TURLOCK IRRIGATION DISTRICT
333 EAST CANAL DRIVE
POST OFFICE BOX 949
TURLOCK, CALIFORNIA 95381
(209) 883-8300

Don Pedro Dam and Powerhouse

March 16, 2009

Danny McClure
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670

Dear Mr. McClure,

RE: Comments on the Proposed Revisions to the 303(d) List of Impaired Water Bodies for the Central Valley Region

The Turlock Irrigation District (TID) appreciates the opportunity to provide comments on staff's recently circulated draft of the proposed revisions to the 303(d) list of impaired water bodies within the Central Valley Region. This transmittal provides specific comments related to the proposed listings for the Harding Drain and the Highline Canal.

Based on our review of the documentation provided supporting the recommendations for new or continued listings, TID is pleased to provide the following comments. For ease of reference, they have been divided into the sections: (1) General Comments; and (2) Specific Comments, which relate to the data analysis and/or additional data provided for consideration.

GENERAL COMMENTS:

a) Harding Drain: Harding Drain is incorrectly referred to as "Turlock Irrigation District Lateral 5." The Harding Drain is approximately 5.5 miles in length and is located at the downstream end of TID's Ceres Main Canal (Figures 1 and 2). As shown, Lateral 5 spills to the Ceres Main Canal where the canal turns to the west. Flows in the Ceres Main Canal, not delivered for irrigation, are discharged to the Harding Drain at CMD32–Hodges (or the Ceres Main, Drop 32 also known as Hodges Drop). It should also be noted that the 303(d) listing currently refers to an 8.3-mile distance of impaired water in the Harding Drain, which appears to be an error in the measured distance or inappropriately includes the Ceres Main and Lateral 5 canals.

