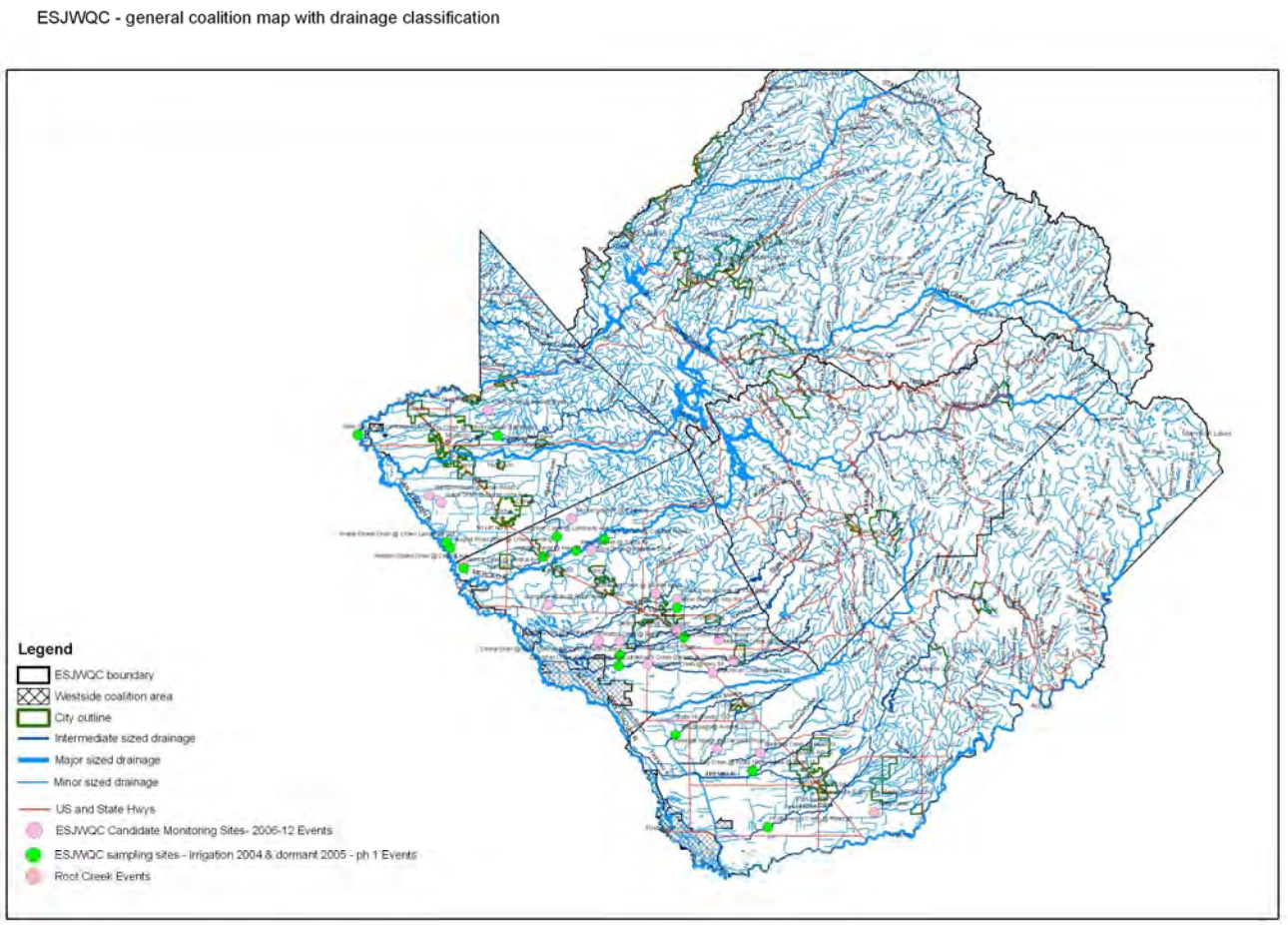


Figure 2. Highline Canal @ Lombardy Road sampling site. The legend for the land use categories is Figure 14.

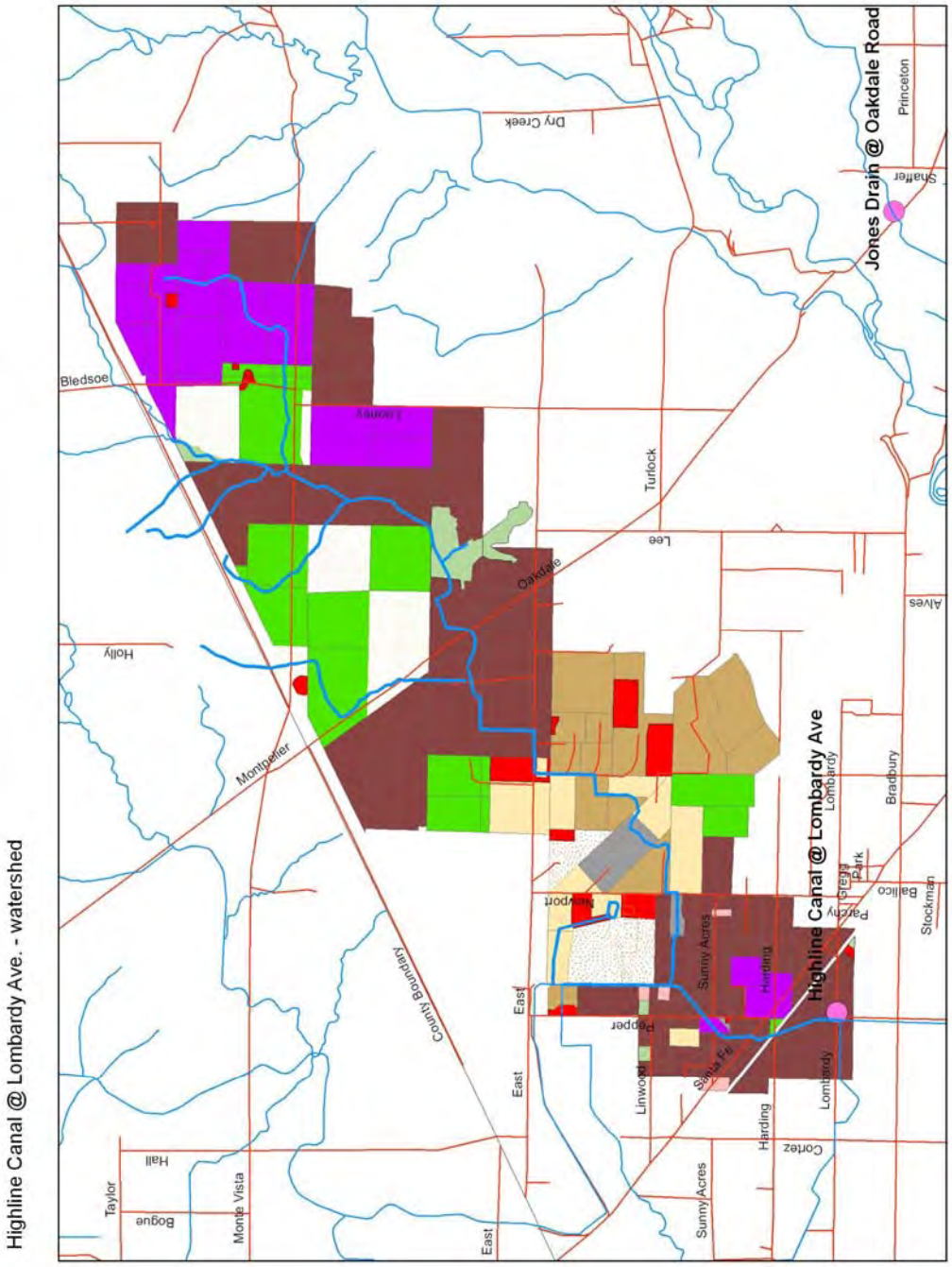


Figure 3. Highline Canal @ Hwy 99 sampling site. The legend for the land use categories is Figure 14.

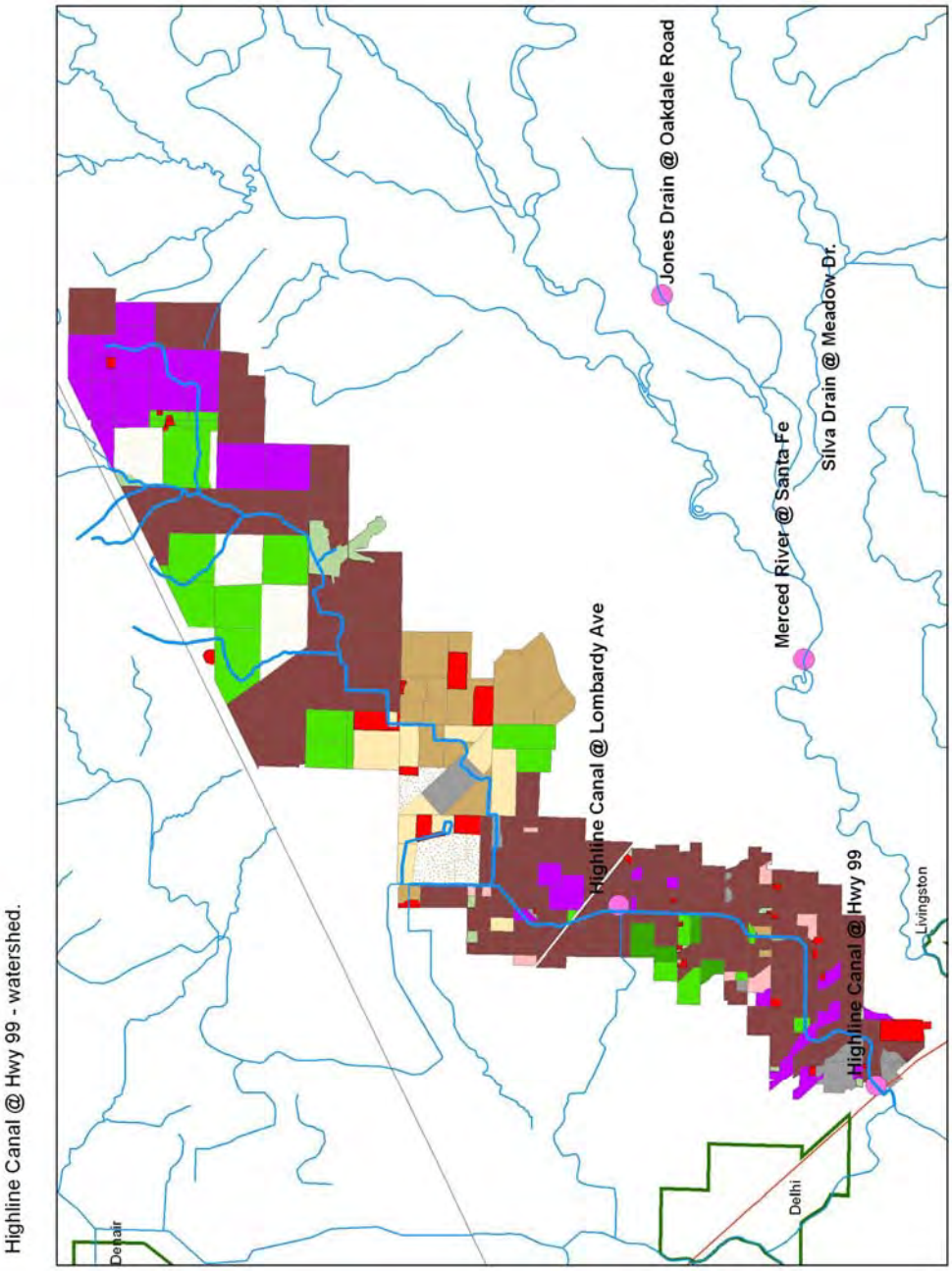


Figure 4. Duck Slough @ Pioneer Road sampling site. The legend for the land use categories is Figure 14.

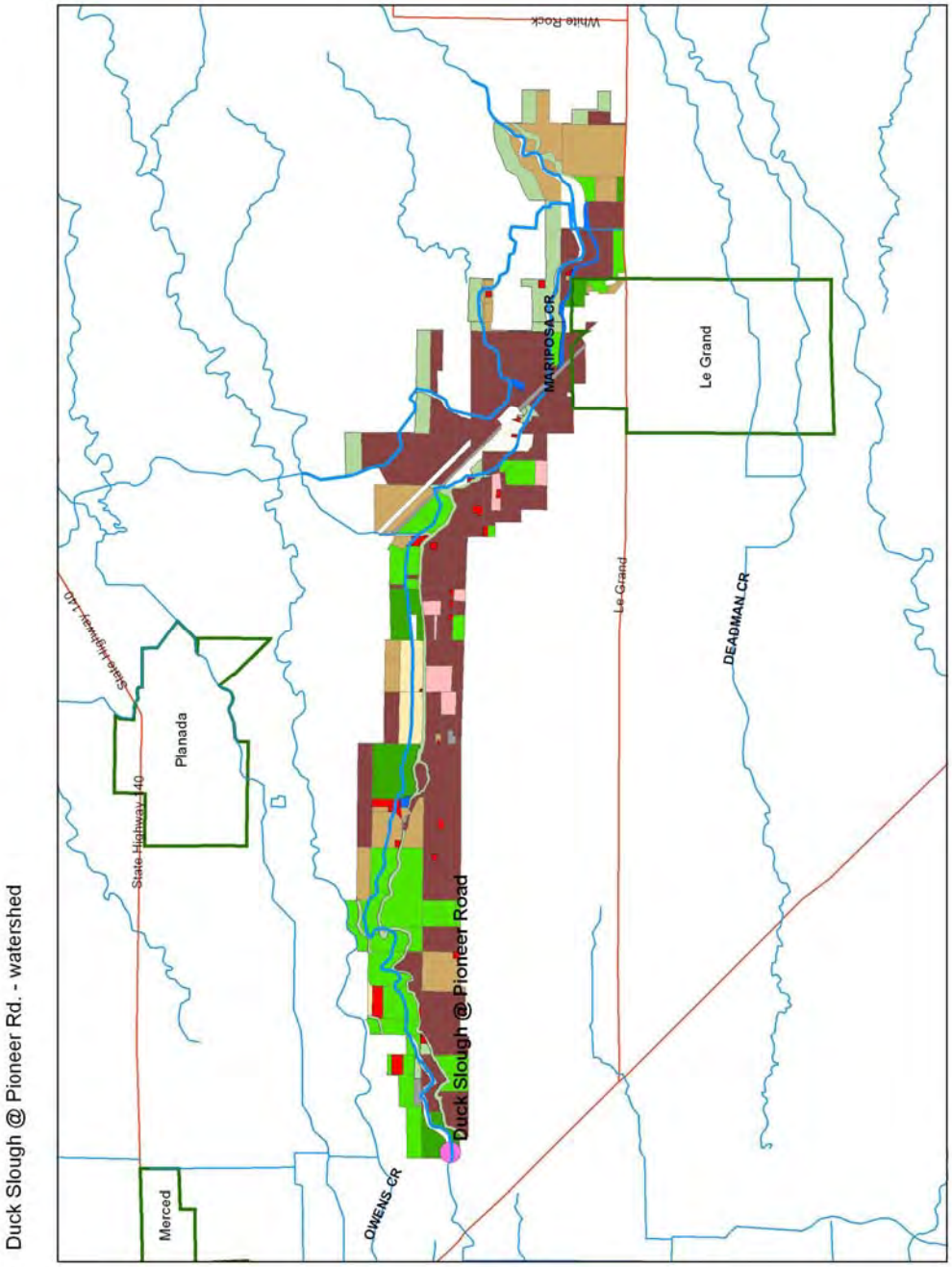


Figure 5. Duck Slough @ Gurr Road sampling site. The legend for the land use categories is Figure 14.

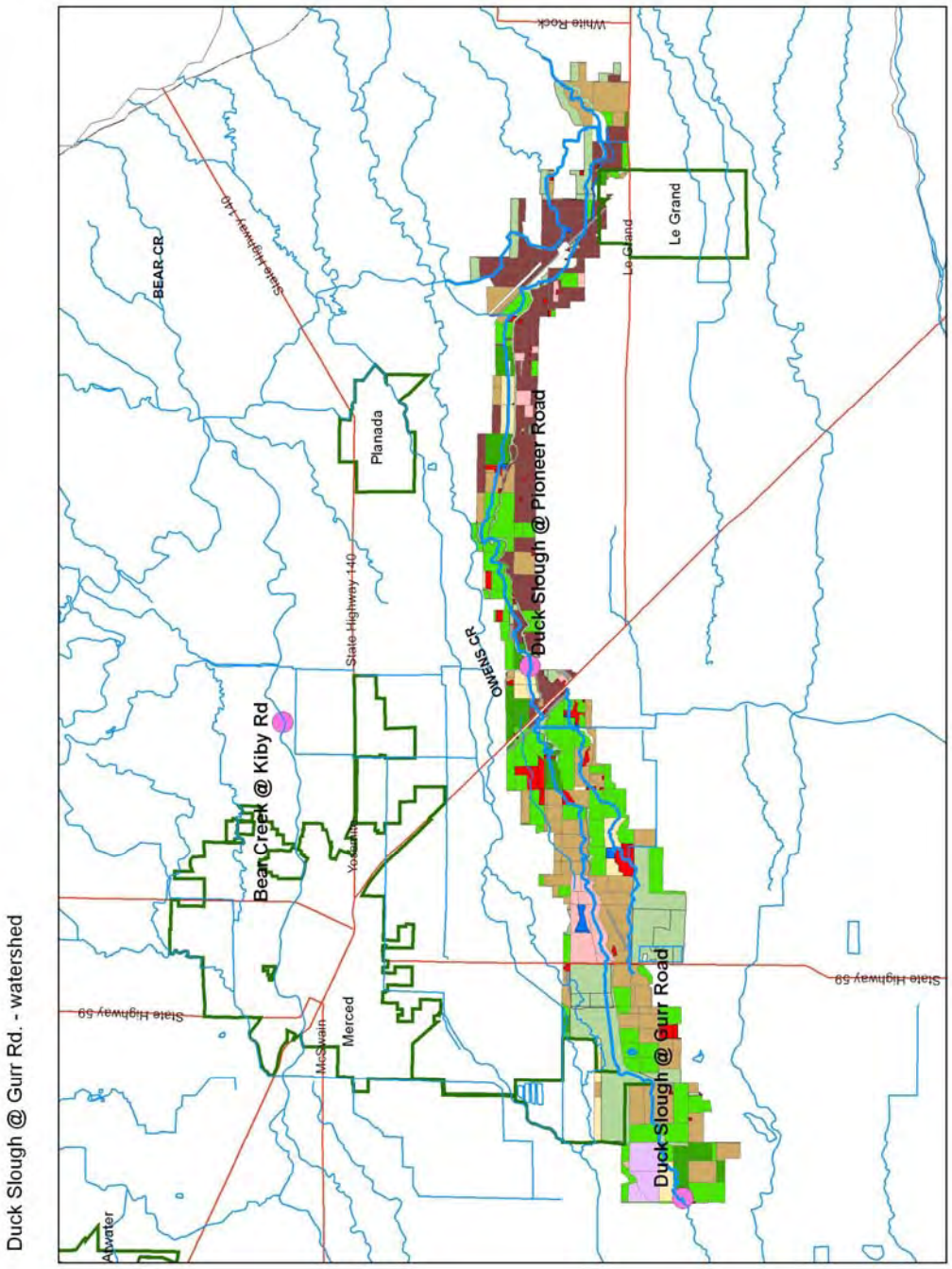


Figure 6. Ash Slough @ Ave 21 sampling site. The legend for the land use categories is Figure 14.

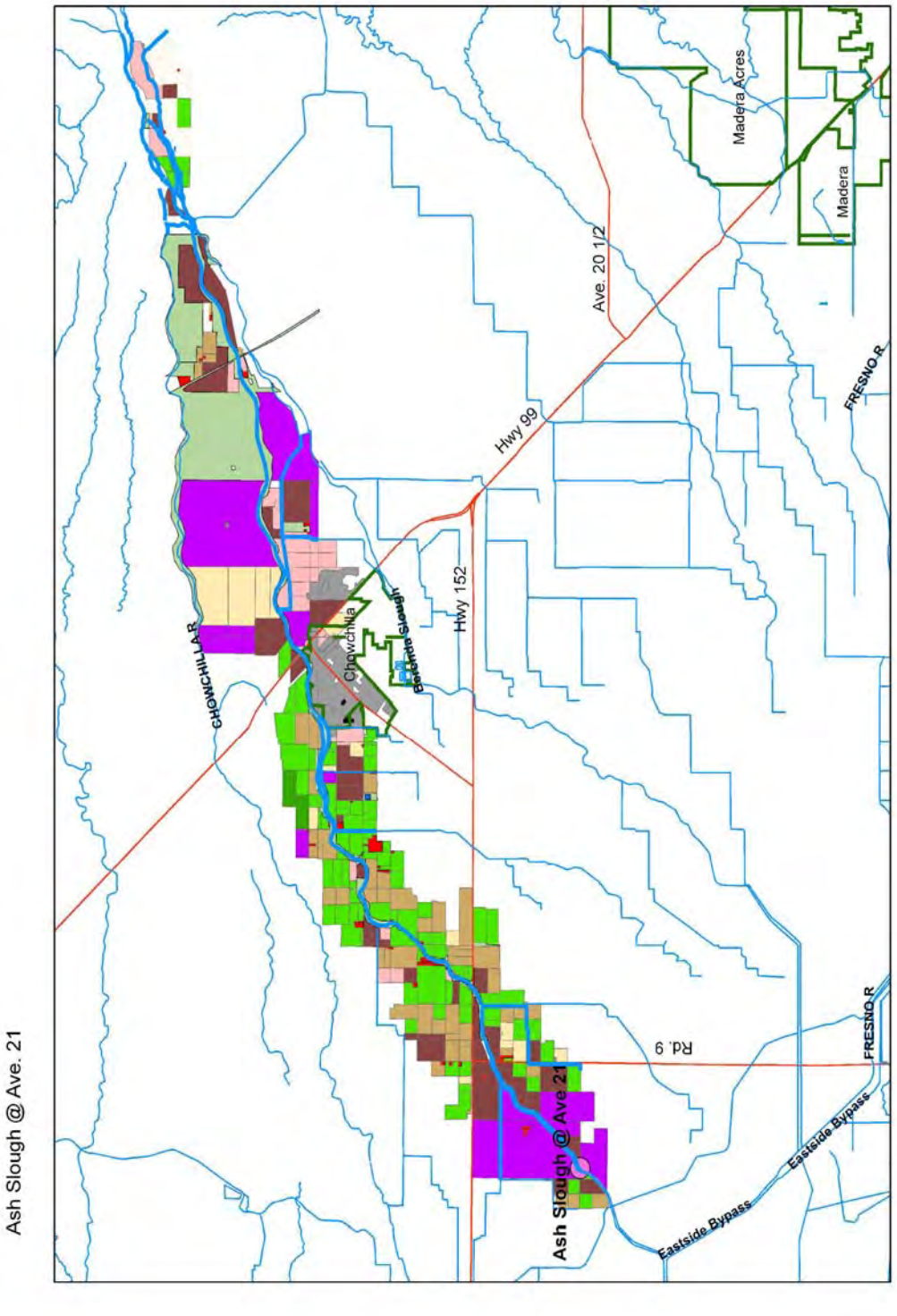


Figure 7. Bear Creek @ Kibby Rd. sampling site. The legend for the land use categories is Figure 14.

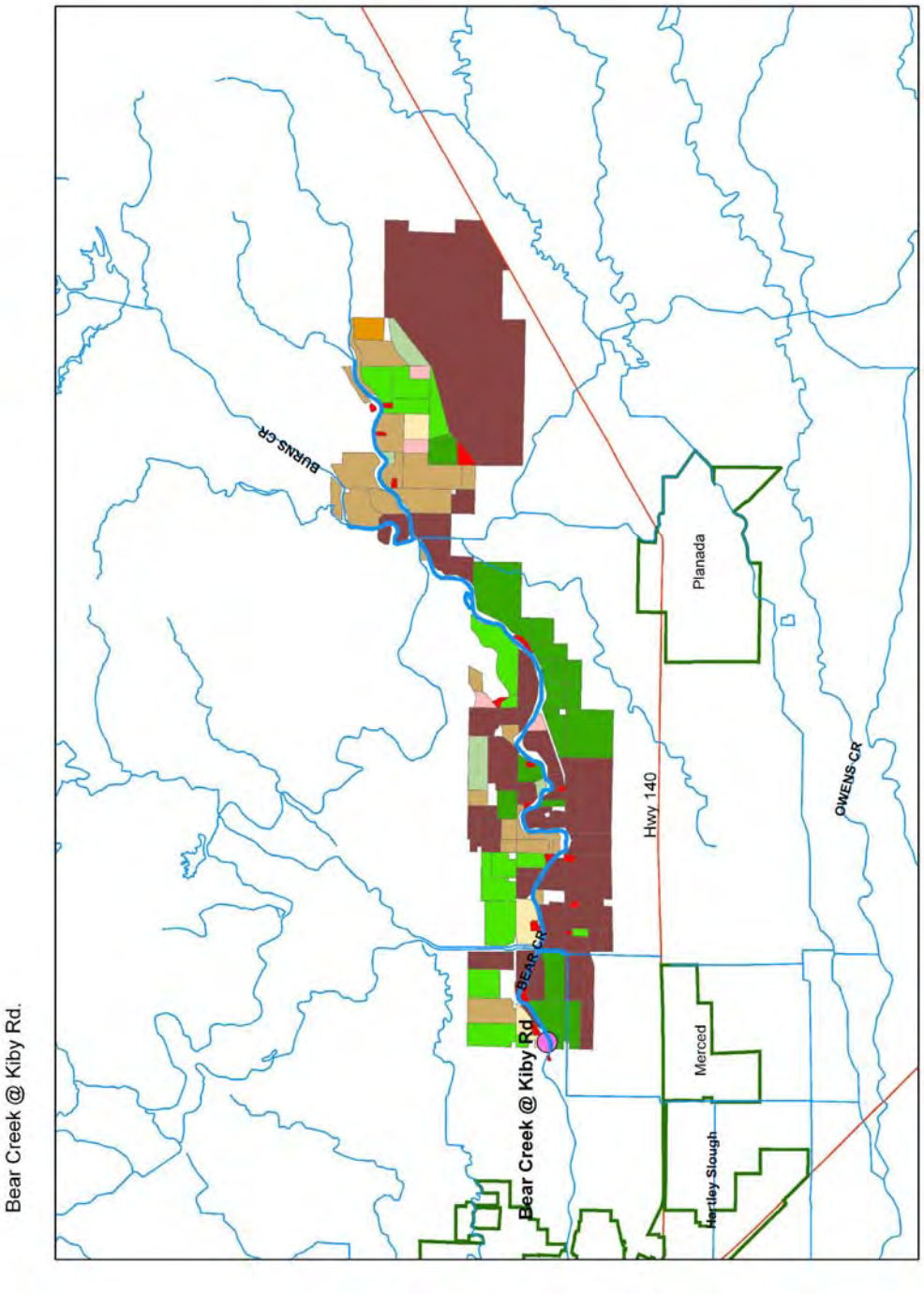


Figure 8. Cottonwood Creek @ Rd. 20 sampling site. The legend for the land use categories is Figure 14.

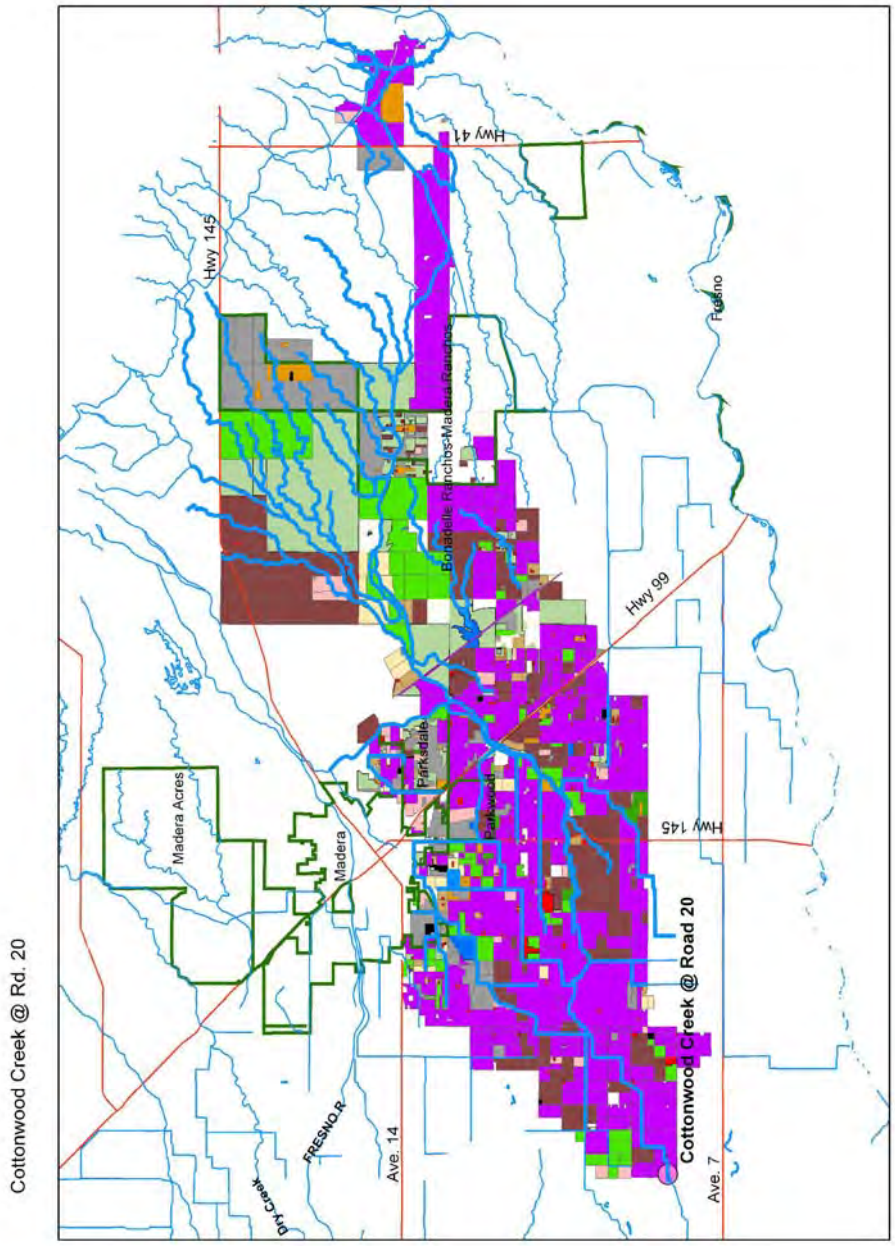


Figure 9. Dry Creek @ Rd. 18 sampling site. The legend for the land use categories is Figure 14.

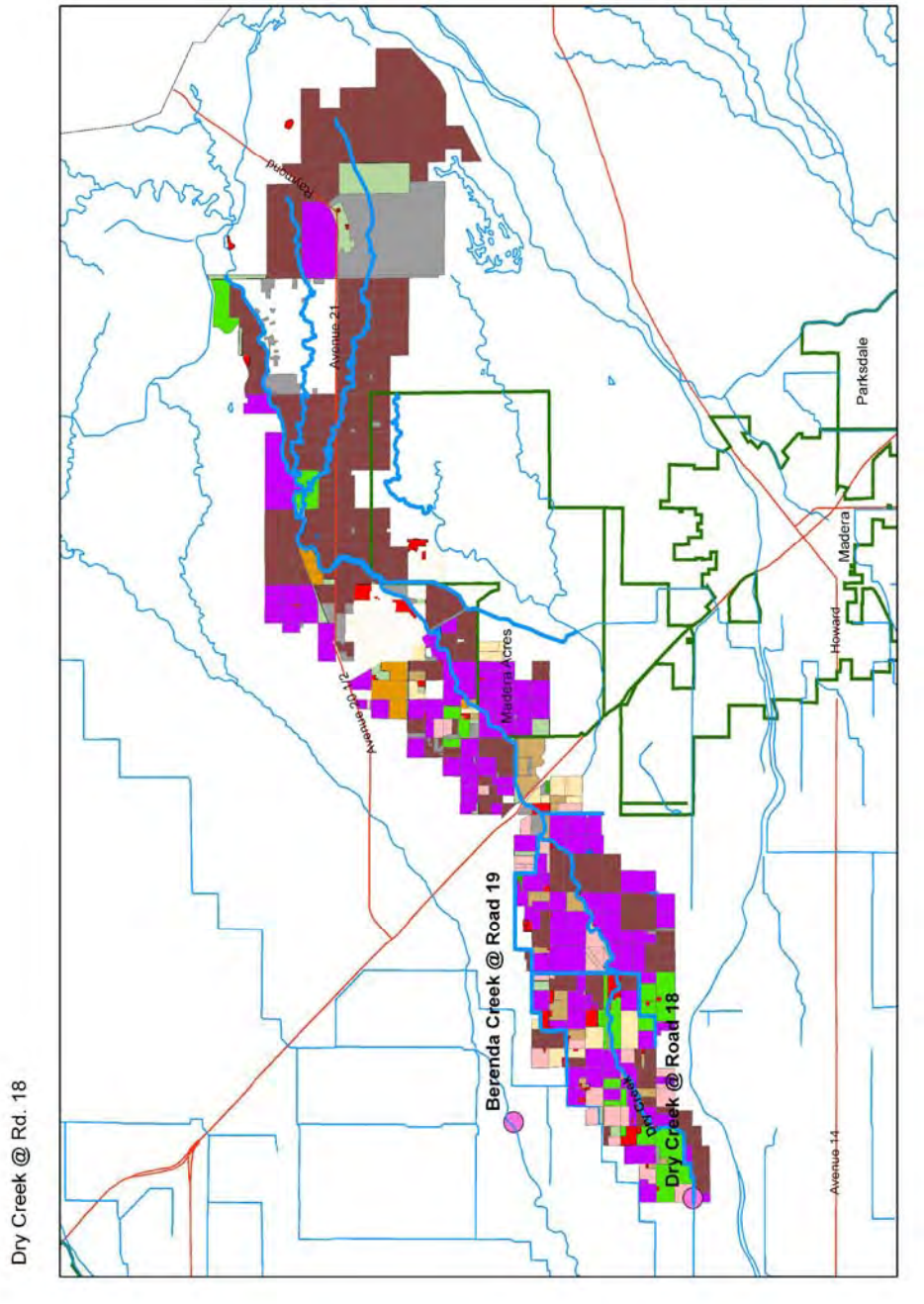


Figure 10. Dry Creek @ Wellsford Road sampling site. The legend for the land use categories is Figure 14.

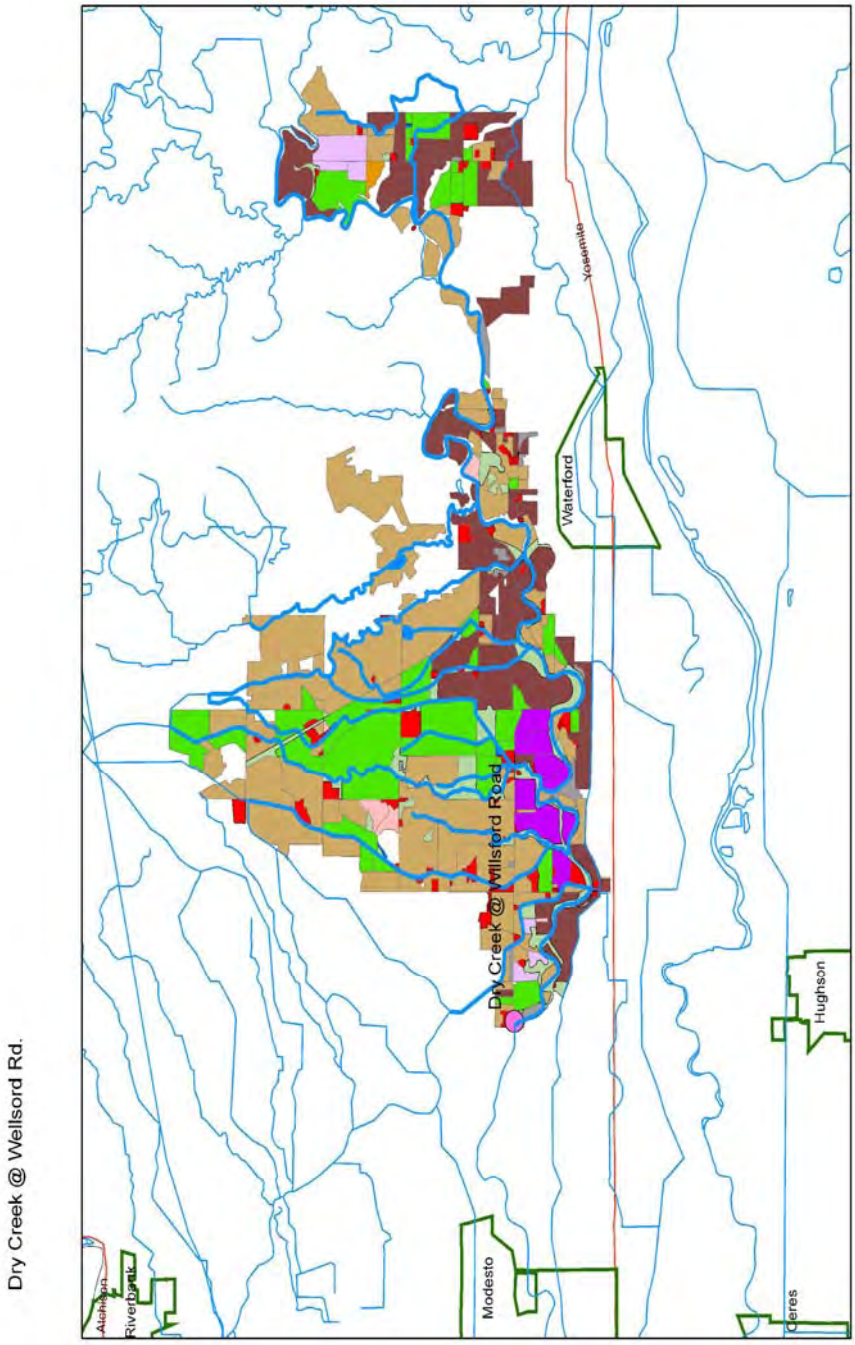


Figure 11. Hilmar Drain @ Central Ave. sampling site. The legend for the land use categories is Figure 14.

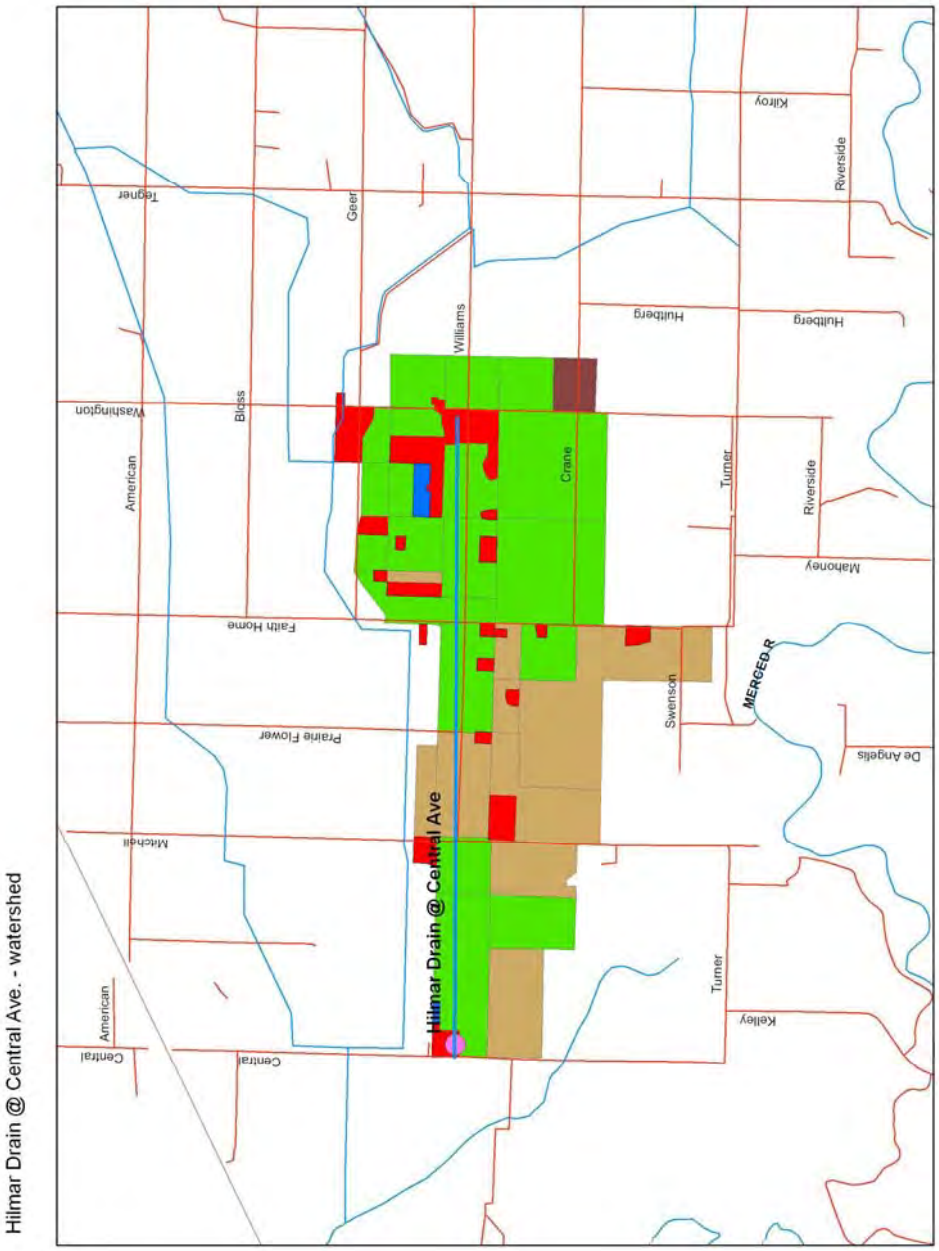


Figure 12. Merced River @ Santa Fe Dr and Jones Drain @ Oakdale Road sampling sites. The legend for the land use categories is Figure 14.

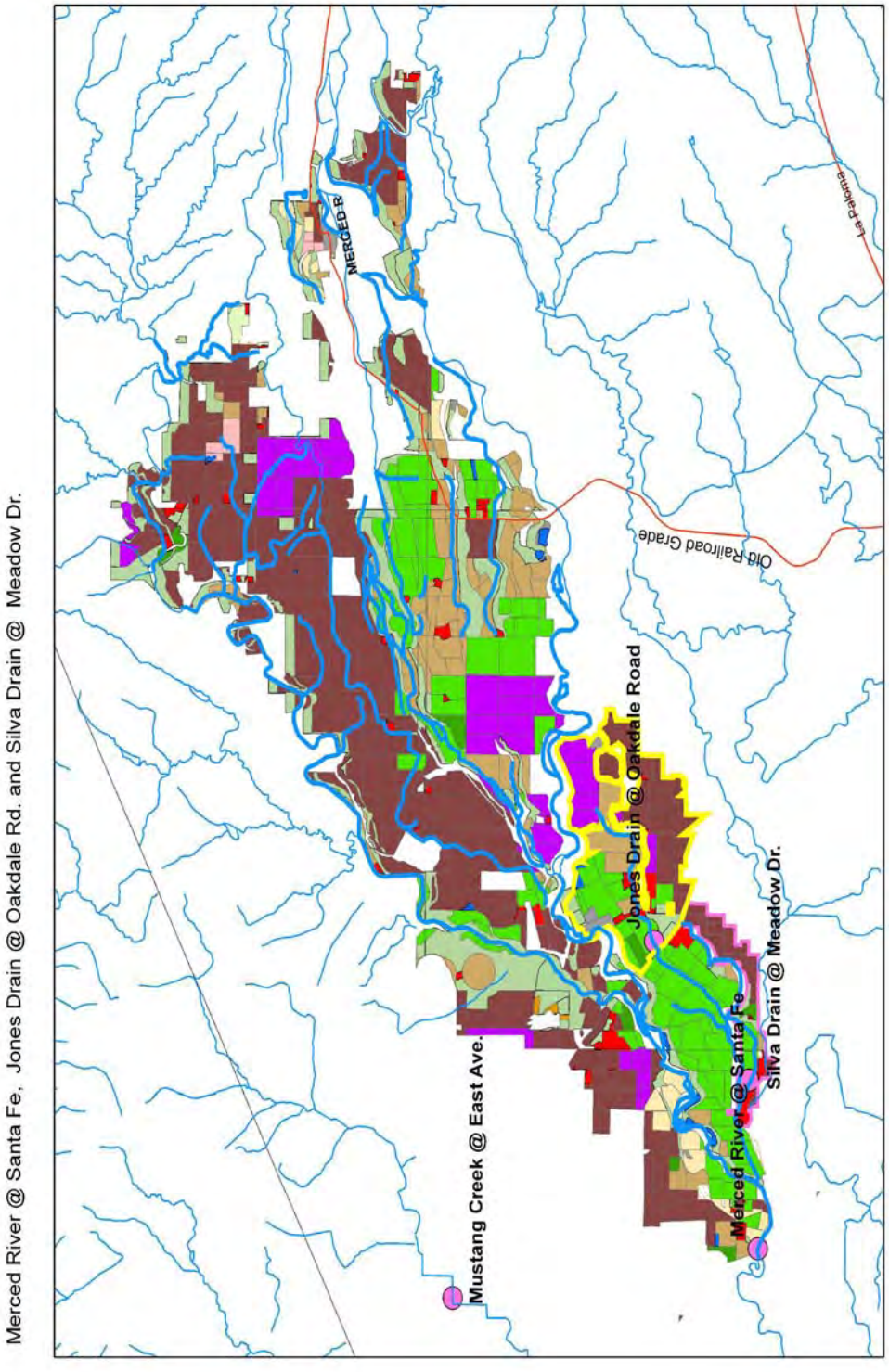
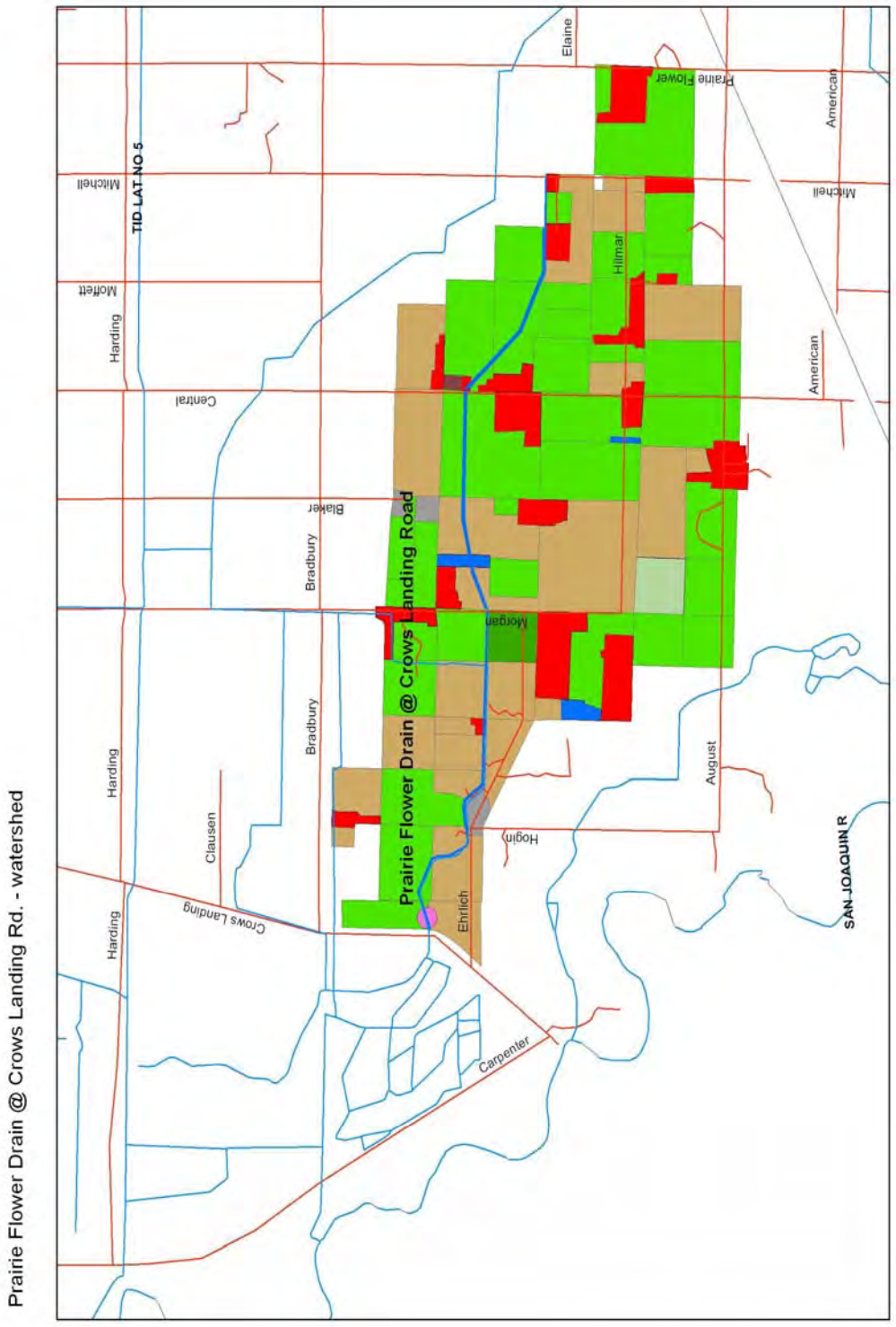


Figure 13. Prairie Flower Drain @ Crows Landing sampling site. The legend for the land use categories is Figure 14.



Prairie Flower Drain @ Crows Landing Rd. - watershed

Figure 14. Legend for land use in previous figures.

Tabulated Results of all Analyses

Data summaries of the constituents monitored by the coalition are presented in the tables below. Full results are available in the SWAMP comparable database maintained by the ESJWQC. Field sheets from the monitoring sites for each event have not been provided due to the additional length of those documents. All data from the datasheets are also available in the ESJWQC database. The database has been placed on the Central Valley Regional Water Quality Control Board FTP site and is available for downloading and synchronizing with the Agricultural Waiver database maintained by the Regional Board. All data generated to date have been placed in the database.

Level IV data packages have been requested from all laboratories and are not yet available. We will provide those data as an electronic appendix to this report when they are provided to us.

All units of measure for the various constituents are as outlined in the August 15, 2005 Monitoring and Reporting Program document and also provided in Table 10 of this report. Please refer to Table 10 for a list of MDL values were it is indicated that it was ND.

ESJWQC Field Results

Station Code: 535XBCAKR
Bear Creek @ Kibby Rd

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
21/Mar/2005	4.4	7.57	113	14.7
10/May/2005	11.92	7.92	221	18.82
19/May/2005	9.6	7.42	131	18.5
14/Jun/2005	9.4	8.09	55	19.1
12/Jul/2005	8.79	7.9	48	22.2
16/Aug/2005	9.23	7.63	52	32.2
20/Sep/2005	9.29	8.02	20	27.57

Station Code: 535XDCAWR
Dry Creek @ Wellsford Road

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
15/Feb/2005	11.3	7.49	73	12.7
22/Mar/2005	8.2	8.96	229	15
11/May/2005	9.29	6.26	149	19.31
15/Jun/2005	5.9	7.21	93	21.3
13/Jul/2005	5.7	7.47	96	26.98
17/Aug/2005	7.11	9.18	110	30.9
21/Sep/2005	6.98	6.67	103	25.3

Station Code: 535XDSAGR
Duck Slough @ Gurr Rd

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
16/Feb/2005	7.8	7.74	191	13.73
21/Mar/2005	10.22	8.24	173	15
10/May/2005	11.1	8.3	211	18.78
14/Jun/2005	8.6	8.4	335	25.3
12/Jul/2005	7.23	7.4	392	27.9
16/Aug/2005	7.37	7.2	160	31.9
20/Sep/2005	8.54	7.22	183	30.8

Station Code: 535XDSAPR
Duck Slough @ Pioneer Road

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
16/Feb/2005	9.12	7.93	146	13.39
21/Mar/2005	9.8	7.87	160	14.6
10/May/2005	10.97	8.26	264	17.91
14/Jun/2005	8.5	7.48	51	19.7
12/Jul/2005	7.87	7.05	46	22.3
21/Jul/2005	8.8	7.65	70	22.3
16/Aug/2005	8.66	7.64	40	33
20/Sep/2005	7.09	8	10	22.9

Station Code: 535XHCALR
Highline Canal @ Lombardy Rd

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
15/Feb/2005	8.6	8.36	469	13.8
21/Mar/2005	9.3	8.56	296	15
10/May/2005	13.51	6.81	57	19.77
14/Jun/2005	9.4	7.32	41	23
13/Jul/2005	9.11	6.85	32	22.82
17/Aug/2005	8.58	6.46	34	27.3
21/Sep/2005	8.78	6.6	31	18.9

Station Code: 535XHCHNN
Highline Canal @ Hwy 99

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
10/May/2005	13.49	8.06	59	19.53
19/May/2005	9.92	7.84	55	20.05
15/Jun/2005	10.1	8.48	35	22.4
13/Jul/2005	8.81	7.26	31	24.02
17/Aug/2005	8.1	6.96	36	19.8
20/Sep/2005	8.83	8.23	30	22.27

Station Code: 535XHDACA
Hilmar Drain @ Central Ave

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
15/Feb/2005	8	8	1102	14.5
22/Mar/2005	8	8.28	1157	14.5
11/May/2005	13.02	7.87	1354	20.65
19/May/2005	7.8	7.81	1214	18.5
15/Jun/2005	13.9	8.04	855	23.7
13/Jul/2005	6.45	7.22	826	20.91
16/Aug/2005	8.27	7.52	788	32.5
21/Sep/2005	8.38	7.63	121	28.5

Station Code: 535XJDAOR
Jones Drain @ Oakdale Road

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
16/Feb/2005	7.99	7.8	122	13.42
22/Mar/2005	4.9	8.58	127	14.7
11/May/2005	9.14	7.81	140	19.04
15/Jun/2005	7.1	7.42	74	22.6
12/Jul/2005	5.98	6.68	66	27.86
17/Aug/2005	8.42	6.9	41	30.8
21/Sep/2005	5.9	6.82	89	22.82

Station Code: 535XMRSFD

Merced River @ Santa Fe

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
16/Feb/2005	10.1	7.83	94	12.9
21/Mar/2005	10.8	7.51	74	15.5
11/May/2005	11.99	6.65	74	12.67
15/Jun/2005	9.2	7.24	41	15.9
13/Jul/2005	8.9	6.66	40	19.37
17/Aug/2005	9	6.38	39	18.24
21/Sep/2005	8.72	6.78	37	18.67

Station Code: 535XPFDCL

Prairie Flower Drain @ Crows Landing Road

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
15/Feb/2005	8.21	7.52	2561	13.83
22/Mar/2005	6.5	7.49	2568	12.9
11/May/2005	7.53	7.56	3168	15.65
15/Jun/2005	13.7	7.85	1705	24.7
13/Jul/2005	3.2	7.3	1723	20.89
17/Aug/2005	7.1	7.57	1779	36.1
21/Sep/2005	5.22	7.54	791	26.29

Station Code: 545XASAAT

Ash Slough @ Ave 21

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
14/Jun/2005	8.5	7.05	36	24.5
12/Jul/2005	8.24	7.96	35	28.23
16/Aug/2005	10.07	8.35	56	25.9

Station Code: 545XCCART

Cottonwood Creek @ Road 20

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
16/Feb/2005	8.04	7.51	167	14
21/Mar/2005	5.6	8.32	127	12.7
10/May/2005	10.26	7.88	189	18.26
14/Jun/2005	5.7	7.1	68	22.2
12/Jul/2005	5.17	7.13	220	23.79
16/Aug/2005	7.53	7.24	141	20.8
20/Sep/2005	6.5	7.23	111	16.7

Station Code: 545XDCARE

Dry Creek at Road 18

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
16/Aug/2005	7.74	6.48	24	26
20/Sep/2005	7.24	7.16	22	18.75

Station Code: 545XLWSMA

Lone Willow Slough @ Madera Ave

Sample Date	Oxygen, Dissolved	pH	Specific Conductivity	Temperature
16/Feb/2005	7.53	8.27	152	15.88
21/Mar/2005	8.35	7.59	171	10.8
10/May/2005	6.37	7.48	239	18.12
14/Jun/2005	4.9	6.34	69	20.3
12/Jul/2005	4.71	6.95	149	24.33

ESJWQC Inorganics

Station Code 535XBCAKR

Bear Creek @ Kibby Rd

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
21/Mar/2005	180	1600	120	9.4	24
10/May/2005	30	280	110	3.1	12
14/Jun/2005	30	23	42	4.5	7
12/Jul/2005	15	70	44	3.1	5.4
16/Aug/2005	45	110	38	2.4	8.1
20/Sep/2005	25	22	40	2.4	5.8

Station Code 535XDCAWR

Dry Creek @ Wellsford Road

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
15/Feb/2005	40	8	43	2.5	11
22/Mar/2005	70	900	150	7.6	14
11/May/2005	120	170	100	7.8	23
15/Jun/2005	160	240	99	9.3	25
13/Jul/2005	50	220	85	8.3	9.4
17/Aug/2005	120	900	92	8.5	27
21/Sep/2005	80	500	90	6.3	16

Station Code 535XDSAGR

Duck Slough @ Gurr Rd

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
16/Feb/2005	300	1600	160	12	130
21/Mar/2005	100	1600	160	5.4	37
10/May/2005	50	1600	110	3.8	31
14/Jun/2005	120	300	200	8.2	47
12/Jul/2005	50	300	250	10	11
16/Aug/2005	100	240	110	4.7	33
20/Sep/2005	100	80	67	3.3	28

Station Code 535XDSAPR

Duck Slough @ Pioneer Road

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
16/Feb/2005	200	BRK*	130	10	96
21/Mar/2005	75	1600	150	5.8	25
10/May/2005	50	1600	130	4.1	30
14/Jun/2005	50	130	42	3.7	29
12/Jul/2005	25	70	40	3.1	11
16/Aug/2005	60	130	37	3.2	18
20/Sep/2005	75	13	35	3.2	24

*** BRK – container broken on arrival; sample not analyzed**

Station Code 535XHCALR

Highline Canal @ Lombardy Rd

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
15/Feb/2005	75	4	310	9.4	14
21/Mar/2005	80	2	260	12	12
10/May/2005	30	240	40	2.1	9.7
14/Jun/2005	30	80	35	2.9	14
13/Jul/2005	5	50	27	2.2	6
17/Aug/2005	30	60	25	2.1	9.2
21/Sep/2005	15	23	30	2	5.5

***BRK- container broken upon arrival; sample not analyzed**

Station Code 535XHCHNN

Highline Canal @ Hwy 99

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
10/May/2005	30	110	38	2.2	7.7
15/Jun/2005	40	50	37	2.8	10
13/Jul/2005	10	170	21	2.3	4.8
17/Aug/2005	40	14	26	2.9	15
20/Sep/2005	20	50	24	2	6.9

Station Code 535XHDACA

Hilmar Drain @ Central Ave

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
15/Feb/2005	30	240	740	7.2	4.3
22/Mar/2005	30	900	760	6.2	7
11/May/2005	25	1600	740	5.4	5.3
15/Jun/2005	20	500	720	5.8	1.4
13/Jul/2005	25	1600	600	7.9	1.8
16/Aug/2005	50	1600	500	6.4	10
21/Sep/2005	30	430	690	6	6

Station Code 535XJDAOR

Jones Drain @ Oakdale Road

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
16/Feb/2005	100	1600	71	3.2	56
22/Mar/2005	30	300	77	2.5	12
11/May/2005	100	1600	65	4.2	32
15/Jun/2005	50	80	61	3.5	26
12/Jul/2005	50	1600	57	5.4	35
17/Aug/2005	70	130	27	2.6	20
21/Sep/2005	100	350	65	1.5	29

Station Code 535XMRSFD

Merced River @ Santa Fe

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
16/Feb/2005	30	80	65	2.9	6.1
21/Mar/2005	20	17	67	2.5	4.9
11/May/2005	30	50	46	2.4	8.6
15/Jun/2005	25	23	38	2.9	3.5
13/Jul/2005	10	50	30	2.4	1.9
17/Aug/2005	20	130	25	2.4	4.2
21/Sep/2005	25	140	31	2.4	3

Station Code 535XPFDCL

Prairie Flower Drain @ Crows Landing Road

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
15/Feb/2005	150	72	1600	20	40
22/Mar/2005	70	1600	1600	13	15
11/May/2005	60	500	1600	14	5.6
15/Jun/2005	50	300	1300	12	8.5
13/Jul/2005	50	1600	1100	13	6.4
17/Aug/2005	200	1600	990	30	48
21/Sep/2005	200	500	460	32	30

Station Code 545XASAAT

Ash Slough @ Ave 21

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
14/Jun/2005	60	50	34	4.5	16
12/Jul/2005	30	500	29	5.8	9.6
16/Aug/2005	50	30	44	3.8	7.5

Station Code 545XCCART

Cottonwood Creek @ Road 20

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
16/Feb/2005	200	1600	150	17	110
21/Mar/2005	120	1600	130	8.7	34
10/May/2005	50	47	110	6.8	17
14/Jun/2005	80	170	55	4.9	32
12/Jul/2005	40	170	140	5.6	4.2
16/Aug/2005	60	300	99	5.5	12
20/Sep/2005	30	70	76	4.4	6.1

Station Code 545XDCARE

Dry Creek at Road 18

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
16/Aug/2005	30	80	22	2.7	6.3
20/Sep/2005	20	500	19	2	5.8

Station Code 545XLWSMA

Lone Willow Slough @ Madera Ave

Sample Date	Color	E. coli	Total Dissolved Solids	Total Organic Carbon	Turbidity
16/Feb/2005	1000	1600	320	10	680
21/Mar/2005	1000	900	360	5.4	690
10/May/2005	75	17	130	7.2	20
14/Jun/2005	50	80	59	9.1	16
12/Jul/2005	45	280	110	10	8.7

ESJWQC- Organophosphates

Station Code: 535XBCAKR

Bear Creek @ Kibby Rd

Sample Date	Chlorpyrifos	Diazinon
21/Mar/2005	ND	ND
10/May/2005	ND	ND
14/Jun/2005	ND	ND
12/Jul/2005	ND	ND
16/Aug/2005	ND	ND
20/Sep/2005	ND	ND

Station Code: 535XDCAWR

Dry Creek @ Wellsford Road

Sample Date	Chlorpyrifos	Diazinon
15/Feb/2005	ND	0.011
22/Mar/2005	ND	ND
11/May/2005	ND	ND
15/Jun/2005	ND	ND
13/Jul/2005	ND	ND
17/Aug/2005	0.024	ND
21/Sep/2005	ND	ND

Station Code: 535XDSAGR

Duck Slough @ Gurr Rd

Sample Date	Chlorpyrifos	Diazinon
16/Feb/2005	ND	ND
21/Mar/2005	ND	ND
10/May/2005	ND	ND
14/Jun/2005	ND	ND
12/Jul/2005	ND	ND
16/Aug/2005	ND	ND
20/Sep/2005	ND	ND

Station Code: 535XDSAPR

Duck Slough @ Pioneer Road

Sample Date	Chlorpyrifos	Diazinon
16/Feb/2005	ND	ND
21/Mar/2005	ND	ND
10/May/2005	ND	ND
14/Jun/2005	ND	ND
12/Jul/2005	0.026	ND
16/Aug/2005	ND	ND
20/Sep/2005	ND	ND

Station Code: 535XHCALR

Highline Canal @ Lombardy Rd

Sample Date	Chlorpyrifos	Diazinon
15/Feb/2005	0.01	0.098
21/Mar/2005	ND	ND
10/May/2005	ND	ND
14/Jun/2005	ND	ND
13/Jul/2005	0.011	ND
17/Aug/2005	ND	ND
21/Sep/2005	ND	ND

Station Code: 535XHCHNN

Highline Canal @ Hwy 99

Sample Date	Chlorpyrifos	Diazinon
10/May/2005	ND	ND
15/Jun/2005	ND	ND
13/Jul/2005	ND	ND
17/Aug/2005	ND	ND
20/Sep/2005	ND	ND

Station Code: 535XHDACA

Hilmar Drain @ Central Ave

Sample Date	Chlorpyrifos	Diazinon
15/Feb/2005	ND	ND
22/Mar/2005	ND	ND
11/May/2005	ND	ND
15/Jun/2005	ND	ND
13/Jul/2005	ND	ND
16/Aug/2005	ND	ND
21/Sep/2005	ND	ND

Station Code: 535XJDAOR

Jones Drain @ Oakdale Road

Sample Date	Chlorpyrifos	Diazinon
16/Feb/2005	ND	0.011
22/Mar/2005	ND	ND
11/May/2005	ND	ND
15/Jun/2005	ND	ND
12/Jul/2005	ND	ND
17/Aug/2005	ND	ND
21/Sep/2005	ND	ND

Station Code: 535XMRSFD

Merced River @ Santa Fe

Sample Date	Chlorpyrifos	Diazinon
16/Feb/2005	ND	ND
21/Mar/2005	ND	ND
11/May/2005	ND	ND
15/Jun/2005	ND	ND
13/Jul/2005	ND	ND
17/Aug/2005	ND	ND
21/Sep/2005	ND	ND

Station Code: 535XPFDCL

Prairie Flower Drain @ Crows Landing Road

Sample Date	Chlorpyrifos	Diazinon
15/Feb/2005	ND	ND
22/Mar/2005	ND	ND
11/May/2005	ND	ND
15/Jun/2005	ND	ND
13/Jul/2005	ND	0.013
17/Aug/2005	0.029	ND
21/Sep/2005	0.018	ND

Station Code: 545XASAAT

Ash Slough @ Ave 21

Sample Date	Chlorpyrifos	Diazinon
14/Jun/2005	ND	ND
12/Jul/2005	0.018	ND
16/Aug/2005	0.046	ND

Station Code: 545XCCART

Cottonwood Creek @ Road 20

Sample Date	Chlorpyrifos	Diazinon
16/Feb/2005	ND	ND
21/Mar/2005	ND	ND
10/May/2005	ND	ND
14/Jun/2005	ND	ND
12/Jul/2005	0.012	ND
16/Aug/2005	ND	ND
20/Sep/2005	ND	ND

Station Code: 545XDCARE

Dry Creek at Road 18

Sample Date	Chlorpyrifos	Diazinon
16/Aug/2005	ND	ND
20/Sep/2005	ND	ND

Station Code: 545XLWSMA

Lone Willow Slough @ Madera Ave

Sample Date	Chlorpyrifos	Diazinon
16/Feb/2005	0.023	0.018
21/Mar/2005	ND	ND
10/May/2005	ND	ND
14/Jun/2005	ND	ND
12/Jul/2005	0.29	ND

ESJWQC Pyrethroids

Station Code: 535XBCAKR
Bear Creek @ Kibby Rd

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
21/Mar/2005			ND	ND	ND	ND
10/May/2005			ND	ND	ND	ND
14/Jun/2005			ND	ND	ND	ND
12/Jul/2005			ND	ND	ND	ND
16/Aug/2005			ND	ND	ND	ND
20/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 535XDCAWR

Dry Creek @ Wellsford Road

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
15/Feb/2005			ND	ND	ND	ND
22/Mar/2005			ND	ND	ND	ND
11/May/2005			ND	ND	ND	ND
15/Jun/2005			ND	ND	ND	ND
13/Jul/2005			ND	ND	ND	ND
17/Aug/2005			ND	ND	ND	ND
21/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 535XDSAGR

Duck Slough @ Gurr Rd

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
16/Feb/2005			ND	ND	ND	ND
21/Mar/2005			ND	ND	ND	ND
10/May/2005			ND	ND	ND	ND
14/Jun/2005			ND	ND	ND	ND
12/Jul/2005			ND	ND	ND	ND
16/Aug/2005			ND	ND	ND	ND
20/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 535XDSAPR

Duck Slough @ Pioneer Road

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
16/Feb/2005			ND	ND	ND	ND
21/Mar/2005			ND	ND	ND	ND
10/May/2005			ND	ND	ND	ND
14/Jun/2005			ND	ND	ND	ND
12/Jul/2005			ND	ND	ND	ND
16/Aug/2005			ND	ND	ND	ND
20/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 535XHCALR

Highline Canal @ Lombardy Rd

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
15/Feb/2005			ND	ND	ND	ND
21/Mar/2005			ND	ND	ND	ND
10/May/2005			ND	ND	ND	ND
14/Jun/2005			ND	ND	ND	ND
13/Jul/2005			ND	ND	ND	ND
17/Aug/2005			ND	ND	ND	ND
21/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 535XHCHNN

Highline Canal @ Hwy 99

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
10/May/2005			ND	ND	ND	ND
15/Jun/2005			ND	ND	ND	ND
13/Jul/2005			ND	ND	ND	ND
17/Aug/2005			ND	ND	ND	ND
20/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 535XHDACA

Hilmar Drain @ Central Ave

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
15/Feb/2005			ND	ND	ND	ND
22/Mar/2005			ND	ND	ND	ND
11/May/2005			ND	ND	ND	ND
15/Jun/2005			ND	ND	ND	ND
13/Jul/2005			ND	ND	ND	ND
16/Aug/2005			ND	ND	ND	ND
21/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 535XJDAOR

Jones Drain @ Oakdale Road

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
16/Feb/2005			ND	ND	ND	ND
22/Mar/2005			ND	ND	ND	ND
11/May/2005			ND	ND	ND	ND
15/Jun/2005			ND	ND	ND	ND
12/Jul/2005			ND	ND	ND	ND
17/Aug/2005			ND	ND	ND	ND
21/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 535XMRSFD

Merced River @ Santa Fe

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
16/Feb/2005			ND	ND	ND	ND
21/Mar/2005			ND	ND	ND	ND
11/May/2005			ND	ND	ND	ND
15/Jun/2005			ND	ND	ND	ND
13/Jul/2005			ND	ND	ND	ND
17/Aug/2005			ND	ND	ND	ND
21/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 535XPFDCL

Prairie Flower Drain @ Crows Landing Road

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
15/Feb/2005			ND	ND	ND	ND
22/Mar/2005			ND	ND	ND	ND
11/May/2005			ND	ND	ND	ND
15/Jun/2005			ND	ND	ND	ND
13/Jul/2005			ND	ND	ND	ND
17/Aug/2005			ND	ND	ND	ND
21/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 545XASAAT

Ash Slough @ Ave 21

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
14/Jun/2005			ND	ND	ND	ND
12/Jul/2005			ND	ND	ND	ND
16/Aug/2005			ND	ND	ND	ND

Station Code: 545XCCART

Cottonwood Creek @ Road 20

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
16/Feb/2005			ND	ND	ND	ND
21/Mar/2005			ND	ND	ND	ND
10/May/2005			ND	ND	ND	ND
14/Jun/2005			ND	ND	ND	ND
12/Jul/2005			ND	ND	ND	ND
16/Aug/2005			ND	ND	ND	ND
20/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 545XDCARE

Dry Creek at Road 18

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
16/Aug/2005			ND	ND	ND	ND
20/Sep/2005	ND	ND	ND	ND	ND	ND

Station Code: 545XLWSMA

Lone Willow Slough @ Madera Ave

Sample Date	Bifenthrin	Cyfluthrin	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
16/Feb/2005			ND	ND	ND	ND
21/Mar/2005			ND	ND	ND	ND
10/May/2005			ND	ND	ND	ND
14/Jun/2005			ND	ND	ND	0.23
12/Jul/2005			ND	ND	ND	ND

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ESJWQC Organics- Surrogates % Recovery

Station Code: 535XBCAKR

Bear Creek @ Kibby Rd

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
21/Mar/2005	68	77	102	97
10/May/2005	75	59.5	120	117
14/Jun/2005	63.6	73.7	112	119
12/Jul/2005	60.6	75.1	108	104
16/Aug/2005	69.4	79.6	117	116
20/Sep/2005	63.7	78.1	117	126

Station Code: 535XDCAWR

Dry Creek @ Wellsford Road

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
15/Feb/2005	82.5	74.1	96.5	96.3
22/Mar/2005	80.2	73.9	107	110
11/May/2005	71.9	53.1	117	114
15/Jun/2005	73.5	77.5	113	117
13/Jul/2005	56.6	54.2	93.5	97.3
17/Aug/2005	58.9	89.7	119	113
21/Sep/2005	59.8	80.7	119	125

Station Code: 535XDSAGR

Duck Slough @ Gurr Rd

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
16/Feb/2005	66.6	58.2	117	116
21/Mar/2005	73.8	74.7	103	97.1
10/May/2005	71.4	57.3	119	116
14/Jun/2005	68.8	71.6	111	109
12/Jul/2005	63.3	62	133	103
16/Aug/2005	71.3	85.3	113	107
20/Sep/2005	65.4	78.8	117	121

Station Code: 535XDSAPR

Duck Slough @ Pioneer Road

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
16/Feb/2005	62.8	49.5	117	116
21/Mar/2005	78.4	76.6	98.8	94.3
10/May/2005	73.4	60	119	117
14/Jun/2005	69.1	74	114	111
12/Jul/2005	59.2	67	104	104
16/Aug/2005	64.8	78.9	101	98.6
20/Sep/2005	54	77.2	115	120

Station Code: 535XHCALR

Highline Canal @ Lombardy Rd

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
15/Feb/2005	90.3	83.2	106	100
21/Mar/2005	70.5	71.6	98.8	98.3
10/May/2005	83.4	60.8	130	129
14/Jun/2005	71.2	68.7	117	110
13/Jul/2005	60.1	67.2	98.2	103
17/Aug/2005	64.2	87.8	115	109
21/Sep/2005	57.5	75	118	123

Station Code: 535XHCHNN

Highline Canal @ Hwy 99

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
10/May/2005	83.2	65.8	139	137
15/Jun/2005	73.7	68.2	123	118
13/Jul/2005	62.3	54	93.8	98.7
17/Aug/2005	54	73	114	110
20/Sep/2005	53.1	72.9	112	114

Station Code: 535XHDACA

Hilmar Drain @ Central Ave

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
15/Feb/2005	79.4	67.9	113	110
22/Mar/2005	85.8	79	112	112
11/May/2005	72.1	50.5	117	112
15/Jun/2005	83.6	64.8	124	129
13/Jul/2005	65.6	52.5	89.9	90
16/Aug/2005	73.9	68.8	115	111
21/Sep/2005	73.9	85.2	126	131

Station Code: 535XJDAOR

Jones Drain @ Oakdale Road

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
16/Feb/2005	68.3	46.6	120	121
22/Mar/2005	82	84.6	104	103
11/May/2005	63.2	58.6	118	117
15/Jun/2005	71.2	77.3	127	120
12/Jul/2005	56.8	74.7	110	106
17/Aug/2005	58.4	70.3	110	105
21/Sep/2005	67.2	73	122	113

Station Code: 535XMRSFD

Merced River @ Santa Fe

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
16/Feb/2005	80.6	69.3	114	112
21/Mar/2005	67.9	69.9	94.6	89.2
11/May/2005	70.4	57	107	108
15/Jun/2005	73.8	64.7	117	121
13/Jul/2005	67.1	55.2	97.6	98.7
17/Aug/2005	63.4	88.6	123	117
21/Sep/2005	67.1	77.9	137	121

Station Code: 535XPFDCL

Prairie Flower Drain @ Crows Landing Road

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
15/Feb/2005	70.7	74.6	107	106
22/Mar/2005	87.8	80.5	112	111
11/May/2005	73.9	53.3	116	116
15/Jun/2005	77.3	73.9	128	121
13/Jul/2005	52.1	62.1	96.3	100
17/Aug/2005	52.4	78.4	101	96.5
21/Sep/2005	64.5	84.6	131	124

Station Code: 545XASAAT

Ash Slough @ Ave 21

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
14/Jun/2005	66.4	55.7	111	110
12/Jul/2005	59.3	66.9	107	103
16/Aug/2005	71	74	108	102

Station Code: 545XCCART

Cottonwood Creek @ Road 20

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
16/Feb/2005	52.4	48.5	95.6	94
21/Mar/2005	65.1	80.3	103	103
10/May/2005	65.9	48.2	111	112
14/Jun/2005	60.6	69	110	123
12/Jul/2005	62.8	62.8	107	105
16/Aug/2005	73.2	79.6	113	111
20/Sep/2005	72.1	73.4	123	129

Station Code: 545XDCARE

Dry Creek at Road 18

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
16/Aug/2005	62.2	69.8	114	108
20/Sep/2005	68	80.3	122	125

Station Code: 545XLWSMA

Lone Willow Slough @ Madera Ave

Sample Date	Decachlorobiphenyl	Tetrachloro-m-xylene	Tributylphosphate	Triphenyl phosphate
16/Feb/2005	55.9	52.7	107	107
21/Mar/2005	48.4	71.6	99.5	96.5
10/May/2005	63.4	50.4	95.7	94.4
14/Jun/2005	59.8	61.6	105	111
12/Jul/2005	56.3	60.8	142	105

Table 7. Discharge measurements for the ESJWQC sample events. An entry of -88 indicates no discharge could be taken, the comments field provides the explanation for the inability to collect the measurements necessary to calculate discharge.

StationName	Sample Date	Unit	Discharge	Comments
Bear Creek @ Kibby Rd	8/16/05	cfs	-88	too deep and fast to take discharge measurements
Bear Creek @ Kibby Rd	9/20/05	cfs	-88	water too deep and wide to get discharge
Dry Creek @ Wellsford Road	8/17/05	cfs	-88	
Dry Creek @ Wellsford Road	9/21/05	cfs	-88	too deep and wide to take discharge
Duck Slough @ Gurr Rd	8/16/05	cfs	75.72	sum of right and left channel discharges
Duck Slough @ Gurr Rd	9/20/05	cfs	20.3	only used discharge of main channel
Duck Slough @ Pioneer Road	8/16/05	cfs	73.55	
Duck Slough @ Pioneer Road	9/20/05	cfs	-88	Stream too wide and deep to take discharge
Highline Canal @ Lombardy Rd	8/17/05	cfs	223.71	
Highline Canal @ Lombardy Rd	9/21/05	cfs	116.76	
Highline Canal @ Hwy 99	8/17/05	cfs	109.1	
Highline Canal @ Hwy 99	9/20/05	cfs	191.43	
Hilmar Drain @ Central Ave	8/16/05	cfs	11.43	
Hilmar Drain @ Central Ave	9/21/05	cfs	4.72	
Jones Drain @ Oakdale Road	8/17/05	cfs	-88	
Jones Drain @ Oakdale Road	9/21/05	cfs	6.17	discharge from main channel
Merced River @ Santa Fe	8/17/05	cfs	-88	
Prairie Flower Drain @ Crows Landing Road	8/17/05	cfs	-88	
Prairie Flower Drain @ Crows Landing Road	9/21/05	cfs	-88	
Ash Slough @ Ave 21	8/16/05	cfs	16.81	
Cottonwood Creek @ Road 20	8/16/05	cfs	12.66	
Cottonwood Creek @ Road 20	9/20/05	cfs	0	5 flow measurements all equal 0; stage = 3.6 ft
Dry Creek at Road 18	8/16/05	cfs	74.38	
Dry Creek at Road 18	9/20/05	cfs	6.59	measured on top of weir; flow too low to measure in front of weir; width of water = 15ft

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During the course of the sampling seasons, we did not experience a large number of detections of chemicals. Also, because of a miscommunication with the sampling laboratory, only velocity measurements were taken for most of the year. Discharge measurements were not taken until the July sampling event. Additionally, when discharge measurements were collected, very few sites had sufficient flow to measure discharge. Consequently, we were able to calculate loads only for one sample event for one chemical, chlorpyrifos. On August 16, 2005 there was a load of 0.77 μg of chlorpyrifos.

