

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0009

NPDES NO. CA0078950

WASTE DISCHARGE REQUIREMENTS
FOR
PLANADA COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY
MERCED COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board or this Board) finds that:

1. Planada Community Services District (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated 30 November 2001, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from its Wastewater Treatment Facility (WWTF) to Miles Creek, a water of the United States. Additional monitoring information requested by this Board was submitted on 12 March 2002.
2. The Discharger owns and operates the wastewater collection, treatment, and disposal system, and provides sewerage service to the community of Planada. The WWTF is in Section 33, T7S, R15E, MDB&M, as shown on Attachment A, a part of this Order.
3. Waste Discharge Requirements (WDRs) Order No. 97-123, a NPDES permit adopted by this Board on 20 June 1997, regulates the WWTF's discharge of disinfected secondary treated wastewater to Miles Creek. Order No. 97-123 was administratively continued on 21 May 2002.
4. The treatment system consists of a metering manhole, an influent pump station, a grinder to shred solids in the raw sewage, an influent distribution box, three silty-clay-lined aerated lagoons, three unlined stabilization ponds, six unlined intermittent sand filters, six pressure filter pods, a chlorination manhole, a chlorine contact pipe, and an effluent pump station. The WWTF flow diagram is depicted on Attachment B, a part of this Order. The WWTF does not waste sludge, but has on rare occasions removed sludge solids from its ponds and disposed of the sludge by land application on site.
5. The Discharger's RWD, which includes data from September 2000 to August 2001, describes the effluent as follows:

Design Flow Rate:	0.53 mgd (Monthly Daily Average Flow)
Average Daily Flow Rate:	0.36 mgd
Maximum Daily Flow Rate:	1.07 mgd
Average Daily Temperature:	72.4° F Summer, 56.8° F Winter

<u>Parameter</u>	<u>Concentration (mg/L, unless otherwise noted)</u>		<u>Average Daily Loading (lb/day)</u>
	<u>Average</u>	<u>Maximum</u>	
pH	7.0-7.3 (range)		---
BOD ₅ ¹	21	67	60.4
TSS	18	56	54.8
Chlorine Residual	0.3	0.8	---
Settleable Solids	<0.1 mL/L	<0.1 mL/L	---
Conductivity @ 25° C	619 (µmhos/cm)	780 (µmhos/cm)	---
<u>Total Dissolved Solids</u>	471	622	---

¹ 5-day, 20° C biochemical oxygen demand

Total coliform concentrations ranged from less than 2 to more than 1600 MPN/100 mL. About 80 percent of the samples were less than 2 MPN/100 mL. Seven of the 109 (6 percent) 7-sample median concentrations exceeded the comparable effluent limitation of 23 MPN/100 mL. Five of the seven 7-sample median violations occurred in December 2000.

6. The Discharger's self monitoring reports (SMRs) from 1 January 2000 and to 30 June 2003 describe the effluent as follows:

Average Daily Flow Rate: 0.37 mgd
 Maximum Daily Flow Rate: 1.07 mgd
 Average Daily Temperature: 68°F Summer; 57°F Winter

<u>Parameter</u>	<u>Concentration (mg/L) (unless otherwise noted)</u>	
	<u>Average</u>	<u>Maximum</u>
pH	7.0-8.5 (range)	
BOD ₅ ¹	17	177
TSS	18	242
Chlorine Residual	0.1	1.0
Settleable Solids	<0.1 mL/L	0.1 mL/L
Conductivity @ 25° C	554 (µmhos/cm)	789 (µmhos/cm)
<u>Total Dissolved Solids</u>	494	623

¹ 5-day, 20° C biochemical oxygen demand

The monthly average effluent EC exceeded 700 µmhos/cm during only one month for which the Discharger submitted only one result. Total coliform concentrations ranged from less than 2 to more than 1600 MPN/100 mL. Seventy-three percent of the 449 samples were less than 2 MPN/100 mL. Twenty-nine (6.5 percent) exceeded the effluent daily maximum limitation of 240 MPN/100 mL. Twenty-seven (6.1 percent) 7-sample medians exceeded the comparable effluent limitation of 23 MPN/100 mL.

7. A seasonally operated cannery in the service area is limited to discharges of domestic waste to the WWTF under restrictions imposed by the Discharger.
8. The Discharger received Notices of Violation on 25 May and 9 September 1999 for effluent limitation exceedances of total coliform organism and chlorine residual and for failing to meet certain monitoring requirements. The Discharger in late 2000 installed a pressure filter system designed to reduce effluent solids and thereby reduce BOD₅, TSS, and total coliform organisms in the effluent; and equipment to meter calcium thiosulfate (the Discharger has since changed to sodium bisulfite) into the effluent wet well to reduce residual chlorine prior to discharge to Miles Creek. When there is excess sodium bisulfite in the effluent, there should be no residual chlorine in the effluent. The Discharger monitors effluent sodium bisulfite continuously. The Discharger violated the total coliform and chlorine residual effluent limitations 48 times in 2000. The improvements reduced the number of these effluent limitation violations to six in 2001, nine in 2002 and four in 2003, and 10 in the first half of 2004 (2004 violations were of coliform limits).
9. Discharger's consultant Harris Consultants, Inc., prepared a 29 November 1990 report titled *Wastewater Treatment Plant Capacity Analysis, Prepared for the Planada Community Services District, Merced County, California*. The report recommended phased improvements for increasing plant capacity to 0.82 mgd.
10. Discharger's consultant Tolladay Fremming & Parson prepared a December 2002 report titled *Preliminary Engineering Report for Wastewater Collection and Treatment Facilities for the Planada Community Services District*. The report offers possible modifications that would increase the monthly average daily flow capacity to 0.9 mgd in order to meet expected population growth.
11. In August 2004, the Discharger's attorney informed the Regional Board that the District is evaluating cessation of discharge to Miles Creek and effluent disposal by reclamation. The Discharger has not submitted a Report of Waste Discharge for any proposed changes to the WWTF.
12. The U.S. Environmental Protection Agency (USEPA) and this Board have classified this discharge as a minor discharge.
13. The Discharger is not required to obtain an Industrial Storm Water Permit for the WWTF because its design flow is less than 1 mgd.
14. The Discharger is not required to implement an approved pretreatment program for the WWTF because its design flow is less than 5 mgd.

APPLICABLE LAWS, REGULATIONS, POLICIES AND PLANS

15. The federal Clean Water Act (CWA) Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) as amended and their implementing regulations in Title 40,

Code of Federal Regulations (40 CFR), Parts 122, 125, 131, 133, 136, 403, and 503 establish the bases for the effluent limitations, pretreatment requirements, and certain sludge disposal requirements in this Order.

16. California Water Code (CWC) Division 7 and its implementing regulations in Title 23 California Code of Regulations (Title 23) establish the water quality protection, permitting and enforcement requirements in this Order.
17. Section 13263.6(a) of the CWC requires that “the regional board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) [EPCRA] indicate as discharged into the POTW, for which the state board or the regional board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective.”
18. California Business and Professions Code (CBPC) Division 3, Chapters 7 and 12.5 and their implementing regulations in Title 16 CCR (Title 16) provide the bases for qualification requirements applicable to technical work and technical report preparation as specifically stated in this Order.
19. USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These rules contain water quality criteria (WQC) applicable to this discharge. The State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan or SIP), which contains guidance on implementation of the NTR and CTR.
20. Federal Clean Water Act regulations at 40 CFR 131.12 establish a federal antidegradation policy that applies to the discharge subject to this Order. In addition, State Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Water in California (hereafter Resolution 68-16), requires the Regional Board in regulating discharge of waste to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board’s policies (e.g., quality that exceeds water quality objectives). Resolution 68-16 requires that the discharge be regulated to meet best practicable treatment or control (BPTC) to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State is maintained. This Board implements Resolution 68-16 consistent with the federal policy. This Order requires the Discharger to comply with technology-based standards consistent with federal regulations and more stringent standards necessary to meet state water quality limitations.
21. This Board adopted the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses,

establishes water quality objectives (WQOs), and contains implementation programs and policies to achieve WQOs for all waters of the Basin. This Order implements the Basin Plan.