Figure 1. Map of Showing Canal System Upstream of Harding Drain

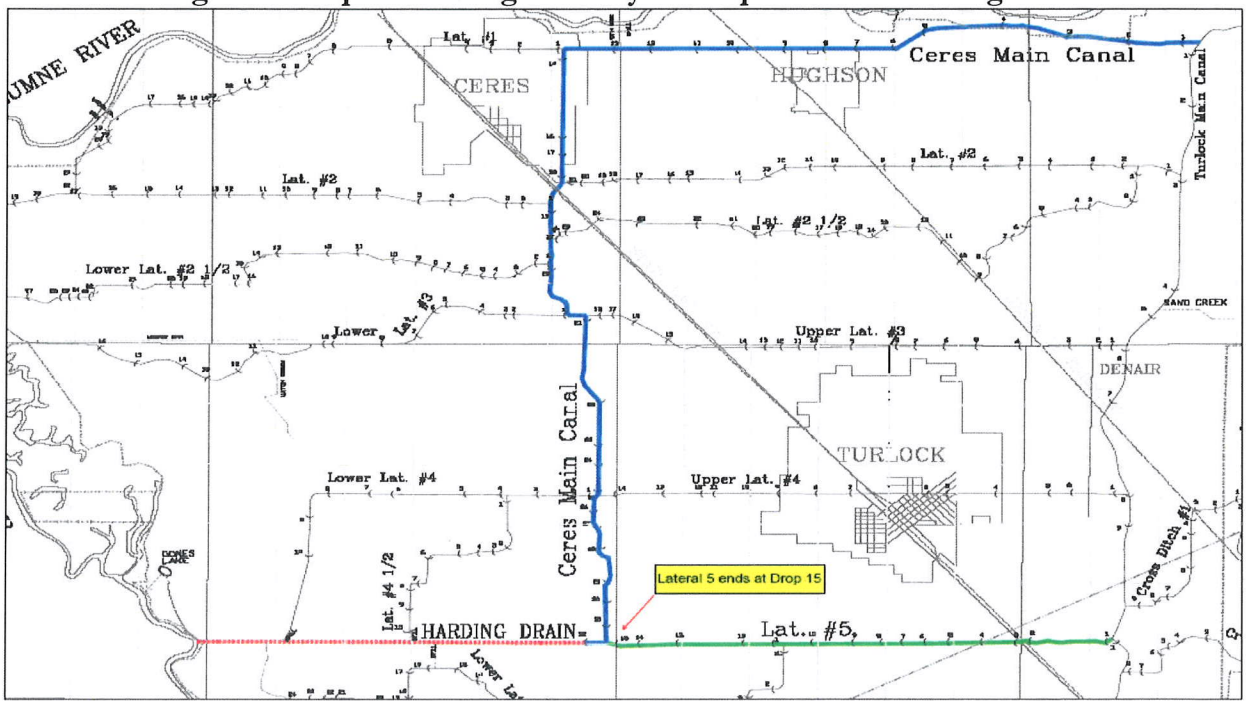


Figure 2. Google Earth Map of Harding Drain Showing Length

b) Highline Canal: The Highline Canal is incorrectly spelled within the proposed listing information. "Highline" should be one word. Correcting this now, could minimize potential confusion later.

According to our records, the length of the Highline Canal (from where it starts at the TID Main Canal to where it spills to the Merced River) is approximately 27 miles. The length of the Highline Canal between Mustang Creek and the spill to the Merced River is approximately 10 miles. A review of the data utilized to list the canal does not include any data collected upstream of Mustang Creek. Therefore, should the Regional Board continue to propose listing the Highline Canal, the appropriate length to include would be the 10 miles downstream of Mustang Creek.

c) MUN and REC Beneficial Uses: Comments were submitted by Peter McGaw of Archer Norris, on behalf of the TID, regarding the inappropriate conclusion that the Harding Drain and the Highline Canal are potential drinking water sources, and the Harding Drain is a recreational use facility. His comments are incorporated herein by reference.

Any proposal to list these waterways as impaired due to MUN uses would be inappropriate. These are constructed agricultural facilities owned and operated by the TID. Neither facility has been, nor will be, a drinking water source. These are agricultural facilities. It is also important to note that none of the proposed MUN listings for the Harding Drain or the Highline Canal are a concern for the waterway downstream of these facilities (i.e. the San Joaquin or Merced rivers). Therefore, the proposed listings for *Simazine* on the Highline Canal, and *alpha-BHC (Benzenehexachloride)*, *Hexachlorobenzen/HCB*, and *Lindane/gamma Hexachlorocyclohexane (gamma-HCH)* on the Harding Drain should be removed.

The proposed listing of the Harding Drain for Escherichia coli (*E. coli*) due to recreational uses is also inappropriate. The Harding Drain is unsafe for swimming and other recreational uses. Signs are posted at each of the roadways, clearly indicating it is not a recreational facility. The proposed listing of the Harding Drain for *E. coli* should be removed.

SPECIFIC COMMENTS:

d) Proposed Listing of Harding Drain for Lindane:

The California Toxics Rule (CTR) Criteria Continuous Concentration for Lindane (gamma-BHC) for freshwater Aquatic Life protection is 0.95 µg/L (4-day average). The draft fact sheet for this water body-pollutant combination incorrectly cites the criterion as 0.08 mg/L (4-day average), 0.08 g/g (4-day average), and 0.08 µg/L (4-day average). A query of the NAWQA database used to develop the proposed listing yields 36 water samples from the Harding Drain from April 1992 through August 2001. Zero of 36 samples exceeded the CTR criterion of 0.95 µg/L (4-day average) for freshwater Aquatic Life protection.

The water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards are not being exceeded.

e) New Data Available Related to Chlorpyrifos and Unknown Toxicity Listings for the Harding Drain

In December 2008 TID completed a Proposition 50-funded project (Grant Agreement No. 04-171-555-1), the "Harding Drain Watershed Agricultural and Urban Impacts Evaluation, Education, and Outreach Project" (Harding Drain Project) grant, to perform detailed monitoring of water quality in the Harding Drain and tributary sources. The TID performed extensive water quality monitoring, collecting monthly samples from May 2006 through August 2008, including locations in the Ceres Main Canal just upstream of the Harding Drain (CMD32–Hodges), and at the upstream (HD1) and downstream (HD2) locations. Figure 3 shows the locations of these sampling sites along the drain. The TID monitoring program included a detailed Quality Assurance Project Plan (QAPP), which was approved by the Central Valley Regional Water Quality Control Board (CVRWQCB) pursuant to Proposition 50 funding requirements, consistent with SWAMP, and is compliant with the data quality assessment process requirements outlined in Section 6 of the SWRCB listing policy. The data gathered for the project was submitted to the CVRWQCB, pursuant to the grant requirements.[1] The additional data collected along the Harding Drain for chlorpyrifos and unknown toxicity are evaluated below, with the data provided in tables as an attachment to this submittal. Application of the delisting criteria (Table 4.1 of SWRCB listing policy) to data from the Harding Drain Project demonstrates that the Harding Drain is not impaired for chlorpyrifos or unknown toxicity.