ESJWQC Water Column Toxicity

Station Code 535XBCAKR

Bear Creek @ Kibby Rd

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
21/Mar/2005	100	NSG	97.5	NSG	1690000	NSG
10/May/2005	5	SL	100	NSG	2160000	NSG
19/May/2005	100	NSG				
14/Jun/2005	90	NSG	100	NSG	1690000	NSG
12/Jul/2005	80	NSG	100	NSG	1700000	NSG
16/Aug/2005	100	NSG	100	NSG	1410000	NSG
20/Sep/2005	90	NSG	100	NSG	1910000	NSG

Station Code 535XDCAWR

Dry Creek @ Wellsford Road

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
15/Feb/2005	80	SG	100	NSG	1660000	NSG
22/Mar/2005	100	NSG	90	NSG	2580000	NSG
11/May/2005	90	NSG	100	NSG	2050000	NSG
15/Jun/2005	100	NSG	97.5	NSG	2250000	NSG
13/Jul/2005	100	NSG	100	NSG	1810000	NSG
17/Aug/2005	100	NSG	100	NSG	1280000	NSG
21/Sep/2005	100	NSG	95	NSG	1850000	NSG

Station Code 535XDSAGR

Duck Slough @ Gurr Rd

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
16/Feb/2005	95	NSG	80	NSG	1790000	NSG
21/Mar/2005	100	NSG	97.5	NSG	2410000	NSG
10/May/2005	100	NSG	100	NSG	2070000	NSG
14/Jun/2005	100	NSG	100	NSG	2390000	NSG
12/Jul/2005	100	NSG	97.5	NSG	3430000	NSG
16/Aug/2005	100	NSG	100	NSG	2480000	NSG
20/Sep/2005	95	NSG	97.5	NSG	2310000	NSG

Station Code 535XDSAPR

Duck Slough @ Pioneer Road

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
16/Feb/2005	100	NSG	65	NSL	1900000	NSG
21/Mar/2005	100	NSG	97.5	NSG	2200000	NSG
10/May/2005	95	NSG	100	NSG	2390000	NSG
14/Jun/2005	95	NSG	100	NSG	1840000	NSG
12/Jul/2005	100	NSG	97.5	NSG	1320000	SL
21/Jul/2005					1750000	NSG
16/Aug/2005	95	NSG	100	NSG	1470000	NSG
20/Sep/2005	90	NSG	95	NSG	2120000	NSG

Station Code 535XHCALR

Highline Canal @ Lombardy Rd

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
15/Feb/2005	100	NSG	100	NSG	2280000	NSG
21/Mar/2005	100	NSG	97.5	NSG	1680000	NSG
10/May/2005	100	NSG	100	NSG	1560000	NSG
14/Jun/2005	95	NSG	97.5	NSG	1450000	NSG
13/Jul/2005	100	NSG	100	NSG	1500000	NSG
17/Aug/2005	100	NSG	100	NSG	797000	SL
24/Aug/2005					1510000	NSG
21/Sep/2005	100	NSG	92.5	NSG	960000	NSG

Station Code 535XHCHNN

Highline Canal @ Hwy 99

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
10/May/2005	45	SL	100	NSG	1220000	NSG
19/May/2005	0	SL				
15/Jun/2005	100	NSG	100	NSG	1400000	NSG
13/Jul/2005	90	NSG	92.5	NSG	1550000	NSG
17/Aug/2005	100	NSG	100	NSG	958000	NSG
20/Sep/2005	90	NSG	100	NSG	1530000	NSG

Station Code 535XHDACA

Hilmar Drain @ Central Ave

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
15/Feb/2005	95	NSG	85	NSG	2960000	NSG
22/Mar/2005	95	NSG	92.5	NSG	2290000	NSG
11/May/2005	70	SL	92.5	NSG	1820000	NSG
19/May/2005	95	NSG				
15/Jun/2005	100	NSG	97.5	NSG	3840000	NSG
13/Jul/2005	100	NSG	100	NSG	3680000	NSG
16/Aug/2005	100	NSG	100	NSG	3230000	NSG
21/Sep/2005	80	NSG	100	NSG	1330000	NSG

Station Code 535XJDAOR

Jones Drain @ Oakdale Road

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
16/Feb/2005	95	NSG	90	NSG	1290000	SL
22/Mar/2005	100	NSG	95	NSG	1310000	NSG
11/May/2005	100	NSG	97.5	NSG	2400000	NSG
15/Jun/2005	100	NSG	97.5	NSG	2180000	NSG
12/Jul/2005	95	NSG	100	NSG	2020000	NSG
17/Aug/2005	25	SL	100	NSG	1030000	NSG
24/Aug/2005	90	NSG				
21/Sep/2005	100	NSG	100	NSG	1400000	NSG

Station Code 535XMRSFD

Merced River @ Santa Fe

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
16/Feb/2005	95	NSG	90	NSG	1610000	NSG
21/Mar/2005	100	NSG	100	NSG	1260000	SL
11/May/2005	100	NSG	97.5	NSG	2100000	NSG
15/Jun/2005	95	NSG	97.5	NSG	1670000	NSG
13/Jul/2005	95	NSG	100	NSG	1730000	NSG
17/Aug/2005	100	NSG	100	NSG	1000000	NSG
21/Sep/2005	95	NSG	100	NSG	1450000	NSG

Station Code 535XPFDCL

Prairie Flower Drain @ Crows Landing Road

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
15/Feb/2005	90	NSG	95	NSG	3930000	NSG
22/Mar/2005	95	NSG	92.5	NSG	2820000	NSG
11/May/2005	75	NSL	100	NSG	1930000	NSG
15/Jun/2005	100	NSG	97.5	NSG	4350000	NSG
13/Jul/2005	95	NSG	100	NSG	4600000	NSG
17/Aug/2005	100	NSG	100	NSG	2160000	NSG
21/Sep/2005	100	NSG	100	NSG	1890000	NSG

Station Code 545XASAAT

Ash Slough @ Ave 21

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
14/Jun/2005	100	NSG	100	NSG	2000000	NSG
12/Jul/2005	85	NSG	100	NSG	1720000	NSG
16/Aug/2005	95	NSG	100	NSG	1690000	NSG

Station Code 545XCCART

Cottonwood Creek @ Road 20

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
16/Feb/2005	95	NSG	75	NSL	1700000	NSG
21/Mar/2005	100	NSG	100	NSG	1960000	NSG
10/May/2005	90	NSG	100	NSG	1930000	NSG
14/Jun/2005	90	NSG	100	NSG	1930000	NSG
12/Jul/2005	100	NSG	97.5	NSG	2530000	NSG
16/Aug/2005	100	NSG	100	NSG	2080000	NSG
20/Sep/2005	95	NSG	95	NSG	2380000	NSG

Station Code 545XDCARE

Dry Creek at Road 18

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
16/Aug/2005	100	NSG	100	NSG	1850000	NSG
20/Sep/2005	95	NSG	95	NSG	1250000	NSL

Station Code 545XLWSMA

Lone Willow Slough @ Madera Ave

SampleDate	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*	
16/Feb/2005	100	NSG	95	NSG	1930000	NSG
21/Mar/2005	100	NSG	95	NSG	492000	SL
10/May/2005	95	NSG	100	NSG	1490000	NSG
14/Jun/2005	100	NSG	95	NSG	2300000	NSG
12/Jul/2005	0	SL	100	NSG	2170000	NSG

ESJWQC Sediment

Station Code: 535XBCAKR

Bear Creek @ Kibby Rd

SampleDate	Growth (weight)	Survival (%)
5/10/2005	0.1563 NSG	93.75 NSG
7/12/2005	0.06344 NSG	95 NSG
9/20/2005		97.5 NSG

Station Code: 535XDCAWR

Dry Creek @ Wellsford Road

SampleDate	Growth (weight)	Survival (%)
5/11/2005	0.14465 SG	93.75 NSG
7/13/2005	0.09103 NSG	091.25 NSG
9/21/2005		100 NSG

StationCode: 535XDSAGR

Duck Slough @ Gurr Rd

SampleDate	Growth (weight)	Survival (%)
5/10/2005	0.13991 SG	93.75 NSG
7/12/2005	0.02213 SL	58.8 SL
9/20/2005		3.8 SL

Station Code: 535XHCALR

Highline Canal @ Lombardy Rd

SampleDate	Growth (weight)	Survival (%)
5/10/2005	0.0992 SL	71.25 SL
7/13/2005	0.07368 SL	92.5 NSG
9/21/2005		95 NSG

StationCode: 535XHCHNN

Highline Canal @ Hwy 99

SampleDate	Growth (weight)	Survival (%)
5/10/2005	0.15275 NSG	86.25 NSG
7/13/2005	0.07949 SG	91.2 NSG
9/20/2005		87.5 SG

StationCode: 535XHDACA

Hilmar Drain @ Central Ave

SampleDate	Growth (weight)	Survival (%)
5/11/2005	0.08975 SL	100 NSG
7/13/2005	9.644 NSG	96.2 NSG
9/21/2005		31.2 SL

StationCode: 535XJDAOR

Jones Drain @ Oakdale Road

SampleDate	Growth (weight)	Survival (%)
5/11/2005	0.16072 NSG	96.25 NSG
7/12/2005	0.07405 NSG	93.8 NSG
9/21/2005		96.2 NSG

StationCode: 535XMRSFD

Merced River @ Santa Fe

SampleDate	Growth (weight)	Survival (%)
5/11/2005	0.1876 NSG	95 NSG
7/13/2005	0.08563 NSG	91.2 NSG
9/21/2005		86.2 NSG

StationCode: 535XPFDCL

Prairie Flower Drain @ Crows Landing Road

SampleDate	Growth (weight)	Survival (%)
5/11/2005	0.14841 NSG	87.5 NSG
7/13/2005	0.0731 SL	91.2 NSG
9/21/2005		83.8 SG

StationCode: 545XASAAT

Ash Slough @ Ave 21

SampleDate	Growth (weight)	Survival (%)
7/12/2005	0.08062 NSG	93.8 NSG

StationCode: 545XCCART

Cottonwood Creek @ Road 20

SampleDate	Growth (weight)	Survival (%)
5/10/2005	0.13349 SG	92.5 NSG
7/12/2005	0.08621 NSG	93.8 NSG
9/20/2005		96.2 NSG

StationCode: 545XDCARE

Dry Creek at Road 18

SampleDate	Growth (weight)	Survival (%)
9/20/2005		93.8 NSG

StationCode: 545XLWSMA

Lone Willow Slough @ Madera Ave

SampleDate	Growth (weight)	Survival (%)
5/10/2005	0.05762 SL	52.5 SL
7/12/2005	0.09881 NSG	88.8 NSG

Sampling and Analytical Methods Used

Sampling, field parameters and instruments used to collect measurements and analytical methods are provided below in Tables 8 - 10. All sampling methods were performed as outlined in the Quality Assurance Project Plan Table B-2. That table has been reproduced as Table 8. All analytical methods were performed as described in the QAPP. That table has been reproduced as Table 10. However, the MDLs for diazinon and chlorpyrifos are lower than those provided in the QAPP. The new MDLs were documented in communications to the Regional Board in the fall of 2004, and again in the spring of 2005. The MDL report is attached to this document as Appendix A.

Table 8. Sampling procedures, containers, sample volumes, preservation and storage techniques, and holding times for samples collected in the field during the 2005 dormant season and 2005 irrigation season sampling.

Parameter	Sample Container	Sample Volume	Immediate Processing and Storage	Holding Time
Color	HDPE	1 L	4°C	48 hrs
Turbidity	HDPE	1 L	4°C	48 hrs
TDS	HDPE	1 L	4°C	7 days
E. coli	HDPE	100 mL	4°C	24 hrs
TOC	Amber glass/TFPE cap	250 mL	4°C	7 days
Water column toxicity	Amber glass	1 Gal	4°C	36 hrs
Sediment toxicity	Glass	2 L	4°C	14 days
Organophosphate pesticides	Amber glass	1 Gal	4°C	Extract 7 days, hold 40 days
Pyrethroid pesticides	Amber glass	1 Gal	4°C	Extract 7 days, hold 40 days

Table 9. Field parameters and instruments used to collect measurements.

Parameter	**Instrument**
Dissolved oxygen	YSI Model 556 Multiprobe Meter
Temperature	YSI Model 556 Multiprobe Meter
pH	YSI Model 556 Multiprobe Meter
Electrical Conductivity	YSI Model 556 Multiprobe Meter

Table 10. Analytical methods, minimum detection limits (MDL), reporting limits (RL) and the first sample date for which the MDLs and RLs were used.

Analytical Methods		Unit	MDL	RL	FirstSampleDate
EPA 8081A					
Organochlorine Pesticides by GC/ECD					
	Bifenthrin[1]	µg/L	0.006	0.02	9/20/2005
	Cyfluthrin, total[1]	µg/L	0.003	0.03	9/20/2005
	Cyhalothrin, lambda, total	µg/L	0.001	0.02	2/15/2005
	Cypermethrin, total	µg/L	0.004	0.1	2/15/2005
	Esfenvalerate/Fenvalerate, total	µg/L	0.002	0.02	2/15/2005
	Permethrin, total	µg/L	0.009	0.02	2/15/2005
EPA 8141A					
Organophosphorus Pesticides capillary method by GC/FPD or GC/NPD					
	Chlorpyrifos	µg/L	0.00259	0.02	2/15/2005
	Diazinon	µg/L	0.00353	0.02	2/15/2005
SM 2120 B					
Color by visual comparison					
	Color	color units	1	1	2/15/2005
SM 2130 B					
Turbidity analysis by Nephelometric method					
	Turbidity	NTU	0.1	0.1	2/15/2005
SM 2540 C					
TDS dried at 180 degrees C					
	Total Dissolved Solids	mg/L	5	5	2/15/2005
SM 5310 C					
Total Organic Carbon: Persulfate-Ultraviolet Oxidation Method Doc# IO-SP-0039-00					
	Total Organic Carbon	mg/L	0.03	0.2	2/15/2005

Analytical Methods	Unit	MDL	RL	FirstSampleDate
SM 9221 B F				
Standard Total Coliform Fermentation Technique with E. Coli Procedure				
E. coli	MPN/100 mL	2	2	2/15/2005

[1]Analytes outside of the original suite of pyrethroids proposed for analysis. These compounds were added to the final sampling event of the irrigation season to determine if their presence could be detected in water column samples.

Copy of Chain of Custody Forms

Chain of custody forms are provided as copies from pdfs provided by the laboratories in their lab reports. After receiving the COC's each lab scanned the forms and created pdf files for inclusion in their laboratory reports. As such, they are complete and accurate records of sample handling and processing and reflect the timing of sample collection and delivery to the laboratories. Sample collection and delivery was performed according to the QAPP submitted to the Regional Board and no samples were flagged for collection or delivery problems.

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	RI-DCAWR-004	2/15/05	1004	FW	1	1-L amber	x	
2	RI-DCAWR-001	2/15/05	1001	FW	1	1-L amber		x
3	RI-DCAWR-002	2/15/05	1002	FW	1	1-L amber		x
4	RI-DCAWR-003	2/15/05	1003	FW	1	1-L amber		x
5	RI-DCAWR-005	2/15/05	1005	FW	1	1-L amber	x	
6	RI-DCAWR-006	2/15/05	1006	FW	1	1-L amber	x	
7	RI-HCAWR-024	2/15/05	1620	FW	1	1-L amber		x
8	RI-HCAWR-025	2/15/05	1621	FW	1	1-L amber	x	
9	RI-REDCL-042	2/15/05	1224	FW	1	1-L amber		x
10	RI-TFDCL-043	2/15/05	1225	FW	1	1-L amber	x	
11	RI-HDACA-072	2/15/05	1540	FW	1	1-L amber		x
12	RI-HDACA-073	2/15/05	1541	FW	1	1-L amber	x	
13	RI-DCAWR -MS/MSD	2/15/05	1005	FW	1	1-gallon amber	x	x

Correct Containers:	Yes	No		
Sample Temperature:	Ambient	Cold	Warm	
Sample Preservative:	Yes	No		
Turnaround Time:	STD	Specify:		

Comments:
RI-DCAWR-005/RI-DCAWR-002 = Field Duplicate
RI-DCAWR-006/RI-DCAWR-003 = Field Blank
RI-DCAWR -MS/MSD = For APPL Internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELINQUISHED BY

Signature:	Mike McElroy
Print:	Mike McElroy
Organization:	PER
DATE:	2/15/05 **TIME:** 1633

RECEIVED BY

Signature:	
Print:	
Organization:	
DATE:	2/16/05 **TIME:** 0800

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS + MM
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	R1-MRSFD-018	2/16/05	1331	FW	1	1-L amber	x	
2	R1-MRSFD-018	2/16/05	1330	FW	1	1-L amber		x
3	R1-DSAGR-031	2/16/05	1301	FW	1	1-L Amber	X	
4	R1-DSAGR-030	2/16/05	1300	FW	1	1-L Amber		X
5	R1-CCART-049	2/16/05	1700	FW	1	1-L Amber	X	
6	R1-CCART-048	2/16/05	1659	FW	1	1-L Amber		X
7	R1-LWSMA-055	2/16/05	1801	FW	1	1-L Amber	X	
8	R1-LWSMA-054	2/16/05	1800	FW	1	1-L Amber		X
9	R1-DSAPR-061	2/16/05	1946	FW	1	1-L Amber	X	
10	R1-DSAPR-060	2/16/05	1945	FW	1	1-L Amber		X
11	R1-JDAOR-067	2/16/05	1031	FW	1	1-L Amber	X	
12	R1-JDAOR-066	2/16/05	1030	FW	1	1-L Amber	~~X~~	X
13	~~MS/MSD~~			FW	4	4-gallon amber	X	X

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

_____ = Field Duplicate

_____ = Field Blank

-MS/MSD = For APPL Internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELINQUISHED BY

Signature:	
Print:	Mike McElroy
Organization:	PER
DATE:	2/16/05 **TIME:** 713

RECEIVED BY

Signature:	
Print:	
Organization:	
DATE:	2/17/05 **TIME:** 0800

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORI

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM / LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	RZ-MRSFD-007	3/21/05	1515	FW	1	1-L amber	~~X~~	X
2	RZ-MRSFD-008	3/21/05	1516	FW	1	1-L amber		X
3	RZ-MRSFD-009	3/21/05	1517	FW	1	1-L amber		X
4	RZ-MRSFD-011	3/21/05	1519	FW	1	1-L amber	X	
5	RZ-MRSFD-012	3/21/05	1520	FW	1	1-L amber	X	
6	RZ-MRSFD-013	3/21/05	1521	FW	1	1-L amber	X	
7	~~RZ-MRSFD-014~~ HCALR-026	3/21/05	1700	FW	1	1-L amber		X
8	~~RZ-MRSFD-015~~ HCALR-027	3/21/05	1701	FW	1	1-L amber	X	
9	RZ-DSAGR-032	3/21/05	1100	FW	1	1-L amber		X
10	RZ-DSAGR-033	3/21/05	1101	FW	1	1-L amber	X	
11	RZ-CCART-050	3/21/05	715	FW	1	1-L amber		X
12	RZ-CCART-051	3/21/05	716	FW	1	1-L amber	X	
13	RZ-MRSFD-010 -MS/MSD	3/21/05	1518	FW	1	1-gallon amber	x	x

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
RZ-MRSFD-008 / RZ-MRSFD-012 = **Field Duplicate**
RZ-MRSFD-009 / RZ-MRSFD-013 = **Field Blank**
RZ-MRSFD-010 **-MS/MSD = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)**

RELIQUINSHED BY			
Signature:			
Print:	Mike McElroy		
Organization:	PER		
DATE:	3/21/05	**TIME:**	1915
RECEIVED BY			
Signature:			
Print:			
Organization:			
DATE:	3/22/05 0800	~~**TIME:**~~	?

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
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APPL CHAIN-OF-CUSTODY RECORI

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM/LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	**East San Joaquin Water Quality Coalition**
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	R2-LWSMA-057	3/21/05	900	FW	1	1-L amber	x	
2	R2-LWSMA-056	3/21/05	901	FW	1	1-L amber		x
3	R2-DSAPR-062	3/21/05	1215	FW	1	1-L amber		x
4	R2-DSAPR-063	3/21/05	1216	FW	1	1-L amber	x	
5	R2-BCAKR-086	3/21/05	1340	FW	1	1-Lamber		x
6	R2-BCAKR-087	3/21/05	1341	FW	1	1-Lamber	x	
7								
8								
9								
10								
11								
12								
13	-MS/MSD			FW	1	1-gallon amber	x	x

Correct Containers:	**Yes**	**No**		
Sample Temperature:	**Ambient**	**Cold**	**Warm**	
Sample Preservative:	**Yes**	**No**		
Turnaround Time:	**STD**	**Specify:**		

Comments:

_____ = **Field Duplicate**

_____ = **Field Blank**

-MS/MSD = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY		
Signature:		
Print:	Mike McElroy	
Organization:	PER	
DATE:	3/21/05	**TIME:** ~~915~~ 1915
RECEIVED BY		
Signature:		
Print:		
Organization:		
DATE:	3/22/05	**TIME:** 0800

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
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APPL CHAIN-OF-CUSTODY RECORI

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	R2 HDACA-075	3·22·05	0931	FW	1	1-L amber	x	
2	R2-HDACA-074	3·22·05	0936	FW	1	1-L amber		x
3	R2-JDACR-069	3·22·05	1149	FW	1	1-L amb	x	
4	R2-JDACR-063	3·22·05	1147	FW	1	1-L amb		x
5	R2-PFDCL-045	3·22·05	0901	FW	1	1-L amb	x	
6	R2-PFDCL-044	3·22·05	[illegible]	FW	1	1-L amb		x
7	R2-DCAWR-002	3·22·05	1321	FW	1	1-L amb	x	
8	R2-DCAWR-001	3·22·05	1320	FW	1	1-L amb		x
9								
10								
11								
12								
13	~~-MS/MSD~~			~~FW~~	~~1~~	~~1-gallon amber~~	~~x~~	~~x~~

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

_____ = **Field Duplicate**

_____ = **Field Blank**

-MS/MSD = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY			
Signature:	[signature]		
Print:	Lucas Wickham		
Organization:	Pacific EcoRisk		
DATE:	03/22/05	**TIME:**	1515
RECEIVED BY			
Signature:	[signature]		
Print:			
Organization:			
DATE:	3/23/04	**TIME:**	0860

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	04-CCART-001	5/10/05	0700	FW	1	1-L amber		x
2	**04-CCART-002**	5/10/05	0701	FW	1	1-L amber		x
3	**04-CCART-003**	5/10/05	0702	FW	1	1-L amber		x
4	04-LWSMA-020	5/10/05	0940	FW	1	1-L amber		x
5	~~04-ASATA-027~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
6	04-DSAGR-034	5/10/05	1210	FW	1	1-L amber		x
7	04-DSAPR-041	5/10/05	1330	FW	1	1-L amber		x
8	04-BCAKR-048	5/10/05	1545	FW	1	1-L amber		x
9	~~04-MRSED-055~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
10	04-HCALR-062	5/10/05	1730	FW	1	1-L amber		x
11	~~04-PFDGL-069~~			~~FW~~	~~1~~	~~1-L amber~~		x
12	~~04-HDACA-076~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
13	04-HCHNN-083	5/10/05	1820	FW	1	1-L amber		x

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
04-CCART-002 = Field duplicate
04-CCART-003 = Field blank
03-MRSFD-MS/MSD = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY			
Signature:			
Print:	Lucas Wickham		
Organization:	Pacific EcoRisk		
DATE:	5/10/05	**TIME:**	1840
RECEIVED BY			
Signature:			
Print:			
Organization:			
DATE:	5/11/05	**TIME:**	0820

*MATRIX CODES: (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	~~04-JBAOR-090~~			FW	1	1-L amber		x
2	~~04-BCAWR-097~~			FW	1	1-L amber		x
3	04-CCART-004	5/10/05	0704	FW	1	1-L amber	x	
4	**04-CCART-005**	5/10/05	0705	FW	1	1-L amber	x	
5	**04-CCART-006**	5/10/05	0706	FW	1	1-L amber	x	
6	**04-CCART-MS/MSD**	5/10/05	0703	FW	1	1-gallon amber	x	x
7	04-LWSMA-021	5/10/05	0941	FW	1	1-L amber	x	
8	~~04-ASATA-028~~			FW	1	1-L amber	x	
9	04-DSAGR-035	5/10/05	1211	FW	1	1-L amber	x	
10	04-DSAPR-042	5/10/05	1331	FW	1	1-L amber	x	
11	04-BCAKR-049	5/10/05	1546	FW	1	1-L amber	x	
12	~~04-MRSFD-056~~			FW	1	1-L amber	x	
13	04-HCALR-063	5/10/05	1731	FW	1	1-L amber	x	

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
04-CCART-005 = Field duplicate
04-CCART-006 = Field blank
04-CCART-MS/MSD = For APPL Internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY			
Signature:	[signature]		
Print:	Lucas Wickham		
Organization:	Pacific EcoRisk		
DATE:	5/10/05	**TIME:**	1840
RECEIVED BY			
Signature:	[signature]		
Print:			
Organization:			
DATE:	5/11/05	**TIME:**	0800

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	~~04-PFDCL-070~~			FW	1	1-L amber	x	
2	~~04-HDACA-077~~			FW	1	1-L amber	x	
3	04-HCHNN-084	5/10/05	1821	FW	1	1-L amber	x	
4	~~04-JDAOR-091~~			FW	1	1-L amber	x	
5	~~04-DCAWR-098~~			FW	1	1-L amber	x	
6								
7								
8								
9								
10								
11								
12								
13								

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

RELIQUINSHED BY			
Signature:			
Print:	Lucas Wickham		
Organization:	Pacific EcoRisk		
DATE:	5/10/05	**TIME:**	1840
RECEIVED BY			
Signature:			
Print:			
Organization:			
DATE:	5/11/05	**TIME:**	0840

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
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APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	SS / LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	~~04-CCART-001~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
2	~~04-CCART-002~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
3	~~04-CCART-003~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
4	~~04-LWSMA-020~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
5	~~04-ASATA-027~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
6	~~04-DSAGR-034~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
7	~~04-DSAPR-041~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
8	~~04-BCAKR-048~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
9	04-MRSFD-055	5/11/05	1220	FW	1	1-L amber		x
10	~~04-HCALR-062~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
11	04-PFDCL-069	5/11/05	1010	FW	1	1-L amber		x
12	04-HDACA-076	5/11/05	1105	FW	1	1-L amber		x
13	~~04-HCHNN-083~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-002 = Field duplicate
04-CCART-003 = Field blank
03-MRSFD-MS/MSD = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY			
Signature:			
Print:	JOHN SCHWALBE		
Organization:	PER		
DATE:	5/11/05	**TIME:**	1650

RECEIVED BY			
Signature:			
Print:			
Organization:			
DATE:	5/12/05	**TIME:**	0800

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
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835 Arnold Drive, Suite 104, Martinez, CA 94553
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APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	04-JDAOR-090	5/11/05	1350	FW	1	1-L amber		x
2	04-DCAWR-097	5/11/05	1515	FW	1	1-L amber		x
3	~~04-CCART-004~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
4	~~04-CCART-005~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
5	~~04-CCART-006~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
6	~~04-CCART-MS/MSD~~			~~FW~~	~~1~~	~~1-gallon amber~~	~~x~~	~~x~~
7	~~04-LWSMA-021~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
8	~~04-ASATA-028~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
9	~~04-DSAGR-035~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
10	~~04-DSAPR-042~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
11	~~04-BGAKR-049~~			~~FW~~	~~1~~	1-L amber	x	
12	04-MRSFD-056	5/11/05	1221	FW	1	1-L amber	x	
13	~~04-HCALR-063~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-005 = Field duplicate
04-CCART-006 = Field blank
04-CCART-MS/MSD = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY			
Signature:			
Print:	JOHN SCHWACKE		
Organization:	PER		
DATE:	5/11/05	TIME:	1650

RECEIVED BY			
Signature:			
Print:			
Organization:			
DATE:	5/12/05	TIME:	0820

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	04-PFDCL-070	5/11/05	1011	FW	1	1-L amber	x	
2	04-HDACA-077	5/11/05	1106	FW	1	1-L amber	x	
3	~~04-HCHNN-084~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
4	04-JDAOR-091	5/11/05	1351	FW	1	1-L amber	x	
5	04-DCAWR-098	5/11/05	1516	FW	1	1-L amber	x	
6								
7								
8								
9								
10								
11								
12								
13								

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELIQUINSHED BY			
Signature:			
Print:	JOHN SCHWALBE		
Organization:	PER		
DATE:	5/11/05	TIME:	1650

RECEIVED BY			
Signature:			
Print:			
Organization:			
DATE:	5/12/05	TIME:	1500

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	05-CCART-001	6.14.05	0800	FW	1	1-L amber		x
2	05-CCART-002	6.14.05	0801	FW	1	1-L amber	x	
3	05-LWSMA-007	6.14.05	0850	FW	1	1-L amber		x
4	05-LWSMA-008	6.14.05	0851	FW	1	1-L amber	x	
5	05-ASATA-013	6.14.05	1010	FW	1	1-L amber		x
6	05-ASATA-014	6.14.05	1011	FW	1	1-L amber	x	
7	05-DSAGR-019	6.14.05	1115	FW	1	1-L amber		x
8	05-DSAGR-020	6.14.05	1146	FW	1	1-L amber	x	
9	05-DSAPR-025	6.14.05	1240	FW	1	1-L amber		x
10	05-DSAPR-026	6.14.05	1241	FW	1	1-L amber	x	
11	05-BCAKR-031	6.14.05	1335	FW	1	1-L amber		x
12	05-BCAKR-032	6.14.05	1536	FW	1	1-L amber	x	
	~~05-MRSFD-037~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
13	~~05-MRSFD-038~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

RELIQUINSHED BY

Signature:			
Print:	Lucas Wickham		
Organization:	PER		
DATE:	6.14.05	**TIME:**	1620

RECEIVED BY

Signature:			
Print:			
Organization:			
DATE:	06/15/05	**TIME:**	0800

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	05-HCALR-043	~~6/14/05~~	1500	FW	1	1-L amber		x
2	**05-HCALR-044**	6/14/05	1501	FW	1	1-L amber		x
3	**05-HCALR-045**	6/14/05	1502	FW	1	1-L amber		x
4	05-HCALR-046	6/14/05	1503	FW	1	1-L amber	x	
5	**05-HCALR-047**	6/14/05	1504	FW	1	1-L amber	x	
6	**05-HCALR-048**	6/14/05	1505	FW	1	1-L amber	x	
7	**05-HCALR-MS/MSD**	6/14/05	1506	FW	1	1-gallon amber	x	x
8	~~05-PFDGL-060~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
9	~~05-PFDGL-061~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
10	~~05-HDACA-066~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
11	~~05-HDACA-067~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
12	~~05-HCHNN-072~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
13	~~05-HCHNN-073~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
05-HCALR-044/0477= Field duplicate
05-HCALR-045/048= Field blank
05-HCALR-MS/MSD = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY			
Signature:	for RC Wickham '05		
Print:	Lucas Wickham		
Organization:	PER		
DATE:	6/14/05	**TIME:**	1620
RECEIVED BY			
Signature:			
Print:			
Organization:			
DATE:	06/15/05	**TIME:**	0900

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	~~05-CCART-001~~			~~FW~~	~~1~~	~~1-L amber~~		x
2	~~05-CCART-002~~			~~FW~~	~~1~~	~~1-L amber~~	x	
3	~~05-LWSMA-007~~			~~FW~~	~~1~~	~~1-L amber~~		x
4	~~05-LWSMA-008~~			~~FW~~	~~1~~	~~1-L amber~~	x	
5	~~05-ASATA-013~~			~~FW~~	~~1~~	~~1-L amber~~		x
6	~~05-ASATA-014~~			~~FW~~	~~1~~	~~1-L amber~~	x	
7	~~05-DSACR-019~~			~~FW~~	~~1~~	~~1-L amber~~		x
8	~~05-DSACR-020~~			~~FW~~	~~1~~	~~1-L amber~~	x	
9	~~05-DSAPR-025~~			~~FW~~	~~1~~	~~1-L amber~~		x
10	~~05-DSAPR-026~~			~~FW~~	~~1~~	~~1-L amber~~	x	
11	~~05-BCAKR-031~~			~~FW~~	~~1~~	~~1-L amber~~		x
12	~~05-BCAKR-032~~			~~FW~~	~~1~~	~~1-L amber~~	x	
	05-MRSFD-037	6-15-05	1035	FW	1	1-L amber		x
13	05-MRSFD-038	6-15-05	1030	FW	1	1-L amber	x	

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

RELIQUINSHED BY

Signature:	
Print:	Lucas Wickham
Organization:	PER
DATE:	6-15-05 **TIME:** 1450

RECEIVED BY

Signature:	
Print:	
Organization:	
DATE:	6/15/05 **TIME:** 1605

***MATRIX CODES**: (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	~~05-HCALR-043~~			~~FW~~	~~1~~	~~1-L amber~~		x
2	~~05-HCALR-044~~			~~FW~~	~~1~~	~~1-L amber~~		x
3	~~05-HCALR-045~~			~~FW~~	~~1~~	~~1-L amber~~		x
4	~~05-HCALR-046~~			~~FW~~	1	1-L amber	x	
5	~~05-HCALR-047~~			~~FW~~	~~1~~	~~1-L amber~~	x	
6	~~05-HCALR-048~~			~~FW~~	~~1~~	~~1-L amber~~	x	
7	~~05-HCALR-MS/MSD~~			~~FW~~	~~1~~	~~1-gallon amber~~	x	x
8	05-PFDCL-060	6.15.05	1320	FW	1	1-L amber		x
9	05-PFDCL-061	6.15.05	1321	FW	1	1-L amber	x	
10	05-HDACA-066	6.15.05	1230	FW	1	1-L amber		x
11	05-HDACA-067	6.15.05	1231	FW	1	1-L amber	x	
12	05-HCHNN-072	6.15.05	1140	FW	1	1-L amber		x
13	05-HCHNN-073	6.15.05	1141	FW	1	1-L amber	x	

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
05-HCALR-044/0477= Field duplicate

05-HCALR-045/048= Field blank

05-HCALR-MS/MSD = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY			
Signature:			
Print:	Lucas Wickham		
Organization:	PER		
DATE:	~~6.15~~ 6.15.05	**TIME:**	1450
RECEIVED BY			
Signature:			
Print:			
Organization:			
DATE:	6/15/05	**TIME:**	1605

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	04-JDAOR-078	6.15.05	0930	FW	1	1-L amber		x
2	04-JDAOR-079	6.15.05	0731	FW	1	1-L amber	x	
3	04-DCAWR-084	6.15.05	0900	FW	1	1-L amber		x
4	04-DCAWR-085	6.15.05	0801	FW	1	1-L amber	x	
5								
6								
7								
8								
9								
10								
11								
12								
13								

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

RELIQUINSHED BY

Signature:	
Print:	Lucas Wickham
Organization:	PER
DATE:	6.15.05 **TIME:** 1450

RECEIVED BY

Signature:	
Print:	
Organization:	
DATE:	6/15/05 **TIME:** 1615

***MATRIX CODES:** (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	06-CCART-001	7.12.05	0805	FW	1	1-L amber		x
2	06-CCART-002	7.12.05	0806	FW	1	1-L amber	x	
3	06-LWSMA-008	7.12.05	0920	FW	1	1-L amber		x
4	06-LWSMA-009	7.12.05	0921	FW	1	1-L amber	x	
5	06-ASATA-016	7.12.05	1055	FW	1	1-L amber		x
6	06-ASATA-017	7.12.05	1056	FW	1	1-L amber	x	
7	06-DSAGR-023	7.12.05	1225	FW	1	1-L amber		x
8	06-DSAGR-024	7.12.05	1226	FW	1	1-L amber	x	
9	06-DSAPR-030	7.12.05	1340	FW	1	1-L amber		x
10	06-DSAPR-031	7.12.05	1341	FW	1	1-L amber	x	
11	06-BCAKR-037	7.12.05	1435	FW	1	1-L amber		x
12	06-BCAKR-038	7.12.05	1436	FW	1	1-L amber	x	
13	~~06-MRSFD-044~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
14	~~06-MRSFD-045~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY

Signature:	[signature] 7.12.05	**Signature:**	[signature]
Print:	Lucas Wickham	**Print:**	Doug Richards
Organization:	PER	**Organization:**	EX MILE
DATE:	~~7.14.05~~ 7.12.05 LW	**TIME:**	1700
		DATE:	7-12-05 **TIME:** 1700

RECEIVED BY

Signature:	[signature]	**Signature:**	[signature]
Print:	Doug Richards	**Print:**	
Organization:	EX MILE	**Organization:**	
DATE:	7-12-05 **TIME:** 1830	**DATE:**	7/13/05 **TIME:** 0800

***MATRIX CODES:** (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	~~06-HGALR-051~~			FW	1	1-L amber		x
2	~~06-HGALR-052~~			FW	1	1-L amber	x	
3	~~06-PFDCL-058~~			FW	1	1-L amber		x
4	~~06-PFDCL-059~~			FW	1	1-L amber	x	
5	~~06-HDACA-065~~			FW	1	1-L amber		x
6	~~06-HDACA-066~~			FW	1	1-L amber	x	
7	~~06-HGINN-072~~			FW	1	1-L amber		x
8	~~06-HGINN-073~~			FW	1	1-L amber	x	
9	06-JDAOR-079	7.12.05	1550	FW	1	1-L amber		x
10	06-JDAOR-080	7.12.05	~~1550~~ 1551	FW	1	1-L amber	x	
11	~~06-DCAWR-086~~			FW	1	1-L amber		x
12	~~06-DCAWR-087~~			FW	1	1-L amber	x	
13								

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY		RELINQUISHED BY	
Signature:	[signature]	Signature:	[signature]
Print:	Lucas Wickham	Print:	DOUG RICHARDS
Organization:	PER	Organization:	Ex MLE
DATE:	7-12-05	TIME: 1700	DATE: 7-12-05 TIME: 1700

RECEIVED BY		RECEIVED BY	
Signature:	[signature]	Signature:	[signature]
Print:	DOUG RICHARDS	Print:	
Organization:	Ex MLE	Organization:	
DATE:	7-12-05	TIME: 1830	DATE: 7/13/05 TIME: 0800

***MATRIX CODES**: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	SS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	06-HCALR-051	7/13/05	1133	FW	1	1-L amber		x
2	06-HCALR-052	7/13/05	1134	FW	1	1-L amber	x	
3	06-PFDCL-058	7/13/05	732	FW	1	1-L amber		x
4	06-PFDCL-059	7/13/05	733	FW	1	1-L amber	x	
5	06-HDACA-065	7/13/05	835	FW	1	1-L amber		x
6	06-HDACA-066	7/13/05	836	FW	1	1-L amber	x	
7	06-HCHNN-072	7/13/05	957	FW	1	1-L amber		x
8	06-HCHNN-073	7/13/05	958	FW	1	1-L amber	x	
9	~~06-JDAOR-079~~			~~FW~~	~~1~~	~~1-L amber~~		x
10	~~06-JDAOR-080~~			~~FW~~	~~1~~	~~1-L amber~~	x	
11	06-DCAWR-086	7/13/05	1405	FW	1	1-L amber		x
12	06-DCAWR-087	7/13/05	1400	FW	1	1-L amber	x	
13								

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY			
Signature:		**Signature:**	
Print:	JOHN SCHWALBE	**Print:**	DOUG RICHARDS
Organization:	PER	**Organization:**	Ex MIL
DATE:	7/13/05 **TIME:** 1515	**DATE:**	7-13-05 **TIME:** 1575
RECEIVED BY			
Signature:		**Signature:**	
Print:	DOUG RICHARDS	**Print:**	
Organization:	Ex MIL	**Organization:**	
DATE:	7-13-05 **TIME:** 1630	**DATE:**	07/14/05 **TIME:** 0800

***MATRIX CODES:** (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	~~06-CCART-001~~			FW	1	1-L amber		x
2	~~06-CCART-002~~			FW	1	1-L amber	x	
3	~~06-LWSMA-008~~			FW	1	1-L amber		x
4	~~06-LWSMA-009~~			FW	1	1-L amber	x	
5	~~06-ASATA-016~~			FW	1	1-L amber		x
6	~~06-ASATA-017~~			FW	1	1-L amber	x	
7	~~06-DSAGR-023~~			FW	1	1-L amber		x
8	~~06-DSAGR-024~~			FW	1	1-L amber	x	
9	~~06-DSAPR-030~~			FW	1	1-L amber		x
10	~~06-DSAPR-031~~			FW	1	1-L amber	x	
11	06-BCAKR-037			FW	1	1-L amber		x
12	~~06-BCAKR-038~~			FW	1	1-L amber	x	
13	06-MRSFD-044	7/13/05	1300	FW	1	1-L amber		x
14	06-MRSFD-045	7/13/05	1301	FW	1	1-L amber	x	

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY		**RELIQUINSHED BY**	
Signature:		**Signature:**	
Print:	JOHN SCHWALBE	**Print:**	DOUG RICHARDS
Organization:	PER	**Organization:**	EX MILE
DATE: 7/13/05	**TIME:** 1515	**DATE:** 7-13-05	**TIME:** 1515
RECEIVED BY		**RECEIVED BY**	
Signature:		**Signature:**	
Print:	DOUG RICHARDS	**Print:**	
Organization:	EX MILE	**Organization:**	
DATE: 7-13-05	**TIME:** 1630	**DATE:** 07/14/05	**TIME:** 0850

***MATRIX CODES:** (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 6141a (Organophosphate: Diazinon, Chlorpyrifos)
1	07-535XPFDCL-GR	8.17.05	1900	FW	1	1-L amber		x
2	07-535XPFDCL-GR	8.17.05	1400	FW	1	1-L amber	x	
3	~~07-535XHDACA-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
4	~~07-535XHDACA-FD~~			~~FW~~	~~1~~	~~1-L amber~~		x
5	~~07-535XHDACA-FB~~			~~FW~~	~~1~~	~~1-L amber~~		x
6	~~07-535XHDACA-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
7	~~07-535XHDACA-FD~~			~~FW~~	~~1~~	~~1-L amber~~	x	
8	~~07-535XHDACA-FB~~			~~FW~~	~~1~~	~~1-L amber~~	x	
9	07-535XHCHNN-GR	8.17.05	0800	FW	1	1-L amber		x
10	07-535XHCHNN-GR	8.17.05	0800	FW	1	1-L amber	x	
11	07-535XJDAOR-GR	8.17.05	1045	FW	1	1-L amber		x
12	07-535XJDAOR-GR	8.17.05	1045	FW	1	1-L amber	x	
13								
14	~~07-535XHDACA-MS~~			~~FW~~	~~1~~	~~1-gallon amber~~	x	x

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:

07-535XHDACA-FD= Field Duplicate
07-535XHDACA-FB= Field Blank

07-535XHDACA-MS = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:	Eddie Kolanko	**Signature:**	Doug Richards
Print:	EDDIE KOLANKO	**Print:**	DOUG RICHARDS
Organization:	PER	**Organization:**	EX MILE
DATE: 8-17-05	**TIME:** 1500	**DATE:** 8-17-05	**TIME:** 1500

RECEIVED BY			
Signature:	Doug Richards	**Signature:**	
Print:	DOUG RICHARDS	**Print:**	
Organization:	EX MILE	**Organization:**	
DATE: 8-17-05	**TIME:** 1620	**DATE:** 8/17/05	**TIME:** 1620

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	~~07-545XCCART-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
2	~~07-545XCCART-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
3	~~07-545XASAAT-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
4	~~07-545XASAAT-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
5	~~07-535XDSAGR-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
6	~~07-535XDSAGR-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
7	~~07-535XDSAPR-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
8	~~07-535XDSAPR-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
9	~~07-535XSCAKR-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
10	~~07-535XSCAKR-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
11	07-535XMRSFD-GR	8.17.05	0945	FW	1	1-L amber		x
12	07-535XMRSFD-GR	8.17.05	0945	FW	1	1-L amber	x	
13	07-535XHCALR-GR	8.17.05	0845	FW	1	1-L amber		x
14	07-535XHCALR-GR	8.17.05	0845	FW	1	1-L amber	x	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	~~No~~	
Turnaround Time:	(STD)	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY

Signature:	Eddie Kakuma	**Signature:**	
Print:	EDDIE KAKUMA	**Print:**	DOUG RICHARDS
Organization:	PER	**Organization:**	EA
DATE:	8-17-05	**TIME:** 1500	**DATE:** 8-17-05 **TIME:** 1500

RECEIVED BY

Signature:		**Signature:**	
Print:	DOUG RICHARDS	**Print:**	
Organization:	EA	**Organization:**	
DATE:	8-17-05 **TIME:** 1620	**DATE:** 8/17/05 **TIME:** 1620	

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie Kalombo Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	07-535XDCAWR-GR	8.17.05	1150	FW	1	1-L amber		x
2	07-535XDCAWR-GR	8.17.05	1150	FW	1	1-L amber	x	
3	~~07-545XDCARE-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
4	~~07-545XDCARE-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
5								
6								
7								
8								
9								
10								
11								
12								
13								

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY			
Signature:	Eddie Kalombo	**Signature:**	Doug Ricketts
Print:	EDDIE KALOMBO	**Print:**	DOUG RICKETTS
Organization:	PER	**Organization:**	EX MIL
DATE:	8-17-05 **TIME:** 1500	**DATE:**	8-17-05 **TIME:** 1500

RECEIVED BY			
Signature:	Doug Ricketts	**Signature:**	
Print:	DOUG RICKETTS	**Print:**	
Organization:	EX MIL	**Organization:**	
DATE:	8-17-05 **TIME:** 1620	**DATE:**	8/17/05 **TIME:** 162[illegible]

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nasy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	08-545XCCART-GR	9/20/05	800	FW	1	1-L amber	x	
2	08-545XDCARE-GR	9/20/05	1000	FW	1	1-L amber		x
3	08-545XDCARE-GR	9/20/05	1000	FW	1	1-L amber	x	
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY		RELIQUINSHED BY	
Signature:	[signature]	**Signature:**	[signature]
Print:	Mike McElroy	**Print:**	Doug Reynolds
Organization:	PER	**Organization:**	Exp Metl
DATE:	9/20/05 **TIME:** 1730	**DATE:**	9/20/05 **TIME:** 1820
RECEIVED BY		**RECEIVED BY**	
Signature:		**Signature:**	[signature]
Print:		**Print:**	
Organization:		**Organization:**	
DATE:	**TIME:**	**DATE:**	9/21/05 **TIME:** 0800

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)									
1	~~08-535XJDAOR-GR~~			FW	1	1-L amber		x									
2	~~08-535XJDAOR-GR~~			FW	1	1-L amber	x										
3	~~08-535XMRSFD-GR~~			FW	1	1-L amber		x									
4	~~08-536XMRSFD-GR~~			FW	1	1-L amber	x										
5	~~08-535XPFDCL-GR~~			FW	1	1-L amber		x									
6	~~08-535XPFDCL-FD~~			FW	1	1-L amber		x									
7	~~08-535XPFDCL-FB~~			FW	1	1-L amber		x									
8	~~08-535XPFDCL-GR~~			FW	1	1-L amber	x										
9	~~08-536XPFDCL-FD~~			FW	1	1-L amber	x										
10	~~08-535XPFDCL-FB~~			FW	1	1-L amber	x										
11	~~08-535XPFDCL-MS~~			FW	1	1-gallon amber	x	x									
12	~~08-545XASAAT-GR~~			FW	1	1-L amber		x									
13	~~08-545XASAAT-GR~~			FW	1	1-L amber	x										
14	08-545XCCART-GR	9/20/05	800	FW	1	1-L amber		x									

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
~~08-535XPFDCL-FD= Field duplicate~~
~~08-535XPFDCL-FB= Field blank~~
~~08-536XPFDCL-MS = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)~~

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY

Signature:	[signature]	Signature:	[signature]
Print:	Mike McElroy	Print:	Doug Russons
Organization:	PER	Organization:	G.P. Mire
DATE: 9/20/05	TIME: 1730	DATE: 9-20-05	TIME: 1820

RECEIVED BY

Signature:		Signature:	[signature]
Print:		Print:	
Organization:		Organization:	
DATE:	TIME:	DATE: 9/21/05	TIME: 0800

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	08-535XBCAKR-GR	9/20/05	1445	FW	1	1-L amber		x
2	08-535XBCAKR-GR	9/20/05	1445	FW	1	1-L amber	x	
3	~~08-535XDCAWR-GR~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
4	~~08-535XDCAWR-GR~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
5	08-535XDSAGR-GR	9/20/05	1200	FW	1	1-L amber		x
6	08-535XDSAGR-GR	9/20/05	1200	FW	1	1-L amber	x	
7	08-535XDSAPR-GR	9/20/05	1340	FW	1	1-L amber		x
8	08-535XDSAPR-GR	9/20/05	1340	FW	1	1-L amber	x	
9	~~08-535XHCALR-GR~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
10	~~08-535XHCALR-GR~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
11	08-535XHCHNN-GR	9/20/05	1630	FW	1	1-L amber		x
12	08-535XHCHNN-GR	9/20/05	1630	FW	1	1-L amber	x	
13	~~08-535XHDAGA-GR~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
14	~~08-535XHDAGA-GR~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY

Signature:	[signature]	**Signature:**	[signature]
Print:	Mike McElroy	**Print:**	Doug Richards
Organization:	PER	**Organization:**	EA
DATE:	9/20/05 **TIME:** 1730	**DATE:**	9.20.05 **TIME:** 1820

RECEIVED BY

Signature:		**Signature:**	[signature]
Print:		**Print:**	
Organization:		**Organization:**	
DATE:	**TIME:**	**DATE:**	9/21/05 **TIME:** 0800

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	EPA 8141a (Organophosphate: Diazinon, Chlorpyrifos)
1	08-535XJDAOR-GR	9-21-05	1030	FW	1	1-L amber		x
2	08-535XJDAOR-GR	9-21-05	1030	FW	1	1-L amber	x	
3	08-535XMRSFD-GR	9-21-05	930	FW	1	1-L amber		x
4	08-535XMRSFD-GR	9-21-05	930	FW	1	1-L amber	x	
5	08-535XPFDCL-GR	9-21-05	1340	FW	1	1-L amber		x
6	08-535XPFDCL-FD	9-21-05	1340	FW	1	1-L amber		x
7	08-535XPFDCL-FB	9-21-05	1340	FW	1	1-L amber		x
8	08-535XPFDCL-GR	9-21-05	1340	FW	1	1-L amber	x	
9	08-535XPFDCL-FD	9-21-05	1340	FW	1	1-L amber	x	
10	08-535XPFDCL-FB	9-21-05	1340	FW	1	1-L amber	x	
11	08-535XPFDCL-MS	9-21-05	1340	FW	1	1-gallon amber	x	x
12	~~08-545XASAAT-GR~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~
13	~~08-545XASAAT-GR~~			~~FW~~	~~1~~	~~1-L amber~~	~~x~~	
14	~~08-545XCCART-GR~~			~~FW~~	~~1~~	~~1-L amber~~		~~x~~

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
08-535XPFDCL-FD= Field duplicate
08-535XPFDCL-FB= Field blank
08-535XPFDCL-MS = For APPL internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY

Signature:	[signature]	Signature:	[signature]
Print:	Mike McElroy	Print:	Doug Richards
Organization:	PER	Organization:	Ex Mile
DATE: 9-21-05	TIME: 1630	DATE: 9-21-05	TIME: 1630

RECEIVED BY

Signature:	[signature]	Signature:	[signature]
Print:	Doug Richards	Print:	Chue Fue Moua
Organization:	Ex Mile	Organization:	APPL, Inc
DATE: 9-21-05	TIME: 1745	DATE: 9-22-05	TIME: 9:00

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

APPL CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: EPA 1660 Mod (Pyrethroids: esfenvalerate, permethrin, cypermethrin, L-cyhalothrin)	REQUESTED ANALYSIS: EPA 8141a (Organophosphates: Diazinon, Chlorpyrifos)
1	~~08-535XBCAKR-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
2	~~08-535XBCAXR-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
3	08-535XDCAWR-GR	9-21-05	1220	FW	1	1-L amber		x
4	08-535XDCAWR-GR	9-21-05	1220	FW	1	1-L amber	x	
5	~~08-535XDSAGR-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
6	~~08-535XDSAGR-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
7	~~08-535XDSAPR-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
8	~~08-535XDSAPR-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
9	08-535XHCALR-GR	9-21-05	800	FW	1	1-L amber		x
10	08-535XHCALR-GR	9-21-05	800	FW	1	1-L amber	x	
11	~~08-535XHCHNN-GR~~			~~FW~~	~~1~~	~~1-L amber~~		x
12	~~08-535XHCHNN-GR~~			~~FW~~	~~1~~	~~1-L amber~~	x	
13	08-535XHDACA-GR	9-21-05	1530	FW	1	1-L amber		x
14	08-535XHDACA-GR	9-21-05	1530	FW	1	1-L amber	x	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:	[signature]	**Signature:**	[signature]
Print:	Mike McElroy	**Print:**	DOUG RICHARDS
Organization:	PER	**Organization:**	FOR MLE
DATE:	9-21-05 **TIME:** 1630	**DATE:**	9-21-05 **TIME:** 1630

RECEIVED BY			
Signature:	[signature]	**Signature:**	[signature]
Print:	DOUG RICHARDS	**Print:**	Chue Fue Moua
Organization:	FOR MLE	**Organization:**	Appl, Inc
DATE:	9-21-05 **TIME:** 1745	**DATE:**	9-22-05 **TIME:** 800

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

2005021186 02/16/2005
PACIFIC ECO TAT: Standard
BSK CHAIN-(216099

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)					
1	RI-DCAWR-007	2/15/05	1007	FW	1	1-L HDPE	x	x	x									050047
2	RI-DCAWR-010	2/15/05	1010	FW	1	250-mL amber					x		MS/MSD					48
3	RI-DCAWR-010	2/15/05	1010	FW	1	100 mL poly							x	B	036083			49
4	RI-DCAWR-008 (D)	2/15/05	1008	FW	1	1-L HDPE	X	X	X									50
5	RI-DCAWR-009 (B)	2/15/05	1009	FW	1	1-L HDPE	X	X	X									51
6	RI-DCAWR-011	2/15/05	1011	FW	1	100mL poly							X	B	036084			52
7	RI-DCAWR-012	2/15/05	1012	FW	1	100mL poly							X	B	↓	85		53
8	RI-DCAWR-014	2/15/05	1014	FW	1	250 mL amber					X							54
9	RI-DCAWR-015	2/15/05	1015	FW	1	250 mL amber					X							055
10	RI-HCALR-026	2/15/05	1626	FW	1	1-L HDPE	X	X	X									56
11	RI-HCALR-027	2/15/05	1627	FW	1	100mL poly							X	B	036086			57
12	RI-HCALR-027	2/15/05	1627	FW	1	250mL amber					X							57
13	~~RI-DCAWR-MS/MSD~~	2/15/05	1014	FW	1	250-mL amber					x							

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
RI-DCAWR-008 = Field Duplicate
RI-DCAWR-009 = Field Blank
RI-DCAWR-MS/MSD = For BSK Internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELINQUISHED BY

Signature:	
Print:	Mike McElroy
Organization:	PE
DATE:	2/15/05 **TIME:** 1645

RECEIVED BY

Signature:	
Print:	
Organization:	BSK
DATE:	2/16/05 **TIME:** 1500

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

2005021186 02/16/2005
PACIFIC ECO TAT: Standard
216099

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	RJ-PFDCL-044	2/15/05	1226	FW	1	1-L HDPE	x	x	x								
2	RJ-PFDCL-045DUP	2/15/05	1228	FW	1	250-mL amber					x						
3	RJ-PFDCL-045	2/15/05	1227	FW	1	100 mL poly							x	B 636887			
4	RJ-HDACA-074	2/15/05	1342	FW	1	[illegible]	x	x	x								
5	RJ-HDACA-075	2/15/05	1345	FW	1	100m poly							x	B 636888			
6	RJ-HDACA-076	2/15/05	1344	FW	1	250 mL amber					x						
7																	
8																	
9																	
10																	
11																	
12																	
13	-MS/MSD			FW	1	250-mL amber					x						

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
_____ = Field Duplicate
_____ = Field Blank
-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

REQUESTED ANALYSIS

RELIQUINSHED BY

Signature:	
Print:	Mike McElroy
Organization:	PEI
DATE:	2/15/05 TIME: 1645

RECEIVED BY

Signature:	
Print:	
Organization:	BSK
DATE:	2/16/05 TIME: 800

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Copy of C-O-C - RECEIVED by FoodLab 2)1186

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104, Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

REQUESTED ANALYSIS

Margin	#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)			
	1	RI-TAWR-007	2/15/05	1007	FW	1	1-L HDPE	x	x	x							
	2	RI-DCAWR-013	2/15/05	1013	FW	1	250-mL amber					x					
*WR	3	RI-DCAWR-010	2/15/05	1010	FW	1	100 mL poly							x	63683		
	4	RI-DCAWB-008	2/15/05	1008	FW	1	1-L HDPE	X	X	X							
	5	RI-DCAWR-009	2/15/05	1009	FW	1	1-L HDPE	X	X	X							
* LOS	6	RI-DCAWR-011	2/15/05	1011	FW	1	100 mL poly							X	63684		
* COT	7	RI-DCAWR-012	2/15/05	1012	FW	1	100 mL poly							X	63685		
	8	RI-DCAWR-014	2/15/05	1014	FW	1	250 mL amber					X					
	9	RI-DCAWR-015	2/15/05	1015	FW	1	250 mL amber					X					
	10	RI-HCALR-026	2/15/05	1622	FW	1	1-L HDPE	X	X	X							
W4	11	RI-HCALR-027	2/15/05	1623	FW	1	100 mL poly							X	63686		
	12	RI-HCALR-028	2/15/05	1624	FW	1	250 mL amber					X					
	13	RI-DCAWR -MS/MSD	2/15/05	1013	FW	1	250-mL amber					x					

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
RI-DCAWR-008 = Field Duplicate
RI-DCAWB-009 = Field Blank
RI-DCAWR -MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY

Signature:	[signature]
Print:	Mike McElroy
Organization:	PER
DATE:	2/15/05 TIME: 1645

RECEIVED BY

Signature:	
Print:	
Organization:	
DATE:	2-15-05 1805 TIME:

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

~~* Sample received past hold time~~ → ok - received w/in 24hr of collection TC 3/2/05

Copy of C-O-C RECEIVED by FOOD LAB

2)1186

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	DJ-PEDEL-044	2/15/05	1226	FW	1	1-L HDPE	x	x	x								
2	DJ-PEDEL-045DUP	2/15/05	1228	FW	1	250-mL amber					x						
* WW 3	DJ-PEDEL-045	2/15/05	1227	FW	1	100 mL poly							x	63687			
4	DJ-HDACA-074	2/15/05	1342	FW	1	1-L HDPE	x	x	x								
WW 5	DJ-HDACA-075	2/15/05	1345	FW	1	100 mL poly							x	63688			
6	DJ-HDACA-076	2/15/05	1344	FW	1	250 mL amber					x						
7																	
8																	
9																	
10																	
11																	
12																	
13	-MS/MSD			FW	1	250-mL amber					x						

REQUESTED ANALYSIS

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
_____ = Field Duplicate
_____ = Field Blank
-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELINQUISHED BY	
Signature:	
Print:	Mike McElroy
Organization:	PER
DATE:	2/15/05 TIME: 1645

RECEIVED BY	
Signature:	
Print:	
Organization:	
DATE:	2-15-05 TIME: 1805

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

~~*Sample received past hold time~~ ok RECEIVED w/IN 24hrs of Collection VG 3/24/05

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-

2005021233 02/17/2005
PACIFIC ECO TAT: Standard
217004

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	[illegible]
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	R1-MRSFD-020	2/16/05	532	FW	1	1-L HDPE	x	x	x								330915
2	R1-MRSFD-032	2/16/05	539	FW	1	250-mL amber					x						16
3	R1-MRSFD-027	2/16/05	833	FW	1	100 mL poly							x				17
4	R1-DSPGR-032	2/16/05	1502	FW	1	1-L HDPE	x	x	x								18
5	R1-DSPGP-024	2/16/05	1504	FW	1	250-mL Amber					x						19
6	R1-DMSAR-025	2/16/05	1703	FW	1	100 mL Poly							x				20
7	R1-ECRFD-050	2/16/05	1401	FW	1	1-L HDPE	x	x	x								21
8	R1-ECRBR-052	2/16/05	1355	FW	1	250 Amber					x						22
9	R1-ECRMC-051	2/16/05	1352	FW	1	100 mL Poly							x				23
10	R1-LWSMH-056	2/16/05	1502	FW	1	1-L HDPE	x	x	x								24
11	R1-LWSMH-058	2/16/05	1504	FW	1	250-mL Amber					x						25
12	R1-LWSMH-057	2/16/05	1503	FW	1	100 mL Poly							x				26
13	MS/MSD			FW	1	250-mL amber					x						27

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
_____ = Field Duplicate
_____ = Field Blank
-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY

Signature:	[signature]
Print:	Mike McFlow
Organization:	PER
DATE:	2/16/05 TIME: 7:25 PM

RECEIVED BY 02/16/05 1945 KR

Signature:	[signature]
Print:	
Organization:	BSK
DATE:	2/17/05 TIME: 0900

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

1 of 2

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-C

2005021233 02/17/2005
PACIFIC ECO TAT: Standard
217004

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	[illegible]
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	R1-DSPPR-060	2/16/05	1941	FW	1	1-L HDPE	x	x	x								
2	R1-DSPPR-060	2/16/05	1444	FW	1	250-mL amber					x						
3	R1-DSPPR-060	2/16/05	1645	FW	1	100 mL poly							x				
4	R1-DSPPR-060	2/16/05	1032	FW	1	1-L HDPE	x	x	x				No BOTTLE				
5	R1-DSPPR-060	2/16/05	1034	FW	1	250mL Poly					x						
6	R1-DSPPR-060	2/16/05	1033	FW	1	100 mL Poly							x				
7																	
8																	
9																	
10																	
11																	
12																	
13	55 *MS/MSD*			FW	1	250-mL amber					x						

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
_____ = Field Duplicate
_____ = Field Blank
-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

REQUESTED ANALYSIS

RELINQUISHED BY

Signature:	[signature]
Print:	Mike McElroy
Organization:	PER
DATE:	2/16/05 TIME: 7:25 PM

RECEIVED BY Collins 1945 KR

Signature:	[signature]
Print:	
Organization:	
DATE:	2/17/05 TIME: 0900

2 of 2

BSK ANALYTICAL LABORATORIES

1414 Stanislaus Street
Fresno, CA 93706-1623
(559) 497-2888, (800) 877-8310
FAX (559) 485-6935
www.bsklabs.com

TEMP:

2005021371 02/18/2005
PACIFIC ECO TAT: Standard
518069

Client Name	Report Attn:	Phone #	FAX #	E-mail:
PER		925-313-8080	925-313-8089	

Address	Project Name	Project #	Carbon Copies: (Check Box)
835 Arnold Dr, Suite 104 Mart	East San Joaquin Water Quality Coalition		CDHS ☐ FresnoCo ☐ EPA ☐ Merced Co ☐ Tulare Co ☐ Other:

City State Zip	Quote #	PO #	Rush Request (Circle One)	
Martinez, CA 94553			7Day 5Day 2Day 1Day	

Sampler Name Printed	Sampler Signature	QC Required (Circle One)	Regulatory Compliance
Mike McElroy		STD Level II Level III	Electronic Data Transfer: Y N System #

Matrix Types: RSW = Raw Surface Water CFW = Chlorinated Finished Water CWW = Chlorinated Waste Water BW = Bottled Water RGW = Raw Ground Water FW = Finished Water WW = Waste Water SW = Storm Water DW = Drinking Water SO = Solid

Sample #	# Btls	Date / Time Sampled	Sample Description/Location	Matrix	Comments / Station Code	Color	Turbidity	TDS
1	1	2/14/05 1032	RI-SJAQR-068	RSW	(1) 1L HDPE	X	X	X

Shaded areas lab use only

Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by (Signature and Print Name)	Company
Mike McElroy	PER	2/17/05	1600	Kathi Perry 02/18/05 1020	BSK-F
Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by (Signature and Print Name)	Company
Relinquished by: (Signature and Printed Name)	Company	Date	Time	Received by (Signature and Print Name)	Company
Received for lab by: (Signature and Printed Name) J. Morales BSK		02/18/05	1250	Payment Received at Delivery: Date: Amount: Check/Cash/Card PIA # Init.	

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

2005031377 03/22/2005
BSK C PACIFIC ECO TAT: Standard CORI
322014

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM / LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
561981	1 R2-MRSFD-014	3/21/05	1522	FW	1	1-L HDPE	x	x	x								56
561982	2 R2-MRSFD-020	3/21/05	1528	FW	1	250-mL amber					x						
561983	3 R2-MRSFD-017	3/21/05	1525	FW	1	100 mL poly							x	EQ		65293	
561984	4 R2-MRSFD-015	3/21/05	1523	FW	1	1-L HDPE	X	X	X								
562015	5 R2-MRSFD-016	3/21/05	1524	FW	1	1-L HDPE	X	X	X								
562016	6 R2-MRSFD-018	3/21/05	1526	FW	1	100mL poly							X	EQ		65294	
562017	7 R2-MRSFD-019	3/21/05	1528	FW	1	100mL poly							X	EQ		65295	
562018	8 R2-MRSFD-021	3/21/05	1529	FW	1	250 mL amber					X						
562019	9 R2-MRSFD-022	3/21/05	1530	FW	1	250 mL amber					X						
562020	10 R2-HCALR-028	3/21/05	~~1522~~ 1702	FW	1	1-L HDPE	X	X	X								
562021	11 R2-HCALR-029	3/21/05	~~1523~~ 1703	FW	1	100mL poly							X	EQ		65296	
562022	12 R2-HCALR-030	3/21/05	~~1524~~ 1704	FW	1	250 mL amber					X						
	13 R2-MRSFD-023 -MS/MSD	3/21/05	1531	FW	1	250-mL amber					x						

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

REQUESTED ANALYSIS

Comments:
R2-MRSFD-015 / R2-MRSFD-018 / R2-MRSFD-021 = Field Duplicate
R2-MRSFD-016 / R2-MRSFD-019 / R2-MRSFD-022 = Field Blank
R2-MRSFD-023 -MS/MSD = For BSK Internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELINQUISHED BY	
Signature:	
Print:	Mike McElroy
Organization:	PER
DATE:	3/21/05 TIME: 1915

RECEIVED BY	
Signature:	
Print:	
Organization:	
DATE:	3-21-05 TIME: 2035

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Sandy Baum 3/22 1005.

3/22 1005

1961 62 63 64 65 66 67 68 69 70 71 72 73

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-

2005031384 03/22/2005
PACIFIC ECO TAT: Standard
322016

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 180.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
60	1 R2-DSAGR-034	3/21/05	1102	FW	1	1-L HDPE	x	x	x								
62	2 R2-DSAGR-036	3/21/05	1104	FW	1	250-mL amber					x						
63	3 R2-DSAGR-035	3/21/05	1103	FW	1	100 mL poly							x	ZS	65308		
64	4 R2-CCART-052	3/21/05	717	FW	1	1-L HDPE	X	X	X								
65	5 R2-CCART-053	3/21/05	718	FW	1	100mL poly							X	ZK	65309		
66	6 R2-CCART-054	3/21/05	719	FW	1	250 mL amber					X						
67	7 R2-LWSMA-058	3/21/05	902	FW	1	1-L HDPE	X	X	X								
68	8 R2-LWSMA-059	3/21/05	903	FW	1	100mL poly							X	EL	65310		
69	9 R2-LWSMA-060	3/21/05	904	FW	1	250ml amber					X						
70	10 R2-DSAPR-064	3/21/05	1217	FW	1	1 L HDPE	X	X	X								
71	11 R2-DSAPR-065	3/21/05	1218	FW	1	100mL poly							X	EM	65311		
72	12 R2-DSAPR-066	3/21/05	1219	FW	1	250ML amber					X						
13	-MS/MSD			FW	1	250-mL amber					x						

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
= Field Duplicate
= Field Blank
-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY

Signature:	
Print:	Mike McElroy
Organization:	PER
DATE:	3/21/05 **TIME:** 1915

RECEIVED BY

Signature:	
Print:	
Organization:	
DATE:	3-21-05 **TIME:** 2035

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

3/22 1055

3/22 1055

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CH

2005031384 03/22/2005
PACIFIC ECO TAT: Standard **RI**
322016

TBY

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM / LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	**East San Joaquin Water Quality Coalition**
PO Number:	

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		*E. coli* (SM 9221 B)				
1	R2-BCAKR-088	3/21/05	1342	FW	1	1-L HDPE	x	x	x								
2	R2-BCAKR-090	3/21/05	1344	FW	1	250-mL amber					x						
3	R2-BCAKR-089	3/21/05	1343	FW	1	100 mL poly							x	ZB	65312		
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13	-MS/MSD			FW	1	250-mL amber					x						

62073
L 74
75

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

______ **= Field Duplicate**

______ **= Field Blank**

-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY

Signature:	[signature]		
Print:	Mike McElroy		
Organization:	PER		
DATE:	3/21/05	**TIME:**	1915

RECEIVED BY

Signature:	[signature]		
Print:			
Organization:			
DATE:	3-21-05	**TIME:**	2035

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Sandy Bacr fm 3/22 1003 [signature] 3/22/05

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OI

2005031690 03/25/2005
PACIFIC ECO TAT: Standard
325001

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	RZ-PFDCL-046	3.22.05	0926	FW	1	1-L HDPE	x	x	x								
2	RZ-PFDCL-048	3.22.05	0924	FW	1	250-mL amber					x						
3	RZ-PFDCL-047	3.22.05	0908	FW	1	100 mL poly							x	B 605383			
4	RZ-JDACL-070	3.22.05	1149	FW	1	1-L HDPE	x	x	x								
5	RZ-JDACL-072	3.22.05	1151	FW	1	250 mL amber					x						
6	RZ-JDACR-071	3.22.05	1150	FW	1	100 mL Poly							x	B 605384			
7	RZ-HDACA-076	3.22.05	0932	FW	1	1-L HDPE	x	x	x								
8	RZ-HDACA-074	3.22.05	0934	FW	1	~~250 mL amber~~					x						
9	RZ-HDACA-077	3.22.05	0933	FW	1	100 mL Poly							x	65534			
10	RZ-DCAWR-073	3.22.05	1322	FW	1	1-L HDPE	x	x	x								
11	RZ-DCAWR-075	3.22.05	1324	FW	1	250 mL amb.					x						
12	RZ-DCAWR-074	3.22.05	1323	FW	1	100 mL poly							x	B 605385			
13	~~MS/MSD~~			FW	1	~~250-mL amber~~					x						

5603476
71 72 73 74 75 76 77 78 79 80

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
= Field Duplicate
= Field Blank
-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELINQUISHED BY	
Signature:	
Print:	Lucas Wickham
Organization:	Pacific EcoRisk
DATE:	3/22/05 TIME: 1515
RECEIVED BY	
Signature:	
Print:	
Organization:	
DATE:	3.22.05 TIME: 1730

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

3/25/05 0730

322113

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY RECORD

2005031690

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		*E. coli* (SM 9221 B)				
1	RZ-PFDCL-046	3.22.05	0852	FW	1	1-L HDPE	x	x	x								
2	RZ-PFDCL-043	3.22.05	0804	FW	1	250-mL amber					x						
* 3	RZ-PFDCL-041	3.22.05	0808	FW	1	100 mL poly							x	053835			
4	RZ-JDAQA-070	3.22.05	1149	FW	1	1-L HDPE	x	x	x								
5	RZ-JDAQA-072	3.22.05	1151	FW	1	250 mL amber					x						
6	RZ-JDAQR-071	3.22.05	1150	FW	1	100 mL Poly							x	053854			
7	RZ-MDALA-076	3.22.05	0932	FW	1	1-L HDPE	x	x	x								
8	RZ-MDACA-074	3.22.05	0934	FW	1	~~250 mL amber~~					x						
9	RZ-MDACA-077	3.22.05	0933	FW	1	100 mL Poly							x				
10	RZ-DCAWR-003	3.22.05	1322	FW	1	1-L HDPE	x	x	x								
11	RZ-DCAWR-005	3.22.05	1324	FW	1	250 mL amb.					x						
12	RZ-DCAWR-004	3.22.05	1323	FW	1	100mL poly							x	053845			
13	~~MS/MSD~~			~~FW~~	~~1~~	~~250-mL amber~~					x						

REQUESTED ANALYSIS

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
_____ = Field Duplicate
_____ = Field Blank
-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY

Signature:	
Print:	Lucas Wickham
Organization:	Pacific EcoRisk
DATE:	03/22/05 TIME: 1515

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Signature:	
Print:	
Organization:	
DATE:	3.22.05 TIME: 1730

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

← Did not receive

* Lab Error; Sample missed

*sample received past hold time

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OI 2005031690 PACIFIC ECO 325001 03/25/2005 TAT: Standard

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	R2-PFDCL-046	3.22.05	0802	FW	1	1-L HDPE	x	x	x								
2	R2-PFDCL-045	3.22.05	0804	FW	1	250-mL amber					x						
3	R2-PFDC2-047	3.22.05	0803	FW	1	100 mL poly							x				
4	R2-JDAC2-070	3.22.05	1149	FW	1	1-L HDPE	x	x	x								
5	R2-JDAC2-072	3.22.05	1151	FW	1	250 mL amber					x						
6	R2-JDACR-071	3.22.05	1150	FW	1	100 mL Poly							x				
7	R2-HDACA-076	3.22.05	0932	FW	1	1-L HDPE	x	x	x								
8	R2-HDACA-075	3.22.05	0934	FW	1	~~250 mL amber~~					x						
* 9	R2-HDACA-077	3.22.05	0933	FW	1	100 mL Poly							x				
10	R2-DCAWR-073	3.22.05	1322	FW	1	1-L HDPE	x	x	x								
11	R2-DCAWR-075	3.22.05	1324	FW	1	250-mL amb.					x						
12	R2-DCAWR-074	3.22.05	1323	FW	1	100 mL poly							x				
13	~~MS/MSD~~			FW	1	~~250-mL amber~~					x						

REQUESTED ANALYSIS

65534 * Bottle crack upon Return to Food Lab - Transfer to new Bott SP

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
_____ = Field Duplicate
_____ = Field Blank
-MS/MSD = For BSK internal Matrix Spike/Matrix
Spike Duplicate (do not invoice)

RELIQUINSHED BY

Signature:	
Print:	Lucas Wickham
Organization:	Pacific EcoRisk
DATE:	03/22/05 TIME: 1515

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Signature:	
Print:	
Organization:	
DATE:	3-22-05 TIME: 1730

9:42
03/25/05 0940 SP

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

: Lab Error: Sample Missed on 03/22/05 - Chem lab sent sample

3/25/05 0780

2005050750 05/11/2005
PACIFIC ECO TAT: Standard
511041

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CU[STODY]

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

REQUESTED ANALYSIS

#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)			
1	04-CCART-007	5/10/05	0707	FW	1	1-L HDPE	x	x	x			5	8/10	58	58	
2	04-CCART-008	5/10/05	0709	FW	1	1-L HDPE	x	x	x					60	59	
3	04-CCART-009	5/10/05	0709	FW	1	1-L HDPE	x	x	x					61	60	
4	04-LWSMA-022	5/10/05	0942	FW	1	1-L HDPE	x	x	x					62	61	
~~5~~	~~04-ASATA-020~~			~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~							
5	04-DSAGR-036	5/10/05	1212	FW	1	1-L HDPE	x	x	x					63	62	
6	04-DSAPR-043	5/10/05	1332	FW	1	1-L HDPE	x	x	x					64	63	
7	04-BCAKR-050	5/10/05	1547	FW	1	1-L HDPE	x	x	x					65	64	
9	~~04-MRSFD-057~~			~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~							
8	04-HCALR-064	5/10/05	1732	FW	1	1-L HDPE	x	x	x					66	65	
11	~~04-PFDCL-071~~			~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~							

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-008= Field duplicate
04-CCART-009 = Field blank
9 ~~04-HCHNN-85 05/10/05 1822~~ 5/10/05
~~Extras~~

RELIQUINSHED BY

Signature:	[signature]
Print:	Lucas Wickham
Organization:	Pacific EcoRisk
DATE:	5/10/05 TIME: 1840

RECEIVED BY

Signature:	[signature]
Print:	[signature]
Organization:	BSK
DATE:	05/11/05 TIME: 0900

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

2005 05 0751

BSK CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		*E. coli* (SM 9221 B)				
1	~~04-HDACA-078~~			FW	1	1-L HDPE	x	x	x								
2	04-HCHNN-085	5/10/05	1822	FW	1	1-L HDPE	x	x	x					58	10	67	
3	~~04-JDAOR-092~~			FW	1	1-L HDPE	x	x	x								
4	~~04-DCAWR-099~~			FW	1	1-L HDPE	x	x	x								
5	04-CCART-010	5/10/05	0710	FW	1	100 mL poly							x	58	10	68	
6	**04-CCART-011**	5/10/05	0711	FW	1	100 mL poly							x	58	106	9	
7	AD **04-CCART-012**	5/10/05	0712	FW	1	100 mL poly							x	58	107	0	
8	04-LWSMA-023	5/10/05	0943	FW	1	100 mL poly							x	58	107	1	
9	~~04-ASATA-030~~			FW	1	100 mL poly							x				
10	04-DSAGR-037	5/10/05	1213	FW	1	100 mL poly							x	58	107	2	
11	AE 04-DSAPR-044	5/10/05	1333	FW	1	100 mL poly							x	58	107	3	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-011= Field duplicate
04-CCART-012 = Field blank

RELIQUINSHED BY

Signature:	B for RK Wilkins
Print:	Lucas Wickham
Organization:	Pacific EcoRisk
DATE:	5/10/05 **TIME:** 1840

RECEIVED BY

Signature:	
Print:	
Organization:	
DATE:	5-10-05 2100 **TIME:**

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
836 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CU

2005050751 05/11/2005
PACIFIC ECO TAT: Standard
511049

Client Name:	Pacific EcoRisk
Client Address:	836 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	SS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	TOC (SM 5310 C)	*E. coli* (SM 9221 B)	REQUESTED ANALYSIS
1	04-FTDACA-078	5/10/05	1322	FW	1	1-L HDPE	x	x	x		x	
2	04-HOHNN-085	5/10/05	1322	FW	1	1-L HDPE	x	x	x		x	
3	04-DOAKR-092			FW	1	1-L HDPE	x	x	x		x	
4	04-DOAWR-099			FW	1	1-L HDPE	x	x	x		x	
5	04-CCART-010	5/10/05	0710	FW	1	100 mL poly					x	
6	04-CCART-011	5/10/05	0714	FW	1	100 mL poly					x	
7	04-CCART-012	5/10/05	0712	FW	1	100 mL poly					x	
8	04-LWSMA-023	5/10/05	0943	FW	1	100 mL poly					x	
9	04-ASANA-080			FW	1	100 mL poly					x	
10	04-DSAGR-037	5/10/05	1213	FW	1	100 mL poly					x	
11	04-DSAPR-044	5/10/05	1333	FW	1	100 mL poly					x	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-011= Field duplicate
04-CCART-012 = Field blank

RELINQUISHED BY			
Signature:			
Print:	Lucas Wickham		
Organization:	Pacific EcoRisk		
DATE:	5/10/05	TIME:	1840

RECEIVED BY			
Signature:			
Print:			
Organization:			
DATE:	5-10-05	TIME:	2000

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-C

2005050880 05/11/2005
PACIFIC ECO TAT: Standard
511044

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	SS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)					
1	04-CCART-MS/MSD	5/10/05	0716	FW	1	250 mL amber					x		5B1603					
2	04-LWSMA-024	5/10/05	0944	FW	1	250 mL amber					x		↓ 60					
3	~~04-ASATA-031~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~							
4	04-DSAGR-038	5/10/05	1214	FW	1	250 mL amber					x		5B1606					
5	04-DSAPR-045	5/10/05	1334	FW	1	250 mL amber					x		↓ 62					
6	04-BCAKR-052	5/10/05	1549	FW	1	250 mL amber					x		↓ 63					
7	~~04-MRSFD-059~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~							
8	04-HCALR-066	5/10/05	1734	FW	1	250 mL amber					x		5B1604					
9	~~04-PEDCL-073~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~							
10	~~04-HDACA-080~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~							
6	04-HCHNN-087	5/10/05	1824	FW	1	250 mL amber					x		5B1621					

REQUESTED ANALYSIS

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-014= Field duplicate
04-CCART-015 = Field blank
04-CCART-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY

Signature:			
Print:	Lucas Wickham		
Organization:	Pacific Eco Risk		
DATE:	5/10/05	TIME:	1840

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Signature:			
Print:			
Organization:	BSK		
DATE:	05-11-05	TIME:	0911

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

2005050904 05/12/2005
PACIFIC ECO TAT: Standard
512024

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8086

BSK CHAIN-OF-C

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	TOC (SM 5310 C)	E. coli (SM 9221 B)	REQUESTED ANALYSIS
1	04-HDACA-078	5/11/05	407	FW	1	1-L HDPE	x	x	x			587049
2	~~04-HCHNN-085~~			~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~			
3	04-JDAOR-092	5/11/05	1382	FW	1	1-L HDPE	x	x	x			50
4	04-DCAWR-099	5/11/05	1517	FW	1	1-L HDPE	x	x	x			51
5	~~04-CCART-010~~			~~FW~~	~~1~~	~~100 mL poly~~					~~x~~	
6	~~04-CCART-011~~			~~FW~~	~~1~~	~~100 mL poly~~					~~x~~	
7	~~04-CCART-012~~			~~FW~~	~~1~~	~~100 mL poly~~					~~x~~	
8	~~04-LWSMA-023~~			~~FW~~	~~1~~	~~100 mL poly~~					~~x~~	
9	~~04-ASATA-030~~			~~FW~~	1	100 mL poly					~~x~~	
10	~~04-DSAGR-037~~			~~FW~~	~~1~~	~~100 mL poly~~					~~x~~	
11	~~04-DSAPR-044~~			~~FW~~	~~1~~	~~100 mL poly~~					~~x~~	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-011= Field duplicate
04-CCART-012 = Field blank

RELINQUISHED BY

Signature:	
Print:	JOHN SCHWALBE
Organization:	PER
DATE:	5/11/05 TIME: 1650

RECEIVED BY

Signature:	
Print:	Julio Morales
Organization:	BSK
DATE:	05/12/05 TIME: 0830

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-

2005050904 05/12/2005
PACIFIC ECO TAT: Standard
512024

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	~~04-CCART-007~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
2	~~04-CCART-008~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
3	~~04-CCART-009~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
4	~~04-LWSMA-022~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
5	~~04-ASATA-029~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
6	~~04-DSAGR-036~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
7	~~04-DSAPR-043~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
8	~~04-BCAKR-050~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
9	04-MRSFD-057	5/11/05	1222	FW	1	1-L HDPE	x	x	x								581752
10	~~04-HCALR-064~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
11	04-PFDCL-071	5/11/05	1612	FW	1	1-L HDPE	x	x	x								581753

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-008= Field duplicate
04-CCART-009 = Field blank

REQUESTED ANALYSIS

RELIQUINSHED BY

Signature:	
Print:	JOHN SCHWALBE
Organization:	PER
DATE:	5/11/05 TIME: 1650

RECEIVED BY

Signature:	
Print:	Julie Morales
Organization:	BSK
DATE:	05/12/05 TIME: 0630

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN

2005050935 05/12/2005
PACIFIC ECO TAT: Standard
512025

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	TOC (SM 5310 C)	E. coli (SM 9221 B)
1	~~04-CCART-MS/MSD~~			~~FW~~	~~1~~	~~250 mL amber~~				x	
2	~~04-LWSMA-024~~			~~FW~~	~~1~~	~~250 mL amber~~				x	
3	~~04-ASATA-031~~			~~FW~~	~~1~~	~~250 mL amber~~				x	
4	~~04-DSAGR-038~~			~~FW~~	~~1~~	~~250 mL amber~~				x	
5	~~04-DSAPR-045~~			~~FW~~	~~1~~	~~250 mL amber~~				x	
6	~~04-DOAKR-052~~			~~FW~~	~~1~~	~~250 mL amber~~				x	
7	04-MRSFD-059	5/11/05	1224	FW	1	250 mL amber				x	
8	~~04-HOALR-066~~			~~FW~~	~~1~~	~~250 mL amber~~				x	
9	04-PFDCL-073	5/11/05	1014	FW	1	250 mL amber				x	
10	04-HDACA-080	5/11/05	1109	FW	1	250 mL amber				x	
11	~~04-HCHNN-087~~			~~FW~~	~~1~~	~~250 mL amber~~				x	

REQUESTED ANALYSIS

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-014= Field duplicate
04-CCART-015 = Field blank
04-CCART-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELIQUINSHED BY	
Signature:	
Print:	JOHN SCHWALBE
Organization:	PER
DATE:	5/11/05 TIME: 1650

RECEIVED BY	
Signature:	
Print:	Julio Morales
Organization:	BSK
DATE:	05/12/05 TIME: 0830

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

5

2005050935 05/12/2005
PACIFIC ECO TAT: Standard
512025

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-C

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	04-JDAOR-094	5/11/05	1354	FW	1	250 mL amber				x		B601005				
2	04-DCAWR-101	5/11/05	1519	FW	1	250 mL amber				x		L01				
3																
4																
5																
6																
7																
8																
9																
10																
11																

REQUESTED ANALYSIS

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELIQUINSHED BY

Signature:	
Print:	JOHN SCHWALBE
Organization:	PER
DATE:	5/11/05 TIME: 1650

RECEIVED BY

Signature:	
Print:	Julie Morales
Organization:	BSK
DATE:	05/12/05 TIME: 0830

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
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(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUS

2005050773 05/11/2005
PACIFIC ECO TAT: Standard
511050

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
AA 1	04-BCAKR-051	5/10/05	1548	FW	1	100 mL poly	58170						x		B# 68207		
2	~~04-MRSFD-058~~			~~FW~~	~~1~~	~~100 mL poly~~							~~x~~				
AB 3	04-HCALR-065	5/10/05	1733	FW	1	100 mL poly	58171						x			208	
4	~~04-RFDGL-072~~			~~FW~~	~~1~~	~~100 mL poly~~							x			~~209~~ VOID	
5	~~04-HDACA-079~~			~~FW~~	~~1~~	~~100 mL poly~~							x			210	
AC 6	04-HCHNN-086	5/10/05	1823	FW	1	100 mL poly		58172					x				
7	~~04-JDACR-093~~			~~FW~~	~~1~~	~~100 mL poly~~							~~x~~				
8	~~04-DCAWR-100~~			~~FW~~	~~1~~	~~100 mL poly~~							x				
AD 9	04-CCART-013	5/10/05	0713	FW	1	250 mL amber		58173			x						
10	04-CCART-014	5/10/05	0714	FW	1	250 mL amber		74			x						
11	04-CCART-015	5/10/05	0715	FW	1	250 mL amber		75			x						

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
04-CCART-014= Field duplicate
04-CCART-015 = Field blank

RELIQUINSHED BY

Signature:	[signature]
Print:	Lucas Wickham
Organization:	Pacific EcoRisk
DATE:	5/10/05 TIME: 1840

RECEIVED BY

Signature:	[signature]
Print:	
Organization:	
DATE:	5-10-05 2000 TIME:

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

[signature] 5/11/05 0900

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
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(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTOI

2005061147 06/15/2005
PACIFIC ECO TAT: Standard
615103

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M.M. LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	05-PFDCL-064	6.15.05	1324	FW	1	250 mL amber					x						01
2	05-HDACA-068	6.15.05	1232	FW	1	1-L HDPE	x	x	x								02
CK 3	05-HDACA-069	6.15.05	1235	FW	1	100 mL poly							x	70586			00
4	05-HDACA-070	6.15.05	1234	FW	1	250 mL amber					x						01
5	05-HCHNN-074	6.15.05	1142	FW	1	1-L HDPE	x	x	x								03
CL 6	05-HCHNN-075	6.15.05	1143	FW	1	100 mL poly							x	70587			03
7	05-HCHNN-076	6.15.05	1149	FW	1	250 mL amber					x						04
8	05-JDAOR-080	6.15.05	0932	FW	1	1-L HDPE	x	x	x								05
SS 9	05-JDAOR-081	6.15.05	0933	FW	1	100 mL poly							x	70588			06
10	05-JDAOR-082	6.15.05	0931	FW	1	250 mL amber					x						07
11																	

REQUESTED ANALYSIS

Correct Containers:	Yes	No		
Sample Temperature:	Ambient	Cold	Warm	
Sample Preservative:	Yes	No		
Turnaround Time:	STD	Specify:		

Comments:

RELIQUINSHED BY

Signature:	
Print:	Lucas Wickham
Organization:	PER
DATE:	6.15.05 **TIME:** 1450

RECEIVED BY

Signature:	
Print:	Katrina Charles
Organization:	BSK
DATE:	6/15/05 **TIME:** 1600

6/15/05 2010

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

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835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY

2005061147 06/15/2005
PACIFIC ECO TAT: Standard
615103

06/15/2005 WED 16:36 FAX 559 277 6969 BSK FOOD & DAIRY LABS →→→ BSK LOGIN 003/004

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	05-PFDCL-064	6-15-05	1324	FW	1	250 mL amber					x						
2	05-HDACA-068	6-15-05	1232	FW	1	1-L HDPE	x	x	x								
CK 3	05-HDACA-069	6-15-05	1233	FW	1	100 mL poly							x				B# 705866
4	05-HDACA-070	6-15-05	1234	FW	1	250 mL amber					x						
5	05-HCHNN-074	6-15-05	1142	FW	1	1-L HDPE	x	x	x								
CL 6	05-HCHNN-075	6-15-05	1143	FW	1	100 mL poly							x				B# 705867
7	05-HCHNN-076	6-15-05	1144	FW	1	250 mL amber					x						
8	05-JDAOR-080	6-15-05	0932	FW	1	1-L HDPE	x	x	x								
CS 9	05-JDAOR-081	6-15-05	0933	FW	1	100 mL poly							x				B# 705868
10	05-JDAOR-082	6-15-05	0934	FW	1	250 mL amber					x						
11																	

REQUESTED ANALYSIS

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELIQUINSHED BY			
Signature:	[signature]		
Print:	Lucas Wickham		
Organization:	PER		
DATE:	6-15-05	TIME:	1450

RECEIVED BY			
Signature:	Katrina Charles		
Print:	Katrina Charles		
Organization:	BSK		
DATE:	06/15/05	TIME:	1602

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY

2005061148 06/15/2005
PACIFIC ECO TAT: Standard
615102

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	TOC (SM 5310 C)	*E. coli* (SM 9221 B)
1	05-DCAWR-086	6-15-05	0902	FW	1	1-L HDPE	x	x	x		x
2	05-DCAWR-087	6-15-05	0903	FW	1	100 mL poly					
3	05-DCAWR-088	6-15-05	0904	FW	1	250 mL amber				x	
4											
5											
6											
7											
8											
9											
10											
11											

REQUESTED ANALYSIS

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELINQUISHED BY

Signature:	
Print:	Lucas Wickham
Organization:	PER
DATE:	6-15-05
TIME:	1457

RECEIVED BY

Signature:	Katrina Chanda
Print:	Katrina Chanda
Organization:	BSK
DATE:	06/15/05
TIME:	1600

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

06/15/2005 WED 16:36 FAX 559 277 6969 BSK FOOD & DAIRY LABS →→ BSK LOGIN 004/004

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTO

2005061148 06/15/2005
PACIFIC ECO TAT: Standard
615102

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	SM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		*E. coli* (SM 9221 B)				
							REQUESTED ANALYSIS										
1	05-DCAWR-086	6.15.05	0802	FW	1	1-L HDPE	x	x	x								
2	05-DCAWR-087	6.15.05	0803	FW	1	100 mL poly							x	70589			
3	05-DCAWR-088	6.15.05	0804	FW	1	250 mL amber					x						
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELIQUINSHED BY			
Signature:			
Print:	Lucas Wickham		
Organization:	PER		
DATE:	6.15.05	**TIME:**	1450
RECEIVED BY			
Signature:			
Print:			
Organization:	BSK		
DATE:	06/15/05	**TIME:**	1600

6/15/05 2000

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTOD

2005061149 06/15/2005
PACIFIC ECO TAT: Standard
615101

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		*E. coli* (SM 9221 B)				
1	~~05-DSAGR-023~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
2	~~05-DSAPR-027~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
3	~~05-DSAPR-028~~			~~FW~~	~~1~~	~~100 mL poly~~							x				
4	~~05-DSAPR-029~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
5	~~05-BCAKR-033~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
6	~~05-BCAKR-034~~			~~FW~~	~~1~~	~~100 mL poly~~							x				
7	~~05-BCAKR-035~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
8	05-MRSFD-039	6-15-05	1057	FW	1	1-L HDPE	x	x	x								
9	05-MRSFD-040	6-15-05	1038	FW	1	100 mL poly							x		70590		
10	05-MRSFD-041	6-15-05	1059	FW	1	250 mL amber					x						
11	05-HCALR-049			FW	1	1-L HDPE	x	x	x				No sample rec'd				

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELINQUISHED BY

Signature:	[signature]
Print:	Lucas Wickham
Organization:	PER
DATE:	6-15-05 TIME: 1450

RECEIVED BY

Signature:	[signature]
Print:	Katrina Charles
Organization:	BSK
DATE:	6/15/05 TIME: 1612

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

[signature] 6/15/05 ~~1600~~ 20:00

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUST(

2005061150 06/15/2005
PACIFIC ECO TAT: Standard
615100

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	~~05-HCALR-050~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
2	~~05-HCALR-051~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
3	~~05-HCALR-052~~			~~FW~~	~~1~~	~~100 mL poly~~							x				
4	~~05-HCALR-053~~			~~FW~~	~~1~~	~~100 mL poly~~							x				
5	~~05-HCALR-054~~			~~FW~~	~~1~~	~~100 mL poly~~							x				
6	~~05-HCALR-055~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
7	~~05-HCALR-056~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
8	~~05-HCALR-057~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
9	~~05-HCALR-MS/MSD~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
10	05-PFDCL-062	6.15.05	1322	FW	1	1-L HDPE	x	x	x					5649	919		
11	05-PFDCL-063	6.15.05	1323	FW	1	100 mL poly							x	5651	1926		

CJ

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
05-HCALR-050/053/056= Field duplicate
05-HCALR-051/054/057 = Field blank
05-HCALR-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

REQUESTED ANALYSIS

RELIQUINSHED BY

Signature:	
Print:	Lucas Wickham
Organization:	PER
DATE:	6.15.05 TIME: 1450

RECEIVED BY

Signature:	Katrina Charles
Print:	Katrina Charles
Organization:	BSK
DATE:	06/15/05 TIME: 1600

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

06/15/05 20:00

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8060 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY

2005061150 06/15/2005
PACIFIC ECO TAT: Standard
615100

06/15/2005 WED 16:36 FAX 559 277 6969 BSK FOOD & DAIRY LABS ++ BSK LOGIN 002/004

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)		TOC (SM 5310 C)		E. coli (SM 9221 B)				
1	~~05-HCALR-050~~			~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~								
2	~~05-HCALR-051~~			~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~								
3	~~05-HCALR-052~~			~~FW~~	~~1~~	~~100 mL poly~~							x	~~DH 705430~~			
4	~~05-HCALR-053~~			~~FW~~	~~1~~	~~100 mL poly~~							x	~~DH 70594~~			
5	~~05-HCALR-054~~			~~FW~~	~~1~~	~~100 mL poly~~							x	~~DH 70595~~			
6	~~05-HCALR-055~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~						
7	~~05-HCALR-056~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~						
8	~~05-HCALR-057~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~						
9	~~05-HCALR-MS/MSD~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~						
10	05-PFOCL-062	6.15.05	1322	FW	1	1-L HDPE	x	x	x								
11	05-PFOCL-063	6.15.05	1323	FW	1	100 mL poly							x	DH 70597			

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
05-HCALR-050/053/056= Field duplicate
05-HCALR-051/054/057 = Field blank
05-HCALR-MS/MSD = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

RELINQUISHED BY	
Signature:	
Print:	Lucas Wickham
Organization:	PER
DATE:	6.15.05
TIME:	1450

RECEIVED BY	
Signature:	
Print:	Katrina Charles
Organization:	BSK
DATE:	06/15/05
TIME:	1600

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

-1.3038

2005070820
PACIFIC ECO
713038

07/13/2005
TAT: Standard

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104 Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTOD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)							
1	06-CCART-003	7-12-05	0807	FW	1	1-L HDPE	x	x	x									60 62 63
2	06-CCART-004	7-12-05	0808	FW	1	100 mL poly				x		FH	72420					64
3	06-CCART-005	7-12-05	0809	FW	1	250 mL amber					x							65
4	06-LWSMA-010	7-12-05	0922	FW	1	1-L HDPE	x	x	x									66
5	06-LWSMA-011	7-12-05	0923	FW	1	100 mL poly				x		FI	72421					67
6	06-LWSMA-012	7-12-05	0924	FW	1	250 mL amber					x							68
7	06-ASATA-018	7-12-05	1057	FW	1	1-L HDPE	x	x	x									69
8	06-ASATA-019	7-12-05	1058	FW	1	100 mL poly				x		FJ	72421					70
9	06-ASATA-020	7-12-05	1059	FW	1	250 mL amber					x							71
10	06-DSAGR-025	7-12-05	1227	FW	1	1-L HDPE	x	x	x									72
11	06-DSAGR-026	7-12-05	1228	FW	1	100 mL poly				x		FK	72422					73
12	06-DSAGR-027	7-12-05	1229	FW	1	250 mL amber					x							74

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY

Signature:	[signature]	**Signature:**	[signature]
Print:	Lucas Wickham	**Print:**	DOUG RICHARDS
Organization:	PER	**Organization:**	Ex MICE
DATE:	7-12-05	**TIME:**	1700

RECEIVED BY

Signature:	[signature]	**Signature:**	[signature]
Print:	DOUG RICHARDS	**Print:**	Katrina Charles
Organization:	Ex MICE	**Organization:**	BSK
DATE:	7-12-05	**TIME:**	1830

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Fed Ex

7/13/05 1000

2 of 3

BSK CHAIN-OF-CUSTOD

2005070820 07/13/2005
PACIFIC ECO TAT: Standard
713038

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)			
13	06-DSAPR-032	7.12.05	1342	FW	1	1-L HDPE	x	x	x			FL	72423	76
14	06-DSAPR-033	7.12.05	1343	FW	1	100 mL poly				x				77
15	06-DSAPR-034	7.12.05	1344	FW	1	250 mL amber					x			78
16	06-BCAKR-039	7.12.05	1437	FW	1	1-L HDPE	x	x	x			FM	72424	79
17	06-BCAKR-040	7.12.05	1438	FW	1	100 mL poly				x				80
18	06-BCAKR-041	7.12.05	1439	FW	1	250 mL amber					x			
	~~06-MRSED-046~~			FW	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~					
	~~06-MRSED-047~~			FW	~~1~~	~~100 mL poly~~				~~x~~				
	~~06-MRSED-048~~			FW	1	250 mL amber					~~x~~			
	~~06-HCALR-053~~			FW	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~					
	~~06-HCALR-054~~			FW	~~1~~	~~100 mL poly~~				~~x~~				
	~~06-HCALR-055~~			FW	~~1~~	~~250 mL amber~~					~~x~~			

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

RELINQUISHED BY

Signature:		Signature:	
Print:	Lucas Wickham	Print:	DOUG RICHARDS
Organization:	PER	Organization:	Ex MILE
DATE:	7.12.05	TIME: 1700	DATE: 7-12-05 TIME: 1700

RECEIVED BY

Signature:		Signature:	katrina charles
Print:	DOUG RICHARDS	Print:	katrina charles
Organization:	Ex MILE	Organization:	BSK
DATE:	7-12-05	TIME: ~~1550~~ 1530	DATE: 07/12/05 TIME: 1830

1530 DR

Food Lab 7/12/05 1800

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

3 of 3

BSK CHAIN-OF-CUSTODY

2005070820 07/13/2005
PACIFIC ECO TAT: Standard
713038

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	8466

REQUESTED ANALYSIS

#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)							
1	~~06-PFDOL-060~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x									
2	~~06-PFDOL-061~~			~~FW~~	~~1~~	~~100 mL poly~~				x								
3	~~06-PFDOL-062~~			~~FW~~	~~1~~	~~250 mL amber~~					x							
4	~~06-HDAOA-067~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x									
5	~~06-HDAOA-068~~			~~FW~~	~~1~~	~~100 mL poly~~				x								
6	~~06-HDAOA-069~~			~~FW~~	~~1~~	~~250 mL amber~~					x							
7	~~06-HCHNN-074~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x									
8	~~06-HCHNN-075~~			~~FW~~	~~1~~	~~100 mL poly~~				x								
9	~~06-HCHNN-076~~			~~FW~~	~~1~~	~~250 mL amber~~					x							
10	19 06-JDAOR-081	7-12-05	1552	FW	1	1-L HDPE	x	x	x									606881
11	20 06-JDAOR-082	7-12-05	1553	FW	1	100 mL poly				x		FN		72425				82
12	21 06-JDAOR-083	7-12-05	1554	FW	1	250 mL amber					x							83

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY

Signature: [signature]	Signature: [signature]
Print: Lucas Wickham	Print: Doug Richards
Organization: PER	Organization: Ex MILE
DATE: 7-12-05 TIME: 1700	DATE: 7-12-05 TIME: 1700

RECEIVED BY

Signature: [signature]	Signature: Katrina Charles
Print: Doug Richards	Print: Katrina Charles
Organization: Ex MLE	Organization: BSK
DATE: 7-12-05 TIME: 1830	DATE: 07/12/05 TIME: 1830

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

FoodLab [signature] 1800

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY

2005070898 07/13/2005
PACIFIC ECO TAT Standard
713115

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)	REQUESTED ANALYSIS
1	06-PFDCL-060	7/13/05	734	FW	1	1-L HDPE	x	x	x			6006229
2	06-PFDCL-061	7/13/05	735	FW	1	100 mL poly				x		30 15 72546
3	06-PFDCL-062	7/13/05	736	FW	1	250 mL amber					x	31
4	06-HDACA-067	7/13/05	837	FW	1	1-L HDPE	x	x	x			32
5	06-HDACA-068	7/13/05	838	FW	1	100 mL poly				x		33 72546
6	06-HDACA-069	7/13/05	839	FW	1	250 mL amber					x	34
7	06-HCHNN-074	7/13/05	959	FW	1	1-L HDPE	x	x	x			35
8	06-HCHNN-075	7/13/05	1000	FW	1	100 mL poly				x		36 72546
9	06-HCHNN-076	7/13/05	1001	FW	1	250 mL amber					x	37
10	~~06-JDAQR-081~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x			
11	~~06-JDAQR-082~~			~~FW~~	~~1~~	~~100 mL poly~~				x		~~72547~~
12	~~06-JDAQR-083~~			~~FW~~	~~1~~	~~250 mL amber~~					x	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY		RECEIVED BY	
Signature:		Signature:	
Print:	JOHN SCHWABE	Print:	DOUG RICHARDS
Organization:	PER	Organization:	EX MLF
DATE:	7/13/05 TIME: 1515	DATE:	7-13-05 TIME: 1515
RELINQUISHED BY		RECEIVED BY	
Signature:		Signature:	
Print:	DOUG RICHARDS	Print:	JACOB SCHULTE
Organization:	EX MLF	Organization:	BSK ~~BOJABS~~
DATE:	7-13-05 TIME: 1635	DATE:	7/13/05 TIME: 1635

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

7/13/05 1144

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY

2005070898 07/13/2005
PACIFIC ECO
713115 TAT: Standard

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	LW, JS
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)	REQUESTED ANALYSIS
1	~~06-DSAPR-032~~			FW	1	1-L HDPE	x	x	x			
2	~~06-DSAPR-033~~			FW	1	100 mL poly				x		
3	~~06-DSAPR-034~~			FW	1	250 mL amber					x	
4	~~06-BCAKR-039~~			FW	1	1-L HDPE	x	x	x			
5	~~06-BCAKR-040~~			FW	1	100 mL poly				x		
6	~~06-BCAKR-041~~			FW	1	250 mL amber					x	
7	06-MRSFD-046	7/13/05	1302	FW	1	1-L HDPE	x	x	x			606238 47
8	06-MRSFD-047	7/13/05	1303	FW	1	100 mL poly				x		39
9	06-MRSFD-048	7/13/05	1304	FW	1	250 mL amber					x	40 ~~7-25-05~~ 48 7/13
10	06-HCALR-053	7/13/05	1135	FW	1	1-L HDPE	x	x	x			41
11	06-HCALR-054	7/13/05	1136	FW	1	100 mL poly				x		42
12	06-HCALR-055	7/13/05	1137	FW	1	250 mL amber					x	43 ~~7-25-05~~ 48

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY		RELINQUISHED BY	
Signature:		Signature:	
Print:	JOHN SCHWABE	Print:	DOUG RICHARDS
Organization:	PER	Organization:	EA MILE
DATE:	7/13/05 TIME: 1575	DATE:	7-13-05 TIME: 1575
RECEIVED BY		**RECEIVED BY**	
Signature:		Signature:	
Print:	EA MILE	Print:	JACOB SCHULTE
Organization:	DOUG RICHARDS	Organization:	BSK LABS
DATE:	7-13-05 TIME: 1635	DATE:	7/13/05 TIME: 1635

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

7/13/05 1644

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY I

2005070898 07/13/2005
PACIFIC ECO TAT: Standard
713115

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	LW, JS
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)					
							REQUESTED ANALYSIS									
1	06-DCAWR-088	7/13/05	1407	FW	1	1-L HDPE	x	x	x				12549	606	725	
2	06-DCAWR-089	7/13/05	1408	FW	1	100 mL poly				x			12550		45	
3	06-DCAWR-090	7/13/05	1409	FW	1	250 mL amber					x				46	
4																
5																
6																
7																
8																
9																
10																
11																
12																

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:		Signature:	
Print:	JOHN SCHWALBE	Print:	DOUG RICHARDS
Organization:	PER	Organization:	EX MLE
DATE:	7/13/05 TIME: 1575	DATE:	7-17-05 TIME: 1515

RECEIVED BY			
Signature:		Signature:	
Print:	DOUG RICHARDS	Print:	JACOB SCHULTZ
Organization:	EX MLE	Organization:	BSK LABS
DATE:	7-13-05 TIME: 1635	DATE:	7/13/05 TIME: 1635

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

7/13/05 1647

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CU

2005081494 08/17/2005
PACIFIC ECO TAT: Standard
817105

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matric*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)	
1	07-545XCCART-GR	8.16.05	0800	FW	1	1-L HDPE	x	x	x			
2	07-545XCCART-GR	8.16.05	0800	FW	1	100 mL poly				x		B45017
3	07-545XCCART-GR	8.16.05	0800	FW	1	250 mL amber					x	
4	07-545XASAAT-GR	8.16.05	1040	FW	1	1-L HDPE	x	x	x			
5	07-545XASAAT-GR	8.16.05	1040	FW	1	100 mL poly				x		B45018
6	07-545XASAAT-GR	8.16.05	1040	FW	1	250 mL amber					x	
7	07-535XDSAGR-GR	8.16.05	1215	FW	1	1-L HDPE	x	x	x			
8	07-535XDSAGR-GR	8.16.05	1215	FW	1	100 mL poly				x		B45019
9	07-535XDSAGR-GR	8.16.05	1215	FW	1	250 mL amber					x	
10	07-535XDSAPR-GR	8.16.05	1330	FW	1	1-L HDPE	x	x	x			
11	07-535XDSAPR-GR	8.16.05	1330	FW	1	100 mL poly				x		B45020
12	07-535XDSAPR-GR	8.16.05	1330	FW	1	250 mL amber					x	

REQUESTED ANALYSIS

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY			
Signature:	Eddie Kalombo	Signature:	Doug Richards
Print:	EDDIE KALOMBO	Print:	DOUG RICHARDS
Organization:	PER	Organization:	EP MILE
DATE:	8-16-05 TIME: 1800	DATE:	8-16-05 TIME: 1800

RECEIVED BY			
Signature:	Doug Richards	Signature:	Wendy Byrd
Print:	DOUG RICHARDS	Print:	WENDY BYRD
Organization:	EP Mile	Organization:	BSK-F
DATE:	8-16-05 TIME: 1955	DATE:	8/16/05 TIME: 1945

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

DNM 8/17/05 1200

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTOD

2005081494 08/17/2005
PACIFIC ECO TAT: Standard
817105

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)						
							REQUESTED ANALYSIS										
1	07-535XHDACA-GR	8.16.05	1700	FW	1	1-L HDPE	x	x	x	X	X	MS/MSD					5024
2	07-535XHDACA-FD	8.16.05	1700	FW	1	1-L HDPE	x	x	x	X	X						22
3	07-535XHDACA-FB	8.16.05	1700	FW	1	1-L HDPE	x	x	x	X	X						23
4	07-535XHDACA-GR	8.16.05	1700	FW	1	100 mL poly				x							
5	07-535XHDACA-FD	8.16.05	1700	FW	1	100 mL poly				x							
6	07-535XHDACA-FB	8.16.05	1700	FW	1	100 mL poly				x							
7	07-535XHDACA-GR	8.16.05	1700	FW	1	250 mL amber					x						
8	07-535XHDACA-FD	8.16.05	1700	FW	1	250 mL amber					x						
9	07-535XHDACA-FB	8.16.05	1700	FW	1	250 mL amber					x						
10	~~07-535XHCHNN-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
11	~~07-535XHCHNN-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				x							
12	~~07-535XHCHNN-GR~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
13	07-535XHDACA-MS	8.16.05	1700	FW	1	250 mL amber					x						

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
07-535XHDACA-FD= Field Duplicate
07-535XHDACA-FB= Field Blank
07-535XHDACA-MS = For BSK Internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY			
Signature:	Eddie Kalombo	Signature:	Doug Richards
Print:	EDDIE KALOMBO	Print:	DOUG RICHARDS
Organization:	PER	Organization:	Ex MILE
DATE:	8-16-05 TIME: 1800	DATE:	8-16-05 TIME: 1800

RECEIVED BY			
Signature:	Doug Richards	Signature:	Wendy Byrd
Print:	DOUG RICHARDS	Print:	WENDY BYRD
Organization:	Ex MILE	Organization:	BSK-F
DATE:	8-16-05 TIME: 1945	DATE:	8/16/05 TIME: 1945

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUST

2005081494 08/17/2005
PACIFIC ECO TAT: Standard
817105

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	*E. coli* (SM 9221 B)	TOC (SM 5310 C)							
							REQUESTED ANALYSIS											
1	07-535XBCAKR-GR	8.16.05	1445	FW	1	1-L HDPE	x	x	x									
2	07-535XBCAKR-GR	8.16.05	1445	FW	1	100 mL poly				x								
3	07-535XBCAKR-GR	8.16.05	1445	FW	1	250 mL amber					x							
4	~~07-535XMRSFD-GR~~			FW	1	1-L HDPE	x	x	x									
5	~~07-535XMRSFD-GR~~			FW	1	100 mL poly				x								
6	~~07-535XMRSFD-GR~~			FW	1	250 mL amber					x							
7	~~07-535XHCALR-GR~~			FW	1	1-L HDPE	x	x	x									
8	~~07-535XHCALR-GR~~			FW	1	100 mL poly				x								
9	~~07-535XHCALR-GR~~			FW	1	250 mL amber					x							
10	~~07-535XPFDCL-GR~~			FW	1	1-L HDPE	x	x	x									
11	~~07-535XPFDCL-GR~~			FW	1	100 mL poly				x								
12	~~07-535XPFDCL-GR~~			FW	1	250 mL amber					x							

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY

Signature:	Eddie K.	**Signature:**	Doug Richards
Print:	EDDIE KALOMOO	**Print:**	DOUG RICHARDS
Organization:	PER	**Organization:**	EX MILE
DATE:	8-16-05 **TIME:** 1800	**DATE:**	8-16-05 **TIME:** 1800

RECEIVED BY

Signature:	Doug Richards	**Signature:**	Wendy Byrd
Print:	DOUG RICHARDS	**Print:**	WENDY BYRD
Organization:	EX MILE	**Organization:**	BSK-L
DATE:	8/16 **TIME:** 1935	**DATE:**	8/16/05 **TIME:** 1945

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

8/17/05 1200

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTO

2005081494 08/17/2005
PACIFIC ECO TAT: Standard
817105

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	*E. coli* (SM 9221 B)	TOC (SM 5310 C)	REQUESTED ANALYSIS
1	~~07-535XJDAOR-GR~~			~~FW~~	1	~~1-L HDPE~~	x	x	x			
2	~~07-535XJDAOR-GR~~			~~FW~~	1	~~100 mL poly~~				x		
3	~~07-535XJDAOR-GR~~			~~FW~~	1	~~250 mL amber~~					x	
4	~~07-535XDCAWR-GR~~			~~FW~~	1	~~1-L HDPE~~	x	x	x			
5	~~07-535XDCAWR-GR~~			~~FW~~	1	~~100 mL poly~~				x		
6	~~07-535XDCAWR-GR~~			~~FW~~	1	~~250 mL amber~~					x	
7	07-545XDCARE-GR	8.16.05	0920	FW	1	1-L HDPE	x	x	x			
8	07-545XDCARE-GR	8.16.05	0920	FW	1	100 mL poly				x		
9	07-545XDCARE-GR	8.16.05	0920	FW	1	250 mL amber					x	
10												
11												
12												

B 75025

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY			
Signature:	Eddie Kalambo	Signature:	Doug Richards
Print:	EDDIE KALAMBO	Print:	DOUG RICHARDS
Organization:	PER	Organization:	EA Mike
DATE:	8-16-05 TIME: 1800	DATE:	8-16-05 TIME: 1800

RECEIVED BY			
Signature:	Doug Richards	Signature:	Wendy Bird
Print:	DOUG RICHARDS	Print:	WENDY BIRD
Organization:	EA MIKE	Organization:	PSK-F
DATE:	8/16/05 TIME: 1935	DATE:	8/16/05 TIME: 1945

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

8/17/05 1200

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PEE LOG ✓ 8.17.36

2005082256

BSK CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	*E. coli* (SM 9221 B)	TOC (SM 5310 C)						
1	~~07-535XHDACA-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
2	~~07-535XHDACA-FD~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
3	~~07-535XHDACA-FB~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x								
4	~~07-535XHDACA-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				x							
5	~~07-535XHDACA-FD~~			~~FW~~	~~1~~	~~100 mL poly~~				x							
6	~~07-535XHDACA-FB~~			~~FW~~	~~1~~	~~100 mL poly~~				x							
7	~~07-535XHDACA-GR~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
8	~~07-535XHDACA-FD~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
9	~~07-535XHDACA-FB~~			~~FW~~	~~1~~	~~250 mL amber~~					x						
10	07-535XHCHNN-GR	8.17.05	0800	FW	1	1-L HDPE	x	x	x								
11	07-535XHCHNN-GR	8.17.05	0800	FW	1	100 mL poly				x		75085					
12	07-535XHCHNN-GR	8.17.05	0800	FW	1	250 mL amber					x						
13	~~07-535XHDACA-MS~~			~~FW~~	~~1~~	~~250 mL amber~~					x						

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:

07-535XHDACA-FD= Field Duplicate

07-535XHDACA-FB= Field Blank

07-535XHDACA-MS = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY

Signature:	Eddie Kalombo	Signature:	Doug Richards
Print:	EDDIE KALOMBO	Print:	DOUG RICHARDS
Organization:	PER	Organization:	Eco Mike
DATE: 8-17-05	TIME: 1500	DATE: 8-17-05	TIME: 1500

RECEIVED BY

Signature:	Doug Richards	Signature:	Jacob Schultz
Print:	DOUG RICHARDS	Print:	JACOB SCHULTZ
Organization:	Eco Mike	Organization:	BSK FOOD LABS
DATE: 8-17-05	TIME: 1620	DATE: 8/17/05	TIME: 1625

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie X. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)						
1	07-535XJDAOR-GR	8.17.05	1045	FW	1	1-L HDPE	x	x	x								
2	07-535XJDAOR-GR	8.17.05	1045	FW	1	100 mL poly				x		75026					
3	07-535XJDAOR-GR	8.17.05	1045	FW	1	250 mL amber					x						
4	07-535XDCAWR-GR	8.17.05	1150	FW	1	1-L HDPE	x	x	x								
5	07-535XDCAWR-GR	8.17.05	1150	FW	1	100 mL poly				x							
6	07-535XDCAWR-GR	8.17.05	1150	FW	1	250 mL amber					x	9580	75087				
7	~~07-543XDCARE-GR~~	~~0420~~	~~0912~~	~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~								
8	~~07-543XDCARE-GR~~	~~0420~~		~~FW~~	~~1~~	~~100 mL poly~~				~~x~~							
9	~~07-545XDCARE-GR~~	~~0420~~		~~FW~~	~~1~~	~~250 mL amber~~					~~x~~						
10																	
11																	
12																	

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY

Signature:	Eddie Kalombo	Signature:	Doug Richards
Print:	EDDIE KALOMBO	Print:	Doug Richards
Organization:	PER	Organization:	Ee mail
DATE:	8-17-05	TIME: 1506	DATE: 8-17-05 TIME: 1530

RECEIVED BY

Signature:	Doug Richards	Signature:	Jacob Schmitt
Print:	Doug Richards	Print:	JACOB SCHMITT
Organization:	Ee mail	Organization:	BSK FOOD LAB
DATE:	81705	TIME: 1630	DATE: 8/17/05 TIME: 1635

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	*E. coli* (SM 9221 B)	TOC (SM 5310 C)					
1	~~07-535XBCAKR-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x							
2	~~07-535XBCAKR-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				x						
3	~~07-535XBCAKR-GR~~			~~FW~~	~~1~~	~~250 mL amber~~					x					
4	07-535XMRSFD-GR	8.17.05	0945	FW	1	1-L HDPE	x	x	x							
5	07-535XMRSFD-GR	8.17.05	0945	FW	1	100 mL poly				x		75088				
6	07-535XMRSFD-GR	8.17.05	0945	FW	1	250 mL amber					x					
7	07-535XHCALR-GR	8.17.05	0845	FW	1	1-L HDPE	x	x	x							
8	07-535XHCALR-GR	8.17.05	0845	FW	1	100 mL poly				x		75089				
9	07-535XHCALR-GR	8.17.05	0845	FW	1	250 mL amber					x					
10	07-535XPFDCL-GR	8.17.05	1400	FW	1	1-L HDPE	x	x	x							
11	07-535XPFDCL-GR	8.17.05	1400	FW	1	100 mL poly				x		75090				
12	07-535XPFDCL-GR	8.17.05	1400	FW	1	250 mL amber					x					

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY

Signature:	Eddie Kalombo	Doug Richards
Print:	EDDIE KALOMBO	Doug Richards
Organization:	PER	Ce Mike
DATE / TIME:	8-17-05 TIME: 1500	8-17-05 TIME: 1500

RECEIVED BY

Signature:	Doug Richards	Jacob Schulte
Print:	DOUG RICHARDS	JACOB SCHULTE
Organization:	EC MIKE	BSK FOOD LABS
DATE / TIME:	8-17-05 TIME: 1620	8/17/05 TIME: 1625

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUS

2005081590 08/18/2005 Pg 1/3
PACIFIC ECO TAT: Standard
818048

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)	REQUESTED ANALYSIS
1	~~07-535XBCAKR-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x			
2	~~07-535XBCAKR-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				x		
3	~~07-535XBCAKR-GR~~			~~FW~~	~~1~~	~~250 mL amber~~					x	
4	07-535XMRSFD-GR	8.17.05	0945	FW	1	1-L HDPE	x	x	x			B750099
5	07-535XMRSFD-GR	8.17.05	0945	FW	1	100 mL poly				x		
6	07-535XMRSFD-GR	8.17.05	0945	FW	1	250 mL amber					x	
7	07-535XHCALR-GR	8.17.05	0845	FW	1	1-L HDPE	x	x	x			100
8	07-535XHCALR-GR	8.17.05	0845	FW	1	100 mL poly				x		
9	07-535XHCALR-GR	8.17.05	0845	FW	1	250 mL amber					x	
10	07-535XPFDCL-GR	8.17.05	1400	FW	1	1-L HDPE	x	x	x			
11	07-535XPFDCL-GR	8.17.05	1400	FW	1	100 mL poly				x		101
12	07-535XPFDCL-GR	8.17.05	1400	FW	1	250 mL amber					x	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
* 9/9/05: E. coli CANCELLED ON THIS submission. Food Lab logged in 3x5's AND reported as seperate Samples ON REPORT # 2005082256
G Brown BSK

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:	Eddie Kalombo	Signature:	Doug Richards
Print:	EDDIE KALOMBO	Print:	Doug Richards
Organization:	PER	Organization:	Go Mike
DATE:	8-17-05 TIME: 1500	DATE:	8-17-05 TIME: 1500

RECEIVED BY			
Signature:		Signature:	
Print:	DOUG RICHARDS	Print:	JASON SCHULTE
Organization:	EC MIKE	Organization:	BSK GOOD VAN
DATE:	8-17-05 TIME: 1630	DATE:	8/17/05 TIME: 1635

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Sandy Beach, Rec 8/18/05 Reg $ 745

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CI

2005081590 08/18/2005
PACIFIC ECO TAT: Standard
818048

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)	
1	07-535XJDAOR-GR	8.17.05	1045	FW	1	1-L HDPE	x	x	x			
2	07-535XJDAOR-GR	8.17.05	1045	FW	1	100 mL poly				x		
3	07-535XJDAOR-GR	8.17.05	1045	FW	1	250 mL amber					x	B75102
4	07-535XDCAWR-GR	8.17.05	1150	FW	1	1-L HDPE	x	x	x			
5	07-535XDCAWR-GR	8.17.05	1150	FW	1	100 mL poly				x		
6	07-535XDCAWR-GR	8.17.05	1150	FW	1	250 mL amber					x	175103
7	~~07-545XDCARE-GR~~	~~8.17.05~~	~~0912~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x			
8	~~07-545XDCARE-GR~~	~~8.17.05~~	~~0920~~	~~FW~~	~~1~~	~~100 mL poly~~				x		
9	~~07-545XDCARE-GR~~	~~8.17.05~~	~~0920~~	~~FW~~	~~1~~	~~250 mL amber~~					x	
10												
11												
12												

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:	Eddie Kalombo	Signature:	Doug Richards
Print:	EDDIE KALOMBO	Print:	Doug Richards
Organization:	PER	Organization:	Ex Mike
DATE:	8-17-05 TIME: 1506	DATE:	8-17-05 TIME: 1530

RECEIVED BY			
Signature:		Signature:	
Print:	Doug Richards	Print:	
Organization:	Ex Mike	Organization:	BSK FOOD LAB
DATE:	8/17/05 TIME: 1620	DATE:	8/17/05 TIME: 1625

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Sandy Bacon Rec 8/18 730 Reg 745

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUST

2005081590 08/18/2005
PACIFIC ECO TAT: Standard
818048

PG 3/3

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Mike M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)
1	~~07-535XHDACA-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
2	~~07-535XHDACA-FD~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
3	~~07-535XHDACA-FB~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
4	~~07-535XHDACA-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				x	
5	~~07-535XHDACA-FD~~			~~FW~~	~~1~~	~~100 mL poly~~				x	
6	~~07-535XHDACA-FB~~			~~FW~~	~~1~~	~~100 mL poly~~				x	
7	~~07-535XHDACA-GR~~			~~FW~~	~~1~~	~~250 mL amber~~					x
8	~~07-535XHDACA-FD~~			~~FW~~	~~1~~	~~250 mL amber~~					x
9	~~07-535XHDACA-FB~~			~~FW~~	~~1~~	~~250 mL amber~~					x
10	07-535XHCHNN-GR	8.17.05	0300	FW	1	1-L HDPE	x	x	x		
11	07-535XHCHNN-GR	8.17.05	0300	FW	1	100 mL poly				x	
12	07-535XHCHNN-GR	8.17.05	0300	FW	1	250 mL amber					x
13	~~07-535XHDACA-MS~~			~~FW~~	~~1~~	~~250 mL amber~~					x

Gon P075704

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:

07-535XHDACA-FD= Field Duplicate
07-535XHDACA-FB= Field Blank

07-535XHDACA-MS = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUISHED BY

Signature:	Eddie Kalomod	Signature:	Doug Richards
Print:	EDDIE KALOMOD	Print:	DOUG RICHARDS
Organization:	PER	Organization:	CE MILE
DATE: 8-17-05	TIME: 1500	DATE: 8-17-05	TIME: 1500

RECEIVED BY

Signature:	Doug Richards	Signature:	Jacob Schultz
Print:	Doug Richardson	Print:	JACOB SCHULTZ
Organization:	Ex Mile	Organization:	BSK FOOD LABS
DATE: 8-17-05	TIME: 1620	DATE: 8/17/05	TIME: 1625

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Sandy Bacon 8/18 0730 Bacon 745
[illegible] 8/18 0745

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUS

2005091876

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	3486

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)	REQUESTED ANALYSIS									
1	~~08-535XBCAKR-GR~~	~~9/20/05~~	~~1445~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x												
2	08-535XBCAKR-GR	9/20/05	1445	FW	1	100 mL poly				x		MM									
3	~~08-535XBCAKR-GR~~	~~9/20/05~~	~~1445~~	~~FW~~	~~1~~	250 mL amber					x										
4	~~08-535XDCAWR-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x												
5	~~08-535XDCAWR-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				x											
6	~~08-535XDCAWR-GR~~			~~FW~~	~~1~~	250 mL amber					x										
7	~~08-535XDSAGR-GR~~	~~9/20/05~~	~~1200~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x												
8	08-535XDSAGR-GR	9/20/05	1200	FW	1	100 mL poly				x		MN									
9	~~08-535XDSAGR-GR~~	~~9/20/05~~	~~1200~~	~~FW~~	~~1~~	250 mL amber					x										
10	~~08-535XDSAPR-GR~~	~~9/20/05~~	~~1340~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x												
11	08-535XDSAPR-GR	9/20/05	1340	FW	1	100 mL poly				x		MO									
12	~~08-535XDSAPR-GR~~	~~9/20/05~~	~~1340~~	~~FW~~	~~1~~	250 mL amber					x										

7412

413

414

Correct Containers:	Yes	No
Sample Temperature:	Ambient	Cold / Warm
Sample Preservative:	Yes	No
Turnaround Time:	STD	Specify:

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature	[signature]	Signature:	[signature]
Print:	Mike McElroy	Print	Doug Richards
Organization:	PER	Organization:	EP Melo
DATE:	9/20/05 TIME: 1730	DATE:	9-20-05 TIME: 1920

RECEIVED BY			
Signature	[signature]	Signature:	
Print:	[illegible]	Print:	
Organization:	BSK	Organization:	
DATE:	09/20/05 TIME: 1935	DATE:	TIME:

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

2005O918 10

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY RECORD

0926018

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)					
1	~~08-535XBCAKR-GR~~	~~9/20/05~~	~~1445~~	~~FW~~	1	1-L HDPE	x	x	x							
2	08-535XBCAKR-GR	9/20/05	1445	FW	1	100 mL poly				x		MM		77412		
3	~~08-535XBCAKR-GR~~	~~9/20/05~~	~~1445~~	~~FW~~	1	250 mL amber					→					
4	~~08-535XDCAWR-GR~~			~~FW~~	1	~~1-L HDPE~~	x	x	x							
5	~~08-535XDCAWR-GR~~			~~FW~~	1	~~100 mL poly~~				x						
6	~~08-535XDCAWR-GR~~			~~FW~~	1	~~250 mL amber~~					→					
7	~~08-535XDSAGR-GR~~	9/20/05	1200	FW	1	1-L HDPE	x	x	x							
8	08-535XDSAGR-GR	9/20/05	1200	FW	1	100 mL poly				x		MN		43		
9	~~08-535XDSAGR-GR~~	~~9/20/05~~	~~1200~~	~~FW~~	1	250 mL amber					→					
10	~~08-535XDSAPR-GR~~	~~9/20/05~~	~~1340~~	~~FW~~	1	1-L HDPE	x	x	x							
11	08-535XDSAPR-GR	9/20/05	1340	FW	1	100 mL poly				x		MO		44		
12	~~08-535XDSAPR-GR~~	~~9/20/05~~	~~1340~~	~~FW~~	1	250 mL amber					→					

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY

Signature: [signature]	Signature: [signature]
Print: Mike McElroy	Print: Doug Richards
Organization: PER	Organization: Ep Mito
DATE: 9/20/05 TIME: 1730	DATE: 9-20-05 TIME: 1920

RECEIVED BY

Signature: Katrina Charles	Signature:
Print: Katrina Charles	Print:
Organization: BSK	Organization:
DATE: 09/20/05 TIME: 1935	DATE: TIME:

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUS

2005091877

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)						
1	~~08-545XASAAT-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~								
2	~~08-545XASAAT-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				~~x~~							
3	~~08-545XASAAT-GR~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~						
4	~~08-545XCCART-GR~~	~~9/20/05~~	~~800~~	~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~								
5	08-545XCCART-GR	9/20/05	800	FW	1	100 mL poly				x		mF			7745		
6	~~08-545XCCART-GR~~	~~9/20/05~~	~~800~~	~~FW~~	~~1~~	~~250 mL amber~~					~~x~~						
7	~~08-545XDCARE-GR~~	~~9/20/05~~	~~1000~~	~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~								
8	08-545XDCARE-GR	9/20/05	1000	FW	1	100 mL poly				x		MK			416		
9	~~08-545XDCARE-GR~~	~~9/20/05~~	~~1000~~	~~FW~~	~~1~~	~~250 mL amber~~					~~x~~						
10																	
11																	
12																	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELIQUINSHED BY

Signature:	[signature]	Signature:	[signature]
Print:	Mike McElroy	Print:	Doug Richards
Organization:	PER	Organization:	Ex Mill
DATE: 9/20/05	TIME: 1730	DATE: 6-20-05	TIME: 1820

RECEIVED BY

Signature:	Katrina Charles	Signature:	
Print:	Katrina Charles	Print:	
Organization:	BSK	Organization:	
DATE: 9/20/05	TIME: 1935	DATE:	TIME:

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Run 100137

20050918??

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTC

2005091877

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nay
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)						
1	08-535XHCALR-GR			FW	1	1-L HDPE	x	x	x								
2	08-535XHCALR-GR			FW	1	100 mL poly				x							
3	08-535XHCALR-GR			FW	1	250 mL amber					x						
4	08-535XHCHNN-GR	9/20/05	1630	FW	1	1-L HDPE	x	x	x								
5	08-535XHCHNN-GR	9/20/05	1630	FW	1	100 mL poly				x		mL		7717			
6	08-535XHCHNN-GR	9/20/05	1630	FW	1	250 mL amber					x						
7	08-535XHDACA-GR			FW	1	1-L HDPE	x	x	x								
8	08-535XHDACA-GR			FW	1	100 mL poly				x							
9	08-535XHDACA-GR			FW	1	250 mL amber					x						
10	08-535XJDAOR-GR			FW	1	1-L HDPE	x	x	x								
11	08-535XJDAOR-GR			FW	1	100 mL poly				x							
12	08-535XJDAOR-GR			FW	1	250 mL amber					x						

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY

Signature:	[signature]	Signature:	[signature]
Print:	Mike McElroy	Print:	Doug Richardson
Organization:	PER	Organization:	Ex Mile
DATE: 9/20/05	TIME: 1730	DATE: 9-20-05	TIME: 1820

RECEIVED BY

Signature:	Katrina Charles	Signature:	
Print:	Katrina Charles	Print:	
Organization:	BSK-F	Organization:	
DATE: 09/20/05	TIME: 1935	DATE:	TIME:

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

2005091877

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY RECORD

926019

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)	REQUESTED ANALYSIS						
1	~~08-545XASAAT-GR~~			FW	1	1-L HDPE	x	x	x									
2	~~08-545XASAAT-GR~~			FW	1	100 mL poly				x								
3	~~08-545XASAAT-GR~~			FW	1	250 mL amber					x							
4	~~08-545XCCART-GR~~	~~9/20/05~~	~~800~~	FW	1	1-L HDPE	x	x	x									
5	08-545XCCART-GR	9/20/05	800	FW	1	100 mL poly				x		DW				7745		
6	~~08-545XCCART-GR~~	~~9/20/05~~	~~800~~	FW	1	250 mL amber					x							
7	~~08-545XDCARE-GR~~	~~9/20/05~~	~~1000~~	FW	1	1-L HDPE	x	x	x									
8	08-545XDCARE-GR	9/20/05	1000	FW	1	100 mL poly				x		DW				1 16		
9	~~08-545XDCARE-GR~~	~~9/20/05~~	~~1000~~	FW	1	250 mL amber					x							
10																		
11																		
12																		

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY		RELINQUISHED BY	
Signature:		Signature:	
Print:	Mike McElroy	Print:	DOUG RICHARDS
Organization:	PER	Organization:	Ex Mill
DATE:	9/20/05 TIME: 1730	DATE:	6-20-05 TIME: 1820
RECEIVED BY		**RECEIVED BY**	
Signature:		Signature:	
Print:		Print:	
Organization:	BSK-D	Organization:	
DATE:	09/20/05 TIME: 1935	DATE:	TIME:

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

20050118 r1

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTODY RECORD

9260 19

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9468

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)	REQUESTED ANALYSIS
1	~~08-535XHCALR-GR~~			FW	1	1-L HDPE	x	x	x			
2	~~08-535XHCALR-GR~~			FW	1	100 mL poly				x		
3	~~08-535XHCALR-GR~~			FW	1	250 mL amber					x	
4	~~08-535XHCHNN-GR~~	~~9/20/05~~	~~1630~~	FW	1	1-L HDPE	x	x	x			
5	08-535XHCHNN-GR	9/20/05	1630	FW	1	100 mL poly				x		ML 7717
6	~~08-535XHCHNN-GR~~	~~9/20/05~~	~~1630~~	FW	1	250 mL amber					x	
7	~~08-535XHDACA-GR~~			FW	1	1-L HDPE	x	x	x			
8	~~08-535XHDACA-GR~~			FW	1	100 mL poly				x		
9	~~08-535XHDACA-GR~~			FW	1	250 mL amber					x	
10	~~08-535XJDAOR-GR~~			FW	1	1-L HDPE	x	x	x			
11	08-535XJDAOR-GR			FW	1	100 mL poly				x		
12	~~08-535XJDAOR-GR~~			FW	1	250 mL amber					x	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:		**Signature:**	
Print:	Mike McElroy	**Print:**	Doug Ricksecker
Organization:	PER	**Organization:**	4x Mile
DATE:	9/20/05 **TIME:** 1730	**DATE:**	9-20-05 **TIME:** 1820

RECEIVED BY			
Signature:		**Signature:**	
Print:	Katrina Charles	**Print:**	
Organization:	BSK-F	**Organization:**	
DATE:	09/20/05 **TIME:** 1935	**DATE:**	**TIME:**

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

2005042160

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUS

2005092168

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	*E. coli* (SM 9221 B)	TOC (SM 5310 C)
1	~~08-535XHCALR-GR~~	~~9.21.05~~	~~800~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
TN27 MM 2	08-535XHCALR-GR	9.21.05	800	FW	1	100 mL poly				x	
3	~~08-535XHCALR-GR~~	~~9.21.05~~	~~800~~	~~FW~~	~~1~~	~~250 mL amber~~					x
4	~~08-535XHCHNN-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
5	~~08-535XHCHNN-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				x	
6	~~08-535XHCHNN-GR~~			~~FW~~	~~1~~	~~250 mL amber~~					x
7	~~08-535XHDACA-GR~~	~~9.21.05~~	~~1530~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
7628 DOC 8	08-535XHDACA-GR	9.21.05	1530	FW	1	100 mL poly				x	
9	~~08-535XHDACA-GR~~	~~9.21.05~~	~~1530~~	~~FW~~	~~1~~	~~250 mL amber~~					x
10	~~08-535X.DAOR-GR~~	~~9.21.05~~	~~1030~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
TN29 PO 11	08-535X.DAOR-GR	9.21.05	1030	FW	1	100 mL poly				x	
12	~~08-535X.DAOR-GR~~	~~9.21.05~~	~~1030~~	~~FW~~	~~1~~	~~250 mL amber~~					x

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080

RELIQUINSHED BY			
Signature:		Signature:	
Print:	Mike McElroy	Print:	Doug Richards
Organization:	PER	Organization:	EA MLE
DATE:	9.21.05 TIME: 1630	DATE:	9-21-05 TIME: 1632

RECEIVED BY			
Signature:		Signature:	
Print:	Doug Richards	Print:	JACOB SCHULTE
Organization:	EA MLE	Organization:	TRA FOOD LABS
DATE:	9-21-05 TIME: 1745	DATE:	9/21/05 TIME: 1750

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

2005092166

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUST

2005092166

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Hagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9486

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)
1	~~08-535XDCAKR-GR~~			FW	1	1-L HDPE	x	x	x		
2	~~08-535XDCAKR-GR~~			FW	1	100 mL poly				x	
3	~~08-535XDCAKR-GR~~			FW	1	250 mL amber					x
4	~~08-535XDCAWR-GR~~	9-21-05	1220	FW	1	1-L HDPE	x	x	x		
5	08-535XDCAWR-GR	9-21-05	1220	FW	1	100 mL poly				x	
6	~~08-535XDCAWR-GR~~	9-21-05	1220	FW	1	250 mL amber					x
7	~~08-535XDSAGR-GR~~			FW	1	1-L HDPE	x	x	x		
8	~~08-535XDSAGR-GR~~			FW	1	100 mL poly				x	
9	~~08-535XDSAGR-GR~~			FW	1	250 mL amber					x
10	~~08-535XDSAPR-GR~~			FW	1	1-L HDPE	x	x	x		
11	~~08-535XDSAPR-GR~~			FW	1	100 mL poly				x	
12	~~08-535XDSAPR-GR~~			FW	1	250 mL amber					x

TN22

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:		Signature:	
Print:	Mike McElroy	Print:	Doug Richards
Organization:	PER	Organization:	Ex Mill
DATE:	9-21-05	TIME: 1630	DATE: 9-21-05 TIME: 1630

RECEIVED BY			
Signature:		Signature:	
Print:	Doug Richards	Print:	JACOB SCHULTZ
Organization:	Ex Mill	Organization:	BSK SOUTH LAB
DATE:	9-21-05	TIME: 1745	DATE: 9/21/05 TIME: 1750

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

2005092167

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUS

2005092167

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D Nash
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)
1	~~08-535XMRSFD-GR~~	~~9/21/05~~	~~930~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
2	08-535XMRSFD-GR	9/21/05	930	FW	1	100 mL poly				x	
3	~~08-535XMRSFD-GR~~	~~9/21/05~~	~~930~~	~~FW~~	~~1~~	~~250 mL amber~~					x
4	~~08-535XPFDCL-GR~~	~~9/21/05~~	~~1340~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
5	~~08-535XPFDCL-FD~~	~~9/21/05~~	~~1340~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
6	~~08-535XPFDCL-FB~~	~~9/21/05~~	~~1340~~	~~FW~~	~~1~~	~~1-L HDPE~~	x	x	x		
7	08-535XPFDCL-GR	9/21/05	1340	FW	1	100 mL poly				x	
8	08-535XPFDCL-FD	9/21/05	1340	FW	1	100 mL poly				x	
9	08-535XPFDCL-FB	9/21/05	1340	FW	1	100 mL poly				x	
10	~~08-535XPFDCL-GR~~	~~9/21/05~~	~~1340~~	~~FW~~	~~1~~	~~250 mL amber~~					x
11	~~08-535XPFDCL-FD~~	~~9/21/05~~	~~1340~~	~~FW~~	~~1~~	~~250 mL amber~~					x
12	~~08-535XPFDCL-FB~~	~~9/21/05~~	~~1340~~	~~FW~~	~~1~~	~~250 mL amber~~					x
13	~~08-535XPFDCL-MS~~	~~9/21/05~~	~~1340~~	~~FW~~	~~1~~	~~250 mL amber~~					x

7623 DUP
7624 DUP
7625 DUP
7626 DUP

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
08-535XPFDCL-FD= Field duplicate
08-535XPFDCL-FB = Field blank
08-535XPFDCL-MS = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

Please fax a copy of the signed and received COC to Stephan Clark at 925-313-8090.

RELINQUISHED BY

Signature:		Signature:	
Print:	Mike McElroy	Print:	Doug Richards
Organization:	PER	Organization:	Ex Mar
DATE:	9-21-05	TIME: 1630	DATE: 9-21-05 TIME: 1630

RECEIVED BY

Signature:		Signature:	
Print:	Doug Richards	Print:	Jacob Schulte
Organization:	Ex Mile	Organization:	BSK
DATE:	9-21-05	TIME: 1745	DATE: 9/21/05 TIME: 1750

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUST

2005091597 09/21/2005
PACIFIC ECO TAT: Standard
921103

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Mayo
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)	
1	~~08-535XHCALR-GR~~			FW	1	1-L HDPE	x	x	x			
2	~~08-535XHCALR-GR~~			FW	1	100 mL poly				x		
3	~~08-535XHCALR-GR~~			FW	1	250 mL amber					x	
4	08-535XHCHNN-GR	9/20/05	1630	FW	1	1-L HDPE	x	x	x			
5	~~08-535XHCHNN-GR~~	9/20/05	1630	FW	1	100 mL poly				x		
6	08-535XHCHNN-GR	9/20/05	1630	FW	1	250 mL amber					x	
7	~~08-535XHDACA-GR~~			FW	1	1-L HDPE	x	x	x			
8	~~08-535XHDACA-GR~~			FW	1	100 mL poly				x		
9	~~08-535XHDACA-GR~~			FW	1	250 mL amber					x	
10	~~08-535XJDAOR-GR~~			FW	1	1-L HDPE	x	x	x			
11	~~08-535XJDAOR-GR~~			FW	1	100 mL poly				x		
12	~~08-535XJDAOR-GR~~			FW	1	250 mL amber					x	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
Both samples separated & left Logged at Food Lab. 9/20/05
X-Ferred to chemlab 9/21/05

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:		Signature:	
Print:	Mike McElroy	Print:	Doug Richardson
Organization:	PER	Organization:	Ex Mile
DATE:	9/20/05	TIME: 1730	DATE: 9-20-05 TIME: 1820

RECEIVED BY			
Signature:		Signature:	
Print:		Print:	
Organization:	BSK-F	Organization:	
DATE:	9/20/05	TIME: 1935	DATE: 9/21/05 TIME: 1020

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Logged at FL.

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUS

2005091597 09/21/2005 03
PACIFIC ECO TAT: Standard
921103

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)						
1	~~08-545XASAAT-GR~~			FW	1	1-L HDPE	x	x	x								
2	~~08-545XASAAT-GR~~			FW	1	100 mL poly				x							
3	~~08-545XASAAT-GR~~			FW	1	250 mL amber					x						
4	08-545XCCART-GR	9/20/05	800	FW	1	1-L HDPE	x	x	x								
5	~~08-545XCCART-GR~~	~~9/20/05~~	~~800~~	FW	1	~~100 mL poly~~				x		mw	Lysed at FL				
6	08-545XCCART-GR	9/20/05	800	FW	1	250 mL amber					x						
7	08-545XDCARE-GR	9/20/05	1000	FW	1	1-L HDPE	x	x	x								
8	~~08-545XDCARE-GR~~	~~9/20/05~~	~~1000~~	FW	1	~~100 mL poly~~				x		mw	Lysed at FL				
9	08-545XDCARE-GR	9/20/05	1000	FW	1	250 mL amber					x						
10																	
11																	
12																	

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8060.

RELIQUINSHED BY			
Signature:		Signature:	
Print:	Mike McElroy	Print:	DOUG RICHARDS
Organization:	PER	Organization:	Ex Mill
DATE:	9/20/05 TIME: 1730	DATE:	6-20-05 TIME: 1820

RECEIVED BY			
Signature:		Signature:	
Print:		Print:	
Organization:	BSK	Organization:	
DATE:	09/20/05 TIME: 1935	DATE:	9/21/05 TIME: 0900

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

3/3

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUST(

2005091597 09/21/2005
PACIFIC ECO TAT: Standard
921103

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)						
1	08-535XBCAKR-GR	9/20/05	1415	FW	1	1-L HDPE	x	x	x								
2	~~08-535XBCAKR-GR~~	~~9/20/05~~	~~1445~~	~~FW~~	~~1~~	~~100 mL poly~~				x							
3	08-535XBCAKR-GR	9/20/05	1445	FW	1	250 mL amber					x						
4	~~08-535XDCAWR-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~								
5	~~08-535XDCAWR-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				~~x~~							
6	~~08-535XDCAWR-GR~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~						
7	08-535XDSAGR-GR	9/20/05	1200	FW	1	1-L HDPE	x	x	x								
8	~~08-535XDSAGR-GR~~	~~9/20/05~~	~~1205~~	~~FW~~	~~1~~	~~100 mL poly~~				x							
9	08-535XDSAGR-GR	9/20/05	1200	FW	1	250 mL amber					x						
10	08-535XDSAPR-GR	9/20/05	1350	FW	1	1-L HDPE	x	x	x								
11	~~08-535XDSAPR-GR~~	~~9/20/05~~	~~1350~~	~~FW~~	~~1~~	~~100 mL poly~~				~~x~~							
12	08-535XDSAPR-GR	9/20/05	1340	FW	1	250 mL amber					x						

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:		Signature:	
Print:	Mike McElroy	Print:	Doug Richards
Organization:	PER	Organization:	EcoMeta
DATE:	9/20/05 TIME: 1750	DATE:	9-20-05 TIME: 1920

RECEIVED BY			
Signature:		Signature:	
Print:		Print:	
Organization:	BSK	Organization:	BSK
DATE:	9/20/05 TIME: 1935	DATE:	9/21/05 TIME: 1000

*MATRIX CODES: (SED = Sediment); FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

3/3

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CU[S]

2005091685 09/22/2005
PACIFIC ECO TAT: Standard
922035

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive Suite 104, Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)
1	08-535XMRSFD-GR	9-21-05	930	FW	1	1-L HDPE	x	x	x		
2	08-535XMRSFD-GR	9-21-05	930	FW	1	100 mL poly				x	
3	08-535XMRSFD-GR	9-21-05	930	FW	1	250 mL amber					x
4	~~08-535XPFDCL-GR ms/msd~~	9-21-05	~~1340~~	FW	1	1-L HDPE	x	x	x		X
5	08-535XPFDCL-FD	9-21-05	1340	FW	1	1-L HDPE	x	x	x		X
6	08-535XPFDCL-FB	9-21-05	1350	FW	1	1-L HDPE	x	x	x		X
7	08-535XPFDCL-GR	9-21-05	1340	FW	1	100 mL poly				x	
8	08-535XPFDCL-FD	9-21-05	1340	FW	1	100 mL poly				x	
9	08-535XPFDCL-FB	9-21-05	1340	FW	1	100 mL poly				x	
10	08-535XPFDCL-GR	9-21-05	1340	FW	1	250 mL amber					x
11	08-535XPFDCL-FD	9-21-05	1340	FW	1	250 mL amber					x
12	08-535XPFDCL-FB	9-21-05	1340	FW	1	250 mL amber					x
13	08-535XPFDCL-MS	9-21-05	1340	FW	1	250 mL amber					x

Handwritten lab numbers: 6837769 (rows 1–3); 6837770, 71, 72 (rows 4–6)

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
08-535XPFDCL-FD= Field duplicate
08-535XPFDCL-FB = Field blank
08-535XPFDCL-MS = For BSK internal Matrix Spike/Matrix Spike Duplicate (do not invoice)

Samples received @ Food Lab 9/21/05
X-fered to Clen Lab 9/22/05 GB.

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY

Signature:	[signature]	Signature:	[signature]
Print:	Mike McElroy	Print:	Doug Richards
Organization:	PER	Organization:	Ex Mike
DATE: 9-21-05	TIME: 1630	DATE: 9-21-05	TIME: 1630

RECEIVED BY

Signature:	[signature]	Signature:	[signature]
Print:	Doug Richards	Print:	Jacob Schulte
Organization:	Ex Mike	Organization:	BSK Food Lab
DATE: 9/21/05	TIME: 1745	DATE: 9/21/05	TIME: 1750

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

* Bacti samples not received, not in ice chest

[signature] 9/22/05 1245

2/3

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUST

2005091685 09/22/2005
PACIFIC ECO TAT: Standard , 5
922035

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

#	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)
1	~~08-535XBCAKR-GR~~			FW	1	1-L HDPE	x	x	x		
2	~~08-535XBCAKR-GR~~			FW	1	100 mL poly				x	
3	~~08-535XBCAKR-GR~~			FW	1	250 mL amber					x
4	08-535XDCAWR-GR	9-21-05	1220	FW	1	1-L HDPE	x	x	x		
5	08-535XDCAWR-GR	9-21-05	1220	FW	1	100 mL poly				x	
6	08-535XDCAWR-GR	9-21-05	1220	FW	1	250 mL amber					x
7	~~08-535XDSAGR-GR~~			FW	1	1-L HDPE	x	x	x		
8	~~08-535XDSAGR-GR~~			FW	1	100 mL poly				x	
9	~~08-535XDSAGR-GR~~			FW	1	250 mL amber					x
10	~~08-535XDSAPR-GR~~			FW	1	1-L HDPE	x	x	x		
11	~~08-535XDSAPR-GR~~			FW	1	100 mL poly				x	
12	~~08-535XDSAPR-GR~~			FW	1	250 mL amber					x

549 (rows 4–6) } 637773

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
Sample received @ FoodLab 9/21/05.
X-fered to chem lab 9/22/05
GS

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY

Signature:	[signature]	Signature:	[signature]
Print:	Mike McElroy	Print:	Doug Richards
Organization:	PER	Organization:	Ex Mile
DATE: 9-21-05	TIME: 1630	DATE: 9-21-05	TIME: 1630

RECEIVED BY

Signature:	[signature]	Signature:	[signature]
Print:	Doug Richards	Print:	Jacob Schulte
Organization:	Ex Mile	Organization:	BSK Food Lab
DATE: 9-21-05	TIME: 1745	DATE: 9/21/05	TIME: 1750

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

[signature] 9/22/05 1245

3/3

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

BSK CHAIN-OF-CUSTOI

2005091685 09/22/2005
PACIFIC ECO TAT: Standard
922035

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Color (SM2120 B Mod)	Turbidity (EPA 180.1)	TDS (EPA 160.1)	E. coli (SM 9221 B)	TOC (SM 5310 C)		
1	08-535XHCALR-GR	9.21.05	800	FW	1	1-L HDPE	x	x	x				
2	08-535XHCALR-GR	9.21.05	800	FW	1	100 mL poly				x			037774
3	08-535XHCALR-GR	9.21.05	800	FW	1	250 mL amber					x		
4	~~08-535XHCHNN-GR~~			~~FW~~	~~1~~	~~1-L HDPE~~	~~x~~	~~x~~	~~x~~				
5	~~08-535XHCHNN-GR~~			~~FW~~	~~1~~	~~100 mL poly~~				~~x~~			
6	~~08-535XHCHNN-GR~~			~~FW~~	~~1~~	~~250 mL amber~~					~~x~~		
7	08-535XHDACA-GR	9.21.05	1530	FW	1	1-L HDPE	x	x	x				
8	08-535XHDACA-GR	9.21.05	1530	FW	1	100 mL poly				x			037775
9	08-535XHDACA-GR	9.21.05	1530	FW	1	250 mL amber					x		
10	08-535XJDAOR-GR	9.21.05	1030	FW	1	1-L HDPE	x	x	x				
11	08-535XJDAOR-GR	9.21.05	1030	FW	1	100 mL poly				x			037776
12	08-535XJDAOR-GR	9.21.05	1030	FW	1	250 mL amber					x		

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
SAMPLES RECEIVED @ Food LAB 9/21/05.
X-FERED to Chem LAB 9/22/05 GS

Please fax a copy of the signed and received COC to Stephen Clark at 925-313-8080.

RELINQUISHED BY			
Signature:		Signature:	
Print:	M. McElroy	Print:	Doug Richards
Organization:	PER	Organization:	ESE Mike
DATE:	9.21.05 TIME: 1630	DATE:	9-21-05 TIME: 1636

RECEIVED BY			
Signature:		Signature:	
Print:	Doug Richards	Print:	JACOBS SCHULTE
Organization:	ESE MIKE	Organization:	PSW FOOD LAB
DATE:	9-21-05 TIME: 1745	DATE:	9/21/05 TIME: 1750

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Q. Kent 9/22/05 1245

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute Ceriod., Acute FHM, Chronic Selenastrum
1	R1-DCAWR-016	2/15/05	1017	FW	5	1-gallon Amber	x
2	R1-DCAWR-017	2/15/05	1018	FW	5	1-gallon Amber	X
3	R1-HCALR-029	2/15/05	1625	FW	5	1-gallon Amber	X
4	R1-PFDCL-047	2/15/05	1230	FW	5	1-gallon Amber	X
5	R1-HDACA-077	2/15/05	1345	FW	5	1-gallon Amber	X
6							
7							
8							
9							
10							
11							

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

R1-DCAWR-017 = Field Duplicate

RELIQUINSHED BY

Signature:	Mike McElroy
Print:	Mike McElroy
Organization:	PER
DATE:	2/15/05 **TIME:**

RECEIVED BY

Signature:	Raffaele Perlotta
Print:	Raffaele Perlotta
Organization:	PER
DATE:	2/16/05 **TIME:** 9-01

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM TJS
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	**East San Joaquin Water Quality Coalition**
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute Ceriodaphnia dubia, Acute FHM, Chronic Selenastrum
1	R1-MRSFD-023	2/16/05	835	FW	5	1-gallon Amber	x
2	R1-DSAGR-035	2/16/05	1305	FW	5	1-gal Amber	X
3	R1-CCART-053	2/16/05	1704	FW	5	1-gal Amber	X
4	R1-LWSMA-059	2/16/05	1805	FW	4	1-gal Amber	X
5	R1-DSARR-065	2/16/05	1950	FW	5	1-gal Amber	X
6	R1-JDAOR-071	2/16/05	1035	FW	5	1-gal Amber	X
7							
8							
9							
10							
11							

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

_____ = **Field Duplicate**

RELIQUINSHED BY

Signature:	
Print:	JOHN SCHWALBE
Organization:	PER
DATE:	2/17/05 **TIME:** 953

RECEIVED BY

Signature:	Raffaele Perrotta
Print:	Raffaele Perrotta
Organization:	PER
DATE:	2/17/05 **TIME:** 9:53

***MATRIX CODES**: (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORI

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM / LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	**East San Joaquin Water Quality Coalition**
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute *Ceriо*, Acute FHM, Chronic *Selenastrum*
1	R2-MRSFD-024	3/21/05	~~3~~ 1532	FW	5	1-gallon Amber	x
2	R2-MRSFD-025	3/21/05	1533	FW	5	1-g Amber	x
3	R2-HCALR-031	3/21/05	1705	FW	5	1-g Amber	x
4	R2-DSAGR-037	3/21/05	1105	FW	5	1-g Amber	x
5	R2-CCART-~~SW~~-035	3/21/05	720	FW	5	1-g Amber	x
6	R2-LWSMA-061	3/21/05	905	FW	5	1-g Amber	x
7	R2-BCAKR-091	3/21/05	1345	FW	5	1-g Amber	x
8	R2-DSAPR-067	3/21/05	1220	FW	~~8~~ 4	1-g Amber	x
9							
10							
11							

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

R2-MRSFD-025 = **Field Duplicate**

RELIQUINSHED BY

Signature:	
Print:	Mike McElroy
Organization:	PER
DATE:	3/21/05 **TIME:** 1825

RECEIVED BY

Signature:	Raffaele Perriotta
Print:	Raffaele Perriotta
Organization:	PER
DATE:	3/22/05 **TIME:** 9:53

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
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PER CHAIN-OF-CUSTODY RECORI

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM / LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	**East San Joaquin Water Quality Coalition**
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute *Ceriodaphnia dubia*, Acute FHM, Chronic *Selenastrum*
1	R2-SDAQR-073	3.22.05	1152	FW	5	1-gallon Amber	x
2	R2-HDACA-079	3.22.05	0935	FW	5	1-gallon Amber	x
3	R2-PFDCL-049	3.22.05	0805	FW	5	1-gal. Amber	x
4	R2-DCAWR-006	3.22.05	1325	FW	5	1-gal. Amber	x
5				~~FW~~			
6							
7							
8							
9							
10							
11							

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

_____ = Field Duplicate

RELIQUINSHED BY	
Signature:	
Print:	Lucas Wickham
Organization:	Pacific EcoRisk
DATE:	03/22/05 **TIME:** 1630
RECEIVED BY	
Signature:	Raffaele Perrotta
Print:	Raffaele Perrotta
Organization:	PER
DATE:	~~3/22/05~~ 3/23/05 **TIME:** 8:56

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-6080 FAX (925) 313-6089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-6080
FAX:	(925) 313-6089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute Ceriodaphnia, Acute FHM, Chronic *Selenastrum*	REQUESTED ANALYSIS: Chronic 10-Day Hyalella
1	04-CCART-016	5/10/05	0717	FW	5	1-Gal Amber Jug	x	
2	**04-CCART-017**	5/10/05	0718	FW	5	1-Gal Amber Jug	x	
3	04-LWSMA-025	5/10/05	0945	FW	5	1-Gal Amber Jug	x	
4	~~04-ASATA-032~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
5	04-DSAGR-039	5/10/05	1215	FW	5	1-Gal Amber Jug	x	
6	04-DSAPR-046	5/4/05	1336	FW	5	1-Gal Amber Jug	x	
7	04-BCAKR-053	5/10/05	1550	FW	5	1-Gal Amber Jug	x	
8	~~04-MRSFD-060~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
9	04-HCALR-067	5/10/05	1755	FW	5	1-Gal Amber Jug	x	
10	~~04-PFDGL-074~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
11	~~04-RDACA-081~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	x	

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
04-CCART-017 = Field duplicate

RELINQUISHED BY			
Signature:			
Print:	Lucas Wickham		
Organization:	PER		
DATE:	5/10/05	**TIME:**	2000

RECEIVED BY			
Signature:			
Print:	QUANG DO		
Organization:	PER		
DATE:	5/10/05	**TIME:**	2000

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
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(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute Cerio., Acute FHM, Chronic *Selenastrum*	Chronic 10-Day Hyalella
1	04-HCALR-066	5/10/05	1736	SED	1	2-L glass jar		x
2	~~04-PEDCL-075~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
3	~~04-HDAGA-062~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
4	04-HCHNN-089	5/10/05	1826	SED	1	2-L glass jar		x
5	~~04-JDAOR-096~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
6	~~04-DCAWR-103~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
7								
8								
9								
10								
11								

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELIQUINSHED BY

Signature:	
Print:	Lucas Wickham
Organization:	PER
DATE:	5/10/05 **TIME:** 2000

RECEIVED BY

Signature:	
Print:	QUANG DO
Organization:	PER
DATE:	5/10/05 **TIME:** 2000

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
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PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute *Ceriodaphnia*, Acute FHM, Chronic *Selenastrum*	REQUESTED ANALYSIS: Chronic 10-Day Hyalella
1	04-HCHNN-088	5/10/05	1825	FW	5	1-Gal Amber Jug	x	
2	~~04-JDAOR-095~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
3	~~04-DCAWR-102~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
4	04-CCART-018	5/10/05	0719	SED	1	2-L glass jar		x
5	**04-CCART-019**	5/10/05	0720	SED	1	2-L glass jar		x
6	04-LWSMA-026	5/10/05	0946	SED	1	2-L glass jar		x
7	~~04-AGATA-033~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
8	04-DSAGR-040	5/10/05	1216	SED	1	2-L glass jar		x
9	04-DSAPR-047	5/10/05	1336	SED	1	2-L glass jar		x
10	04-BCAKR-054	5/10/05	1551	SED	1	2-L glass jar		x
11	~~04-MRSFD-061~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
04-CCART-019 = Field duplicate

RELIQUINSHED BY	
Signature:	
Print:	Lucas Wickham
Organization:	PER
DATE:	5/10/05 **TIME:** 2000
RECEIVED BY	
Signature:	
Print:	QUANG DO
Organization:	PER
DATE:	5/10/05 **TIME:** 2000

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

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(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	LW/JS
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute *Ceriod* , Acute FHM, Chronic *Selenastrum*	REQUESTED ANALYSIS: Chronic 10-Day Hyalella
1	~~04-CCART-016~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
2	~~04-CCART-017~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
3	~~04-LWSMA-025~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
4	~~04-AGATA-032~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
5	~~04-DSAGR-039~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
6	~~04-DSAPR-046~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
7	~~04-BCAKR-053~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
8	04-MRSFD-060	5/11/05	1205 LW/JS	FW	5	1-Gal Amber Jug	x	
9	~~04-HCALR-067~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
10	04-PFDCL-074	5/11/05	1015	FW	5	1-Gal Amber Jug	x	
11	04-HDACA-081	5/11/05	1110	FW	5	1-Gal Amber Jug	x	

Correct Containers:	Yes	No		
Sample Temperature:	Ambient	Cold	Warm	
Sample Preservative:	Yes	No		
Turnaround Time:	STD	Specify:		

Comments:
04-CCART-017 = Field duplicate

RELIQUINSHED BY

Signature:	Lucas Wickham
Print:	Lucas Wickham
Organization:	PER
DATE:	5/11/05 **TIME:** 1940

RECEIVED BY

Signature:	Raffaele Perrotta
Print:	Raffaele Perrotta
Organization:	PER
DATE:	~~5/11/05~~ RA 5/12/05 **TIME:** 8:15

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	LW/JS
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute *Ceno* , Acute FHM, Chronic *Selenastrum*	REQUESTED ANALYSIS: Chronic 10-Day Hyalella
1	~~04-HCHKN-058~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	x	
2	04-JDAOR-095	5/11/05	1355	FW	5	1-Gal Amber Jug	x	
3	04-DCAWR-102	5/11/05	1520	FW	5	1-Gal Amber Jug	x	
4	~~*04-GGART-018~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
5	~~04-CCART-019~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
6	~~04-LWSMA-026~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
7	~~04-ASATA-033~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
8	~~04-DSAOR-040~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
9	~~04-DSAPR-047~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
10	~~04-DCAWR-054~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
11	04-MRSFD-061	5/11/05	1226	SED	1	2-L glass jar		x

Correct Containers:	Yes	No		
Sample Temperature:	Ambient	Cold	Warm	
Sample Preservative:	Yes	No		
Turnaround Time:	STD	Specify:		

Comments:
04-CCART-019 = Field duplicate

RELIQUINSHED BY

Signature:	
Print:	Lucas Wickham
Organization:	PER
DATE:	5/11/05 TIME: 1940

RECEIVED BY

Signature:	
Print:	Raffaele Perrotta
Organization:	PER
DATE:	~~5/11/05~~ re 5/12/05 TIME: 8:15

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

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Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute *Ceriodaphnia*
1	04-BCAKR-900	5/19/05	1020	FW	1	1-Gal Amber Jug	x
2	04-HDACA-901	5/19/05	0900	FW	1	1-Gal Amber Jug	x
3	04-HCHNN-902	5/19/05	0948	FW	1	1-Gal Amber Jug	x
4							
5							
6							
7							
8							
9							
10							
11							

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:

RELIQUINSHED BY

Signature:	
Print:	Mike McElroy
Organization:	PER
DATE:	5/19/05 **TIME:** 1407

RECEIVED BY

Signature:	Raffaele Perrotta
Print:	Raffaele Perrotta
Organization:	PER
DATE:	5/19/05 **TIME:** 14:07

***MATRIX CODES:** (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute *Ceriodaphnia dubia*, Acute FHM, Chronic *Selenastrum*
1	05-CCART-006	6-14-05	0805	FW	5	1-Gal Amber Jug	x
2	05-LWSMA-012	6-14-05	0855	FW	5	1-Gal Amber Jug	x
3	05-ASATA-018	6-14-05	1015	FW	5	1-Gal Amber Jug	x
4	05-DSAGR-024	6-14-05	1150 LW	FW	5	1-Gal Amber Jug	x
5	05-DSAPR-030	6-14-05	~~1250~~ 1245	FW	5	1-Gal Amber Jug	x
6	05-BCAKR-036	6-14-05	1340	FW	5	1-Gal Amber Jug	x
7	~~05-MRSFD-042~~			FW	5	1-Gal Amber Jug	x
8	05-HCALR-058	6-14-05	LW 1516 1519	FW	5	1-Gal Amber Jug	x
9	**05-HCALR-059**	6-14-05	1518	FW	5	1-Gal Amber Jug	x
10	~~05-PFDCL-065~~			FW	5	1-Gal Amber Jug	x
11	~~05-HDAGA-071~~			FW	5	1-Gal Amber Jug	x
12	~~05-HCHNN-077~~			FW	5	1-Gal Amber Jug	x
13	~~05-JDAOR-083~~			FW	5	1-Gal Amber Jug	x
14	~~05-DCAWR-089~~			FW	5	1-Gal Amber Jug	x

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
05-HCALR-059= Field duplicate

RELIQUINSHED BY

Signature:	
Print:	Mike McElroy
Organization:	PER
DATE:	6-14-05 **TIME:** 18:17

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Signature:	
Print:	QUANG DO
Organization:	PACIFIC ECORISK
DATE:	6/14/05 **TIME:** 1830

***MATRIX CODES**: (**SED** = Sediment); (**FW** = Freshwater); (**WW** = Wastewater); (**STRMW** = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
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(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	MM/LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute Ceriodaphnia dubia, Acute Fathead Minnow, Chronic Selenastrum capricornutum
1	~~05-CGART-006~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~
2	~~05-LWCMA-012~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~
3	~~05-ASATA-018~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~
4	~~05-DSAGR-024~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~
5	~~05-DCAPR-030~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~
6	~~05-BCAKR-036~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~
7	05-MRSFD-042	6-15-05	1040	FW	5	1-Gal Amber Jug	x
8	~~05-HCALR-058~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~
9	~~05-HCALR-059~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~
10	05-PFDCL-065	6-15-05	1325	FW	5	1-Gal Amber Jug	x
11	05-HDACA-071	6-15-05	1235	FW	5	1-Gal Amber Jug	x
12	05-HCHNN-077	6-15-05	1145	FW	5	1-Gal Amber Jug	x
13	05-JDAOR-083	6-15-05	0935	FW	5	1-Gal Amber Jug	x
14	05-DCAWR-089	6-15-05	0805	FW	5	1-Gal Amber Jug	x

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
05-HCALR-059= Field duplicate

RELIQUINSHED BY		
Signature:		
Print:	Mike McElroy	
Organization:	PER	
DATE:	6-15-05	**TIME:** 1740
RECEIVED BY		
Signature:		
Print:	Raffaele Reniatti	
Organization:	PER	
DATE:	6/16/05	**TIME:** 8:15

***MATRIX CODES:** (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute *Ceriodaphnia*, Acute FHM, Chronic *Selenastrum*	REQUESTED ANALYSIS: Chronic 10-Day Hyalella
1	06-CCART-006	7.12.05	0810	FW	5	1-Gal Amber Jug	x	
2	06-CCART-007	7.12.05	0811	SED	1	2-L glass jar		x
3	06-LWSMA-013	7.12.05	0925	FW	5	1-Gal Amber Jug	x	
4	06-LWSMA-014	7.12.05	0926	SED	1	2-L glass jar		x
5	**06-LWSMA-015**	7.12.05	0927	SED	1	2-L glass jar		x
6	06-ASATA-021	7.12.05	1100	FW	5	1-Gal Amber Jug	x	
7	06-ASATA-022	7.12.05	1101	SED	1	2-L glass jar		x
8	06-DSAGR-028	7.12.05	1230	FW	5	1-Gal Amber Jug	x	
9	06-DSAGR-029	7.12.05	1231	SED	1	2-L glass jar		x
10	06-DSAPR-035	7.12.05	1345	FW	5	1-Gal Amber Jug	x	
11	~~06-DSAPR-036~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
12	06-BCAKR-042	7.12.05	1440	FW	5	1-Gal Amber Jug	x	
13	06-BCAKR-043	7.12.05	1441	SED	1	2-L glass jar		x

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
06-LWSMA-015 = Field Duplicate

RELIQUISHED BY		RECEIVED BY	
Signature:	[signature]	Signature:	
Print:	Lucas Wickham	Print:	
Organization:	PER	Organization:	
DATE:	7.12.05 TIME: 1730	DATE:	TIME:
Signature:	[signature]	Signature:	
Print:	QUANG DO	Print:	
Organization:	PER	Organization:	
DATE:	7-12-05 TIME: 1730	DATE:	TIME:

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute Ceriodaphnia, Acute FHM, Chronic Selenastrum	REQUESTED ANALYSIS: Chronic 10-Day Hyalella
1	~~06-MRSED-049~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	x	
2	~~06-MRSED-050~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
3	~~06-HCALR-056~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	x	
4	~~06-HCALR-057~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
5	~~06-PFDCL-063~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	x	
6	~~06-PFDCL-064~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
7	~~06-HDACA-070~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	x	
8	~~06-HDACA-071~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
9	~~06-HCHNN-077~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	x	
10	~~06-HCHNN-078~~			~~SED~~	~~1~~	~~2-L glass jar~~		x
11	06-JDAOR-084	7.12.05	1555	FW	5	1-Gal Amber Jug	x	
12	06-JDAOR-085	7.12.05	1556	SED	1	2-L glass jar		x
13	~~06-DCAWR-091~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	x	
14	~~06-DCAWR-092~~			~~SED~~	~~1~~	~~2-L glass jar~~		x

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELIQUINSHED BY

Signature:	[signature]	**Signature:**	
Print:	Lucas Wickham	**Print:**	
Organization:	PER	**Organization:**	
DATE:	7.12.05 **TIME:** 1730	**DATE:**	**TIME:**

RECEIVED BY

Signature:	[signature]	**Signature:**	
Print:	QUANG PO	**Print:**	
Organization:	PER	**Organization:**	
DATE:	7-12-05 **TIME:** 1730	**DATE:**	**TIME:**

***MATRIX CODES:** (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, LW
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9486

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute *Ceriodaphnia*, Acute FHM, Chronic *Selenastrum*	REQUESTED ANALYSIS: Chronic 10-Day Hyalella
1	06-MRSFD-049	7/13/05	1305	FW	5	1-Gal Amber Jug	x	
2	06-MRSFD-050	7/13/05	1306	SED	1	2-L glass jar		x
3	06-HCALR-056	7/13/05	1138	FW	5	1-Gal Amber Jug	x	
4	06-HCALR-057	7/13/05	1139	SED	1	2-L glass jar		x
5	06-PFDCL-063	7/13/05	737	FW	5	1-Gal Amber Jug	x	
6	06-PFDCL-064	7/13/05	738	SED	1	2-L glass jar		x
7	06-HDACA-070	7/13/05	840	FW	5	1-Gal Amber Jug	x	
8	06-HDACA-071	7/13/05	841	SED	1	2-L glass jar		x
9	06-HCHNN-077	7/13/05	1002	FW	5	1-Gal Amber Jug	x	
10	06-HCHNN-078	7/13/05	1003	SED	1	2-L glass jar		x
11	~~06-JDAOR-084~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	x	
12	~~06-JDAOR-085~~			~~SED~~	1	2-L glass jar		x
13	06-DCAWR-091	7/13/05	1410	FW	5	1-Gal Amber Jug	x	
14	06-DCAWR-092	7/13/05	1412	SED	1	2-L glass jar		x

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELIQUINSHED BY

Signature:	[signature]	**Signature:**	
Print:	JOHN SCHWALBE	**Print:**	
Organization:	PER	**Organization:**	
DATE:	7/13/05 **TIME:**	**DATE:**	**TIME:**

RECEIVED BY

Signature:	Raffaele Perrotta	**Signature:**	
Print:	Raffaele Perrotta	**Print:**	
Organization:	PER	**Organization:**	
DATE:	7/13/05 **TIME:** 18:45	**DATE:**	**TIME:**

***MATRIX CODES:** (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	JS, MM
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: ~~Acute Cerio, Acute Fthm~~, Chronic *Selenastrum*	~~Chronic 10 Day Hyalella~~
1	OG-05APR-093	7/21/05	1415	FW	1	1 gl amber	X	
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	(No)	
Turnaround Time:	STD	Specify:	

Comments:

_____ = Field Duplicate

RELIQUINSHED BY

Signature:		**Signature:**	
Print:	JOHN SCHWALBE	**Print:**	
Organization:	PER	**Organization:**	
DATE:	7/21/05 **TIME:** 1700	**DATE:**	**TIME:**

RECEIVED BY

Signature:		**Signature:**	
Print:	Lucas Wickham	**Print:**	
Organization:	Pacific EcoRisk	**Organization:**	
DATE:	07.21.05 **TIME:** 1702	**DATE:**	**TIME:**

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. / Mike M
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Acute Cerio, Acute FHM, Chronic *Selenastrum*									
1	07-545XCCART-GR	8-16-05	0800	FW	5	1-Gal Amber Jug	x									
2	07-545XASAAT-GR	8-16-05	1040	FW	5	1-Gal Amber Jug	x									
3	07-535XDSAGR-GR	8-16-05	1215	FW	5	1-Gal Amber Jug	x									
4	07-535XDSAPR-GR	8-16-05	1330	FW	5	1-Gal Amber Jug	x									
5	07-535XBCAKR-GR	8-16-05	1445	FW	5	1-Gal Amber Jug	x									
6	~~07-535XMRGFD-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~									
7	~~07-535XHCALR-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~									
8	~~07-535XPFDCL-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~									
9	07-535XHDACA-GR	8-16-05	1700	FW	5	1-Gal Amber Jug	x									
10	~~07-535XHCHNN-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~									
11	~~07-535XJBAOR-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~									
12	~~07-535XDGAWR-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~									
13	07-545XDCARE-GR	8-16-05	0920	FW	5	1-Gal Amber Jug	x									
14	ok ~~07-535XHDACA-FD~~	8-16-05	1700	FW	5	1-Gal Amber Jug	x									

Included EKK

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:
07-535XHDACA-FD= Field Duplicate

RELINQUISHED BY

Signature:	Eddie Kalomo	**Signature:**	[signature]
Print:	EDDIE KALOMO	**Print:**	Y. Khadiyeva
Organization:	PER	**Organization:**	
DATE: 8-16-05	**TIME:** 1800	**DATE:** 8-16-5	**TIME:** 18:15

RECEIVED BY

Signature:		**Signature:**	
Print:		**Print:**	
Organization:		**Organization:**	
DATE:	**TIME:**	**DATE:**	**TIME:**

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	Eddie K. Rob M.
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS: Acute *Cerio*, Acute FHM, Chronic *Selenastrum*

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Acute *Cerio*, Acute FHM, Chronic *Selenastrum*
1	07-545XCCART-GR			FW	5	1-Gal Amber Jug	x
2	07-545XASAAT-GR			FW	5	1-Gal Amber Jug	x
3	07-535XDSAGR-GR			FW	5	1-Gal Amber Jug	x
4	07-535XDSAPR-GR			FW	5	1-Gal Amber Jug	x
5	07-535XBCAKR-GR			FW	5	1-Gal Amber Jug	x
6	07-535XMRSFD-GR	8-17-05	0945	FW	5	1-Gal Amber Jug	x
7	07-535XHCALR-GR	8.17.05	0845	FW	5	1-Gal Amber Jug	x
8	07-535XPFDCL-GR	8.17.05	1400	FW	5	1-Gal Amber Jug	x
9	07-535XHDACA-GR			FW	5	1-Gal Amber Jug	x
10	07-535XHCHNN-GR	8.17.05	0800	FW	5	1-Gal Amber Jug	x
11	07-535XJDAOR-GR	8.17.05	1045	FW	5	1-Gal Amber Jug	x
12	07-535XDCAWR-GR	8.17.05	1150	FW	5	1-Gal Amber Jug	x
13	07-545XDCARE-GR			FW	5	1-Gal Amber Jug	x
14	07-535XHDACA-FD			FW	5	1-Gal Amber Jug	x

Correct Containers:	(Yes)	No	
Sample Temperature:	Ambient	(Cold)	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	(STD)	Specify:	

Comments:
07-535XHDACA-FD= Field Duplicate

RELINQUISHED BY

Signature: Eddie Kalomba	Signature: Natasha Tollei
Print: EDDIE KALOMBA	Print: NATASHA TOLLEI
Organization: PER	Organization: PER
DATE: 8-17-05 TIME:	DATE: 8-18-05 TIME: 900

RECEIVED BY

Signature:	Signature:
Print:	Print:
Organization:	Organization:
DATE: TIME:	DATE: TIME:

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

CHAIN OF CUSTODY RECORD

PACIFIC ECORISK
835 Arnold Drive, Suite 104
Martinez, CA 94553
(925)313-8080 fax: (925)313-8089

RESULTS TO: Mike Johnson
UC Davis
ESJWQC
Attn: ______ Tel: ______

BILL TO: Same As Results To
Attn: ______ Tel: ______

PROJECT: ESJWQC #9466

SAMPLE IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	GRAB/ COMP.	# CONTAINERS/TYPE	Chronic Selenastrum	96 hr acute Cerio							REMARKS
07-53[illegible] X JDAOR-GR	8/24/05	1140	Ambient H2O	G	1 / 1g Amber		X							
07-535 X HCALR-GR	8/24/05	1230	Ambient H2O	G	1 / 1g Amber	X								
					/									
					/									
					/									
					/									
					/									
					/									
					/									
					/									
					/									

METHOD OF SHIPMENT: FED X ____ UPS ____ HAND X OTHER ____

COMMENTS: Event 7 resampling

CODES:

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	PAGE #
[signature]	8/24/05		[signature]	8/24/05	1730	OF

White - Return w/sample Yellow: - Keep for your records

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute Ceriod., Acute FHM, Chronic Selenastrum	REQUESTED ANALYSIS: Chronic 10-Day Hyalella
1	~~08-535XMDAOR-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
2	~~08-535XMDAOR-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
3	~~08-535XMR3FD-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
4	~~08-535XMR3FD-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
5	~~08-535XPFDCL-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
6	~~08-535XPFDCL-FD~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
7	~~08-535XPFDCL-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
8	~~08-545XASAAT-GR~~	9		~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
9	~~08-545XASAAT-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
10	08-545XCCART-GR	9/20/05	900	FW	5	1-Gal Amber Jug	x	
11	08-545XCCART-IN	9/20/05	800	SED	1	2-L glass jar		x
12	08-545XDCARE-GR	9/20/05	1000	FW	5	1-Gal Amber Jug	x	
13	08-545XDCARE-IN	9/20/05	1000	SED	1	2-L glass jar		x

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
~~**08-535XPFDCL-FD = Field duplicate**~~

RELINQUISHED BY

Signature:	[signature]	**Signature:**	[signature]
Print:	M. Mc Elroy	**Print:**	Natasha Tellei
Organization:	PER	**Organization:**	PER
DATE:	9/20/05 **TIME:** 1730	**DATE:**	9-20-05 **TIME:** 1730

RECEIVED BY

Signature:	[signature]	**Signature:**	
Print:		**Print:**	
Organization:		**Organization:**	
DATE:	**TIME:**	**DATE:**	**TIME:**

***MATRIX CODES:** (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute Ceriodaphnia, Acute FHM, Chronic Selenastrum	REQUESTED ANALYSIS: Chronic 10-Day Hyalella
1	08-535XBCAKR-GR	9/20/05	1445	FW	5	1-Gal Amber Jug	x	
2	08-535XBCAKR-IN	9/20/05	1445	SED	1	2-L glass jar		x
3	~~08-535XDCAWR-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
4	~~08-535XDCAWR-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
5	08-535XDSAGR-GR	9/20/05	1200	FW	5	1-Gal Amber Jug	x	
6	08-535XDSAGR-IN	9/20/05	1200	SED	1	2-L glass jar		x
7	08-535XDSAPR-GR	9/20/05	1348	FW	5	1-Gal Amber Jug	x	
8	~~08-535XDSAPR-IN~~	~~9/20/05~~	~~1340~~	~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
9	~~08-535XHGALR-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
10	~~08-535XHGALR-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
11	08-535XHCHNN-GR	9/20/05	1630	FW	5	1-Gal Amber Jug	x	
12	08-535XHCHNN-IN	9/20/05	1630	SED	1	2-L glass jar		x
13	~~08-535XHDACA-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
14	~~08-535XHDACA-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~

Correct Containers:	**Yes**	**No**	
Sample Temperature:	**Ambient**	**Cold**	**Warm**
Sample Preservative:	**Yes**	**No**	
Turnaround Time:	**STD**	**Specify:**	

Comments:
No sediment collected at DSAPR, too dangerous to collect. High traffic on Hwy 99 bridge.

