

Required Technical Report

February 25, 2005

CITY OF ESCONDIDO

Hale Avenue Resource Recovery Facility

Wet Weather Discharge to Escondido Creek January 9-13, 2005

Order No. R9-2003-0394

Reference CA:01-0833.02:stewr

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”



Mary Ann Mann,
Utilities Manager

RS
FEB 28 11:41 AM
SAN DIEGO REGIONAL
WATER QUALITY
CONTROL BOARD



Patrick A. Thomas
Director of Public Works
Utilities Administration
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4657 Fax: 760-432-9512

February 25, 2005

Mr. John H. Robertus
Executive Officer
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, California 92123-4320

SAN DIEGO REGIONAL
WATER QUALITY
CONTROL BOARD
2005 FEB 28 P 12:24

SUBJECT: Wet Weather Discharge to Escondido Creek, January 9-13, 2005
Reference Code Number: CA:01-0833.02:stewr

Dear Mr. Robertus:

The City of Escondido received your letter dated February 8, 2005 requiring a “technical report” regarding the wet weather discharge from the Hale Avenue Resource Recovery Facility (HARRF). Your letter specifically addresses the discharge of tertiary and secondary treated effluent into Escondido Creek. The following information is provided as the “technical report” referenced in your letter, addressing the two specific items (a status report on the ultraviolet disinfection certification and documentation of measures taken to comply with the permit) as well as providing information relating to compliance with the Cease and Desist Order issued in 1996.

1. *A status report on the current certification of the Title 22 disinfection facilities at the HARRF. If the facilities are not currently certified to treat the 9 MGD authorized for discharge under Order No. R9-2003-0380, the City should include a full explanation as to why the certification has not been received and when the certification is expected. Your letter previously stated “Unless the City can document authorization from the Department of Health Services to increase the disinfection capabilities of the tertiary treatment facilities beyond 4 MGD, the discharge of 9 MGD from those facilities to Escondido Creek would be a violation of Discharge Specification B.5 of Order R9-2003-0394”.*

The City of Escondido is currently operating under interim guidelines for distributing recycled water. The ultraviolet disinfection system at the HARRF, the UV 3000 from Trojan Technologies, was designed for 9 MGD under the 1993 “Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse”. Prior to approval of the system, 2000 Guidelines were published, which affected the UV system rating. The interim operating plan, approved by the California Department of Health Services (CDHS), allows the HARRF to distribute 4 MGD of recycled water for Title 22 purposes while we work with CDHS on obtaining a higher capacity rating.

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It is our understanding that Trojan Technologies has submitted a draft report to CDHS that presents lamp-aging data for lamps manufactured by Philips. This report presented a higher lamp-life factor and lamp intensity than the lamps that were installed at the HARRF. We are corresponding with CDHS regarding the status of that report with respect to their acceptance. In a letter dated January 4, 2005, CDHS accepted the End-of-Lamp Age Factor for the Trojan 3000 Philips lamp. Another facility is currently checking their bioassay results using the Philips lamps. We have been told that once CDHS has received the final report on the bioassay and the proposal for modifying the original bioassay results, we will be notified if the same correction can be made at the HARRF.

The City is currently in the process of purchasing the new Phillips lamps in anticipation of acceptance of a higher capacity rating.

Although the HARRF is currently limited to distributing 4 MGD of recycled water, it is our understanding that the interim operating plan does not restrict the flows allowed under our wet weather discharge permit (Order R9-2003-0394). The permit does specify 9 MGD. Before discharging the tertiary effluent to the Escondido Creek on January 9, 2005, John Burcham, the HARRF Superintendent, spoke with Brian Kelley, Senior Water Resources Engineer with your office, to verify if the wet weather discharge permit was limited to 4 MGD. He was told that it was not.

On February 22, 2005, John Burcham spoke with Brian Ott, Water Resource Control Engineer with your office, and asked the same question. He was again told that the 4 MDG limitation was only for distribution of recycled water and did not apply to the wet weather discharge permit.

