

**COMMENT LETTER 77 - JAMES T. HOLLIBAUGH, PH.D. (OCTOBER 2, 1996),  
RECEIVED OCTOBER 4, 1996**

**Response to Comment 77-1**

*Comment Summary: The comment provides an opinion about the best uses and future flexibility for use of the treated wastewater that will be produced by the Santa Rosa Subregional System.*

The overall project objectives include a statement supporting “wise use of water resources” (refer to page 1-3 of the Draft EIR/EIS). Each of the project alternatives includes a beneficial use of water, either for irrigation, recharge of the geysers, or by returning the water to the river from which it was withdrawn. The EIR/EIS authors do not agree that irrigation is a waste of a resource, but agree that a large irrigation project will commit use of reclaimed water to that purpose. Decision makers are expected to weigh the uses of reclaimed water as one factor when they choose an alternative.

**Response to Comment 77-2**

*Comment Summary: The comment compares the Draft EIR/EIS with a previous project EIR (EIP 1990) and states that the Draft EIR/EIS is better written and the alternatives appear to have been developed with more concern for potential environmental impacts, including elimination of major direct project impacts to the esteros in West County. Analyses within the Draft EIR/EIS recognize that irrigation will affect the water balance, including increased groundwater inflows to Stemple and Americano creeks and possible changes to the salinity regime. The comment continues that if the proposed improvements to riparian corridors are implemented, there should be a net overall improvement in water quality in the streams that enter the esteros and a commensurate improvement in water quality in the esteros.*

The EIR/EIS authors agree that although some change to the esteros is an unavoidable effect of a West County project, the overall impact is not necessarily adverse from a biological and water quality perspective. Refer to Response to Comment 12-13.

**Response to Comment 77-3**

*Comment Summary: The comment states that the pesticide transport model used in the Draft EIR/EIS shows that “no pesticide will leave the irrigated area and reach the streams,” and that pesticide application in association with the high tech irrigation scenario associated with Alternative 3 will affect the esteros and other non-agricultural environments.*

Table 1 in Appendix I-1 (Estimation of Nitrogen, Salt and Herbicide/Pesticide Concentrations in Surface Water), of the Draft EIR/EIS shows that small amounts of pesticides will be present in streams. The effect of the pesticides is evaluated on Page 6-

24 in Appendix K-4 (Ecological Risk Assessment), of the Draft EIR/EIS, and the impact is considered to be less than significant.

#### **Response to Comment 77-4**

*Comment Summary: The comment states that the wintertime overland flow pesticide transport pathway was not evaluated.*

The approach to modeling pesticide transport is described in the pesticide modeling section of the *Water Quality Evaluations on Wastewater Irrigation in West County and South County Alternatives* (which is cited in Appendix I-1 of the Draft EIR/EIS as Tanji 1995). Pesticides were modeled by simulating short term runoff events and seasonal subsurface drainage. Runoff in winter was not evaluated because the worst-case pesticide runoff impacts would occur in the dry season, as follows:

- Because pesticide use restrictions preclude application in association with rainfall, pesticide applications overwhelmingly occur during the growth (non-rainy season).
- Pesticide mass mobility in runoff is greatest within one week of pesticide application, and attenuates rapidly for most pesticides.
- Stream flows that would dilute pesticides leaving the irrigation area are lowest during the dry season; therefore, pesticide concentrations would be highest.

#### **Response to Comment 77-5**

*Comment Summary: The comment states that the pesticide “model results” are inconsistent with the effects of agriculture that have been observed elsewhere in California. The comment also questions whether the Irrigation Conservation and Management Plan (ICMP) will “prevent pesticide release into the environment.”*

As described in Response to Comment 77-3, the pesticide model results show that pesticides will be present in streams adjacent to agricultural irrigation areas. The ICMPs, as described in Measures 2.2.1 through 2.2.6 (pages 2-21 through 2-34), and in Appendix D-19 (Irrigation Management Guidelines for the West County and South County Alternatives), of the Draft EIR/EIS, do not claim to prevent pesticide release into the non-agricultural environment. Measure 2.2.6 states that the ICMP will minimize offsite movement of pesticides. As part of this measure the City is also committing to conducting regular spot checks. This regular checking is intended to ensure that competent pesticide handling and application is practiced. In addition, the ICMPs will incorporate the State Water Resources Control Board Technical Advisory Committee's management recommendations concerning pesticides, which include requirements for application of the least toxic and the lowest amounts of pesticides necessary. Finally, Appendix D-19, on page 21, recommends not only initial training, but periodic refresher courses in Best Management Practices for water quality management.