RELIQUISHED BY

Signature:	M McE	**Signature:**	Natasha Telles
Print:	Mike McElroy	**Print:**	Natasha Telles
Organization:	PER	**Organization:**	PER
DATE: 9/20/05	**TIME:** 1730	**DATE:** 9-20-05	**TIME:** 1730

RECEIVED BY

Signature:		**Signature:**	
Print:		**Print:**	
Organization:		**Organization:**	
DATE:	**TIME:**	**DATE:**	**TIME:**

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

REQUESTED ANALYSIS

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	Acute *Cerio*, Acute FHM, Chronic *Selenastrum*	Chronic 10-Day Hyalella									
1	~~08-535XBCAKR-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~										
2	~~08-535XBCAKR-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~									
3	08-535XDCAWR-GR	9-21-05	1220	FW	5	1-Gal Amber Jug	x										
4	08-535XDCAWR-IN	9-21-05	1220	SED	1	2-L glass jar		x									
5	~~08-535XDSAGR-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~										
6	~~08-535XDSAGR-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~									
7	~~08-535XDSAPR-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~										
8	~~08-535XDSAPR-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~									
9	08-535XHCALR-GR	9-21-05	800	FW	5	1-Gal Amber Jug	x										
10	08-535XHCALR-IN	9-21-05	800	SED	1	2-L glass jar		x									
11	~~08-535XHCHNN-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~										
12	~~08-535XHCHNN-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~									
13	08-535XHDACA-GR	9/21/05	1530	FW	5	1-Gal Amber Jug	x										
14	08-535XHDACA-IN	9/21/05	1530	SED	1	2-L glass jar		x									

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:

RELINQUISHED BY

Signature:	[signature]	**Signature:**	
Print:	Mike McElroy	**Print:**	
Organization:	PER	**Organization:**	
DATE: 9-21-05	**TIME:** 1630	**DATE:**	**TIME:**

RECEIVED BY

Signature:	[signature]	**Signature:**	
Print:	Raffaele Pericotti	**Print:**	
Organization:	PBR	**Organization:**	
DATE: 9/21/05	**TIME:** 8:40	**DATE:**	**TIME:**

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Pacific EcoRisk
ENVIRONMENTAL CONSULTING & TESTING
835 Arnold Drive, Suite 104, Martinez, CA 94553
(925) 313-8080 FAX (925) 313-8089

PER CHAIN-OF-CUSTODY RECORD

Client Name:	Pacific EcoRisk
Client Address:	835 Arnold Drive, Suite 104 Martinez, CA 94553
Sampled By:	M. McElroy, D. Nagy
Phone:	(925) 313-8080
FAX:	(925) 313-8089
Project Manager:	Stephen Clark
Project Name:	East San Joaquin Water Quality Coalition
PO Number:	9466

	Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container Number	Container Type	REQUESTED ANALYSIS: Acute Ceriod., Acute FHM, Chronic Selenastrum	Chronic 10-Day Hyalella
1	08-535XJDAOR-GR	9.21.05	1030	FW	5	1-Gal Amber Jug	x	
2	08-535XJDAOR-IN	9.21.05	1030	SED	1	2-L glass jar		x
3	08-535XMRSFD-GR	9.21.05	930	FW	5	1-Gal Amber Jug	x	
4	08-535XMRSFD-IN	9.21.05	930	SED	1	2-L glass jar		x
5	08-535XPFDCL-GR	9.21.05	1340	FW	5	1-Gal Amber Jug	x	
6	**08-535XPFDCL-FD**	9.21.05	1340	FW	5	1-Gal Amber Jug	x	
7	08-535XPFDCL-IN	9.21.05	1340	SED	1	2-L glass jar		x
8	~~08-545XASAAT-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
9	~~08-545XASAAT-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
10	~~08-545XCCART-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
11	~~08-545XCCART-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~
12	~~08-545XDGARE-GR~~			~~FW~~	~~5~~	~~1-Gal Amber Jug~~	~~x~~	
13	~~08-545XDGARE-IN~~			~~SED~~	~~1~~	~~2-L glass jar~~		~~x~~

Correct Containers:	Yes	No	
Sample Temperature:	Ambient	Cold	Warm
Sample Preservative:	Yes	No	
Turnaround Time:	STD	Specify:	

Comments:
08-535XPFDCL-FD = Field duplicate

RELIQUINSHED BY

Signature:		**Signature:**	
Print:	Mike McElroy	**Print:**	
Organization:	PER	**Organization:**	
DATE:	9.21.05 **TIME:** 1630	**DATE:**	**TIME:**

RECEIVED BY

Signature:	Raffaele Perrotta	**Signature:**	
Print:	Raffaele Perrotta	**Print:**	
Organization:	PER	**Organization:**	
DATE:	9/22/05 **TIME:** 8:40	**DATE:**	**TIME:**

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Associated Laboratory and Field QC Results

ESJWQC Color QAQC

Field Blanks

Sample Date	Station Code	Replicate	Lab Result Comments	Color
15/Feb/2005	535XDCAWR	1	Sample analyzed outside holding time.	ND
21/Mar/2005	535XMRSFD	1		ND
10/May/2005	545XCCART	1		ND
14/Jun/2005	535XHCALR	1		ND
16/Aug/2005	535XHDACA	1		ND
21/Sep/2005	535XPFDCL	1		ND
21/Sep/2005	535XPFDCL	2	RPD NA	ND

Field Duplicates

Sample Date	Station Code	Replicate	Lab Result Comments	Color
15/Feb/2005	535XDCAWR	1	RPD 0 Sample analyzed outside holding time.	40
21/Mar/2005	535XMRSFD	1	RPD 0	20
10/May/2005	545XCCART	1	RPD 0	50
14/Jun/2005	535XHCALR	1	RPD 22	40
14/Jun/2005	535XHCALR	2	RPD 0	40
16/Aug/2005	535XHDACA	1	RPD 0	50
21/Sep/2005	535XPFDCL	1	RPD 29	150

Lab Duplicates

Sample Date	Station Code	Replicate	Lab Result Comments	Color
21/Mar/2005	535XMRSFD	2	RPD 0	20
22/Mar/2005	535XPFDCL	2	RPD 0	70
10/May/2005	545XCCART	2	RPD 0	50
11/May/2005	535XHDACA	2	RPD 0	25
15/Jun/2005	535XHDACA	2	RPD 0	20
12/Jul/2005	535XBCAKR	2	RPD 0	15
16/Aug/2005	545XCCART	2	RPD 0	60
17/Aug/2005	535XPFDCL	2	RPD 0	200
20/Sep/2005	535XDSAGR	2	RPD 0	100

Lab Blanks

Sample Date	Station Code	Replicate	Lab Result Comments	Color
17/Feb/2005	LABQA	1		ND
18/Feb/2005	LABQA	1		ND
22/Mar/2005	LABQA	1		ND
25/Mar/2005	LABQA	1		ND
11/May/2005	LABQA	1		ND
12/May/2005	LABQA	1		ND
15/Jun/2005	LABQA	1		ND
16/Jun/2005	LABQA	1		ND
14/Jul/2005	LABQA	1		ND
18/Aug/2005	LABQA	1		ND
21/Sep/2005	LABQA	1		ND
22/Sep/2005	LABQA	1		ND

Lab Duplicates- non-project samples

Sample Date	Station Code	Replicate	Lab Result Comments	Color
17/Feb/2005	000NONAG	1		ND
17/Feb/2005	000NONAG	2	RPD NA	ND
18/Feb/2005	000NONAG	1		ND
18/Feb/2005	000NONAG	2	RPD NA	ND
22/Sep/2005	000NONAG	1		25
22/Sep/2005	000NONAG	2	RPD 0	25

ESJWQC E. coli QAQC

Field Blank

Sample Date	Station Code	Replicate	Lab Result Comments	E. coli
15/Feb/2005	535XDCAWR	1	AnalysisTime 21:20; DF=1	ND
21/Mar/2005	535XMRSFD	1	AnalysisTime 21:00; DF=1	ND
10/May/2005	545XCCART	1	AnalysisTime 21:00; DF=1	ND
14/Jun/2005	535XHCALR	1	AnalysisTime 21:50; DF=1	ND
16/Aug/2005	535XHDACA	1	AnalysisTime 21:30; DF=1	ND
21/Sep/2005	535XPFDCL	1	AnalysisTime 19:53; DF=1	40

Field Duplicate

Sample Date	Station Code	Replicate	Lab Result Comments	E. coli
15/Feb/2005	535XDCAWR	1	AnalysisTime 21:20; DF=1 RPD 96	23
21/Mar/2005	535XMRSFD	1	AnalysisTime 21:00; DF=1 RPD 19	14
10/May/2005	545XCCART	1	AnalysisTime 21:00; DF=1 RPD 168	540
14/Jun/2005	535XHCALR	1	AnalysisTime 21:50; DF=1 RPD 46	50
16/Aug/2005	535XHDACA	1	AnalysisTime 21:30; DF=1 RPD 0	1600
21/Sep/2005	535XPFDCL	1	AnalysisTime 19:53; DF=1 RPD 104	1600

ESJWQC Total Dissolved Solids QAQC

Field Blanks

Sample Date	Station Code	Replicate	Lab Result Comments	Total Dissolved Solids
15/Feb/2005	535XDCAWR	1		ND
21/Mar/2005	535XMRSFD	1		ND
10/May/2005	545XCCART	1		ND
14/Jun/2005	535XHCALR	1		10
16/Aug/2005	535XHDACA	1		ND
16/Aug/2005	535XHDACA	2	RPD 0	ND
21/Sep/2005	535XPFDCL	1		ND

Field Duplicates

Sample Date	Station Code	Replicate	Lab Result Comments	Total Dissolved Solids
15/Feb/2005	535XDCAWR	1	RPD 5	42
21/Mar/2005	535XMRSFD	1	RPD 4	70
10/May/2005	545XCCART	1	RPD 0	110
14/Jun/2005	535XHCALR	1	RPD 0	35
14/Jun/2005	535XHCALR	2	RPD 0	35
16/Aug/2005	535XHDACA	1	RPD 2	490
21/Sep/2005	535XPFDCL	1	RPD 2	450

Lab Duplicates

Sample Date	Station Code	Replicate	Lab Result Comments	Total Dissolved Solids
15/Feb/2005	535XPFDCL	2	RPD 0	1600
16/Feb/2005	535XMRSFD	2	RPD 0	65
10/May/2005	535XDSAPR	2	RPD 0	130
11/May/2005	535XJDAOR	2	RPD 4	68
11/May/2005	535XHDACA	2	RPD 0	740
14/Jun/2005	545XCCART	2	RPD 3	53
15/Jun/2005	535XHDACA	2	RPD 2	700
13/Jul/2005	535XPFDCL	2	RPD 0	1100
20/Sep/2005	535XBCAKR	2	RPD 2	41
21/Sep/2005	535XMRSFD	2	RPD 0	31

Lab Blanks

Sample Date	Station Code	Replicate	Lab Result Comments	Total Dissolved Solids
20/Feb/2005	LABQA	1		ND
24/Feb/2005	LABQA	1		ND
25/Feb/2005	LABQA	1		ND
29/Mar/2005	LABQA	1		ND
01/Apr/2005	LABQA	1		ND
15/May/2005	LABQA	1		ND
17/May/2005	LABQA	1		ND
18/May/2005	LABQA	1		ND
21/Jun/2005	LABQA	1		ND
20/Jul/2005	LABQA	1		ND
21/Jul/2005	LABQA	1		ND
22/Aug/2005	LABQA	1		ND
23/Aug/2005	LABQA	1		ND
26/Sep/2005	LABQA	1		ND
28/Sep/2005	LABQA	1		ND
29/Sep/2005	LABQA	1		ND

Lab Duplicates- non-project samples

Sample Date	Station Code	Replicate	Lab Result Comments	Total Dissolved Solids
25/Feb/2005	000NONAG	1		360
25/Feb/2005	000NONAG	2	RPD 0	360
29/Mar/2005	000NONAG	1		670
29/Mar/2005	000NONAG	2	RPD NA	660
01/Apr/2005	000NONAG	1		550
01/Apr/2005	000NONAG	2	RPD 0	550
15/May/2005	000NONAG	1		230
15/May/2005	000NONAG	2	RPD 0	230
20/Jul/2005	000NONAG	1		430
20/Jul/2005	000NONAG	2	RPD 0	430
23/Aug/2005	000NONAG	2	RPD 0	1100
23/Aug/2005	000NONAG	1		1100
25/Aug/2005	000NONAG	1		170
25/Aug/2005	000NONAG	2	RPD 0	170
26/Sep/2005	000NONAG	1		270
26/Sep/2005	000NONAG	2	RPD 0	270

ESJWQC Total Organic Carbon QAQC

Field Blanks

Sample Date	Station Code	Replicate	Lab Result Comments	Total Organic Carbon
15/Feb/2005	535XDCAWR	1		0.78
21/Mar/2005	535XMRSFD	1		0.2
10/May/2005	545XCCART	1		0.26
14/Jun/2005	535XHCALR	1		4.7
16/Aug/2005	535XHDACA	1		1.8
21/Sep/2005	535XPFDCL	1		5.8

Field Duplicates

Sample Date	Station Code	Replicate	Lab Result Comments	Total Organic Carbon
15/Feb/2005	535XDCAWR	1	RPD 11	2.8
21/Mar/2005	535XMRSFD	1	RPD 3	2.6
10/May/2005	545XCCART	1	RPD 7	7.3
14/Jun/2005	535XHCALR	1	RPD 3	2.8
16/Aug/2005	535XHDACA	1	RPD 0	6.4
21/Sep/2005	535XPFDCL	1	RPD 32	23

Lab Blanks

Sample Date	Station Code	Replicate	Lab Result Comments	Total Organic Carbon
01/Mar/2005	LABQA	1		ND
02/Mar/2005	LABQA	1		ND
03/Mar/2005	LABQA	1		ND
07/Mar/2005	LABQA	1		ND
31/Mar/2005	LABQA	1		ND
04/Apr/2005	LABQA	1		ND
05/Apr/2005	LABQA	1		ND
26/May/2005	LABQA	1		0.23
27/May/2005	LABQA	1		ND
29/May/2005	LABQA	1		ND
30/May/2005	LABQA	1		ND
31/May/2005	LABQA	1		ND
22/Jun/2005	LABQA	1		ND
23/Jun/2005	LABQA	1		ND
15/Jul/2005	LABQA	1		ND
18/Jul/2005	LABQA	1		ND
19/Jul/2005	LABQA	1		ND
23/Aug/2005	LABQA	1		ND
29/Aug/2005	LABQA	1		ND
30/Sep/2005	LABQA	1		ND
04/Oct/2005	LABQA	1		ND

LCS

Sample Date	Station Code	Replicate	Lab Result Comments[1]	Total Organic Carbon
01/Mar/2005	LABQA	1	PR 100	5
01/Mar/2005	LABQA	2	PR 100, RPD 2	5
02/Mar/2005	LABQA	1	PR 98	4.9
02/Mar/2005	LABQA	2	PR 100, RPD 2	5
03/Mar/2005	LABQA	1	PR 98	4.9
03/Mar/2005	LABQA	2	PR 100, RPD 2	5
07/Mar/2005	LABQA	1	PR 104	5.2
07/Mar/2005	LABQA	2	PR 102, RPD 2	5.1
31/Mar/2005	LABQA	1	PR 96	4.8
31/Mar/2005	LABQA	2	PR 96, RPD 0	4.8
04/Apr/2005	LABQA	1	PR 100	5
04/Apr/2005	LABQA	2	PR 98, RPD 2	4.9
05/Apr/2005	LABQA	1	PR 94	4.7
05/Apr/2005	LABQA	2	PR 98, RPD 4.1	4.9
26/May/2005	LABQA	1	PR 91	4.8
26/May/2005	LABQA	2	PR 95, RPD 4	5
27/May/2005	LABQA	1	PR 100	5
27/May/2005	LABQA	2	PR 98, RPD 2	4.9
29/May/2005	LABQA	1	PR 98	4.9
29/May/2005	LABQA	2	PR 98, RPD 0	4.9
30/May/2005	LABQA	1	PR 98	4.9
30/May/2005	LABQA	2	PR 98, RPD 0	4.9
31/May/2005	LABQA	1	PR 94	4.7
31/May/2005	LABQA	2	PR 98, RPD 4.1	4.9
22/Jun/2005	LABQA	1	PR 100	5
22/Jun/2005	LABQA	2	PR 96, RPD 2	4.8
23/Jun/2005	LABQA	1	PR 102	5.1
23/Jun/2005	LABQA	2	PR 106, RPD 3.9	5.3

Sample Date	Station Code	Replicate	Lab Result Comments[1]	Total Organic Carbon
15/Jul/2005	LABQA	1	PR 104	5.2
15/Jul/2005	LABQA	2	PR 104, RPD 0	5.2
18/Jul/2005	LABQA	1	PR 104	5.2
18/Jul/2005	LABQA	2	PR 106, RPD 2	5.3
19/Jul/2005	LABQA	1	PR 102	5.1
19/Jul/2005	LABQA	2	PR 104, RPD 2	5.2
23/Aug/2005	LABQA	1	PR 106	5.3
23/Aug/2005	LABQA	2	PR 106, RPD 0	5.3
29/Aug/2005	LABQA	1	PR 104, PRD 2	5.2
29/Aug/2005	LABQA	2	PR 104, RPD 0	5.2
30/Sep/2005	LABQA	1	PR 105	5.3
30/Sep/2005	LABQA	2	PR 104, RPD 1.6	5.2
04/Oct/2005	LABQA	1	PR 100	5
04/Oct/2005	LABQA	2	PR 100, RPD 0	5

MS

Sample Date	Station Code	Replicate	Lab Result Comments	Total Organic Carbon
15/Feb/2005	535XDCAWR	1	PR 105	5
15/Feb/2005	535XDCAWR	2	PR 107, RPD 2	5.1
15/Feb/2005	535XDCAWR	1	PR 107	7
15/Feb/2005	535XDCAWR	2	PR 106, RPD 1.4	6.9
01/Mar/2005	000NONAG[2]	1	PR 102	8.7
01/Mar/2005	000NONAG	2	PR 98, RPD 3.6	8.4
21/Mar/2005	535XMRSFD	1	PR 100	6.5
21/Mar/2005	535XMRSFD	2	PR 100, RPD 0	6.5
22/Mar/2005	535XDCAWR	1	PR 103	12
22/Mar/2005	535XDCAWR	2	PR 101, RPD 1.7	12
05/Apr/2005	000NONAG	1	PR 105	54
05/Apr/2005	000NONAG	2	PR 104, RPD 0.8	53
05/Apr/2005	000NONAG	1	PR 100	8.3
05/Apr/2005	000NONAG	2	PR 102, RPD 2.3	8.5
10/May/2005	535XDSAGR	1	PR 102	8
10/May/2005	535XDSAGR	2	PR 102, RPD 0	8
10/May/2005	535XHCHNN	1	PR 100	6.2
10/May/2005	535XHCHNN	2	PR 101, RPD 1.7	6.3
27/May/2005	000NONAG	1	PR 100	5.5
27/May/2005	000NONAG	2	PR 105, RPD 1.8	5.9
27/May/2005	000NONAG	1	PR 102	5.8
27/May/2005	000NONAG	2	PR 102, RPD 1.9	5.6
31/May/2005	000NONAG	1	PR 103	6.2
31/May/2005	000NONAG	2	PR 103, RPD 0	6.2
31/May/2005	000NONAG	1	PR 107	5.5

Sample Date	Station Code	Replicate	Lab Result Comments	Total Organic Carbon
31/May/2005	000NONAG	2	PR 107, RPD 0	5.5
14/Jun/2005	535XHCALR	1	PR 104	7.2
14/Jun/2005	535XHCALR	2	PR 102, RPD 1.3	7.1
23/Jun/2005	000NONAG	1	PR 109	6.1
23/Jun/2005	000NONAG	2	PR 105, RPD 3.3	5.9
15/Jul/2005	000NONAG	1	PR 107	5.6
15/Jul/2005	000NONAG	2	PR 107, RPD 0	5.6
18/Jul/2005	000NONAG	1	PR 35	2.6
18/Jul/2005	000NONAG	2	PR 35, RPD 0	2.6
18/Jul/2005	000NONAG	1	PR 100	6.3
18/Jul/2005	000NONAG	2	PR 104, RPD 4.7	6.6
19/Jul/2005	544XTTGUR	1	PR 104	13
19/Jul/2005	544XTTGUR	2	PR 104, RPD 0	13
16/Aug/2005	535XHDACA	1	PR 105	11
16/Aug/2005	535XHDACA	2	PR 106, RPD 0.9	11
29/Aug/2005	000NONAG	1	PR 104	5.1
29/Aug/2005	000NONAG	2	PR 105, RPD 1.3	5.2
30/Sep/2005	000NONAG	1	PR 105	6.3
30/Sep/2005	000NONAG	2	PR 106, RPD 1.6	6.4
04/Oct/2005	535XPFDCL	1	PR 108	140
04/Oct/2005	535XPFDCL	2	PR 100, RPD 5.8	132.6

[1] PR – Percent Recovery; RPD – Relative Percent Difference

[2] NONAG indicates that the sample was not submitted for QA by the ESJWQC. The sample was provided by an unknown source and included in the QA analysis with the QA samples from this project, and was included in the QA report from the laboratory to meet their QA criteria.

ESJWQC Turbidity QA

Field Blanks

Sample Date	Station Code	Replicate	Lab Result Comments	Turbidity
15/Feb/2005	535XDCAWR	1	Sample analyzed outside holding time.	0.2
21/Mar/2005	535XMRSFD	1		0.1
10/May/2005	545XCCART	1		0.4
14/Jun/2005	535XHCALR	1		1
16/Aug/2005	535XHDACA	1		0.2
21/Sep/2005	535XPFDCL	1		ND
21/Sep/2005	535XPFDCL	2	RPD NA	ND

Field Duplicates

Sample Date	Station Code	Replicate	Lab Result Comments	Turbidity
15/Feb/2005	535XDCAWR	1	H; RPD 9	10
21/Mar/2005	535XMRSFD	1	RPD 22	3.9
10/May/2005	545XCCART	1	RPD 6	16
14/Jun/2005	535XHCALR	1	RPD 0	14
14/Jun/2005	535XHCALR	2	RPD 0	14
16/Aug/2005	535XHDACA	1	RPD 20	8.1
21/Sep/2005	535XPFDCL	1	RPD 3	29

H - Sample analyzed outside holding time

Lab Duplicates

Sample Date	Station Code	Replicate	Lab Result Comments	Turbidity
21/Mar/2005	535XMRSFD	1	RPD 0	4.9
22/Mar/2005	535XPFDCL	1	RPD 0	15
10/May/2005	545XCCART	1	RPD 0	17
11/May/2005	535XHDACA	1	RPD 0	5.3
15/Jun/2005	535XHDACA	1	RPD 0	1.4
12/Jul/2005	535XBCAKR	1	RPD 0	5.4
16/Aug/2005	545XCCART	1	RPD 0	12
17/Aug/2005	535XPFDCL	1	RPD 0	48
20/Sep/2005	535XDSAGR	1	RPD 0	28

Lab Blanks

Sample Date	Station Code	Replicate	Lab Result Comments	Turbidity
17/Feb/2005	LABQA	1		ND
18/Feb/2005	LABQA	1		ND
22/Mar/2005	LABQA	1		ND
25/Mar/2005	LABQA	1		ND
11/May/2005	LABQA	1		ND
12/May/2005	LABQA	1		ND
15/Jun/2005	LABQA	1		ND
16/Jun/2005	LABQA	1		ND
14/Jul/2005	LABQA	1		ND
18/Aug/2005	LABQA	1		ND
21/Sep/2005	LABQA	1		ND
22/Sep/2005	LABQA	1		ND

Lab Duplicates- non-project samples

Sample Date	Station Code	Replicate	Lab Result Comments	Turbidity
17/Feb/2005	000NONAG	1		0.8
17/Feb/2005	000NONAG	2	RPD 0	0.8
18/Feb/2005	000NONAG	1		6.7
18/Feb/2005	000NONAG	2	RPD 0	6.7
11/May/2005	000NONAG	1		0.4
11/May/2005	000NONAG	2	RPD 0	0.4
18/Aug/2005	000NONAG	1		ND
18/Aug/2005	000NONAG	2	RPD NA	ND
22/Sep/2005	000NONAG	1		0.3
22/Sep/2005	000NONAG	2	RPD 0	0.3

ESJWQC Organophosphate QAQC

Field Blank

Sample Date	Station Code	Replicate	Chlorpyrifos	Diazinon
15/Feb/2005	535XDCAWR	1	ND	ND
21/Mar/2005	535XMRSFD	1	ND	ND
10/May/2005	545XCCART	1	ND	ND
14/Jun/2005	535XHCALR	1	ND	ND
16/Aug/2005	535XHDACA	1	ND	ND
21/Sep/2005	535XPFDCL	1	ND	ND

Field Duplicate

Sample Date	Station Code	Replicate	Chlorpyrifos	Diazinon
15/Feb/2005	535XDCAWR	1	ND RPD NA	0.013 RPD 17
21/Mar/2005	535XMRSFD	1	ND RPD NA	ND RPD NA
10/May/2005	545XCCART	1	ND RPD NA	ND RPD NA
14/Jun/2005	535XHCALR	1	ND RPD NA	ND RPD NA
16/Aug/2005	535XHDACA	1	ND RPD NA	ND RPD NA
21/Sep/2005	535XPFDCL	1	0.018 RPD 0	ND RPD NA

Lab Blank

Sample Date	Station Code	Replicate	Chlorpyrifos	Diazinon
18/Feb/2005	LABQA	1	ND	ND
02/Mar/2005	LABQA	1	ND	ND
21/May/2005	LABQA	1	ND	ND
23/Jun/2005	LABQA	1	ND	ND
13/Jul/2005	LABQA	1	ND	ND
14/Jul/2005	LABQA	1	ND	ND
18/Aug/2005	LABQA	1	ND	ND
19/Aug/2005	LABQA	1	ND	ND
26/Sep/2005	LABQA	1	ND	ND

LCS

Sample Date	Station Code	Replicate	Chlorpyrifos		Diazinon	
18/Feb/2005	LABQA	1	0.526	PR 105	0.491	PR 98
02/Mar/2005	LABQA	1	0.51	PR 102	0.495	PR 99
21/May/2005	LABQA	1	0.503	PR 100	0.483	PR 97
23/Jun/2005	LABQA	1	0.614	PR 123	0.634	PR 127
13/Jul/2005	LABQA	1	0.494	PR 99	0.433	PR 87
13/Jul/2005	LABQA	2	0.585	PR 117, RPD 17	0.506	PR 101, RPD 16
14/Jul/2005	LABQA	1	0.505	PR 101	0.44	PR 88
14/Jul/2005	LABQA	2	0.528	PR 106, RPD 5	0.448	PR 90, RPD 2
18/Aug/2005	LABQA	1	0.533	PR 107	0.488	PR 98
18/Aug/2005	LABQA	2	0.534	PR 107, RPD 0	0.484	PR 97, RPD 1
19/Aug/2005	LABQA	1	0.483	PR 97	0.469	PR 94
19/Aug/2005	LABQA	2	0.451	PR 90, RPD 7	0.438	PR 88, RPD 7
26/Sep/2005	LABQA	1	0.595	PR 119	0.54	PR 108
26/Sep/2005	LABQA	2	0.612	PR 122, RPD 3	0.548	PR 110, RPD 2

MS

Sample Date	Station Code	Replicate	Chlorpyrifos		Diazinon	
15/Feb/2005	535XDCAWR	1	0.496	PR 99	0.473	PR 95
15/Feb/2005	535XDCAWR	2	0.492	PR 98, RPD 1	0.478	PR 96, RPD 1
21/Mar/2005	535XMRSFD	1	0.432	PR 86	0.423	PR 85
21/Mar/2005	535XMRSFD	2	0.421	PR 84, RPD 2	0.41	PR 82, RPD 4
10/May/2005	545XCCART	1	0.956	PR 96	0.932	PR 93
10/May/2005	545XCCART	2	1.05	PR 105, RPD 9	0.994	PR 99, RPD 6
14/Jun/2005	535XHCALR	1	0.578	PR 116	0.569	PR 114
14/Jun/2005	535XHCALR	2	0.566	PR 113, RPD 2	0.555	PR 111, RPD 3
19/Jul/2005	544XTTGUR	1	0.53	PR 106	0.456	PR 91
19/Jul/2005	544XTTGUR	2	0.479	PR 96, RPD 10	0.422	PR 84, RPD 8
16/Aug/2005	535XHDACA	1	0.485	PR 97	0.434	PR 87
16/Aug/2005	535XHDACA	2	0.528	PR 106, RPD 9	0.483	PR 97, RPD 11
21/Sep/2005	535XPFDCL	1	0.595	PR 115	0.502	PR 100
21/Sep/2005	535XPFDCL	2	0.589	PR 114, RPD 1	0.522	PR 104, RPD 4

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EJSWQC Pyrethroid QAQC

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Sample Date	Station Code	Replicate	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate Permethrin
15/Feb/2005	535XDCAWR	1	ND	ND	ND	ND
21/Mar/2005	535XMRSFD	1	ND	ND	ND	ND
10/May/2005	545XCCART	1	ND	ND	ND	ND
14/Jun/2005	535XHCALR	1	ND	ND	ND	ND
16/Aug/2005	535XHDACA	1	ND	ND	ND	ND
21/Sep/2005	535XPFDCL	1	ND	ND	ND	ND

Field Duplicate

Sample Date	Station Code	Replicate	Cyhalothrin, lambda		Cypermethrin		Esfenvalerate/Fenvalerate Permethrin	
15/Feb/2005	535XDCAWR	1	ND	RPD NA	ND	RPD NA	ND	RPD NA	ND	RPD NA
21/Mar/2005	535XMRSFD	1	ND	RPD NA	ND	RPD NA	ND	RPD NA	ND	RPD NA
10/May/2005	545XCCART	1	ND	RPD NA	ND	RPD NA	ND	RPD NA	ND	RPD NA
14/Jun/2005	535XHCALR	1	ND	RPD NA	ND	RPD NA	ND	RPD NA	ND	RPD NA
16/Aug/2005	535XHDACA	1	ND	RPD NA	ND	RPD NA	ND	RPD NA	ND	RPD NA
21/Sep/2005	535XPFDCL	1	ND	RPD NA	ND	RPD NA	ND	RPD NA	ND	RPD NA

Lab Blank

Sample Date	Station Code	Replicate	Cyhalothrin, lambda		Cypermethrin	Esfenvalerate/Fenvalerate Permethrin
18/Feb/2005	LABQA	1	ND	ND	ND	ND
07/Mar/2005	LABQA	1	ND	ND	ND	ND
17/May/2005	LABQA	1	ND	ND	ND	ND
18/May/2005	LABQA	1	ND	ND	ND	ND
25/Jun/2005	LABQA	1	ND	ND	ND	ND
13/Jul/2005	LABQA	1	ND	ND	ND	ND
14/Jul/2005	LABQA	1	ND	ND	ND	ND
18/Aug/2005	LABQA	1	ND	ND	ND	ND
19/Aug/2005	LABQA	1	ND	ND	ND	ND
26/Sep/2005	LABQA	1	ND	ND	ND	ND

LCS

Sample Date	Station Code	Replicate	Cyhalothrin, lambda		Cypermethrin	Esfenvalerate/Fenvalerate Permethrin
18/Feb/2005	LABQA	1	0.411 PR 91	2.04 PR 91	0.392 PR 87	0.654 PR 145
07/Mar/2005	LABQA	1	0.348 PR 77	1.62 PR 72	0.306 PR 68	0.467 PR 104
17/May/2005	LABQA	1	0.338 PR 75	1.76 PR 78	0.341 PR 76	0.33 PR 73
18/May/2005	LABQA	1	0.345 PR 77	1.77 PR 79	0.338 PR 75	0.34 PR 76
25/Jun/2005	LABQA	1	0.362 PR 80	1.67 PR 74	0.352 PR 78.2	0.335 PR 74
13/Jul/2005	LABQA	1	0.327 PR 73	1.51 PR 67	0.34 PR 75.6	0.32 PR 71
13/Jul/2005	LABQA	2	0.405 PR 90, RPD 21	1.85 PR 82, RPD 20	0.418 PR 93, RPD 21	0.39 PR 87, RPD 20
14/Jul/2005	LABQA	1	0.398 PR 88	1.85 PR 82	0.497 PR 110	0.415 PR 92
14/Jul/2005	LABQA	2	0.403 PR 90, RPD 1	1.88 PR 84, RPD 1.6	0.464 PR 103, RPD 7	0.429 PR 95, RPD 3
18/Aug/2005	LABQA	2	0.392 PR 87, RPD 2	1.94 PR 86, RPD 1.0	0.378 PR 84, RPD 0	0.349 PR 78, RPD 0
18/Aug/2005	LABQA	1	0.398 PR 88	1.92 PR 85	0.38 PR 84	0.35 PR 78
19/Aug/2005	LABQA	2	0.408 PR 91, RPD 6	2.06 PR 92, RPD 0.5	0.38 PR 84, RPD 7	0.369 PR 82, RPD 1
19/Aug/2005	LABQA	1	0.434 PR 96	2.05 PR 91	0.406 PR 90	0.374 PR 83
26/Sep/2005	LABQA	2	0.375 PR 83, RPD 6	1.83 PR 81, RPD 5	0.393 PR 87, RPD 6	0.325 PR 72, RPD 8
27/Sep/2005	LABQA	1	0.397 PR 88	1.92 PR 85	0.419 PR 93	0.351 PR 78

MS

Sample Date	Station Code	Replicate	Cyhalothrin, lambda	Cypermethrin	Esfenvalerate/Fenvalerate	Permethrin
15/Feb/2005	535XDCAWR	1	0.378 PR 84	1.71 PR 76	0.335 PR 74	0.436 PR 97
15/Feb/2005	535XDCAWR	2	0.359 PR 80, RPD 5	1.67 PR 74, RPD 3	0.33 PR 73, RPD 1	0.4 PR 89, RPD 8
21/Mar/2005	535XMRSFD	1	0.409 PR 91	1.99 PR 88	0.391 PR 87	0.499 PR 111
21/Mar/2005	535XMRSFD	2	0.418 PR 93, RPD 2	1.98 PR 88, RPD 0	0.386 PR 86, RPD 1	0.532 PR 118, RPD 6
10/May/2005	545XCCART	1	0.677 PR 75	3.49 PR 76	0.689 PR 77	0.769 PR 85
10/May/2005	545XCCART	2	0.744 PR 83, RPD 10	3.81 PR 85, RPD 11	0.742 PR 82, RPD 6	0.856 PR 95, RPD 4
14/Jun/2005	535XHCALR	1	0.43 PR 96	1.96 PR 87	0.409 PR 91	0.5 PR 111
14/Jun/2005	535XHCALR	2	0.429 PR 95, RPD 0	1.94 PR 86, RPD 1	0.415 PR 92, RPD 2	0.529 PR 118, RPD 6
19/Jul/2005	544XTTGUR	1	0.389 PR 86	1.75 PR 78	0.443 PR 98	0.43 PR 96
19/Jul/2005	544XTTGUR	2	0.405 PR 90, RPD 4	1.83 PR 81, RPD 5	0.462 PR 103, RPD 4	0.513 PR 114, RPD 18
16/Aug/2005	535XHDACA	1	0.386 PR 86	1.86 PR 83	0.363 PR 81	0.351 PR 78
16/Aug/2005	535XHDACA	2	0.423 PR 94, RPD 9	2.01 PR 89.3, RPD 7.8	0.401 PR 89.1, RPD 9.9	0.365 PR 81.1, RPD 3.9
21/Sep/2005	535XPFDCL	1	0.4 PR 88.9	1.93 PR 85.8	0.445 PR 98.9	0.334 PR 74.2
21/Sep/2005	535XPFDCL	2	0.35 PR 77.8, RPD 13	1.74 PR 77.3, RPD 10.4	0.406 PR 90.2, RPD 9.2	0.306 PR 68.0, RPD 9

ESJWQC Surrogates QAQC

Field Blank

Sample Date	Station Code	Replicate	Decachlorobiphenyl %	Tetrachloro-m-xylene %	Tributylphosphate %	Triphenyl phosphate %
15/Feb/2005	535XDCAWR	1	72.8	76.9	99.3	95.2
21/Mar/2005	535XMRSFD	1	59.4	76.1	95.9	92.1
10/May/2005	545XCCART	1	72.5	58.2	113	116
14/Jun/2005	535XHCALR	1	51.6	59	110	121
16/Aug/2005	535XHDACA	1	57.5	74.3	113	112
21/Sep/2005	535XPFDCL	1	59	77.1	119	121

Field Duplicate

Sample Date	Station Code	Replicate	Decachlorobiphenyl %	Tetrachloro-m-xylene %	Tributylphosphate %	Triphenyl phosphate %
15/Feb/2005	535XDCAWR	1	77.7	69.2	102	103
21/Mar/2005	535XMRSFD	1	78.5	75.3	97.9	97.4
10/May/2005	545XCCART	1	68.4	49.8	101	101
14/Jun/2005	535XHCALR	1	68	63.4	112	110
16/Aug/2005	535XHDACA	1	73.6	69.9	118	111
21/Sep/2005	535XPFDCL	1	49.1	77.5	119	121

Lab Blank

Sample Date	Station Code	Replicate	Decachlorobiphenyl %	Tetrachloro-m-xylene %	Tributylphosphate %	Triphenyl phosphate %
18/Feb/2005	LABQA	1	92.8	67	114	112
02/Mar/2005	LABQA	1			108	107
07/Mar/2005	LABQA	1	75.6	50.2		
17/May/2005	LABQA	1	68.4	39.4		
18/May/2005	LABQA	1	74.7	45.3		
21/May/2005	LABQA	1			106	102
23/Jun/2005	LABQA	1			113	114
25/Jun/2005	LABQA	1	80.1	71		
13/Jul/2005	LABQA	1	71.7	48.7	104	103
14/Jul/2005	LABQA	1	72.7	59	90.7	92.9
18/Aug/2005	LABQA	1	75.4	64.5	111	107
19/Aug/2005	LABQA	1	70.9	81.4	107	101
26/Sep/2005	LABQA	1	79.3	71.2	119	128

LCS

Sample Date	Station Code	Replicate	Decachlorobiphenyl %	Tetrachloro-m-xylene %	Tributylphosphate %	Triphenyl phosphate %
18/Feb/2005	LABQA	1	88.3	63.7	113	108
02/Mar/2005	LABQA	1			112	111
07/Mar/2005	LABQA	1	70	61.7		
17/May/2005	LABQA	1	77	37		
18/May/2005	LABQA	1	79.3	54		
21/May/2005	LABQA	1			110	108
23/Jun/2005	LABQA	1			134	120
25/Jun/2005	LABQA	1	70.7	37.7		
13/Jul/2005	LABQA	1	64	44	99.9	101
13/Jul/2005	LABQA	2	72.3	48	114	116
14/Jul/2005	LABQA	1	76.3	53.3	95.4	94.5
14/Jul/2005	LABQA	2	74	56.7	98	97.2
18/Aug/2005	LABQA	1	73.7	60.3	112	111
18/Aug/2005	LABQA	2	75.3	56	110	108
19/Aug/2005	LABQA	1	78.3	81	106	103
19/Aug/2005	LABQA	2	78	80	97.7	102
26/Sep/2005	LABQA	1			122	125
26/Sep/2005	LABQA	2	67.7	54	126	129
27/Sep/2005	LABQA	1	74.7	70.7		

MS

Sample Date	Station Code	Replicate	Decachlorobiphenyl %	Tetrachloro-m-xylene %	Tributylphosphate %	Triphenyl phosphate %
15/Feb/2005	535XDCAWR	1	74.7	59.3	104	101
15/Feb/2005	535XDCAWR	2	74.7	71.3	104	104
21/Mar/2005	535XMRSFD	1	67.7	60.7	96.7	96
21/Mar/2005	535XMRSFD	2	89	77	94.7	93.5
10/May/2005	545XCCART	1	76	44.7	99.5	103
10/May/2005	545XCCART	2	79.5	35.7	115	113
14/Jun/2005	535XHCALR	1	77.3	71	109	111
14/Jun/2005	535XHCALR	2	74 RPD 4.4	73.3	109	106
19/Jul/2005	544XTTGUR	1	67	52.7	95.9	95.9
19/Jul/2005	544XTTGUR	2	67.7	54.3	90	89.2
16/Aug/2005	535XHDACA	1	68	64.3	100	95.6
16/Aug/2005	535XHDACA	2	75	83.3	110	104
21/Sep/2005	535XPFDCL	1	66	81.3	115	118
21/Sep/2005	535XPFDCL	2	62	76	111	114

ESJWQC Water Column Toxicity QAQC

Laboratory QA- Negative Controls

SampleDate	StationCode	*Ceriodaphnia dubia*	*Pimephales promelas*	*Selenastrum capricornutum*
16/Feb/2005	LABQA	100	100	1380000
17/Feb/2005	LABQA	100	95	1800000
22/Mar/2005	LABQA	100	100	1650000
23/Mar/2005	LABQA	100	97.5	1590000
11/Apr/2005	LABQA			1690000
11/May/2005	LABQA	90	100	1130000
12/May/2005	LABQA	95	100	563000
20/May/2005	LABQA	100		
15/Jun/2005	LABQA	100	100	643000
16/Jun/2005	LABQA	95	97.5	1500000
13/Jul/2005	LABQA	100	100	1720000
14/Jul/2005	LABQA	100	97.5	1170000
22/Jul/2005	LABQA			1140000
17/Aug/2005	LABQA	100	100	1360000
18/Aug/2005	LABQA	100	100	998000
25/Aug/2005	LABQA	95		1410000
30/Aug/2005	LABQA			494000
21/Sep/2005	LABQA	95	100	1730000
22/Sep/2005	LABQA	95	95	610000

Field Duplicates

SampleDate	StationCode	*Ceriodaphnia dubia*	*Pimephales promelas*	*Selenastrum capricornutum*
15/Feb/2005	535XDCAWR	100 NSG RPD 22	95 NSG RPD 5	1730000 NSG RPD 4
21/Mar/2005	535XMRSFD	95 NSG RPD 5	100 NSG RPD 0	1940000 NSG RPD 42*
10/May/2005	545XCCART	90 NSG RPD 0	100 NSG RPD 0	1880000 NSG RPD 3
14/Jun/2005	53X5HCALR	100 NSG RPD 5	100 NSG RPD 2	1410000 NSG RPD 3
16/Aug/2005	535XHDACA	100 NSG RPD 0	100 NSG RPD 0	3340000 NSG RPD 3
21/Sep/2005	535XPFDCL	90 NSG RPD 11	92.5 NSG RPD 8	1400000 NSG RPD 29

*The sample collected on 5/21/05 for MRSFD was re-run due to the high RPD values. The re-test found that the original sample had a cell count of 1.660 (NSG), the duplicate sample had a cell count of 1.930 (NSG) and the RPD was reduced to 15.

ESJWQC Sediment Toxicity QAQC

Laboratory QA: Negative Controls

Sample Date	Station Code	Growth (weight)	Survival (%)
5/16/2005	LABQA	0.16507	96.25
7/17/2005	LABQA	0.07693	91.2
7/18/2005	LABQA	9.533	96.2
10/5/2005	LABQA		97.5
10/6/2005	LABQA		97.5

Field Duplicates

Sample Date	Station Code	Growth (weight)			Survival (%)		
5/10/2005	545XCCART	0.13901	SG	RPD 7	96.25	NSG	RPD 4
7/12/2005	545XLWSMA	0.0946	NSG	RPD 10	92.5	NSG	RPD 4

Summary of Precision and Accuracy

All sites were sampled twice during the storm season and five times during the irrigation season of 2005 with the following exceptions:

- Bear Creek @ Kibby Road was not sampled on February 15, 2005 due to high flows and an inability to safely access the water.
- Highline Canal @ Highway 99 was not sampled in February or March due to lack of flow and water being too low to get water samples.
- Ash Slough @ Avenue 21 was not sampled in February or March due to low water and was not sampled in September because it was dry.
- Lone Willow Slough @ Madera Avenue was last sampled in July and replaced by site Dry Creek @ Road 18.

INORGANIC RESULTS

Not including quality assurance samples, there was a total of 84 environmental samples collected and analyzed for each of the inorganic constituents. For every 20 samples, one field duplicate and field blank were collected for each constituent resulting in six field duplicates and six field blanks analyzed in 2005. Field blanks and duplicates comprised 6% respectively of all samples for each constituent.

COLOR

Result Summary

All six field blanks were non-detects. Four of the six field duplicates had relative percent differences (RPD) values of 0. Two field duplicates, one collected at Highline Canal @ Lombardy Rd on 6/14/05 and the other collected at Prairie Flower Drain @ Crows Landing Rd on 9/21/05 had RPD values of 22 and 29 respectively. One field duplicate did not meet the RPD criteria of less than 25. For each batch of samples analyzed, one or more laboratory duplicates and one or more laboratory blanks were run. All laboratory duplicates using project samples had an RPD of 0 (N=9) and all laboratory blanks were non-detects (N=12). Non-project samples were included to complete lab batch requirements for laboratory duplicates. Of these three non-project samples, all had RPD values of 0.

Precision and Accuracy

The laboratory did not supply matrix spike or certified reference material results for each batch to examine accuracy. Sample precision criteria were met by 5 of the 6 samples and no sample contamination was present. Laboratory precision criteria were met.

Exceedances

No water quality objectives exist by which to evaluate color exceedances.

Completeness

Sample completeness was 100%.

E.COLI

Result Summary

Five of the six field blanks were non-detects. *E. coli* field blank from site Prairie Flower Drain @ Crows Landing Road collected on September 21, 2005 had a value of 40. The associated environmental value for Prairie Flower Drain @ Crows Landing Road was 500. Therefore the Prairie Flower Drain @ Crows Landing Road field blank meets the data quality requirement of being less than the sample value divided by 5 (40<100). For field duplicates RPD values ranged from 0 to 168. Only two out of the six samples were less than the RPD of 25 and met data quality assurance criteria. All *E. coli* batches were run with a control positive, control negative and sterility check. These data are reported in attached lab reports and met data quality objectives. No laboratory blanks or laboratory duplicates were run with any of the batches.

Precision and Accuracy

Sampling precision is difficult to examine due to the method of quantitation of *E. coli*. RPD values may not be the best way to examine accuracy. Sampling contamination was not an issue. Due to a lack of laboratory blanks and duplicates, laboratory precision and contamination can not be evaluated.

Exceedances

Forty-five out of 96 samples had values exceeding water quality standards. The sample for Duck Slough @ Pioneer Road collected on February 16, 2005 was broken upon arrival at the laboratory and was not analyzed. There were two sites that did not have any exceedances and they were Highline Cnal @ Highway 99 and Merced River @ Santa Fe. All other sites had one or more samples with exceedances. There does not appear to be a correlation between season and number of exceedances. Hilmar Drain @ Central Ave had an exceedances value for all samples collected during 2005.

Completeness

Sample completeness was 99%.

TDS

Result Summary

Only one of the six field blanks for total dissolved solids (TDS) had a detectable amount of total dissolved solids. This was for Highline Canal @ Lombardy Road collected on June 14, 2005 with a value of 10. The associated environmental sample has a value of 35 and therefore the blank does not meet the data quality criteria of being 1/5 of the environmental sample value. This is the only sample that does not meet the criteria for field blanks. Field duplicate RPD values were between 0 and 5 and were less than the data quality assurance RPD criterion of 25.

Precision and Accuracy

There were no certified reference material results reported with any of the batches to examine laboratory accuracy. Laboratory precision and contamination criterion were met. Sample contamination appeared in one of the six field blanks but sampling precision criteria were met.

Exceedances

There were a total of 13 TDS exceedances all from two sites- HDACA and PFDCL. All samples collected from Hilmar Drain @ Central Avenue during 2005 had TDS water quality exceedances and six out of the seven collected samples from Prairie Flower Drain @ Crows Landing Rd had TDS water quality exceedances.

Completeness

Sample completeness was 100%.

TOC

Result Summary

Total organic carbon (TOC) values ranged from 2 to 32. There does not seem to be a correlation between season and amount of TOC in the sample. All six field blanks were above the reporting limit of 0.2 mg/L. For three of the field blanks from Merced River @ Santa Fe (June 21, 2005), Cottonwood Creek @ Road 21 (May 10, 2005) and Prairie Flower Drain @ Crows Landing Rd (September 21, 2005), the amount detected was less than 1/5 of the environmental sample value. For the other three samples, Dry Creek @ Wellsford Rd (February 15, 2005), Highline Canal @ Lombardy Rd (June 14, 2005), and Hilmar Drain @ Central Ave (August 16, 2005), the TOC in the field blanks was greater than 1/5 of the corresponding environmental sample. Of these three samples the highest value reported was 4.7mg/L.

Five of the six field duplicate samples had RPD values less than the data quality objective of 25. The duplicate sample collected on September 21, 2005 for Pr4airie Flower Drain @ Crows Landing Rd had a value of 23mg/L whereas the corresponding environmental sample had a value of 32mg/L resulting in an RPD of 32.

All lab blanks (N=21) were reported as non-detects except for one analyzed on May 26, 2005 that had a result of 0.23, just slightly greater than the reporting limit of 0.2.

All lab control spike (LCS) percent recoveries were within the data quality range of 80-120% and the relative percent differences between LCS lab replicate one and LCS lab replicate two were less than the stated criterion of 20 for all 21 samples.

All matrix spike (MS) percent recoveries were within the data quality range of 80-120% and the relative percent differences between MS lab replicate one and MS lab replicate two were less than the stated criterion of 20 for all 23 samples. Matrix Spikes were performed on 10% of the environmental samples collected for this project. The other Matrix Spikes were performed on samples from other projects to meet laboratory QA requirements.

Precision and Accuracy

Each lab batch contained all necessary LABQAs to meet the precision and accuracy requirements outlined by the QAPP. Both sampling and laboratory data criteria were met.

Exceedances

No water quality objectives exist by which to evaluate TOC exceedances.

Completeness

Sample completeness was 100%.

TURBIDITY

Result Summary

Turbidity values ranged from 1.4 to 690. The two highest values reported were during the storm season for Lone Willow Slough @ Madera Ave. During the irrigation season these values dropped significantly. However, there does not appear to be a connection between turbidity values and season.

Two of the field blanks collected were non-detects; the other four samples were less than 1/5 of their associated environmental sample and meet the data quality criterion.

All six field duplicates have RPD value <25 and meet the data quality criterion.

Lab blanks are all non-detects and all laboratory duplicates have an RPD of 0.

Precision and Accuracy

No certified reference material results have been reported for turbidity. Laboratory and sampling precision and contamination criteria were met.

Exceedances

No water quality objectives exist by which to evaluate turbidity exceedances.

Completeness

Sample completeness was 100%.

ORGANICS RESULTS

Not including quality assurance samples, there was a total of 84 environmental samples collected and analyzed for each of the organic constituents. For every 20 samples, one field duplicate and field blank were collected for each constituent resulting in six field duplicates and six field blanks analyzed in 2005. Field blanks and duplicates comprised 6% respectively of all samples for each constituent.

An amendment to the original ESJWQC QAPP was submitted to address the percent recovery limits requested by the CVRWQCB MRP. The request was to alter the Percent Recovery to reflect the specific control limits of APPL laboratories for 2005. It is essential that laboratories calculate in-house performance criteria for matrix spike recoveries and surrogate recoveries. It may also be useful to calculate such in-house criteria for laboratory control sample (LCS) recoveries and for the initial demonstration of capability when experience indicates that the criteria recommended in specific methods are frequently missed for some analytes or matrices. The development of in-house performance criteria and the use of control charts or similar procedures to track laboratory performance cannot be over-emphasized. Many data systems and commercially-available software packages support the use of control charts. These criteria were calculated following EPA method guidelines. The following tables reflect the changes made to the data quality criteria for organics as per in-house calculations by APPL laboratories.

Control limits (CL) for organophosphates:

Analyte	PQL	MDL	CL
Bifenthrin	0.02	0.006	52-117
Cyfluthrin	0.03	0.003	53-125
Cypermethrin	0.10	0.004	55-107
Esfenvalerate/Fenvalerate	0.02	0.002	52-117
Lambda cyhalothrin	0.02	0.001	62-104
Permethrin	0.02	0.009	24-166
Surrogate: DECA	41-117		41-117
Surrogate: TCmX	38-113		38-113

Control limits (CL) for pyrethroids:

Analyte	PQL	MDL	CL
Azinphosmethyl	1.0	0.488	36-189
Bolstar	0.10	0.0716	43-119
Chlorpyrifos	0.05	0.00259	61-125
Coumaphos	0.20	0.13	60-124
Def	0.10	0.084	60-118
Demeton-S	0.20	0.01	12-85
Diazinon	0.05	0.00353	57-130
Dichlorvos	0.20	0.02	46-141
Dimethoate	0.10	0.08	68-202
Disulfoton	0.10	0.02	47-117
EPN	0.10	0.03	57-133
EPTC	0.10	0.03	39-133
Ethion	0.10	0.03	65-134
Ethoprop	0.10	0.0235	65-125
Fenamiphos	1.0	0.1	40-135
Fensulfothion	0.50	0.16	54-161
Fenthion	0.10	0.02	50-118
Malathion	0.10	0.05	47-125
Merphos	0.10	0.06	54-114
Mevinphos	0.70	0.0716	43-205
Naled	0.50	0.271	9-155
Parathion, ethyl	0.10	0.02	62-123
Parathion, methyl	0.10	0.0755	55-164
Phorate	0.10	0.0722	44-117
Prowl	0.10	0.041	63-129
Ronnel	0.10	0.03	53-114
Stirophos	0.10	0.06	68-128
Tokuthion	0.10	0.0216	56-123
Trichloronate	0.10	0.05	43-113
Trifluralin	0.10	0.036	44-117
Surrogate: Tributylphosphate	60-150		60-150
Surrogate: Triphenylphosphate	56-129		56-129

ORGANOPHOSPHATES

Result Summary

Eleven of the 84 samples had detectable levels of chlorpyrifos with the greatest amount detected at Lone Willow Slough @ Madera Ave (July 12, 2005) with 0.29 µg/L. Diazinon was detected in five samples collected in 2005 where the greatest amount

detected was 0.098µg/L from Highline Canal @ Lombardy Rd (February 15, 2005). Six of the 13 sites did not experience a detection in 2005.
All of the six field blanks were non-detects. Of the six field duplicates, only two of the samples had detectable amounts of organophosphates. Both RPD values for the duplicates were below the data quality criterion of 25. Lab blanks were performed for each batch and all were non-detects. Both lab control spikes and matrix spikes were performed for each batch run. If a matrix spike duplicate was not run, a lab control spike duplicate was run instead. All percent recoveries (PR) were within control limits set by the laboratory and RPD values were below 20 for lab duplicates. Surrogate recoveries were within control limits for all samples as were RPD values for surrogate lab duplicates.

Precision and Accuracy

Lab and sampling methods met precision, accuracy and contamination data quality criteria.

Exceedances

Six samples (7%) had detected amount of chlorpyrifos greater than 0.02µg/L. One sample from Highline Canal @ Lombardy Rd (February 15, 2005) had an amount of diazinon exceeding the water quality objective of 0.08µg/L with a value of 0.098µg/L.

Completeness

Sample completeness was 100%.

PYRETHROIDS

Result Summary

Only one sample collected from Lone Willow Slough @ Madera Ave on June 14, 2005 had a detectable amount of permethrin (0.23µg/L). All other pryrethroids were not detected at any of the sites during 2005.
All six field blanks and field duplicates were non-detects. A lab blank, LCS and MS were run with each batch. All lab blanks were non-detects. Pyrethroid MS and LCS results met the data quality criterion for percent recoveries. RPD values for lab duplicates were equal to or less than 21 for all samples. Surrogate recoveries were within control limits for all samples as were RPD values for surrogate lab duplicates.

Precision and Accuracy

Lab and sampling methods met precision, accuracy and contamination data quality criteria.

Exceedances

There are no quality water objectives set for pyrethroids.

Completeness

Sample completeness was 100%.

TOXICITY

Toxicity for all four species is defined as a statistically significant difference between the sample and the control. This is noted in the results table by an NS for not significant and

an S for significant. There is also a second measurement of toxicity which is based on an 80% threshold. If the value for the sample is less than 80% of the value for the control the code is L, and if it is greater than 80% than the code is G. Therefore a code of NSG means that the sample was not significantly different from the control and greater than 80% of the control. Likewise, a code of SG means that there was a significant difference but the sample was greater than 80% of the control.

Toxic identification evaluations (TIEs) are performed if there is a 50% reduction in *Ceriodaphnia* growth compared to the control. Complete mortality in the sample within 24 hours after initiation of the test triggers a dilution series test to estimate the number of toxic units present in the sample.

If there was toxicity indicated for a sample, a follow-up sample was collected within 72 hours of completing the toxicity tests. This was not the case for the first storm event in February 2005 due to miscommunication between the laboratories (see exceedance report submitted on April 22, 2005). A follow-up sample was not collected for a *Selenastrum* toxicity exceedance from Lone Willow Slough @ Madera Ave collected on March 21, 2005 because the site was dry when the field crew returned to conduct the resampling. A photograph of the site was submitted to the Regional Board a documentation of the low flows. There was also a *Ceriodaphnia* toxicity exceedance in a sample collected from Lone Willow Slough @ Madera Avenue on July 12, 2005, however due to this site moving to a different coalition, there was no follow-up sample taken. A reported *Selenastrum* toxicity exceedance for Merced River @ Santa Fe collected on March 21, 2005 was re-tested with an associated field duplicate and a new lab control and was found to not be significantly different than the control. The original result was termed an "anomaly" by the laboratory (refer to Pacific Ecorisk report for samples collected on March 21, 2005 and March 22, 2005). Therefore a follow-up sample was not collected.

WATER COLUMN TOXICITY

Result Summary

The total number of toxicity tests ran was 259 including follow-up tests for all three water column toxicity species, *Ceriodaphnia dubia, Pimephales promelas, and Selenastrum capricornutum*.. Overall there were 12 water column toxicity exceedances in 2005 (4% of all tests). Seven of these were for *Ceriodaphnia*, five were for *Selenestrum* including one test that was later determined not significantly different from the control (Merced River @ Santa Fe March 21, 2005). There were no toxicity exceedances for *Pimephales*. Only one follow-up sample showed persistence of the toxicity (follow up sample for Highline Canal @ Highway 99 collected on May 10, 2005). All other follow-up samples had no toxicity.

TIEs

Ceriodaphnia TIEs were performed on the following samples: Bear Creek @ Kibby Rd (May 10, 2005), Highline Canal @ Highway 99 (May 10, 2005), and Jones Drain @ Oakdale Rd (August 17, 2005). Both Bear Creek @ Kibby Rd and Highline Canal @ Highway 99 TIEs had no reduction of survival in the baseline indicating that the toxicity was no longer present. For the Jones Drain @ Oakdale Rd sanple, a dilution series test

and Phase I TIE were run targeting pesticides. However there were no significant reductions in survival also indicating that the toxicity initially see was not persistent. A negative control is run with each batch to determine significance. Field duplicates were collected for six sites and all RPD were less than 25 except for two *Selenastrum* field duplicates, Merced River @ Santa Fe (March 21, 2005) and Prairie Flower Drain @ Crows Landing Rd (September 21, 2005). The Merced River @ Santa Fe (March 21, 2005) sample was rerun with its duplicate and achieved a final RPD of 15. Prairie Flower Drain @ Crows Landing Rd (September 21, 2005) was outside of the RPD criteria with a value of 29.

Precision and Accuracy

All biological responses of the controls were within acceptable limits. The precision criterion was met with 83% of duplicate samples.

Completeness

Sample completeness was 100%.

SEDIMENT TOXICITY

Result Summary

Sediment samples were collected three times during the irrigation season of 2005. No resampling was done if there was a significant reduction in either survival or growth. Both survival and growth were assessed for the first two sampling events (March and July) but only survival was analyzed for samples collected in September. A total of 57 tests were run for *Hyalella azteca*. Seventeen of those tests were significantly different than the control; however six of those were greater than 80% of the control suggesting that the significance was due to the lack of variance within the sample and the control. Of the eleven tests that were statistically significant and less than 80% of the control, six toxicity hits were for *Hyalella* growth and five were for *Hyalella* survival. Field duplicates were collected twice, once in May and once in July. The RPD for all samples was less than 25. A negative control was performed with each batch to measure significance.

Precision and Accuracy

The laboratory methods met sediment toxicity precision data quality criteria. All negative controls results were within acceptable limits.

Completeness

Sample completeness was 100%.

Pesticide Use Information

Pesticide use for sampling sites showing exceedances.

Although the minimum detection limits for chlorpyrifos and diazinon were sufficiently low, the reporting limits for chlorpyrifos were above the water quality objectives as provided in the Basin Plan. Consequently, although we are not confident that the concentrations reported below the reporting limit are accurate, we treat each detection of an organophosphate compound as an exceedance and precede with the analysis of the pesticide use reports for identification of source(s). We will follow up with grower contacts and outreach as outlined in our MRPP.

All exceedances are listed in Tables 11 and 14. Pesticide use reports for 2005 were requested from all the counties within the coalition. The following data were available during preparation of this report: Merced: January, February, May – August; Madera: May – September; Stanislaus: January – March; Calaveras: January – March; Tuolumne: none; and Mariposa: none. For each sampling period in which chemicals were detected (Table 13), or that toxicity was reported (Table 14), pesticide use on agricultural lands for the 2 weeks prior to samplingwas collected for that watershed based on the MTRS. All agricultural products that contained the chemicals detected are listed by watershed and are shown in maps. All agricultural products used on agricultural lands that were used in the 2 weeks prior to an exceedance are listed by watershed in Tables 15 - 30 and are shown in maps in Figures 15 - 26. The legend for the maps is presented in Figure 27. Pesticide use is reported as amount of product used.

Full pesticide use information is provided as a separate electronic Appendix B at the end of this report.

Exceedances
The following exceedance tables (Table 11-14) (Table 13 also shows detections) do not include sampling exceedances for Lone Willow Slough since all the data collected for this site has been turned over to the Westside coalition.

E – environmental
FD – field duplicate

Table 11. ESJWQC - Results of E. coli Analysis.

Site Name	Date Sampled	Analyte	Sample Type	Result	Units	WQO
Ash Slough @ Ave. 21	7/12/2005	E. coli	E	500	MPN/100 ml	200
Bear Creek @ Kibby	3/21/2005	E. coli	E	>1600	MPN/100 ml	200
Bear Creek @ Kibby	5/10/2005	E. coli	E	280	MPN/100 ml	200
Cottonwood Cr @ Rd20	2/16/2005	E. coli	E	>1600	MPN/100 ml	200
Cottonwood Cr @ Rd20	3/21/2005	E. coli	E	1600	MPN/100 ml	200
Cottonwood Cr @ Rd20	5/10/2005	E. coli	E	540	MPN/100 ml	200
Cottonwood Cr @ Rd20	8/16/2005	E. coli	E	300	MPN/100 ml	200
Dry Creek @ Rd 18	9/20/2005	E. coli	E	500	MPN/100 ml	200
Dry Creek @ Wellsford Rd	3/22/2005	E. coli	E	900	MPN/100 ml	200
Dry Creek @ Wellsford Rd	6/15/2005	E. coli	E	240	MPN/100 ml	200
Dry Creek @ Wellsford Rd	7/13/2005	E. coli	E	220	MPN/100 ml	200
Dry Creek @ Wellsford Rd	8/17/2005	E. coli	E	900	MPN/100 ml	200
Dry Creek @ Wellsford Rd	9/21/2005	E. coli	E	500	MPN/100 ml	200
Duck Slough @ Gurr Rd	2/16/2005	E. coli	E	>1600	MPN/100 ml	200
Duck Slough @ Gurr Rd	3/21/2005	E. coli	E	>1600	MPN/100 ml	200
Duck Slough @ Gurr Rd	5/10/2005	E. coli	E	>1600	MPN/100 ml	200
Duck Slough @ Gurr Rd	6/14/2005	E. coli	E	300	MPN/100 ml	200
Duck Slough @ Gurr Rd	7/12/2005	E. coli	E	300	MPN/100 ml	200
Duck Slough @ Gurr Rd	8/16/2005	E. coli	E	240	MPN/100 ml	200
Duck Slough @ Pioneer	5/10/2005	E. coli	E	>1600	MPN/100 ml	200
Duck Slough @ Pioneer	3/21/2005	E. coli	E	>1600	MPN/100 ml	200
Highline Canal @ Lombardy Rd	5/10/2005	E. coli	E	240	MPN/100 ml	200
Hilmar Dr @ Central Ave	2/15/2005	E. coli	E	240	MPN/100 ml	200
Hilmar Dr @ Central Ave	3/22/2005	E. coli	E	900	MPN/100 ml	200
Hilmar Dr @ Central Ave	5/11/2005	E. coli	E	1600	MPN/100 ml	200
Hilmar Dr @ Central Ave	6/15/2005	E. coli	E	500	MPN/100 ml	200
Hilmar Dr @ Central Ave	7/13/2005	E. coli	E	1600	MPN/100 ml	200
Hilmar Dr @ Central Ave	8/16/2005	E. coli	E	>1600	MPN/100 ml	200
Hilmar Dr @ Central Ave	9/21/2005	E. coli	E	430	MPN/100 ml	200
Hilmar Dr @ Central Ave	8/16/2005	E. coli	FD	>1600	MPN/100 ml	200
Jones Drain @ Oakdale Rd	2/16/2005	E. coli	E	>1600	MPN/100 ml	200
Jones Drain @ Oakdale Rd	3/22/2005	E. coli	E	300	MPN/100 ml	200
Jones Drain @ Oakdale Rd	5/11/2005	E. coli	E	>1600	MPN/100 ml	200
Jones Drain @ Oakdale Rd	7/12/2005	E. coli	E	1600	MPN/100 ml	200

Site Name	Date Sampled	Analyte	Sample Type	Result	Units	WQO
Jones Drain @ Oakdale Rd	9/21/2005	E. coli	E	350	MPN/100 ml	200
Prairie Flower Dr @ Crows Landing Rd	3/22/2005	E. coli	E	>1600	MPN/100 ml	200
Prairie Flower Dr @ Crows Landing Rd	5/11/2005	E. coli	E	500	MPN/100 ml	200
Prairie Flower Dr @ Crows Landing Rd	6/15/2005	E. coli	E	300	MPN/100 ml	200
Prairie Flower Dr @ Crows Landing Rd	7/12/2005	E. coli	E	>1600	MPN/100 ml	200
Prairie Flower Dr @ Crows Landing Rd	8/17/2005	E. coli	E	>1600	MPN/100 ml	200
Prairie Flower Dr @ Crows Landing Rd	9/21/2005	E. coli	E	500	MPN/100 ml	200
Prairie Flower Dr @ Crows Landing Rd	9/21/2005	E. coli	E	>1600	MPN/100 ml	200

Table 12. ESJWQC - General Physical Analysis results (field data only)

Site Name	Sample Date	Sample Type	Oxygen, Dissolved	pH	Specific Conductivity	Total Dissolved Solids
			WQO	WQO	WQO	WQO
			> 5.0 mg/L	6.5-8.5 -log [H+]	< 700 (µmhos/cm)	< 450 mg/L
Bear Creek @ Kibby Rd	3/21/05	E	4.4			
Dry Creek @ Wellsford Rd.	3/22/05	E		8.96		
Dry Creek @ Wellsford Rd.	5/11/05	E		6.26		
Dry Creek @ Wellsford Rd.	8/17/05	E		9.18		
Dry Creek @ Rd 18	8/16/05	E		6.48		
Highline Canal @ Lombardy Rd.	2/15/05	E				
Highline Canal @ Lombardy Rd.	3/21/05	E		8.56		
Highline Canal @ Lombardy Rd.	8/17/05	E		6.46		
Hilmar Drain @ Central Ave.	2/15/05	E			1102	740
Hilmar Drain @ Central Ave.	3/22/05	E			1157	760
Hilmar Drain @ Central Ave.	5/11/05	E			1354	740
Hilmar Drain @ Central Ave.	5/19/05	E			1214	
Hilmar Drain @ Central Ave.	6/15/05	E			855	720
Hilmar Drain @ Central Ave.	7/13/05	E			826	600
Hilmar Drain @ Central Ave.	8/16/05	E			788	500
Hilmar Drain @ Central Ave.	8/16/05	FD				490
Hilmar Drain @ Central Ave.	9/21/05	E				690
Jones Drain @ Oakdale Rd	3/22/05	E	4.9	8.58		
Merced River @ Santa Fe	8/17/05	E		6.38		
Prairie Flower Drain @ Crows Landing Rd.	2/15/05	E			2561	1600
Prairie Flower Drain @ Crows Landing Rd.	3/22/05	E			2568	1600
Prairie Flower Drain @ Crows Landing Rd.	5/11/05	E			3168	1600
Prairie Flower Drain @ Crows Landing Rd.	6/15/05	E			1705	1300
Prairie Flower Drain @ Crows Landing Rd.	7/13/05	E	3.2		1723	1100

Site Name	Sample Date	Sample Type	Oxygen, Dissolved	pH	Specific Conductivity	Total Dissolved Solids
Prairie Flower Drain @ Crows Landing Rd.	8/17/05	E			1779	990
Prairie Flower Drain @ Crows Landing Rd.	9/21/05	E			791	460
Prairie Flower Drain @ Crows Landing Rd.	9/21/05	FD				450

Table 13: Water Chemistry Analysis Results.

Station Name	Sample Date	Sample Type Code	Group	Analyte Name	Unit	Result	WQO	Res Qual Code	MDL	RL
Ash Slough @ Ave 21	7/12/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.018	0.02	DNQ	0.00259	0.05
Ash Slough @ Ave 21	8/16/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.046	0.02	DNQ	0.00259	0.05
August Road Drain upstream of Crows Landing Bridge (Hogin Rd)*	7/31/2004	E	Organophosphate	Dimethoate	µg/L	0.31			0.08	0.1
August Road Drain upstream of Crows Landing Bridge (Hogin Rd)*	9/29/2004	E	Organophosphate	Chlorpyrifos	µg/L	0.026	0.02	DNQ	0.0254	0.05
Cottonwood Creek @ Road 20	7/12/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.012	0.02	DNQ	0.00259	0.05
Dry Creek @ Wellsford Road	2/15/2005	E	Organophosphate	Diazinon	µg/L	0.011	0.08	DNQ	0.00353	0.05
Dry Creek @ Wellsford Road	2/15/2005	FD	Organophosphate	Diazinon	µg/L	0.013	0.08	DNQ	0.00353	0.05
Duck Slough @ Gurr Rd	7/31/2004	FD	Organophosphate	Chlorpyrifos	µg/L	0.045	0.02	DNQ	0.0254	0.05
Duck Slough @ Gurr Rd	7/31/2004	E	Organophosphate	Trifluralin	µg/L	0.045		DNQ	0.036	0.1
Duck Slough @ Gurr Rd	7/31/2004	FD	Organophosphate	Trifluralin	µg/L	0.34			0.036	0.1
Duck Slough @ Gurr Rd	9/29/2004	E	Pyrethroid	Esfenvalerate/Fenvalerate, total	µg/L	0.05			0.002	0.02
Duck Slough @ Pioneer Road	7/12/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.026	0.02	DNQ	0.00259	0.05
Highline Canal @ Lombardy Rd	2/15/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.01	0.02	DNQ	0.00259	0.05
Highline Canal @ Lombardy Rd	2/15/2005	E	Organophosphate	Diazinon	µg/L	0.098	0.08		0.00353	0.05
Highline Canal @ Lombardy Rd	7/13/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.011	0.02	DNQ	0.00259	0.05
Jones Drain @ Oakdale Road	2/16/2005	E	Organophosphate	Diazinon	µg/L	0.011	0.08	DNQ	0.00353	0.05
Prairie Flower Drain @ Crows Landing Road	7/13/2005	E	Organophosphate	Diazinon	µg/L	0.013	0.08	DNQ	0.00353	0.05
Prairie Flower Drain @ Crows Landing Road	9/21/2005	FD	Organophosphate	Chlorpyrifos	µg/L	0.018	0.02	DNQ	0.00259	0.05
Prairie Flower Drain @ Crows Landing Road	9/21/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.018	0.02	DNQ	0.00259	0.05

* August Rd. Drain @ Crows Landing subwatershed has been removed from the sampling plan due to safety concerns for the sampling crews.

Table 14: Results of Toxicity Evaluations.