RECEIVING WATER BENEFICIAL USES – SURFACE WATER

22. Miles Creek is an ephemeral tributary to the San Joaquin River. The WWTF discharge point to Miles Creek is at latitude N 37° 16' 59" and longitude W 120° 20' 04". Approximately seven miles downstream of the discharge, Miles Creek joins Owens Creek. Thereafter, Owens Creek meanders for about 16 miles to its juncture with the Eastside Canal. At this point, water from Owens Creek can be diverted to the Eastside Canal or to the Eastside Bypass, both of which form a network of natural and manmade channels for agricultural irrigation and drainage that drains to the San Joaquin River.
23. Miles Creek carries storm runoff from the Sierra foothills and agricultural runoff from surrounding areas. Winter and spring flows in Miles Creek vary considerably (from 0 to 700 cubic feet per second or cfs) in relation to rainfall intensity. During the summer and fall months, flow in Miles Creek upstream of the waste discharge is insignificant and the waste discharge contributes virtually all of the flow in Miles Creek, making it effluent dominated.
24. The Merced Irrigation District diverts water from Owens Creek approximately 7.5 miles downstream of the discharge for use in irrigation of various crops, including food crops.
25. The Basin Plan, at page II-2.00, states, "Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams. In some cases a beneficial use may not be applicable to the entire body of water. In these cases the Regional Board's judgment will be applied. It should be noted that it is impractical to list every surface water body in the Region. For unidentified water bodies, the beneficial uses will be evaluated on a case-by-case basis." The Basin Plan does not specifically identify beneficial uses of Miles Creek, but the Basin Plan does identify present (as of 1974) and potential beneficial uses in the San Joaquin River within the reach between the Sack Dam to the mouth of the Merced River, to which Miles Creek is tributary. In addition, in 1989 the Board assigned municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1, as directed by State Board Resolution 88-63. The beneficial uses of the San Joaquin River within the reach between Sack Dam and the mouth of the Merced River, as defined in the Basin Plan, and thereby applicable to Miles Creek pursuant to the tributary rule, are:
 - a. Municipal and domestic supply (potential) (MUN),
 - b. Agricultural supply (AGR),
 - c. Industrial process supply (PRO),
 - d. Water contact recreation (REC-1),

- e. Non-contact water recreation (REC-2),
 - f. Warm freshwater habitat (WARM),
 - g. Migration of aquatic organisms, habitat (warm and cold) (MIGR),
 - h. Spawning, reproduction, and/or early development (SPWN) (existing for warm and potential for cold), and
 - i. Wildlife habitat (WILD).
26. The flow conditions, habitat values, and actual uses of Miles Creek reflect that not all beneficial uses designated for the San Joaquin River from Sack Dam to the mouth of Merced River may be applicable to Miles Creek. The Basin Plan recognizes that some uses may not currently exist and probably may not be supported in the future, at least for certain portions of the receiving waters. Thus, consideration for removing some of the beneficial uses may be appropriate. The Regional Board, however, is not authorized to remove such uses unless it follows the public processes required by state law and federal regulations (i.e., by amending the Basin Plan). Although Miles Creek may not support all the designated beneficial uses, unless the Basin Plan is amended specifically for this, all designated beneficial uses must be protected from impacts of the discharge.
27. The ephemeral nature of Miles Creek means that no consistent receiving water dilution is available to buffer pollutants and help protect the designated beneficial uses. Consequently, the discharge itself cannot contain pollutants in concentrations that would cause harm to agricultural production, public health, and aquatic life.
28. In Order No. 97-123, Finding No. 16, this Board determined the beneficial uses of Miles Creek downstream of Whealan Avenue to be MUN, industrial supply, AGR, REC-1, REC-2, WARM, MIGR (warm water), shellfish harvesting (SHELL), and WILD. These beneficial uses differ from the designated beneficial uses determined by tributary rule and listed in Finding No. 25 in that they do not include MIGR (cold water) and SPWN (warm water and potential cold water) but do include a nonspecific reference to industrial supply and the additional beneficial use of SHELL. At that time, this Board exercised the discretion allowed in determining uses of unidentified water bodies (Basin Plan, page II-2.00, Surface Waters).
29. In evaluating the beneficial uses applicable to Miles Creek in Order No. 97-123, available information provided by the California Department of Fish and Game (DFG) and Merced County Department of Public Health (MCDPH) was considered. As Order No. 97-123 indicates, DFG reported that Miles Creek and Owens Creek provide warm freshwater habitat for aquatic resources such as amphibians, clams, and warm water fishes, but was not a significant fishery or spawning creek. DFG reported that humans collect clams for consumption from Miles Creek. Order No. 97-123 also indicates a MCDPH representative confirmed that people harvested clams from Miles Creek and Owens Creek in the past and may continue to do so.

30. On the morning of 12 January 2004, DFG responded to a citizen's complaint of a fish kill in Miles Creek downstream of Planada WWTF's discharge. The DFG investigator, on inspection of Miles Creek, reported to Regional Board staff that minnows, carp, pollywogs, and other fish were found dead in the creek water. The evidence indicates that Miles Creek supports a diverse aquatic community and has the beneficial use of SPWN (warm). Miles Creek on the morning of 12 January 2004 had no flow upstream of the discharge. The incident is still under investigation, no conclusions as to the cause of the fish kill have been determined, and no enforcement action has been taken as yet.
31. The State Board adopted Order No. WQ2002-0015 on 3 October 2002 concerning the WDRs this Board adopted WDRs for Vacaville's Easterly Wastewater Treatment Plant. This precedential decision provides guidance on implementing the Basin Plan, particularly the protection of beneficial uses as designated in an effluent dominated water body where some actual and probable uses may warrant re-evaluation. Some of the issues addressed by the State Board Order may be relevant to the Planada WWTF discharge.
32. The beneficial uses controlling the most stringent effluent limitations of this Order are the potential MUN, existing AGR, REC-1, and potential cold freshwater SPWN. Other designated beneficial uses are less sensitive and do not control the effluent limitations of this Order. As this Board has previously reviewed and determined that MUN, AGR, REC-1, WARM, WILD, and warm water SPWN exist or are probable beneficial uses, as previously described in Finding Nos. 25, 28, 29, and 30, only cold water SPWN has no recent evidence or documentation of beneficial use in Miles Creek.
33. If the Discharger intends to continue discharges to Miles Creek and has or wishes to acquire information to establish that the cold water SPWN beneficial use does not exist and is unlikely to be attained in the future in Miles Creek, it may provide such to the Regional Board for full analysis through a Use Attainability Analysis (UAA). If the UAA indicates that the Basin Plan should be amended to remove this designated beneficial use, this Board will process the Basin Plan amendment change, if appropriate, with support from the Discharger. As State Board Order No. WQ2002-0015 makes clear, the Discharger bears the responsibility for providing the information to support this evaluation. Given that previous NPDES permits for this discharge have not protected cold water SPWN, that no evidence of cold water SPWN in Miles Creek exists, and that the Discharger is evaluating alternatives to eliminate altogether discharges to Miles Creek, it is appropriate to delay implementation of the 7.0 mg/L receiving water limitation required by the Basin Plan to protect cold water SPWN. The delay can extend until the Board confirms the limit as necessary through a UAA or as unnecessary either by a UAA or a commitment by the Discharger to cease discharges to Miles Creek by date certain. It is appropriate to include in this Order a time schedule(s) requiring the Discharger to provide this Board with the technical information necessary to complete a UAA, or a commitment either to a project ensuring compliance with a 7.0 mg/L receiving water limit or to a project resulting in cessation of discharges to Miles Creek.