1. <u>HARDING DRAIN – CHLORPYRIFOS LISTING</u>

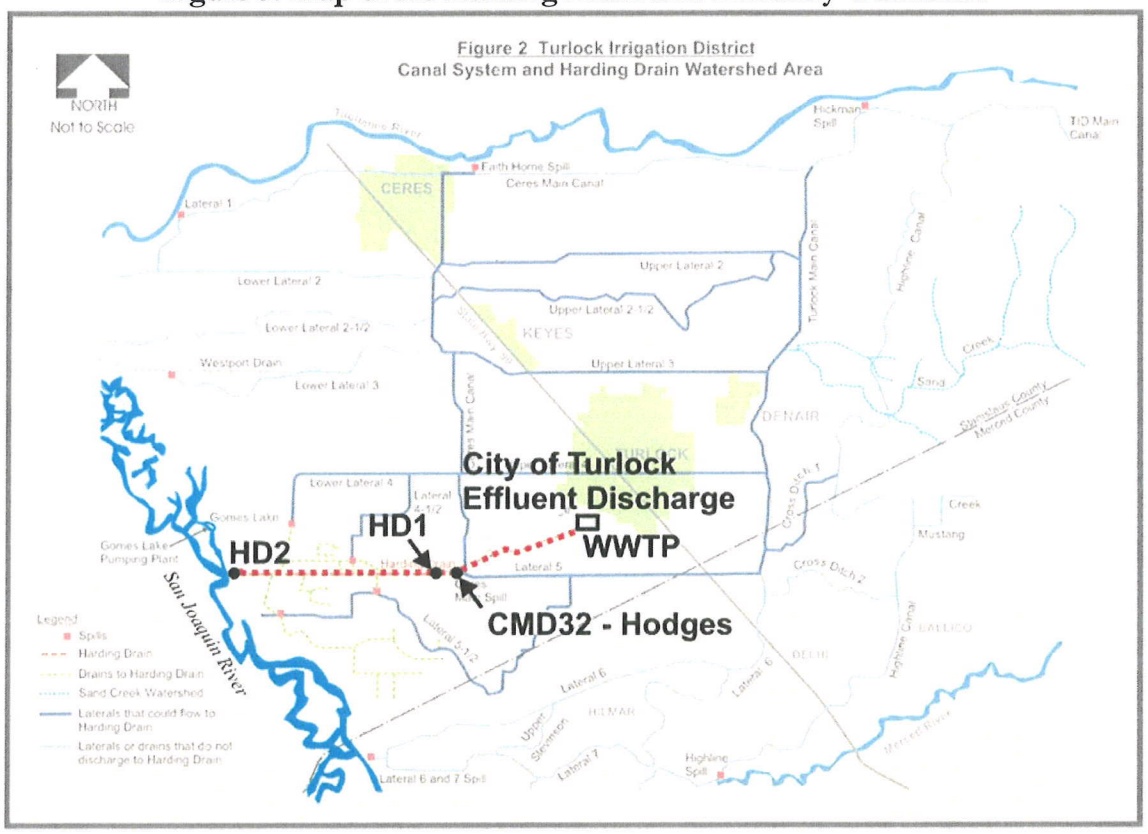
Chlorpyrifos data were compared to the California Department of Fish and Game (CDFG) Hazard Assessment Criteria of 0.015 µg/L 4-day average (chronic) concentration. The chronic 4-day criterion is more restrictive than the acute 1-hour maximum concentration criterion of 0.025 µg/L.

Data collected by TID for chlorpyrifos support delisting (Attachment A - Table 1). Ninety samples were collected in the Harding Drain at CMD32-Hodges, HD1, and HD2 from May 2006 through August 2008. Three of the 90 samples showed exceedances of the chronic limit (0.015 µg/L). The delisting criteria would allow for up to seven exceedances for a sample size of 90.