I have had communication with Brian Bernados, the District Engineer for CDHS, regarding the 4 MGD restriction. I was told that the 4 MGD limitation only applied to irrigation or other uses where there may be human contact with the recycled water and that it should not, in his opinion, be applied to live stream discharges.

Section B.5 of Order No. R9-2003-0394 states that the "*wastewater shall be considered adequately disinfected if in the effluent at some location in the treatment process, the median number of coliform organisms does not exceed 2.2 per 100 mL and the number of coliform organisms does not exceed 23 per 100 mL in more than one sample within any 30-day period*". The tertiary effluent discharged into Escondido Creek in January did meet this requirement. The daily maximum for total coliform on January 10-11, 2005 was 8 MPN/100 mL. The daily maximum of E.Coli was 15 per 100 mL on January 11, 2005. The median values of total, fecal and E.Coli coliforms were less than 2/100 mL. The number of coliforms has not exceeded 23 per 100 mL in any sample within any 30-day period.

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The statement in your February 8, 2005 letter indicating that the City is in non-compliance if we have not yet received documented authorization from CDHS that the UV disinfection can be approved beyond the 4 MGD limitation is of considerable concern to us. We felt we had received verbal confirmation from your staff that we could proceed with the wet weather discharge.

Your letter referenced Order No. R9-2003-0380. City staff have been unable to locate this order in our files or on your website. Regional Board staff have indicated to City staff that this is a "typo". If there is another Board Order that pertains to the HARRF discharge, please forward a copy to the city and we will address any remaining concerns.

2. *Documentation of the measures taken by the City to comply with discharge specifications in the wet weather permit including, but not limited to:*
 - a. *Measures to determine whether the mouth of the San Elijo Lagoon was completely open prior to the initiation of the discharge to Escondido Creek.*

John Burcham, HARRF Superintendent, visually observed that the mouth of the San Elijo Lagoon was open on January 8, 2005. John also received confirmation of this by calling the San Elijo Joint Powers Authority on January 9, 2005. The status of the lagoon was verified when I spoke with Doug Gibson, Director of the San Elijo Lagoon Conservancy, on January 11, 2005. Doug Gibson indicated that the mouth had been open for several weeks.

- b. *The amount of nutrients, total nitrogen and total phosphorus, that was determined by the City to be discharged to Escondido Creek during the discharge, and the date, expected duration, and expected amount of nutrients to be removed from Escondido Creek as a result of the discharge.*

The total nitrogen from the tertiary water discharge to Escondido Creek was 17.2 mg/L which amounts to 2,525 pounds. The total phosphorus was 0.71 mg/L or 104 pounds.

In the secondary effluent that was discharged, the total nitrogen was 18.6 mg/L or 43 pounds. The total phosphorus was 2.6 mg/L or 6.1 pounds.

The nutrients are expected to be removed by July 31, 2005. The amount removed would be the total from the discharge in January along with any other wet weather discharges that occur before April 30, 2005. We are unable to provide an expected duration for the nutrient removal. That will depend on the nutrient concentration in the dry weather flow at the time of removal.

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- c. *The average flow rate of Escondido Creek, approximately 100 yards upstream of the HARRF, during the discharge and the minimum flow rate recorded during the discharge of secondary effluent to the creek.*

Stream flows, as recorded at San Diego County's stream gauging station, averaged 2300 cubic feet per second (cfs) when the tertiary wastewater discharge began on January 9, 2005. The average flow during the discharge period of January 9-12 was 1870 cfs. The minimum flow rate recorded during the discharge of secondary effluent to the creek was 91 cfs.

Your letter states that "*the discharge of secondary effluent to Escondido Creek on January 11-12, 2005 demonstrates that the City has failed to comply with the requirements of CDO 96-31*". As you are aware, the local rainfall this year has been one of the highest in recorded history. This was the first incident of secondary effluent wet weather discharge from HARRF since 1997. Since that time, the City has been in compliance with respect to unauthorized discharges of secondary effluent. The secondary effluent discharge in January occurred as a result of a continuing extreme wet weather condition.