Site name	Sample Date	Sample Type Code	Species Name	Test Comments	Mean	% Control	Eval. Threshold	cell growth
Bear Creek @ Kibby Rd	5/10/05	Grab	Ceriodaphnia dubia	Follow up TIE found no significant reduction in survival in the baseline, indicating that the toxicity that had been observed in the initial testing of this sample was no longer present.	5	5.3	80	
Cottonwood Creek @ Rd 20	5/10/05	Integrated	Hyalella azteca		0.13349	80.9	80	
Cottonwood Creek @ Rd 20	5/10/05	FieldDup	Hyalella azteca		0.13901	84.2	80	
Dry Creek @ Wellsford Rd	2/15/05	Grab	Ceriodaphnia dubia		80	80	80	
Dry Creek @ Wellsford Rd	5/11/05	Integrated	Hyalella azteca		0.14465	87.6	80	
Duck Slough @ Gurr Rd	5/10/05	Integrated	Hyalella azteca		0.13991	84.8	80	
Duck Slough @ Gurr Rd	7/12/05	Integrated	Hyalella azteca		58.8	64.5	80	
Duck Slough @ Gurr Rd	7/12/05	Integrated	Hyalella azteca		0.02213	28.8	80	
Duck Slough @ Gurr Rd	9/21/05	Integrated	Hyalella azteca			3.75		
Duck Slough @ Pioneer	7/12/05	Grab	Selenastrum capricornutum		1320000	76.7	80	
Highline Canal @ Hwy 99	5/10/05	Grab	Ceriodaphnia dubia	Follow up TIE found no significant reduction in survival in the baseline, indicating that the toxicity that had been observed in the initial testing of this sample was no longer present.	45	47	80	
Highline Canal @ Hwy 99	5/19/05	Grab	Ceriodaphnia dubia	Complete mortality in May 19 sample indicates that ambient water toxicity was still present at this site.	0	0	80	
Highline Canal @ Hwy 99	7/13/05	Integrated	Hyalella azteca		0.07949	83.4	80	
Highline Canal @ Hwy 99	9/21/05	Integrated	Hyalella azteca			87.5		
Highline Canal @ Lombardy Rd.	5/10/05	Integrated	Hyalella azteca		71.25	74	80	
Highline Canal @ Lombardy Rd.	5/10/05	Integrated	Hyalella azteca		0.0992	60.1	80	
Highline Canal @ Lombardy Rd.	7/13/05	Integrated	Hyalella azteca		0.07368	77.3	80	
Hilmar Drain @ Central Ave.	5/11/05	Grab	Ceriodaphnia dubia		70	73.7	80	
Hilmar Drain @ Central Ave.	5/11/05	Integrated	Hyalella azteca		0.08975	54.4	80	
Hilmar Drain @ Central Ave.	9/21/05	Integrated	Hyalella azteca			31.2		
Jones Drain @ Oakdale Rd	2/16/05	Grab	Selenastrum capricornutum		1290000	71.7	80	

Site name	Sample Date	Sample Type Code	Species Name	Test Comments	Mean	% Control	Eval. Threshold	cell growth
Jones Drain @ Oakdale Rd	8/17/05	Grab	Ceriodaphnia dubia	Due to the observation of >50% reduction in survival in the initial sample a dilution series test and Phase I TIE test targeting pesticides were run on this sample. Statistically significant reductions in survival were not seen in any of this follow-up testing, indicating that the toxicity initially seen in this sample was no persistent.	25	25	80	
Merced River @ Santa Fe	3/21/05	Integrated	Selenastrum capricornutum					1,260,000
Prairie Flower Drain @ Crows Landing Rd.	7/13/05	Integrated	Hyalella azteca		0.07310	76.7	80	
Prairie Flower Drain @ Crows Landing Rd.	9/21/05	Integrated	Hyalella azteca			83.8		

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In the discussions below, we rely heavily on the use of K_{oc} values to determine the compounds that could runoff and cause sediment toxicity or water column toxicity. K_{oc} is the organic carbon - water partition coefficient and generally defines the propensity of the compound to partition to water or attach to sediment. The term that represents this propensity is "leaching potential". Specific Numeric Values (SNVs) for parameters that define leaching potential have been submitted to DPR by pesticide manufacturers and DPR evaluates and approves these submissions. Active ingredients with properties that exceed the SNVs established by DPR are considered to have the potential to contaminate ground water. Pesticide active ingredients are placed on the list of "potential leachers" under the following conditions:

One of the following must be true

- Water solubility: > 3 ppm (mg/L), or
- Soil adsorption coefficient (K_{oc}): < 1,900 cm^3/g

and one of the following must be true

- Hydrolysis half-life: > 14 days, or
- Aerobic soil metabolism half-life: > 610 days, or
- Anaerobic soil metabolism half-life: > 9 days

However, we are concerned with the potential for surface runoff and immediate toxicity to aquatic organisms. Consequently, the half-life criteria are not important. Although there is not a perfect negative correlation between K_{oc} and water solubility, if we classified a compound as having a K_{oc} value to bind to sediment and be a potential cause of sediment toxicity, the compound was not classified as having a sufficiently high water solubility to also be a cause of water column toxicity. All chemicals were classified as either potential toxicants in water or in sediment. The single exception is chlorpyrifos, which appears to cause water column toxicity even as it is attached to particulates. It has both a sufficiently high water solubility (~1.4 mg/L) and K_{oc} (1,380 – 14,000) to be classified as a toxicant in both water and sediment.

K_{oc} values for all compounds were obtained from a variety of sources. Websites from the California Department of Pesticide Regulation, the Pesticide Action Network, the Huang and Young (2005) report to the California Department of Transportation (http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/_pdfs/monitoring/CTSW-RT-03-084-73-04.pdf) and and numerous studies from the scientific literature were used to document K_{oc} values. Because K_{oc} can change depending on soil characteristics, if there were any major discrepancies between published values, we used the most common value or established a range of values. We used the more conservative value for an initial determination, but once a chemical was determined to partition to sediment, it could not become a toxicant in the water column (exception being chlorpyrifos).

The source identification analysis used the pesticide use reports for the two weeks prior to the sample collection date. We obtained information on all pesticides but for specific instances of toxicity, we eliminated all chemicals that could not cause toxicity. For example, to determine sources of toxicity to *Selenastrum*, we considered only herbicides and applications of metals and

salts. To determine sources of toxicity to *Ceriodaphnia*, we eliminated herbicides because they are not documented causes of toxicity to *Ceriodaphnia*. Those chemicals are eliminated from the tables prior to identifying TRS' that could be sources.

Pesticide use information is filed by Township/Range/Section. Data are not available for individual fields or parcels except where they coincide with complete sections. In many instances below, the pesticide use reports did not contain any applications of target chemicals such as diazinon or chlorpyrifos despite detections of those chemicals in samples collected by the coalition. In these cases, we will search through the pesticide use databases to find the crops for which these chemicals are registered and contact the growers to survey management practices and initiate outreach on additional BMPs that can be implemented. We will report on the result of these searches in the June 30, 2006 report.

Pesticide Exceedances in Water Column

Ash Slough @ Ave 21 – Chlorpyrifos detected during 7/12/05 sample event

Chlorpyrifos was reported at a concentration of 0.018 µg/L (Table 13), which is below the water quality objective. No chlorpyrifos was detected during the May or June sampling events. Examination of the pesticide use reports indicated that there were no applications of chlorpyrifos in the watershed during the two weeks prior to sampling. The only reported use of chlorpyrifos in the watershed was in TRS 9S15E31 on May 15, 2005 (Table 15). It is unlikely that the detection of chlorpyrifos in July was a result of the May application as there was no detection of chlorpyrifos in either the May or June sample events although irrigation undoubtedly occurred between May and July. At this point, the source of the exceedance is unknown. Ash Slough runs on the north edge of the city of Chowchilla providing the possibility that the exceedance originated in the urban area. Alternatively, the application could be from unreported agricultural use. The ESJWQC will search through the pesticide use databases to find the crops for which these chemicals are registered and contact these growers in the Ash Slough watershed to perform surveys of management practices and initiate outreach on BMP implementation.

Table 15. Chlorpyrifos pesticide use in the Ash Slough watershed preceding the July 12, 2005 and August 16, 2005 sampling events.

date applied	Product name	Chemical name	Amount of product	unit	treated acres	TRS
5/15/05	LORSBAN 4E-HF	CHLORPYRIFOS	1.25	GA	10	9S15E31

Ash Slough @ Ave 21 – Chlorpyrifos detected during 8/16/05 sample event

Chlorpyrifos was reported at a concentration of 0.046 µg/L (Table 13), which is above the water quality objective. Chlorpyrifos was detected in the month of July preceding the August sample event, but was not detected during the May or June sampling events. As reported above, the only reported use of chlorpyrifos in the watershed was in TRS 9S15E31 on May 15, 2005 (Table 15). It is unlikely that the detection of chlorpyrifos in August is due to this application for the reasons stated above. At this point, the source of the exceedance is unknown. Ash Slough runs on the north edge of the city of Chowchilla providing the possibility that the exceedance originated in the urban area. Alternatively, the application could be unreported agricultural use. The ESJWQC will search through the pesticide use databases to find the crops for which these chemicals are registered and contact these growers in the Ash Slough watershed to perform surveys of management practices and initiate outreach on BMP implementation.

Cottonwood Creek @ Rd. 20 – Chlorpyrifos detected in the 7/12/05 sample event

Chlorpyrifos was reported at a concentration of 0.012 µg/L (Table 13), which is below the water quality objective. No chlorpyrifos was detected in the two weeks preceding the July sample event. The expanded search resulted in finding applications during the period May 26, 2005 to May 29, 2005 (Table 16). At this point, the source of the exceedance is unknown. Cottonwood Creek runs on the south of the city of Madera providing the possibility that the exceedance originated in the urban area. Alternatively, the application could be unreported agricultural use. The ESJWQC will search through the pesticide use databases to find the crops for which these chemicals are registered and contact these growers in the Cottonwood Creek watershed to perform surveys of management practices and initiate outreach on BMP implementation.

Table 16. Chlorpyrifos use in the Cottonwood Creek @ Rd 20 watershed prior to detection in the July 12, 2005 sample event.

date applied	Product name	Chemical name	Amount of product	unit	treated acres	TRS
5/26/05	LORSBAN 4E-HF	CHLORPYRIFOS	61.5	GA	41	11S20E31
5/26/05	LORSBAN 4E-HF	CHLORPYRIFOS	9	GA	6	11S20E32
5/28/05	LORSBAN 4E-HF	CHLORPYRIFOS	12.8	GA	200	11S20E22
5/28/05	LORSBAN 4E-HF	CHLORPYRIFOS	60	GA	40	11S20E34
5/29/05	LORSBAN 4E-HF	CHLORPYRIFOS	60	GA	40	11S20E34

Dry Creek @ Wellsford Rd. – Diazinon detected during the 2/15/05 sample event

Diazinon was reported at a concentration of 0.011 µg/L and 0.013 µg/L in the environmental sample and field duplicate respectively (Table 13), which are below the water quality objective. Although there were a substantial number of pesticides applied in the watershed prior during January and in February prior to the February 15 sampling event, no diazinon was applied in the weeks preceding the sample event (Table 17, Figure 15). At this point, the source of the exceedance is unknown. Dry Creek runs on the north of the city of Waterford providing the possibility that the exceedance originated in the urban area. Alternatively, the application could be unreported agricultural use. The ESJWQC will search through the pesticide use databases to find the crops for which these chemicals are registered and contact these growers in the Dry Creek watershed to perform surveys of management practices and initiate outreach on BMP implementation.

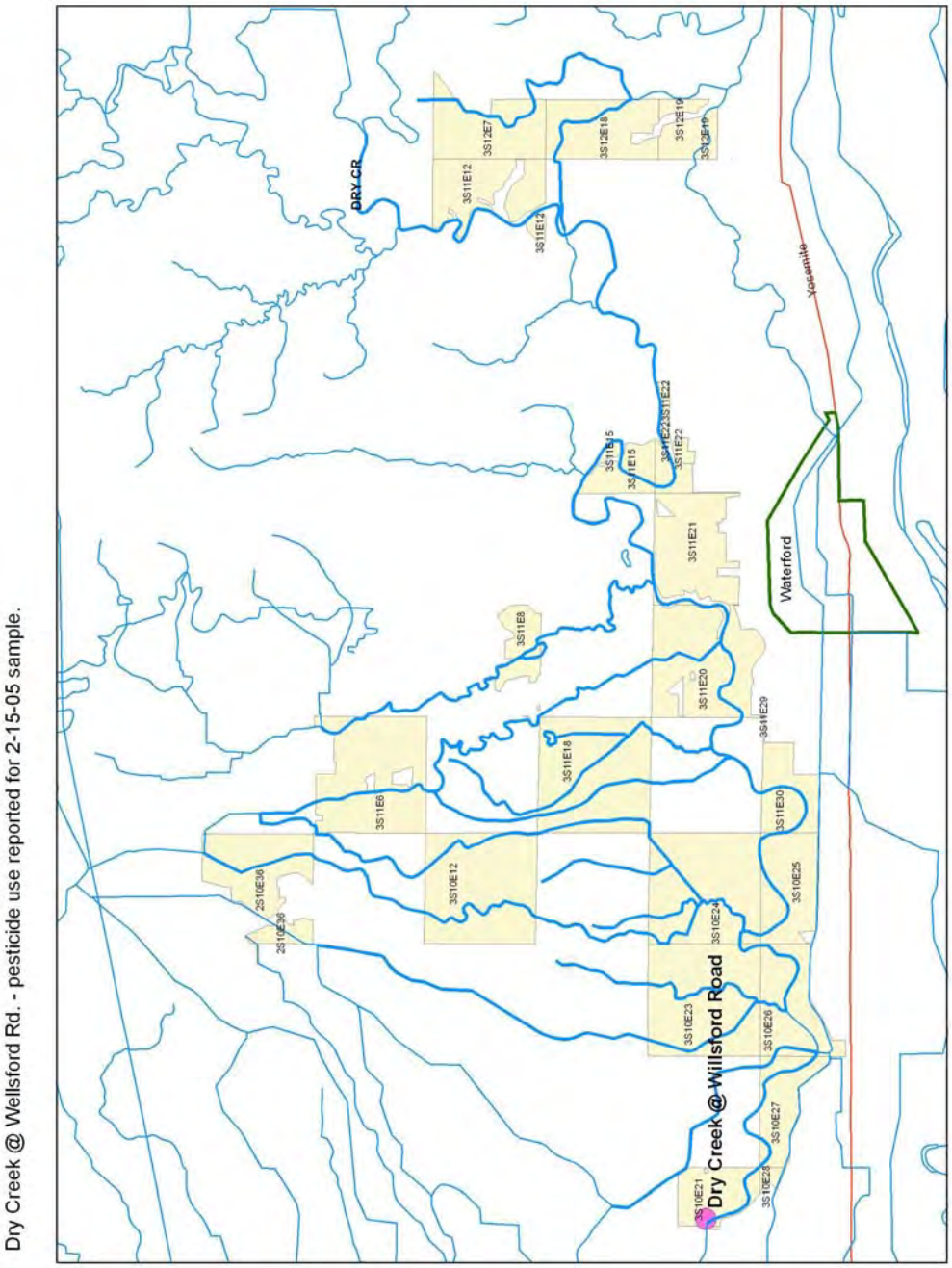
Table 17. Pesticide use by TRS, for the Dry Creek @ Wellsford Rd watershed for the two weeks prior to the February 15, 2005 sample event.

Product name	Chemical name	total used per TRS	unit	TRS
GLY STAR ORIGINAL	GLYPHOSATE, ISOPROPYLAMINE SALT	7.5	GA	2S10E36
VANGARD WG	CYPRODINIL	11.25	Lb	2S10E36
GOAL 2XL HERBICIDE	OXYFLUORFEN	10	GA	3S10E12
SIM-TROL 4L	SIMAZINE	10	GA	3S10E12
TOUCHDOWN HERBICIDE	GLYPHOSATE, DIAMMONIUM SALT	10	GA	3S10E12
GALIGAN 2E OXYFLUORFEN HERBICIDE	OXYFLUORFEN	1.215	GA	3S10E21
GRAMOXONE MAX	PARAQUAT DICHLORIDE	5.695	GA	3S10E21
NUFARM RHOMENE MCPA BROADLEAF HERBICIDE	MCPA, DIMETHYLAMINE SALT	56	GA	3S10E21
SHARK HERBICIDE	CARFENTRAZONE-ETHYL	0.185938	GA	3S10E21
SIM-TROL 4L	SIMAZINE	0.26	GA	3S10E21
SURFLAN A.S. AGRICULTURAL HERBICIDE	ORYZALIN	1.04125	GA	3S10E21
REX LIME SULFUR SOLUTION	SULFUR	331.3	GA	3S10E23
ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	1.5	GA	3S10E24
TENKOZ BUCCANEER PLUS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	16.35	GA	3S10E24
VANGARD WG	CYPRODINYL	7.5	Lb	3S10E24
CHAMP FORMULA 2 FLOWABLE	COPPER HYDROXIDE	13.125	GA	3S10E25
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.9375	GA	3S10E25
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	7.375	GA	3S10E25
ROVRAL 4 FLOWABLE	IPRODIONE	9.375	GA	3S10E25
SURFLAN A.S. AGRICULTURAL HERBICIDE	ORYZALIN	12.1875	GA	3S10E25
VANGARD WG	CYPRODINIL	8.203125	Lb	3S10E25
ZIRAM 76DF FUNGICIDE	ZIRAM	600	LB	3S10E25
GALIGAN 2E OXYFLUORFEN HERBICIDE	OXYFLUORFEN	2.3125	GA	3S10E26
KOCIDE DF	COPPER HYDROXIDE	5.5	LB	3S10E26
NUFARM CREDIT SYSTEMIC EXTRA HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	8	GA	3S10E26

Product name	Chemical name	total used per TRS	unit	TRS
NU-FLOW M SEED TREATMENT FUNGICIDE	MYCLOBUTANIL	1.75	GA	3S10E26
PRINCEP 4L	SIMAZINE	0.375	GA	3S10E26
ROUNDUP HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	1.7125	GA	3S10E26
SURFLAN A.S.	ORYZALIN	13.625	GA	3S10E26
ORBIT	PROPICONAZOLE	0.078125	GA	3S10E27
ROVRAL 4 FLOWABLE	IPRODIONE	2.4	GA	3S10E27
CHAMPION WETTABLE POWDER	COPPER HYDROXIDE	40	LB	3S10E28
DIMILIN 2L	DIFLUBENZURON	2	GA	3S10E28
DIREX 4L	DIURON	2.5	GA	3S10E28
GOAL 2XL	OXYFLUORFEN	1.125	GA	3S10E28
GRAMOXONE MAX	PARAQUAT DICHLORIDE	1.125	GA	3S10E28
KOCIDE 101	COPPER HYDROXIDE	40	LB	3S10E28
ROUNDUP ORIGINAL MAX HERBICIDE	GLYPHOSATE, POTASSIUM SALT	1.25	GA	3S10E28
ROVRAL 4 FLOWABLE	IPRODIONE	2.5	GA	3S10E28
SOLICAM DF HERBICIDE	NORFLURAZON	1	LB	3S10E28
VANGARD WG	CYPRODINIL	2.5	LB	3S10E28
ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	0.0087	GA	3S11E12
LAREDO EW	MYCLOBUTANIL	2.8292	GA	3S11E12
ROVRAL 4 FLOWABLE	IPRODIONE	114	GA	3S11E15
GOAL 2XL	OXYFLUORFEN	7.834219	GA	3S11E18
GRAMOXONE MAX	PARAQUAT DICHLORIDE	10.52719	GA	3S11E18
SURFLAN A.S. AGRICULTURAL HERBICIDE	ORYZALIN	17.31766	GA	3S11E18
GOAL 2XL	OXYFLUORFEN	0.223203	GA	3S11E20
KOCIDE 2000	COPPER HYDROXIDE	14.4	LB	3S11E20
ROUNDUP ORIGINAL MAX HERBICIDE	GLYPHOSATE, POTASSIUM SALT	1.19	GA	3S11E20
ROVRAL 4 FLOWABLE	IPRODIONE	2.5	GA	3S11E20
SABER CA	2,4-D, DIMETHYLAMINE SALT	2.285	GA	3S11E20
SURFLAN A.S. AGRICULTURAL HERBICIDE	ORYZALIN	4.16625	GA	3S11E20
VANGARD WG	CYPRODINIL	3.1875	Lb	3S11E20
WEEVIL-CIDE TABLETS	ALUMINUM PHOSPHIDE	0.59375	GA	3S11E20
CHAMP FORMULA 2 FLOWABLE	COPPER HYDROXIDE	7.5	GA	3S11E21
GOAL 2XL	OXYFLUORFEN	33.5	GA	3S11E21
KOCIDE DF	COPPER HYDROXIDE	30	LB	3S11E21
OMNI SUPREME SPRAY	PETROLEUM OIL, UNCLASSIFIED	23	GA	3S11E21
PRINCEP 4L	SIMAZINE	31.25	GA	3S11E21
ROUNDUP ORIGINAL MAX HERBICIDE	GLYPHOSATE, POTASSIUM SALT	48.75	GA	3S11E21
ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	7	GA	3S11E21
SOLICAM DF HERBICIDE	NORFLURAZON	60	LB	3S11E21
SUPRACIDE 2E	METHIDATHION	11.5	GA	3S11E21
VANGARD WG	CYPRODINIL	10.93125	Lb	3S11E21
ROVRAL 4 FLOWABLE	IPRODIONE	10.63	GA	3S11E22
VANGARD WG	CYPRODINIL	42.1925	Lb	3S11E22
CHAMP FORMULA 2 FLOWABLE	COPPER HYDROXIDE	36.5	GA	3S11E29
DIMILIN 2L	DIFLUBENZURON	1	GA	3S11E29
GLY STAR PLUS	GLYPHOSATE,	5	GA	3S11E29

Product name	Chemical name	total used per TRS	unit	TRS
	ISOPROPYLAMINE SALT			
GOAL 2XL	OXYFLUORFEN	5	GA	3S11E29
KOCIDE 101	COPPER HYDROXIDE	72	LB	3S11E29
ROVRAL 4 FLOWABLE	IPRODIONE	1.25	GA	3S11E29
SOLICAM DF HERBICIDE	NORFLURAZON	20	LB	3S11E29
SURFLAN A.S.	ORYZALIN	3.75	GA	3S11E29
VANGARD WG	CYPRODINIL	10.3125	Lb	3S11E29
CHAMP FORMULA 2 FLOWABLE	COPPER HYDROXIDE	127.5	GA	3S11E30
GLYFOS HERBICIDE	GLYPHOSATE	2.34	GA	3S11E30
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.78	GA	3S11E30
HYDROX	COPPER HYDROXIDE	20	LB	3S11E30
ROVRAL 4 FLOWABLE	IPRODIONE	2.5	GA	3S11E30
SIM-TROL 4L	SIMAZINE	3.13	GA	3S11E30
VANGARD WG	CYPRODINIL	34.53125	LB	3S11E30
MCP AMINE HERBICIDE	MCPA, DIMETHYLAMINE SALT	25.5	GA	3S11E6
SHARK HERBICIDE	CARFENTRAZONE-ETHYL	0.980156	GA	3S11E6
FARMSAVER.COM OXIFLO 2 EC	OXYFLUORFEN	1.45875	GA	3S11E8
NUFARM CREDIT SYSTEMIC EXTRA HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	1.09375	GA	3S11E8
WEEVIL-CIDE TABLETS	ALUMINUM PHOSPHIDE	0.265625	GA	3S12E18
2, 4-D AMINE 4 HERBICIDE	2, 4-D AMINE	15	GA	3S12E19
GRAMOXONE MAX	PARAQUAT DICHLORIDE	13.5	GA	3S12E19
ROVRAL 4 FLOWABLE	IPRODIONE	9.375	GA	3S12E19
WEEVIL-CIDE TABLETS	ALUMINUM PHOSPHIDE	0.234375	GA	3S12E19
VANGARD WG	CYPRODINIL	26.9	LB	3S12E7

Figure 15. Pesticide use, by TRS, for Dry Creek @ Wellsford Rd. for the 2/15/05 sample.



Duck Slough @ Pioneer Rd - Chlorpyrifos detected during the 7/12/05 sample event

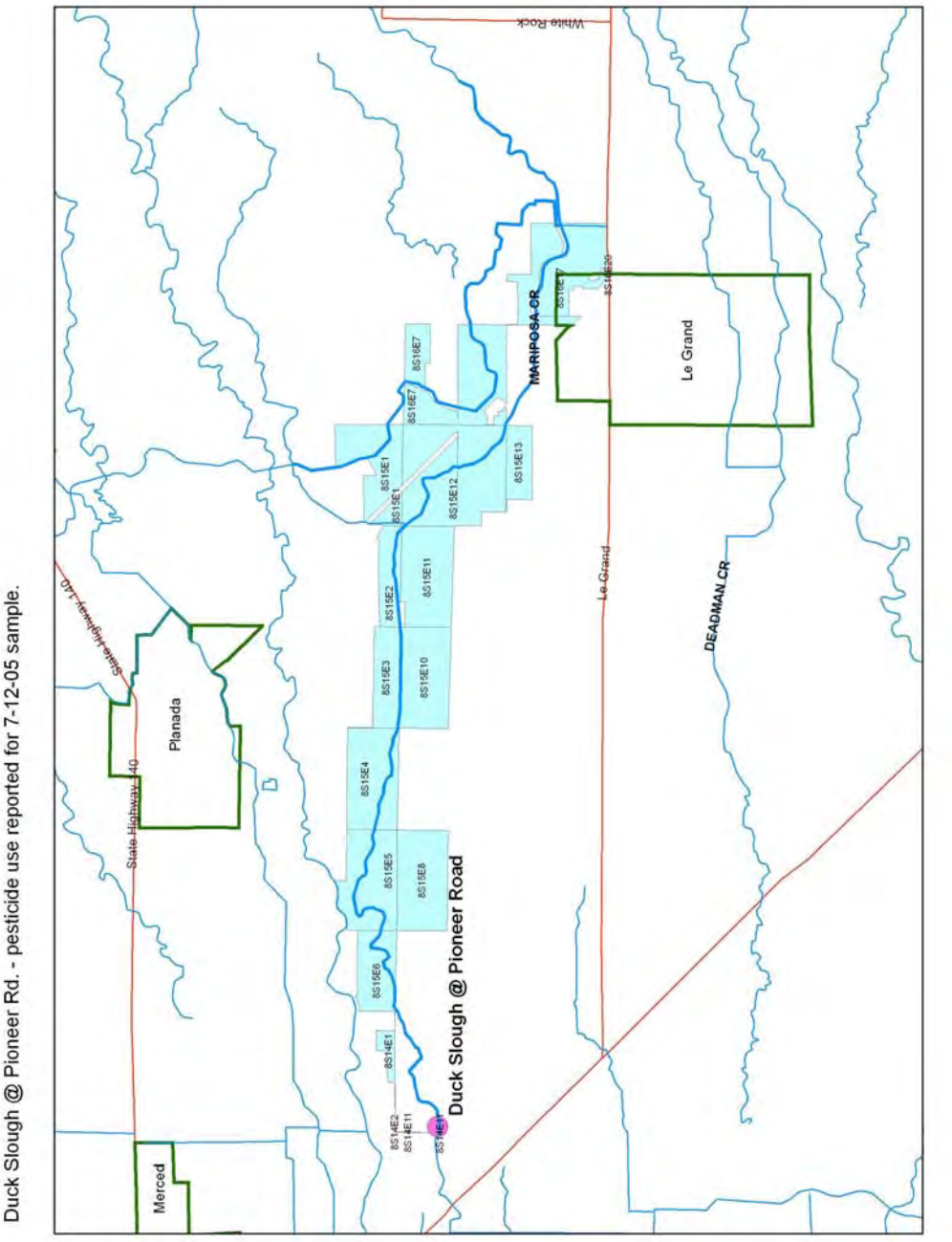
Chlorpyrifos was reported at a concentration of 0.026 µg/L (Table 13), which is above the water quality objective. Although there were a substantial number of pesticides applied in the watershed prior to the July 12 sampling event, no chlorpyrifos was applied in the weeks preceding the sample event (Table 17, Figure 16). At this point, it is unclear what the source of the exceedance is. Duck Slough runs on the north of the city of Le Grand providing the possibility that the exceedance originated in the urban area. Alternatively, the application could be unreported agricultural use. The ESJWQC will search through the pesticide use databases to find the crops for which these chemicals are registered and contact these growers in the Duck Slough @ Pioneer Rd watershed to perform surveys of management practices and initiate outreach on BMP implementation.

Table 17. Pesticide use, by TRS, for Duck Slough @ Pioneer during the two weeks prior to the July 12, 2005 sample event.

Product name	Chemical name	Total used per TRS	unit	Total acres treated	TRS
DU PONT STEWARD INSECTICIDE	INDOXACARB	0.9	GA	17.0	8S14E1
PROCLAIM INSECTICIDE	EMAMECTIN BENZOATE	13.4	LBS	52.0	8S14E1
ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	32.4	GA	120.5	8S14E1
DU PONT STEWARD INSECTICIDE	INDOXACARB	4.3	GA	79.0	8S14E11
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	4.0	GA	30.0	8S14E11
DU PONT LANNATE SP INSECTICIDE	METHOMYL	30.0	LBS	40.0	8S14E2
INDUCE	METHOXYFENOZIDE	0.5	GA	32.5	8S14E2
INTREPID 2F	METHOXYFENOZIDE	2.5	GA	32.5	8S14E2
TRILIN HERBICIDE	TRIFLURALIN	1.6	GA	13.0	8S14E2
CLINCH ANT BAIT	AVERMECTIN	209.0	LBS	209.0	8S15E1
DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	0.3	GA	5.0	8S15E10
DU PONT AVAUNT INSECTICIDE	INDOXACARB	10.3	LB	55.0	8S15E10
ESTEEM ANT BAIT	PYRIPROXYFEN	74.0	LBS	37.0	8S15E10
GLY STAR PLUS	GLYPHOSATE, ISOPROPYLAMINE SALT	5.5	GA	22.0	8S15E10
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.7	GA	22.0	8S15E10
INTREPID 2F	METHOXYFENOZIDE	3.8	GA	76.0	8S15E10
PERM-UP 3.2 EC INSECTICIDE	PERMETHRIN	0.1	GA	6.0	8S15E10
RALLY 40W AGRICULTURAL FUNGICIDE IN WATE	MYCLOBUTANIL	6.3	lb	20.0	8S15E10
SUCCESS	SPINOSAD	0.9	GA	20.0	8S15E10
CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.3	LB	2.0	8S15E11
DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	0.4	GA	5.0	8S15E11
DU PONT LANNATE SP INSECTICIDE	METHOMYL	56.3	LBS	75.0	8S15E11
DU PONT VENDEX 50WP MITICIDE	FENBUTATIN-OXIDE	5.0	LBS	5.0	8S15E11
GLYFOS HERBICIDE	GLYPHOSATE	0.4	GA	2.0	8S15E11
BUCCANEER GLYPHOSATE HERBICIDE	GLYPHOSATE	8.0	GA	60.0	8S15E12

Product name	Chemical name	Total used per TRS	unit	Total acres treated	TRS
CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.4	LB	2.0	8S15E12
GLYFOS HERBICIDE	GLYPHOSATE	0.5	GA	2.0	8S15E12
GOAL 2XL	OXYFLUORFEN	2.5	GA	60.0	8S15E12
CHATEAU HERBICIDE SW	FLUMIOXAZIN	1.2	LB	10.0	8S15E13
DU PONT LANNATE SP INSECTICIDE	METHOMYL	56.0	LBS	73.0	8S15E13
ESTEEM ANT BAIT	PYRIPROXYFEN	178.0	LBS	89.0	8S15E13
GLY STAR PLUS	GLYPHOSATE, ISOPROPYLAMINE SALT	2.2	GA	7.0	8S15E13
GLYFOS HERBICIDE	GLYPHOSATE	5.4	GA	22.0	8S15E13
GOAL 1.6E HERBICIDE	OXYFLUORFEN	0.3	GA	12.0	8S15E13
SURFLAN A.S.	ORYZALIN	2.6	GA	7.0	8S15E13
DU PONT AVAUNT INSECTICIDE	INDOXACARB	26.7	LB	122.0	8S15E2
DU PONT LANNATE SP INSECTICIDE	METHOMYL	64.5	LBS	86.0	8S15E2
DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	0.0	GA	6.0	8S15E3
DU PONT AVAUNT INSECTICIDE	INDOXACARB	12.7	LB	68.0	8S15E3
INTREPID 2F	METHOXYFENOZIDE	15.2	GA	139.0	8S15E3
PERM-UP 3.2 EC INSECTICIDE	PERMETHRIN	0.2	GA	7.0	8S15E3
TOUCHDOWN TOTAL	GLYPHOSATE	29.4	GA	147.0	8S15E3
DU PONT AVAUNT INSECTICIDE	INDOXACARB	12.7	LBS	58.0	8S15E4
DU PONT LANNATE SP INSECTICIDE	METHOMYL	48.8	LBS	65.0	8S15E4
ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	33.2	GA	158.0	8S15E5
DU PONT AVAUNT INSECTICIDE	INDOXACARB	12.1	LB	64.3	8S15E6
PROCLAIM INSECTICIDE	EMAMECTIN BENZOATE	5.9	LBS	23.0	8S15E6
ROUNDUP WEATHERMAX HERBICIDE	GLYPHOSATE, POTASSIUM SALT	12.5	GA	67.0	8S15E6
DIPEL ES	BACILLUS THURINGIENSIS (BERLINER), SUBSP. KURSTAKI, SEROTYPE 3A,3B	5.8	GA	27.0	8S15E8
DU PONT AVAUNT INSECTICIDE	INDOXACARB	3.3	LB	15.0	8S15E8
EXTINGUISH PROFESSIONAL FIRE ANT BAIT	METHOPRENE	12.0	LBS	16.0	8S16E17
DU PONT AVAUNT INSECTICIDE	INDOXACARB	6.8	LBS	31.0	8S16E20
DU PONT VYDATE L INSECTICIDE/NEMATICIDE	OXAMYL	10.0	GA	25.0	8S16E20
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.8	GA	26.0	8S16E20
TENKOZ BUCCANEER PLUS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	6.5	GA	26.0	8S16E20
TENKOZ TRIFLURALIN 4 EMULSIFIABLE CONCEN	TRIFLURALIN	3.4	GA	27.4	8S16E20
CLINCH ANT BAIT	AVERMECTIN	645.0	LBS	645.0	8S16E7

Figure 16. Pesticide use, by TRS, for Duck Slough @ Pioneer for the 7/12/05 sample.



Highline Canal @ Lombardy Rd – Chlorpyrifos and diazinon detected during the 2/15/05 sample event

Chlorpyrifos was reported at a concentration of 0.01 µg/L (Table 13), which is below the water quality objective, and diazinon was detected at 0.098 µg/L, which is above the water quality objective. There were no reported applications of chlorpyrifos or diazinon in the weeks preceding the sample event. At this point, the source of the exceedance is unknown. The Highline Canal does not appear to receive any urban runoff above this sample site eliminating the possibility that the exceedance originated in an urban area. However, we will confirm this with the Turlock Irrigation District who is responsible for the conveyance. Alternatively, we may not have included the entire watershed in our mapping and pesticide use search. There are several small watersheds with ephemeral streams that emerge from the foothills that do not appear on any map. These watersheds may have been converted to agricultural use, primarily orchards receiving dormant spray applications, and yet not appear on any current map. We are currently expanding our search for additional watersheds and additional pesticide use that could have contributed these chemicals to the water. Alternatively, the application could be from unreported agricultural use. The ESJWQC will search through the pesticide use databases to find the crops for which these chemicals are registered and contact these growers in the Highline Canal @ Lombardy Rd watershed to perform surveys of management practices and initiate outreach on BMP implementation.

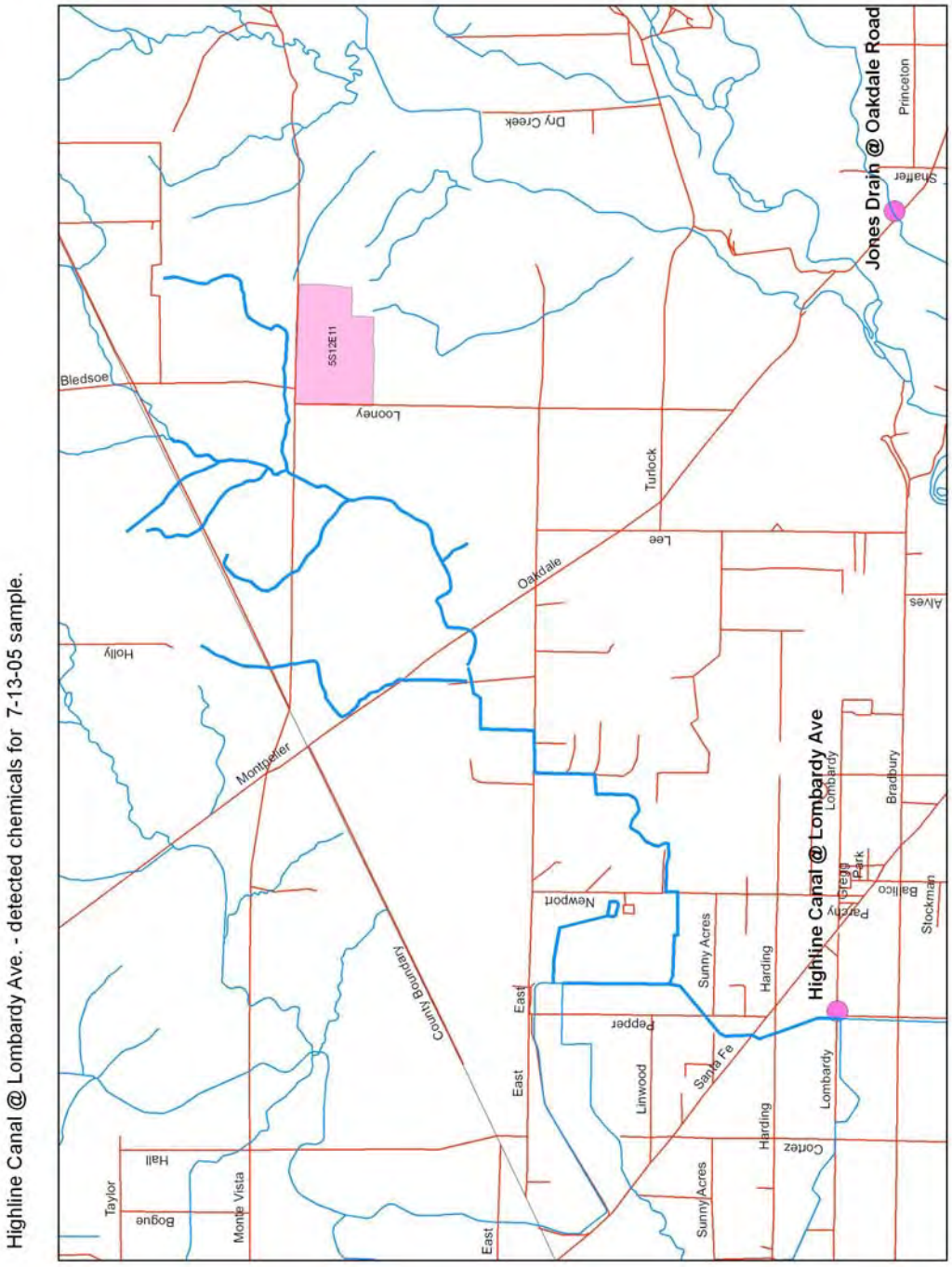
Highline Canal @ Lombardy Rd – Chlorpyrifos detected during the 7/13/05 sample event

Chlorpyrifos was reported at a concentration of 0.011 µg/L (Table 13), which is below the water quality objective. The pesticide use reports indicate that there was a single application of chlorpyrifos on July 12 (Table 18, Figure 17). The reported use occurred relatively high in the watershed and is located just adjacent to the canal. The application procedure was by ground spraying indicating that the potential for drift is reduced although not eliminated. The ESJWQC will contact the grower(s) in the TRS with the reported application to survey for BMPs and initiate discussions about additional BMP implementation.

Table 18. Chlorpyrifos use for Highline Canal @ Lombardy Rd. for 7/13/05 sample.

Appl date	Product name	Chemical name	amount	unit	Treat. acres	TRS
7/12/05	LORSBAN-4E	CHLORPYRIFOS	62.5	GA	125	5S12E11

Figure 17. Chlorpyrifos use for Highline Canal @ Lombardy for 7/13/05 sample.



Jones Drain @ Oakdale Rd – Diazinon detected during the 2/16/05 sample event

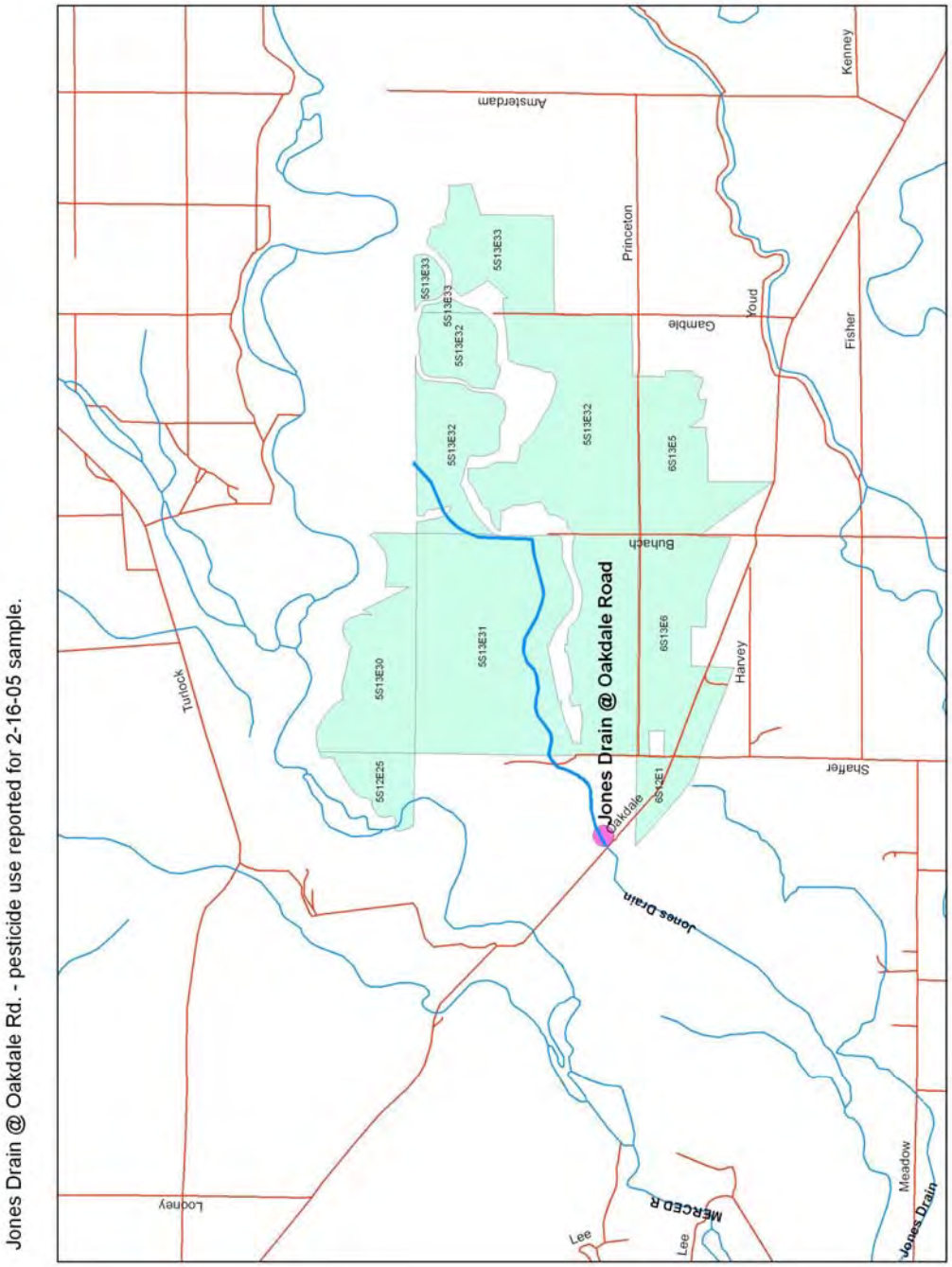
Diazinon was reported at a concentration of 0.011 µg/L (Table 13), which is below the water quality objective. There were no reported applications of diazinon in the weeks preceding the sample event (Table 19 and Figure 18). At this point, the source of the exceedance is unknown. The Jones Drain does not appear to receive any urban runoff above this sample site eliminating the possibility that the exceedance originated in an urban area. Alternatively, we may not have included the entire watershed in our mapping and pesticide use search, or the application could be from unreported agricultural use. There are several small watersheds with ephemeral streams that emerge from the foothills that do not appear on any map. These watersheds may have been converted to agricultural use, primarily orchards receiving dormant spray applications, and yet not appear on any current map. However, the Jones Drain watershed is a small watershed that is relatively well defined by the borders of other watersheds including the Merced River. We are currently expanding our search for additional watersheds and additional pesticide use that could have contributed these chemicals to the water. The ESJWQC will search through the pesticide use databases to find the crops for which these chemicals are registered and contact these growers in the Jones Drain watershed to perform surveys of management practices and initiate outreach on BMP implementation.

Table 19. Pesticide use by TRS, for the Jones Drain @ Oakdale Rd during the weeks preceding the February 16, 2005 sample event.

product name	Chemical name	Total amount per TRS	unit	Total treated acres	TRS
TOUCHDOWN HERBICIDE	GLYPHOSATE, DIAMMONIUM SALT	26.5	GA	106.0	5S12E25
GOAL 2XL HERBICIDE	OXYFLUORFEN	7.5	GA	75.7	5S13E30
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	11.1	GA	47.7	5S13E31
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.4	GA	45.0	5S13E32
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	10.7	GA	45.0	5S13E32
VANGARD WG	CYPRODINIL	17.8	LBS	57.0	5S13E32
BASICOP	COPPER SULFATE	222.0	LBS	44.4	5S13E33
DIMILIN 2L	DIFLUBENZURON	4.2	GA	44.4	5S13E33
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.1	GA	6.5	5S13E33
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	1.2	GA	6.5	5S13E33
VANGARD WG	CYPRODINIL	53.4	LBS	170.6	5S13E33
BANVEL	DICAMBA, DIMETHYLAMINE SALT	8.8	GA	140.0	6S12E1
SHARK HERBICIDE	CARFENTRAZONE-ETHYL	8.8	LBS	140.0	6S12E1
VANGARD WG	CYPRODINIL	7.6	LBS	24.1	6S12E1
GOAL 2XL HERBICIDE	OXYFLUORFEN	8.6	GA	59.0	6S13E5
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	7.2	GA	59.0	6S13E5
ROVRAL BRAND 4 FLOWABLE FUNGICIDE	IPRODIONE	13.5	GA	108.0	6S13E5
SURFLAN A.S.	ORYZALIN	17.2	GA	59.0	6S13E5
AUXIGRO WP WETTABLE POWDER	GLUTAMIC ACID	14.5	LBS	58.0	6S13E6
FREEWAY	METHYL SILICONE RESINS	2.9	GA	58.0	6S13E6
GOAL 2XL HERBICIDE	OXYFLUORFEN	30.4	GA	208.5	6S13E6

product name	Chemical name	Total amount per TRS	unit	Total treated acres	TRS
NORDOX 75 WG	COPPER OXIDE (OUS)	72.5	LBS	58.0	6S13E6
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	25.4	GA	208.5	6S13E6
ROVRAL BRAND 4 FLOWABLE FUNGICIDE	IPRODIONE	7.3	GA	58.0	6S13E6
SURFLAN A.S.	ORYZALIN	60.8	GA	208.5	6S13E6

Figure 18. Pesticide use, by TRS, for Jones Drain @ Oakdale Rd. for 2/16/05 sample.



Prairie Flower Drain @ Crows Landing Rd – Diazinon detected in the 7/13/05 sample event

Diazinon was reported at a concentration of 0.013 µg/L (Table 13), which is below the water quality objective. There were no reported applications of diazinon in the weeks preceding the sample event. At this point, the source of the exceedance is unknown. The Prairie Flower Drain does not appear to receive any urban runoff above this sample site eliminating the possibility that the exceedance originated in an urban area. Alternatively, we may not have included the entire watershed in our mapping and pesticide use search, or the application could be from unreported agricultural use. Water is moved around in this region making it difficult to define watersheds. We have recently received data from the Turlock Irrigation District providing additional information on the location of smaller drains within the watershed. This information has not expanded the size of the watershed. We are currently expanding our search for additional pesticide applications that could have contributed this chemical to the water. If we can find applications of diazinon adjacent to the watershed, we can visit the locations to determine if these sites could be part of the watershed. In the interim, the ESJWQC will contact growers in the watershed and initiate outreach concerning BMP implementation.

Prairie Flower Drain @ Crows Landing Rd – Chlorpyrifos detected during the 9/21/05 sample event

Chlorpyrifos was reported at a concentration of 0.018 µg/L (Table 13) in both the environmental sample and the field duplicate sample, which are below the water quality objective. Pesticide use reports for this site for September have become available only within the last week and are not yet analyzed. We will report the results of these samples in the report due June 30, 2005.

Sediment Toxicity Exceedances

Toxicity exceedances were treated differently than water chemistry exceedances. For water chemistry exceedances, we were able to search for one or two chemicals that were detected in the water. Given that there were a large number of chemicals applied and the ESJWQC did not analyze samples for these chemicals, we treated any chemical applied in the watershed as a potential source of the toxicity. We then analyzed these chemicals by K_{oc} to determine which of the chemicals could be responsible for the toxicity. In dealing with sources of sediment toxicity, we narrowed the list of chemicals down to those that could be responsible for the toxicity if their K_{oc} value was above 1800 (100 below the DPR standard). We restrict our interpretation of sediment toxicity to a significant decrease in survival of the treatment compared to the control as is currently recognized in the August 15, 2005 version of the MRP.

Hyalella toxicity

Duck Slough @ Gurr Rd – Sediment toxicity detected during the 7/12/05 sample event

Survival of *Hyalella* was reported as 58.8% which was significantly different from the controls. In the Duck Slough watershed (Figure 19) there were over one hundred chemical applications in the two weeks prior to sampling (Table 20). The pesticide applications included a large number of herbicides that are not expected to cause toxicity and the following chemicals with K_{oc} values below 1,500-1,800 which are not expected to partition to sediment (K_{oc} values in parentheses): methamidaphos (5), sethoxydim (100), imidcloprid (440), myclobutinil (500), oxamyl (6), acetamiprid (130-260), propanil (150), methomyl (72), dimethoate (20), and flumioxazin (105).

There were a series of applications of products with the capacity to bind to soil/organic matter and be transported to surface waters where they could accumulate in the sediments. These include propargite (4,000 – 8,000), oxyfluorfen (100,000), indoxacarb (2,200-8,200), avermectin (6,000), dimethylpolysiloxane (1,840), mancozeb (2,000), spiromesifen (50,000-100,000), pyriproxyfen (14,000), methoprene (23,000), abamectin (4,000), and a series of pyrethroids with a known affinity to bind to sediment.

Methoxyfenozide was also used commonly in the watershed and although it may partition to sediment, it is considered a relatively nontoxic compound (insect growth regulator) that is recommended for use in integrated pest management programs (http://www.cdpr.ca.gov/docs/publicreports/5698.pdf). Consequently, we did not include methoxyfenozide as a potential source of toxicity.

Applications of the compounds with a high affinity for binding took place in 21 of the 56 TRS' in the two weeks prior to sampling (Table 21). We will contact the growers who applied the chemicals marked with blue highlighting to initiate outreach with discussions of BMPs appropriate to the parcels involved.

Figure 19. Duck Slough pesticide applications. Applications are for the two weeks prior to the July sampling event.

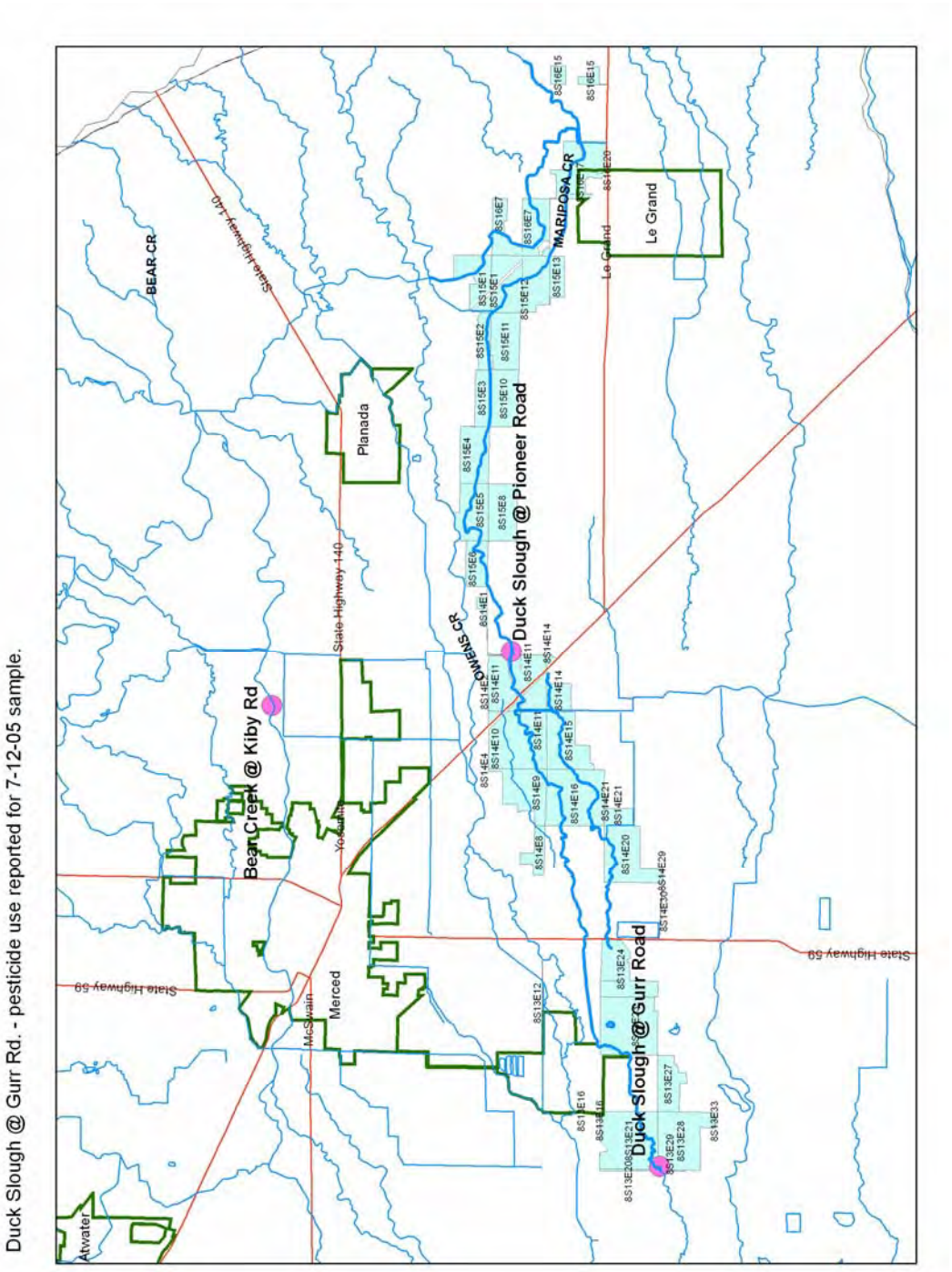


Table 20. Pesticide applications in the Duck Slough watershed during the 2 weeks prior to July sampling. Shaded rows indicate applications with a high potential to contribute to sediment toxicity. Herbicides have been removed from the table.

application date	PUR Product name	Chemical name	amount	unit	treated acres	TRS
6/29/05	INDUCE	METHOXYFENOZIDE	0.15	GA	16	8S14E2
6/29/05	INDUCE	METHOXYFENOZIDE	0.3075	GA	16.5	8S14E2
6/29/05	TRILIN HERBICIDE	TRIFLURALIN	1.625	GA	13	8S14E2
6/29/05	INTREPID 2F	METHOXYFENOZIDE	1.25	GA	16	8S14E2
6/29/05	INTREPID 2F	METHOXYFENOZIDE	1.28	GA	16.5	8S14E2
6/29/05	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	2.1	GA	90	8S13E11
6/29/05	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	3.3	GA	55	8S13E11
6/29/05	MONITOR 4 LIQUID INSECTICIDE	METHAMIDOPHOS	0.69	GA	35	8S13E11
6/29/05	MONITOR 4 LIQUID INSECTICIDE	METHAMIDOPHOS	10.52	GA	55	8S13E11
6/29/05	ZEPHYR 0.15EC	ABAMECTIN	2.285156	GA	117	8S13E12
6/29/05	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	CYFLUTHRIN	2.742188	GA	117	8S13E12
6/29/05	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	IMIDACLOPRID	2.742188	GA	117	8S13E12
6/29/05	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	0.3125	GA	5	8S15E10
6/29/05	DU PONT AVAUNT INSECTICIDE	INDOXACARB	0.9375	LB	5	8S15E10
6/29/05	RALLY 40W AGRICULTURAL FUNGICIDE IN WATE	MYCLOBUTANIL	6.25	LB	20	8S15E10
6/29/05	DU PONT AVAUNT INSECTICIDE	INDOXACARB	9.333	LBS	50	8S15E10
6/30/05	DU PONT LANNATE INSECTICIDE	METHOMYL	19.67	LBS	78.7	8S13E20
6/30/05	DU PONT LANNATE INSECTICIDE	METHOMYL	14.6	LBS	58.4	8S13E20
6/30/05	AMMO 2.5 EC	CYPERMETHRIN	0.27	GA	34.5	8S13E24
6/30/05	AMMO 2.5 EC	CYPERMETHRIN	0.29	GA	37	8S13E27
6/30/05	AMMO 2.5 EC	CYPERMETHRIN	0.63	GA	80	8S13E27
6/30/05	AMMO 2.5 EC	CYPERMETHRIN	0.26	GA	33.4	8S13E27
6/30/05	DU PONT LANNATE INSECTICIDE	METHOMYL	13.15	LBS	52.6	8S13E28
7/1/05	DU PONT AVAUNT INSECTICIDE	INDOXACARB	12.09625	LB	64.3	8S15E6
7/1/05	DU PONT AVAUNT INSECTICIDE	INDOXACARB	26.6875	LB	122	8S15E2
7/1/05	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	2.5	GA	30	8S14E10
7/1/05	DIMETHOATE 267	DIMETHOATE	5.63	GA	30	8S14E10
7/1/05	PENNCOZEB 75DF	MANCOZEB	60	LBS	30	8S14E10

application date	PUR Product name	Chemical name	amount	unit	treated acres	TRS
	DRY FLOWABLE FUNGICIDE					
7/1/05	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.25625	LB	2	8S15E11
7/1/05	GOAL 2XL	OXYFLUORFEN	2.5	GA	60	8S15E12
7/1/05	CLINCH ANT BAIT	AVERMECTIN	555	LBS	555	8S16E7
7/1/05	CLINCH ANT BAIT	AVERMECTIN	90	LBS	90	8S16E7
7/1/05	OBERON 2SC INSECTICIDE/MITICIDE	SPIROMESIFEN	4.793	GA	74	8S14E21
7/1/05	R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	1.199	GA	74	8S14E21
7/1/05	DU PONT VYDATE L INSECTICIDE/NEMATICIDE	OXAMYL	10	GA	25	8S16E20
7/2/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	56.25	LBS	75	8S15E11
7/2/05	ESTEEM ANT BAIT	PYRIPROXYFEN	34	LBS	17	8S15E13
7/2/05	TENKOZ TRIFLURALIN 4 EMULSIFIABLE CONCEN	TRIFLURALIN	1.875	GA	15	8S16E20
7/4/05	CLINCH ANT BAIT	AVERMECTIN	209	LBS	209	8S15E1
7/4/05	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	2.83	GA	34	8S14E15
7/4/05	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	0.58	GA	7	8S14E15
7/4/05	DIMETHOATE 267	DIMETHOATE	6.38	GA	34	8S14E15
7/4/05	DIMETHOATE 267	DIMETHOATE	1.31	GA	7	8S14E15
7/4/05	PENNCOZEB 75DF DRY FLOWABLE FUNGICIDE	MANCOZEB	68	LBS	34	8S14E15
7/4/05	PENNCOZEB 75DF DRY FLOWABLE FUNGICIDE	MANCOZEB	14	LBS	7	8S14E15
7/5/05	PROCLAIM INSECTICIDE	EMAMECTIN BENZOATE	13.398	LBS	52	8S14E1
7/6/05	DU PONT LANNATE INSECTICIDE	METHOMYL	46.5	LBS	62	8S14E8
7/6/05	DU PONT LANNATE INSECTICIDE	METHOMYL	48	LBS	64	8S14E8
7/6/05	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	0.4	GA	5	8S15E11
7/6/05	DU PONT VENDEX 50WP MITICIDE	FENBUTATIN-OXIDE	5	LBS	5	8S15E11
7/6/05	DU PONT LANNATE INSECTICIDE	METHOMYL	33	LBS	44	8S14E16
7/6/05	EXTINGUISH PROFESSIONAL FIRE ANT BAIT	METHOPRENE	12	LBS	16	8S16E17
7/6/05	ASSAIL BRAND 70WP INSECTICIDE	ACETAMIPRID	0.525156	GA	87.3	8S13E28
7/7/05	DU PONT AVAUNT INSECTICIDE	INDOXACARB	3.28125	LB	15	8S15E8
7/7/05	ESTEEM ANT BAIT	PYRIPROXYFEN	74	LBS	37	8S15E10
7/7/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	56	LBS	73	8S15E13

application date	PUR Product name	Chemical name	amount	unit	treated acres	TRS
7/7/05	ESTEEM ANT BAIT	PYRIPROXYFEN	74	LBS	37	8S15E13
7/7/05	DU PONT LANNATE INSECTICIDE	METHOMYL	17.52	LBS	70.1	8S13E20
7/7/05	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	CYFLUTHRIN	0.429	GA	18	8S14E21
7/7/05	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	IMIDACLOPRID	0.429	GA	18	8S14E21
7/7/05	ZEAL MITICIDE	ETOXAZOLE	1.125	LBS	18	8S14E21
7/7/05	SUPER WHAM! CA	PROPANIL	18.6	GA	12.4	8S13E29
7/7/05	SUPER WHAM! CA	PROPANIL	42.15	GA	28.1	8S13E29
7/7/05	SUPER WHAM! CA	PROPANIL	27.15	GA	18.1	8S13E29
7/7/05	SUPER WHAM! CA	PROPANIL	49.5	GA	33	8S13E29
7/7/05	SUPER WHAM! CA	PROPANIL	67.2	GA	44.8	8S13E29
7/7/05	SUPER WHAM! CA	PROPANIL	65.7	GA	43.8	8S13E29
7/7/05	SUPER WHAM! CA	PROPANIL	49.65	GA	33.1	8S13E29
7/7/05	DU PONT LANNATE INSECTICIDE	METHOMYL	19.25	LBS	77	8S13E28
7/7/05	POAST	SETHOXYDIM	8	GA	40	8S14E30
7/7/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	13.2	LBS	40	8S14E30
7/7/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	16.83	LBS	51	8S14E30
7/7/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	24.96	LBS	96	8S14E29
7/8/05	DU PONT STEWARD INSECTICIDE	INDOXACARB	0.93	GA	17	8S14E1
7/8/05	PERM-UP 3.2 EC INSECTICIDE	PERMETHRIN	0.164063	GA	7	8S15E3
7/8/05	DU PONT STEWARD INSECTICIDE	INDOXACARB	4.32	GA	79	8S14E11
7/8/05	PERM-UP 3.2 EC INSECTICIDE	PERMETHRIN	0.140625	GA	6	8S15E10
7/8/05	INTREPID 2F	METHOXYFENOZIDE	0.5	GA	46	8S15E10
7/8/05	INTREPID 2F	METHOXYFENOZIDE	3.28125	GA	30	8S15E10
7/8/05	COMITE	PROPARGITE	27.25	GA	109	8S14E14
7/8/05	ESTEEM ANT BAIT	PYRIPROXYFEN	70	LBS	35	8S15E13
7/8/05	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	7.03	GA	90	8S14E20
7/8/05	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	5.47	GA	70	8S14E20
7/8/05	DREXEL DIMETHOATE 2.67	DIMETHOATE	14.06	GA	90	8S14E20
7/8/05	DREXEL DIMETHOATE 2.67	DIMETHOATE	10.94	GA	70	8S14E20
7/8/05	INTREPID 2F	METHOXYFENOZIDE	5.63	GA	90	8S14E20
7/8/05	INTREPID 2F	METHOXYFENOZIDE	4.38	GA	70	8S14E20
7/8/05	DU PONT LANNATE INSECTICIDE	METHOMYL	20.4	LBS	68	8S14E21

application date	PUR Product name	Chemical name	amount	unit	treated acres	TRS
7/8/05	DU PONT LANNATE INSECTICIDE	METHOMYL	7.97	LBS	27.5	8S13E27
7/8/05	DU PONT LANNATE INSECTICIDE	METHOMYL	16.38	LBS	63	8S14E29
7/8/05	DU PONT LANNATE INSECTICIDE	METHOMYL	13.49	LBS	51.9	8S14E29
7/8/05	OBERON 2SC INSECTICIDE/MITICIDE	SPIROMESIFEN	1.25	GA	20	8S13E33
7/9/05	DU PONT AVAUNT INSECTICIDE	INDOXACARB	12.69	LBS	58	8S15E4
7/9/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	34.5	LBS	46	8S14E16
7/9/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	36	LBS	48	8S14E16
7/9/05	DU PONT LANNATE INSECTICIDE	METHOMYL	22.5	LBS	90	8S14E20
7/9/05	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	CYFLUTHRIN	1.334	GA	56	8S14E21
7/9/05	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	IMIDACLOPRID	1.334	GA	56	8S14E21
7/9/05	ZEPHYR 0.15EC	AVERMECTIN	1.295	GA	56	8S14E21
7/10/05	PROCLAIM INSECTICIDE	EMAMECTIN BENZOATE	5.93	LBS	23	8S15E6
7/11/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	48.75	LBS	65	8S15E4
7/11/05	INTREPID 2F	METHOXYFENOZIDE	9.734375	GA	89	8S15E3
7/11/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	34.5	LBS	46	8S15E2
7/11/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	30	LBS	40	8S15E2
7/11/05	DU PONT LANNATE INSECTICIDE	METHOMYL	14.04	LBS	54	8S13E23
7/11/05	DU PONT AVAUNT INSECTICIDE	INDOXACARB	6.78	LBS	31	8S16E20
7/11/05	SUPER WHAM! CA	PROPANIL	69	GA	46	8S13E29
7/11/05	SUPER WHAM! CA	PROPANIL	70.5	GA	47	8S13E29
7/11/05	SUPER WHAM! CA	PROPANIL	125.4	GA	83.6	8S13E29
7/12/05	DU PONT LANNATE SP INSECTICIDE	METHOMYL	30	LBS	40	8S14E2
7/12/05	TRIPLELINE FOAM-AWAY	DIMETHYLPOLYSILOXANE	1.5625	GA	50	8S15E3
7/12/05	INTREPID 2F	METHOXYFENOZIDE	5.46875	GA	50	8S15E3
7/12/05	DIPEL ES	BACILLUS THURINGIENSIS (BERLINER), SUBSP. KURSTAKI, SEROTYPE 3A,3B	5.75	GA	27	8S15E8
7/12/05	COMITE	PROPARGITE	6.25	GA	25	8S14E14

application date	PUR Product name	Chemical name	amount	unit	treated acres	TRS
7/12/05	COMITE	PROPARGITE	15.75	GA	63	8S14E14
7/12/05	ASSAIL BRAND 70WP INSECTICIDE	ACETAMIPRID	0.215625	GA	34.5	8S13E24
7/12/05	R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	0.75	GA	34.5	8S13E24
7/12/05	ZEPHYR 0.15 EC	AVERMECTIN	0.81	GA	34.5	8S13E24
7/12/05	DU PONT LANNATE INSECTICIDE	METHOMYL	19.63	LBS	75.5	8S14E21
7/12/05	ASSAIL BRAND 70WP INSECTICIDE	ACETAMIPRID	0.20875	GA	33.4	8S13E27
7/12/05	ASSAIL BRAND 70WP INSECTICIDE	ACETAMIPRID	0.23125	GA	37	8S13E27
7/12/05	ASSAIL BRAND 70WP INSECTICIDE	ACETAMIPRID	0.5	GA	80	8S13E27
7/12/05	R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	0.8	GA	37	8S13E27
7/12/05	R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	1.73	GA	80	8S13E27
7/12/05	R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	0.72	GA	33.4	8S13E27
7/12/05	ZEPHYR 0.15 EC	AVERMECTIN	0.87	GA	37	8S13E27
7/12/05	ZEPHYR 0.15 EC	AVERMECTIN	1.88	GA	80	8S13E27
7/12/05	ZEPHYR 0.15 EC	AVERMECTIN	0.78	GA	33.4	8S13E27

Table 21. TRS locations in the Duck Slough @ Gurr Road watershed with applications of chemicals with potential to cause sediment toxicity in the July sample.

TRS
8S13E12
8S13E24
8S13E27
8S13E33
8S14E 1
8S14E 10
8S14E 11
8S14E 15
8S14E 20
8S14E 21
8S15E 10
8S15E 11
8S15E 12
8S15E 13
8S15E 2
8S15E 3
8S15E 4
8S15E 6
8S16E 17
8S16E 20
8S16E 7

Highline Canal @ Lombardy Rd – Sediment toxicity during the 5/10/05 sample event

Survival of *Hyalella* was reported as 71.25% which was considered significantly different from the controls. There were 50 product applications in the two weeks immediately preceding the sample event (Table 22 and Figure 20). Of those, 31 were herbicides, sulfur, or adjuvants that are not expected to cause sediment toxicity. In addition, there was one application of myclobutanil with a low K_{oc} (500), and four applications of azoxystrobin (K_{oc} = 300-1,600) that are not expected to bind to sediment. Fourteen products remained, all of which could be expected to be transported adsorbed to sediments and organic matter (highlighted in blue in Table 22). These include the pyrethroids esfenvalerate and lambda-cyhalothrin (6 applications), and pyraclostrobin (3 applications, K_{oc} = 6,000 – 16,000), and avermectin (5 applications, K_{oc} = 6,000).

Applications of the compounds with a high affinity for binding took place in 11 of the 16 TRS' in the two weeks prior to sampling (Table 23). We will contact the growers who applied the chemicals marked with blue highlighting to initiate outreach with discussions of BMPs appropriate to the parcels involved.

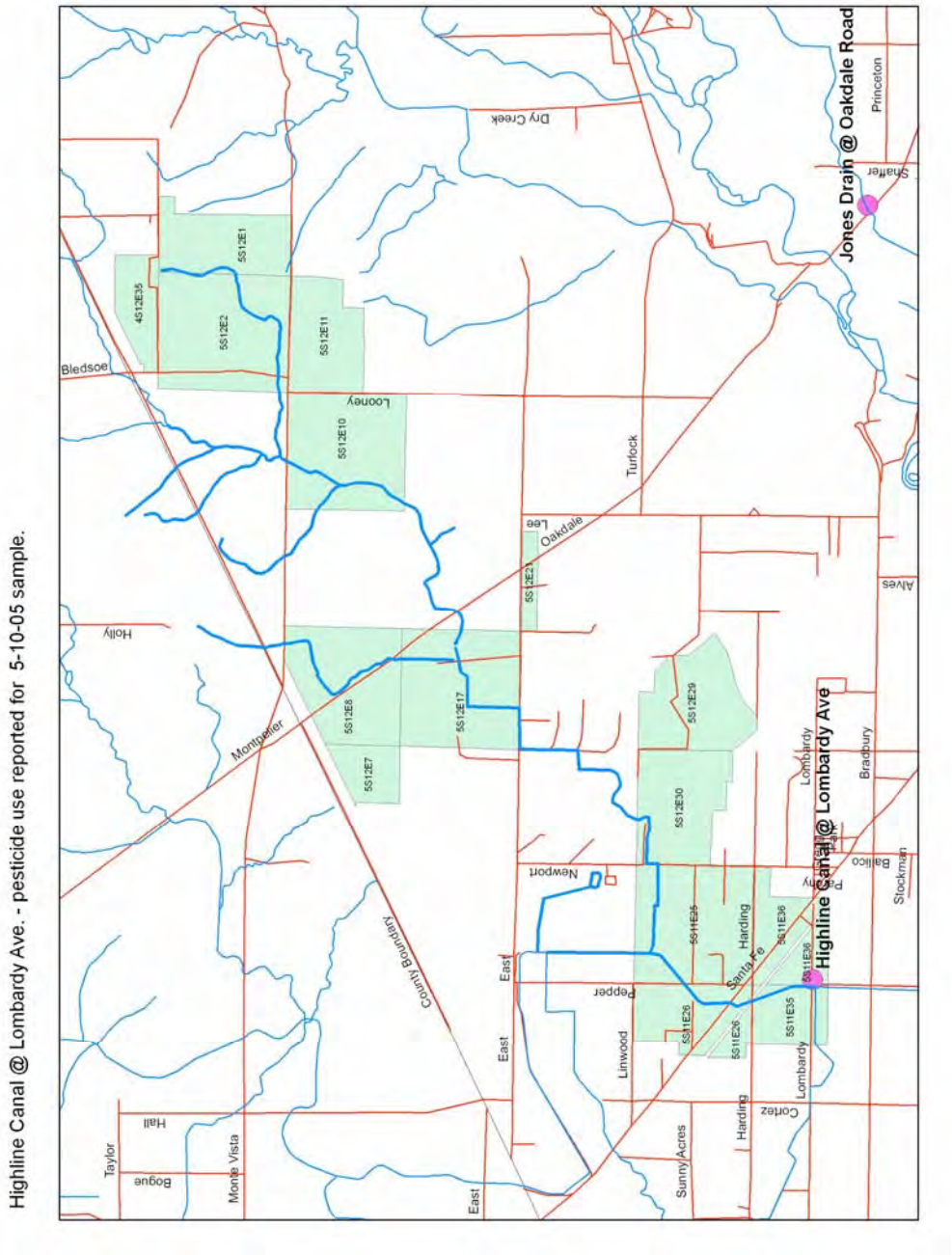
Table 22. Applications in the Highline Canal @ Lombardy Road watershed during the period prior to the May sample event. The 31 herbicides have been removed from the table.

Product name	Chemical name	Total product used	Unit	Treated acres	TRS
PRISTINE FUNGICIDE	PYRACLOSTROBIN	203.3	LBS	325.2	4S12E35
AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE	AVERMECTIN	0.4	GA	5.0	5S11E26
WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY	LAMBDA-CYHALOTHRIN	96.0	OZ	32.0	5S11E26
WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY	LAMBDA-CYHALOTHRIN	54.0	OZ	18.0	5S11E35
AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE	AVERMECTIN	1.0	GA	13.0	5S11E36
DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	3.5	GA	47.0	5S11E36
WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY	LAMBDA-CYHALOTHRIN	66.0	OZ	22.0	5S11E36
PRISTINE FUNGICIDE	PYRACLOSTROBIN	164.2	LBS	262.7	5S12E1
PRISTINE FUNGICIDE	PYRACLOSTROBIN	192.2	LBS	307.5	5S12E10
RALLY 40 WSP	MYCLOBUTANIL	39.3	LBS	157.0	5S12E11
ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	0.1	GA	648.0	5S12E17
AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE	AVERMECTIN	0.1	GA	648.0	5S12E17
PRISTINE FUNGICIDE	PYRACLOSTROBIN	315.8	LBS	505.2	5S12E2
ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	22.4	GA	224.0	5S12E21
AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE	AVERMECTIN	17.5	GA	224.0	5S12E21
WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY	LAMBDA-CYHALOTHRIN	1120.0	OZ	224.0	5S12E21
AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE	AVERMECTIN	2.8	GA	36.0	5S12E30
WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY	LAMBDA-CYHALOTHRIN	195.0	OZ	65.0	5S12E30
ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	31.9	GA	272.0	5S12E7
ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	33.0	GA	282.0	5S12E8

Table 23. TRS locations in the Highline Canal @ Lombardy Road watershed with applications of chemicals with potential to cause sediment toxicity in the May sample.

TRS
4S12E35
5S11E26
5S11E35
5S11E36
5S12E2
5S12E7
5S12E8
5S12E10
5S12E11
5S12E21
5S12E30

Figure 20. Applications in the Highline Canal @ Lombardy Road watershed during the period prior to the May sample event.



Significant sediment toxicity was observed at the following sites during the September 21, 2005 sampling event:

- Highline Canal @ Highway 99
- Duck Slough @ Gurr Road
- Hilmar Drain @ Central Avenue
- Prairie Flower Drain @ Crows Landing Road

Pesticide use reports for these sites for September have become available only within the last week and are not yet analyzed. We will report the results of these samples in the report due June 30, 2005.

Water Column Toxicity

Selenastrum capricornutum

Duck Slough @ Pioneer Rd – *Selenastrum* toxicity detected during the 7/12/05 sample event

Growth of 1,320,000 cells/ml was reported for the Duck Slough site which was considered to be significantly (76.7% of the control) reduced compared to the controls. We collected pesticide use information for the watershed for the two weeks prior to the sample date. We eliminated all of the compounds that would not act as herbicides to determine possible sources (Table 24). After selecting the herbicides, we used the K_{oc} values as a guide for determining which of the herbicides would be mobile in the soil, and consequently could move to surface waters causing reduced growth of the *Selenastrum*. Less mobile compounds include (K_{oc} in parentheses) trifluralin (6,400-13,400), glyphosate (3,000-20,100), oxyfluorfen (1,500), and flumioxazin (1,400 est). Twenty-two applications remain on the list (highlighted in blue) including 15 TRS' (Table 25). We will contact the growers in the TRS highlighted in blue (Table 25) to survey for BMPs and initiate discussions about additional BMP implementation.

Table 24. Herbicides applied in the Duck Slough @ Pioneer Road watershed during the first two weeks prior to the July 2005 sample.

application date	PUR Product name	Chemical name	amount	unit	treated acres	TRS
6/29/05	TRILIN HERBICIDE	TRIFLURALIN	1.625	GA	13	8S14E2
6/29/05	MEPEX	MEPIQUAT CHLORIDE	12.79688	GA	117	8S13E12
6/29/05	RIVERDALE WEEDESTROY AM-40 AMINE SALT	2,4-D, DIMETHYLAMINE SALT	7.91	GA	42.2	8S13E21
6/30/05	POAST	SETHOXYDIM	14.96	GA	64	8S14E8
6/30/05	PIX ULTRA PLANT REGULATOR	MEPIQUAT CHLORIDE	9.09375	GA	97	8S13E16
6/30/05	TRILIN	TRIFLURALIN	18.0375	GA	96.2	8S13E20
6/30/05	MEPEX	MEPIQUAT CHLORIDE	2.16	GA	34.5	8S13E24
6/30/05	TENKOZ TRIFLURALIN 4 EMULSIFIABLE CONCEN	TRIFLURALIN	1.55	GA	12.4	8S16E20
6/30/05	MEPEX	MEPIQUAT CHLORIDE	2.31	GA	37	8S13E27
6/30/05	MEPEX	MEPIQUAT CHLORIDE	5	GA	80	8S13E27
6/30/05	MEPEX	MEPIQUAT CHLORIDE	2.09	GA	33.4	8S13E27
7/1/05	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.25625	LB	2	8S15E11
7/1/05	GLYFOS HERBICIDE	GLYPHOSATE	0.4	GA	2	8S15E11
7/1/05	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	0.4	GA	2	8S15E11
7/1/05	BUCCANEER GLYPHOSATE HERBICIDE	GLYPHOSATE	8	GA	60	8S15E12

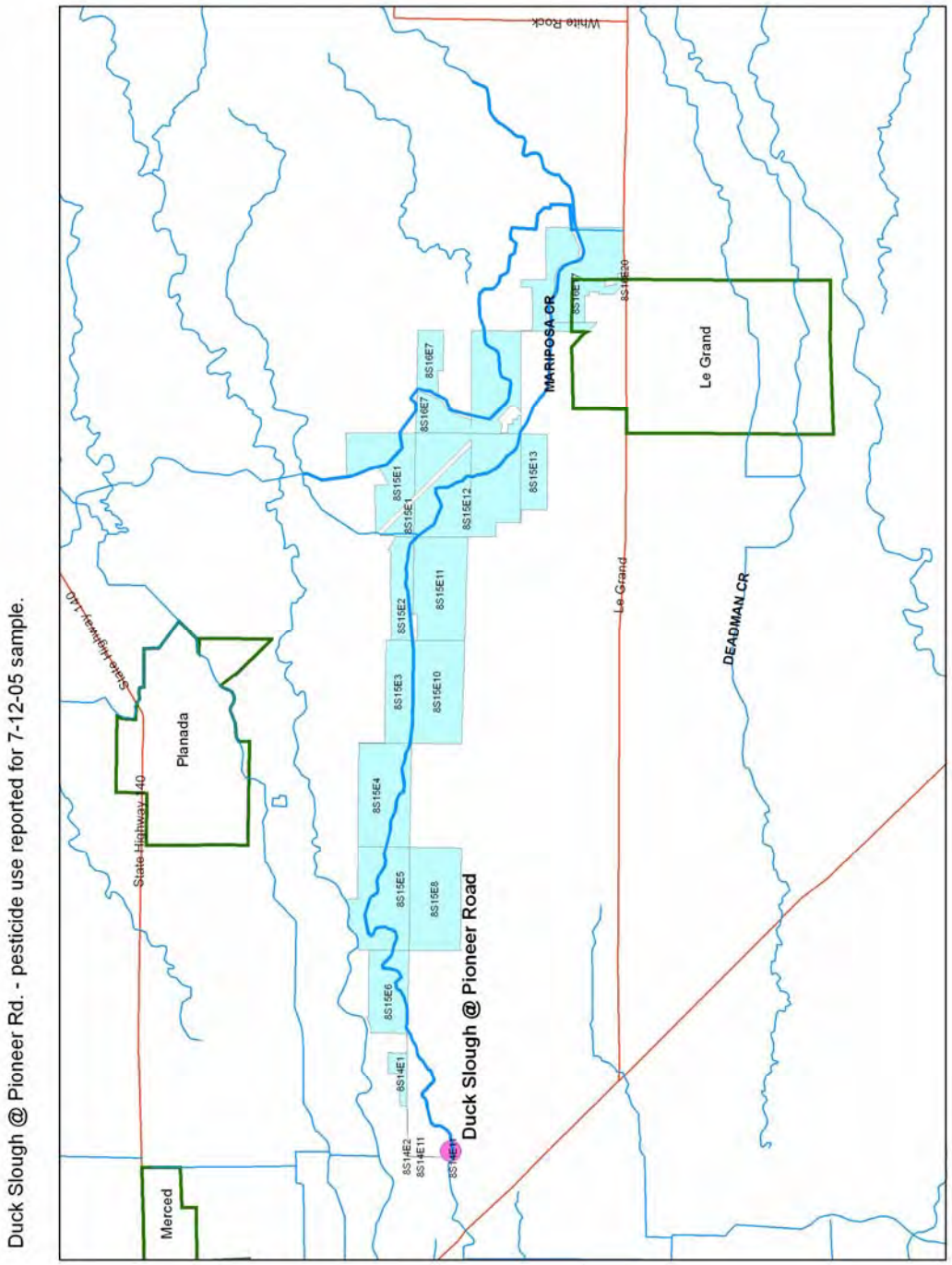
application date	PUR Product name	Chemical name	amount	unit	treated acres	TRS
7/1/05	GOAL 2XL	OXYFLUORFEN	2.5	GA	60	8S15E12
7/1/05	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.38125	LB	3	8S15E13
7/1/05	GLYFOS HERBICIDE	GLYPHOSATE	0.6	GA	3	8S15E13
7/1/05	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	0.6	GA	3	8S15E13
7/2/05	TENKOZ TRIFLURALIN 4 EMULSIFIABLE CONCEN	TRIFLURALIN	1.875	GA	15	8S16E20
7/4/05	RHOMENE MCPA AMINE HERBICIDE	MCPA, DIMETHYLAMINE SALT	18.63	GA	149	8S13E21
7/4/05	WEEDAR 64 BROADLEAF HERBICIDE	2,4-D, DIMETHYLAMINE SALT	18.63	GA	149	8S13E21
7/5/05	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	17.43	GA	83	8S15E5
7/5/05	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.5625	LB	3	8S15E13
7/5/05	GLYFOS HERBICIDE	GLYPHOSATE	0.8	GA	3	8S15E13
7/5/05	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	0.8	GA	3	8S15E13
7/5/05	GLYFOS HERBICIDE	GLYPHOSATE	3.3	GA	10	8S16E18
7/5/05	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	3.3	GA	10	8S16E18
7/6/05	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	16.1	GA	43	8S14E1
7/6/05	ROUNDUP WEATHERMAX HERBICIDE	GLYPHOSATE, POTASSIUM SALT	12.5	GA	67	8S15E6
7/6/05	NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	4	GA	30	8S14E11
7/7/05	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	15.75	GA	75	8S15E5
7/7/05	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.375	LB	2	8S15E12
7/7/05	GLYFOS HERBICIDE	GLYPHOSATE	0.5	GA	2	8S15E12
7/7/05	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	0.5	GA	2	8S15E12
7/7/05	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.25	LB	4	8S15E13
7/7/05	GLYFOS HERBICIDE	GLYPHOSATE	1	GA	4	8S15E13
7/7/05	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	1	GA	4	8S15E13
7/7/05	MEPEX	MEPIQUAT CHLORIDE	0.675	GA	18	8S14E21
7/7/05	BRITZ COTTON DEFOLIANT CONCENTRATE	SODIUM CHLORATE	0.25	GA	40	8S14E30
7/7/05	BRITZ COTTON DEFOLIANT CONCENTRATE	SODIUM CHLORATE	0.32	GA	51	8S14E30

application date	PUR Product name	Chemical name	amount	unit	treated acres	TRS
7/7/05	POAST	SETHOXYDIM	8	GA	40	8S14E30
7/8/05	PRISM HERBICIDE	CLETHODIM	7.71875	GA	19	8S14E4
7/8/05	TOUCHDOWN TOTAL	GLYPHOSATE	29.4	GA	147	8S15E3
7/8/05	PRISM 2 EC HERBICIDE	CLETHODIM	7.71875	GA	38	8S14E9
7/8/05	GLYFOS HERBICIDE	GLYPHOSATE	3	GA	12	8S15E13
7/8/05	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	3	GA	12	8S15E13
7/8/05	GOAL 1.6E HERBICIDE	OXYFLUORFEN	0.3	GA	12	8S15E13
7/8/05	BANVEL	DICAMBA, DIMETHYLAMINE SALT	1.25	GA	20	8S13E33
7/9/05	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	5.25	GA	25	8S14E1
7/9/05	CHATEAU HERBICIDE SW	FLUMIOXAZIN	1.5	LB	8	8S15E11
7/9/05	GLYFOS HERBICIDE	GLYPHOSATE	2	GA	8	8S15E11
7/9/05	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	2	GA	8	8S15E11
7/9/05	MEPEX	MEPIQUAT CHLORIDE	7.109	GA	56	8S14E21
7/11/05	POAST	SETHOXYDIM	16.5	GA	66	8S14E16
7/11/05	GLY STAR PLUS	GLYPHOSATE, ISOPROPYLAMINE SALT	2.2	GA	7	8S15E13
7/11/05	SURFLAN A.S.	ORYZALIN	2.6	GA	7	8S15E13
7/12/05	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	11.03	GA	52.5	8S14E1
7/12/05	CHATEAU HERBICIDE SW	FLUMIOXAZIN	1.125	LB	6	8S15E11
7/12/05	GLYFOS HERBICIDE	GLYPHOSATE	1.5	GA	6	8S15E11
7/12/05	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	1.5	GA	6	8S15E11

Table 25. TRS locations in the Dusk Slough @ Pioneer Road watershed with applications of chemicals with potential to cause Selenastrum toxicity for the July sample.

