

COMMENT LETTER 113 - Ad Hoc COMMITTEE ON CLEAN WATER, ANNE MAURICE (OCTOBER 1, 1996), RECEIVED OCTOBER 7, 1996

Response to Comment 113-1

Comment Summary: The comment indicates that the city's goal of creating a weather independent wastewater system is unattainable. The comment also states that a cultural change from using water as a medium to transport waste to disposing of waste using other mechanisms should be more thoroughly explored and has not been adequately addressed in the Draft EIR/EIS. Lastly, the comment states that the Draft EIR/EIS does not provide a definitive answer concerning whether the quality of wastewater that will be produced by the subregional system creates a serious health or biological risk.

The first portion of the comment is accurate. The City cannot develop a wastewater system which is independent of constraints imposed by the range of weather conditions that are likely to be experienced in northern California. The alternatives that have been addressed by the Draft EIR/EIS all reflect potential solutions that have an estimated 95 percent reliability under the range of northern California weather conditions that have been experienced during the last 70 years. This level of reliability has been determined to be acceptable to the North Coast Regional Water Quality Control Board, as described in Response to Comment 118-57. Temporary measures will be needed during contingency events to manage wastewater volumes above the design discharge rates for Alternatives 2, 3, and 5. Contingency wastewater volumes are considered to be monthly wastewater volumes in excess of that which may be stored, irrigated, or discharged to the Russian River under the design discharge rate. All of the contingency measures under consideration use the same facilities that will be utilized under normal discharge conditions. Contingency measures are prioritized for implementation as follows: (1) winter irrigation, (2) emergency conservation, (3) contingency storage, and (4) contingency discharge. The measures are prioritized based on ease of implementation and environmental acceptability. More detailed discussion of the contingency plan can be found on pages 3.3-42 and 3.3-43 and in Appendix D-10 (Water Balance Contingency Plan) of the Draft EIR/EIS.

The second comment (concerning consideration of alternative waste treatment technologies) is inaccurate. Other mechanisms of waste treatment and transmission have been evaluated as part of the preparation of the Draft EIR/EIS. Mechanisms proposed in the comment (i.e., waterless toilets) were considered and evaluated as part of the environmental documentation process for the Project. However, as discussed in Appendix D-6 (Documentation in Support of the Elimination of Alternatives) of the Draft EIR/EIS, these mechanisms, cannot yet be guaranteed to manage wastewater flows at a level of about 400 million gallons annually and thus do not achieve the purpose and need of the Project. For additional information refer to Master Response 18 regarding redwood irrigation, Master Response 16 regarding waterless toilets, and Master Response 17 regarding Water Conservation. These Master Responses are located in Section 6.2 of this document.

Lastly, the portion of the comment that states that the Draft EIR/EIS does not provide a definitive answer concerning whether the quality of wastewater that will be produced by the Subregional System creates a serious health or biological risk is also not accurate. Pages 4.6-90 through 4.6-130 and Appendices I-8 (Russian River Water Quality Model) and L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS provide detailed discussion of the surface water quality impacts and ecological risk associated with the Russian River discharge component of the Project. The comment states “In fact we have good reason to suspect that there are serious biological contaminants that pose health risks that are being ignored. There are real problems that need study.” However, the comment does not provide any information on what the “good reason” or “real problems that need study” are. Therefore, the comment provides no additional information to suggest that the analysis provided by the Draft EIR/EIS is inaccurate or omits other pertinent data. Specific concerns were expressed in subsequent comments and these comments are addressed specifically in the Responses to Comments below.

Response to Comment 113-2

Comment Summary: The comment states that just one sample was collected at Delta Pond and analyzed for Legionella and Salmonella, and that this is inadequate.

The comment is correct that one sample was taken from Delta Pond; additional samples were taken at the Laguna Treatment Plant. Additional samples are not deemed necessary because neither *Legionella* nor *Salmonella* data were used directly in the analysis of impacts, as no evaluation criteria have been established for these pathogens. *Legionella* and *Salmonella* are bacteria and, as such, are readily disinfected by chlorination or ultraviolet light. Analysis of total coliform as an indicator of adequate disinfection is deemed adequate to ensure safety of reclaimed water. The comment does not specify why having more data is necessary for constituents that have not been evaluated. Refer to Response to Comment 9-20 and to Master Response 8, located in Section 6.2 of this document, concerning pathogens.