GROUNDWATER BENEFICIAL USES

34. The designated beneficial uses of the underlying groundwater are MUN, industrial service supply (IND), PRO, and AGR.

EFFLUENT LIMITATIONS AND REASONABLE POTENTIAL ANALYSES

35. Title 40 CFR Part 133.102 requires a minimum of secondary treatment for BOD₅, TSS, and pH.
36. Title 40 CFR Part 122.44(d) requires water quality-based effluent limitations (WQBELs) for all pollutants that are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an in-stream excursion above any State water quality standard, including State narrative criteria (or objectives) for water quality. Clean Water Act Section 301(b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include Basin Plan beneficial uses and narrative and numeric water quality objectives, State Board adopted standards, and federal standards, including the NTR and the CTR. The Basin Plan contains numeric and narrative water quality objectives, including objectives for bacteria, chemical constituents, dissolved oxygen, pH, toxicity, salinity, and suspended materials. The narrative toxicity objective states: “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life” (Basin Plan at III-8.00). For determining whether there is reasonable potential for an excursion above a narrative objective, the regulations prescribe three discrete methods (40 CFR 122.44(d)(vi)). This Board often relies on the second method because the USEPA’s water quality criteria have been developed using methodologies that are subject to public review, as are the individual recommended criteria guidance documents. USEPA’s ambient water quality criteria are used as means of supplementing the integrated approach to toxics control, and in some cases deriving numeric limitations to protect receiving waters from toxicity as required in the Basin Plan’s narrative toxicity objective.
37. Based on the information submitted as part of the application and as directed by monitoring and reporting programs, this Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for the following parameters: pH, BOD₅, total suspended solids, settleable solids, conductivity, total coliform organisms, total residual chlorine, and acute whole effluent toxicity. Effluent limitations for these constituents are included in this Order:
- a. ***Dilution:*** Water quality-based effluent limitations (e.g., pH, total residual chlorine, priority pollutants) in this Order apply at the point of discharge as, at times, the discharge is the only flow in Miles Creek and there is no dilution.
 - b. ***BOD₅ and TSS:*** BOD₅ and TSS effluent limitations are set in accordance with the secondary treatment standards found at 40 CFR 133.102, which states that the effluent BOD₅ and TSS shall not exceed a 30-day average of 30 mg/L and a 7-day average of 45 mg/L, and that the average BOD₅ and TSS percent removal rate shall be no less than 85%. The maximum daily limitations are calculated based on the 30-day average limitation using the standard statistical procedures in the SIP and USEPA’s *Technical Support Document for Water Quality Based Toxics Control* (TSD) for describing effluent concentrations using a lognormal distribution.

The mass-based limitations are calculated using the applicable concentration limitation and the design flow of the facility. These limitations will continue until the Discharger modifies the WWTF to meet tertiary treatment requirements, as described in later findings.

- c. **pH:** The Basin Plan requires that the pH of receiving waters shall not be depressed below 6.5 or raised above 8.5 standard units. As the discharge is at times the only flow in Miles Creek, these limitations are applied directly to the discharge.
- d. **Settleable solids:** The Basin Plan requires that waters not contain settleable substances in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses. Title 40 CFR 122.44(l) requires that effluent limitations in renewed permits be at least as stringent in previous permits. Order 97-123 limitations for settleable solids are 0.2 mL/L average monthly and 1.0 mL/L maximum daily. These limitations will continue until the Discharger modifies the WWTF to meet tertiary treatment requirements, as described in later findings.
- e. **Conductivity:** The Basin Plan requires that surface waters shall not contain constituents in concentrations that adversely affect beneficial uses. The Basin Plan's "Policy for Application of Water Quality Objectives" provides that in implementing narrative WQOs, this Board will consider numeric criteria and guidelines developed by other agencies and organizations. This application of the Basin Plan is consistent with 40 CFR 122.44(d)(1)(vi)(A).

For EC, Ayers, R.S., and D.W. Westcott, *Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)*, reports levels above 700 $\mu\text{mhos/cm}$ will reduce crop yields for sensitive plants. This Order does not consider the types of crops currently grown in the area affected by the WWTF discharge but does consider the potential for restricting the types of crops that may be grown in the area if the water quality with respect to EC were considerably degraded.

The Basin Plan requires that groundwater designated for use as MUN not contain concentrations of chemical constituents in excess of Title 22 MCLs. Title 22 MCLs for EC as shown in Section 64449, Table 64449-B (Secondary Maximum Contaminant Levels-Ranges), are 900 μmhos (recommended limit) and 1,600 μmhos (upper limit).

The WWTF effluent EC averages 554 $\mu\text{mhos/cm}$ with a maximum of 778 $\mu\text{mhos/cm}$. The Discharger's SMRs for 2000 through June 2004 indicate that the average monthly EC during each of these 4.5 years exceeded 700 $\mu\text{mhos/cm}$ only once.

As the Discharger needs to do nothing differently to consistently comply with a monthly average EC limitation of 700 $\mu\text{mhos/cm}$ and has not justified degradation beyond 700 $\mu\text{mhos/cm}$, such a limit is reasonable and appropriate.

- f. **Total Coliform Organisms:** The effluent limitations for total coliform organisms are based on the requirements to protect AGR food crop irrigation and REC-1 beneficial uses, as

explained later in this Order in findings on tertiary treatment requirements. The same limitations as in Order No. 97-123 will continue in effect until tertiary treatment limitations become effective, as set forth in Provision G.8.

- g. **Total Residual Chlorine:** USEPA recommends, in its *Ambient Water Quality Criteria for the Protection of fresh Water Aquatic Life*, a maximum chlorine concentration (1-hour average) of 0.019 mg/L and a continuous chlorine concentration (4-day average) of 0.011 mg/L for protection of aquatic life. The Discharger disinfects its effluent by chlorination. From December 2001 to November 2002, Discharger's SMRs show that the average residual chlorine concentration in the effluent is 0.1 mg/L, which exceeds the recommended criteria. Based on this information, chlorine is discharged from the facility at levels that cause or have the reasonable potential to cause an in-stream excursion above narrative WQO for toxicity from the Basin Plan. Water quality-based effluent limitations for total residual chlorine calculated using the methods in USEPA's TSD are appropriate, as is continuous monitoring of chlorine residual. The Discharger can assess compliance with this requirement by discharging excess sodium bisulfite in the effluent and by continuously monitoring the effluent concentration of sodium bisulfite. The discharger proposes to perform daily grab samples for effluent chlorine concentration. This Order requires continuous monitoring of effluent sodium bisulfite and twice daily grab samples of effluent total chlorine residual concentration.
- h. **Acute and Chronic Whole Effluent Toxicity:** Acute whole effluent toxicity limitations and chronic whole effluent toxicity requirements are included in this Order and are based on interpretation the narrative WQO for toxicity in the Basin Plan and requirements in Section 4 of the SIP.
38. Section 1.3 of the SIP requires imposition of a water quality-based effluent limitation for a priority pollutant if: (1) the maximum effluent concentration (MEC) is greater than the most stringent CTR criteria or applicable site-specific Basin Plan objective; or (2) the ambient background concentration is greater than the CTR criterion or applicable site-specific Basin Plan objective, or (3) other information is available to determine that a water quality-based effluent limitation is necessary to protect beneficial uses.
39. The Discharger was issued a CWC Section 13267 Order on 27 February 2001 requiring it to submit effluent and receiving water monitoring data meeting the requirements of the SIP to assist this Board in conducting the reasonable potential analyses (RPAs) pursuant to the SIP and 40 CFR 122.44(d). The Discharger submitted effluent data and downstream receiving water data for priority pollutants to this Board on 12 July 2001 and 9 December 2002. The priority pollutant monitoring reports indicated that samples were collected on 24 April 2001 and 8 October 2002, respectively. According to the Discharger's April 2001 and October 2002 monthly monitoring reports, Miles Creek had upstream flow on 24 April 2001 but no upstream flow on 8 October 2002. No upstream receiving water priority pollutant data were submitted.
40. The RPA for CTR and NTR pollutants was based on the submitted effluent monitoring data, as no background receiving water data are available. Without the upstream or background water

quality data, the RPA is substantially incomplete. However, cyanide, carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane were found in the effluent in maximum concentrations well above the governing WQO or WQC, thus, exhibiting reasonable potential to cause or contribute to an instream excursion above the WQO or WQC. Water quality-based effluent limitations (WQBELs) are included in this Order for these pollutants. To complete the RPA, it is appropriate to require the Discharger to resample the effluent and receiving water for both upstream and downstream water quality data. Such a requirement is included in the attached Monitoring and Reporting Program. It is also appropriate to include in this Order a reopener to allow inclusion of effluent limitations deemed necessary following review of the required data.