On January 11, 2005, the incoming flows to HARRF exceeded 30 MGD. The City of San Diego was sending the HARRF more than what our agreement with them allows. They were notified that they needed to reduce their flows. The City of San Diego staff responded that if they were to reduce what they were sending to the HARRF, they would spill raw sewage into Lake Hodges. The operating staff at San Elijo Joint Powers Authority requested our wastewater treatment operators to reduce our discharge into our shared outfall. We were told that if we did not reduce the outfall discharge, they would spill raw sewage.

Discharge of secondary effluent into the Escondido Creek appeared to City staff as a better option for public health and the environment than allowing two raw sewage spills to occur. Prior to spilling, three empty clarifiers were filled with secondary effluent and mixed liquor. The holding pond was receiving effluent at such an increased rate that it overflowed and it did sustain structural damage. At this point, a decision was made to discharge secondary effluent into Escondido Creek.

We have since notified the City of San Diego in writing that they need to check their Rancho Bernardo system for inflow and infiltration sources of water due to the rainstorms, and limit their discharges to the agreed upon amounts. A meeting will be scheduled with them to discuss this issue within the next few weeks. During the rain events this week, we did receive considerable cooperation with the City of San Diego staff on limiting their discharge to the HARRF.

We have met with San Elijo Joint Powers Authority (JPA) on improving our communication and developing a formal protocol for requesting a cut in effluent flows. Although flows to

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HARRF exceeded 33 MGD this week, we have so far been able to avoid a discharge of secondary effluent. Although our operating staff was informed that San Elijo JPA would spill raw sewage if we did not reduce flows to the outfall, that information apparently was not accurate. We have recently been informed that they would have spilled secondary effluent.

In addition to improving communication with San Diego and San Elijo JPA, city staff have investigated possible sources of infiltration and inflow (I&I) into the collection system. Staff have found a few areas where residents were diverting their storm water into the sewer and have eliminated these connections. Approximately 1800 manhole inserts (storm guards) had been previously installed in potential I&I areas. These were inspected in January and February and the inserts replaced as needed. A program is in place to purchase and install additional inserts each year until every manhole in the system is equipped with an insert. There is also an on-going program for video taping the collection system for evidence of I&I and other maintenance issues. Approximately one-third of the system has been inspected since 2001 using a camera.

The City is in the process of adding storage at the HARRF in the form of two tanks that will have a combined capacity of 3 MG (2 MG for secondary effluent, and 1 MG for recycled water). We are currently awaiting Army Corps of Engineer approval for permits to begin the project.

We feel that the City has been acting with due diligence in complying with CDO No. 96-31. The rains between December 27, 2004 and January 10, 2005 were declared a disaster by the State of California and the Federal Government. The continuing runoff from that "natural disaster" resulted, in our opinion, in the discharge of secondary effluent and that it was not a result of negligence.

The Self-Monitoring Reports for Orders 99-72 and R9-2003-0394 are being submitted with this letter. They contain additional information regarding the discharges and specific compliance issues. As noted in these reports, there were areas of non-compliance associated with water quality and monitoring. The monitoring issues are contributed to staff not being familiar with protocols associated with discharge events. Corrective measures will be implemented to assure that staff are knowledgeable with respect to monitoring requirements.

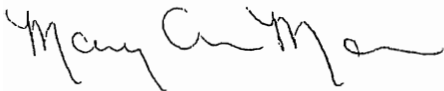
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Since I am new to the City (I began working as the Utilities Manager September 27, 2004), I would appreciate an opportunity to meet with you and your staff to discuss the HARRF and related issues. Please feel free to contact me regarding a meeting or if you have any additional questions. I can be reached at (760) 839-4528.

Sincerely,

A handwritten signature in black ink that reads "Mary Ann Mann". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

Mary Ann Mann, P.E.
Utilities Manager

cc: Jack Anderson, Assistant City Manager
Jeffrey Epp, City Attorney
Pat Thomas, Director of Public Works
Glen Peterson, Assistant Utilities Manager
John Burcham, HARRF Superintendent