1 The new data evaluated within this submittal was provided to the Central Valley Regional Water Quality Control Board in a SWAMP compatible format, as required by the agreement for the grant project (Grant Agreement No. 04-171-555-1). However, if there is a need to provide additional information, including copies of the Monitoring Plan or QAPP for the grant project, we will provide that information upon request.

Other available data[2] for chlorpyrifos were also assessed for the Harding Drain and are summarized in Table 2 (see Attachment A). While historic data from the USGS and DPR (pre-1995) indicate impairment, more recent data show a substantial improvement in water quality. USGS chlorpyrifos data collected between 1992 and 1994 had a total of 18 exceedances out of 23 samples; historic DPR chlorpyrifos data showed 12 exceedances out of 49 samples. However, more recent data collected by the USGS between 1999 and 2001 at HD2 showed no exceedances for chlorpyrifos out of 12 samples. Further, chlorpyrifos data collected by TID between September 2001 and September 2004 show nine exceedances out of 220 samples. The delisting criteria would allow up to 18 exceedances to support delisting.

Figure 3. Map of the Harding Drain and Tributary Watershed



2 The historic data were sent to the State Water Resources Control Board during the 2004 303(d) list update in a letter to Mr. Craig J. Wilson from Brown and Caldwell, on behalf of TID, dated January 30, 2005. It is our understanding that the Central Valley Regional Water Quality Control Board has these data available for review and considered these data in the draft 2008 update to the 303(d) list. We can provide an additional copy for further consideration if requested.

Summary

A summary of the exceedance frequency for recent and historic chlorpyrifos data is provided in Table 2 (see Attachment A). All recent data gathered between 1999 and 2008, both individually and collectively, indicate that the Harding Drain is no longer impaired for chlorpyrifos and support delisting the Harding Drain for this constituent. If historic data are analyzed in conjunction with the more recent chlorpyrifos data, there would be insufficient non-exceedances to support delisting. However, Section 4.11 of the Listing Policy states:

"When all other Delisting Factors do not result in the delisting of a water segment but information indicates attainment of standards, a water segment shall be evaluated to determine whether the weight of evidence demonstrates that a water quality standard is attained. If the weight of evidence indicates attainment, the water segment shall be removed from the section 303(d) list..."

When the most recent data (from 1999 through 2008) are evaluated, there are a total of 12 exceedances out of 322 samples. The listing policy permits delisting for up to 27 exceedances for a sample size of 322. Therefore, the weight of evidence demonstrates that the Harding Drain is no longer impaired for chlorpyrifos, and this water body-pollutant combination should be removed from the 303(d) list.

2. HARDING DRAIN – UNKNOWN TOXICITY LISTING

Ceriodaphnia dubia

Results of 96-hour acute-style toxicity tests were compared to the evaluation guideline for unknown toxicity (*Ceriodaphnia dubia*), where an exceedance is characterized by a statistically significant reduction in survival relative to the control, using the appropriate statistical approaches described in EPA-821-R-02-012.

Seventy-three samples were collected in the Harding Drain at CMD32-Hodges, HD1 and HD2 from May 2006 through May 2008 for evaluation of toxicity to *Ceriodaphnia dubia* (Attachment A - Table 3). Zero of 73 samples collected exhibited statistically significant toxicity.

Section 4.1 of the listing policy requires water segments to be removed from the section 303(d) list if the number of measured exceedances supports rejection of the null hypothesis as presented in Table 4.1 of the listing policy. The delisting criteria would allow up to six exceedances out of 73 samples to support delisting. Because significant toxicity was not detected in any of the 73 samples, the Harding Drain should no longer be listed for unknown toxicity (*Ceriodaphnia dubia*).

The recent toxicity data provided in this comment later can also be evaluated in conjunction with the 25 SWAMP samples described in the draft fact sheet for the Harding Drain. Collectively, the two datasets result in a total of zero exceedances out of 98 samples. Table 4.1 of the listing policy permits up to eight exceedances for 98 samples. Because all available data indicate that unknown toxicity to *Ceriodaphnia dubia* is no longer present in the Harding Drain, this water body-pollutant combination should be removed from the 303(d) list.