TRS
8S13E12
8S13E16
8S13E21
8S13E24
8S14E8
8S14E9
8S14E16
8S14E21
8S14E30
8S15E11
8S15E11
5S12E12
8S15E13
8S15E15

Figure 21. Pesticide applications in the Duck Slough watershed prior to the July 12, 2005 sample event.



Jones Drain @ Oakdale Rd – *Selenastrum* toxicity reported during the February 16, 2005 sample event.

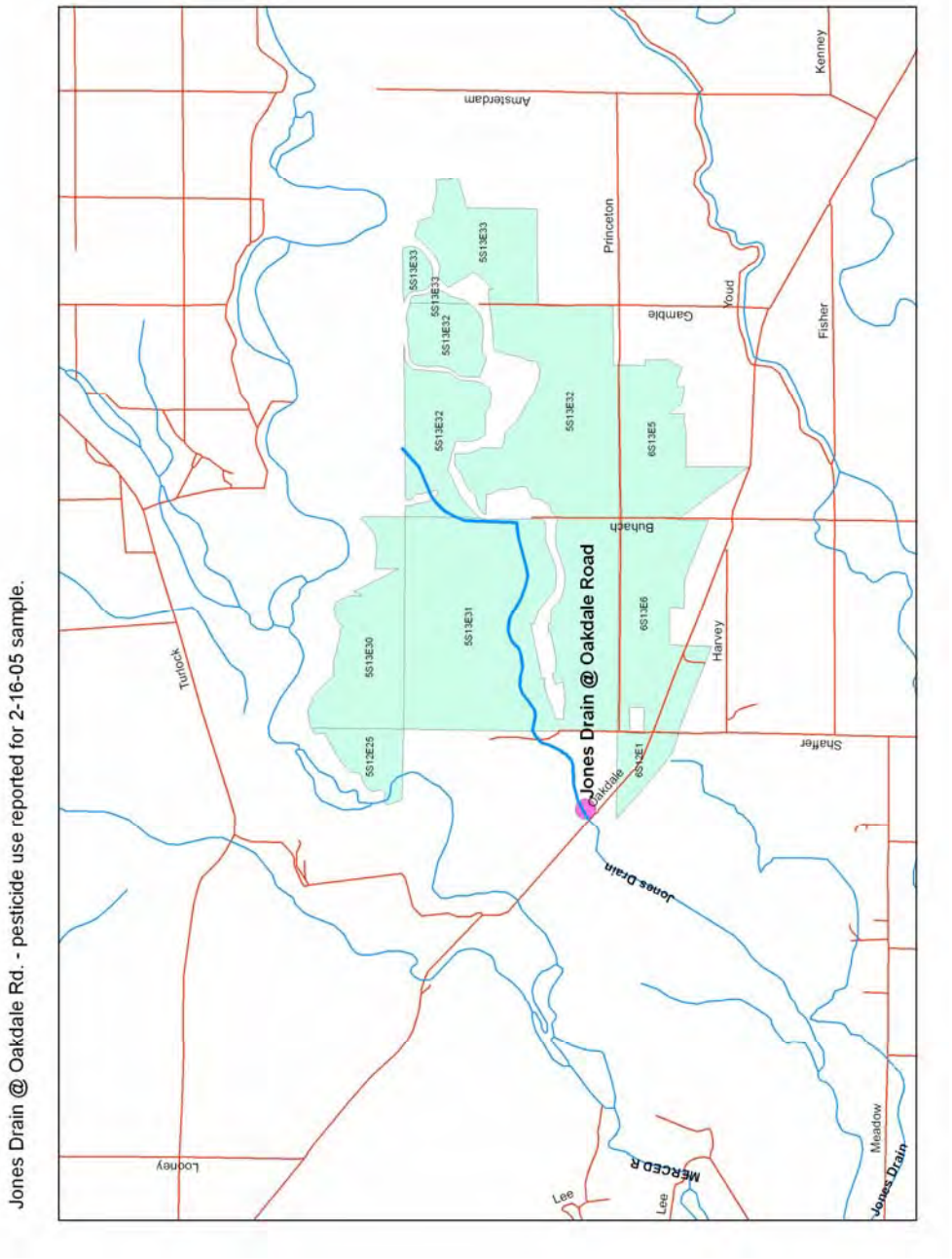
Growth of 1,290,000 cells/ml was reported for the Jones Drain site which was considered to be significantly (71.7% of the control) reduced compared to the controls. We collected pesticide use information for the watershed for the two weeks prior to the sample date (previously presented in Table 19) and Figure 22. We eliminated all of the compounds that would not act as herbicides to determine possible sources (Table 26). After selecting the herbicides, we used the Koc values as a guide for determining which of the herbicides would be mobile in the soil, and consequently could move to surface waters causing reduced growth of the Selenastrum. We used the K_{oc} values as provided in the Huang and Young (2005) report to the California Department of Transportation (http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/_pdfs/monitoring/CTSW-RT-03-084-73-04.pdf), and used their classification of mobility as a guide. We used additional information on Koc values for herbicides not included in their analysis. Less mobile compounds include (K_{oc} in parentheses) trifluralin (6,400-13,400), glyphosate (3,000-20,100), oxyfluorfen (1500), and diflubenzuron (10,000). In addition, carfentrazone was not included due to its extremely short half-life in the soil (http://pmep.cce.cornell.edu/profiles/herb-growthreg/cacodylic-cymoxanil/carfentrazone-ethyl/carfen-ethyl_reg_103.html). Three applications remain on the list (highlighted in blue) including 3 TRS': 6S12E1, 6S13E5, and 6S13E6. We will contact the growers who applied the chemicals marked with blue highlighting to initiate outreach with discussions of BMPs appropriate to the parcels involved.

Table 26. Herbicides applied in the Jones Drain @ Oakdale Road watershed during the first two weeks of February 2005.

Product name	Chemical name	amount	new unit	treated acres	TRS
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.1089	GA	11.25	5S13E32
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.1320	GA	13.31	5S13E32
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.2037	GA	20.44	5S13E32
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	3.18	GA	13.31	5S13E32
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	4.88	GA	20.44	5S13E32
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	2.63	GA	11.25	5S13E32
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.1480	GA	15.16	5S13E31
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	3.56	GA	15.16	5S13E31
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.05	GA	6.45	5S13E33
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	1.2	GA	6.45	5S13E33
TOUCHDOWN HERBICIDE	GLYPHOSATE, DIAMMONIUM SALT	26.5	GA	106	5S12E25
GOAL 2XL HERBICIDE	OXYFLUORFEN	7	GA	28	5S13E30
GOAL 2XL HERBICIDE	OXYFLUORFEN	0.3125	GA	32.56	5S13E31
NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	7.5	GA	32.56	5S13E31
BANVEL	DICAMBA, DIMETHYLAMINE SALT	2.69	GA	43	6S12E1
BANVEL	DICAMBA, DIMETHYLAMINE SALT	3.44	GA	55	6S12E1

Product name	Chemical name	amount	new unit	treated acres	TRS
BANVEL	DICAMBA, DIMETHYLAMINE SALT	2.63	GA	42	6S12E1
SHARK HERBICIDE	CARFENTRAZONE-ETHYL	2.69	LBS	43	6S12E1
SHARK HERBICIDE	CARFENTRAZONE-ETHYL	3.44	LBS	55	6S12E1
SHARK HERBICIDE	CARFENTRAZONE-ETHYL	2.63	LBS	42	6S12E1
DIMILIN 2L	DIFLUBENZURON	4.2	GA	44.4	5S13E33
BASICOP	COPPER SULFATE	222	LBS	44.4	5S13E33
AUXIGRO WP WETTABLE POWDER	GLUTAMIC ACID	14.5	LBS	58	6S13E6
NORDOX 75 WG	COPPER OXIDE (OUS)	72.5	LBS	58	6S13E6
GOAL 2XL HERBICIDE	OXYFLUORFEN	5.6	GA	38.4	6S13E6
GOAL 2XL HERBICIDE	OXYFLUORFEN	4.05	GA	27.8	6S13E6
GOAL 2XL HERBICIDE	OXYFLUORFEN	3.97	GA	27.2	6S13E6
GOAL 2XL HERBICIDE	OXYFLUORFEN	4.67	GA	32	6S13E6
GOAL 2XL HERBICIDE	OXYFLUORFEN	5.07	GA	34.8	6S13E6
GOAL 2XL HERBICIDE	OXYFLUORFEN	5.59	GA	38.3	6S13E6
GOAL 2XL HERBICIDE	OXYFLUORFEN	1.46	GA	10	6S13E6
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	4.67	GA	38.4	6S13E6
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	3.38	GA	27.8	6S13E6
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	3.314	GA	27.2	6S13E6
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	3.89	GA	32	6S13E6
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	4.23	GA	34.8	6S13E6
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	4.65	GA	38.3	6S13E6
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	1.22	GA	10	6S13E6
SURFLAN A.S.	ORYZALIN	11.2	GA	38.4	6S13E6
SURFLAN A.S.	ORYZALIN	8.11	GA	27.8	6S13E6
SURFLAN A.S.	ORYZALIN	7.93	GA	27.2	6S13E6
SURFLAN A.S.	ORYZALIN	9.33	GA	32	6S13E6
SURFLAN A.S.	ORYZALIN	10.15	GA	34.8	6S13E6
SURFLAN A.S.	ORYZALIN	11.17	GA	38.3	6S13E6
SURFLAN A.S.	ORYZALIN	2.92	GA	10	6S13E6
GOAL 2XL HERBICIDE	OXYFLUORFEN	4.23	GA	29	6S13E5
GOAL 2XL HERBICIDE	OXYFLUORFEN	4.38	GA	30	6S13E5
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	3.52	GA	29	6S13E5
ROUNDUP HERBICIDE (WITHDRAWN)	GLYPHOSATE, ISOPROPYLAMINE SALT	3.65	GA	30	6S13E5
SURFLAN A.S.	ORYZALIN	8.46	GA	29	6S13E5
SURFLAN A.S.	ORYZALIN	8.75	GA	30	6S13E5

Figure 22. Pesticide use by TRS, for the Jones Drain @ Oakdale Rd during the two weeks preceding the February 16, 2005 sample event.



Merced River @ Santa Fe – Selenastrum toxicity reported during the 3/21/05 sample event

Growth of 1,260,000 cells/ml was reported for the Merced River site which was considered to be significantly (76.7% of the control) reduced compared to the controls. Pesticide use reports are not available for March, and consequently the ESJWQC will contact all growers in the watershed to perform surveys of management practices and initiate outreach on BMP implementation.

Ceriodaphnia dubia toxicity

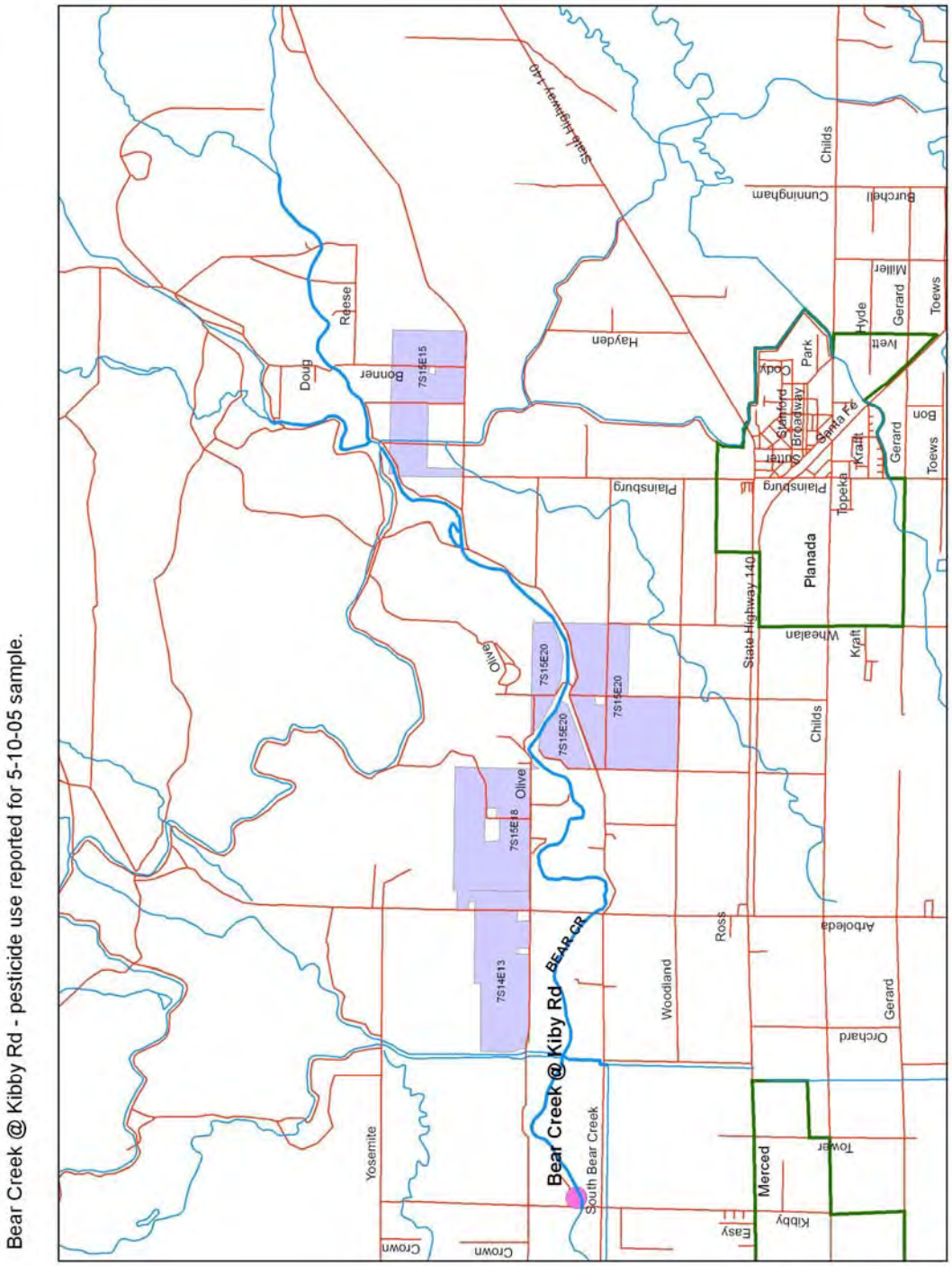
Bear Creek @ Kibby Rd – *Ceriodaphnia* toxicity reported during the 5/10/05 sample

Survival of 5% was reported for *Ceriodaphnia* for samples collected at the Bear Creek site on May 10, 2005. This survival was considered statistically significantly different from the controls and the sample was considered toxic. A Toxicity Identification Evaluation was performed but was not able to resolve the cause of toxicity. Pesticide use reports for the two weeks prior to the May 10 sample date indicate that one application of chlorpyrifos, two applications of Maneb, and one application of pyraclostrobin were made (Table 27 and Figure 23). The remaining applications were herbicides. Of these, Maneb has a K_{oc} of 2,000 indicating low potential for movement to the water as a dissolved compound. Applications were made in TRS' 7S15E18, and 7S15E20. All TRS' are adjacent to Bear Creek. The ESJWQC will contact the growers in these TRS' to perform surveys of management practices and initiate outreach on BMP implementation.

Table 27. Pesticide use, by TRS, for Bear Creek @ Kibby Rd for 5/10/05 sample.

Product name	chemical name	total used per TRS	unit	total treated acres	TRS
LORSBAN 4E-HF	CHLORPYRIFOS	44	GA	88	7S15E18
CABRIO EG FUNGICIDE	PYRACLOSTROBIN	146.25	LBS	195	7S15E20
MANEX	MANEB	62.34	GA	225	7S15E20
MANEX II	MANEB		GA		7S15E20

Figure 23. Pesticide use, by TRS, for Bear Creek @ Kibby Rd sampling site for 5/10/05 sample.



Dry Creek @ Wellsford Rd – *Ceriodaphnia* toxicity reported during the 2/15/05 sample

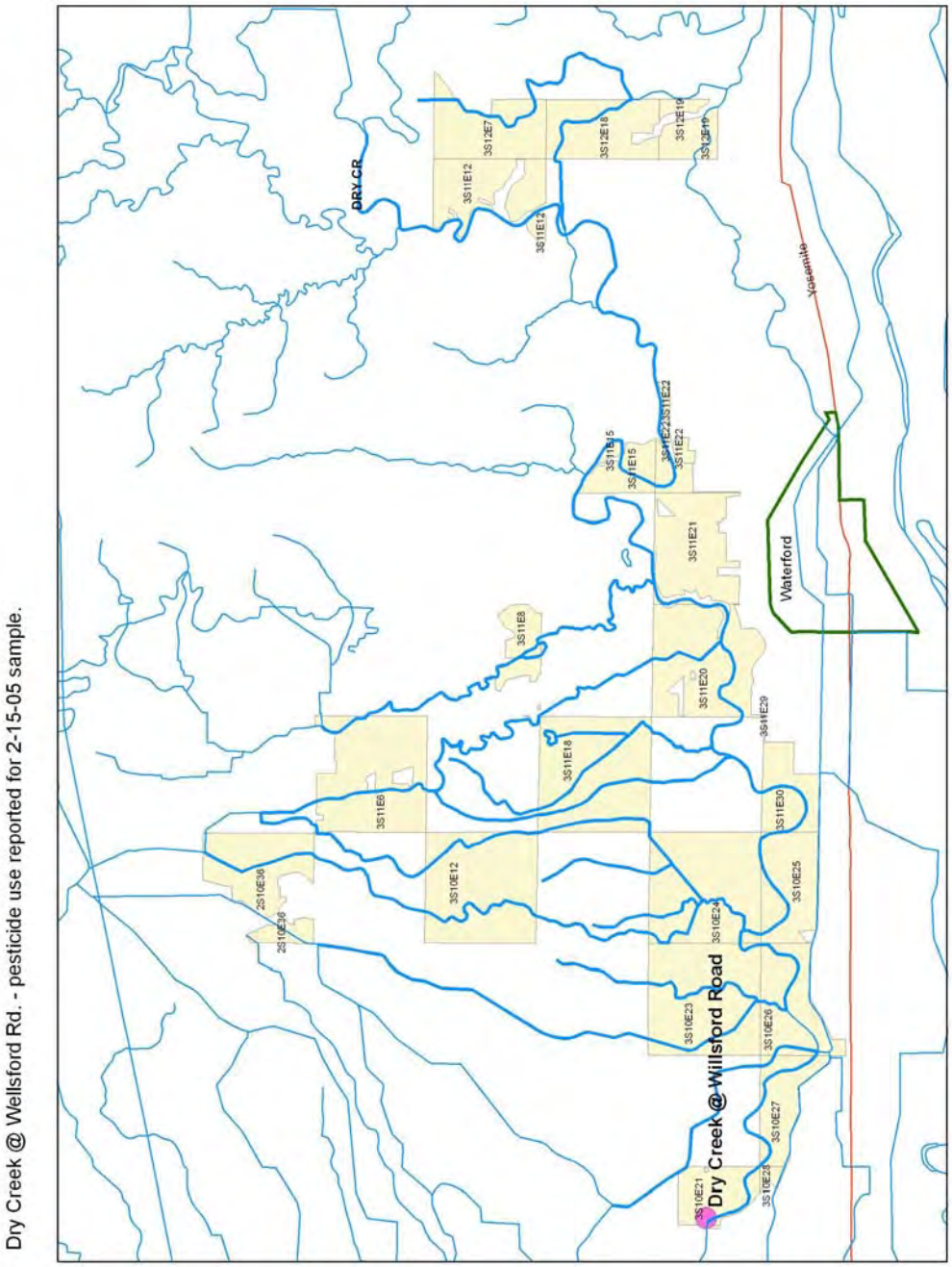
Survival of 80% was reported for *Ceriodaphnia* for samples collected at the Dry Creek site on February 15, 2005. This survival was considered statistically significantly different from the controls and the sample was considered toxic. A Toxicity Identification Evaluation was not performed as the level of toxicity did not reach the trigger (50% of control). Pesticide use reports for the two weeks prior to the February 15 sample date indicate that 23 applications of pesticides were made (Table 28 and Figure 25). The remaining applications were herbicides. Of these, cyprodinyl has a K_{oc} of 1,500-2,030 indicating low potential for movement to the water as a dissolved compound. Applications of these chemicals occurred in every TRS in the watershed with the exception of 2S10E36. All other applications have high to moderate potential for movement to surface waters. The ESJWQC will contact the growers in these TRS' to perform surveys of management practices and initiate outreach on BMP implementation.

Table 28. Pesticide use by TRS, for the Dry Creek @ Wellsford Rd watershed for the two weeks prior to the February 15, 2005 sample event. Same as Table 17 but with the herbicides removed.

Product name	Chemical name	total used per TRS	unit	TRS
VANGARD WG	CYPRODINIL	11.25	Lb	2S10E36
ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	1.5	GA	3S10E24
VANGARD WG	CYPRODINYL	7.5	Lb	3S10E24
ROVRAL 4 FLOWABLE	IPRODIONE	9.375	GA	3S10E25
VANGARD WG	CYPRODINIL	8.203125	Lb	3S10E25
ZIRAM 76DF FUNGICIDE	ZIRAM	600	LB	3S10E25
NU-FLOW M SEED TREATMENT FUNGICIDE	MYCLOBUTANIL	1.75	GA	3S10E26
ORBIT	PROPICONAZOLE	0.078125	GA	3S10E27
ROVRAL 4 FLOWABLE	IPRODIONE	2.4	GA	3S10E27
ROVRAL 4 FLOWABLE	IPRODIONE	2.5	GA	3S10E28
SOLICAM DF HERBICIDE	NORFLURAZON	1	LB	3S10E28
VANGARD WG	CYPRODINIL	2.5	LB	3S10E28
ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	0.0087	GA	3S11E12
LAREDO EW	MYCLOBUTANIL	2.8292	GA	3S11E12
ROVRAL 4 FLOWABLE	IPRODIONE	114	GA	3S11E15
ROVRAL 4 FLOWABLE	IPRODIONE	2.5	GA	3S11E20
VANGARD WG	CYPRODINIL	3.1875	Lb	3S11E20
WEEVIL-CIDE TABLETS	ALUMINUM PHOSPHIDE	0.59375	GA	3S11E20
SUPRACIDE 2E	METHIDATHION	11.5	GA	3S11E21
VANGARD WG	CYPRODINIL	10.93125	Lb	3S11E21
ROVRAL 4 FLOWABLE	IPRODIONE	10.63	GA	3S11E22
VANGARD WG	CYPRODINIL	42.1925	Lb	3S11E22
ROVRAL 4 FLOWABLE	IPRODIONE	1.25	GA	3S11E29
VANGARD WG	CYPRODINIL	10.3125	Lb	3S11E29

Product name	Chemical name	total used per TRS	unit	TRS
ROVRAL 4 FLOWABLE	IPRODIONE	2.5	GA	3S11E30
VANGARD WG	CYPRODINIL	34.53125	LB	3S11E30
ROVRAL 4 FLOWABLE	IPRODIONE	9.375	GA	3S12E19
WEEVIL-CIDE TABLETS	ALUMINUM PHOSPHIDE	0.234375	GA	3S12E19
VANGARD WG	CYPRODINIL	26.9	LB	3S12E7

Figure 24. Pesticide use, by TRS, for Dry Creek @ Wellsford Rd. for the February 15, 2005 sample event.



Highline Canal @ Highway 99 – *Ceriodaphnia* toxicity reported during the 5/10/05 sample

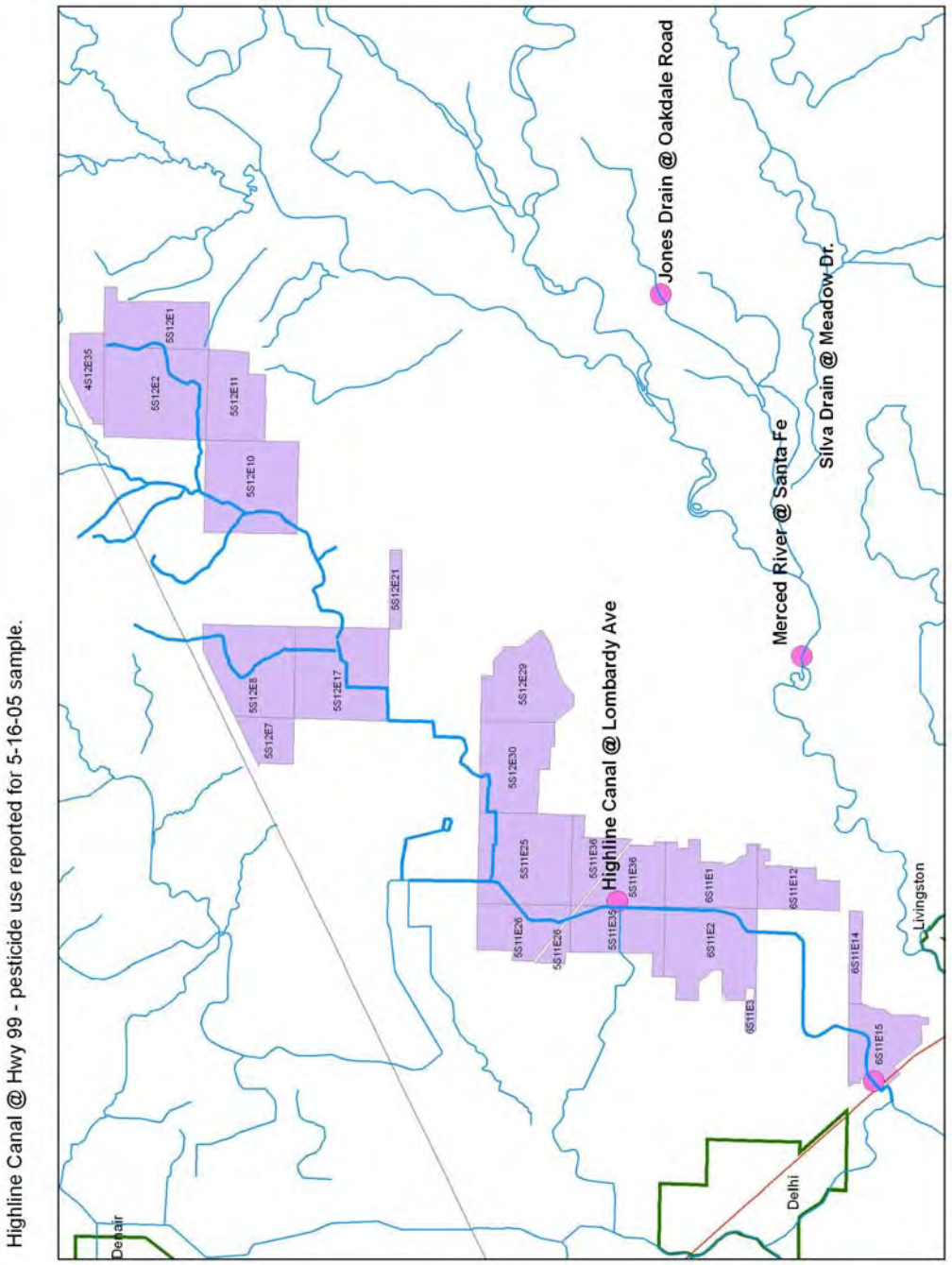
Survival of 45% was reported for *Ceriodaphnia* for samples collected at the Highline Canal @ Highway 99 site on May 10, 2005. This survival was considered statistically significantly different from the controls and the sample was considered toxic. A Toxicity Identification Evaluation was performed as the level of toxicity did reach the trigger (50% of control). The results of the TIE were inconclusive and no cause could be assigned. Follow-up sampling was performed on May 19, 2005 and the water was still toxic with 0% survival in the treatment compared to the controls. Pesticide use reports for the two weeks prior to the May 19 (Table 29 and Figure 25) sample date indicate that 25 applications of pesticides were made (removing herbicides, sulfur, surfactants, and adjuvants). Of these, fenbutatin-oxide has a K_{oc} of 100,000 and avermectin has a K_{oc} of 6,000 indicating low potential for movement to the water as dissolved compounds. There were pyrethroids applied which also have low potential for moving to water bodies as dissolved substances. All other applications have high to moderate potential for movement to surface waters. Methoxyfenozide was also used commonly in the watershed and although it may partition to sediment or remain in the dissolved fraction, it is considered a relatively nontoxic compound (insect growth regulator) that is recommended for use in integrated pest management programs (http://www.cdpr.ca.gov/docs/publicreports/5698.pdf). Consequently, we did not include methoxyfenozide as a potential source of toxicity. Applications of chemicals with the potential to move offsite occurred in four TRS': 6S11E1, 6S11E2, 6S11E3, and 6S11E14. These sections are located in the lower reaches of the watershed. Prior to the May 10, 2005 sampling date, only applications of sodium tetrathiocarbonate were made in 6S11E3, and these could be the only reported applications responsible for the toxicity. The ESJWQC will contact the growers in these TRS' to perform surveys of management practices and initiate outreach on BMP implementation.

Table 29. Pesticide use, by TRS, Highline Canal @ Hwy 99 5/10/05 & 5/16/05 sample.

Spray date	EPA name	Chemical name	product quantity	unit	Treated acres	TRS
5/3/2005	AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE	AVERMECTIN	1.0	GA	13.0	5S11E36
5/3/2005	ENZONE	SODIUM TETRATHIOCARBONATE	57.3	GA	3.0	6S11E3
5/3/2005	ENZONE	SODIUM TETRATHIOCARBONATE	468.0	GA	24.0	6S11E3
5/9/2005	ENZONE	SODIUM TETRATHIOCARBONATE	390.0	GA	20.0	6S11E3
5/12/2005	ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	2.0	GA	20.0	6S11E1
5/12/2005	ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	1.3	GA	12.0	6S11E14
5/12/2005	EXIT	PERMETHRIN	1.0	GA	20.0	6S11E1
5/12/2005	INTREPID 2F	METHOXYFENOZIDE	1.3	GA	12.0	6S11E14
5/12/2005	WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY	LAMBDA CYHALOTHRIN	54.0	OZ	18.0	5S11E35

Spray date	EPA name	Chemical name	product quantity	unit	Treated acres	TRS
5/12/2005	WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY	LAMBDA CYHALOTHRIN	66.0	OZ	22.0	5S11E36
5/13/2005	ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	1.7	GA	18.0	6S11E14
5/13/2005	AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE	AVERMECTIN	1.3	GA	18.0	6S11E14
5/13/2005	INTREPID 2F	METHOXYFENOZIDE	1.3	GA	18.0	6S11E14
5/14/2005	ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	1.2	GA	12.0	6S11E14
5/14/2005	ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	1.5	GA	15.0	6S11E2
5/14/2005	INTREPID 2F	METHOXYFENOZIDE	1.2	GA	12.0	6S11E14
5/14/2005	PERM-UP 3.2 EC INSECTICIDE	PERMETHRIN	1.1	GA	14.0	6S11E1
5/16/2005	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	3.5	GA	47.0	5S11E36
5/16/2005	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	2.0	GA	26.0	6S11E1
5/16/2005	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	0.7	GA	9.0	6S11E3
5/16/2005	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	1.8	GA	24.0	6S11E3
5/16/2005	VENDEX 50WP	FENBUTATIN-OXIDE	70.5	LBS	47.0	5S11E36
5/16/2005	VENDEX 50WP	FENBUTATIN-OXIDE	39.0	LBS	26.0	6S11E1
5/16/2005	VENDEX 50WP	FENBUTATIN-OXIDE	13.5	LBS	9.0	6S11E3
5/16/2005	VENDEX 50WP	FENBUTATIN-OXIDE	36.0	LBS	24.0	6S11E3

Figure 25. Pesticide use, by TRS, for Highline Canal @ Hwy 99 5/10 & 5/16/05 sample.



Jones Drain @ Oakdale Rd – *Ceriodaphnia* toxicity reported during the 8/17/05 sample

Survival of 25% was reported for *Ceriodaphnia* for samples collected at the Jones Drain site on August 17, 2005. This survival was considered statistically significantly different from the controls and the sample was considered toxic. A Toxicity Identification Evaluation was performed as the level of toxicity did reach the trigger (50% of control). The results of the TIE were inconclusive and no cause could be assigned. Follow-up sampling was performed but the water was not toxic. Pesticide use reports for the two weeks prior to the August 17 sample date have not yet been received. We will perform the source identification analysis and report the results in the June 30, 2006 report.

Hilmar Drain @ Central Ave – *Ceriodaphnia* toxicity reported during the 5/11/05 sample

Survival of 70% was reported for *Ceriodaphnia* for samples collected at the Hilmar Drain site on May 11, 2005. This survival was considered statistically significantly different from the controls and the sample was considered toxic. A Toxicity Identification Evaluation was not performed as the level of toxicity did not reach the trigger (50% of control). Follow-up sampling was performed and the water was not toxic at that time. Pesticide use reports for the two weeks prior to the May 11 sample date indicate that 4 applications of pesticides were made (Table 30 and Figure 26). Of these, lambda cyhalothrin and abamectin have high K_{oc} values indicating low potential for movement to the water as dissolved compounds. Carbaryl and azoxystrobin have low K_{oc} values indicating the potential for movement so surface water. Applications of these two chemicals occurred in 6S10E19, and 6S10E20. The ESJWQC will contact the growers in these TRS' to perform surveys of management practices and initiate outreach on BMP implementation.

Table 30. Pesticide use, by TRS, Hilmar @ Central Ave. for 5/11/05 sample.

EPA name	chemical name	Total product used/TRS	Unit	Total treated acres /TRS	TRS
SEVIN 5 BAIT	CARBARYL	208.0	LBS	104.0	6S10E19
ABOUND FLOWABLE FUNGICIDE	AZOXYSTROBIN	1.5	GA	15.0	6S10E20
AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE	ABAMECTIN	1.2	GA	15.0	6S10E20
WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY	LAMBDA-CYHALOTHRIN	42.0	OZ	15.0	6S10E20

Figure 26. Pesticide use, by TRS, for Hilmar @ Central Ave. for 5/11/05 sample.

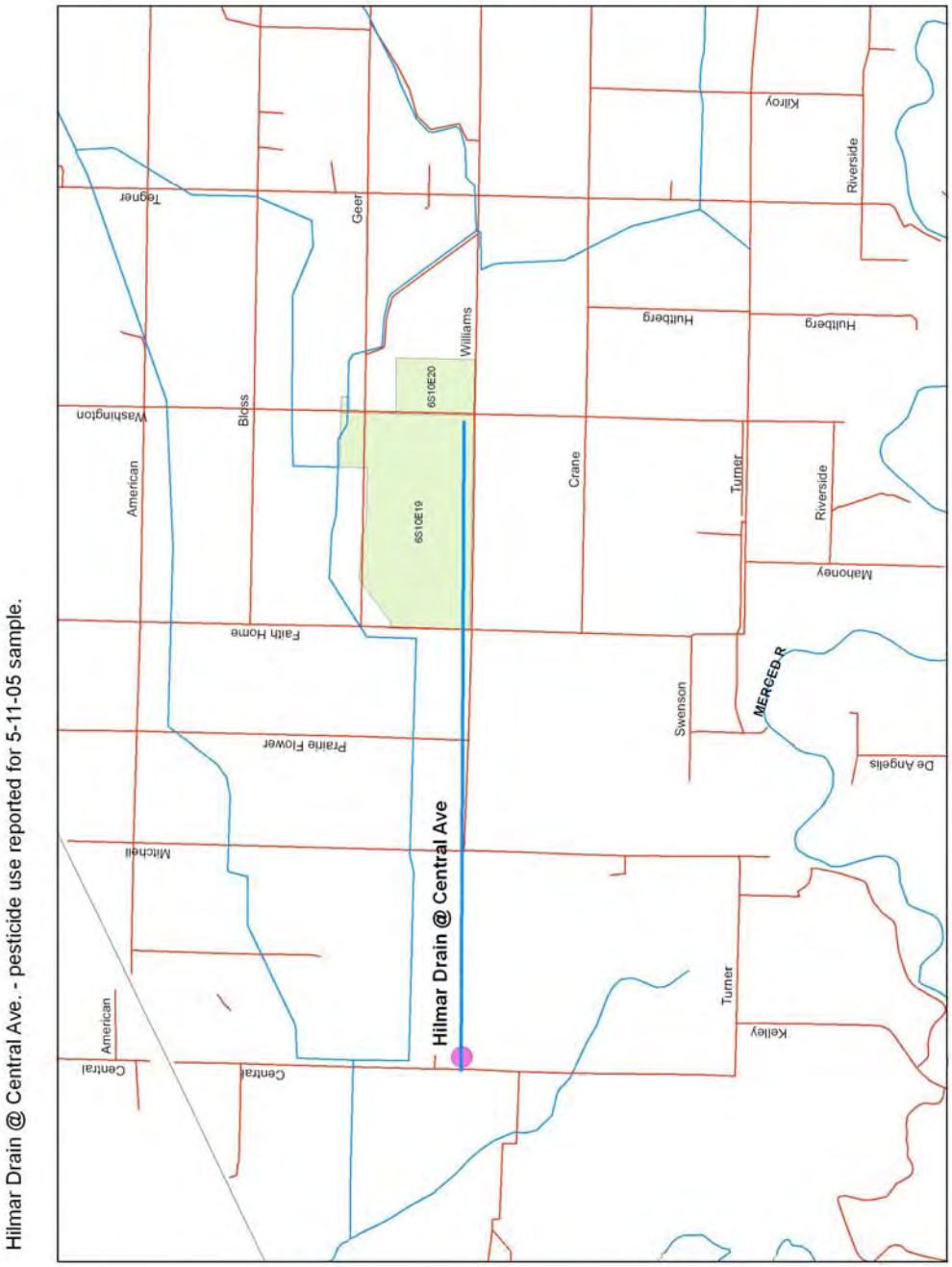
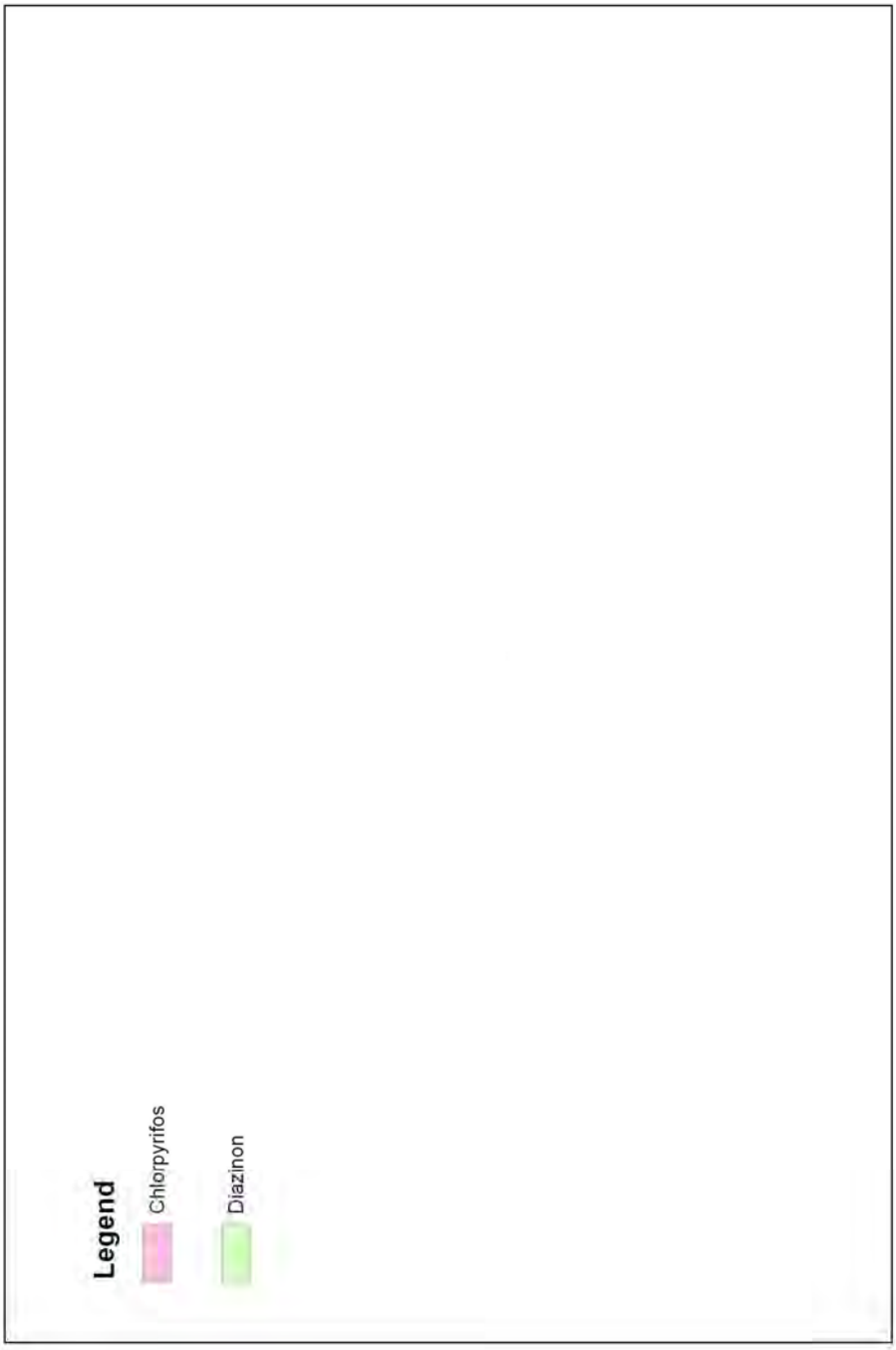


Figure 27. Legend for detected chemicals.



Legend for detected chemicals.

Regional Board sampling program

Summary of Pesticide Detection Results from Berenda Creek @ Ave 17.5 and Owens Creek @ Gurr Rd.

Pesticide detection results from Beranda Creek @ Ave 17.5 and Owens Creek @ Gurr Rd. identified various chemicals in the water during the sampling periods of 6/22, 7/7, 7/20 and 8/3/05 (Table 31). Pesticide use reports were obtained from Madera and Merced counties for the months of June through August of 2005 from the Departments of Agriculture. The contact for Merced County was Mike Quinn and Tammy Dobson for Madera County. For each sampling period that chemicals were detected, all pesticide use for the 2 weeks prior was collected for that watershed based on the MTRS. All agricultural products that were used in the 2 weeks prior that contained the chemicals detected are listed by watershed in Tables 32 and 33. Figures 28- 30 show the location of the pesticide use at Berenda Creek @ Ave 17.5. Figures 31 - 39 show the pesticide use Owens Creek @ Gurr Rd.

Berenda Creek @ Ave 17.5
Of the four sampling events reported, two resulted in toxicity/pesticide detections. Chlorpyrifos was the reported cause of the toxicity in the July 7, 2005 sampling event based on the results of the TIE. Two applications of chlorpyrifos were made in the watershed on June 23, 2005 and June 27, 2005 (Table 32). Applications were made in TRS' 10S16E12, and 10S18E12. The ESJWQC will contact the growers in these TRS' to perform surveys of management practices and initiate outreach on BMP implementation.

Owens Creek @ Gurr Rd
No toxicity was reported in any of the 4 events. Multiple chemicals were detected in the water in all sample events. Examination of the pesticide use reports indicates that not all chemicals detected were reported as applications in the watershed in the weeks preceding the sampling events. The monitoring site is located downstream of the inflow from a POTW and it is possible that some of the chemicals originated in Madera. However, the chemicals detected are not normally used in urban environments except perhaps on golf courses. Alternatively, the application could be from unreported agricultural use. The ESJWQC will search through the pesticide use databases to find the crops for which these chemicals are registered and contact these growers in the Owens Creek watershed to perform surveys of management practices and initiate outreach on BMP implementation. In addition, we will contact the growers in the TRS' in which reported applications were made and perform surveys of management practices and initiate outreach on BMP implementation.

Table 31: Pesticide Detection Results at Berenda Creek @ Ave. 17.5 and Owens Creek @ Gurr Rd on samples taken on 6/22, 7/7 and 8/3/05.

Site ID	Site Name	County	Lat/Long	Date sampled	Tox. Results (survival)	Additional data – Detected Chemicals	Chemicals identified from pesticide use reports
SSJ03	Berenda Creek @ Ave. 17.5	Ma	Lat./ 37.00448 Long/ 120.23746	6/22/2005	None observed (FH minnow, Cerio, Algae)	No pesticide detected	x
				7/7/2005	None to minnow, algae. 0% to Cerio in 24 hrs.	TIE performed. Non-polar organic indicated. 2.7 TUs. PBO removed some toxicity. OP plus other pesticides Indicated by TIE. 0.26 ug/L Cholrpyrifos detected.	Chlorpyrifos
				7/20/2005	None observed	Chlorpyrifos 0.023 ug/L, Propazine 0.0205 ug/L, Metolachlor 0.0189 ug/L, Oxyfluorfen 0.0572 ug/L, Norflurazon 0.104 ug/L	Chlorpyrifos, Oxyfluorfen
				8/3/2005	None observed	No pesticide detected	x
SSJ10	Owens Creek @ Gurr Rd.	Me	Lat/ 37.235343 Long/ 120.559533	6/22/2005	None observed (FH minnow, Cerio, Algae	Thiobencarb 0.300 ug/L, Trifluralin 0.0158 ug/L,) Propanil 0.118 ug/L, Metolachlor 0.192 ug/L	Trifluralin, Propanil
				7/7/2005	None observed	Dimethoate 0.063 ug/L, Molinate 0.040 ug/L, Trifluralin 0.078 ug/L, Propanil 0.622 ug/L, Metolachlor 1.1 ug/L	Dimethoate, Propanil
				7/20/2005	None observed	Dimethoate 0.0402 ug/L, Disulfoton 0.0173 ug/L, Diuron 0.031 ug/L, Atrazine 0.080 ug/L, Trifluralin 0.0857 ug/L, Propazine 0.0184 ug/L, Metolachlor 0.193 ug/L, Norflurazon 0.0946 ug/L	Dimethoate, Propanil
				8/3/2005	None observed	Diuron 0.080 ug/L, Methomyl 0.216 ug/L, Molinate 0.0424 ug/L, Metolachlor 0.0334 ug/L, Oxyfluorfen 0.0221 ug/L	Oxyfluorfen

Table 32. Results of Pesticide Use at Berenda Creek @ Ave. 17.5 in the weeks preceding the June 22, July 7, and the July 20, 2005 sampling events. Applications highlighted in yellow are for chlorpyrifos which was detected on June 7, 2005 through the TIE process. The application highlighted in blue is oxyfluorfen, a chemical applied in the watershed and detected in the water during the July 20, 2005 sampling event.

TRS	Date Applied	commodity	Treated Acres	Product name	Chemical name	amount used	unit
10S16E12	23-Jun-05	WALNUT	150	LORSBAN 4E-HF	CHLORPYRIFOS	75	GA
10S18E9	27-Jun-05	TANGELO	40	LORSBAN 4E-HF	CHLORPYRIFOS	10	GA
11S16E5	08-Jul-05	ALMOND	31	LORSBAN 4E-HF	CHLORPYRIFOS	15.5	GA
11S16E4	14-Jul-05	ALMOND	7	GOAL 2XL	OXYFLUORFEN	0.0625	GA

Table 33. Results of Pesticide Use at Owens Creek @ Gurr Rd.

TRS	Commodity	Application Date	Treated Acres	Product Name	Chemical name	quantity	units
7S15E28	TOMATO FRESH	08-Jun-05	100	TENKOZ TRIFLURALIN 4 EMULSIFIABLE CONCEN	TRIFLURALIN	12.5	GA
8S13E11	TOMATO PROCESS	10-Jun-05	90	TRILIN	TRIFLURALIN	7.2	GA
8S15E6	TOMATO FRESH	15-Jun-05	24	TRILIN HERBICIDE	TRIFLURALIN	3	GA
8S13E3	RICE	22-Jun-05	90	SUPER WHAM!	PROPANIL	112.5	GA
8S13E16	TOMATO FRESH	23-Jun-05	85	DIMETHOATE 267	DIMETHOATE	10.63	GA
8S13E3	RICE	23-Jun-05	80	SUPER WHAM! CA	PROPANIL	100	GA
8S14E10	TOMATO FRESH	25-Jun-05	91	DIMETHOATE 267	DIMETHOATE	22.75	GA
8S14E10	TOMATO FRESH	25-Jun-05	62.5	DIMETHOATE 267	DIMETHOATE	15.63	GA
8S13E3	RICE	27-Jun-05	96	SUPER WHAM! CA	PROPANIL	120	GA
8S13E4	RICE	28-Jun-05	142.8	STAM 80 EDF HERBICIDE EXTRUDED DRY FLOWA	PROPANIL	571.2	LBS
8S13E4	RICE	28-Jun-05	53.4	STAM 80 EDF HERBICIDE EXTRUDED DRY FLOWA	PROPANIL	213.6	LBS
8S13E4	RICE	28-Jun-05	53.8	STAM 80 EDF HERBICIDE EXTRUDED DRY FLOWA	PROPANIL	215.2	LBS

TRS	Commodity	Application Date	Treated Acres	Product Name	Chemical name	quantity	units
8S13E4	RICE	28-Jun-05	26	SUPER WHAM!	PROPANIL	26	GA
8S13E4	RICE	28-Jun-05	53	SUPER WHAM!	PROPANIL	53	GA
8S13E4	RICE	28-Jun-05	50	SUPER WHAM!	PROPANIL	50	GA
8S13E4	RICE	28-Jun-05	12	SUPER WHAM!	PROPANIL	12	GA
8S13E3	RICE	28-Jun-05	42	SUPER WHAM!	PROPANIL	42	GA
8S13E3	RICE	29-Jun-05	80	SUPER WHAM!	PROPANIL	80	GA
8S14E10	TOMATO FRESH	01-Jul-05	30	DIMETHOATE 267	DIMETHOATE	5.63	GA
8S13E4	RICE	07-Jul-05	12	SUPER WHAM!	PROPANIL	12	GA
8S13E4	RICE	07-Jul-05	30	SUPER WHAM!	PROPANIL	30	GA
8S13E4	RICE	07-Jul-05	12	SUPER WHAM!	PROPANIL	12	GA
8S13E4	RICE	07-Jul-05	30	SUPER WHAM!	PROPANIL	30	GA
7S16E31	CORN FOR/FOD	12-Jul-05	18	DIMETHOATE 4E	DIMETHOATE	2.25	GA
7S16E31	CORN FOR/FOD	12-Jul-05	22	DIMETHOATE 4E	DIMETHOATE	2.75	GA
7S16E31	CORN FOR/FOD	12-Jul-05	30	DIMETHOATE 4E	DIMETHOATE	3.75	GA
8S13E9	RICE	12-Jul-05	30	STAM 80 EDF HERBICIDE EXTRUDED DRY FLOWA	PROPANIL	120	LBS
7S15E35	CORN FOR/FOD	19-Jul-05	8	DIMETHOATE 4E	DIMETHOATE	1	GA
7S15E36	CORN FOR/FOD	19-Jul-05	166	DIMETHOATE 4E	DIMETHOATE	20.75	GA
7S15E36	CORN FOR/FOD	19-Jul-05	60	DIMETHOATE 4E	DIMETHOATE	7.5	GA
8S13E21	RICE	20-Jul-05	100	STAM 80 EDF HERBICIDE EXTRUDED DRY FLOWA	PROPANIL	400	LBS
8S15E2	ALMOND	27-Jul-05	7	GOAL 1.6E HERBICIDE	OXYFLUORFEN	0.2	GA

Figure 28. Berenda Creek @ Ave. 17.5 watershed showing agricultural land use overlaid by Township/Range/Section.

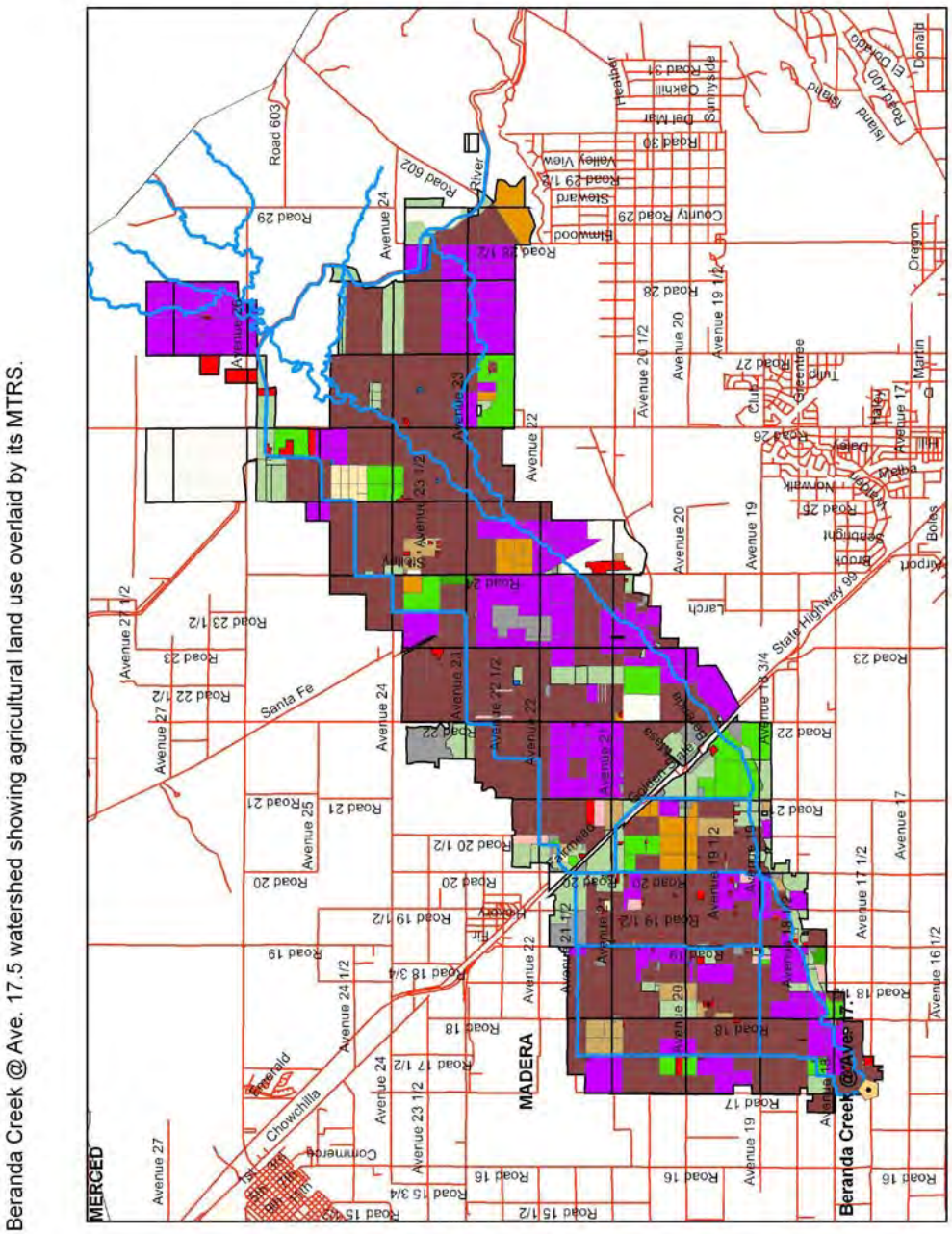


Figure 29. Berenda Creek @ Ave. 17.5 showing detected chemicals applied in the weeks preceding the July 7, 2005 sampling event.

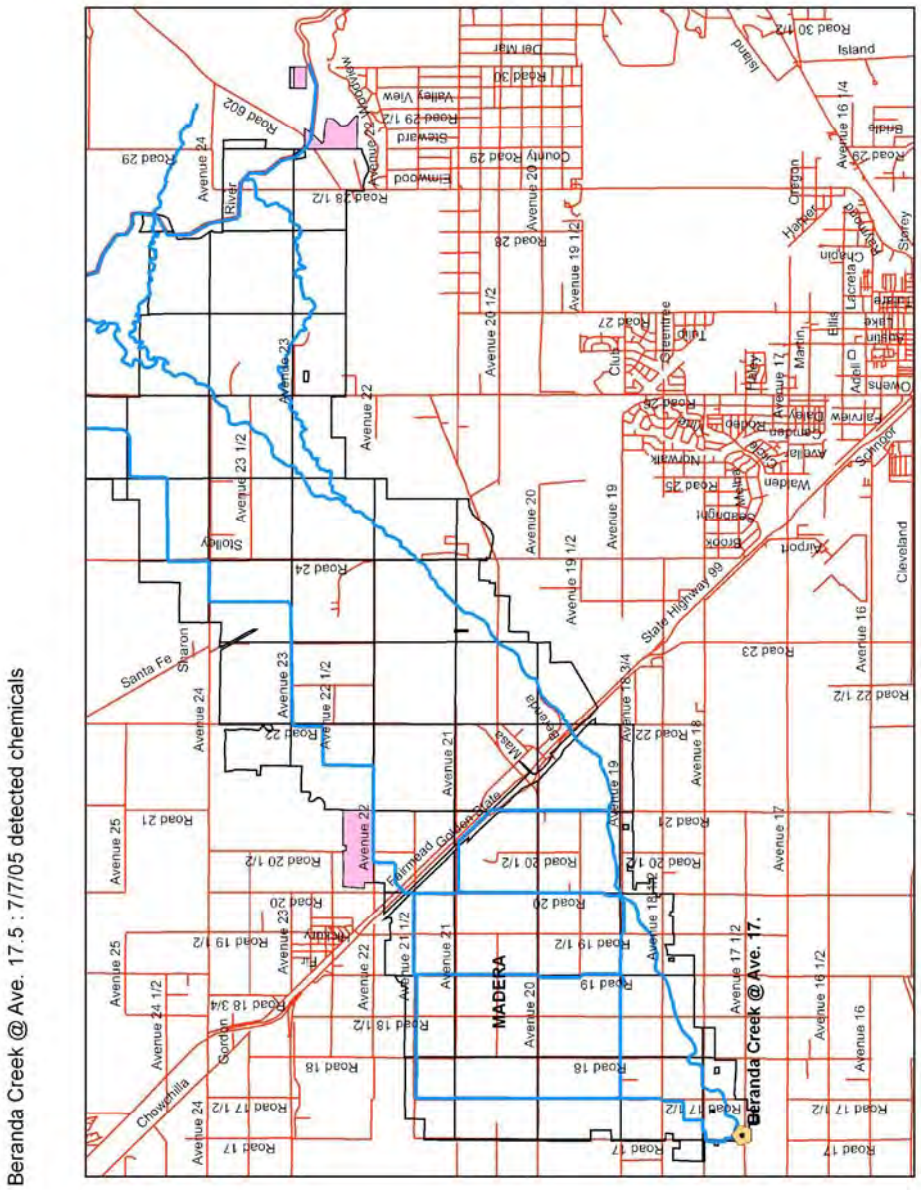


Figure 30: Berenda Creek @ Ave. 17.5 showing detected chemicals applied in the weeks preceding the July 20, 2005 sampling event.

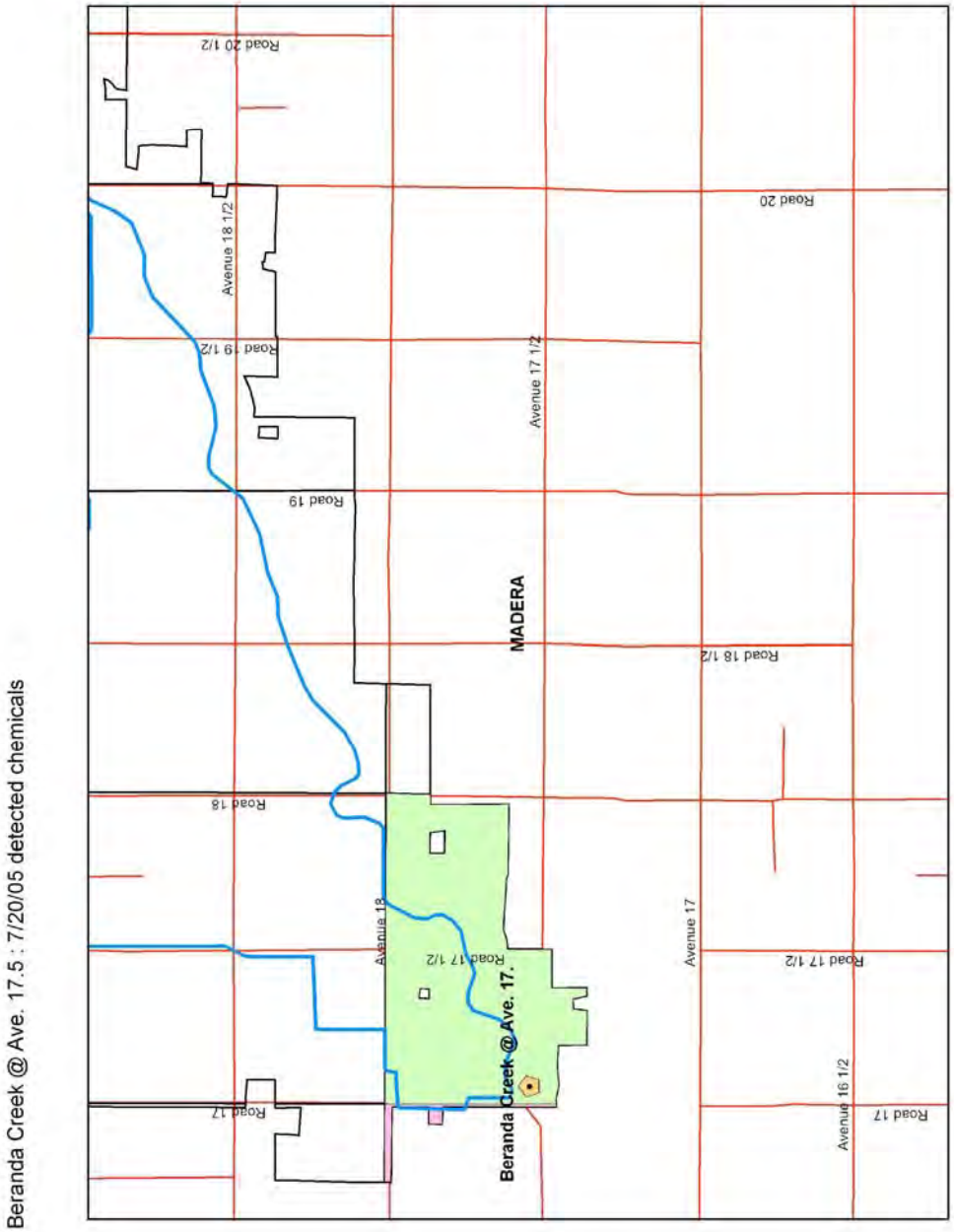


Figure 31: Owens Creek @ Gurr Rd. watershed showing agricultural land use overlaid by Township/Range/Section.

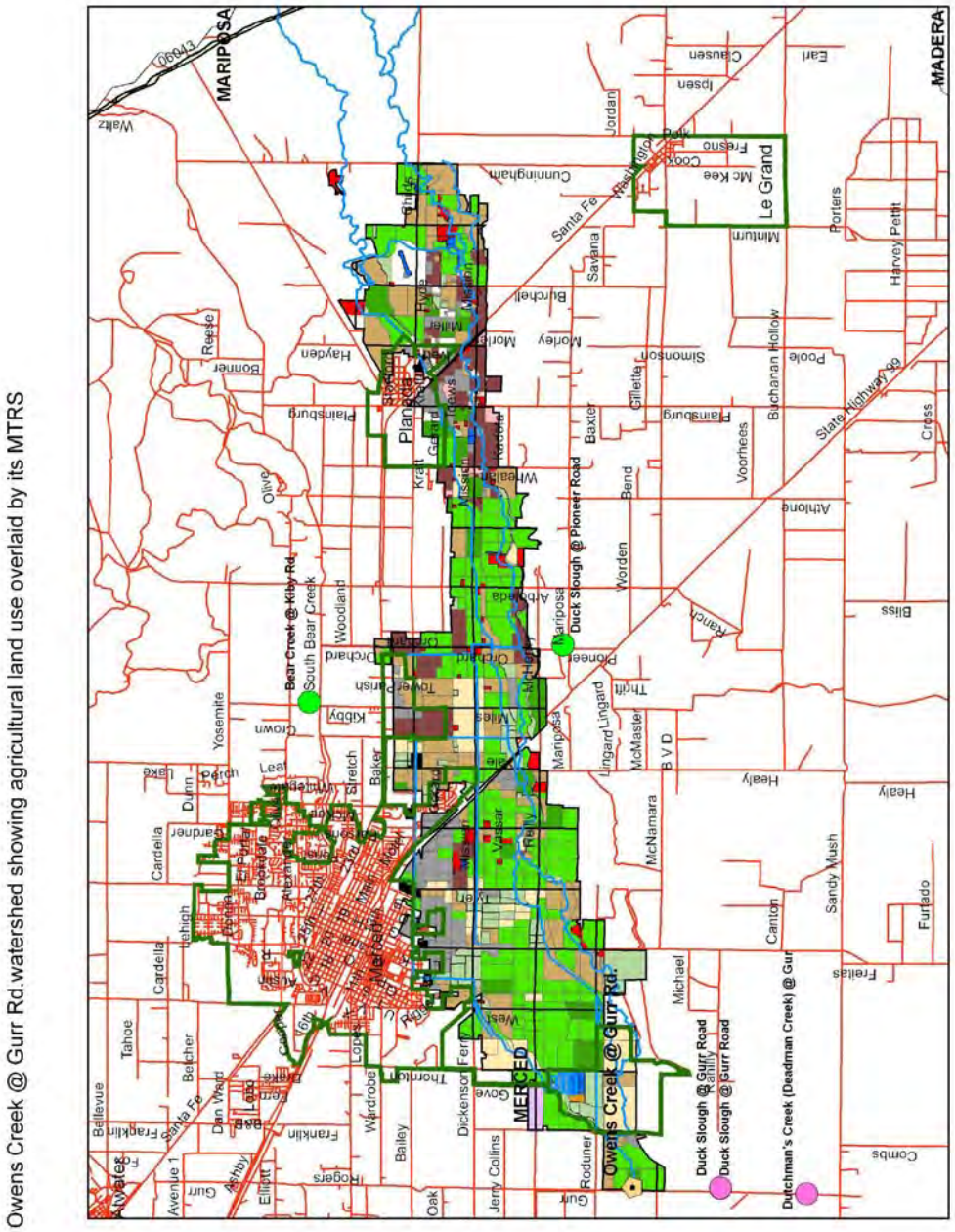


Figure 32. Owens Creek @ Gurr Rd. showing detected chemicals applied in the weeks preceding the June 22, 2005 sampling event.

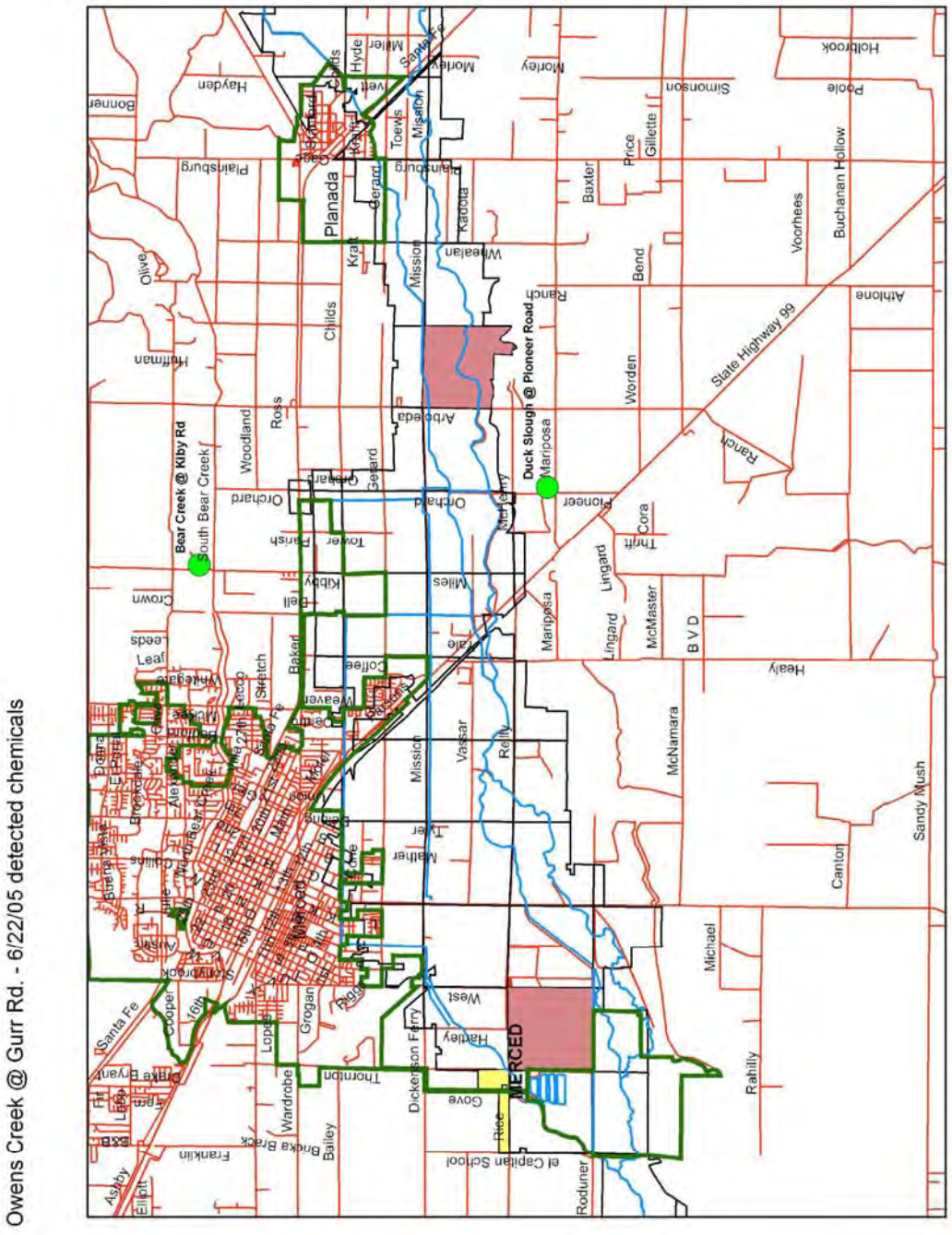


Figure 33. Owens Creek @ Gurr Rd. showing detected chemicals applied in the weeks preceding the June 22, 2005 sampling event. Trifluralin use at 7S15E28 is highlighted in green.

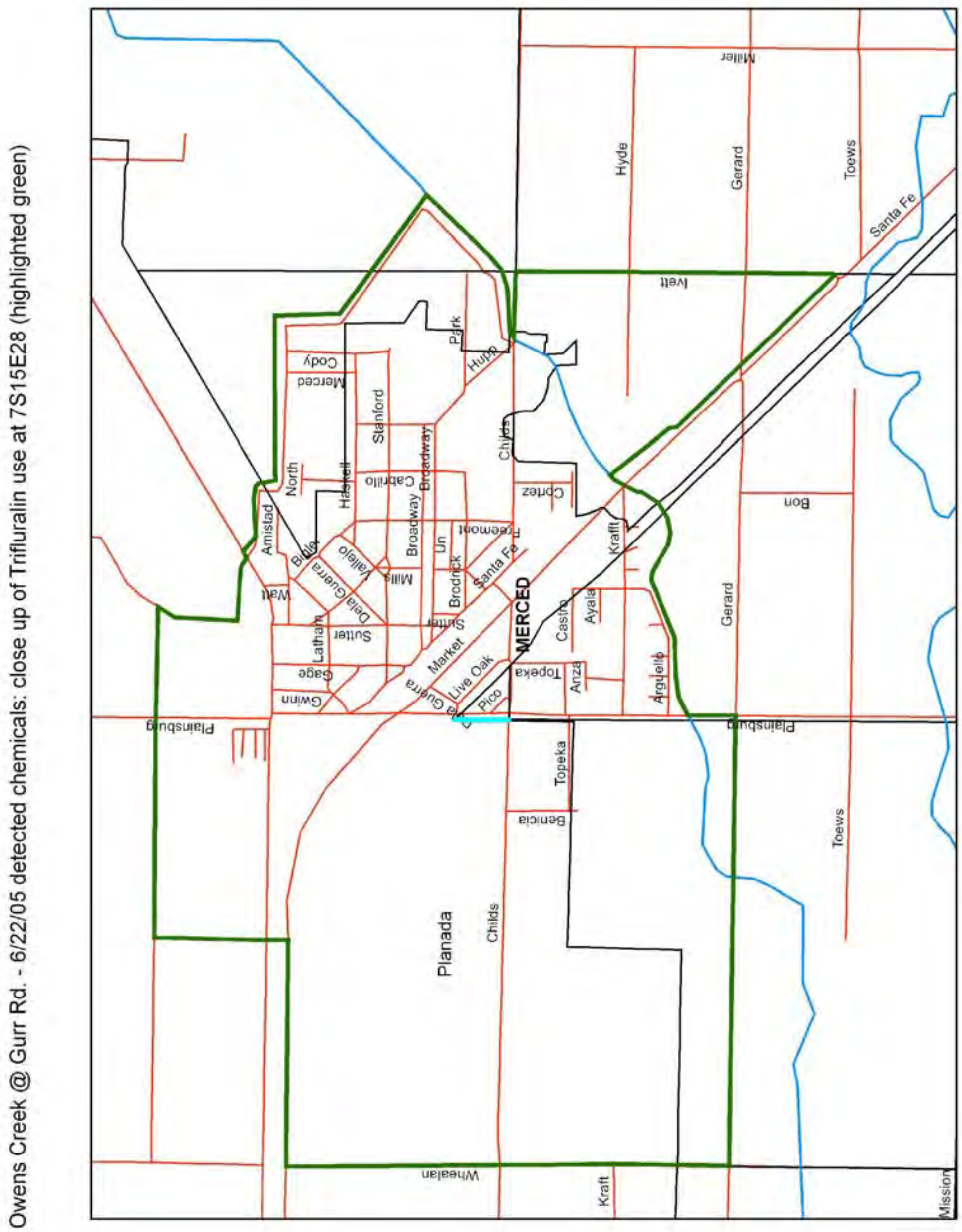


Figure 34. Owens Creek @ Gurr Rd. showing detected chemicals during the weeks preceding the July 7, 2005 sampling.

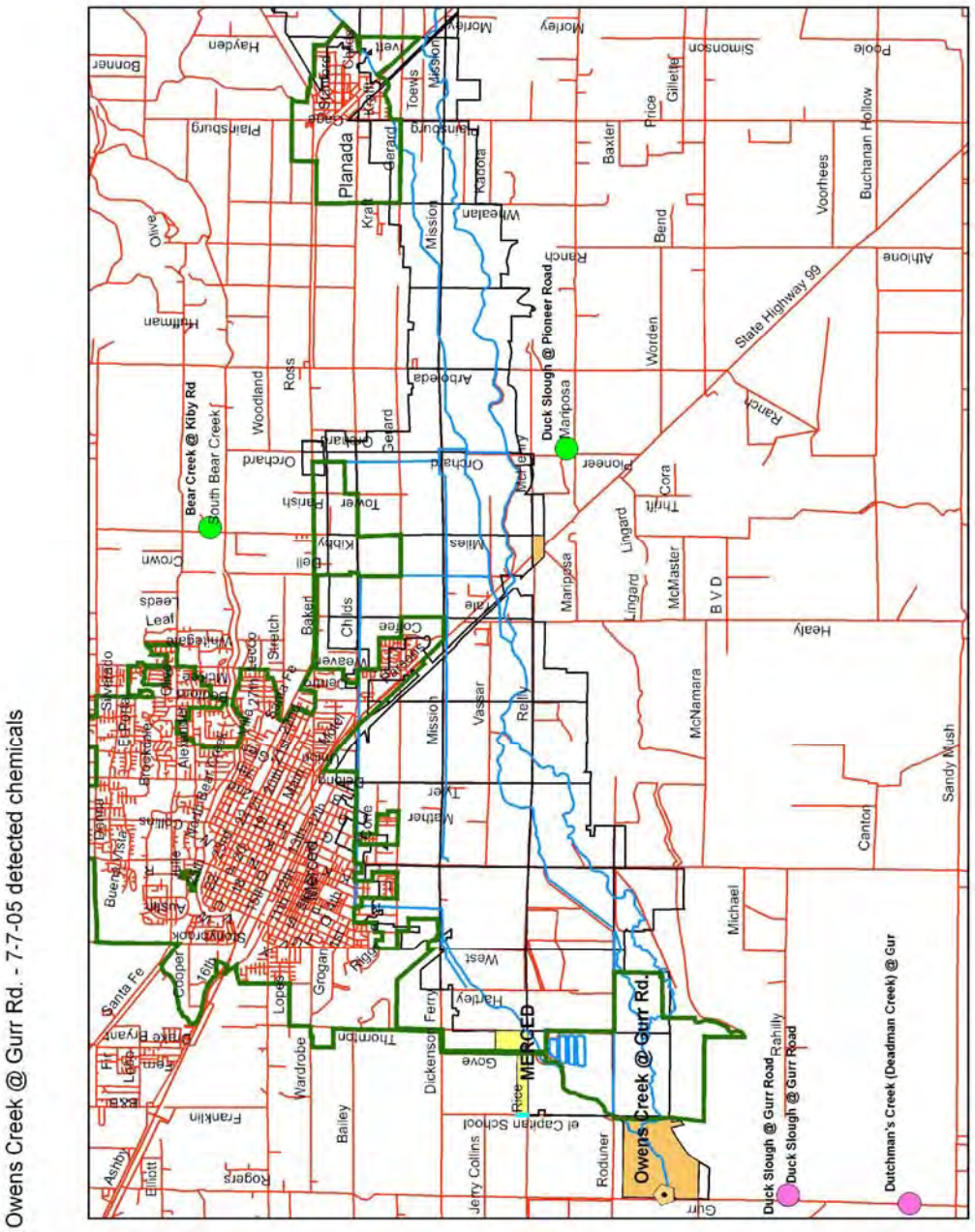


Figure 35. Owens Creek @ Gurr Rd. showing detected chemicals applied in the weeks preceding the July 7, 2005 sampling event. Dimethoate use at 8S13E16 is highlighted in green.

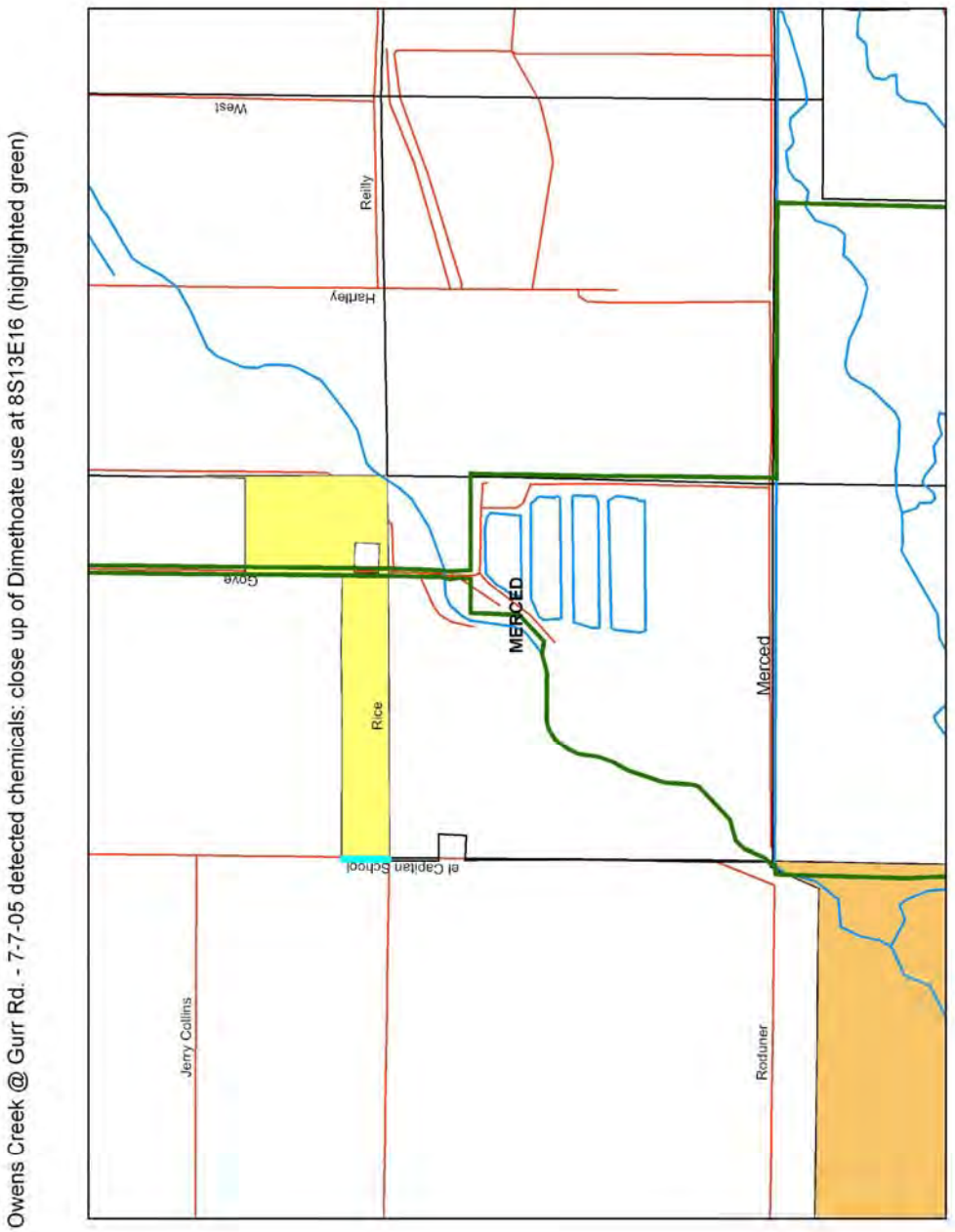


Figure 36. Owens Creek @ Gurr Rd. showing detected chemicals applied in the weeks preceding the July 20, 2005 sampling event.