41. No reasonable potential was found for the remaining NTR/CTR pollutants because all effluent data were below the most stringent criterion, were non-detect, or were anomalous. For 18 pollutants, this Board was unable to determine reasonable potential because of a lack of WQOs or criteria. The 8 October 2002 sample test results showed 2,3,7,8 TCDD (Dioxin) to be present in Miles Creek downstream of the discharge point in a concentration above the applicable water quality criteria, but it was not detected in the effluent. Additional information is necessary to determine whether reasonable potential exists for 2,3,7,8 TCDD (Dioxin) to exceed the applicable water quality criteria in Miles Creek.
42. Section 2.1 of the SIP provides that *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1 further states that a compliance schedule may be included in NPDES permits provided that the following justification has been submitted: *“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and identify the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is short as practicable.”* Provision G.7 of this Order requires that the Discharger either provide this information by 27 May 2005 or WQBELs for CTR pollutants described in Finding 40 will take effect on that date. Otherwise, the WQBELs will take effect in the shortest time possible as approved by the Executive Officer, but in no case later than 26 January 2010.

TERTIARY TREATMENT REQUIREMENT

43. The 1988 Memorandum of Agreement (MOA) between California Department of Health Services (DHS) and the State Board on the use of recycled water establishes basic principles relative to the agencies and the regional boards. In addition, the MOA allocates primary areas of responsibility and authority between these agencies, and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to the use of recycled water in California.

44. This Board requested guidance from DHS on 24 February 1999 regarding use of relatively undiluted wastewater discharged to agricultural drains or streams where the water may be used or diverted for beneficial uses of AGR for irrigation of vegetable and fruit crops and REC-1. DHS letter dated 8 April 1999 provided the requested guidance. DHS recommends that relatively undiluted wastewater discharged in this circumstance be adequately oxidized, coagulated, filtered and disinfected, i.e., tertiary level of treatment. DHS considers wastewater adequately disinfected if:
- a. The chlorine disinfection process provides a CT (residual chlorine concentration times modal contact time) value of not less than 450 milligram-minutes per liter at all times, with a modal contact time of at least 90 minutes, based on peak dry weather design flow; and
 - b. The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 mL, utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period. No single sample should exceed an MPN of 240 per 100 mL for total coliform bacteria.
45. DHS has developed recycling water criteria, Title 22, California Code of Regulations (CCR), Division 4, Chapter 3 (Title 22 RWC), for the reuse of wastewater. Title 22 RWC requires that for irrigation of food crops where the edible portion of the crop may come in contact with treated wastewater, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be disinfected tertiary recycled water. Disinfected tertiary recycled water is defined as adequately oxidized, coagulated, and filtered and disinfected wastewater such that the effluent total coliform levels do not exceed 2.2 MPN per 100 mL, as a 7-day median.
46. To protect the AGR and REC-1 beneficial uses of the receiving waters, and the potential use of MUN, the wastewater must be adequately treated and disinfected to prevent disease. Filtration is an effective means of reducing pathogens from the waste stream. Disinfected tertiary recycled water removes 99.5% of viruses. Coliform organisms are used as an indicator of the effectiveness of the entire treatment train and of the effectiveness of removing pathogens.
47. Title 22 RWC is not directly applicable to surface waters; however, this Board finds it appropriate to apply DHS's recycling water criteria to Miles Creek because its waters are frequently undiluted and used for AGR irrigation of food crops, SHELL, and REC-1 (Finding Nos. 24, 25 and 29). The method of treatment is not prescribed by this Order, but the wastewater must be treated to a level equivalent to that recommended by DHS. If the Discharger determines disinfected tertiary recycled water or equivalent treatment infeasible, it must develop other alternatives to dispose of its wastewater that do not require this level of treatment.
48. In addition to coliform testing, a turbidity effluent limitation is an appropriate second indicator of the effectiveness of the treatment process to assure compliance with the required level of treatment. The treatment process, or equivalent, must be capable of reliably meeting a turbidity limitation of two (2) nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles

in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to complete and identify high coliform concentrations.

49. Tertiary treatment technology can consistently achieve lower concentrations of BOD, TSS and settleable solids than the secondary treatment standards. The 30-day average BOD and TSS limitations of 10 mg/L, and the 0.1 mL/L maximum daily limitation for settleable solids reflect the capability of tertiary treatment.
50. Tertiary treatment has not been previously prescribed for this discharge; therefore, a schedule for compliance with this requirement is appropriate.
51. Pursuant to CWC Section 13263, the provisions of CWC Section 13241 were considered as follows:
 - a. The Existing And Potential Future Beneficial Uses Of Water. As found in the above findings, the past, present and probable future beneficial uses of the receiving stream include MUN, AGR, PRO, REC-1, REC-2, WARM, MIGR (warm and cold), SPWN (existing warm and potential cold), SHELL and WILD, but the Discharger may request this Board complete a UAA for SPWN (cold) and amend the Basin Plan, if appropriate, to dedesignate this beneficial use.
 - b. The Environmental Characteristics Of The Hydrographic Unit Including The Quality Of Water Available. Water upstream of the discharge includes storm water runoff from the foothills, surrounding farmland and Planada's storm water collection system; and tail water from local farms and a dairy. Prior to October 2002, upstream flow in Miles Creek was often absent. However, receiving water monitoring data submitted with District self monitoring reports indicates upstream flow since has been almost continuous. District personnel report that a dairy and modifications to the Planada storm water collection system are likely responsible for the change in the Creek's flow regime. District personnel also report that upstream flows are typically much, much less than that discharged from the WWTF. The quality of upstream flow is largely unknown. The water downstream of the discharge is of good quality with respect to salts and when properly disinfected should be of good quality with respect to pathogens. The water downstream of the discharge is used by and benefits many people.
 - c. Water Quality Conditions That Could Reasonably Be Achieved Through The Coordinated Control Of All Factors, Which Affect Water Quality In The Area. Within certain limits, the Board has the authority and responsibility to regulate all of the known point source discharges to Miles Creek and their quality. The dairy discharge, if routinely discharged as implied, is not likely consistent with this Board's plans and policies and is being investigated. Discharges from Planada's storm water collection system have not been shown to cause significant adverse impacts on Miles Creek. On the other hand, fishable, swimmable, and agricultural irrigation water quality conditions in Miles Creek can be reasonably achieved by

upgrading the WWTF to tertiary standards. The Discharger currently uses intermittent sand filters or pressure filters to polish the effluent from the oxidation ponds. Upgrading the treatment process is reasonable and necessary and technically not difficult to achieve.

- d. Economic Considerations. The Discharger has plans to expand the capacity of the WWTF from its current 0.53 mgd to 0.9 mgd at a cost of \$460,000 to accommodate growth in the community and to consistently comply with terms in Order No. 97-123. Upgrading the treatment process will require additional expenditure of funds. The State Board, Division of Financial Assistance, estimates that the cost to add tertiary treatment to an existing secondary WWTP is approximately \$1 million per mgd. Based on the State Board's estimate, the Discharger's current estimated cost of compliance without expansion is \$500,000. The estimated cost of providing tertiary treatment with expansion of the WWTF to 0.9 mgd is \$900,000. The Discharger may be able to use some components in its current treatment process that may reduce estimated costs. The Discharger's current monthly domestic sewer user fee is \$23.00. The California average monthly domestic sewer user fee is \$20.46.
- e. The Need For Developing Housing In The Area. Population growth in Merced County in the Planada and City of Merced areas is increasing demand for housing. The requirement to increase the level of treatment for discharge to Miles Creek should not impede home construction in the area. Increased population density will, however, increase the potential for water related activities, such as water contact and noncontact recreation and recreational shellfish harvesting. These beneficial uses require high quality water; i.e., tertiary treatment. Without tertiary treatment, the downstream waters could not be safely utilized for these water uses.
- f. The Need To Develop And Use Recycled Water. State of California and Regional Board policy (Basin Plan, page IV-14.00, Policy 2) both encourage the reclamation and reuse of wastewater. Upgraded effluent quality increases opportunity for reuse. The Discharger need not directly reuse the treated wastewater as discharge into Miles Creek facilitates agricultural irrigation and public recreation. Since the treatment level must be upgraded to tertiary level, the Discharger has an option to adopt an alternative method for treating and disposing of the wastewater. A feasible alternative is direct reuse for agriculture without discharging to Miles Creek. In either option, the wastewater is being used for agriculture.