Pimephales promelas

Results of 96-hour acute-style toxicity tests were compared to the evaluation guideline for unknown toxicity (*Pimephales promelas*), where an exceedance is characterized by a statistically significant reduction in survival relative to the control, using the appropriate statistical approaches described in EPA-821-R-02-012.

Seventy-three samples were collected in the Harding Drain at CMD32-Hodges, HD1 and HD2 from May 2006 through May 2008 for evaluation of toxicity to *Pimephales promelas* (Attachment A - Table 4). During one sampling event in June 2006, the laboratory control survival was below test acceptability requirements and three of the associated samples had to be removed from further analysis. Of the remaining 70 samples, no statistically significant toxicity was detected. The delisting criteria provided in Table 4.1 of the listing policy would allow up to five exceedances out of 70 samples to support delisting. Because significant toxicity was not detected in any of the 70 samples, the Harding Drain should no longer be listed for unknown toxicity (*Pimephales promelas*).

The recent toxicity data provided in this transmittal can also be evaluated in conjunction with the 25 SWAMP samples described in the draft fact sheet for the Harding Drain. Collectively, the two datasets result in a total of zero exceedances out of 95 samples. Table 4.1 of the listing policy permits up to eight exceedances for 95 samples. Because all available data indicate that unknown toxicity to *Pimephales promelas* is no longer present in the Harding Drain, this water body-pollutant combination should be removed from the 303(d) list.

Selenastrum capricornutum

Samples from the Harding Drain were also collected from May 2006 through May 2008 for evaluation of chronic toxicity for the green algae *Selenastrum capricornutum*. While reductions in algal growth were observed, a number of issues arose during the sampling program that drew into question the reliability of algae toxicity testing results, the repeatability of the tests, and the effect of test conditions and/or variables on the test results. The data, and a summary of the associated technical issues, are included in the Data Evaluation Technical Memorandum prepared for the Harding Drain Watershed Agricultural and Urban Impacts Evaluation, Education, and Outreach Project (Grant Agreement No. 04-171-555-1). It is our understanding that the CVRWQCB has a copy of this document and supporting data; we can provide an additional copy if requested.

The TID appreciates the CVRWQCB staff's serious consideration of these comments when as they prepare revisions to the proposed listings. Should you have any questions regarding the above comments, please do not hesitate to contact me at (209) 883-8428.

Sincerely,

Debra C. Liebersbach, P.E.
Water Planning Department Manager

ATTACHMENT A

Table 1. Chlorpyrifos data collected for the Harding Drain Watershed Agricultural and Urban Impacts Evaluation Education and Outreach Program, 2006-2008