To clarify the scope of monitoring the following changes are made to the Draft EIR/EIS:

Page 2-34. The first paragraph under the timing section is revised as follows:

The City will conduct spot-checks at least once a month to ensure that landowners are implementing the nutrient and manure management component of the ICMP [and using State Water Resources Control Board Technical Advisory Committee management recommendations for Irrigated Agriculture and Pesticides.](#)

#### **Response to Comment 77-6**

*Comment Summary: The comment states that the monitoring proposed for pesticides in Appendix D-19 (Irrigation Management Guidelines for the West County and South County Alternatives) is woefully inadequate.*

Appendix D-19 (Irrigation Management Guidelines for the West County and South County Alternatives) of the Draft EIR/EIS was not intended to contain a detailed monitoring plan. The actual monitoring requirements will be determined by the Regional Board. However, Appendix D-19 contains a recommended hypothetical monitoring program, which includes direct analytical monitoring of the environment. Page 53 in Appendix D-19 specifies the following sampling of surface water: “Analyze for herbicides/pesticides that have been used on adjacent fields in watershed.”

#### **Response to Comment 77-7**

*Comment Summary: The comment states that the consequences of pesticide contamination and other irrigation-caused problem is unclear. The comment asks what process will be followed to determine if suspension of reclaimed water delivery is the appropriate response for failure to follow the ICMP.*

As specified in Measure 2.2.6: Agrochemical and Fertilizer Best Management Practices, of the Draft EIR/EIS (page 2-34), the City of Santa Rosa has accepted responsibility for enforcing the pesticide management component of the ICMP. The City will have authority to act and enforce the contract if the irrigator is not following provision of the ICMP. In addition, the USEPA and the State of California regulate, establish and enforce pesticide use restrictions, and responsibility for following use restrictions lies with pesticide applicators. The consequences of pesticide misuse are established by law. As indicated in Measure 2.2.1: Irrigation Conservation and Management Programs, legally binding contracts will be established with each land owner that receives reclaimed water, and the process will be stipulated therein. (Refer to page 2-21 of the Draft EIR/EIS). These contracts have not yet been developed, so detailed information about their provisions is not available.

#### **Response to Comment 77-8**

*Comment Summary: The comment addresses the potential risk to aquatic organisms through exposure to pesticides from high intensity cropping.*

As discussed in Response to Comment 77-3, the Draft EIR/EIS projects that small amounts of pesticides will reach the environment. Potential risk to the aquatic resources of the estero watersheds (including freshwater shrimp) due to pesticide use is detailed in Appendix K-4 (Ecological Risk Assessment) of the Draft EIR/EIS.

### **Response to Comment 77-9**

*Comment Summary: The comment voices concern that because the West County alternative extends the irrigated areas much closer to the Estero Americano, there will be an obvious and sharp visual contrast between the irrigated cultivated land and the present situation of seasonal changes in color and texture of dryland pasture which will be a different experience for the recreational user.*

Refer to Response to Comment 5-21.

### **Response to Comment 77-10**

*Comment Summary: The comment states that the Draft EIR/EIS fails to use references to primary literature, that use of the previous EIR (i.e., EIP 1990) as a reference for the Draft EIR/EIS is inappropriate, and that some of the recent Technical Memoranda are earlier Technical Memoranda in a new format.*

Documents prepared in accordance with the State CEQA Guidelines are not subject to the referencing or citation requirements of referenced scientific journals. The reference need not be to a published book or journal article, but needs only to provide the location where the information can be found. The Draft EIR/EIS, including appendices, contains a large number of references to primary literature, which are used where appropriate and pertinent. Because no specifics are provided in the comment regarding specific primary literature references that are missing from the Draft EIR/EIS, or how their use might have presented a clearer or more complete description of the Project's environmental impacts, a more specific response is not possible.

The EIR/EIS authors do not agree that use of the 1991 EIP EIR as a reference is inappropriate. The 1991 EIP EIR contains useful and accurate data and analysis that is appropriate for use in the Draft EIR/EIS. Since the comment does not specify what information from the 1991 EIP EIR that was incorporated into this Draft EIR/EIS is inaccurate, or how any of that data might be misleading or out of date, a more specific response cannot be made. However, it is recognized that the 1991 EIR was decertified. Use is made only of specific information the EIR/EIS authors believe to be correct.

The Technical Memoranda that have been used in support of the Draft EIR/EIS have all been prepared since July 1993 and are not reformatted versions of previous Technical Memoranda. These new Technical Memoranda occasionally incorporate data that was originally provided in the Technical Memoranda prepared prior to 1993, but this information was reevaluated for its accuracy before it was incorporated into the most recent Technical Memoranda.