Response to Comment 113-3

Comment Summary: The comment states that only four reclaimed water samples were analyzed for Giardia, Cryptosporidium, Legionella and Salmonella.

Refer to Response to Comment 41-10.

Response to Comment 113-4

Comment Summary: The comment asks why the one Delta Pond sample wasn't tested for Cryptosporidium and Giardia or, if it was, why the results weren't reported in the Draft EIR/EIS.

Samples that were collected at Delta Pond on November 30, 1994, were scheduled for *Cryptosporidium* and *Giardia* analysis. However, the *Cryptosporidium* and *Giardia* samples were mishandled in the laboratory (due to equipment failure). Therefore, no *Cryptosporidium* or *Giardia* data are reported for November 30, 1994. Refer to Response to Comment 9-20.

Response to Comment 113-5

Comment Summary: This comment refers to a Delta Pond coliform count of 280 mpn/100ml and asks why a second samples wasn't taken immediately and further testing conducted in the 30 day period.

The regulations that specify no more than 23 coliforms per 100 ml are for fresh effluent and the point of compliance is at the end of chlorine contact at the Laguna plant. Coliform samples are routinely collected at the point of compliance and are reported in the appendix of Appendix H-2 (Reclaimed Water Quality) of the Draft EIR/EIS. The Delta Pond sample referred to was collected in November 1994. During this month, the maximum coliform count at the point of compliance was 2 MPN/100 mL. Therefore, coliform counts were in compliance. There is no reason to assume that the coliform level in Delta Pond reflects a problem with human fecal contamination and presence of other naturally occurring bacteria which are common to all surface water sources. Refer to Master Response 8, located in Section 6.2 of this document and to Response to Comment 9-20.

Response to Comment 113-6

Comment Summary: The comment states that Delta Pond tested high for E. coli, an indicator of fecal contamination, and asks what steps have been taken to protect the public from exposure to pathogens in water used for irrigation.

Delta Pond was tested once for total coliform bacteria (but not *E. coli*, specifically), as noted in Appendix H-2 (Reclaimed Water Quality) and the Appendix J-3 (Human Health Risks from Chemical and Biological Components of Reclaimed Water) of the Draft EIR/EIS. The reported total coliform count is not high relative to other surface water bodies and is similar to that found in the Russian River. Refer to Russian River data in Table 3.1-1 on page 3-2 of Appendix J-3 of the Draft EIR/EIS and to the July 1993 report by CH2M Hill, which is referenced in both Section 4.7 and Appendix J-3 of the Draft EIR/EIS. To protect public health, irrigation water will be applied in accordance with current and proposed State regulations as described in Section 4.7 of the Draft EIR/EIS. Refer to Master Response 8 for additional discussion of why total coliform levels in ponds are not indicative of a health risk. Refer also to Response to Comment 9-20.

Response to Comment 113-7

Comment Summary: The comment asks why cyclospora and E coli 0157 were not analyzed.

Coliform bacteria were analyzed. *E Coli 0157* is a coliform bacterium. *Cyclospora* is also a bacterium, readily killed by UV and chlorine disinfection. Impact significance was evaluated using Coliform bacteria as the indicator organism. Refer to Responses to Comments 102-17 and 41-3.

Response to Comment 113-8

Comment Summary: The comment asks what steps were taken locally to determine the incidence of cyclospora in response to outbreaks elsewhere.

Cyclospora has not been evaluated in Santa Rosa's reclaimed water. Refer to Responses to Comments 9-17 and 102-17, and Master Response 8.

Response to Comment 113-9

Comment Summary: The comment asks about hazards of stored water.

Refer to Master Response 8, located in Section 6.2 of this document and to Response to Comment 9-20.

Response to Comment 113-10

Comment Summary: The comment asks about the hazards of spray irrigation and the potential of spreading contaminated aerosols.