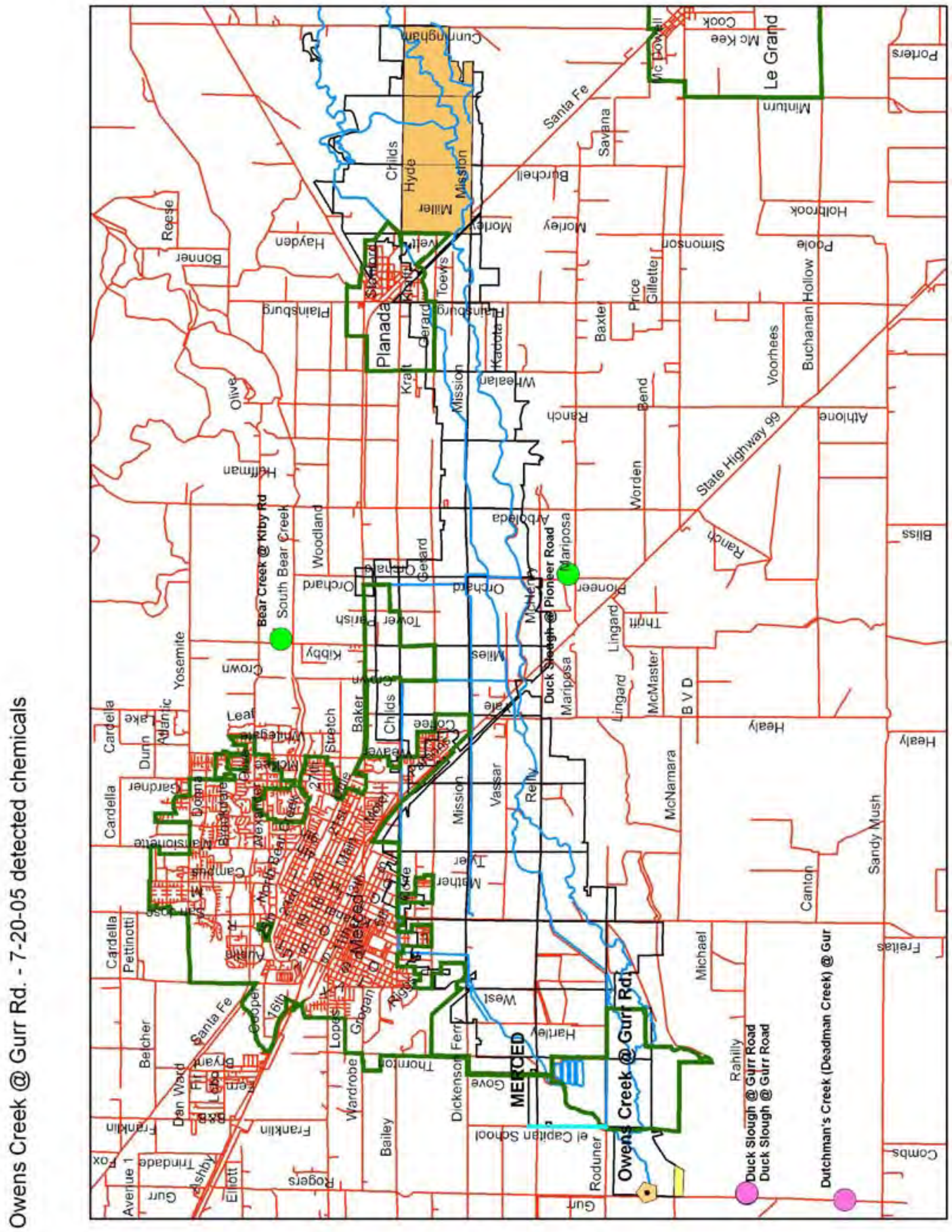


Figure 37. Owens Creek @ Gurr Rd. showing detected chemicals applied in the weeks preceding the July 20, 2005 sampling event. Propanil use at 8S13E9 and 8S13E4 is highlighted in green.

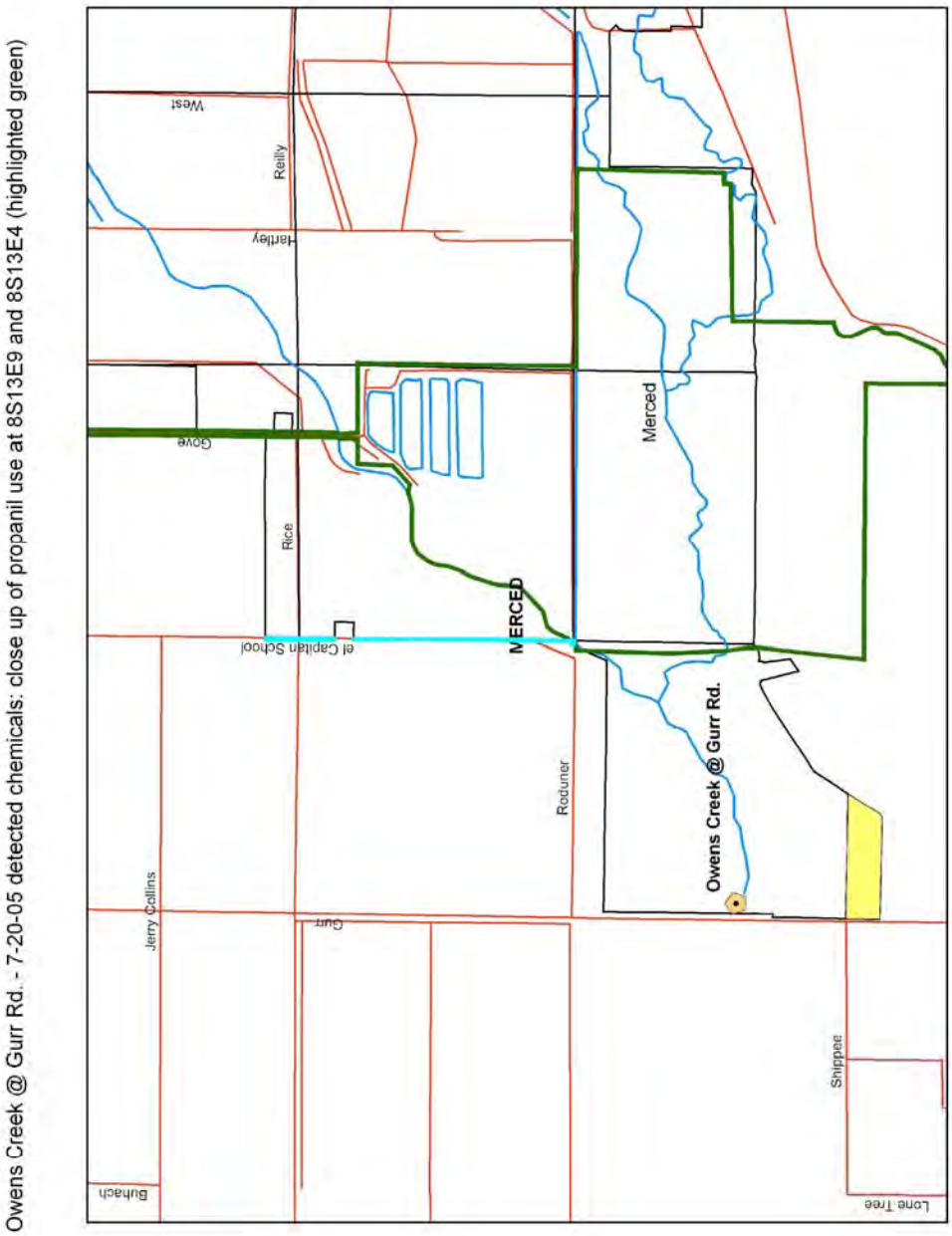


Figure 38. Owens Creek @ Gurr Rd. showing detected chemicals applied in the weeks preceding the August 3, 2005 sampling event.

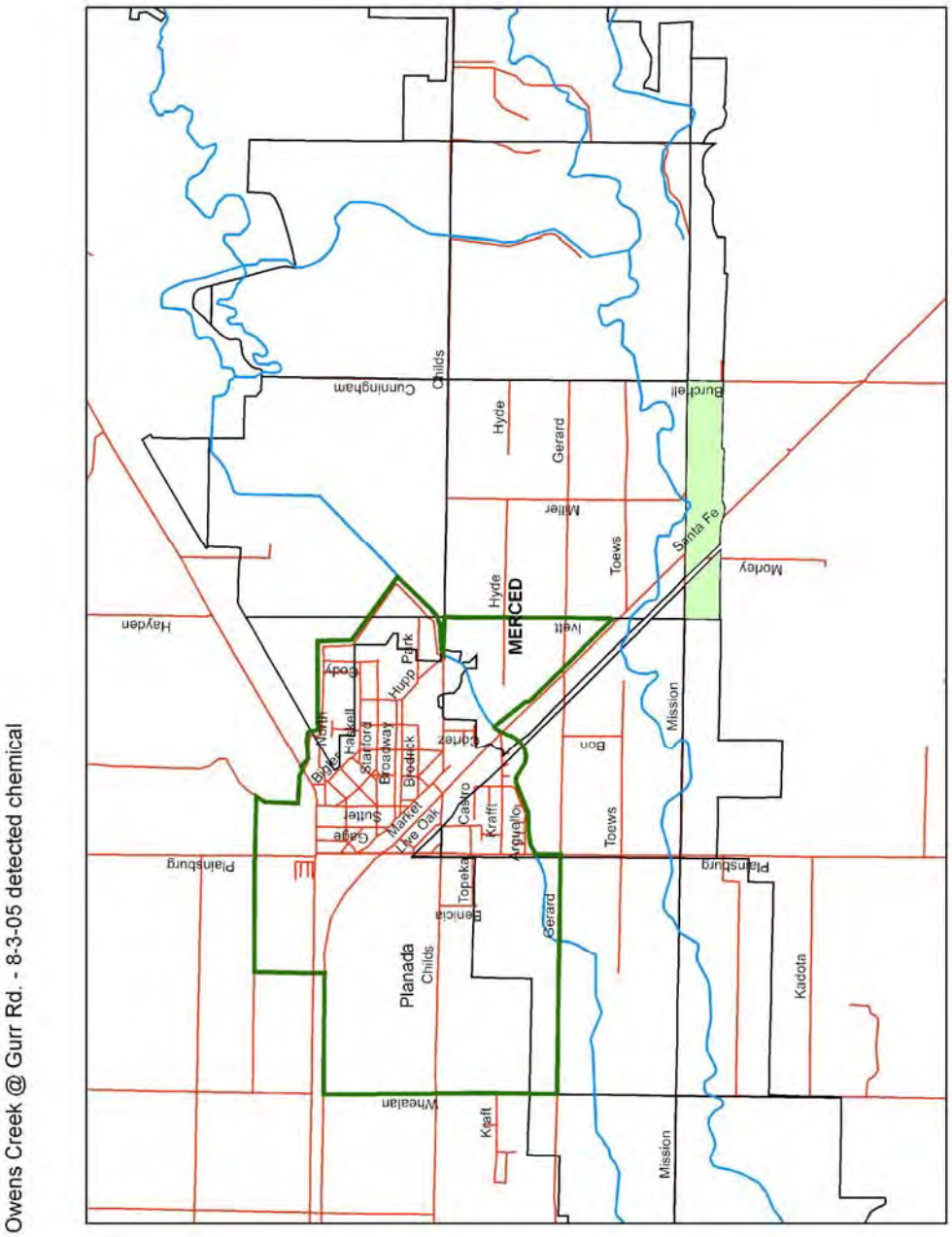


Figure 39: Legend

Legend for detected chemicias

Data Interpretation

Evaluation of the ESJWQC monitoring program objectives

1. Determine the concentration and load of waste in discharges to surface waters

The Coalition was able to measure the concentration at all sites that contained water, and calculate loads of conserved constituents for some of the sites and sample dates. Many of the loads could not be calculated due to high flows. Also, due to a miscommunication with the laboratory performing the sampling, flow measurements were collected but they failed to obtain a sufficient number of flow measurements for load calculations. Although the Coalition was partially successful in meeting this objective, improvements need to be made. By the end of the 2005 Irrigation sampling season, when flows were possible to collect, the field sampling crew was collecting a sufficient number of flow measurements to calculate loads. This objective should be met fully in the future.

2. Evaluate compliance with existing narrative and numeric water quality objectives to determine if implementation of additional management practices is necessary to improve and/or protect water quality

Although the appropriate numeric water quality objectives are still in question for many of the water bodies in the Coalition region, where clear objectives are available, the data have been compared and compliance evaluated. There are numerous exceedances that occurred in the Coalition region for numerous constituents, and implementation of management practices for these constituents is appropriate. The first step in this process is notification of growers in the affected watersheds and presentations on potential management measures to implement. Those are currently planned for the spring of 2006 and will consist of a series of meetings held throughout the Coalition region to discuss the exceedances and management practices. The results of these meetings will be provided in the next Semi-Annual Monitoring Report.

Many numeric criteria require an understanding of the background or normal values for the constituents in surface waters. At this point, the coalition is developing a background set of measurements for parameters such as turbidity and temperature against which future measurements can be evaluated. Compliance with narrative criteria is much more difficult to determine except for toxicity in which a statistical measure is available. The Coalition will need to work with the Regional Board to develop a process by which measurements of parameters such as color can be evaluated and compared to the narrative criteria.

3. Assess the impact of waste discharges from irrigated agriculture to surface water

Many of the discharges are found at levels that are above existing numeric water quality objectives, and consequently should be considered as causing a negative impact on surface water quality. The degree of negative impact is difficult to determine for many

constituents including color, dissolved oxygen, and pH. pH and DO are non-conserved constituents and vary diurnally. Finally, there are exceedances that are difficult to interpret given the remainder of the monitoring data. For example, there are several instances when chlorpyrifos and diazinon have been found at concentrations above the water quality objectives which should indicate that toxicity to aquatic organisms is occurring. However, the results of the toxicity tests performed with water collected at the same site and the same time indicate no toxicity. Consequently, for the water from that site and at locations upstream, the impact could be interpreted as minimal. However, if there are additional inputs downstream, the chemicals in the water could contribute to significant downstream toxicity and cause significant negative impacts on surface waters. Therefore, even if toxicity is not present, the Coalition does view concentrations of chemicals above numeric criteria as a significant negative impact requiring the implementation of management practices. Finally, there are exceedances that clearly are negative impacts such as toxicity. These must be addressed through additional monitoring, special studies, and implementation of management practices.

4. Determine the degree of implementation of management practices to reduce discharge of specific wastes that impact water quality in watersheds within the coalition region

At this point, the Coalition has just initiated the contacting of growers to inform them of exceedances, request meetings, assess current use of management practices, and provide education on the implementation of additional management practices that could be effective in reducing discharges of agricultural wastes to surface waters. Also, for some constituents such as *E. coli* and TDS, it is unclear to what extent the presence of the constituents in surface waters is a function of discharge from agriculture compared to other potential sources. Consequently, the Coalition will undertake two special studies to further elucidate the problem and allow an approach to management to be developed.

5. Determine the effectiveness of management practices and strategies to reduce discharges of wastes that impact water quality

This is a long-term objective that has yet to be initiated and will be ongoing for the next several years. During the next six months, the Coalition will initiate contact with growers in watersheds with exceedances, survey for management practices currently in use, and provide education on additional management practices that could be implemented to reduce discharges and improve water quality.

Data Interpretation in Light of QC Results

As described in the section Summary of Precision and Accuracy, with few exceptions, all data fell within the QA criteria established in the QAPP originally submitted by the Coalition. The Quality Control data that would effect the interpretation of the results include the percent recovery of the matrix spikes (MS), laboratory control spikes (LCS), and surrogate spikes. MS and LCS evaluate the accuracy of the measurements and reflect matrix interference in the measurements. If MS or LCS recoveries are too low, it indicates inaccuracy in the measurements and that the actual concentration of the chemical in the sample could be higher than reported. Surrogates are used to determine

precision. If surrogate recoveries are inconsistent, the precision of the measurements is low. The sample data were evaluated in light of the MS, LCS, and surrogate recovery data.

Color, *E. coli*, turbidity, and TDS do not have MS, LCS, or surrogate QC analyses associated with the environmental samples. All MS and LCS values for TOC were near or above 100% indicating that the TOC measurements of the environmental samples can be interpreted without qualification. A single field duplicate sample had a RPD of 32%, and the laboratory flagged the value but did not repeat the analysis. The Coalition believes that the value is sufficiently precise such that no qualification of the results is necessary.

LCS and MS values for chlorpyrifos ranged from 97% to 123% and 84% to 116% respectively. These values are sufficiently high that no qualification of the results is necessary and the concentrations of chlorpyrifos reported accurately reflect the concentrations in the ambient samples. Diazinon LCS and MS values ranged from 87% to 110% and 82% to 114% respectively. Only one site, Merced River @ Santa Fe Dr had consistently lower MS values indicating that the concentrations reported for the ambient sample could be 15% - 20% higher for the March 21, 2005 sampling date. The remaining MS values were high for one or both samples at all sites indicating a low probability of matrix interference when measuring diazinon.

LCS values for cyhalothrin range between 73 % and 96% (mean = 84.8.3%) and MS values range between 75% and 96% (mean = 87%), LCS values for cypermethrin range from 67% to 92% (mean = 81.9%) and MS values range from 74% to 89.3% (mean = 82.5%), LCS values for esfenvalerate/fenvalerate range from 68% to 110% (mean = 85.9%) and MS values ranged from 73% to 103% (mean = 87.3%), LCS values for permethrin ranged from 71% to 145% (mean = 85.7%) and MS values ranged from 68% to 114% (mean = 95.4%) indicating that matrix interference could be occurring and the values for each measurement of the pyrethroids except permethrin could be approximately 15% - 20 % larger than those recorded in the data. Surrogate recoveries were within control limits for all samples indicating sufficient precision in the analyses for both organophosphates and pyrethroids.

RPD for Color
Relative percent difference (RPD) of replicate samples is used to determine the precision of the analysis. If any RPD falls outside of the RPD limits, the calculations and instruments are typically checked, and the analyses may be repeated. There was one sample, Prairie Flower Drain @ Crows Landing Road on September 21, 2005, for which the RPD was 29%, a value slightly outside of the range. A single RPD for color outside of the control range is not considered problematic and the remaining values from that batch are sufficiently precise such that no qualification of the results is necessary.

Data Evaluation
Pesticides

Two pesticides (diazinon and chlorpyrifos) were detected in 15 samples in the ESJWQC region during the dormant and irrigation seasons of 2005. This is approximately 15 % of the samples tested. Of these, 5 samples had detections of chlorpyrifos exceeding the water quality standards (7%), and 1 sample had a detection of diazinon exceeding the water quality standard (1%). Dimethoate was detected in 1 sample, Trufluralin was detected in 2 samples and total Pyrethroids was detected in 1 smple. Refer to Table 33 b for results.

Examination of the pesticide use reports was able to identify applications in only one of the 13 pesticide detections (Highline Canal @ Lombardy Rd, July 13, 2005 sample event). In some instances, the water bodies in question passed near urban areas leaving the possibility that the chemicals could be from urban sources. There is no way for the ESJWQC to determine if the chemicals were from those areas. Alternatively, the chemicals could be from unreported agricultural use in the watershed. If we assume that unreported use was on crops for which the chemicals are labeled, we can locate those crops and contact growers to survey for management practices.

Toxicity

We were able to obtain Pesticide Use Reports for 7 of the toxicity exceedances (survival only - 2 *Hyalella*, 1 *Selenastrum*, and 4 *Ceriodaphnia*). Six more toxicity exceedances were found, and we are waiting for the PURs for the weeks prior to the event to be delivered. In every instance, there were chemicals applied in the watersheds that could account for the toxicity observed. In some instances, e.g., the larger watersheds, there were a substantial number of applications upstream.

E. coli

Determination of an *E. coli* exceedance is not based on a water quality objective, but rather the extrapolation of the current water quality objective for fecal coliform. That standard is 200 MPN/100 mL, and since *E. coli* is a subset of fecal coliforms, if the *E. coli* value is above 200 MPN/100 mL, the fecal coliform standard will also be above 200 MPN/100 mL.

Exceedances of E. coli standards were the most numerous type of exceedance in the ESJWQC region. There were 41 exceedances and an additional field duplicate that had values above 200 MPN/100 mL. When we received the initial indication that there were a large number of exceedances, we performed an analysis to determine if the exceedances were a function of the number of dairies or the acreage of irrigated pasture in the watersheds. The results of that analysis were originally submitted to the Regional Board in the communication report of October 17, 2005.

A total of 12 sites experienced exceedances with a range of 1 to 5 exceedances per monitoring site. We performed a correlation analysis to determine if the signal

Table 33b: Water Chemistry Analysis Results of all analyzed pesticides.

Station Name	Sample Date	Sample Type Code	Group	Analyte Name	Unit	Result	WQO	Res Qual Code	MDL	RL
Ash Slough @ Ave 21	7/12/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.018	0.02	DNQ	0.00259	0.0
Ash Slough @ Ave 21	8/16/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.046	0.02	DNQ	0.00259	0.0
August Road Drain upstream of Crows Landing Bridge (Hogin Rd)*	7/31/2004	E	Organophosphate	Dimethoate	µg/L	0.31			0.08	0
August Road Drain upstream of Crows Landing Bridge (Hogin Rd)*	9/29/2004	E	Organophosphate	Chlorpyrifos	µg/L	0.026	0.02	DNQ	0.0254	0.0
Cottonwood Creek @ Road 20	7/12/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.012	0.02	DNQ	0.00259	0.0
Dry Creek @ Wellsford Road	2/15/2005	E	Organophosphate	Diazinon	µg/L	0.011	0.08	DNQ	0.00353	0.0
Dry Creek @ Wellsford Road	2/15/2005	FD	Organophosphate	Diazinon	µg/L	0.013	0.08	DNQ	0.00353	0.0
Duck Slough @ Gurr Rd	7/31/2004	FD	Organophosphate	Chlorpyrifos	µg/L	0.045	0.02	DNQ	0.0254	0.0
Duck Slough @ Gurr Rd	7/31/2004	E	Organophosphate	Trifluralin	µg/L	0.045		DNQ	0.036	0
Duck Slough @ Gurr Rd	7/31/2004	FD	Organophosphate	Trifluralin	µg/L	0.34			0.036	0
Duck Slough @ Gurr Rd	9/29/2004	E	Pyrethroid	Esfenvalerate/Fenvalerate, total	µg/L	0.05			0.002	0.0
Duck Slough @ Pioneer Road	7/12/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.026	0.02	DNQ	0.00259	0.0
Highline Canal @ Lombardy Rd	2/15/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.01	0.02	DNQ	0.00259	0.0
Highline Canal @ Lombardy Rd	2/15/2005	E	Organophosphate	Diazinon	µg/L	0.098	0.08		0.00353	0.0
Highline Canal @ Lombardy Rd	7/13/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.011	0.02	DNQ	0.00259	0.0
Jones Drain @ Oakdale Road	2/16/2005	E	Organophosphate	Diazinon	µg/L	0.011	0.08	DNQ	0.00353	0.0
Prairie Flower Drain @ Crows Landing Road	7/13/2005	E	Organophosphate	Diazinon	µg/L	0.013	0.08	DNQ	0.00353	0.0
Prairie Flower Drain @ Crows Landing Road	9/21/2005	FD	Organophosphate	Chlorpyrifos	µg/L	0.018	0.02	DNQ	0.00259	0.0
Prairie Flower Drain @ Crows Landing Road	9/21/2005	E	Organophosphate	Chlorpyrifos	µg/L	0.018	0.02	DNQ	0.00259	0.0

* August Rd. Drain @ Crows Landing subwatershed has been removed from the sampling plan due to safety concerns for the sampling crews.

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(MPN/100 mL) was related to the number of acres of irrigated pasture, the number of parcels of irrigated pasture, the number of acres of dairies, the number of dairies, of the combined number of acres or parcels of both dairies and irrigated pasture in the watersheds. The results of the analysis indicate that there is no correlation between the number of parcels or the acres of irrigated pasture and average *E. coli* signal ($r = 0.15$ for both), and there is no significant correlation between the number of dairies and the *E. coli* signal ($r = 0.26$), or the acreage of dairies and *E. coli* ($r = 0.18$). There was no correlation between the combined acreage ($r = 0.17$) or combined number of parcels ($r = 0.22$) and *E. coli*. [Statistical significance at $\alpha = 0.05$ level for all tests of the null hypothesis $r = 0$ against the alternative hypothesis $r \neq 0$ is 0.361.] These results indicate either of two possibilities: 1) the coliform bacteria is not primarily from dairies or cattle grazing but from other sources such as wildlife, leaking septic systems or sanitary sewer lines, or 2) the coliform bacteria is from grazing or dairy operations but the contribution to the total load is not evenly distributed across the watershed. I.e., a few locations (dairies or pastures) provide the bulk of the load to the water body.

We proposed a source identification study to determine the taxonomic group from which the coliforms originated. Studies of this nature are performed routinely today using Real time Polymerase Chain Reaction (RT-PCR) techniques. These studies would be performed at the University of California, Davis.

Physical Parameters

There were numerous exceedances of dissolved oxygen, pH, specific conductivity (EC), and total dissolved solids (TDS).

Dissolved Oxygen

The DO standard by which an exceedance was determined was 5.0 mg/L and is based on the warm water fisheries beneficial use standard. No beneficial uses have been established for any of the water bodies with the exception of the Merced River. And, dissolved oxygen is not a constituent which is static as a bolus of water moves downstream. As water moves, it can gain or lose dissolved oxygen depending on the water temperature, rate and the turbulence of the flow, photosynthetic rate, and the biological oxygen demand (BOD). Diel changes can be significant, and source identification for low DO is not possible. However, potential causes of low DO may be possible to assign if other conditions are present at the time of the measurements. For example, if the TOC measure is elevated, it may provide an indication that BOD is high driving DO lower. If there is a substantial amount of carbon of terrestrial origin or carbon from emergent aquatic plants, that carbon is often recalcitrant and breaks down slowly compared to algal derived carbon. As it does, it drives a much higher BOD than would carbon of aquatic origin.

The site with the lowest dissolved oxygen, 3.2 mg/L on July 13, 2005 at the Prairie Flower Drain, the water temperature was 21^{o}C making the DO level approximately 36% of saturation. pH for the site was 7.57 indicating that the photosynthetic rate was not so low that the plants were respiring and using oxygen, resulting in increased carbonic acid levels in the water (see below). TOC for the site was only 13 mg/L which is not

generally high enough to suggest a great deal of suspended carbon in the water column. Benthic organic carbon sources could be the source of the BOD. While it is likely that the low DO at this site is a function of BOD, at this time it is not possible to confidently assign a cause to the low DO without additional measurements of carbon loading in the system.

pH

There were 8 exceedances of the pH standard during the year. Five of those were within 0.2 pH units, and an additional measure was within 0.25 pH units. The range of accuracy of the meter is only ±0.2 pH units indicating that the former 5 measurements may or may not be outside the pH standard. The later measurement is barely outside the range of accuracy for the meter.

pH is a function of the carbonic acid content of the water which is a function of the photosynthetic rate of the algae and rooted aquatic plants in the water. During periods when the algae are experiencing high photosynthetic rates, the carbon dioxide content of the water declines and the dissolved oxygen content of the water increases. This shift decreases the carbonic acid level in the water and the pH increases. There are two dates at which the pH of the water is higher than the pH standard, both at the same location. On March 22, 2005 and August 17, 2005, the pH at the Dry Creek @ Wellsford Rd site was 8.96 and 9.18 respectively. The percent saturation of the DO is approximately 80% for the March sample and 95% for the August sample (percent saturation uncorrected for barometric pressure). While neither of these values is extraordinarily high, it is possible that they are sufficient to raise the pH of the water to slightly above the pH standard.

EC and TDS

EC and TDS are generally correlated with each other to a certain degree. The term TDS describes all solids (usually mineral salts) that are dissolved in water. The more salts that are dissolved in the water, the higher the value of the electric conductivity. The relationship between the conductivity of a solution and its content varies not only by the concentration of the dissolved ions, but is also based upon the charge and mobility of the dissolved ionic species. A small ion and a large ion can have the same electrical charge. The small ion will find it easier to move through the water molecules, so it "conducts" that charge faster, resulting in a higher EC for the same concentration (TDS) in the solution. Likewise, if two ions have the same size, but one has a higher charge than the other, the higher charged ion will result in a higher EC. It follows that if the correlation between EC and TDS is high for measurements made across several sites at several different times, the source of the ions in the water are constant, i.e., the types of ions in solution and/or their ratios are constant across time and/or space. Alternatively, if there is little or no correlation between EC and TDS, the types of ions and/or their ratios vary across time and/or space.

There are two general sources of EC (or TDS) in agricultural landscapes; fertilizers and native soils. A commercial fertilizer can be made up of dozens of different chemicals each of which ionize, and contribute to the EC of the solution. Different brands of

fertilizer can use different chemicals to make up the total formula indicating that there will not be a standard signal for fertilizer-generated EC or TDS.

A preliminary analysis was run to examine the correlations between EC and TDS in the sites within the coalition region. A Pearson product moment correlation coefficient was calculated for each site using the EC and TDS values from all 7 sample dates as the data. No tests for normality were made prior to calculating the correlations. For all sites at which there were no exceedances, the correlations between EC and TDS ranged from 0.985 to 0.719 indicating moderately strong to strong relationships between the two measures. The correlation coefficient between EC and TDS for Prairie Flower Drain is 0.927, well within the range of values across the rest of the coalition and indicative of a strong relationship between EC and TDS across time in the watershed. The correlation coefficient for the Hilmar Drain watershed is 0.338, well outside of the range for the rest of the coalition area and indicating a very weak correlation between the two measures.

These analyses suggest that the source of the salts in the Prairie Flower Drain is constant across the year while the source and/or composition of the salts in the Hilmar Drain vary seasonally. At this point, it is unclear how these differences, both across watersheds and over time in the Hilmar Drain watershed, could occur. Geographically, the two drains are located only a short distance apart. Differences could be a result of different irrigation or drainage practices in those watersheds. As we continue to collect data over the next year, expand the list of constituents that are measured, and survey the watershed for management practices, we may be able to gain a better understanding of the salt dynamics in the two watersheds.

Summary of Management Practices Used

In a July 2004 response to staff comments on the April 1, 2004 Watershed Evaluation Report and the Monitoring and Reporting Project Plan submissions, the ESJWQC submitted a BMP compilation for the major crops grown in the coalition region (alfalfa, apples, cherries, corn, dry beans, peaches, tomato, walnuts, wine grapes). These are management practices that are currently employed by growers to guide farming operations in the coalition region. Although growers may not use all of the management practices listed in the compilation, they select each year those practices that will result in maximizing their yields while protecting water quality. In addition, growers applying agricultural chemicals follow the label instructions on the product as their first management practice to prevent off-site movement of the chemical.

Understanding the specific management practices used by growers in any watershed is a goal of the coalition's outreach and education activities. The results of the current year's monitoring activities will guide the targeting of coalition efforts in surveying the management practices used in watersheds, specific TRS', and by individual growers. We have a series of meetings scheduled in several large watersheds, and will hold additional meetings at the level of the monitoring watershed to address specific exceedances. At that time, we will be able to compile an inventory of BMPs used in those watersheds. It must be emphasized that the management practices that growers indicate they use may in fact not have been used in the past year, or may not be used next year depending on the specific weather conditions and pest outbreaks. And, specific management practices may vary across single fields depending on soil conditions, drainage, and nutrient retention capacity (cation holding capacity). Consequently, trying to relate specific management practices to specific exceedances will be difficult. However, there are management practices dealing with pesticide applications that should be implemented regardless of the weather, soils, or drainage. We will be able to determine the application procedures and report those results. We will compile all results and provide that compilation in the June 30, 2006 report.

Actions taken to address water quality impacts identified

Activities to Date

Actions to date include eight meetings with growers (Table 34) over the last calendar year. These meetings presented the goals of the Conditional Waiver Program, the monitoring results from the coalition's and the Regional Board sampling programs, and provided growers with an introduction to implementation of management practices. The last three meetings have been annual meetings held in Stanislaus, Merced, and Madera Counties. At that meeting, the monitoring results were presented, and the management practices that can be used were introduced. The presentation is attached to this report below. The presentation is saved as a .rtf and loses the format of the power Point presentation and a flow diagram outlining the long-term process of the Waiver Program, but the main elements of the presentation are included.

Table 34. Landowner/Grower outreach meetings conducted in the coalition region during the 2005 calendar year.

Date	Meeting	Number of Attendees
Feb.15, 2005	ESJ presentation on monitoring results/orchard BMP review at grower meeting, UC Cooperative Extension sponsored, Madera	70
February 22, 2005	ESJ presentation on monitoring results/orchard BMP review at Turlock Irrigation District grower meeting, Turlock	60
March 9, 2005	ESJ presentation on monitoring results/orchard BMP review at Merced County Ag Commissioner continuing education meeting, Merced	60
March 21, 2005	Presentation on ESJ monitoring results, BMP implementation to board of directors, Red Top Resource Conservation District, Chowchilla	10
March 24, 2005	ESJ Workshop: monitoring results review: orchard, row crop BMP review, Modesto	55
November 8, 2005	ESJ Annual meeting: review of 2005 sampling results, review BMPs for orchard/row crops, Modesto	140
November 30, 2005	ESJ Annual meeting: review of 2005 sampling results, review BMPs for orchard/row crops, Madera	50
December 8, 2005	ESJ Annual meeting: review of 2005 sampling results, review BMPs for orchard/row crops, Merced	55

Presentation to the Annual Meetings of the ESJWQC in Stanislaus, Merced, and Madera Counties

(The presentation is saved as a .rtf and loses the format of the power Point presentation and a flow diagram outlining the long-term process of the Waiver Program, but the main elements of the presentation are included)

East San Joaquin Water Quality Coalition

Landowner Signups as of November 1, 2005
1865 Landowner / operators
507,038 irrigated acres
Approx 1.05 million irrigated acres in coalition region

East San Joaquin
Water Quality Coalition

Initiated organizational efforts in October ’03
IRS Recently Approved as non-profit, 501 c5
10 member Board of Directors
Meet monthly to manage coalition affairs
East San Joaquin Water Quality Coalition

13 member Board of Directors
Parry Klassen, Board Chairman; Coalition for Urban Rural Environmental Stewardship
Julia Berry, Madera County Farm Bureau
Richard Gemperle, Gemperle Enterprises
Kent Johnson, Ag Production Co.
Bill McKinney, almond grower
Bruce Pace, A.L. Gilbert Co.
Diana Westmoreland Pedrozo, Merced County Farm Bureau
Alan Reynolds, Gallo Vineyards, Inc.
Wayne Zipser, Stanislaus Co. Farm Bureau

Ex-officio
Dennis Gudgel, Stanislaus County Agricultural Commissioner;
David Robinson, Merced County Agricultural Commissioner.
Bob Rolan, Madera County Agricultural Commissioner
Michael McElhiney, Natural Resource Conservation Service
East San Joaquin
Water Quality Coalition

Monitoring Program Team

Michael Johnson, UC Davis: manages monitoring program

Pacific Ecorisk Inc., Martinez, CA (water and sediment toxicity testing)
APPL Inc., Fresno, CA (pesticide analysis)
BSK Laboratories Inc., Fresno, CA (color, turbidity, Total Dissolved Solids, Total Organic Carbon, and E. coli. testing)

Oversight
ESJWQC Board of Directors

East San Joaquin Water Quality Coalition

2005 Dues

$50 per landowner/operator
$1 per acre irrigated land
Dues covers
13 monitoring sites
Reserves for TIE's (toxicity identification evaluation)
Operation of Coalition

East San Joaquin Water Quality Coalition
2005 Regional Monitoring

13 coalition-funded monitoring sites
Monitor July-September '05; two storm events
Still Assessing program 2006
Coordinate data sharing with irrigation districts

East San Joaquin Water Quality Coalition
Monitoring Program Objectives

Characterize discharge from irrigated agriculture in the Coalition region
Identify locations where water quality objectives are violated
Identify potential source(s) of the exceedances
Promote to landowners the implementation of management practices to eliminate water quality problems.
Water Monitoring Requirements
Water column
Toxicity testing
Water chemistry
organophosphate pesticides
Sediment toxicity test

Coalition contracted analytical Labs
Pacific EcoRisk Inc.; collection and toxicity testing
APPL Labs, pesticide testing
BSK Labs, drinking water constituents

All field sampling followed Quality Assurance Project Plan (QAPP)

Water Monitoring Requirements
Toxicity Testing
Species representing three trophic levels
Water flea (Ceriodaphnia dubia)
Fathead minnow Pimephales promelas).
Green algae (Selanastrum capricornutum),

Toxicity Identification Evaluation (TIE)
Performed in three phases to identify a cause(s),

After three phase TIE…
Sufficient information generally available to ID contaminant causing toxicity.
Not uncommon to complete TIE and be unable to identify a specific class of contaminant responsible for toxicity.
Then assigned "unknown toxicity"

Sediment Toxicity Testing
Pore water (water between sediment particles)

2005 Monitoring Sites

Bear Creek @ Kiby Rd
Cottonwood Creek @ Road 20
Duck Slough @ Pioneer Road
Highline Canal @ Hwy 99
Hilmar Drain @ Central Ave
Jones Drain @ Oakdale Road
Lone Willow Slough @ Madera Ave
Prairie Flower Drain @ Crows Landing Road
Ash Slough @ Avenue 21
Duck Slough @ Gurr Road
Highline Canal @ Lombardy Ave
Merced River @ Santa Fe
Dry Creek @ Willsford Road

Three Phase Approach: Implementation
Used if actionable toxicity or exceedance of state or federal standard detected at monitoring site

Phase 1 - Pesticides
1) Contact landowners with information
ID constituent (pesticide, nutrient, sediment, etc.)
ID potential lands contributing to runoff
ID potential crops constituent applied (or could have originated)
Plan for action: potential BMPs, time frames, resources to assist in adopting BMPs
Description of potential actions that local or state regulators could take if subsequent monitoring does not show mitigation of the toxicity.
2) Organize Outreach meetings
Inform landowners of monitoring results and information above

Three Phase Approach: Implementation
Phase II - Pesticides
Successive monitoring results show ongoing toxicity or no improvement in discharge levels

Continued landowner outreach
Show monitoring results; promote BMPs to mitigate the problem

2) Request implementation of a mandatory Product Stewardship Program
To County Agricultural Commissioners, the California Department of Pesticide Regulation and pesticide registrants and suppliers
Work with landowners and operators on BMPs that are specific to a product's use

Three Phase Approach: Implementation
Phase III - Pesticides
If no improvement in toxicity or pesticide levels, Coalition may recommend to:

CAC for localized permit conditions to be developed and implemented to prevent movement of the pesticide into local waterways.
DPR for product be considered for a formal Product Reevaluation
Approaches for BMPs
(Best Management Practices)
Goal: Create list of options

Application BMPs
Lower label rates
Mix and load properly
Calibrate equipment
New sprayer technology

Site BMPs (orchard)
Cover crops: native perennials, legumes
Grassy row centers during dormancy
Vegetative filter strips
Grassed waterways
Drainage management

Integrated Pest Management: Orchards
Determine need to dormant spray
Selection of dormant season pest management strategies
No dormant spray, in-season spray as needed
OP dormant applications with BMPs
Alternate year dormant applications: a 50% reduction?
Bt sprays at bloom
Spinosad + oil as dormant spray
Non-OP pesticides as dormant sprays (pyrethroids)
Pheromone mating disruption
www.ipm.ucdavis.edu : On-line calculator
Application BMPs

Managing Drift From Airblast Sprayers
Most drift comes from outside 2 rows
First/last passes through the orchard
Don't spray inside of row 1 or 2
Spray outside - inward on perimeter rows, slowing down to improve coverage.

Application BMPs
Evaluate aerial vs. ground spray
Establish setback zones (buffers near sensitive areas)
Use drift mitigation practices
Use proper mixing, loading and disposal practices

Structural BMPs
(Irrigation or storm runoff)
Basins for water & sediment run-off
Requires modification of drainage system to protect surface water

Irrigation Input BMPs
Irrigation scheduling
PAM / calcium in irrigation water

Structural BMPs
(Irrigation runoff)
Re-circulation systems (tailwater recovery)
Low-pressure drip or micro-sprinklers
Filter strips

Potential Practices
(need more research)
Let grass grow in drainage ditches

Circulate drain water through vegetated ditches or field areas
Circulate drain water through constructed wetlands

Diazinon supplemental label changes
No spraying within 48 hours of forecast rain
No sprays when orchard soil moisture at field capacity and/or rain forecast with potential for runoff
Do not apply within 100 feet upslope of irrigation ditch, drainage canal or water body
Leave vegetative filter strip/buffer of 10 feet between orchard if sensitive areas within 100 feet
When wind blowing, no outside spray of outer rows
No aerial applications

Synthetic Pyrethroids
and sediment toxicity
Common names
Bifenthrin
Cyfluthrin
Cyhalothrin
Cypermethrin
Deltamethrin
Fenpropathrin
Esfenvalerate
Permethrin
Tralomethrin
Zeta-cypermethrin

Enormous Task At Hand
Maintain accurate, cost effective monitoring programs
Identify and promote practices that reduce farm runoff in rivers
Orchard runoff from dormant sprays
Almonds, Peaches, Plums/Prunes
Irrigation runoff carrying pesticides/nutrients
Row, field crops (alfalfa, tomatoes, cotton)
Orchards
Promote adoption by growers /PCAs

What's Next?
Organize subwatershed meetings

Discuss potential BMPs to address toxicity / exceedances
Encourage implementation of BMPs

Watch mail for announcements

Future Activities

As required by the MRP, all growers living in watersheds that have experienced exceedances will receive a letter from the coalition indicating that there have been exceedances discovered and providing the nature of those exceedances. We are in the process of developing the list of names and addresses of the growers from the parcel numbers in the watersheds and the pesticide use reports. Meetings will be scheduled and all growers will be encouraged to attend. At the meetings, the ESJWQC will circulate the BMP survey(s) to growers so that we can inventory the management practices used. We are attaching a draft survey below that will be given to orchard growers, and we are in the final stages of developing surveys for additional crops.

There will be another series of meetings (Table 35) that will be general meetings not targeting specific watersheds. At these meetings, we will also circulate the surveys to gain an understanding of the management practices used across the coalition region.

Letter to be sent to growers in watersheds with exceedances is presented below.

In addition, to focus our management outreach efforts for *E. coli*, we have proposed a source identification study and are awaiting Regional Board concurrence on that proposal to move forward with the study design.

East San Joaquin Water Quality Coalition

1201 L Street
Modesto, CA 95354

Re: Notice of workshop to discuss exceedance of E coli standard at Duck Slough/Gurr road monitoring site; outline potential BMP solutions

January 15, 2005

Dear Landowner;

Analysis of water samples taken from Duck Slough at Gurr Road has determined that an exceedance of a State standard for E coli occurred on (dates).

The water sample was collected by the East San Joaquin Water Quality Coalition (Coalition) under its responsibilities in the Irrigated Lands Program of the California Water Resources Control Board.

This letter is to invite you to a workshop scheduled for 1 pm on January 22, 2006 at the Merced County Agricultural Commissioners office in Merced.

Workshop speakers will describe the nature of the E coli exceedance and possible causes. The Coalition is in the process of determining the types of management practices currently used in the Duck Slough watershed and potential new practices to help mitigate the source of E coli pollution.

Also highlighted at the meeting will be research being performed on BMPs to determine effectiveness in mitigating farm runoff in the Central Valley.

The attached map shows the sampling site location and waterway. Shaded farm properties are lands where runoff could potentially reach the waterway (based primarily on proximity). It is important for owners or operators of the shaded properties to attend this workshop.

Grower participationat these workshops and more importantly, adopting BMPs on lands determined as sources of farm runoff problems, are key success measures for the Coalition to comply with the Irrigated Lands program. Failure to solve water quality problems through watershed-wide efforts will eventually lead to individual permitting of each farm operation and field by the Water Board.

Thank You and we look forward to your participation in Coalition activities.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

East San Joaquin Water Quality Coalition

FARM SITE
Survey

DRAFT 12 05

Farm Site

1. Have you made a visual evaluation of the surrounding area and fields to assess the runoff potential (from irrigation or storm water) of a field prior to a pesticide spray application?

Yes	(3)
No	(1)

2. Prior to an application do you check weather conditions and ask questions such as “Is it too windy?” or “Will it rain later today or tomorrow”?

Yes	(3)
No	(1)

Questions 3-4 concern dormant spray applications. Answer if applicable.

3. Prior to applying winter dormant sprays, what condition is your orchard floor?

Vegetative cover	(3)
Some vegetation	(2)
No vegetation (disked)	(2)
No vegetation (not disked)	(1)

4. Do you contain runoff from your orchard(s) during winter storms and after dormant sprays, preventing runoff from entering nearby waterways?

Yes	(3)
No	(1)

5. What type(s) of practices are used to lessen storm runoff from fields into ditches, canals or streams that flow into nearby rivers.

Vegetative filter strips around edges	(3)
Grass row centers	(3)
Tailwater return system	(3)
None	(1)

6. In the past two years, have you practiced any mitigation measures (checking weather conditions, i.e. avoided spraying on windy days or when rainfall is imminent, checking droplet size/calibrating nozzles, maintaining setback zones) to reduce drift of pesticides to non-target areas?

Yes	(3)
No	(1)

7. Have you been informed of methods to reduce the potential of pesticides being carried into ditches, canals or streams that feed into nearby rivers?

Yes	(3)
No	(1)

Site Evaluation section total _____

Pest Management

1. What most influences your decision to select a pesticide or other pest management strategy in your field(s)?

Monitor pest situation; use appropriate treatment	(3)
Spray based on past history of pest problems	(2)
Spray according to calendar date	(1)

2. If you have an orchard near a sensitive waterway or with drainage to waterways, have you or your PCA considered alternative strategies to using diazinon or chlorpyrifos (Lorsban) in your spray program either during the dormant or growing season?

Considered & used when appropriate	(3)
Considered, but not too seriously	(2)
No consideration	(1)

3. Do you normally spot treat pest-infested areas or treat an entire field to prevent further infestation?

Decision based on many variables	(3)
Spot treat only	(2)
Treat whole field always	(1)

4. Have you received information or guidance in last two years on the different pest management options available to you?

Yes	(3)
No	(1)

Pest Management Strategies section total _____

Pesticide Mixing / Loading / Storage

1. What is the surface where pesticide or fertilizer mixing/loading takes place?

Concrete or asphalt pad that drains to a central sump	(3)
Concrete or asphalt pad	(2)
Field	(2)
Soil or gravel	(1)
Hard packed or paved road	(1)

2. What is the minimum distance between any pesticide or fertilizer mixing/loading area and any ditches, canals or streams that feed into nearby rivers?

Less than 20 feet	(1)
Between 20 and 100 feet	(2)
More than 100 feet	(3)

3. What is the minimum distance between any pesticide or fertilizer mixing/loading area and any deep well locations?

Less than 20 feet	(1)
Between 20 and 100 feet	(2)
More than 100 feet	(3)

4. Is the sprayer checked for cracked or broken hoses and is the drain plug in place prior to filling the tank?

Yes	(3)
No	(1)

5. Is the tank filled to overflowing?

Yes	(1)
No	(3)

6. How do you prevent tank overfilling?

Stop when it foams over	(1)
Keep a close watch	(2)
Use an air gap	(3)

7. Do you use a backflow valve on the fill tube?

Yes	(3)
No	(1)

8. During mixing and loading how full is the tank prior to the addition of chemicals?

One-third to one-half full	(3)
Two-thirds full	(2)
Full	(1)

9. Is someone present during pesticide or fertilizer mixing/loading operations to watch for spills and other mishaps and to take corrective action?

Present entire time	(3)
Present most of the time	(2)
Start filling, leave and return after set time	(1)

10. Are you and your employees aware of the necessary corrective action when a spill occurs?

Yes	(3)
No	(1)

11. Do you use a closed system when possible?

Yes	(3)
No	(1)

12. Do your pesticide and fertilizer storage areas have spill containment capability to protect from runoff into any nearby surface waters?

Yes	(3)
No	(1)

13. What type of floors are in your pesticide and fertilizer storage areas?

Impermeable surface with curbs (coated or sealed concrete is best)	(3)
Impermeable surface without curbs, no cracks	(2)
Impermeable surface with curbs, some cracks	(2)
Permeable surface	(1)

Mix / Load / Storage section total _____

Sprayer Equipment and Spraying

1. How often is spray equipment calibrated?

Prior to each application	(3)
Once a month	(2)
Once per year	(1)
Never	(0)

2. Are spray nozzles adjusted to match the crop canopy profile?

Yes	(3)
No	(1)

3. When spraying young orchards, are top nozzles shut off to minimize overspray and conserve materials?

Yes	(3)
No	(1)

4. Are nozzles used that provide the largest effective droplet size in order to minimize drift?

Yes	(3)
No	(1)

5. In the past two years, what type of sprayer(s) did you use for orchard or row crop application(s)?

Electronic controlled sprayer nozzles (e.g. Smart Sprayer)	(3)
Conventional Airblast	(2)
Aerial	(1)

Spray Equipment section total _____

Sprayer Cleanup and Container Disposal

1. How do you dispose of rinsate from your sprayer(s)?

Mix with water and reapply to field	(3)
Store in Hazardous Waste container	(3)
Field, not prone to runoff, that can be disked	(3)
Field, more than 150 feet from surface waters	(2)
Field, less than 150 feet from surface waters	(1)

2. Where do you clean spray application equipment?

On a mixing/loading pad	(3)
On application site (rinseate re-applied to field)	(3)
More than 300 feet from surface waters	(3)
More than 150 feet from surface waters	(2)
Less than 150 feet from surface waters	(1)

3. How do you handle empty pesticide containers?

Triple rinsed, taken to landfill or recycling handler	(3)
Triple rinsed, then put on burn pile	(2)
Put on burn pile	(1)

4. Do you clean up pesticide and fertilizer spills promptly?

Yes	(3)
No	(1)

Cleanup and Container Disposal section total _____

Table 35. Landowner/Grower outreach meetings scheduled for the coalition region during the winter of 2006.

Date (tentative)	Meeting Agenda/sample site Watershed	Location
February 2, 2006	ESJ presentation on monitoring results/orchard, row crop BMP review at member/outside grower meeting for ESJ sites at Hilmar Drain and Highway 99, Hilmar Drain @ Lombardy Ave., Mustang Creek @ East Ave.,	Turlock Irrigation District office, Turlock
Feb.15, 2006	ESJ presentation on monitoring results/orchard, row crop BMP review at member/outside grower meeting for ESJ sites at Ash Slough @ Avenue 21, Cottonwood Creek @ Road 20, Dry Creek@ Road 18.	Madera County Farm Bureau, Madera
February 1, 2006	ESJ presentation on monitoring results/orchard, row crop BMP review at member/outside grower meeting for ESJ sites at Bear Creek @ Kibby Road; Duck Slough at Pioneer road, Duck Slough @ Gurr Rd; Dutchman's Creek @ Gurr Rd.	Merced County Farm Bureau, Merced
February 2, 2006	ESJ presentation on monitoring results/orchard, row crop BMP review at member/outside grower meeting for ESJ sites at Bear Creek @ Kibby Road; Duck Slough at Pioneer road, Duck Slough @ Gurr Rd; Dutchman's Creek @ Gurr Rd.	American Legion Hall, Ballico

Exceedance, Communication, and Evaluation Reports

Until the publication of the August 15, 2005 version of the Regional Board MRP, there was no distinction between Exceedance and Communication Reports. Consequently, within the text of the following communications with the Regional Board, the terms Communication Report and Exceedance Report are used interchangeably until September 2005.

East San Joaquin Water Quality Coalition

1201 L Street
Modesto, CA 95354
www.esjcoalition.org

April 6, 2005

TO: William Croyle
Diana Messina
Irrigated Lands Conditional Waiver Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Sacramento, CA 95670-6114

FROM: Parry Klassen
Wayne Zipser
Michael Johnson

Re: Communication report on monitoring results for March 22 and 23, 2005

On March 22-23, 2005 water was collected at the ESJWQC monitoring sites during the second runoff event of the dormant season. Toxicity tests were completed on Friday March 27, 2005 and the results were communicated to us in full late on Tuesday March 29, 2005. Toxicity was found in water from samples collected at two sites and is being reported in this communication report.

Water from two sites was found to be toxic to *Selenastrum*; Merced River @ Santa Fe Drive and Lone Willow Slough @ Madera Ave. The number of algal cells from samples collected at these sites is provided below in Table 1. The formal data report from all sites has not been forwarded from the laboratory. An algal TIEs has been initiated for the Lone Willow Slough site due to the high reduction in the number of algal cells. The Merced River site had two samples collected, one as a duplicate QA sample. The duplicate sample did not experience any reduction in algal cell growth, and in fact was 17% higher. Consequently, we are in the process of retesting both the original and the duplicate sample to determine the reduction in the original sample is real or an artifact. Persistence sampling is being conducted for the Lone Willow Slough site and will be conducted for the Merced River site if the original sample continues to experience a reduction in cell growth during the retest.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

East San Joaquin Water Quality Coalition

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April 6, 2005

TO: William Croyle
Diana Messina
Irrigated Lands Conditional Waiver Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Sacramento, CA 95670-6114

FROM: Parry Klassen
Wayne Zipser
Michael Johnson

Re: Communication report on monitoring results for February 15, 2005

We received today the results of the water chemistry from the first runoff event collected on February 15, 2005. Exceedances of water quality objectives were found at Highline Canal @ Lombardy Ave and Dry Creek @ Wellsford Road. Those data are provided below in Table 1. The Dry Creek site was a QA site and a duplicate sample was collected. Both the original sample and the duplicate experienced the same water quality exceedances. No toxicity was detected in either sample during toxicity testing immediately after the runoff event. Although there are no water quality objectives for pyrethroids, concentrations are reported due to the high levels detected.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

Table 1.

StationCode	Analyte	Result (µg/l)	MDL	WQO
R1-DCAWR-004	Permethrin	0.436	0.009	NA
R1- DCAWR - 004	Lambda-cyhalothrin	0.378	0.001	NA
R1- DCAWR - 004	Esfenvalerate/Fenvalerate	0.335	0.002	NA
R1- DCAWR - 004	Cypermethrin	1.71	0.004	NA
R1- DCAWR - 001	Diazinon	0.473	0.000353	0.08
R1- DCAWR - 001	Chlorpyrifos	0.496	0.000259	0.02
R1- DCAWR - 004	Permethrin	0.400	0.009	NA
R1- DCAWR - 004	Lambda-cyhalothrin	0.359	0.001	NA
R1- DCAWR - 004	Esfenvalerate/Fenvalerate	0.330	0.002	NA
R1- DCAWR - 004	Cypermethrin	1.67	0.004	NA
R1- DCAWR - 001	Diazinon	0.478	0.000353	0.08
R1- DCAWR - 001	Chlorpyrifos	0.492	0.000259	0.02
R1-HCALA-024	Diazinon	0.098	0.000353	0.08

East San Joaquin Water Quality Coalition

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April 7, 2005

TO: William Croyle
Diana Messina
Irrigated Lands Conditional Waiver Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Sacramento, CA 95670-6114

FROM: Parry Klassen
Wayne Zipser
Michael Johnson

Re: Communication report on monitoring results for February 15, 2005

Upon review of the results of the water chemistry from the first runoff event collected on February 15, 2005, we would like to report an error in our communication report of April 6, 2005. In the April 6 communication report, we reported exceedances of water quality objectives from Highline Canal @ Lombardy Ave and Dry Creek @ Wellsford Road. During a review of the data, the samples reported as environmental samples from Dry Creek were actually matrix spike samples. The environmental samples from the Dry Creek site had no detections of any pesticide. The exceedance at the Highline Canal site is correct. A revised Table 1 is provided below. We can provide the original EDD from the laboratory if necessary.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

Table 1. Exceedances of water quality objectives from Rain Event #1.

StationCode	Analyte	Result (µg/l)	MDL	WQO
R1-HCALA-024	Diazinon	0.098	0.000353	0.08

East San Joaquin Water Quality Coalition

1201 L Street
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April 22, 2005

TO: William Croyle
Diana Messina
Irrigated Lands Conditional Waiver Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Sacramento, CA 95670-6114

FROM: Parry Klassen
Wayne Zipser
Michael Johnson

Re: Communication report on monitoring results for February 16, 2005

We recently received the following communication from the toxicity testing laboratory.

In reviewing the ESJWQC Rain Event 1 hard copy report, I noted that there appeared to be a sufficient difference between the Lab Control (1,800,000 cells/mL) and the R1-JDAOR-071 (1,290,000 cells/mL) sample that could (and by my judgment should) result in a significant difference between the treatments. I checked our email communications with you, and noted that the summary table that was sent to you on February 28 also indicated that the sample was not toxic. Upon reviewing the statistical analysis, I noted that the conclusion that the sample was not toxic was based on a comparison the R1-JDAOR-071 results to the incorrect Lab Control. The R1-JDAOR-071 sample was collected 2/16/05 and tested 2/17/05, but was compared to the Lab Control for samples collected 2/15/05 and tested 2/16/05. At this time it does not appear that there was a glitch in our statistical software, but rather a data cloning error by the scientist entering the data into our statistical software (i.e., they selected the wrong Lab Control for the statistical comparison apparently based on the sampling date rather than the testing date). This has not happened in the past, but we are amending our statistical analysis SOP to include further guidance on the use of cloned Lab Control data files so as to assure that the data is reviewed for this error in the future.

Please feel free to call me should you need further clarification regarding this issue.

Consequently, the sample at Jones Drain at Oakdale Road is now considered a positive sample for toxicity to *Selenastrum*. At this point, it is not possible to resample for persistence. However, the results for the second dormant sampling at that site conducted on March 16 indicated no toxicity to any test organism. We are working with the laboratory to eliminate the possibility of this oversight occurring in the future. We realize that good laboratory technique is

the cornerstone of a good monitoring program, and we are committed to maintaining a high quality monitoring program.

As a follow-up to the communication report of toxicity during rain event #2, we reported the following results:
Lab Control: 1,653,500 cells/mL
R2-MRSFD-024: 1,260,000 cells/ml (23.8% reduction compared to the Lab Control)
R2-MRSFD-025 (duplicate sample): 1,937,250 cells/mL (no significant difference from Lab Control)
R2-LWSMA-061: 492,000 cells/ml (70.2% reduction compared to the Lab Control).

We retested both the MRSFD-024 and -025 samples to determine if the results would be consistent. Those results are:
Lab Control: 1,470,000 cells/mL
R2-MRSFD-024: 972,000 cells/ml (no significant difference compared to the Lab Control)
R2-MRSFD-025 (duplicate sample): 997,000 cells/mL (no significant difference from Lab Control)

We considered this sample not to be toxic and did not pursue the retesting for persistence.

We initiated a TIE on the LWSMA sample and discussed with the lab sending a crew out for persistence sampling. The initial retesting of the sample for the TIE resulted in the following:
Lab Control: 803,000 cells/mL
LWSMG: 874,000 cells/mL (no significant difference from the Lab Control)

Consequently, there was no toxicity on the retest and the TIE could not be completed. There was no water at the Lone Willow Slough site (see attached picture) and we could not resample for persistence. As you can see in the picture, there is a standing puddle below the water level of the pipe, and mud at the right side of the picture upstream of the puddle. The original sample is still considered toxic, but we are unable to determine the cause of the toxicity.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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May 14, 2005

William Croyle
Diana Messina
Irrigated Lands Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Sacramento, CA 95670-6114

Dear Bill and Diana,
Late in the afternoon of May 13, we received notification from our toxicity testing laboratory that significant toxicity has been detected at two sites during the first irrigation season sampling event.

Samples collected at Highline Canal at Highway 99 and Bear Creek at Kibby Road both experienced what will be significant toxicity to *Ceriodaphnia*. Survival in the control was 95%; survival in the Highline Canal sample was 25% and survival in the Bear Creek sample was 5%, both at 48 hours into the test. Both tests will be completed to determine the total extent of the toxicity. As reflected in the recent TIC discussion, we are initiating TIEs immediately on these samples, and new samples will be collected within the next few days to determine persistence. We will keep you updated on the progress of the toxicity testing.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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May 18, 2005

William Croyle
Diana Messina
Irrigated Lands Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Sacramento, CA 95670-6114

Dear Bill and Diana,
Today we received notification from our toxicity testing laboratory that significant toxicity has been detected at an additional site during the first irrigation season sampling event.

Samples collected at Hilmar Drain at Central Avenue experienced significant toxicity to *Ceriodaphnia*. Survival in the control was 90%; survival in the sample was 70%. The reduction in survival was found at the end of the 4-day toxicity test. As reflected in the recent TIC discussion, we are not initiating a TIE on this sample, and a new sample will be collected tomorrow to determine persistence. We will keep you updated on the progress of the toxicity testing.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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May 30, 2005

William Croyle
Melissa Morris
Irrigated Lands Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Sacramento, CA 95670-6114

Dear Bill and Melissa,
On May 14, 2005, we submitted a communication report for toxicity to Ceriodaphnia experienced at Highline Canal at Highway 99, and Bear Creek at Kibby Road. Toxicity was sufficient to trigger TIEs at both sites. The results of those TIEs are provided below.

The survival results for the TIEs performed on the samples collected from Highline Canal (HCHNN) and Bear Creek (BCAKR) are presented below:

Controls:
Lab Control: 100%
Centrifuge Blank: 95%
C-8 SPE Blank: 90%
PBO Blank: 100%

HCHNN:
100% Baseline: 100% (not toxic)
100% Centrifugation: 100%
100% C-8 SPE: 100%
100% PBO: 100%
Conclusion: Toxicity observed during initial testing of the sample was not persistent.

BCAKR:
100% Baseline: 70%
100% Centrifugation: 100%
100% C-8 SPE: 95%
100% PBO: 100%
Conclusion: Toxicity only marginally present. PBO and centrifugation both removed the toxicity, indicating the presence of a metabolically activated toxicant which was associated with the particulate fraction of the sample.

We resampled both locations and the Hilmar Drain at Central Avenue site (reported in the May 18, 2005 Communication Report) for persistence in the toxicity. Those data are:

Control = 100%
04-BCAKR-900 = 100%
04-HDACA-901 = 95%
04-HCHNN-902 = 0%

These data indicate that the toxicity was persistent at the Highline Canal site, although as reported above, the toxicity from the first test was not persistent from the time of collection until the initiation of the TIE test, and the results from the TIE are inconclusive.

We will be requesting the Pesticide Use Reports from all three locations to determine the applications in the area in the time period immediately prior to the testing. However, those reports are not submitted to the County Agricultural Commissioners until June 10, 2005, and it will at least a few months for us to receive those data.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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Wayne Zipser
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June 12, 2005

William Croyle
Melissa Morris
Irrigated Lands Program
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Sacramento, CA 95670-6114

Dear Bill and Melissa,
We submitted a communication report on May 14, 2005 indicating that significant toxicity had been detected in samples collected at Highline Canal at Highway 99 and Bear Creek at Kibby Road. TIEs performed on the samples indicated that a metabolically activated pesticide was responsible for the toxicity at the Bear Creek site, and the results of the TIE on the Highline Canal site were inconclusive.

On Friday, June 10, 2005 we received the results of the water chemistry. There were no detects of any of the analytes at any site. We analyzed for chlorpyrifos and diazinon and consequently, the metabolically activated pesticide implicated as the toxic agent in the Bear Creek sample is neither of the two.

The pesticide use reports have just been turned in to the county Agriculture Commissioner and will not be available to us for several weeks. We will continue to pursue the cause of the toxicity and will update you when we have additional information.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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Wayne Zipser
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June 17, 2005

William Croyle
Melissa Morris
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Sacramento, CA 95670-6114

Dear Bill and Melissa,

During the May irrigation season sampling event, sediment was collected and tested for toxicity. The results were transmitted to us from the toxicity-testing laboratory on June 16, 2005. Statistically significant reductions in survival were seen at two locations, Lone Willow Slough at Madera Avenue, and the Highline Canal at Lombardy Avenue. Statistically significant reductions in growth were seen at; Cottonwood Creek at Road 20, Lone Willow Slough at Madera Avenue, Duck Slough at Gurr Road, Highline Canal at Lombardy Avenue, Hilmar Drain at Central Avenue, and Dry Creek at Wellsford Road. All data are provided in the table below.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

ESJWQC Event 04 Toxicity Testing Summary

Site ID	Species	% Survival	Mean Weight (mg)	Toxicity (Y/N)	Notes
03-HA-HSControl-01	*Hyalella azteca*	96.3	0.17	N/A	Testing initiated 5/16/05
04-CCART-018	*Hyalella azteca*	92.5	**0.13**	**Y**	
04-CCART-019	*Hyalella azteca*	96.3	**0.14**	**Y**	
04-LWSMA-026	*Hyalella azteca*	**52.5**	**0.06**	**Y**	
04-DSAGR-040	*Hyalella azteca*	93.8	**0.14**	**Y**	
04-BCAKR-054	*Hyalella azteca*	93.8	0.16	N	
04-MRSFD-061	*Hyalella azteca*	95	0.19	N	
04-HCALR-068	*Hyalella azteca*	**71.3**	**0.10**	**Y**	
04-PFDCL-075	*Hyalella azteca*	87.5	0.15	N	
04-HDACA-082	*Hyalella azteca*	100	**0.09**	**Y**	
04-HCHNN-089	*Hyalella azteca*	86.3	0.15	N	
04-JDAOR-096	*Hyalella azteca*	96.3	0.16	N	
04-DCAWR-103	*Hyalella azteca*	93.8	**0.14**	**Y**	

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July 18, 2005

William Croyle
Melissa Morris
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Melissa,

During the July irrigation season sampling event, water collected at Lone Willow Slough at Madera Avenue was toxic to *Ceriodaphnia*. Mortality was 95% within 24 hours of the initiation of testing. We have initiated a dilution series and a TIE on the original water sample collected at the site. We will also collect a persistence sample from the site. We will update you on the results of these tests as they become available.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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July 20, 2005

William Croyle
Melissa Morris
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Sacramento, CA 95670-6114

Dear Bill and Melissa,

During the July irrigation season sampling event, a statistically significant reduction in *Selenastrum* growth was observed in water collected at Duck Slough at Pioneer Road. The cell count in the sample was 1,320,000 cells/ml compared to 1,720,000 cells/ml in the control. The reduction in growth was 23%, which does not trigger a TIE. A persistence sample will be collected.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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July 29, 2005

William Croyle
Melissa Morris
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Sacramento, CA 95670-6114

Dear Bill and Melissa,

We received the results of the water chemistry analyses for the last irrigation season monitoring event. Chlorpyrifos was detected in the sample collected from Duck Slough at Pioneer Road at a level of 0.026 µg/L, slightly above the acute standard of 0.020 µg/L. No toxicity was observed at that site for *Ceriodaphnia* or fathead minnows. The amount of chlorpyrifos found in the sample was approximately 0.68 toxic units, well below the LC_{50} for *Ceriodaphnia*. We will request the pesticide use reports for the watershed and attempt to locate the source of the chlorpyrifos.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

East San Joaquin Water Quality Coalition
1201 L Street
Modesto, CA 95354
www.esjcoalition.org

August 8, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana,

We received the results of the toxicity testing of the persistence sample from Duck Slough at Pioneer Road. No toxicity was observed in the sample indicating that the original toxicity was not persistent.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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August 18, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Re: Communication Report on monitoring results for irrigation samples collected on July 31, August 31, and September 29, 2004, runoff events collected on February 15 and March 21 and 22, 2005 and irrigation samples collected on May 10 and 11, and June 14 and 15, 2005.

Dear Bill and Dana:

As a result of difficulties between contract laboratories, we did not receive any data for physical parameters or E. coli for sampling events from February through June 2005. We recently received those data and are reporting the results. We have included the results from the irrigation season 2004 because the data we originally reported had not been quality assurance evaluated. Those data are now complete, but no changes have occurred from the original report.

We base our report of exceedance of *E. coli* on the 235 MPN/100 ml standard for water bodies with a REC-1 beneficial use designation. Although none of the water bodies we sample have been assigned beneficial uses, we are using the tributary rule to assign the REC-1 standard to the water bodies sampled during the monitoring program. The standard for pH is taken from the Basin Plan. We will no longer include TDS as an exceedance as it appears that there are no relevant water quality objectives for TDS for the coalition region.

During the July (Irr-1-2004), August (Irr-2-2004), and September (Irr-2-2004) 2004 irrigation season sampling event, water collected at Duck Slough @ Gurr Rd, August Rd. drain @ Crows Landing Bridge and Ash Slough @ Ave. 21 had exceedances of water quality objectives. Those data are provided below in Table 1.

During runoff events in February (R-1-2005) and March (R-2-2005) 2005, water collected from Duck Slough @ Gurr Rd., Highline Canal @ Lombardy Ave., Bear Creek @ Kiby Rd., Cottonwood Creek @ Rd. 20, Hilmar Drain @ Central Ave., Jones Drain @ Oakdale Rd., Lone Willow Slough @ Madera Ave., Prairie Flower Drain @ Crows Landing Rd., and Dry Creek @ Willsford Rd. had exceedances of water quality objectives. Those data are provided below in Table 1.

During the irrigation season in May (Irr-1-2005) and June (Irr-2-2005) 2005, water collected from Duck Slough @ Gurr Rd., Highline Canal @ Lombardy Ave., Bear Creek @ Kiby Rd., Cottonwood Creek @ Rd. 20, Duck Slough @ Pioneer Rd., Hilmar Drain @ Central Ave., Jones Drain @ Oakdale Rd., Prairie Flower Drain @ Crows Landing, and Dry Creek @

Wellsford Rd. had exceedances of water quality objectives. Those data are provided below in Table 1.

At this point, we do not plan to take any further action concerning these exceedances. Irrigated agriculture is not responsible for *E. coli* exceedances and these are likely a function of dairy or septic discharges to the drain or stream system. As we mentioned in our Annual Monitoring Report, the September 2004 exceedance for pH was only in the sample at the laboratory. Field measurements did not result in an exceedance. For the March sample at the Highline Canal at Lombardy Ave, the field measurement of pH was 8.56, slightly above the water quality objective of 8.5. However, we will not at this time attempt to identify sources or recommend implementation of BMPs for the pH exceedance. It is not clear how finding sources of exceedances of pH can be accomplished. As we continue to monitor, if we consistently measure pH at levels above 8.5, we will look further at the redox chemistry of the water and attempt to determine the cause of the exceedance.

We also received the following information from the laboratory indicating that there was a minor holding time exceedance during the first rain event analysis for color and turbidity. The original and duplicate samples for the Dry Creek @ Wellsford Road site were analyzed for color and turbidity about an hour past the 48 hour holding time requirement. As indicated below by the laboratory, there was no indication that this exceedance of the holding time caused any difficulties with the analysis, and there are no water quality objectives for color or turbidity for these water bodies since the normal turbidity is unknown.

RE: East San Joaquin Water Quality Coalition – Rain Event #R1
Flagged "Holding Times" for report # 2005021186 for Color and Turbidity Tests

Dear Mr. Clark:

Please note that there were slight analytical holding times issues associated with the analysis for Color and Turbidity on two samples from this sampling set. Samples DCAWR-007 and DCAWR-008 were analyzed ~one hour past the 48 hour hold time referenced by the method. This exceedance should have minimal effects on data quality as is evident by the precision in values between this parent and duplicate samples.

Please give me a call or email if you need any additional information.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

Table 1. Results of physical parameters and E. coli testing for sampling events in the irrigation season 2004, dormant season 2005, and the May and June 2005 irrigation samples.

Event	Sample	Date Sampled	Analyte	Result	Units	WQO	Units
Irr-1-2004							
	01-ARDCL-008	7-31-04	E. coli	300	MPN/100 ml	235	MPN/100 ml
	01-DSAGR-023	7-31-04	E. coli	350	MPN/100 ml	235	MPN/100 ml
	01-DSAGR-037	7-31-04	E. coli	1600	MPN/100 ml	235	MPN/100 ml
Irr-2-2004						235	
	02-ARDCL-003	8-31-04	E. coli	300	MPN/100 ml	235	MPN/100 ml
	02-DCAGR-025	8-31-04	E. coli	1600	MPN/100 ml	235	MPN/100 ml
Irr-3-2004							
	03-ARDCL-002	9-29-04	E. coli	240	MPN/100 ml	235	MPN/100 ml
	03-DCAGR-020	9-29-04	E. coli	500	MPN/100 ml	235	MPN/100 ml
	03-ARDCL-004	9-29-04	pH	9.0	$-\log[H^+]$	6.5-8.5	$-\log[H^+]$
R-1-2005							
	R1-HDACA-075	2-15-05	E. coli	240	MPN/100 ml	235	MPN/100 ml
	R1-DSAGR-033	2-16-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
	R1-CCART-051	2-16-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
	R1-LWSMA-057	2-16-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
	R1-JDAOR-069	2-16-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
R-2-2005							
	R2-DSAGR-035	3-21-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
	R2-CCART-053	3-21-05	E. coli	1600	MPN/100 ml	235	MPN/100 ml
	R2-LWSMA-059	3-21-05	E. coli	900	MPN/100 ml	235	MPN/100 ml
	R2-DSAPR-065	3-21-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
	R2-BCAKR-089	3-21-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
	R2-HCALA-028	3-21-05	pH	8.8	$-\log[H^+]$	6.5-8.5	$-\log[H^+]$
	R2-PFDCL-047	3-22-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
	R2-JDAOR-071	3-22-05	E. coli	300	MPN/100 ml	235	MPN/100 ml
	R2-HDALA-077	3-22-05	E. coli	900	MPN/100 ml	235	MPN/100 ml
	R2-DCAWR-004	3-22-05	E. coli	900	MPN/100 ml	235	MPN/100 ml
Irr-1-2005							
	04-CCART-011	5-10-05	E. coli	540	MPN/100 ml	235	MPN/100 ml
	04-DSAGR-037	5-10-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
	04-DSAPR-044	5-10-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
	04-BCAKR-051	5-10-05	E. coli	280	MPN/100 ml	235	MPN/100 ml
	04-HCALA-065	5-10-05	E. coli	240	MPN/100 ml	235	MPN/100 ml
	04-PFDCL-072	5-11-05	E. coli	500	MPN/100 ml	235	MPN/100 ml
	04-HDACA-079	5-11-05	E. coli	1600	MPN/100 ml	235	MPN/100 ml
	04-JDAOR-093	5-11-05	E. coli	>1600	MPN/100 ml	235	MPN/100 ml
Irr-2-2005							
	05-DSAGR-022	6-14-05	E. coli	300	MPN/100 ml	235	MPN/100 ml
	05-HDACA-069	6-15-05	E. coli	500	MPN/100 ml	235	MPN/100 ml
	05-DCAWR-087	6-15-05	E. coli	240	MPN/100 ml	235	MPN/100 ml
	05-PFDCL-063	6-15-05	E. coli	300	MPN/100 ml	235	MPN/100 ml

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August 22, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

Late this afternoon we received notification from our toxicity testing laboratory that significant toxicity to *Ceriodaphnia* was found at the Jones Drain @ Oakdale Road site. Survival in the control was 100% and survival in the sample was 40% at the end of the 96 hour test. We are initiating a dilution series test and a TIE immediately on the sample, and a new sample will be collected within the next two days. We will keep you updated on the progress of the toxicity testing and the TIE results.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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Wayne Zipser
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September 6, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

On August 22, 2005 we sent a report that we found significant toxicity to *Ceriodaphnia* at the Jones Drain @ Oakdale Road site. Survival in the control was 100% and survival in the sample was 40% at the end of the 96 hour test. We initiated a dilution series test and a TIE on the sample within 24 hours after completion of the original test, and a new sample was collected within 24 hours.

The results of the dilution series and the TIE are that the toxicity was not persistent and consequently, the results of the tests are inconclusive. We cannot determine the cause of the toxicity at that site. We are still awaiting the results of the water chemistry analyses, but with a small suite of compounds to test, we do not anticipate finding the cause of the toxicity. The testing of the follow-up sample resulted in no toxicity.

At this point, we will obtain all of the PURs for the watershed upstream of the sample location. We will not be able to target specific chemicals, but will instead determine the location of all applications within the watershed. We will then eliminate any applications of chemicals that we do test for but did not detect and target our outreach appropriately.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

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September 8, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

On August 18, 2005 we reported several exceedances of *E. coli* standards in our sampling program from the past several months. We also reported at that time that the *E. coli* is not a problem generated by irrigated agriculture and we would no longer report these exceedances. However, the recent communication received from Kyle Wooldridge and Dana have brought to our attention that irrigated pasture could be a source of coliforms to surface waters in the coalition region. Consequently, we will continue to report *E. coli* exceedances to the Regional Board, and are currently investigating the potential sources of the coliforms present in the water collected during sampling events over the last year. We expect to have those analyses done relatively quickly.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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September 11, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

The East San Joaquin Water Quality Coalition is requesting to amend their MRP Plan and QAPP for sediment toxicity analytical procedure using *Hyalella azteca.* The amendment consists of a method modification to EPA-600-R-94-024 that foregoes the growth endpoint described in the EPA procedure. The mortality endpoint will still be utilized and remains to be at this time the most effective endpoint for determination of toxicity to the species *Hyalella azteca*. All other procedures that for sediment toxicity testing that are utilized for the Coalition program will remain consistent with the procedures described in EPA-600-R-94-024. The Coalition will resume the growth endpoint procedure at any time if requested by senior staff at the Central Valley Regional Water Quality Control Board.

We are currently revising our MRP and QAPP and the revised documents will reflect the amendment requested above.

Let us know if further explanation or documentation is necessary.

Parry Klassen
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September 16, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

We received yesterday afternoon the results of the water chemistry analyses from the irrigation sampling conducted on August 16, 2005. There were no exceedances of any water quality objectives at any site. Earlier, we reported toxicity at the Jones Drain at Oakdale road site in the original toxicity test, but the results of the TIEs and the dilution series indicated no toxicity. At that point, we reported that the results were inconclusive and that we would wait until the results of the water chemistry were available.

At this point, we will obtain all of the PURs for the watershed upstream of the sample location. We will not be able to target specific chemicals, but will instead determine the location of all applications within the watershed. We will then eliminate any applications of chemicals that we do test for but did not detect and target our outreach appropriately. However, we will not treat the positive toxicity test as an exceedance for the purposes of implementing BMPs. Instead, we will continue to monitor the site to determine if we continue to obtain "false positive" results. A series of false positive results would be approached as an exceedance and will result in more effort being applied to determine the cause.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
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September 19, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana,

During the July irrigation sampling event, the East San Joaquin Water Quality Coalition collected sediment for toxicity testing. Due to an oversight, the results of those tests were not reported when they were delivered to the coalition. Significant toxicity was detected at four sites. Reduced survival was found at Duck Slough at Gurr Road, and reduced growth was found at the same site, and Highline Canal at Lombardy Road, Highline Canal at Highway 99, and Prairie Flower Drain at Crows Landing Road. The results of all tests are provided in Table 1 below. The ESJWQC has requested that the growth endpoint be eliminated from the reporting requirements. However, because the endpoint was utilized during the period when the testing was performed, the test results are being reported.

We apologize for the oversight in the reporting of the results. We have instituted measures to insure that all future results will be reported as soon as they arrive from the laboratory. We are collecting sediment during the current sampling event taking place this week. Those results will be reported as soon as they are available. We are requesting the pesticide use reports for the Duck Slough watershed and will evaluate pesticide use during the period prior to sampling. We are also evaluating pesticide use in all watersheds that experienced sediment toxicity during the first irrigation event.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

ESJWQC Event 06 Sediment Toxicity Testing Summary

Site ID	Species	% Survival	Mean Weight (mg)	Toxicity (Y/N)	Notes
03-HA-HSControl-01	*Hyalella azteca*	91.3	0.08	N/A	
06-CCART-007	*Hyalella azteca*	93.8	0.09	N	
06-LWSMA-014	*Hyalella azteca*	88.8	0.10	N	
06-LWSMA-015	*Hyalella azteca*	92.5	0.09	N	
06-ASATA-022	*Hyalella azteca*	93.8	0.08	N	
06-DSAGR-029	*Hyalella azteca*	**58.8**	**0.02**	**Y**	
06-BCAKR-043	*Hyalella azteca*	95	0.06	N	
06-JDAOR-085	*Hyalella azteca*	93.8	0.07	N	
03-HA-HSControl-02	*Hyalella azteca*	96.3	0.10	N/A	
06-MRSFD-050	*Hyalella azteca*	91.3	0.09	N	
06-HCALR-057	*Hyalella azteca*	92.5	**0.07**	**Y**	
06-PFDCL-064	*Hyalella azteca*	91.3	**0.07**	**Y**	
06-HDACA-071	*Hyalella azteca*	96.3	0.10	N	
06-HCHNN-078	*Hyalella azteca*	91.3	**0.08**	**Y**	
06-DCAWR-92	*Hyalella azteca*	91.3	0.09	N	

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September 26, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

Thank you for your correspondence of September 22, 2005 regarding the exceedance and communication reports for the Duck Slough @ Gurr Road sediment toxicity exceedance. In response to your question about the sampling date, the sediment was collected on July 12, 2005, and toxicity testing was initiated on July 17, 2005. We will be sure to include the sampling date on all exceedance reports in the future.

At this time, we are submitting the formal communication report for the Duck Slough @ Gurr Road exceedance.

1. Follow-up monitoring and analyses conducted.
In accordance with the MRP, no immediate follow-up sampling was conducted. Sediment samples were collected on September 20, 2005 and were tested for toxicity. The results of that test indicated no toxicity. No chemical analyses were conducted and it is not known if the cause of the toxicity was from an organic or inorganic compound.

2. Actions taken to identify the source of the exceedance.

3. Complete analytical results
Original toxicity results for the Hyaella tests are provided as Table 3-1.

4. Time schedule to identify and implement the Management Practice Effectiveness evaluation.
The time schedule is:

Action	Anticipated Date
Obtain Pesticide Use Reports	February 2006
Identify potential sources	March 2006
Perform Management Practices Survey	June 2006
Implement outreach/BMP education	July 2006

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

Table 3-1. Original sediment toxicity data from the laboratory report.

Table 8. Effects of ESJWQC sediments on *Hyalella azteca* survival and growth.		
Sample ID	Mean % Survival	Growth (mean dry wt, mg)
Lab Control 1	91.2	0.08
06-CCART-007	93.8	0.09
06-LWSMA-014	88.8	0.10
06-ASATA-022	93.8	0.08
06-DSAGR-029*	**58.8***	0.02
06-BCAKR-043	95	0.06
06-JDAOR-085	93.8	0.07
Lab Control 2	96.2	0.10
06-MRSFD-050	91.2	0.08
06-HCALR-057*	92.5	**0.07***
06-PFDCL-064*	91.2	**0.07***
06-HDACA-071	96.2	0.10
06-HCHNN-078	91.2	0.08
06-DCAWR-092	91.2	0.09

* - Significantly less than the Lab Control treatment response at $p < 0.05$.

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October 3, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:
In response to your email of September 27, 2005, we have reviewed our physical parameter data and wish to report exceedances of Electrical Conductivity (EC) (Table 1), pH (Table 2), and Total Dissolved Solids (TDS) (Table 3) over the last year. We have been so focused on pesticide and toxicity exceedances that we overlooked the physical parameter data. Also, we have received the TDS data only for the storm season and the first two months of the 2005 irrigation season and are reporting exceedances for those data.

Exceedances of the pH standard have occurred primarily with field-collected data. With one exception, pH measurements from the laboratory have not been outside the 6.5-8.5 range specified in the Basin Plan. We do not yet have pH data from the laboratory for the July-September samples and will update our Exceedance Report when those data arrive.

We will file Communication Reports on these exceedances at a later date.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

Table 1. EC exceedances based on the EC standard of 900 µS/cm.