## Response to Comment 77-11

*Comment Summary: The comment states that Crangon spp. is not a mysid (Page 4.9-29 of the Draft EIR/EIS).*

The comment is correct. To properly characterize the invertebrates described, the text in the Draft EIR/EIS should be amended.

The following change is made to the Draft EIR/EIS:

Page 4.9-29. The second sentence of the third paragraph is revised as follows:

“The most common invertebrates are mysids, ~~including~~ caridian shrimp (*Crangon* spp.), and crabs.”

Refer also to Response to Comment 77-10, regarding use of previous Technical Memoranda.

## Response to Comment 77-12

*Comment Summary: The comment states that there is a discrepancy between the Draft EIR/EIS and supporting Technical Memorandum concerning the information regarding steelhead trout at the Carroll Road site.*

Refer to Master Response 12, located in Section 6.2 of this document, regarding steelhead trout at the Carroll Road site.

## Response to Comment 77-13

*Comment Summary: This comment refers to the chlorophyll concentrations in Estero Americano in Table 4.6-24 on page 4.6-47 and says that a 4-order-of-magnitude difference is outrageous. The comment also states that a similar (4 order of magnitude) range of chlorophyll were reported for the Russian River and the Laguna de Santa Rosa, and that this raises questions about the accuracy of the data in Tables 4.6-3 on page 4.6-12 and 4.6-11 on page 4.6-25.*

Typographical/transcription errors were found in the numbers. However, the verified range of chlorophyll *a* in Estero Americano is 3 orders of magnitude. This range of planktonic chlorophyll *a* is not unreasonable for a data set that covers several seasons and ranges from strongly ocean influenced samples (taken near the mouth on an incoming tide) to an upstream station that is surrounded by dairies (cows have been observed standing in the water not far from the station with the highest chlorophyll *a* concentrations).

The following changes are made to the Draft EIR/EIS:

Page 4.6-47. Table 4.6-24 is revised as follows:

**Table 4.6-24**

Summary of Estero Water Quality  
(mg/L unless otherwise noted)

	Estero Americano		Estero de San Antonio	
	Bar-Open <sup>1</sup>	Bar-Closed <sup>2</sup>	Bar-Open <sup>1</sup>	Bar-Closed <sup>2</sup>
Salinity (parts/thousand)	27.0 / 0-38.8		17.6 / 1.1-38	12.2 / 0.5-18.7
Turbidity (NTU)	17.6 / 1.3-120		12.7 / 2.1-51	12.3 / 2.7-52
Dissolved Oxygen	8.1 / 3-16.8		8.2 / 2.1-20	10.3 / 3.2-20
Nitrate-Nitrogen	0.37 / ND-8.7		0.31 / ND-1.2	0.27 / ND-1.5
Ammonia-Nitrogen	0.60 / ND-10		0.71 / ND-3.3	0.5 / ND-2.8
Un-ionized Ammonia-N	0.004 / ND-0.046		ND	ND
Phosphate-P	0.46 / ND-3.5		0.86 / 0.24-2	1.5 / 0.58-2.2
Copper	0.0058 / ND-0.036		0.0028 / ND-0.006	0.004 / ND-0.012
Lead	0.015 / ND-0.1		0.0005 / ND-0.0007	0.0004 / ND-0.001
Zinc	0.034 / ND-0.36		0.007 / ND-0.01	0.007 / ND-0.024
Planktonic Chlorophyll <i>a</i>	0.26/0.004-5.6 0.026- 0.000014-0.56		0.035 / 0.00083-0.242	0.062 / 0.0039-0.169

Source: *Environmental Conditions in West County Waterways*, Merritt Smith Consulting 1996g

NTU = Nephelometric Turbidity Units

<sup>1</sup> The average values and the range of observed values are summarized in each cell of the table as follows: average/minimum-maximum.

<sup>2</sup> No data are yet available for bar-closed conditions in Estero Americano since the bar has not been closed when water quality data were being collected.

In Table 4.6-3 on page 4.6-12 of the Draft EIR/EIS, the seasonal average planktonic chlorophyll *a* concentrations in the Russian River range from 0.002 to 0.031 mg/L - only one order of magnitude. The attached algae chlorophyll *a* concentrations vary by 2 orders of magnitude.