Appendix J-3 (Human Health Risks from Chemical and Biological Components of Reclaimed Water) of the Draft EIR/EIS recognizes that exposures via the inhalation (aerosol) pathway may occur and discusses the possible effects that this pathway has on estimates of risk (i.e., the infectious dose by inhalation may be lower than the infectious dose by ingestion for some organisms). For potential exposures to irrigation water the possible increased risk of infection resulting from a lower infectious dose via inhalation is countered by the reduced exposure times, lower water ingestion/inhalation rates, and smaller exposure frequencies of the irrigation aerosol pathway as compared to the domestic use scenario, the quantified exposure scenario. Compliance with current and proposed State regulations as described in Section 4.7 of the Draft EIR/EIS will further reduce the potential for exposure.

Response to Comment 113-11

Comment Summary: The comment asks what food crops are presently irrigated with reclaimed water.

A wide variety of food crops are currently grown with the City's reclaimed water. The more typical are corn, tomatoes, several types of squash, grapes, and pumpkins. Elsewhere, Projects using reclaimed water have included irrigation of lettuce, cauliflower, broccoli, artichokes, corn, celery, cucumbers, strawberries, spinach, potatoes, onions, radishes, melons, grapes and various fruit trees, including avocados and citrus.

Response to Comment 113-12

Comment Summary: The comment asks from which ponds reclaimed water is distributed.

Irrigation water is typically a blend of reclaimed water coming directly from the Laguna Treatment Plant with water stored in ponds. Typically users on the Laguna side get a blend of water; on average during the summer two-thirds of the water comes directly from the plant the other third is stored water. The West College side of the system is fed from Delta Pond and water from the plant is routinely added to Delta pond. The City-owned farms all have ponds; the detention time in the ponds varies with the pond size. During peak use Kelly Pond has a detention time of only about three days.

Response to Comment 113-13

Comment Summary: The comment asks which commercial growers use Santa Rosa wastewater, and to what extent?

Currently there are only two commercial growers using the reclaimed water. Next year a third commercial grower is expected to be on line. Information on irrigation contractors is available for review at the Utilities Department. Because the City's largest commercial user leases land from the largest irrigation contractor and is not metered separately there are no accurate data on that usage. The City estimates from observation of their operations that vegetable growers are using about 1.5 acre feet/acre/year of water.

Response to Comment 113-14

Comment Summary: The comment expresses concerns that Maximum Contaminant Levels for chlorinated hydrocarbons were set before potential concerns regarding endocrine disrupters were identified by the scientific community.

Refer to Master Response 9, located in Section 6.2 of this document, regarding endocrine disrupters.

Response to Comment 113-15

Comment Summary: The comment asks if any organic growers use reclaimed water.

One organic vegetable grower uses reclaimed water for irrigation. Reclaimed water is a blend of water from the treatment plant and water from ponds. Refer to Response to Comment 113-12 for a discussion of blending of reclaimed water from the plant and from ponds.

Response to Comment 113-16

Comment Summary: In reference to the increase in the value of agricultural production cited in the Draft EIR/EIS, the comment states that the EIR does not address possible public rejection of wastewater irrigation of food crops and subsequent decrease in value.

The comment is correct in stating that the Draft EIR/EIS does not address this specific topic. Public rejection of food crops irrigated with reclaimed water is highly speculative, and has not occurred elsewhere in California where reclaimed water has been used to irrigate crops for 20 years. The comment does not provide any evidence or cite any sources which suggest that such rejection has occurred elsewhere or may occur in relation to the Project.

Response to Comment 113-17

Comment Summary: The comment asks what the City of Santa Rosa plans to do about high E. coli counts in Delta Pond.

Because there has been no analysis of *E. coli* in Delta pond, there is no reason to assume that there is a problem that needs to be corrected. Levels of total coliform have been analyzed, and are similar to counts in the Russian River. These counts do not necessarily reflect the presence of *E. coli*. Refer to Master Response 8, located in Section 6.2 of this document. Refer also to Response to Comment 9-20.

Response to Comment 113-18

Comment Summary: The comment asks if the Regional Water Quality Control Board will require additional testing for continued discharge from Delta Pond.

The Regional Board allows discharge from Delta pond and has imposed particular testing requirements with which the City currently complies. Refer to Master Response 8, located in Section 6.2 of this document.

Response to Comment 113-19

Comment Summary: The comment asks why wastewater destined for wastewater storage ponds is not dechlorinated.