RECEIVING WATER LIMITATIONS

52. Receiving water limitations in this Order are based on the WQOs in the Basin Plan and established to protect the designated beneficial uses of the receiving waters. Included are narrative limitations to protect human health and designated beneficial uses, prevent nuisances as defined by CWC Section 13050, and prevent degradation of the aquatic communities.
53. To comply with the Basin Plan's WQOs for chemical constituents, the receiving water concentrations for molybdenum must not exceed 0.050 mg/L and 0.019 mg/L (monthly mean) and for selenium must not exceed 0.02 mg/L and 0.005 mg/L (4-day average).

54. To protect MUN (Finding No. 25), the waste constituents in the effluent must not cause the receiving water concentrations of those constituents to exceed the maximum contaminant levels in Title 22, CCR, Section 64431, Tables 64431-A and 64431-B; Section 64444, Table 64444-A; and Section 64449, Table 64449-A (Title 22 MCLs) and the concentration of lead to exceed 0.015 mg/L.
55. To protect SPWN (Cold) (Finding No. 25 and 32), the dissolved oxygen concentration in Miles Creek must be maintained at the Basin Plan requirement of 7 mg/L. The Discharger's SMRs from December 2001 through November 2002 indicate that the Discharger consistently reported downstream receiving water sampling station R-2 dissolved oxygen (DO) concentration above 5 mg/L and complied with Order No. 97-123's receiving water dissolved oxygen limitation of 5 mg/L. The SMRs also indicate that the R-2 DO concentration was depressed to less than 7 mg/L on at least two occasions when the upstream sampling station R-1 DO was greater than 7 mg/L. WWTF upgrades to full tertiary treatment may eliminate these apparent receiving water limitation violations. This Order considers this and makes the effective date of the receiving water limitation for DO of 7.0 mg/L the same as the date of full compliance for the upgraded level of treatment in Provision G.8.
56. To protect WARM, SPWN, MIGR, and WILD (Finding No. 25), Miles Creek must be free of toxic substances in toxic concentrations. Chlorine and ammonia are known to cause toxicity to aquatic organisms in surface waters. Therefore, the discharge must be free of both chlorine and ammonia in toxic concentrations. Limitations that will maintain the effluent free of chlorine in toxic concentrations are described in Finding No. 37.g.
57. Untreated domestic wastewater contains ammonia. Wastewater treatment plants commonly use nitrification, a biological process that converts ammonia to nitrate, to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. USEPA's *Ambient Water Quality Criteria for Ammonia* reflects ammonia concentrations protective of fish species, as ammonia is generally more toxic to wild fish than to other aquatic species. While ammonia is generally more acutely toxic to wild fish than to other aquatic species, this does not appear to be true for chronic toxicity. USEPA's ammonia criteria document identifies two invertebrates, the amphipod *Hyalella* and fingernail clam *Musculium*, as having two of the four most sensitive genus mean chronic values used to quantify the chronic toxicity criterion. It is not known at present whether Miles Creek does or could support the two invertebrates. USEPA's acute and chronic ammonia toxicity criteria for wild fish may adequately protect aquatic life in Miles Creek. Information is presently insufficient to find that Planada's discharge has reasonable potential to cause ammonia toxicity to aquatic life in Miles Creek. It is appropriate that the Discharger be required to study the impacts of ammonia on the wetted section of Miles Creek to determine whether reasonable potential exists and, if so, to develop and recommend ammonia effluent limitations that are adequately protective of Miles Creek's warm freshwater habitat. A time schedule for the Discharger to complete this requirement is appropriate and specified herein.

GROUNDWATER LIMITATIONS

58. Basin Plan WQOs to protect the beneficial uses of groundwater (Finding No. 34) include numeric and narrative objectives. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, or animals. The chemical constituent objective for groundwater designated for use as MUN states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed Title 22 MCLs. The Basin Plan requires the application of the most stringent objective as necessary to ensure that groundwaters do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect MUN, AGR, or any other beneficial use. Groundwater limitations in this Order implement the Basin Plan objectives.
59. Domestic wastewater contains constituents such as total dissolved solids, conductivity, pathogens, nitrates, organics, metals, and oxygen demanding substances. Wastewater percolation through the unlined ponds may result in an increase in the concentration of these constituents in groundwater. The increase in the concentration of these constituents in groundwater must be consistent with Resolution 68-16. Resolution 68-16 may allow for degradation of groundwater quality for identified waste constituents if the Discharger provides best practicable treatment and control (BPTC) of the discharge and any degradation of groundwater does not exceed water quality objectives, unreasonably impact beneficial uses, or cause a condition or pollution or nuisance. State Board decisions have interpreted BPTC as the level of treatment technologically achievable using “best efforts.” Any increase in constituent concentrations in groundwater must be shown to be necessary to allow wastewater utility service necessary to accommodate housing in the area and must be consistent with maximum benefit to the people of the State of California. Some degradation of groundwater by the Discharger is consistent with Resolution 68-16 provided that:
- a. The degradation is limited in extent;
 - b. The degradation after effective source control, high level of treatment, and control is limited to waste constituents typically encountered in municipal wastewater as specified in Receiving Water and Groundwater Limitations in this Order;
 - c. The Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating BPTC measures; and
 - d. The degradation does not result in water quality less than that prescribed in the Basin Plan.
60. Groundwater monitoring must be conducted to determine if discharges have degraded groundwater, and if so, whether the degradation is consistent with Regional Board plans and policies, including Resolution 68-16. This Order requires the Discharger to begin groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. This Board may reopen this Order to revise or include additional appropriate limitations if data indicates that the WWTF discharge from the unlined ponds have adversely impacted groundwater.

GENERAL FINDINGS

61. The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid wastes, are exempt from the requirements of Title 27, CCR, Section 20005, et seq., (Title 27). The exemption, pursuant to Section 20090(a), is based on the following:
 - a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The waste discharge requirements are consistent with WQOs; and
 - c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.
62. This Order includes requirements for disposal of sewage sludge and other solids. These requirements are based on Title 27, 40 CFR 503, and prevention of unauthorized discharges of sludge or solid wastes into waters of the United States or waters of the State.
63. Consistent with Resolution No. 68-16, this Order when fully implemented will be more restrictive than Order No. 97-123. This Order includes receiving water limitations and effluent limitations that comply with the plans and policies of the State Board and Regional Board. Degradation allowed by this Order is consistent with the maximum benefit to the people of the State because this Order requires the Discharger to attain a high level of treatment and the discharge results from wastewater utility service necessary to accommodate housing in the area.
64. This Order imposes stringent effluent and receiving water limitations and other requirements that will result in use of BPTC. The Discharger has used the pond system for the treatment of wastewater for a long time. This treatment system and its operation are not complex. The ponds have stored sludge for a long time. Sludge handling on site is not BPTC if during drying the percolate is not prevented from reaching the groundwater. This Order requires the Discharger to submit a Sludge Management Plan for Executive Officer approval prior to any sludge handling for the purpose of removing, drying, storing, and disposing of sludge from the ponds. The Discharger has not conducted an evaluation of whether it is using BPTC for all aspects of the discharge. This Order requires substantially higher level of treatment and monitoring than required by Order No. 97-123, and in endeavoring to comply with its requirements, the Discharger must analyze the different treatment, control, monitoring, and disposal options. Thus, it is appropriate for the Discharger to conduct a BPTC evaluation of the existing WWTF and the proposed modifications. Therefore, the BPTC time schedule in this Order coincides with the schedule to upgrade the WWTF for tertiary treatment, or implement other treatment and disposal options.
65. Based on State Board Water Quality Order Nos. 81-5 and 82-5, the BPTC evaluation must include:
 - a. The water supply available to the Discharger;

- b. The Discharger's past effluent quality;
- c. The effluent quality achieved by other similarly situated dischargers;
- d. The Discharger's good faith efforts to limit the discharge of the constituent; and
- e. The measures necessary to achieve compliance.