Site	Sample Date	Sample Time	Result (µg/L)	MDL[a] (µg/L)	RL[b] (µg/L)	Exceeds Chronic Limit (0.015 µg/L)?
CMD32-H	5/24/2006	1:39:00 PM	ND	0.001	0.002	NO
HD1	5/24/2006	2:51:00 PM	ND	0.001	0.002	NO
HD2	5/24/2006	4:21:00 PM	0.0138	0.001	0.002	NO
CMD32-H	6/14/2006	8:05:00 AM	ND	0.001	0.002	NO
HD1	6/14/2006	9:55:00 AM	ND	0.001	0.002	NO
HD2	6/14/2006	11:00:00 AM	ND	0.001	0.002	NO
CMD32-H	7/12/2006	9:45:00 AM	ND	0.001	0.002	NO
HD1	7/12/2006	10:35:00 AM	ND	0.001	0.002	NO
HD2	7/12/2006	11:45:00 AM	0.0239	0.001	0.002	**YES**
CMD32-H	8/9/2006	10:02:00 AM	ND	0.001	0.002	NO
HD1	8/9/2006	11:05:00 AM	ND	0.001	0.002	NO
HD2	8/9/2006	12:20:00 PM	ND	0.001	0.002	NO
CMD32-H	9/13/2006	9:55:00 AM	ND	0.001	0.002	NO
HD1	9/13/2006	11:00:00 AM	ND	0.001	0.002	NO
HD2	9/13/2006	12:05:00 PM	ND	0.001	0.002	NO
CMD32-H	10/11/2006	10:15:00 AM	ND	0.001	0.002	NO
HD1	10/11/2006	11:05:00 AM	ND	0.001	0.002	NO
HD2	10/11/2006	12:05:00 PM	ND	0.001	0.002	NO
HD1	11/8/2006	11:30:00 AM	ND	0.001	0.002	NO
HD2	11/8/2006	12:45:00 PM	ND	0.001	0.002	NO
CMD32-H	12/13/2006	9:30:00 AM	ND	0.001	0.002	NO
HD1	12/13/2006	11:15:00 AM	ND	0.001	0.002	NO
HD2	12/13/2006	11:45:00 AM	ND	0.001	0.002	NO
HD1	1/10/2007	10:50:00 AM	ND	0.001	0.002	NO
HD2	1/10/2007	12:00:00 PM	ND	0.001	0.002	NO
CMD32-H	2/14/2007	10:15:00 AM	ND	0.001	0.002	NO
HD1	2/14/2007	11:10:00 AM	ND	0.001	0.002	NO
HD2	2/14/2007	12:05:00 PM	ND	0.001	0.002	NO
HD1	3/14/2007	9:40:00 AM	ND	0.001	0.002	NO
HD2	3/14/2007	10:30:00 AM	ND	0.001	0.002	NO
CMD32-H	4/11/2007	10:35:00 AM	ND	0.001	0.002	NO
HD1	4/11/2007	1:00:00 PM	ND	0.001	0.002	NO
HD2	4/11/2007	2:10:00 PM	ND	0.001	0.002	NO
CMD32-H	5/9/2007	9:50:00 AM	ND	0.001	0.002	NO
HD1	5/9/2007	11:55:00 AM	ND	0.001	0.002	NO
HD2	5/9/2007	12:50:00 PM	ND	0.001	0.002	NO
CMD32-H	6/13/2007	10:10:00 AM	ND	0.001	0.002	NO
HD1	6/13/2007	11:55:00 AM	ND	0.001	0.002	NO
HD2	6/13/2007	12:55:00 PM	ND	0.001	0.002	NO
HD1	7/11/2007	4:45:00 AM	ND	0.001	0.002	NO
CMD32-H	7/11/2007	9:05:00 AM	ND	0.001	0.002	NO

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Table 1. Chlorpyrifos data collected for the Harding Drain Watershed Agricultural and Urban Impacts Evaluation Education and Outreach Program, 2006-2008

Site	Sample Date	Sample Time	Result (µg/L)	MDL[a] (µg/L)	RL[b] (µg/L)	Exceeds Chronic Limit (0.015 µg/L)?
HD2	7/11/2007	11:30:00 AM	ND	0.001	0.002	NO
HD1	8/8/2007	11:05:00 AM	ND	0.001	0.002	NO
HD2	8/8/2007	12:10:00 PM	ND	0.001	0.002	NO
CMD32-H	9/12/2007	9:45:00 AM	ND	0.001	0.002	NO
HD1	9/12/2007	10:35:00 AM	ND	0.001	0.002	NO
HD2	9/12/2007	11:35:00 AM	ND	0.001	0.002	NO
CMD32-H	10/17/2007	9:10:00 AM	ND	0.001	0.002	NO
HD1	10/17/2007	9:45:00 AM	ND	0.001	0.002	NO
HD2	10/17/2007	11:00:00 AM	ND	0.001	0.002	NO
CMD32-H	11/14/2007	10:30:00 AM	ND	0.001	0.002	NO
HD1	11/14/2007	11:05:00 AM	ND	0.001	0.002	NO
HD2	11/14/2007	11:45:00 AM	ND	0.001	0.002	NO
HD1	12/12/2007	12:15:00 PM	ND	0.001	0.002	NO
HD2	12/12/2007	1:15:00 PM	ND	0.001	0.002	NO
CMD32-H	1/9/2008	9:50:00 AM	ND	0.001	0.002	NO
HD1	1/9/2008	10:30:00 AM	ND	0.001	0.002	NO
HD2	1/9/2008	11:20:00 AM	ND	0.001	0.002	NO
CMD32-H	1/25/2008	10:50:00 AM	ND	0.001	0.002	NO
HD1	1/25/2008	11:25:00 AM	ND	0.001	0.002	NO
HD2	1/25/2008	12:10:00 PM	ND	0.001	0.002	NO
HD1	2/13/2008	12:00:00 PM	ND	0.001	0.002	NO
HD2	2/13/2008	1:00:00 PM	ND	0.001	0.002	NO
CMD32-H	3/19/2008	10:45:00 AM	ND	0.001	0.002	NO
HD1	3/19/2008	12:00:00 PM	ND	0.001	0.002	NO
HD2	3/19/2008	12:55:00 PM	ND	0.001	0.002	NO
CMD32-H	4/9/2008	9:25:00 AM	ND	0.001	0.002	NO
HD1	4/9/2008	10:00:00 AM	ND	0.001	0.002	NO
HD2	4/9/2008	12:55:00 PM	ND	0.001	0.002	NO
CMD32-H	4/23/2008	10:40:00 AM	ND	0.001	0.002	NO
HD1	4/23/2008	11:00:00 AM	ND	0.001	0.002	NO
HD2	4/23/2008	11:40:00 AM	ND	0.001	0.002	NO
CMD32-H	5/14/2008	11:30:00 AM	ND	0.001	0.002	NO
HD1	5/14/2008	12:05:00 PM	ND	0.001	0.002	NO
HD2	5/14/2008	1:00:00 PM	ND	0.001	0.002	NO
CMD32-H	5/28/2008	2:55:00 PM	ND	0.001	0.002	NO
HD1	5/28/2008	3:10:00 PM	ND	0.001	0.002	NO
HD2	5/28/2008	3:40:00 PM	ND	0.001	0.002	NO
CMD32-H	6/12/2008	11:25:00 AM	ND	0.001	0.002	NO
HD1	6/12/2008	11:40:00 AM	ND	0.001	0.002	NO
HD2	6/12/2008	12:05:00 PM	ND	0.001	0.002	NO
CMD32-H	6/25/2008	2:25:00 PM	ND	0.001	0.002	NO
HD1	6/25/2008	2:43:00 PM	ND	0.001	0.002	NO