Site Code	Date	EC (µS/cm)
HDACA	15/Feb/2005	1102
HDACA	22/Mar/2005	1157
HDACA	19/May/2005	1214
HDACA	11/May/2005	1354
PFDCL	15/Jun/2005	1705
PFDCL	13/Jul/2005	1723
PFDCL	17/Aug/2005	1779
PFDCL	15/Feb/2005	2561
PFDCL	22/Mar/2005	2568
PFDCL	11/May/2005	3168

HDACA – Hilmar Drain @ Central Avenue; PFDCL – Prairie Flower Drain @ Crows Landing Road

Table 2. pH exceedances for the ESJ coalition region for the storm season and the irrigation season 2005.

Site Code	Date	pH
DCAWR	11/May/2005	6.26[1]
LWSMA	14/Jun/2005	6.34[2]
MRSFD	17/Aug/2005	6.38
HCALR	17/Aug/2005	6.46
DCARE	16/Aug/2005	6.48
HCALR	21/Mar/2005	8.56[5]
JDAOR	22/Mar/2005	8.58[4]
DCAWR	22/Mar/2005	8.96[3]
DCAWR	17/Aug/2005	9.18

[1]Laboratory pH = 7.8
[2]Laboratory pH = 7.1
[3]Laboratory pH = 8.0
[4]Laboratory pH = 7.7
[5]Laboratory pH = 8.8

DCAWR – Dry Creek @ Wellsford Road; LWSMA – Lone Willow Slough @ Madera Ave; MRSFD – Merced River @ Sante Fe Drive; HCALR – Highline Canal @ Lombardy Road; DCARE – Dry Creek @ Road Eighteen; JDAOR – Jones Drain @ Oakdale Road

Table 3. TDS exceedances for the ESJ coalition region for the storm season based on a TDS standard of 450 mg/L. Only samples collected during the dormant season sampling and May and June 2005 are included in the table. Exceedances during the 2004 Irrigation season have been reported in the April 1, 2005 Annual Monitoring Report.

Site Code	Date	Total Dissolved Solids (mg/L)
PFDCL	15/Feb/2005	1600
HDACA	15/Feb /2005	740
PFDCL	22/Mar/2005	1600
HDALA	22/Mar /2005	760
HDACA	11/May/2005	740
PFDCL	11/May/2005	1600
HDACA	15/Jun/2005	720
PFDCL	15/Jun/2005	1300

HDACA – Hilmar Drain @ Central Avenue; PFDCL – Prairie Flower Drain @ Crows Landing Road

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October 3, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

Thank you for your correspondence of September 22, 2005 regarding the exceedance and communication reports for the Jones Drain at Oakdale Road toxicity exceedance. In response to your question about the sampling date, the water was collected on August 17, 2005, and toxicity testing was initiated on August 18, 2005. We will be sure to include the sampling date on all exceedance reports in the future.

At this time, we are submitting the formal communication report for the Jones Drain exceedance.

1. Follow-up monitoring and analyses conducted.

After receiving the report of significant toxicity on August 22, 2005, we initiated a dilution series test and a Toxicity Identification Evaluation test on August 22. No toxicity was detected in either the dilution series or the TIE and the results were considered inconclusive. The results of those tests are provided in Tables 1-1 (TIE) and 1-2 (dilution series). We collected a persistence sample on August 24, 2005. No toxicity was detected in the persistence sample (Table 1-3). Analytical chemistry was completed with no detection of any of the 6 analytes for which we test (see attached Excel spread sheet and Table 1-4 for a summary).

2. Actions taken to identify the source of the exceedance.

As outlined in the MRP submitted April 1, 2004, we are requesting the Pesticide Use Reports from the county Agricultural Commissioner. All reports from the 2 weeks prior to the sampling date will be obtained. We are unable to determine when the PURs will be made available to the ESJWQC although we anticipate receiving those data by February 2006. Once obtained, we will determine which parcels received applications of chemicals not included in the list of analytes. We will then establish the solubility, proximity to surface water, and the potential for transport to the Jones Drain. We will obtain any information on toxicity available through the use of appropriate toxicity databases. After examining those data, we will make an evaluation of the parcels from which the exceedance may have originated.

3. Complete analytical results

Complete water chemistry analytical results are provided in the Excel table attached to the Communication report. All QA data are included in the file. Complete toxicity results are provided as Tables 1-1 and 1-2. Original toxicity results for the Ceriodaphnia tests are provided as Table 3-1.

4. Time schedule to identify and implement the Management Practice Effectiveness evaluation.
The time schedule is:

Action	Anticipated Date
Obtain Pesticide Use Reports	February 2006
Identify potential sources	March 2006
Perform Management Practices Survey	June 2006
Implement outreach/BMP education	July 2006

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

Table 1-1.

Sample/Treatment ID	Treatment	Species	% Survival	Toxicity (Y/N	
07-CD-LWControl-01	Lab water control	*Ceriodaphnia dubia*	100	N/A	No blank interference was present in any of the TIE treatments. The toxicity observed during the original testing of this sample was not ersistent in the 100% Baseline sample. Therefore, as the toxicity was not persistent in the TIE, the TIE is inconclusive as to the cause of toxicity in the testing initiated 8/18/05.
07-CD-TIE-Blank-01	Centrifugation blank	*Ceriodaphnia dubia*	100	N	
07-CD-TIE-Blank-02	Centrifugation +C8SPE blank	*Ceriodaphnia dubia*	100	N	
07-CD-TIE-Blank-03	PBO blank	*Ceriodaphnia dubia*	100	N	
07-535XJDAOR-GR	100% Baseline sample	*Ceriodaphnia dubia*	100	N	
07-535XJDAOR-GR	100% Centrifuged sample	*Ceriodaphnia dubia*	100	N	
07-535XJDAOR-GR	100% Centrifuged sample+C8SPE	*Ceriodaphnia dubia*	100	N	
07-535XJDAOR-GR	100% Sample + PBO	*Ceriodaphnia dubia*	100	N	

Table 1-2.

Sample/Treatment ID	Species	Concentration	% Survival	Toxicity (Y/N)	Notes
07-CD-LWControl-01	*Ceriodaphnia dubia*	Control	95	N/A	The toxicity observed for testing initiated on 8/18//05 was not persistent.
07-535XJDAOR-GR	*Ceriodaphnia dubia*	6.25%	100	N	
07-535XJDAOR-GR	*Ceriodaphnia dubia*	12.5%	100	N	
07-535XJDAOR-GR	*Ceriodaphnia dubia*	25%	95	N	
07-535XJDAOR-GR	*Ceriodaphnia dubia*	50%	100	N	
07-535XJDAOR-GR	*Ceriodaphnia dubia*	100%	100	N	

Table 1-3.

Sample/Treatment ID	Species	% Survival	Toxicity (Y/N)
07-CD-LWControl-01	*Ceriodaphnia dubia*	95	N/A
07-535XJDAOR-GR	*Ceriodaphnia dubia*	90	N

Table 1-4.

StationCode	SampleDate	AnalysisDate	AnalyteName	Units	Result	ResultQualCode
07-535XJDAOR-GR	17/Aug/2005	25/Aug/2005	Chlorpyrifos	µg/L	-0.00259	ND
07-535XJDAOR-GR	17/Aug/2005	27/Aug/2005	Cypermethrin	µg/L	-0.004	ND
07-535XJDAOR-GR	17/Aug/2005	25/Aug/2005	Diazinon	µg/L	-0.00353	ND
07-535XJDAOR-GR	17/Aug/2005	27/Aug/2005	Esfenvalerate/Fenvalerate	µg/L	-0.002	ND
07-535XJDAOR-GR	17/Aug/2005	27/Aug/2005	Lambda(Cyhalothrin)	µg/L	-0.001	ND
07-535XJDAOR-GR	17/Aug/2005	27/Aug/2005	Permethrin	µg/L	-0.009	ND

Table 3-1.

Site ID	Species	% Survival	Toxicity (Y/N)	Notes
07-CD-LWControl-01	*Ceriodaphnia dubia*	100	N/A	
07-545XCCART-GR	*Ceriodaphnia dubia*	100	N	
07-545XASAAT-GR	*Ceriodaphnia dubia*	95	N	
07-535XDSAGR-GR	*Ceriodaphnia dubia*	100	N	
07-535XDSAPR-GR	*Ceriodaphnia dubia*	95	N	
07-535XBCAKR-GR	*Ceriodaphnia dubia*	100	N/A	
07-CD-LWControl-02	*Ceriodaphnia dubia*	90	N/A	
07-535XHDACA-GR	*Ceriodaphnia dubia*	100	N	
07-535XHDACA-FD	*Ceriodaphnia dubia*	100	N	Field Duplicate. RPD = 0%
07-545XDCARE-GR	*Ceriodaphnia dubia*	100	N	
07-CD-LWControl-03	*Ceriodaphnia dubia*	100	N/A	
07-535XMRSFD-GR	*Ceriodaphnia dubia*	100	N	
07-535XHCALR-GR	*Ceriodaphnia dubia*	100	N	
07-535XPFDCL-GR	*Ceriodaphnia dubia*	100	N	
07-CD-LWControl-04	*Ceriodaphnia dubia*	100	N/A	
07-535XHCHNN-GR	*Ceriodaphnia dubia*	100	N	
07-535XJDAOR-GR	*Ceriodaphnia dubia*	**40**	**Y**	
07-535XDCAWR-GR	*Ceriodaphnia dubia*	100	N	

Table 1-1. TIE results.

Sample/Treatment ID	Treatment	Species	% Survival	Toxicity (Y/N	
07-CD-LWControl-01	Lab water control	*Ceriodaphnia dubia*	100	N/A	No blank interference
07-CD-TIE-Blank-01	Centrifugation blank	*Ceriodaphnia dubia*	100	N	was present in any of
07-CD-TIE-Blank-02	Centrifugation +C8SPE blank	*Ceriodaphnia dubia*	100	N	the TIE treatments. The toxicity observed during
07-CD-TIE-Blank-03	PBO blank	*Ceriodaphnia dubia*	100	N	the original testing of
07-535XJDAOR-GR	100% Baseline sample	*Ceriodaphnia dubia*	100	N	this sample was not
07-535XJDAOR-GR	100% Centrifuged sample	*Ceriodaphnia dubia*	100	N	ersistent in the 100% Baseline sample.
07-535XJDAOR-GR	100% Centrifuged sample+C8SPE	*Ceriodaphnia dubia*	100	N	Therefore, as the toxicity was not
07-535XJDAOR-GR	100% Sample + PBO	*Ceriodaphnia dubia*	100	N	persistent in the TIE, the TIE is inconclusive as to the cause of toxicity in the testing initiated 8/18/05.

Table 1-2. Dilution series results.

Sample/Treatment ID	Species	Concentration	% Survival	Toxicity (Y/N)	Notes
07-CD-LWControl-01	*Ceriodaphnia dubia*	Control	95	N/A	The toxicity observed
07-535XJDAOR-GR	*Ceriodaphnia dubia*	6.25%	100	N	for testing initiated on
07-535XJDAOR-GR	*Ceriodaphnia dubia*	12.5%	100	N	8/18//05 was not
07-535XJDAOR-GR	*Ceriodaphnia dubia*	25%	95	N	persistent.
07-535XJDAOR-GR	*Ceriodaphnia dubia*	50%	100	N	
07-535XJDAOR-GR	*Ceriodaphnia dubia*	100%	100	N	

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East San Joaquin Water Quality Coalition
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October 18, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Re: Exceedance Report on monitoring results for irrigation samples collected on July 12, August 16, and September 21, 2005, for *E. coli* and TDS

Dear Bill and Dana:

On October 17, 2005 we received data for physical parameters and *E. coli* for sampling events from July through September 2005. We base our report of exceedance of *E. coli* on the 200 MPN/100 ml standard and TDS at 450 mg/L. Those exceedances are provided below in Table 1.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

Table 1. Results of physical parameters and *E. coli* testing for sampling events in July, August, and September 2005.

Event Month	Sample Code	Date Sampled	Analyte	Result	Units	WQO	Units
July							
	ASAAT	7-12-05	E. coli	500	MPN/100 ml	200	MPN/100 ml
	DSAGR	7-12-05	E. coli	300	MPN/100 ml	200	MPN/100 ml
	JDAOR	7-12-05	E. coli	1600	MPN/100 ml	200	MPN/100 ml
	PFDCL	7-12-05	E. coli	>1600	MPN/100 ml	200	MPN/100 ml
	HDACA	7-13-05	E. coli	1600	MPN/100 ml	200	MPN/100 ml
	DCAWR	7-13-05	E. coli	220	MPN/100 ml	200	MPN/100 ml
	PFDCL	7-13-05	TDS	1100	mg/L	450	mg/L
	HDACA	7-13-05	TDS	600	mg/L	450	mg/L
August							
	CCART	8-16-05	E. coli	300	MPN/100 ml	200	MPN/100 ml
	DSAGR	8-16-05	E. coli	240	MPN/100 ml	200	MPN/100 ml
	HDACA	8-16-05	E. coli	>1600	MPN/100 ml	200	MPN/100 ml
	HDACA-FD	8-16-05	E. coli	>1600	MPN/100 ml	200	MPN/100 ml
	DCAWR	8-17-05	E. coli	900	MPN/100 ml	200	MPN/100 ml
	PFDCL	8-17-05	E. coli	>1600	MPN/100 ml	200	MPN/100 ml
	HDACA	8-16-05	TDS	500	mg/L	450	mg/L
	HDACA-FD	8-16-05	TDS	490	mg/L	450	mg/L
	PFDCL	8-17-05	TDS	990	mg/L	450	mg/L
Sept							
	PFDCL	9-21-05	TDS	460	mg/L	450	mg/L
	PFDCL-FD	9-21-05	TDS	450	mg/L	450	mg/L
	HDACA	9-21-05	TDS	690	mg/L	450	mg/L
	DCARE	9-20-05	E. coli	500	MPN/100 ml	200	MPN/100 ml
	DCAWR	9-21-05	E. coli	500	MPN/100 ml	200	MPN/100 ml
	PFDCL	9-21-05	E. coli	500	MPN/100 ml	200	MPN/100 ml
	PFDCL-FD	9-21-05	E. coli	>1600	MPN/100 ml	200	MPN/100 ml
	HDACA	9-21-05	E. coli	430	MPN/100 ml	200	MPN/100 ml
	JDAOR	9-21-05	E. coli	350	MPN/100 ml	200	MPN/100 ml

ASAAT – Ash Slough at Avenue 21; DSAGR – Duck Slough at Gurr Road; JDAOR – Jones Drain at Oakdale Road; HDACA – Hilmar Drain at Central Ave; DCAWR – Dry Creek at Wellsford Road; PFDCL – Prairie Flower Drain at Crows Landing Road; CCART – Cottonwood Creek at Road 20; DCARE – Dry Creek at Road 18

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October 18, 2005

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Re: Exceedance Report on monitoring results for irrigation samples collected on July 12, August 16, and September 21, 2005, for sediment toxicity

Dear Bill and Dana:

On October 18, 2005 we received data for sediment toxicity for samples collected on September 16 and 17, 2005. We are reporting the exceedances along with the rest of the data provided below in Table 1.

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

Table 1. Results of sediment toxicity testing for September 2005. The values in bold are significantly different from the control. Two sites (Ash Slough at Avenue 21, Duck Slough at Gurr Road) were not sampled due to dry conditions.

Site ID	Species	% Survival	Toxicity (Y/N)
08-HA-HSControl-01	*Hyalella azteca*	97.5	N/A
08-545XCCART-IN	*Hyalella azteca*	96.2	N
08-535XHCHNN-IN	*Hyalella azteca*	**87.5**	**Y**
08-535XDSAGR-IN	*Hyalella azteca*	**3.75**	**Y**
08-535XDCARE-IN	*Hyalella azteca*	93.8	N
08-535XBCAKR-IN	*Hyalella azteca*	97.5	N
08-HA-HSControl-02	*Hyalella azteca*	97.5	N/A
08-535XMRSFD-IN	*Hyalella azteca*	86.2	N
08-535XHCALR-IN	*Hyalella azteca*	95	N
08-535XHDACA-IN	*Hyalella azteca*	**31.2**	**Y**
08-535XPFDCL-IN	*Hyalella azteca*	**83.8**	**Y**
08-535XJDAOR-IN	*Hyalella azteca*	96.2	N
08-535XDCAWR-IN	*Hyalella azteca*	100	N

ASAAT – Ash Slough at Avenue Twenty-one; DSAGR – Duck Slough at Gurr Road; JDAOR – Jones Drain at Oakdale Road; HDACA – Hilmar Drain at Central Ave; DCAWR – Dry Creek at Wellsford Road; PFDCL – Prairie Flower Drain at Crows Landing Road; CCART – Cottonwood Creek at Road 20; DCARE – Dry Creek at Road 18

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October 17, 2005

William Croyle
Dana Thomsen
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Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

We are submitting the formal communication report for the 33 *E. coli* exceedances reported on August 18, 2005.

1. Follow-up monitoring and analyses conducted.

No immediate follow-up sampling was conducted. Many of these exceedances occurred a year ago, and the continued exceedance of *E. coli* water quality standards indicates that the exceedances are an ongoing issue. A total of 12 sites experienced exceedances with a range of 1 to 5 exceedances per monitoring site. We performed a correlation analysis to determine if the signal (MPN/100 mL) was related to the number of acres of irrigated pasture, the number of parcels of irrigated pasture, the number of acres of dairies, the number of dairies, of the combined number of acres or parcels of both dairies and irrigated pasture in the watersheds. The results of the analysis indicate that there is no correlation between the number of parcels or the acres of irrigated pasture and average *E. coli* signal ($r = 0.15$ for both), and there is no significant correlation between the number of dairies and the *E. coli* signal ($r = 0.26$), or the acreage of dairies and *E. coli* ($r = 0.18$). There was no correlation between the combined acreage ($r = 0.17$) or combined number of parcels ($r = 0.22$) and *E. coli*. [Statistical significance at $\alpha = 0.05$ level for all tests of the null hypothesis $r = 0$ against the alternative hypothesis $r \neq 0$ is 0.361.] These results indicate either of two possibilities: 1) the coliform bacteria is not primarily from dairies or cattle grazing but from other sources such as wildlife, leaking septic systems or sanitary sewer lines, or 2) the coliform bacteria is from grazing or dairy operations but the contribution to the total load is not evenly distributed across the watershed. I.e., a few locations (dairies or pastures) provide the bulk of the load to the water body. To effectively target management options, additional follow-up analyses are being proposed (see #2 below).

2. Actions taken to identify the source of the exceedance.

After identification of all exceedances, all irrigated pasture in each of the watersheds was identified. In addition, all of the dairies within those watersheds were also located. Irrigated pastures were identified by APN and owner and we are currently contacting those landowners to develop information on grazing practices and water management. With 12 of the 13 possible watersheds experiencing water quality exceedances, contacting all owner/operators is a significant task.

In addition, *E. coli* is a general indicator of bacterial contamination and it is not clear what sources contribute to the coliform load. Consequently, we are designing a follow-up study to sample watersheds during non-monitoring events and perform analyses to identify the source of the bacteria. Using these samples, we can extract the DNA from the bacteria in the water, use real-time PCR to amplify the DNA signal and then use electrophoretic techniques (DGGE) and sequence analysis to match the bacterial DNA sequences with bacterial sequences from known sources, e.g., humans, cows, sheep, dogs, birds, etc. Once we understand the relative contribution of these sources, we can use the information gathered on grazing practices and water management to develop an appropriate management strategy.

We will design an appropriate study and provide the experimental design and analytical techniques to the Regional Board for comment and input. We anticipate that the study will commence during the next irrigation season and will consist of three sampling events from early, mid, and late in the season.

3. Complete analytical results

Analytical results are appended electronically to the transmittal message. These results include all data reports provided to the coalition by the analytical laboratory. QC data are included in the data reports.

4. Time schedule to identify and implement the Management Practice Effectiveness evaluation.

The time schedule is:

Action	Anticipated Completion Date
Contact Growers in Watersheds	February 2006
Design Bacterial ID Study	March 2006
Perform Management Practices Survey	June 2006
Perform Bacterial ID Study	Irrigation Season 2006
Implement Outreach/BMP Education	September 2006

Let us know if further explanation or documentation is necessary.

Parry Klassen
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December 6, 2005

William Croyle
Dana Thomsen
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11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

On October 3, 2005, we filed an Exceedance Report for the two sites listed below.

Site	Exceedance	Date of sampling
Jones Drain @ Oakdale Rd	E. coli	7/12/05
Prairie Flower Drain @ Crows Landing Road	E. coli	7/13/05

.

These Exceedance Reports were filed because we were informed by you that we would need to include *E. coli* in our list of constituents for which exceedance reports need to be filed. We were also given the standard of 200 MPN/100mL as the receiving water limitation for *E. coli*.

As we prepare our annual report and move forward with Communication Reports, we began searching for the *E. coli* standard. We have realized that the Basin Plan does not provide objectives for *E. coli*, but instead provides the objectives for total coliforms. Clearly, *E. coli* and total coliforms are not the same constituent, and should not be used interchangeably. Consequently, the receiving water limitation for total coliforms should not be used for *E. coli*. We are unable to find reference to *E. coli* standards in other Regional Board documents including the 2003 list of Water Quality Standards and the updates provided on the Regional Board website.

The US EPA also bases their drinking water regulations on total coliforms. If testing for total coliforms is positive, there is a requirement for additional testing for fecal coliforms or *E. coli*, depending on the preference of the organization.

Unless the water quality objective for E. coli has escaped us, we believe that there is no current standard and therefore, no exceedance can take place. Consequently, we will not follow up with the study proposed in the earlier Communication Report, nor will we pursue the current E. coli data any further. If you feel that we are in error, please direct us to the appropriate document so we can confirm the water quality objective for *E. coli*.

Let us know if further explanation or documentation is necessary.

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Dear Bill and Dana:

On October 3, 2005, we filed an Exceedance Report for pH for the sites listed below.

Site	Exceedance	Date of sampling
Dry Creek @ Wellsford Rd	pH	3/22/05
Dry Creek @ Wellsford Rd	pH	5/11/05
Dry Creek @ Wellsford Rd	pH	8/17/05
Dry Creek @ Road 18	pH	8/16/05
Highline Canal @ Lombardy Ave	pH	3/21/05
Highline Canal @ Lombardy Ave	pH	8/17/05
Jones Drain @ Oakdale Rd	pH	3/22/05
Merced River @ Santa Fe Dr	pH	8/17/05

At this time we are submitting the Communication Report for the pH exceedances.

1. Follow-up monitoring and analyses conducted.
No follow-up sampling was conducted.

2. Actions taken to identify the source of the exceedance.
pH is not a constituent for which a source can be identified. There are two potential causes of pH outside the range (6.5 – 8.5) specified in the Basin Plan. First, substances with very low or very high pH could have been added to the water or been the result of a spill. However, given the normal buffering capacity of the stream systems in the Valley, the pH of the contaminant would have to be relatively high or low and would probably have resulted in noticeable fish kills and the death of other biota in the streams. No such kills were observed and consequently, it is unlikely that the pH exceedances were the result of spills or deliberate dumping into the water bodies.

The second cause of exceedances of pH is the diel shift in pH that occurs as a result of photosynthetic activity by algae in the water column, benthic algae, and rooted aquatic

macrophytes, or could be the result of CO2 released during the decay of organic matter in the water body. It is well established that diel shifts in photosynthetic rates can change pH as much as 0.5 pH units. And, it is unclear if the shifts in photosynthetic rate are a function of excessive nutrients and eutrophication. However, dissolved oxygen measurements taken at the time that pH was taken did not indicate supersaturation of the water which would be indicative of extremely high rates of photosynthesis.

3. Complete analytical results
Analytical results are appended electronically to the transmittal message.

4. Time schedule to identify and implement the Management Practice Effectiveness evaluation.
At this time, it is not possible to implement management practices to address pH. When the Coalition initiates monitoring for nutrients, we may be able to obtain sufficient information to address pH. However, even understanding the level of nutrients in the water will most probably be insufficient to understand the pH dynamics of the water column.

Let us know if further explanation or documentation is necessary.

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December 21, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

On October 31, 2005, we received an email from Dana indicating that we did not include the date for submission of an Evaluation Report in the Communication Report we submitted for *E. coli* exceedances. We have had considerable discussion about the need to submit an Exceedance Report or a Communication Report on *E. coli* given the lack of standards in the Basin Plan for this constituent. In fact, we submitted a second communication report that indicated that we planned to do nothing about the *E. coli* exceedances. During our conference call discussion on December, 16, 2005, you indicated that because *E. coli* was a subset of fecal coliforms, it would be covered by the fecal coliform standards in the Basin Plan. Although we believe that this deserves further discussion, perhaps by the Technical Issues Committee, we are providing a date for submission of the Implementation Plan for the *E. coli* detections during the 2005 dormant and irrigation seasons.

Again, because *E. coli* is a generic measure of coliforms and is not specific to any individual species, we would need to perform a source identification study to determine the relative contribution of all potential contributing species. We are unable to target specific sources and provide management practices until we properly identify the source(s). We anticipate being able to identify and quantify the percentage contribution of humans, cows, birds, companion animals, and horses. However, to do so will require that we collect samples at several times during the summer and perform the tests. The samples are then taken to the lab, the DNA is extracted and the source identification tests performed. These tests will not be completed until the end of the summer of 2006 after which we will contact the potential sources (if from agricultural activities covered by the coalition) and proceed with the BMP outreach. We would continue to test in the irrigation season of 2007 to determine that management has or has not been effective in reducing the *E. coli* loads. Consequently, we expect to submit an Implementation Report in December of 2007 after receiving all of the data and the results of the analyses.

We realize that this submission date is quite far into the future but *E. coli* is unique among the constituents for which we sample in that it is possible that the contamination may be entirely from nonagricultural activities/sources. It will take us a full summer to determine the source(s) and adequately address the problem.

Let us know if further explanation or documentation is necessary.

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December 21, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

We are submitting the formal communication report for the *E. coli* exceedances reported in an Exceedance Report dated October 18, 2005. The sites listed in that Exceedance Report are:

Site	Exceedance	Date of sampling
Ash Slough @ Ave 21	E. coli	7-12-05
Duck Slough @ Gurr Road	E. coli	7-12-05
Jones Drain @ Oakdale Road	E. coli	7-12-05
Prairie Flower Drain @ Crows Landing Road	E. coli	7-12-05
Hilmar Drain @ Central Ave	E. coli	7-13-05
Dry Creek @ Wellsford Road	E. coli	7-13-05
Cottonwood Creek @ Road 20	E. coli	8-16-05
Duck Slough @ Gurr Road	E. coli	8-16-05
Hilmar Drain @ Central Ave	E. coli	8-16-05
Hilmar Drain @ Central Ave - FD	E. coli	8-16-05
Dry Creek @ Wellsford Road	E. coli	8-17-05
Prairie Flower Drain @ Crows Landing Road	E. coli	8-17-05
Dry Creek @ Road 18	E. coli	9-20-05
Dry Creek @ Wellsford Road	E. coli	9-21-05
Prairie Flower Drain @ Crows Landing Road	E. coli	9-21-05
Prairie Flower Drain @ Crows Landing Road - FD	E. coli	9-21-05
Hilmar Drain @ Central Ave	E. coli	9-21-05
Jones Drain @ Oakdale Road	E. coli	9-21-05

1. Follow-up monitoring and analyses conducted.

No immediate follow-up sampling was conducted. However, as we collected samples during the irrigation season, it is apparent that for these 7 sites, *E. coli* exceedances are a continuing

problem. Earlier, we performed a correlation analysis to determine if the signal (MPN/100 mL) was related to the number of acres of irrigated pasture, the number of parcels of irrigated pasture, the number of acres of dairies, the number of dairies, of the combined number of acres or parcels of both dairies and irrigated pasture in the watersheds. To reiterate those results, the analysis indicates that there is no correlation between the number of parcels or the acres of irrigated pasture and average *E. coli* signal ($r = 0.15$ for both), and there is no significant correlation between the number of dairies and the *E. coli* signal ($r = 0.26$), or the acreage of dairies and *E. coli* ($r = 0.18$). There was no correlation between the combined acreage ($r = 0.17$) or combined number of parcels ($r = 0.22$) and *E. coli*. [Statistical significance at $\alpha = 0.05$ level for all tests of the null hypothesis $r = 0$ against the alternative hypothesis $r \neq 0$ is 0.361.] Our conclusions from that analysis were (and remain) that either: 1) the coliform bacteria is not primarily from dairies or cattle grazing but from other sources such as wildlife, leaking septic systems or sanitary sewer lines, or 2) the coliform bacteria is from grazing or dairy operations but the contribution to the total load is not evenly distributed across the watershed. I.e., a few locations (dairies or pastures) provide the bulk of the load to the water body. To effectively target management options, additional follow-up analyses are being proposed (see #2 below).

2. Actions taken to identify the source of the exceedance.
After identification of all exceedances, all irrigated pasture in each of the watersheds was identified. In addition, all of the dairies within those watersheds were also located. Irrigated pastures were identified by APN and owner and we are currently contacting those landowners to develop information on grazing practices and water management.

In addition, *E. coli* is a general indicator of bacterial contamination and it is not clear what sources contribute to the coliform load. Consequently, we are designing a follow-up study to sample watersheds during non-monitoring events and perform analyses to identify the source of the bacteria. Using these samples, we can extract the DNA from the bacteria in the water, use real-time PCR to amplify the DNA signal and then use electrophoretic techniques (DGGE) and sequence analysis to match the bacterial DNA sequences with bacterial sequences from known sources, e.g., humans, cows, sheep, dogs, birds, etc. Once we understand the relative contribution of these sources, we can use the information gathered on grazing practices and water management to develop an appropriate management strategy.

We will design an appropriate study and provide the experimental design and analytical techniques to the Regional Board for comment and input. We anticipate that the study will commence during the next irrigation season and will consist of three sampling events from early, mid, and late in the season.

3. Complete analytical results
Analytical results are appended electronically to the transmittal message. These results include all data reports provided to the coalition by the analytical laboratory. QC data are included in the data reports.

4. Time schedule to identify and implement the Management Practice Effectiveness evaluation.
The time schedule is:

Action	Anticipated Completion Date
Contact Growers in Watersheds	February 2006
Design Bacterial ID Study	March 2006
Perform Management Practices Survey	June 2006
Perform Bacterial ID Study	Irrigation Season 2006
Implement Outreach/BMP Education	September 2006
Evaluation Report	December 2007

We realize that the submission date for the Evaluation Report is quite far into the future but *E. coli* is unique among the constituents for which we sample in that it is possible that the contamination may be entirely from nonagricultural activities/sources. It will take us a full summer to determine the source(s) and adequately address the problem.

Let us know if further explanation or documentation is necessary.

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December 22, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

We are submitting the formal communication report for the sediment toxicity exceedances reported in an Exceedance Report dated October 18, 2005. The sites listed in that Exceedance Report are:

Site	Exceedance	Date of sampling
Duck Slough @ Gurr Road	Sediment toxicity	9/16/05
Hilmar Drain @ Central Ave	Sediment toxicity	9/16/05
Prairie Flower Drain @ Crows Landing Road	Sediment toxicity	9/16/05
Highline Canal @ Highway 99	Sediment toxicity	9/16/05

1. Follow-up monitoring and analyses conducted.

No immediate follow-up sampling was conducted. No chemical analyses were conducted and it is not known if the cause of the toxicity was from an organic or inorganic compound. Sediment toxicity has been detected in these watersheds during the previous sampling event in July and May indicating that there is a pattern of sediment toxicity.

2. Actions taken to identify the source of the exceedance.

We will treat sediment toxicity in the same manner as water column toxicity. We have requested the Pesticide Use Reports for the watersheds and will search for chemicals that were applied that could bind to sediment and be carried to the water bodies. Once we have established the potential sources in the watershed, we will contact growers and initiate outreach.

It will not be possible to establish exact sources for sediment because it is not clear when the sediment was deposited at the sites. The previous toxicity at all four locations in the July and/or May 2005 sediment samples suggests that the toxicity experienced in September 2005 could be a result of either recent applications of chemicals that have been transported to the water bodies bound to sediment, or the result of slow breakdown of the chemicals applied much earlier in the growing season. Given that very little is known about the half-life of most chemicals in sediment, the sediment containing the toxic substances could have been deposited up to several months prior to sampling.

To demonstrate the process of using pesticide use reports to identify sources, we are attaching below the results of our search for potential sources for the July exceedances in the Duck Slough @ Gurr Road, and Prairie Flower Drain @ Crows Landing Road watersheds, and the Hilmar Drain @ Central Ave watershed for the May sediment exceedance. K_{oc} values were obtained from a number of sources.

Duck Slough

In the Duck Slough watershed (Figure 1) there were over one hundred chemical applications in the two weeks prior to sampling (Table 1). The pesticide applications included a large number of herbicides that are not expected to cause toxicity and the following chemicals with K_{oc} values below 1500-1800 which, based on CDPR criteria, are not expected to partition to sediment (K_{oc} values in parentheses): methamidaphos (5), sethoxydim (100), imidcloprid (440), myclobutinil (500), oxamyl (6), acetamiprid (130-260), propanil (150), methomyl (72), dimethoate (20), and flumioxazin (105).

There were a series of applications of products with the capacity to bind to soil and be transported to surface waters where they could accumulate in the sediments. These include propargite (4000 - 8000), oxyfluorfen (100,000), indoxacarb (2200-8200), avermectin (6000), dimethylpolysiloxane (1840), mancozeb (2000), spiromesifen (50,000-100,000), pyriproxyfen (14,000), methoprene (23,000), abamectin (4000), and a series of pyrethroids with a known affinity to bind to sediment.

Methoxyfenozide was also used commonly in the watershed and although it may partition to sediment, it is considered a relatively nontoxic compound (insect growth regulator) that is recommended for use in integrated pest management programs (http://www.cdpr.ca.gov/docs/publicreports/5698.pdf).

Applications of the compounds with a high affinity for binding took place in 21 of the 56 TRS' in the two weeks prior to sampling (Table 2). We will contact the growers who applied the chemicals marked with blue highlighting to initiate outreach with discussions of BMPs appropriate to the parcels involved.

Prairie Flower Drain

The Prairie Flower Drain @ Crows Landing Road watershed (Figure 2a) experienced a sediment toxicity exceedance in July. Review of the pesticide use reports for the two weeks prior to the sampling event indicates that there was one chemical applied in the watershed. The chemical was propargite, applied July 6, which does have the potential for partitioning to sediment and is considered sufficiently toxic to result in sediment toxicity. The conclusions from this analysis are either: 1) the single application was responsible for the exceedance, 2) applications prior to the 2-week window were responsible for the exceedance, 3) there is (are) unreported application(s) in the watershed, or 4) the source of the toxicity is not related to agriculture. No toxicity was reported from the site in May indicating that the application and exceedance was generated in the approximately 6 weeks between the May sampling and the beginning of the two-week window at the end of June.

To narrow the potential conclusions and identify the source, we recently obtained from the Turlock Irrigation District a more complete local map of the drainage in the watershed. It is apparent that the Ables Drain (see Figure 2b) does drain from the region south of the Prairie Flower Drain. The single TRS is highlighted in the figure and is located to the south of Ables Drain and south of Hilmar Road. Although the map suggests that the application was located too far south to reach Ables Drain, the field(s) to which the chemical was applied may stretch to the north far enough to drain to Ables and eventually into Prairie Flower Drain. Alternatively, the mapping accuracy of the layers used for the analysis could be low and the product was applied to the north of Hilmar Road. There are several pumps (green dots in Figure 2b) that could move water and sediment and from fields to the south of the drain. We will perform a site visit to determine if the pumps are moving water and sediment from the TRS to which the product was applied into Ables Drain and eventually Prairie Flower Drain.

The second potential explanation is that there were additional applications prior to the 2-week window that could account for the toxicity. We collected the pesticide use information for the 6-month period prior to the sampling and those results are provided in Table 3. Only two other chemicals, both herbicides, were applied indicating that prior reported applications were not the cause of the toxicity. Although unreported applications may have occurred (conclusion #3), it is not possible for the coalition to determine if this is the cause of the sediment toxicity. Finally, there is no urban development in the watershed indicating that the final potential conclusion is incorrect.

The ESJWQC will pursue this exceedance by performing a site visit to determine the potential for drainage from the TRS to which the product was applied. If the visit indicates that it is possible for water and sediment to reach Ables Drain and Prairie Flower Drain, the grower will be contacted and outreach initiated. If the visit indicates that the water and sediment cannot move to the drains, all growers in the watershed will be identified and contacted. Outreach on BMP implementation will be initiated.

Hilmar Drain

During the month of May prior to the sampling event, 5 chemicals were applied in the watershed (Table 4). One chemical, mineral oil, is a carrier with no known sediment toxicity. Two of the chemicals applied, abamectin and lambda cyhalothrin, have K_{oc} values sufficiently elevated to indicate binding potential to soil and organic material that can be moved to the water body. A third chemical, azoxystrobin has a K_{oc} value of just less than 1600, which is generally classified as having the potential for significant partitioning to sediment. The final product, carbaryl, has a low K_{oc} value of 300 indicating little potential for partitioning to sediment.

All three chemicals with the potential for sediment toxicity were applied in the same TRS, 6S10E20. We will contact the grower(s) in this section and initiate outreach on BMP implementation.

These three case studies indicate that we are able to identify sources using the Pesticide Use Reports and when we receive the information from the County Agricultural Commissioners for the most recent sediment toxicity exceedances, we will be able to perform a similar analysis. It is generally true that given the delay in filing the Pesticide Use Reports until the 10th day of the

month following application, the time required for the Agricultural Commissioner's office to process the information and make it available to us, and the time required for us to process the data, plot the information in the GIS and do the analysis, it is extremely unlikely that we will be able to provide any significant level of analysis within the 45 days between the filing of the Exceedance Report and the Communication Report. We have not received the PUR data from the Agricultural Commissioner's offices until 60 days after sampling at the minimum, and it takes us 30 days after receipt of the data to provide the level of analysis illustrated here for the July data. As a result, the Communication reports cannot adequately address source identification within a 45 day period.

3. Complete analytical results

Complete analytical results are attached electronically to this communication report.

4. Time schedule to identify and implement the Management Practice Effectiveness evaluation.

The time schedule is:

Action	Anticipated Date
Obtain Pesticide Use Reports	February 28, 2006
Identify potential sources	February 28, 2006
Perform Management Practices Survey	March 30, 2006
Implement outreach/BMP education	March 30, 2006
Submit Evaluation Report	December 1, 2006

Let us know if further explanation or documentation is necessary.

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Figure 1. Duck Slough pesticide applications. Applications are for the two weeks prior to the July sampling event.

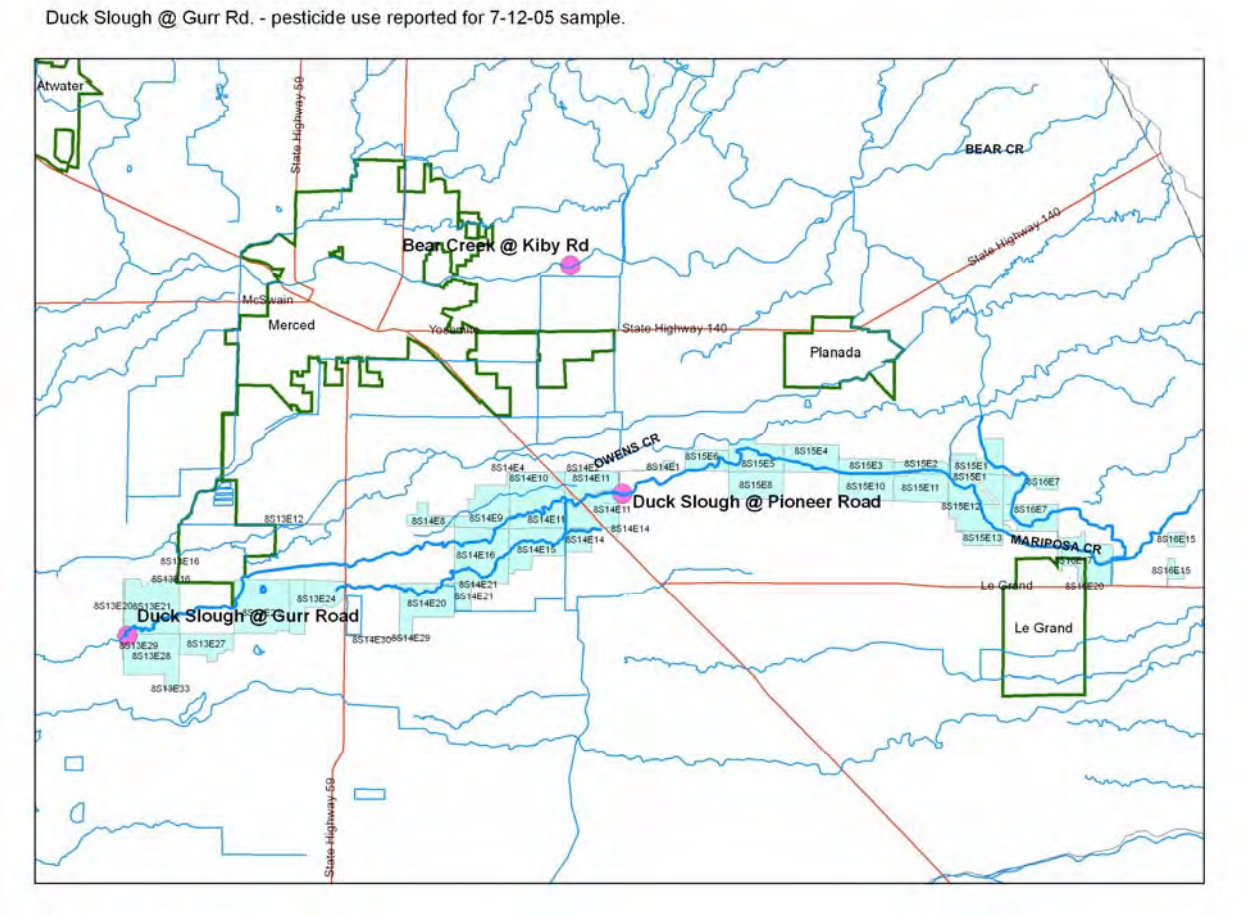


Figure 2a. Prairie Flower Drain pesticide applications. Original map of watershed drainage. The highlighted area is the location of the single pesticide application.

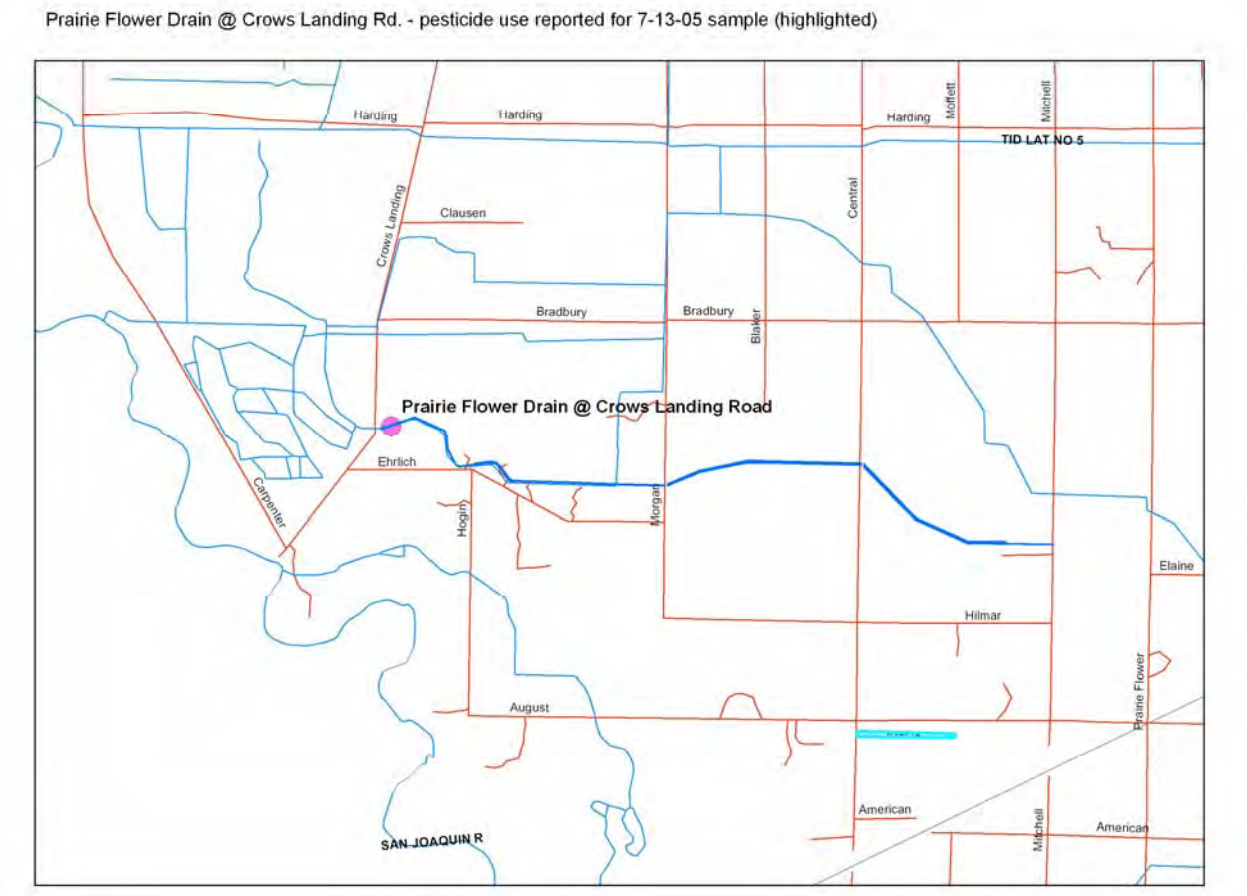


Figure 2b. Prairie Flower Drain pesticide applications. Watershed drainage and pump locations provided by the Turlock Irrigation District. The highlighted area is the location of the single pesticide application.

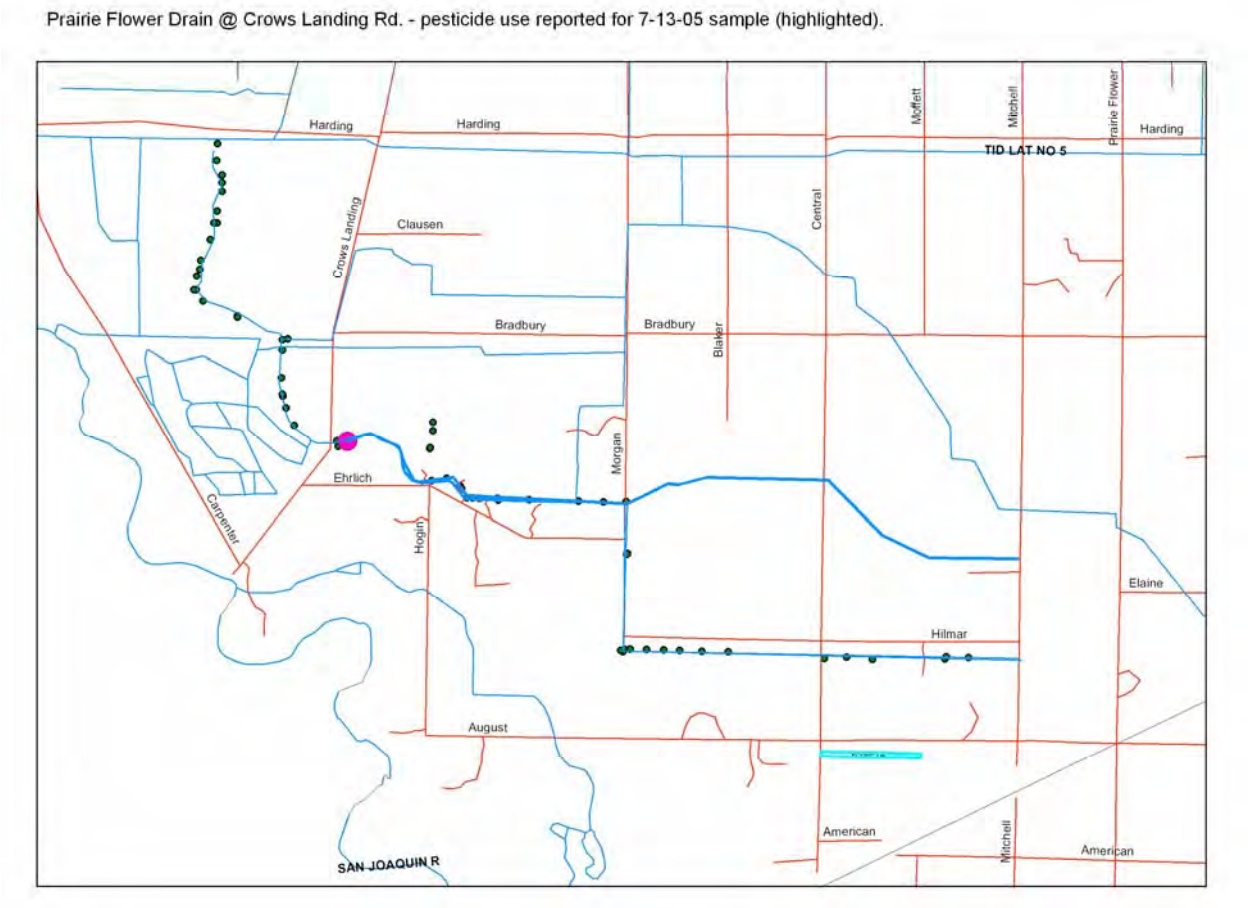


Figure 3. Hilmar Drain pesticide applications in May 2005 prior to the May 2005 sediment sampling event.

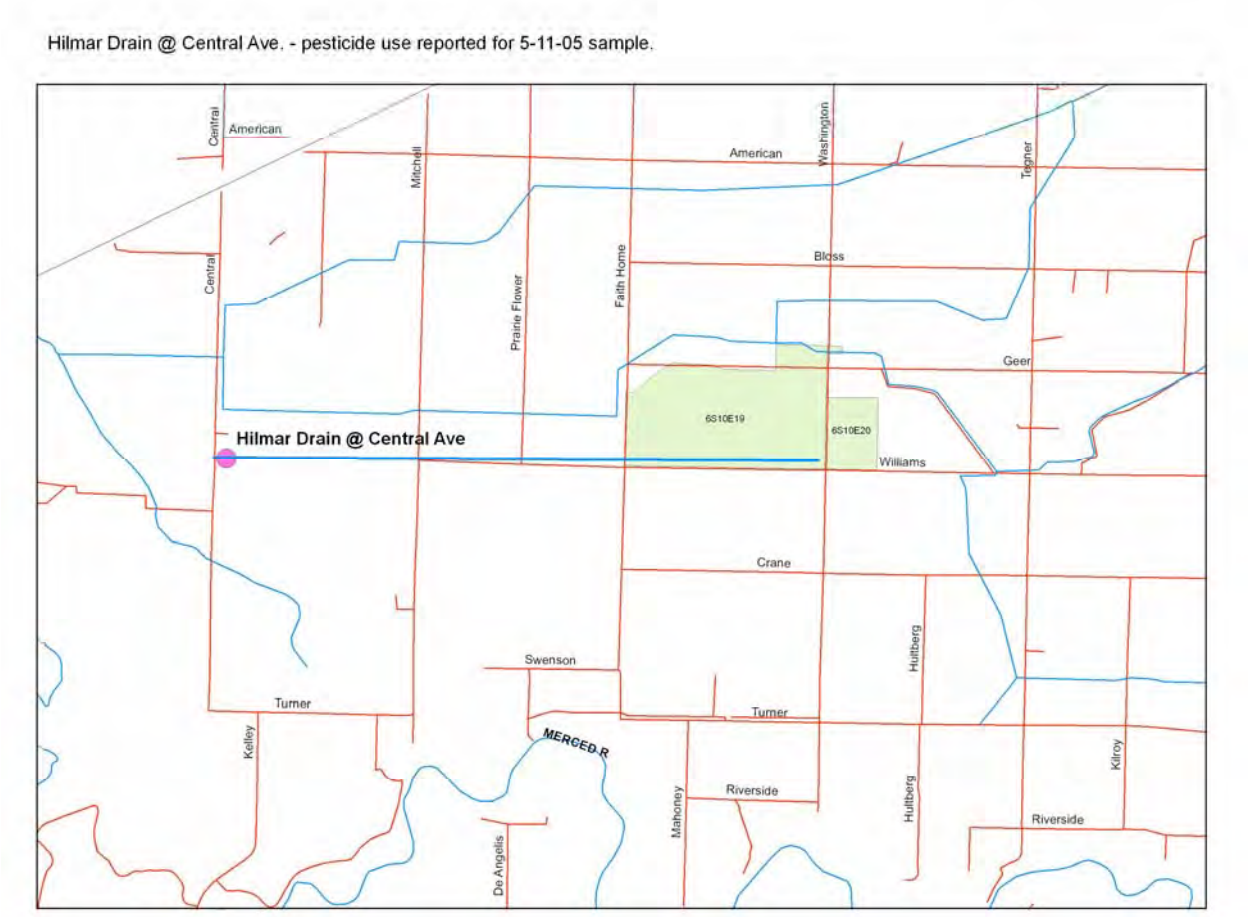


Table 1. Pesticide applications in the Duck Slough watershed during the 2 weeks prior to sampling. Shaded rows indicate applications with a high potential to contribute to sediment toxicity.

application date	treated acres	PUR Product name	Chemical name	amount	unit	TRS
6/29/05	16	INDUCE	METHOXYFENOZIDE	0.15	GA	8S14E2
6/29/05	16.5	INDUCE	METHOXYFENOZIDE	0.3075	GA	8S14E2
6/29/05	13	TRILIN HERBICIDE	TRIFLURALIN	1.625	GA	8S14E2
6/29/05	16	INTREPID 2F	METHOXYFENOZIDE	1.25	GA	8S14E2
6/29/05	16.5	INTREPID 2F	METHOXYFENOZIDE	1.28	GA	8S14E2
6/29/05	90	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	2.1	GA	8S13E11
6/29/05	55	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	3.3	GA	8S13E11
6/29/05	35	MONITOR 4 LIQUID INSECTICIDE	METHAMIDOPHOS	0.69	GA	8S13E11
6/29/05	55	MONITOR 4 LIQUID INSECTICIDE	METHAMIDOPHOS	10.52	GA	8S13E11
6/29/05	117	ZEPHYR 0.15EC	ABAMECTIN	2.285156	GA	8S13E12
6/29/05	117	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	CYFLUTHRIN	2.742188	GA	8S13E12
6/29/05	117	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	IMIDACLOPRID	2.742188	GA	8S13E12
6/29/05	117	MEPEX	MEPIQUAT CHLORIDE	12.79688	GA	8S13E12
6/29/05	5	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	0.3125	GA	8S15E10
6/29/05	5	DU PONT AVAUNT INSECTICIDE	INDOXACARB	0.9375	LB	8S15E10
6/29/05	20	RALLY 40W AGRICULTURAL FUNGICIDE IN WATE	MYCLOBUTANIL	6.25	LB	8S15E10
6/29/05	50	DU PONT AVAUNT INSECTICIDE	INDOXACARB	9.333	LBS	8S15E10
6/29/05	42.2	RIVERDALE WEEDESTROY AM-40 AMINE SALT	2,4-D, DIMETHYLAMINE SALT	7.91	GA	8S13E21

6/30/05	64	CROP OIL CONCENTRATE	MINERAL OIL	16	GA	8S14E8
6/30/05	64	CROP OIL CONCENTRATE	PETROLEUM DISTILLATES	16	GA	8S14E8
6/30/05	64	CROP OIL CONCENTRATE	PETROLEUM OIL, PARAFFIN BASED	16	GA	8S14E8
6/30/05	64	POAST	SETHOXYDIM	14.96	GA	8S14E8
6/30/05	97	PIX ULTRA PLANT REGULATOR	MEPIQUAT CHLORIDE	9.09375	GA	8S13E16
6/30/05	96.2	TRILIN	TRIFLURALIN	18.0375	GA	8S13E20
6/30/05	78.7	DU PONT LANNATE INSECTICIDE	METHOMYL	19.67	LBS	8S13E20
6/30/05	58.4	DU PONT LANNATE INSECTICIDE	METHOMYL	14.6	LBS	8S13E20
6/30/05	34.5	AMMO 2.5 EC	CYPERMETHRIN	0.27	GA	8S13E24
6/30/05	34.5	MEPEX	MEPIQUAT CHLORIDE	2.16	GA	8S13E24
6/30/05	12.4	TENKOZ TRIFLURALIN 4 EMULSIFIABLE CONCEN	TRIFLURALIN	1.55	GA	8S16E20
6/30/05	37	AMMO 2.5 EC	CYPERMETHRIN	0.29	GA	8S13E27
6/30/05	80	AMMO 2.5 EC	CYPERMETHRIN	0.63	GA	8S13E27
6/30/05	33.4	AMMO 2.5 EC	CYPERMETHRIN	0.26	GA	8S13E27
6/30/05	37	MEPEX	MEPIQUAT CHLORIDE	2.31	GA	8S13E27
6/30/05	80	MEPEX	MEPIQUAT CHLORIDE	5	GA	8S13E27
6/30/05	33.4	MEPEX	MEPIQUAT CHLORIDE	2.09	GA	8S13E27
6/30/05	52.6	DU PONT LANNATE INSECTICIDE	METHOMYL	13.15	LBS	8S13E28
7/1/05	64.3	DU PONT AVAUNT INSECTICIDE	INDOXACARB	12.09625	LB	8S15E6
7/1/05	122	DU PONT AVAUNT INSECTICIDE	INDOXACARB	26.6875	LB	8S15E2
7/1/05	30	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	2.5	GA	8S14E10
7/1/05	30	DIMETHOATE 267	DIMETHOATE	5.63	GA	8S14E10
7/1/05	30	PENNCOZEB 75DF DRY	MANCOZEB	60	LBS	8S14E10

		FLOWABLE FUNGICIDE				
7/1/05	2	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.25625	LB	8S15E11
7/1/05	2	GLYFOS HERBICIDE	GLYPHOSATE	0.4	GA	8S15E11
7/1/05	2	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	0.4	GA	8S15E11
7/1/05	60	BUCCANEER GLYPHOSATE HERBICIDE	GLYPHOSATE	8	GA	8S15E12
7/1/05	60	GOAL 2XL	OXYFLUORFEN	2.5	GA	8S15E12
7/1/05	555	CLINCH ANT BAIT	AVERMECTIN	555	LBS	8S16E7
7/1/05	90	CLINCH ANT BAIT	AVERMECTIN	90	LBS	8S16E7
7/1/05	3	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.38125	LB	8S15E13
7/1/05	3	GLYFOS HERBICIDE	GLYPHOSATE	0.6	GA	8S15E13
7/1/05	3	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	0.6	GA	8S15E13
7/1/05	74	OBERON 2SC INSECTICIDE/ MITICIDE	SPIROMESIFEN	4.793	GA	8S14E21
7/1/05	74	R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	1.199	GA	8S14E21
7/1/05	25	DU PONT VYDATE L INSECTICIDE/ NEMATICIDE	OXAMYL	10	GA	8S16E20
7/2/05	75	DU PONT LANNATE SP INSECTICIDE	METHOMYL	56.25	LBS	8S15E11
7/2/05	17	ESTEEM ANT BAIT	PYRIPROXYFEN	34	LBS	8S15E13
7/2/05	15	TENKOZ TRIFLURALIN 4 EMULSIFIABLE CONCEN	TRIFLURALIN	1.875	GA	8S16E20
7/4/05	209	CLINCH ANT BAIT	AVERMECTIN	209	LBS	8S15E1
7/4/05	34	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	2.83	GA	8S14E15
7/4/05	7	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	0.58	GA	8S14E15
7/4/05	34	DIMETHOATE 267	DIMETHOATE	6.38	GA	8S14E15
7/4/05	7	DIMETHOATE 267	DIMETHOATE	1.31	GA	8S14E15

7/4/05	34	PENNCOZEB 75DF DRY FLOWABLE FUNGICIDE	MANCOZEB	68	LBS	8S14E15
7/4/05	7	PENNCOZEB 75DF DRY FLOWABLE FUNGICIDE	MANCOZEB	14	LBS	8S14E15
7/4/05	149	RHOMENE MCPA AMINE HERBICIDE	MCPA, DIMETHYLAMINE SALT	18.63	GA	8S13E21
7/4/05	149	WEEDAR 64 BROADLEAF HERBICIDE	2,4-D, DIMETHYLAMINE SALT	18.63	GA	8S13E21
7/5/05	52	PROCLAIM INSECTICIDE	EMAMECTIN BENZOATE	13.398	LBS	8S14E1
7/5/05	83	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	17.43	GA	8S15E5
7/5/05	3	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.5625	LB	8S15E13
7/5/05	3	GLYFOS HERBICIDE	GLYPHOSATE	0.8	GA	8S15E13
7/5/05	3	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	0.8	GA	8S15E13
7/5/05	10	GLYFOS HERBICIDE	GLYPHOSATE	3.3	GA	8S16E18
7/5/05	10	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	3.3	GA	8S16E18
7/6/05	43	QUEST	AMMONIUM SULFATE	1	GA	8S14E1
7/6/05	43	QUEST	CITRIC ACID	1	GA	8S14E1
7/6/05	43	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	16.1	GA	8S14E1
7/6/05	67	ROUNDUP WEATHERMAX HERBICIDE	GLYPHOSATE, POTASSIUM SALT	12.5	GA	8S15E6
7/6/05	30	NUFARM CREDIT SYSTEMIC HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	4	GA	8S14E11
7/6/05	62	DU PONT LANNATE INSECTICIDE	METHOMYL	46.5	LBS	8S14E8
7/6/05	64	DU PONT LANNATE INSECTICIDE	METHOMYL	48	LBS	8S14E8
7/6/05	5	DU PONT ASANA XL INSECTICIDE	ESFENVALERATE	0.4	GA	8S15E11
7/6/05	5	DU PONT VENDEX 50WP	FENBUTATIN-OXIDE	5	LBS	8S15E11

		MITICIDE				
7/6/05	44	DU PONT LANNATE INSECTICIDE	METHOMYL	33	LBS	8S14E16
7/6/05	16	EXTINGUISH PROFESSIONAL FIRE ANT BAIT	METHOPRENE	12	LBS	8S16E17
7/6/05	87.3	ASSAIL BRAND 70WP INSECTICIDE	ACETAMIPRID	0.525156	GA	8S13E28
7/7/05	75	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	15.75	GA	8S15E5
7/7/05	15	DU PONT AVAUNT INSECTICIDE	INDOXACARB	3.28125	LB	8S15E8
7/7/05	37	ESTEEM ANT BAIT	PYRIPROXYFEN	74	LBS	8S15E10
7/7/05	2	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.375	LB	8S15E12
7/7/05	2	GLYFOS HERBICIDE	GLYPHOSATE	0.5	GA	8S15E12
7/7/05	2	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	0.5	GA	8S15E12
7/7/05	4	CHATEAU HERBICIDE SW	FLUMIOXAZIN	0.25	LB	8S15E13
7/7/05	4	GLYFOS HERBICIDE	GLYPHOSATE	1	GA	8S15E13
7/7/05	4	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	1	GA	8S15E13
7/7/05	73	DU PONT LANNATE SP INSECTICIDE	METHOMYL	56	LBS	8S15E13
7/7/05	37	ESTEEM ANT BAIT	PYRIPROXYFEN	74	LBS	8S15E13
7/7/05	70.1	DU PONT LANNATE INSECTICIDE	METHOMYL	17.52	LBS	8S13E20
7/7/05	18	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	CYFLUTHRIN	0.429	GA	8S14E21
7/7/05	18	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	IMIDACLOPRID	0.429	GA	8S14E21
7/7/05	18	MEPEX	MEPIQUAT CHLORIDE	0.675	GA	8S14E21
7/7/05	18	ZEAL MITICIDE	ETOXAZOLE	1.125	LBS	8S14E21
7/7/05	12.4	SUPER WHAM!	PROPANIL	18.6	GA	8S13E2

		CA				9
7/7/05	28.1	SUPER WHAM! CA	PROPANIL	42.15	GA	8S13E29
7/7/05	18.1	SUPER WHAM! CA	PROPANIL	27.15	GA	8S13E29
7/7/05	33	SUPER WHAM! CA	PROPANIL	49.5	GA	8S13E29
7/7/05	44.8	SUPER WHAM! CA	PROPANIL	67.2	GA	8S13E29
7/7/05	43.8	SUPER WHAM! CA	PROPANIL	65.7	GA	8S13E29
7/7/05	33.1	SUPER WHAM! CA	PROPANIL	49.65	GA	8S13E29
7/7/05	77	DU PONT LANNATE INSECTICIDE	METHOMYL	19.25	LBS	8S13E28
7/7/05	40	BRITZ COTTON DEFOLIANT CONCENTRATE	SODIUM CHLORATE	0.25	GA	8S14E30
7/7/05	51	BRITZ COTTON DEFOLIANT CONCENTRATE	SODIUM CHLORATE	0.32	GA	8S14E30
7/7/05	40	BRITZ O/S BLEND	PETROLEUM HYDROCARBONS	10	GA	8S14E30
7/7/05	40	POAST	SETHOXYDIM	8	GA	8S14E30
7/7/05	40	DU PONT LANNATE SP INSECTICIDE	METHOMYL	13.2	LBS	8S14E30
7/7/05	51	DU PONT LANNATE SP INSECTICIDE	METHOMYL	16.83	LBS	8S14E30
7/7/05	96	DU PONT LANNATE SP INSECTICIDE	METHOMYL	24.96	LBS	8S14E29
7/8/05	17	DU PONT STEWARD INSECTICIDE	INDOXACARB	0.93	GA	8S14E1
7/8/05	19	BRITZ O/S BLEND	PETROLEUM HYDROCARBONS	2.375	GA	8S14E4
7/8/05	19	PRISM HERBICIDE	CLETHODIM	7.71875	GA	8S14E4
7/8/05	7	PERM-UP 3.2 EC INSECTICIDE	PERMETHRIN	0.164063	GA	8S15E3
7/8/05	147	TOUCHDOWN TOTAL	GLYPHOSATE	29.4	GA	8S15E3
7/8/05	79	DU PONT STEWARD INSECTICIDE	INDOXACARB	4.32	GA	8S14E11
7/8/05	38	BRITZ O/S BLEND	PETROLEUM HYDROCARBONS	2.375	GA	8S14E9

7/8/05	38	PRISM 2 EC HERBICIDE	CLETHODIM	7.71875	GA	8S14E9
7/8/05	6	PERM-UP 3.2 EC INSECTICIDE	PERMETHRIN	0.140625	GA	8S15E10
7/8/05	46	INTREPID 2F	METHOXYFENOZIDE	0.5	GA	8S15E10
7/8/05	30	INTREPID 2F	METHOXYFENOZIDE	3.28125	GA	8S15E10
7/8/05	109	COMITE	PROPARGITE	27.25	GA	8S14E14
7/8/05	12	GLYFOS HERBICIDE	GLYPHOSATE	3	GA	8S15E13
7/8/05	12	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	3	GA	8S15E13
7/8/05	12	GOAL 1.6E HERBICIDE	OXYFLUORFEN	0.3	GA	8S15E13
7/8/05	35	ESTEEM ANT BAIT	PYRIPROXYFEN	70	LBS	8S15E13
7/8/05	90	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	7.03	GA	8S14E20
7/8/05	70	DANITOL 2.4 EC SPRAY	FENPROPATHRIN	5.47	GA	8S14E20
7/8/05	90	DREXEL DIMETHOATE 2.67	DIMETHOATE	14.06	GA	8S14E20
7/8/05	70	DREXEL DIMETHOATE 2.67	DIMETHOATE	10.94	GA	8S14E20
7/8/05	90	INTREPID 2F	METHOXYFENOZIDE	5.63	GA	8S14E20
7/8/05	70	INTREPID 2F	METHOXYFENOZIDE	4.38	GA	8S14E20
7/8/05	68	DU PONT LANNATE INSECTICIDE	METHOMYL	20.4	LBS	8S14E21
7/8/05	27.5	DU PONT LANNATE INSECTICIDE	METHOMYL	7.97	LBS	8S13E27
7/8/05	63	DU PONT LANNATE INSECTICIDE	METHOMYL	16.38	LBS	8S14E29
7/8/05	51.9	DU PONT LANNATE INSECTICIDE	METHOMYL	13.49	LBS	8S14E29
7/8/05	20	BANVEL	DICAMBA, DIMETHYLAMINE SALT	1.25	GA	8S13E33
7/8/05	20	OBERON 2SC INSECTICIDE/ MITICIDE	SPIROMESIFEN	1.25	GA	8S13E33
7/9/05	25	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	5.25	GA	8S14E1
7/9/05	58	DU PONT	INDOXACARB	12.69	LBS	8S15E4

		AVAUNT INSECTICIDE				
7/9/05	8	CHATEAU HERBICIDE SW	FLUMIOXAZIN	1.5	LB	8S15E11
7/9/05	8	GLYFOS HERBICIDE	GLYPHOSATE	2	GA	8S15E11
7/9/05	8	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	2	GA	8S15E11
7/9/05	46	DU PONT LANNATE SP INSECTICIDE	METHOMYL	34.5	LBS	8S14E16
7/9/05	48	DU PONT LANNATE SP INSECTICIDE	METHOMYL	36	LBS	8S14E16
7/9/05	90	DU PONT LANNATE INSECTICIDE	METHOMYL	22.5	LBS	8S14E20
7/9/05	56	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	CYFLUTHRIN	1.334	GA	8S14E21
7/9/05	56	LEVERAGE 2.7 SUSPENSION EMULSION INSECTI	IMIDACLOPRID	1.334	GA	8S14E21
7/9/05	56	MEPEX	MEPIQUAT CHLORIDE	7.109	GA	8S14E21
7/9/05	56	ZEPHYR 0.15EC	AVERMECTIN	1.295	GA	8S14E21
7/10/05	23	PROCLAIM INSECTICIDE	EMAMECTIN BENZOATE	5.93	LBS	8S15E6
7/11/05	65	DU PONT LANNATE SP INSECTICIDE	METHOMYL	48.75	LBS	8S15E4
7/11/05	89	INTREPID 2F	METHOXYFENOZIDE	9.734375	GA	8S15E3
7/11/05	46	DU PONT LANNATE SP INSECTICIDE	METHOMYL	34.5	LBS	8S15E2
7/11/05	40	DU PONT LANNATE SP INSECTICIDE	METHOMYL	30	LBS	8S15E2
7/11/05	20	SUCCESS	SPINOSAD	0.9375	GA	8S15E10
7/11/05	66	CROP OIL CONCENTRATE	MINERAL OIL	16.5	GA	8S14E16
7/11/05	66	CROP OIL CONCENTRATE	PETROLEUM DISTILLATES	16.5	GA	8S14E16
7/11/05	66	CROP OIL CONCENTRATE	PETROLEUM OIL, PARAFFIN BASED	16.5	GA	8S14E16
7/11/05	66	POAST	SETHOXYDIM	16.5	GA	8S14E16

7/11/05	7	GLY STAR PLUS	GLYPHOSATE, ISOPROPYLAMINE SALT	2.2	GA	8S15E13
7/11/05	7	SURFLAN A.S.	ORYZALIN	2.6	GA	8S15E13
7/11/05	54	DU PONT LANNATE INSECTICIDE	METHOMYL	14.04	LBS	8S13E23
7/11/05	31	DU PONT AVAUNT INSECTICIDE	INDOXACARB	6.78	LBS	8S16E20
7/11/05	46	SUPER WHAM! CA	PROPANIL	69	GA	8S13E29
7/11/05	47	SUPER WHAM! CA	PROPANIL	70.5	GA	8S13E29
7/11/05	83.6	SUPER WHAM! CA	PROPANIL	125.4	GA	8S13E29
7/12/05	52.5	ROUNDUP ULTRAMAX HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	11.03	GA	8S14E1
7/12/05	40	DU PONT LANNATE SP INSECTICIDE	METHOMYL	30	LBS	8S14E2
7/12/05	50	TRIPLELINE FOAM-AWAY	DIMETHYLPOLYSILOXANE	1.5625	GA	8S15E3
7/12/05	50	INTREPID 2F	METHOXYFENOZIDE	5.46875	GA	8S15E3
7/12/05	27	DIPEL ES	BACILLUS THURINGIENSIS (BERLINER), SUBSP. KURSTAKI, SEROTYPE 3A,3B	5.75	GA	8S15E8
7/12/05	6	CHATEAU HERBICIDE SW	FLUMIOXAZIN	1.125	LB	8S15E11
7/12/05	6	GLYFOS HERBICIDE	GLYPHOSATE	1.5	GA	8S15E11
7/12/05	6	GLYFOS HERBICIDE	GLYPHOSATE, ISOPROPYLAMINE SALT	1.5	GA	8S15E11
7/12/05	25	COMITE	PROPARGITE	6.25	GA	8S14E14
7/12/05	63	COMITE	PROPARGITE	15.75	GA	8S14E14
7/12/05	34.5	ASSAIL BRAND 70WP INSECTICIDE	ACETAMIPRID	0.215625	GA	8S13E24
7/12/05	34.5	R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	0.75	GA	8S13E24
7/12/05	34.5	ZEPHYR 0.15 EC	AVERMECTIN	0.81	GA	8S13E24
7/12/05	75.5	DU PONT LANNATE INSECTICIDE	METHOMYL	19.63	LBS	8S14E21
7/12/05	33.4	ASSAIL BRAND 70WP	ACETAMIPRID	0.20875	GA	8S13E27

7/12/05	37	INSECTICIDE ASSAIL BRAND 70WP	ACETAMIPRID	0.23125	GA	8S13E27
7/12/05	80	INSECTICIDE ASSAIL BRAND 70WP	ACETAMIPRID	0.5	GA	8S13E27
7/12/05	37	INSECTICIDE R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	0.8	GA	8S13E27
7/12/05	80	R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	1.73	GA	8S13E27
7/12/05	33.4	R-11 SPREADER-ACTIVATOR	DIMETHYLPOLYSILOXANE	0.72	GA	8S13E27
7/12/05	37	ZEPHYR 0.15 EC	AVERMECTIN	0.87	GA	8S13E27
7/12/05	80	ZEPHYR 0.15 EC	AVERMECTIN	1.88	GA	8S13E27
7/12/05	33.4	ZEPHYR 0.15 EC	AVERMECTIN	0.78	GA	8S13E27

Table 2. TRS locations with applications of chemicals with potential to cause sediment toxicity.

TRS
8S13E12
8S13E24
8S13E27
8S13E33
8S14E 1
8S14E 10
8S14E 11
8S14E 15
8S14E 20
8S14E 21
8S15E 2
8S15E 3
8S15E 4
8S15E 6
8S15E 10
8S15E 11
8S15E 12
8S15E 13
8S16E 7
8S16E 17
8S16E 20

Table 3. Applications of chemicals in the Prairie Flower Drain @ Crows Landing Road watershed. Applications during the months from February through July are included.

application date	treated acres	Chemical name	amount	unit	TRS
2/13/05	60	DIGLYCOLAMINE SALT OF 3,6-DICHLORO-O-ANISIC ACID	1.87	GA	6S9E14
7/6/05	60	PROPARGITE	15	GA	6S9E14
2/13/05	60	2,4-D, DIMETHYLAMINE SALT	5.6	GA	6S9E14

Table 4. Applications of chemicals in the Hilmar Drain @ Central Ave watershed. Applications are for the month of May 2005 prior to the sediment toxicity exceedance during the May sampling event.

chemical name	Total product used	Unit	Total treated acres	TRS
ABAMECTIN	1.2	GA	15.0	6S10E20
AZOXYSTROBIN	1.5	GA	15.0	6S10E20
MINERAL OIL	15.0	GA	15.0	6S10E20
LAMBDA-CYHALOTHRIN	42.0	OZ	15.0	6S10E20
CARBARYL	208.0	LBS	104.0	6S10E19

East San Joaquin Water Quality Coalition
1201 L Street
Modesto, CA 95354
www.esjcoalition.org

December 22, 2005

William Croyle
Dana Thomsen
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Bill and Dana:

On October 18, 2005, we filed an Exceedance Report for TDS for the sites listed below. We are now submitting the Communication Report for those exceedances.

Site	Exceedance	Date of sampling
Hilmar Drain @ Central Ave	TDS	7/13/05
Hilmar Drain @ Central Ave	TDS	8/16/05
Hilmar Drain @ Central Ave	TDS	9/21/05
Prairie Flower Drain @ Crows Landing Rd	TDS	7/13/05
Prairie Flower Drain @ Crows Landing Rd	TDS	8/16/05
Prairie Flower Drain @ Crows Landing Rd	TDS	9/21/05

1. Follow-up monitoring and analyses conducted.

No follow-up sampling was conducted. Both sites were the location of TDS exceedances at every sampling event during the 2005 irrigation season indicating that TDS is a continual problem in the watersheds. The location of these watersheds places them into a region that traditionally suffers from problems with high salt content and consequently high EC and TDS.

2. Actions taken to identify the source of the exceedance.

There are two potential sources of dissolved solids. Irrigation water placed onto salty soils can leach salts down into the shallow ground water where it can enter field drains and be moved to larger water bodies, or simply move through the unsaturated zone to the stream. Additionally, irrigation water can be obtained from a source that is naturally high in salts even before application to the field. Consequently, although TDS is a nonpoint source input to most water bodies, it is possible that there are inputs from field drains. We have recently obtained a map from the Turlock Irrigation District that indicates smaller drains and locations of pumps. At this point, we do not know if the pumps are located on field drains and are pumping water to the Ables Drain (Figure 1), but we will assume that these are drain pumps and are moving water from field drains to the main drains in the watershed. However, it is clear that not all parcels and fields in the watershed are located next to field drain pumps, suggesting that shallow ground water

recharge may be a factor in moving salts to the main drains. To determine the relative contribution of salt from these two potential sources, the ESJWQC will do the following:

- Survey the watersheds upstream of the sampling sites on the two main drains to determine the location of as many field drains as possible
- Sample the water used for irrigation as it is applied to the fields to determine the TDS and EC content
- Sample the water in the field drains just prior to the pumping into the drains to determine the TDS and EC content
- Perform a mass balance of water and dissolved solids to determine the relative contribution of surface and drain water/salts and shallow ground water/salts to the loads in the two drains.

We will conduct the study twice during the irrigation season to determine if there are differences across the irrigation season. We will develop an experimental design and a Quality Assurance Project Plan that will be submitted to the Regional Board prior to initiating field measurements.

3. Complete analytical results
Analytical results for the Hilmar Drain and Prairie Flower Drain exceedances are appended electronically to the transmittal message.

4. Time schedule to identify and implement the Management Practice Effectiveness evaluation.

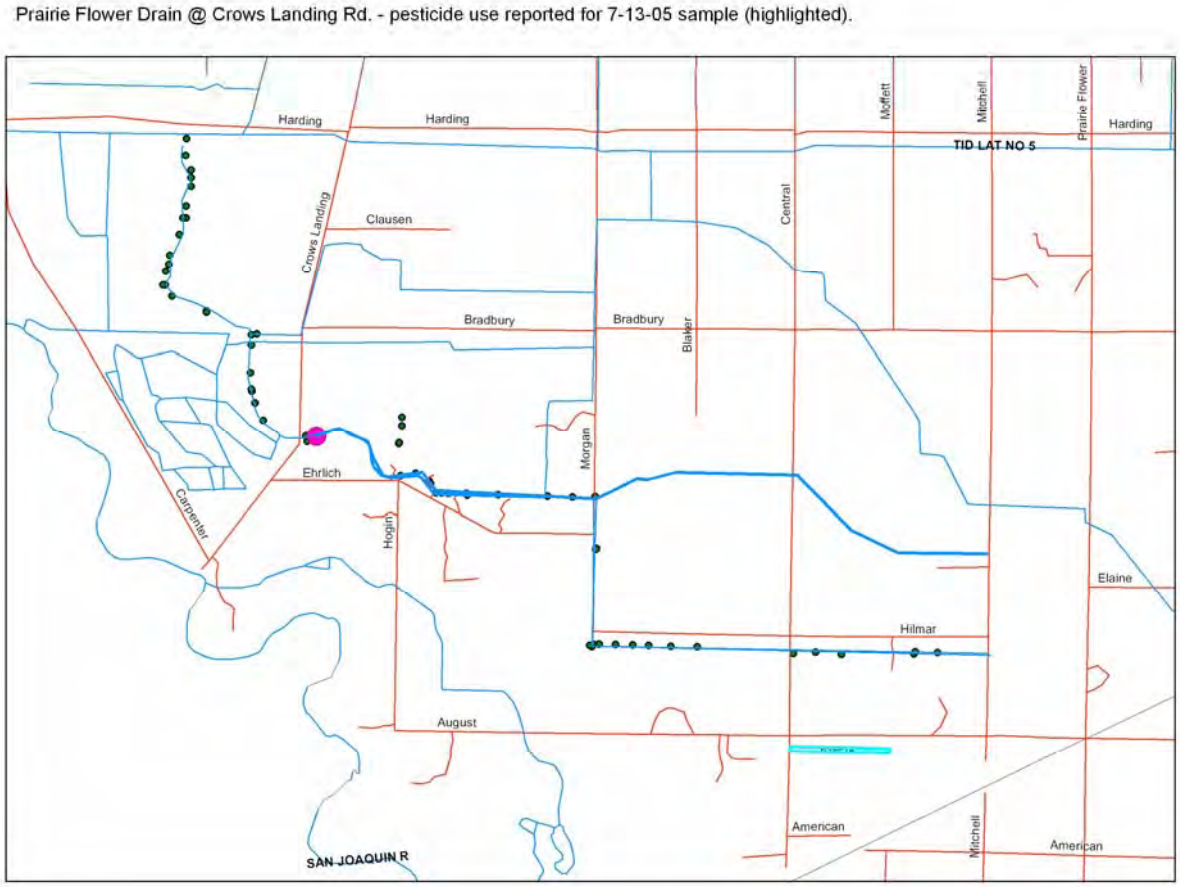
Action	Anticipated Completion Date
Develop experimental design and QAPP	April 1, 2006
Conduct field measurements of TDS and EC for the study of relative contributions	August 30, 2006
Submission of report to the Regional Board	December 1, 2006
Implement Outreach/BMP Education	December 1, 2006
Submit Evaluation Report	December 1, 2006

Let us know if further explanation or documentation is necessary.

Parry Klassen
559-325-9855

Wayne Zipser
209-522-7278

Figure 1. Prairie Flower Drain with Ables Drain as the tributary to the south and east. Ables Drain runs parallel to Hilmar Ave and then north along Morgan Rd to where it empties into Prairie Flower Drain. The small green dots are the locations of the pumps on the drains. Watershed drainage and pump locations were provided by the Turlock Irrigation District.



Conclusions and Recommendations

The monitoring program was a success in that:

- All planned sample events were captured and samples were collected from all sites that had water
- Completeness for all planned constituents was at or near 100%
- The Data Quality Objectives were met
- All data were placed into a SWAMP comparable database and transferred to the Regional Board

The monitoring program will improve in the following areas:

- Chemical testing will meet the Regional Board's Reporting Limit requirements starting in the 2006 dormant season sampling
- Discharge measurements will be collected from all sites at which it is possible to collect measurements
- The coalition will continue to improve communications with the laboratories to obtain information on exceedances in a timely manner
- The coalition will try to obtain the Pesticide Use Reports more quickly so the source identification analyses can be performed

The monitoring program provided the following technical conclusions:

- In many watersheds, large amounts of pesticides are applied emphasizing the importance of managing water quality from a watershed perspective
    - Multiple applications of pesticides in a watershed make source identification difficult
- There appears to be a number of unreported applications of pesticides in many of the watersheds
- The most common exceedances were *E. coli* and exceedances related to salts (EC and TDS)
- The EC and TDS in the Hilmar Drain watershed are not well correlated over time suggesting that the source and/or composition of the salts in the drain changes seasonally

Recommendations

- Focus chemical analyses on the most common pesticides applied in the watersheds
- Perform the *E. coli* source identification study to allow the targeting of management practices
- Develop a methodology to understand the source of the salts in the Hilmar Drain and Prairie Flower Drain watersheds