66. CWC Section 13267 states, in part:

“(a) A regional board, in establishing ...waste discharge requirements...may investigate the quality of any waters of the state within its region” and “(b)(1) In conducting an investigation specified in [Section 13267] subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

67. CWC Section 13383 states:

“(a) The state board or a regional board may establish monitoring, inspection, entry, reporting, and recordkeeping requirements, as authorized by Section 13377 or by subdivisions (b) and (c) of this section, for any person who discharges pollutants ... any person who owns or operates a publicly owned treatment works or other treatment works treating domestic sewage, or any person who uses or disposes of sewage sludge.

(b) The state board or the regional boards may require any person subject to this section to establish and maintain monitoring equipment or methods, including, where appropriate, biological monitoring methods, sample effluent as prescribed, and provide other information as may be reasonably required.

(c) The state board or a regional board may inspect the facilities of any person subject to this section pursuant to the procedure set forth in subdivision (c) of Section 13267.”

68. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3, Division 13 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) in accordance with CWC Section 13389.

69. The attached Monitoring and Reporting Program No. R5-2005-0009 required by this Order is necessary to assess compliance with these waste discharge requirements and is incorporated herein as a part of this Order.
70. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge and have been provided with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
71. In a public meeting, all comments pertaining to the discharge were heard and considered.
72. This Order shall serve as an NPDES permit pursuant to CWA Section 402, and amendments thereto, and shall take effect upon the date of hearing, provided USEPA has no objections. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.
73. All the above and the supplemental information and details in the attached Fact Sheet and Attachments A through C, which are incorporated herein, were considered in establishing the conditions of discharge in this Order.

IT IS HEREBY ORDERED that Order No. 97-123 is rescinded and, pursuant to CWC Sections 13263, 13267, 13377, and 13383, the Planada Community Services District, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991, hereafter "Standard Provisions."]

A. Discharge Prohibitions:

1. Discharge of wastewater at a location or in a manner different from that described in this Order is prohibited.
2. By-pass of wastes is prohibited, except as allowed by Provision A.13 of Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES).

B. Effluent Limitations:

1. The average monthly daily discharge flow shall not exceed 0.53 mgd.
2. The discharge shall not have a pH less than 6.5 standard units nor greater than 8.5 standard units at any time.
3. Survival of aquatic organisms in required 96-hour bioassays of undiluted waste shall be no less than:

- a. Minimum for any one bioassay..... 70%
- b. Median for any three or more consecutive bioassays 90%

4. Effluent shall not exceed the following limitations:

<u>Constituents</u>	<u>Units</u>	<u>Average Monthly</u>	<u>Maximum Daily</u>
Conductivity @ 25°C	µmhos/cm	700	---
Total Residual Chlorine	mg/L	0.01	0.02
Settleable Solids	mL/L		0.1

5. The final and interim effluent limitations listed below for CTR constituents shall be implemented in accordance with the conditions and dates set forth in **Provision G.7**.

a. Final CTR Effluent Limitations:

<u>Constituents</u>	<u>Units</u>	<u>Average Monthly¹</u>	<u>Maximum Daily¹</u>
Cyanide	µg/L	4.2	8.5
Carbon Tetrachloride	µg/L	0.25	0.50
Chlorodibromo-methane	µg/L	0.41	0.82
<u>Dichlorobromo-methane</u>	µg/L	0.56	1.1

¹ A daily maximum or monthly average value for a given constituent shall be considered non-compliant with the effluent limitations only if it exceeds the effluent limitation and the reported ML for that constituent. The MLs that the Discharger's laboratory must achieve are indicated in the SIP Section 2.4.1.

b. Interim CTR Effluent Limitations:

<u>Constituents</u>	<u>Units</u>	<u>Average Monthly¹</u>	<u>Maximum Daily¹</u>
Cyanide	µg/L	10	20
Carbon Tetrachloride	µg/L	0.45	0.9
Chlorodibromo-methane	µg/L	1.6	2.1
<u>Dichlorobromo-methane</u>	µg/L	6	12

¹ A daily maximum or monthly average value for a given constituent shall be considered non-compliant with the effluent limitations only if it exceeds the effluent limitation and the

reported ML for that constituent. The MLs that the Discharger's laboratory must achieve are indicated in the SIP Section 2.4.1.

6. The final and interim effluent limitations for the constituents listed below shall be implemented in accordance with the conditions and final compliance dates set forth in **Provision G.8**.

a. Final Effluent Limitations:

(1) <u>Constituents</u>	<u>Units</u>	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>7-Sample Median¹</u>	<u>Average Daily</u>	<u>Maximum Daily</u>
BOD ₅ ²	mg/L	10	15	---		20
	lb/day	44 ³	66 ³	---		88 ³
Total Suspended Solids (TSS)	mg/L	10	15	---		20
	lb/day	44 ³	66 ³	---		88 ³
Total Coliform Organisms ⁴	MPN ⁴ / 100 mL	---	---	2.2		23
<u>Turbidity</u>	NTU				2	10 ⁵

¹ Median value based on the last seven samples.

² 5-day, 20°C biochemical oxygen demand (BOD)

³ Based upon a design flow of 0.53 mgd.

⁴ MPN = most probable number

⁵ This magnitude shall not be exceeded at any time; turbidity shall not exceed 5 NTU more than 5 percent of the time within a 24-hour period.

(2) The arithmetic mean of 20°C BOD (5-day) and total suspended solids in effluent samples collected over a monthly period shall not exceed 10 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (90 percent removal).

(3) The CT (residual chlorine concentration times modal contact time) value shall be not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather flow.

b. Interim Effluent Limitations:

(1) <u>Constituents</u>	<u>Units</u>	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>7-Sample Median¹</u>	<u>Maximum Daily</u>
BOD ₅ ²	mg/L	30	45	---	60
	lb/day	133 ³	199 ³	---	265 ³
Total Suspended	mg/L	30	45	---	60

(1) <u>Constituents</u>	<u>Units</u>	<u>Average Monthly</u>	<u>Average Weekly</u>	<u>7-Sample Median¹</u>	<u>Maximum Daily</u>
Solids (TSS)	lb/day	133 ³	199 ³	---	265 ³
Total Coliform Organisms ⁴	MPN ⁴ / 100 mL	---	---	23	240

¹ Median value based on the last seven samples.

² 5-day, 20°C biochemical oxygen demand (BOD)

³ Based upon a design flow of 0.53 mgd.

⁴ MPN = most probable number

(2) The arithmetic mean of 20°C BOD (5-day) and total suspended solids in effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).

C. Pond Specifications

1. Ponds shall be managed to prevent breeding of mosquitoes. In particular:
 - a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
2. Freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).
3. As one means of discerning compliance with **Provision G.5**, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L.

D. Sludge Disposal Specifications

Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, etc., as needed to ensure optimal plant operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations.
3. Any storage of residual sludge, solid waste, and biosolids on property of the WWTF shall be temporary and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations.
4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e, landfill, WWTF, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
5. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water quality control board. This may mean use of dischargers that have obtained coverage under the General Biosolids Order (State Board Water Quality Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities) or equivalent individual waste discharge requirements.
6. Use and disposal of biosolids should comply with the self-implementing federal regulations of 40 CFR 503, which are subject to enforcement by the USEPA, not this Board. If during the life of this Order the State accepts primacy for implementation of 40 CFR 503, this Board may also initiate enforcement where appropriate.

E. Receiving Water Limitations

Receiving Water Limitations are based upon WQOs contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in Miles Creek or waters to which it is tributary:

1. The fecal coliform concentration in any 30-day period to exceed a geometric mean of 200 MPN/100 mL or exceed 400 MPN/100 mL in more than 10 percent of the total number samples.
2. Biostimulatory substances to be present in the water that promote aquatic growth in concentrations that cause nuisance or adversely affect beneficial uses.