Reclaimed water destined for storage ponds is dechlorinated during the discharge season.

Response to Comment 113-20

Comment Summary: The comment asks which chlorinated hydrocarbons are tested in the reclaimed water storage ponds and how often are they tested.

Chlorinated hydrocarbons and many other organic compounds are tested in the reclaimed water storage ponds quarterly, as required by the current NPDES permit. The constituents listed in Appendix 2 of Draft EIR/EIS Appendix H-2 (Reclaimed Water Quality) are those that are measured in plant effluent and storage ponds pursuant to the NPDES permit. Data in Appendix 2 of Appendix H-2 reflect sampling at the treatment plant, not the storage ponds, but the data for storage ponds are available in the City's Self Monitoring Reports.

Response to Comment 113-21

Comment Summary: The comment requests study of waterless toilets in the Draft EIR/EIS.

Refer to Master Response 16, located in Section 6.2 of this document, concerning use of waterless toilets.

Response to Comment 113-22

Comment Summary: The comment requests study of irrigation with redwoods using underground emitters.

Refer to Master Response 18, located in Section 6.2 of this document, concerning irrigation of redwoods.

Response to Comment 113-23

Comment Summary: The comment asks about effects of irrigation with reclaimed water on golf courses in Rohnert Park.

Golf course irrigators have not reported any problems with use of reclaimed water. Greens are occasionally tested for salt levels. The City has not counted the redwood trees at the golf course, nor is there any program to monitor growth rate. Bird populations are not being monitored.

Response to Comment 113-24

Comment Summary: The comment asks for expansion of redwood irrigation.

Refer to Master Response 18, located in Section 6.2 of this document.

Response to Comment 113-25

Comment Summary: The comment recommends use of waterless toilets and educating people about conservation during certain weather scenarios.

Refer to Master Response 16, located in Section 6.2 of this document, regarding waterless toilets. As described in Chapter 3 of the Draft EIR/EIS, starting on page 3.3-42, the Contingency Plan includes emergency conservation. This will be employed during low flow river conditions as a measure to avoid increased discharge to the river. The City also has an active water conservation program, which is described starting on page 3.2-3 of the Draft EIR/EIS.

Response to Comment 113-26

Comment Summary: The comment supports the conversion to ultraviolet disinfection, and requests ongoing monitoring.

The City of Santa Rosa is proceeding with the conversion to ultraviolet disinfection. The City will continue to monitor reclaimed water quality as required in its permit with the Regional Water Quality Control Board.

Response to Comment 113-27

Comment Summary: This comment refers to a Delta Pond coliform count of 280 mpn/100 mL and asks if other samples have been taken and where are they reported.

The sample referred to in the comment was for total coliform, not *E. coli*. Refer to Responses to Comments 113-5 and 113-17.

Response to Comment 113-28

Comment Summary: This comment states that there is no evidence of testing Delta Pond for trihalomethanes and other chlorinated hydrocarbons.

Refer to Response to Comment 113-20.

Response to Comment 113-29

Comment Summary: The comment expresses concern about existing spray irrigation on Occidental and Guerneville Roads.

Refer to Response to Comment 113-10.

Response to Comment 113-30

Comment Summary: The comment expresses concern about the chemical and biological constituents in aerosols and recommends that spray irrigation be tested for these constituents.

Measurements of the chemicals and microorganisms in reclaimed water are contained in Appendices H-2 (Reclaimed Water Quality) and H-3 (Reclaimed Water Quality Update) of the Draft EIR/EIS. The domestic use scenario of Appendix J-3 (Human Health Risks from Chemical and Biological Components of Reclaimed Water) of the Draft EIR/EIS includes an estimate of risk for the inhalation pathway for chemicals. Exposure via inhalation in the domestic use scenario, which assumes that water is used in the confines of the home, will be higher than an exposure that occurs outdoors. Refer to Response to Comment 113-10 for a discussion of the risk from microorganisms.

Response to Comment 113-31

Comment Summary: The comment asks if testing of irrigation water for chemicals and microorganisms has been performed and requests that current irrigation be stopped until the water is tested.