In Table 4.6-11 on page 4.6-25 of the Draft EIR/EIS, the seasonal average planktonic chlorophyll *a* concentrations in the Laguna de Santa Rosa range from 0.006 to 0.232. A transcription error occurs in Table 4.6-11, although Table 6 on page 12 of Appendix I-4 (*Laguna de Santa Rosa Water Quality Monitoring Results*) from which Table 4.6-11 is derived is correct.

The following change is made to the Draft EIR/EIS:

Page 4.6-25. Table 4.6-11 is revised as follows:

**Table 4.6-11**

Summary of Water Quality in the Laguna de Santa Rosa

	Above Santa Rosa Creek				Below Santa Rosa Creek			
	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Conductivity (µmhos/cm)	565	670	733	634	328	417	598	534
Turbidity (NTU)	20.2	27.4	28.9	24.5	8.8	22.1	21.8	5.7
Dissolved oxygen (mg/L)	7.5	8.3	7.1	6.8	9.1	7.3	6.1	6.5
Nitrate-Nitrogen (mg/L)	4.23	1.60	0.25	0.52	1.95	0.95	1.06	0.59
Ammonia-Nitrogen (mg/L)	1.72	1.49	0.24	0.24	0.28	0.08	0.12	0.12
TKN (mg/L)	2.62	5.13	2.27	2.05	no data	no data	1.07	no data
Dissolved orthophosphate-phosphorous (mg/L)	1.47	1.48	1.13	0.74	0.93	0.63	0.41	0.21
Chlorophyll <i>a</i> (mg/L)	<u>0.042</u> 0.42	0.096	0.232	0.059	0.013	0.048	0.055	0.006

Source: Laguna de Santa Rosa Water Quality Monitoring Results, Merritt Smith Consulting 1996j

Period of record: August 1989 - August 1995

NTU = Nephelometric Turbidity Unit

TKN - Total Kjeldahl Nitrogen = sum of organic nitrogen and ammonia concentrations

### Response to Comment 77-14

*Comment Summary: The comment suggests a phased program of construction of small reservoirs.*

Refer to Master Response 14 regarding phasing and small reservoirs, located in Section 6.2 of this document.

## **Response to Comment 77-15**

*Comment Summary: The comment states that the combined effect of reclaimed water and increased numbers of cattle and feed imports to the West County watershed on the nutrient balance should be considered.*

A nitrogen balance was performed and is described in Appendix I-1 (Estimation of Nitrogen, Salt, and Herbicide/Pesticide Concentrations in Surface Water) of the Draft EIR/EIS. The results of the nitrogen balance and estimated nitrogen concentrations under existing and future conditions are presented in Table 1 of Appendix I-1. Both the previous nitrogen balance mentioned in the comment (which is in CH2M Hill's Technical Memorandum No. R-9, December 5, 1989) and Appendix I-1 include the effect of imported feed as part of the existing manure load. Mitigation 2.2.6: Agrochemical and Fertilizer Best Management Practices, as described on page 2-34 of the Draft EIR/EIS, recognizes that nitrogen is currently not well managed in the watershed and specifies that nutrients be applied to irrigation areas based on agronomic need, not based on manure production. This measure calls for a manure management program that will ensure that there is no Project-related impact of manure on surface waters.

## **Response to Comment 77-16**

*Comment Summary: The comment states that estero eutrophication would be increased if the project causes an increase in the nutrient concentration in groundwater.*

Page 196 in Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text), of the Draft EIR/EIS explains that the project is expected to result in a decrease in the concentration of nitrogen in water reaching the esteros. This will be achieved through improved manure management and the use of vegetated filter strips. Refer to 2.2.6: Agrochemical and Fertilizer Best Management Practices, on page 2-34 of the Draft EIR/EIS.

## **Response to Comment 77-17**

*Comment Summary: This comment points out a possible Typographical/transcription error in the discussion of dissolved copper after the implementation of pH control of domestic drinking water.*

Refer to Response to Comment 8-25.

## **Response to Comment 77-18**

*Comment Summary: This comment states that given the small number of samples of copper taken after the implementation of pH control of domestic drinking water, the conclusion that dissolved copper has been reduced is not statistically valid. The comment further states that a reduction in dissolved copper through implementation of pH control cannot be counted on as a mitigation measure.*



The Draft EIR/EIS does not make the claim that dissolved copper has been reduced, only that a potential exists for long-term reduction in dissolved copper. As described in Mitigation Measure 2.5.2: Control Program for Dissolved Copper Levels, on page 2-123 of the Draft EIR/EIS, mitigation for dissolved copper does not rely on any decrease in dissolved copper that may result from pH control of domestic drinking water.