3. Chemical constituents in excess of the MCLs in Title 22, CCR, Section 64431, Tables 64431-A and 64431-B; Section 64444, Table 64444-A; and Section 64449, Table 64449-A and Table 64449-B.
4. Lead in excess of 0.015 mg/L.
5. Molybdenum (Total) in excess of 0.05 mg/L or a monthly mean of 0.019 mg/L.
6. Selenium (Total) in excess of 0.02 mg/L or a four-day average of 0.005 mg/L.
7. Concentrations of dissolved oxygen to fall below 5.0 mg/L until 14 October 2009, and thereafter to fall below 7.0 mg/L.
8. Toxic substances to be present in the water that produce detrimental physiological response in human, plant, animal, or aquatic life.
9. Chlorine in detectable concentrations.
10. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on objects in the water.
11. The ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units when there is upstream flow in Miles Creek.
12. The normal ambient temperature to change by more than 5°F when there is upstream flow in Miles Creek.
13. Pesticides, individually or in combination with other pesticides, in concentrations in the water, bottom sediments or aquatic life that adversely affect beneficial uses.
14. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the U.S. Environmental Protection Agency.
15. Discoloration that causes nuisance or adversely affects beneficial uses.
16. The turbidity, when there is creek flow, to increase as follows:
 - a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs;
 - b. More than 20 percent where natural turbidity is between 5 and 50 NTUs;
 - c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs; or
 - d. More than 10 percent where natural turbidity is greater than 100 NTUs.
17. Alteration of the surface water suspended sediment discharge rate or suspended sediment load in such a manner as to cause nuisance or adversely affect beneficial uses.

18. Deposition of material that cause nuisance or adversely affect beneficial uses.
19. Suspended materials in concentrations that cause nuisance or adversely affect beneficial uses.
20. Floating material in amounts that cause a nuisance or adversely affect beneficial uses.
21. Taste or odor-producing substances in concentrations that impart undesirable tastes or odors to municipal or domestic water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance or adversely affect beneficial uses.
22. Violation of any applicable water quality standard for receiving waters adopted by this Board or the State Board pursuant to the CWA and regulations adopted thereunder.

F. Groundwater Limitations

Release of waste constituents from any storage, treatment, or disposal component associated with the WWTF shall not, in combination with other sources, cause the following in groundwater:

1. Adversely impact beneficial uses or exceed water quality objectives.
2. Any constituent concentration to incrementally increase beyond the current concentration in down gradient wells.
3. The most probable number of total coliform organisms to exceed 2.2 per 100 mL.

G. Provisions

1. The Discharger shall comply with Monitoring and Reporting Program No. R5-2005-0009, a part of this Order.

When requested by USEPA, the Discharger shall complete and submit "Discharge Monitoring Reports." The submittal date shall be no later than the submittal date specified under Reporting in the Monitoring and Reporting Program.

2. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)," dated 1 March 1991, a part of this Order.
3. Public contact with wastewater shall be precluded through such means as fences and signs, or acceptable alternatives.
4. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

5. Objectionable odors originating at the WWTF shall not be perceivable beyond the WWTF boundaries or discharge areas.
6. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, Sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, Sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
7. **CTR pollutants compliance schedule.** The WWTF may be able to comply with **Effluent Limitations B.5.a** by making minor modifications or operational changes. The Discharger shall evaluate its options and shall comply in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
a. Either comply with Effluent Limitations B.5.a or submit a technical report containing a compliance schedule justification sufficient to satisfy SIP Section 2.1, paragraph 3. The report shall include: (1) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (2) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (3) a proposal, including an implementation schedule, for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades or operational modifications); and (4) a demonstration that the proposed schedule is short as possible.	27 May 2005
b. If approved, begin implementation of the items identified in Task a, above. If rejected, comply with Effluent Limitations B.5.a .	Within 30 days of approval or rejection of the technical report by the Executive Officer (EO).
c. Comply fully with Effluent Limitations	By the deadline approved by

<u>Task</u>	<u>Compliance Date</u>
B.5.a.	the EO but no later than 26 January 2010.

Technical reports submitted pursuant to this Provision are subject to the requirements of **Provision G.6** and EO approval.

The Discharger shall submit on or before each date specified in the above tasks, the specified report or, if appropriate, a written report detailing compliance or noncompliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated with an estimate of the date when the Discharger will be in compliance. The Discharger shall notify this Board by letter when it returns to compliance with the time schedule.

The Discharger shall submit written letter monitoring reports on its progress on **1 February** and **1 August** of each year until the Discharger achieves compliance with **Effluent Limitation B.5.a.**

8. **Tertiary Treatment Compliance Schedule:** The Discharger shall comply with **Effluent Limitation B.6.a** or provide an alternative method of disposal for the WWTF effluent. The Discharger shall evaluate its options and shall comply in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
a. Submit technical report in the form of a work plan and implementing schedule for complying with Effluent Limitation B.6.a , or for fully implementing an alternative treatment and disposal method.	27 May 2005
b. Implement EO approved work plan	60 days following EO written approval of Task 8.a
c. Full Compliance	26 January 2010

Technical reports submitted pursuant to this Provision are subject to the requirements of **Provision G.6** and EO approval.

The Discharger shall submit written letter monitoring reports on its progress on **1 February** and **1 August** of each year until the Discharger achieves compliance with **Effluent Limitation B.6.a.**

9. **BPTC Compliance Schedule:** The Discharger shall conduct a BPTC evaluation (**Finding No. 59**) of the existing WWTF and of any proposed modification to upgrade the treatment to tertiary treatment, or of any alternative treatment and disposal option.

<u>Task</u>	<u>Compliance Date</u>
a. Submit a technical report in the form of a work plan, and a schedule, that sets forth a plan for conducting a comprehensive technical evaluation of the WWTF; including each major treatment and disposal component and any planned modifications to upgrade the treatment to tertiary, or equivalent, treatment, or alternative treatment and disposal option. The technical evaluation shall determine BPTC as required by Resolution 68-16 (See Finding No. 59 and Fact Sheet) for each waste constituent. The work plan shall contain a preliminary evaluation of each component. The schedule for submitting the technical report shall not exceed two years.	27 May 2005
b. Implement approved work plan.	Within 30 days of approval by the EO of Task 9.a.
c. Submit technical report indicating the results of the technical evaluation, including recommended WWTF modifications, if any, to achieve BPTC, and a schedule to complete the modifications. The schedule to complete the modifications shall not extend beyond 15 October 2009.	Within two years of approval by the EO of Task 9.a.
d. Complete WWTF modifications to achieve BPTC.	26 January 2010.

Technical reports submitted pursuant to this Provision are subject to the requirements of **Provision G.6** and EO approval.

The Discharger shall submit written letter monitoring reports on its progress on **1 February** and **1 August** of each year until the Discharger achieves compliance with this provision.

10. **Groundwater Monitoring Tasks.** Finding No. 60 indicates that groundwater monitoring must be conducted to determine compliance with groundwater limitations. The Discharger shall submit a technical report describing a proposed groundwater monitoring well network. The technical report shall consist of a monitoring well installation work plan that satisfies Attachment C, *Standard Monitoring Well Provisions for Waste Discharge Requirements*. The network shall include one or more background monitoring wells and sufficient number of designated monitoring wells to evaluate compliance with this Order's groundwater limitations. These must include monitoring wells immediately downgradient of representative treatment and storage units that do or may release waste constituents to groundwater.

All wells shall comply with appropriate standards as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981), and any more stringent standards adopted by the Discharger or county pursuant to CWC Section 13801.

The Discharger shall install approved monitoring wells and commence groundwater monitoring in accord with this Order's Monitoring and Reporting Program and the time schedule below. After the first sampling event, the Discharger shall report on its sampling protocol as specified in the MRP. The Discharger shall comply with the following compliance schedule in implementing the work required by this Provision:

<u>Task</u>	<u>Compliance Date</u>
a. Submit technical report: monitoring well installation work plan	27 May 2005
b. Implement monitoring well installation work plan	30 days following EO approval of Task 10.a
c. Complete monitoring well installation and commence groundwater monitoring	60 days following EO approval of Task 10.b
d. Submit technical report: monitoring well installation report of results	30 days following EO approval of Task 10.c
e. Submit technical report on sampling procedures as described in the MRP	1st day of the second month following the first sampling event

Technical reports submitted pursuant to this Provision are subject to the requirements of **Provision G.6** and EO approval.