The EIR/EIS authors are not aware of any testing of irrigation water in the field, but disagree that further testing is necessary based on the reports of reclaimed water quality found in Appendices H-2 (Reclaimed Water Quality) and H-3 (Reclaimed Water Quality Update) and the human health risk assessment contained in Appendix J-3 (Human Health Risks from Chemical and Biological Components of Reclaimed Water) of the Draft EIR/EIS. Irrigation practices comply with current and proposed State regulations. In addition, previous studies of wastewater aerosols have shown little to no adverse health effects, even from raw wastewater aerosols from treatment plants. In fact, workers at wastewater treatment plants do not generally have a higher level of disease incidence than the general population (*Wastewater Aerosols and Disease*, H. Pahren and W. Jakubowski, eds., Office of Research and Development, U.S. Environmental Protection Agency, 1979).

Response to Comment 113-32

Comment Summary: The comment asks for statistics about cancer rates in Sonoma County.

There is no evidence that existing cancer rates in Sonoma County have any relevance to the Long-Term Wastewater Project. A survey of cancer rates is beyond the scope of the EIR/EIS.

Response to Comment 113-33

Comment Summary: The comment asks for assurances regarding biological and organic contamination.

Appendix J-3 (Human Health Risks from Chemical and Biological Components of Reclaimed Water) of the Draft EIR/EIS, evaluates both chemical and biological constituents of reclaimed water and the effects of human exposure.

Response to Comment 113-34

Comment Summary: The comment contends sampling for pathogens was inadequate.

Refer to Response to Comment 41-3 and 41-4. *Cyclospora* and *E. coli* 0157 have not been measured in reclaimed water.

Response to Comment 113-35

Comment Summary: The comment states that E. coli 0157 was not evaluated in the EIR/EIS and asks what assurances about E. coli 0157 can be provided.

Refer to Responses to Comment 41-3, 9-17 and 102-17.

Response to Comment 113-36

Comment Summary: The comment addresses biological and organic contaminants, and states that the Utilities Department “does not appear to be testing for viruses, cyclospora, cryptosporidium, etc, at present and there does not appear to be any testing at the storage ponds.”

The Utilities Department currently monitors for *Cryptosporidium* and *Giardia* weekly in addition to all of the constituents for which monitoring is required in the existing discharge permit. Testing at the treatment plant is appropriate for determining compliance with Title 22 and for ensuring adequate disinfection. Refer to Responses to Comments 41-4 and 113-5.

Response to Comment 113-37

Comment Summary: The comment notes that the EIR/EIS authors do not know “the extent of damage and disruption to our endocrine systems caused by organo-chlorines in the wastewater, and have no standard by which to assess risk.”

The study of endocrine disrupters is an emerging field of investigation and there is still much debate in the scientific community about the nature of endocrine disrupters and the concentrations at which they act. No scientific consensus has been reached on effective dosages, therefore it was deemed inappropriate to speculate on estimates of risk for these chemicals. Refer to Master Response 9, located in Section 6.2 of this document. Because no specific evidence or recommendations have been included in the comment, it is not possible to respond more specifically.

Response to Comment 113-38

Comment Summary: The comment claims that coliform levels in Delta Pond are 100 times the number allowed by the Department of Health Services and expresses concern about the number of heterotrophic bacteria in Delta Pond.

The Department of Health Services does not regulate coliform levels in storage ponds. Refer to Master Response 8, located in Section 6.2 of this document, and Response to Comment 41-8. Refer also to Response to Comment 9-20.

Response to Comment 113-39

Comment Summary: The comment expresses concern about the quality of reclaimed water in storage ponds.

Refer to Master Response 8, located in Section 6.2 of this document and to Response to Comment 9-20.

Response to Comment 113-40

Comment Summary: The comment states that Giardia, Cryptosporidium and other pathogens were analyzed only four times.

Appendix H-2 (Reclaimed Water Quality) of the Draft EIR/EIS reports four analyses, and Appendix H-3 (Reclaimed Water Quality Update) of the Draft EIR/EIS reports many more analyses.

Response to Comment 113-41

Comment Summary: The comment suggests that water in storage ponds does not qualify as tertiary treated water.

The comment confuses total coliform with fecal coliform. The regulations that specify no more than 23 total coliforms per 100 ml are for fresh effluent and the point of compliance is at the end of chlorine contact at the Laguna Treatment Plant, not at Delta Pond. The reclaimed water meets requirements for unrestricted irrigation. Refer to Master Response 8, located in Section 6.2 of this document.