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Table 1. Chlorpyrifos data collected for the Harding Drain Watershed Agricultural and Urban Impacts Evaluation Education and Outreach Program, 2006-2008

Site	Sample Date	Sample Time	Result (µg/L)	MDL[a] (µg/L)	RL[b] (µg/L)	Exceeds Chronic Limit (0.015 µg/L)?
HD2	6/25/2008	3:10:00 PM	ND	0.001	0.002	NO
CMD32-H	7/16/2008	10:40:00 AM	0.0144	0.001	0.002	NO
HD1	7/16/2008	11:00:00 AM	ND	0.001	0.002	NO
HD2	7/16/2008	11:25:00 AM	0.0229	0.001	0.002	**YES**
CMD32-H	7/30/2008	10:30:00 AM	ND	0.001	0.002	NO
HD1	7/30/2008	10:50:00 AM	ND	0.001	0.002	NO
HD2	7/30/2008	11:15:00 AM	0.0861	0.001	0.002	**YES**

[a]Method Detection Limit

[b]Laboratory Reporting Limit

Table 2. Summary of Chlorpyrifos Results on Harding Drain (CMD32-H, HD1, and HD2)

Constituent	Data Group	Data Collection Entity	Data Collection Period	Total No. of Samples	Total No. of Exceedances	No. of Allowable Exceedances[a]
Chlorpyrifos	Historic Data	USGS	1992-1994	23	16	N/A
		DPR[b]	1991-1993	2	2	N/A
		CVRWQCB	1991-1992	22	10	N/A
		TOTAL		**47**	**28**	**3**
	All recent data	TID	2001-2004	220	9	18
		USGS	1999-2001	12	0	N/A
		City of Turlock[c]	2001-2008	0	0	N/A
		TID	2006-2008	90	3	7
		TOTAL		**322**	**12**	**27**

[a] Source: Table 4.1 of the SWRCB's "Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List" (2004). Table 4.1 includes the number of allowable exceedances according to sample size for up to 129 samples. For sample sizes greater than 129, the maximum number of measured exceedances allowed is calculated using a binomial distribution function supplied below Table 4.1.

[b] The limit of quantification (LOQ) for DPR chlorpyrifos tests is 0.05 µg/L and exceeds the reference value of 0.015 µg/L. Per the SWRCB's Listing Policy, non-detect data cannot be assumed to be lower than the reference value if the LOQ exceeds the reference value. Seven non-detect DPR datapoints are not considered in this evaluation.