Response to Comment 113-42

Comment Summary: The comment states that water from Delta Pond should be considered unsuitable for spray irrigation on use on food crops pending further investigation.

Refer to Responses to Comments 113-10 and 14-41; and to Master Response 8, located in Section 6.2 of this document.

Response to Comment 113-43

Comment Summary: The comment asks what monitoring is done in storage ponds other than Delta Pond.

The existing monitoring program for each storage pond is described in the existing discharge permit. Monitoring in all ponds is required prior to surface water discharge.

Response to Comment 113-44

Comment Summary: The comment asks if any organic farms use reclaimed water.

One organic vegetable grower uses reclaimed water for irrigation.

Response to Comment 113-45

Comment Summary: The comment requests studies of redwood irrigation.

Refer to Master Response 18, located in Section 6.2 of this document.

Response to Comment 113-46

Comment Summary: The comment requests study of incinerating or composting toilets.

Refer to Master Response 16, located in Section 6.2 of this document.

Response to Comment 113-47

Comment Summary: The comment requests study of irrigation of non-food crops or removing waste from the water stream.

All of the irrigation alternatives consider use of non-food crops, including urban irrigation of turf, and irrigation of forage and fodder crops. Refer to Master Response 16, located in Section 6.2 of this document, regarding waterless toilets.

Response to Comment 113-48

Comment Summary: The comment consists of a flier from the Ad Hoc Committee On Clean Water for the City of Santa Rosa Board of Public Utilities Meeting on October 17, 1995, attached to Comment Letter 113.

The flier supports use of composting toilets and redwood irrigation. Refer to Master Response 18 regarding redwoods, and Master Response 16 regarding waterless toilets. Both Master Responses are located in Section 6.2 of this document.

Response to Comment 113-49

Comment Summary: The comment consists of a page from the National Small Flows Clearinghouse 1996 Guide to Products Services advertising alternative toilets, attached to Comment Letter 113.

The information is offered to support use of waterless toilets. Refer to Master Response 16, located in Section 6.2 of this document, regarding waterless toilets.

Response to Comment 113-50

Comment Summary: The comment consists of a September 27, 1996 letter to the Editor from the Ad Hoc Committee On Clean Water, attached to Comment Letter 113.

The letter supports use of redwood irrigation. Refer to Master Response 18, located in Section 6.2 of this document, regarding irrigation of redwoods.

Response to Comment 113-51

Comment Summary: The comment consists of an article in The New York Times entitled "Illness outbreak puzzles officials" (June 30, 1996), attached to Comment Letter 113.

The article discusses *Cyclospora* and is apparently submitted in support of Comment 113-34. Refer to Responses to Comments 113-34 and 41-4.

Response to Comment 113-52

Comment Summary: The comment consists of a copy of the Petition of the Miller Brewing Company for Review of Order No. 95-133 before the State Water Resources Control Board of the State of California, attached to Comment Letter 113.

The comment does not address the adequacy of the analyses or information within the Draft EIR/EIS, and is not relevant to the proposed Project alternatives. Therefore, no further discussion is required.

Response to Comment 113-53

Comment Summary: The comment consists of an article in Biocycle entitled "Technology improves for composting toilets" (April 1996), attached to Comment Letter 113.

The information is offered to support use of waterless toilets. Refer to Master Response 16, located in Section 6.2 of this document, regarding waterless toilets.

Response to Comment 113-54

Comment Summary: The comment consists of an article in The Press Democrat entitled "Bacteria called growing threat to nation's water" (July 11, 1996), attached to Comment Letter 113.

The article discusses *Cryptosporidium* and *Giardia* and is apparently submitted in support of comments regarding these pathogens. Refer to Master Response 8, located in Section 6.2 of this document concerning pathogens in reclaimed water.

Response to Comment 113-55

Comment Summary: The comment consists of an article in The New York Times entitled "Illness outbreak puzzles officials" (June 30, 1996), attached to Comment Letter 113.

The article discusses *Cyclospora* and is apparently submitted in support of Comment 113-34. Refer to Responses to Comments 113-34 and 41-4.