[c] The limit of quantification (LOQ) for City of Turlock chlorpyrifos tests fluctuates between 0.08, 0.5, and 1 µg/L and exceeds the reference value of 0.015 µg/L. Per the SWRCB's Listing Policy, non-detect data cannot be assumed to be lower than the reference value if the LOQ exceeds the reference value. Quarterly non-detect City of Turlock datapoints are not considered in this evaluation.

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Table 3. Summary of *Ceriodaphnia dubia* Toxicity Testing Results, % Survival (96-hr Acute)

Date	Lab	*Ceriodaphnia dubia* % Survival (96-hr Acute) at Sampling Locations			
		CMD32-H	HD1	HD2	Control
5/24/2006	BES	100	100	100	100
6/14/2006	BES	100	100	100	100
7/12/2006	BES	100	100	100	100
	PER	100	100	100	95
8/9/2006	PER	95	100	95	100
9/13/2006	PER	100	100	100	95
10/11/2006	PER	100	100	100	100
11/8/2006	PER	*No flow*	100	100	100
12/13/2006	PER	100	100	100	90
1/10/2007	PER	100	100	100	100
2/14/2007	PER	100	100	100	100
3/14/2007	PER	*No flow*	100	100	100
4/11/2007	PER	100	95	100	100
5/9/2007	PER	100	100	100	100
6/13/2007	PER	95	100	100	100
7/11/2007	PER	100	100	100	100
8/8/2007	PER	*No flow*	100	100	100
9/12/2007	PER	100	100	100	100
10/17/2007	PER	100	100	100	100
11/14/2007	PER	95	100	100	100
12/12/2007	PER	*No flow*	100	100	100
1/9/2008	PER	100	100	100	100
1/25/2008	PER	100	100	100	95
2/13/2008	PER	*No flow*	100	95	90
3/19/2008	PER	100	100	100	100
4/9/2008	PER	100	100	90	95
5/14/2008	PER	100	100	100	100

PER = Pacific EcoRisk. Results reported are average of four replicate samples.

BES = Block Environmental Services. Results reported are average of four replicate samples.

No flow = No samples were collected and analyzed for this program when no flow was present.

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Table 4. Summary of Fathead Minnow (*Pimephales promelas*) Toxicity Testing Results, % Survival (96-hr Acute)

Date	Lab	Fathead Minnow % Survival (96-hr Acute) at Sampling Locations			
		CMD32-H	HD1	HD2	Control
5/24/2006	BES	100	100	95	100
6/14/2006	BES	55[a]	50[a]	100[a]	20[a]
7/12/2006	BES	100	100	100	100
	PER	100	100	100	100
8/9/2006	PER	100	100	100	100
9/13/2006	PER	100	100	100	100
10/11/2006	PER	100	100	100	100
11/8/2006	PER	*No flow*	100	100	100
12/13/2006	PER	100	100	100	100
1/10/2007	PER	97.5	100	100	100
2/14/2007	PER	100	100	100	100
3/14/2007	PER	*No flow*	100	97.5	100
4/11/2007	PER	77.5[b]	97.5	97.5	97.5
5/9/2007	PER	100	97.5	100	100
6/13/2007	PER	100	100	100	100
7/11/2007	PER	100	100	100	100
8/8/2007	PER	*No flow*	100	100	100
9/12/2007	PER	95	100	100	100
10/17/2007	PER	97.5	100	97.5	100
11/14/2007	PER	100	100	97.5	100
12/12/2007	PER	*No flow*	97.5	100	97.5
1/9/2008	PER	95	100	100	100
1/25/2008	PER	100	100	97.5	100
2/13/2008	PER	*No flow*	100	100	97.5
3/19/2008	PER	100	100	100	100
4/9/2008	PER	100	97.5	100	100
5/14/2008	PER	85	95	95	92.5

PER = Pacific EcoRisk. Results reported are average of four replicate samples.
BES = Block Environmental Services. Results reported are average of two replicate samples.
No flow = No samples were collected and analyzed for this program when no flow was present.

[a] *Laboratory control samples failed test acceptability requirements (=90% survival).*
[b] *The reduction in mortality for this sample occurred in only one of the four test replicates and was attributed by the laboratory to be pathogen-related mortality in its fathead minnow stock.*