11. **Ammonia-N Evaluation.** The Discharger shall submit a technical report in the form of a work plan and implementation schedule describing a proposed study to evaluate ammonia-N toxicity to the various aquatic species currently supported by or potentially supported by Miles Creek and the WWTF discharge thereto, and develop ammonia-N effluent limitations (Finding No. 57). The Discharger shall submit a technical report describing the details and results of the technical evaluation and proposing the appropriate ammonia-N effluent limitations that are protective of Miles Creek's beneficial uses. The technical evaluation report shall include the technical justifications for the proposed ammonia effluent limitations and supporting materials. The evaluation shall be conducted by experts with experience in such work, and shall be subject to EO approval. The following compliance schedule applies to the work required in this Provision:

<u>Task</u>	<u>Compliance Date</u>
a. Submit technical report in the form of a work plan and implementing schedule	27 May 2005
b. Implement EO approved work plan	60 days following EO written approval of Task 11.a
c. Submit technical evaluation report	26 January 2010

Technical reports submitted pursuant to this Provision are subject to the requirements of **Provision G.6** and EO approval.

The Discharger shall submit written letter monitoring reports on its progress on **1 February** and **1 August** of each year until the Discharger achieves compliance with this provision.

12. **Sludge Management Plan.** At least **90 days** prior to handling any sludge from any pond for the purpose of removing, drying, storing, or disposing of the sludge, the Discharger shall submit a Sludge Management Plan, which shall include all the details of such sludge handling that demonstrate compliance with this Order's Sludge Disposal Specifications. The Sludge Management Plan shall include information requested in Attachment D *Information Needs for Sludge Management Plan*.
13. The Discharger shall report to this Board any toxic chemical release data it reports to the state emergency response commission within 15 days of reporting the data to the commission pursuant to Section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
14. The Discharger shall implement the best practicable treatment and control of the discharge, including proper operation and maintenance, to comply with this Order.

15. The Discharger shall conduct the chronic toxicity testing specified in this Order's Monitoring and Reporting Program. If the testing indicates that the discharge causes, has reasonable potential to cause, or contributes to an in-stream excursion above the WQO for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a work plan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. In addition, if the State Board adopts a chronic toxicity WQO, this Order may be reopened and a limitation based on that objective included.
16. The WWTF shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
17. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, National Pretreatment Standards: Prohibited Discharges, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:
 - a. Wastes that create a fire or explosion hazard in the treatment works;
 - b. Wastes that will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;
 - c. Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;
 - d. Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;
 - e. Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless this Board approves alternate temperature limitations;
 - f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and
 - h. Any trucked or hauled pollutants, except at points predesignated by the Discharger.

18. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, National Pretreatment Standards: Prohibited Discharges, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:
 - a. Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or
 - b. Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.
19. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to this Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. In the event of noncompliance, the Discharger shall notify this Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement actions, including Regional Board or court orders requiring corrective actions or imposing civil monetary liability, or in revision or rescission of this Order.
20. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Board, Division of Water Rights.
21. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with this Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.
22. If this Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of a limitation for the receiving waters, this Order may be enforced or, alternately, reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.

23. This Order expires on **26 January 2010**, and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date to apply for renewal of waste discharge requirements if it wishes to continue the discharge.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 27 January 2005.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

Attachments:

Monitoring and Reporting Program

A. Vicinity Map

B. Flow Schematic

C. Standard Monitoring Well Provisions

D. Information Needs for Sludge Management Plan

Fact Sheet

Standard Provisions for Waste Discharge Requirements (NPDES)(1 March 1991), Revised March 1997)(Separate attachment to Discharger only)

BLH/WDH: 1/27/05 AMENDED

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-0009
NPDES NO. CA0078950

FOR
PLANADA COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY
MERCED COUNTY

Adherence to this Monitoring and Reporting Program (MRP) is required pursuant to California Water Code Sections 13383 and 13267. The Discharger shall not deviate from this MRP unless and until the Regional Board or Executive Officer issues a revised MRP. Sampling locations are depicted on Attachment B. Any proposed change to a sampling location must have the prior concurrence of the Regional Board staff. After concurrence, a description of the change and the Regional Board staff's written concurrence must be attached to the Discharger's copy of this Order.

Sample collection, storage, and analyses shall be performed in accordance with 40 CFR Part 136 or other methods approved and specified by the Executive Officer of the Regional Board. All samples shall be grab samples unless otherwise indicated and representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with Standard Provisions, Provisions for Monitoring.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DHS) or a laboratory waived by the Executive Officer from obtaining a certification for these analyses by the DHS. The director of the laboratory whose name appears on the certification or his or her laboratory supervisor who is directly responsible for analytical work performed shall supervise all analytical work including appropriate quality assurance/quality control procedures in his or her laboratory and shall sign all reports of such work submitted to the Regional Board.

For California Toxics Rule (CTR) priority pollutants, the Discharger shall report sampling results as required by the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementations Plan or SIP) Section 2.4. The Discharger's laboratory must meet minimum levels in the SIP Appendix 4.

INFLUENT MONITORING

Samples shall be collected at approximately the same time as effluent samples and should be representative of the influent for the period sampled. Influent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Metered	Continuous
BOD ₅ ¹	mg/L, lbs/day	24-hr. flow-proportional composite	Weekly
Total Suspended Solids	mg/L, lbs/day	24-hr. flow-proportional composite	Weekly
pH	standard units	Grab	Weekdays
Cyanide ²	µg/L	Grab	Monthly ⁴
Carbon Tetrachloride ²	µg/L	Grab	Quarterly ⁴
Chlorodibromomethane ²	µg/L	Grab	Quarterly ⁴
Dichlorobromomethane ²	µg/L	Grab	Quarterly ⁴
2,3,7,8-TCDD (TEQ) ^{2,3}	µg/L, pg/L	Grab	Annually ⁴

¹ 5-day, 20°C biochemical oxygen demand

² Coincident with effluent monitoring

³ TEQ as defined in EFFLUENT MONITORING below.

⁴ Frequency of monitoring for these constituents shall be the same as for effluent monitoring.

EFFLUENT MONITORING

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Time of collection of samples shall be recorded.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed below, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Meter	Continuous
BOD ₅ ¹	mg/L, lbs/day	24-hr. flow-proportional composite	Weekly
Total Suspended Solids	mg/L, lbs/day	24-hr. flow-proportional composite	Weekly
Settleable Solids	ml/L	Grab	Weekdays

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
pH	standard units	Grab	Weekly ⁹
Total Coliform Organisms	MPN ³ /100 ml	Grab	2/Week ⁴
Total Residual Chlorine	mg/L	Grab	2/Day
Sulfate	mg/L	Meter	Continuous
Turbidity	NTU	Grab	Continuous ⁵
Cyanide	µg/L	Grab	Monthly ⁶
Carbon Tetrachloride	µg/L	Grab	Quarterly ^{7, 11}
Chlorodibromomethane	µg/L	Grab	Quarterly ^{7, 11}
Dichlorobromomethane	µg/L	Grab	Quarterly ^{7, 11}
Conductivity @ 25°C	µmhos/cm	Grab	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly
Temperature	°F	Grab	Weekdays ⁹
General Minerals ²	mg/L	24-hour flow proportional composite	Annually
Acute Toxicity ⁸	% survival	24-hour flow proportional composite	Quarterly ⁹
Ammonia-N	mg/L	Grab	Weekly
Total Kjeldahl Nitrogen (TKN)	mg/L	Grab	Weekly ⁹
Nitrate N	mg/L	Grab	Weekly ⁹
2,3,7,8-TCDD (TEQ) ¹⁰	µg/L, pg/L	Grab	Annually ¹¹
Priority Pollutants ¹¹	µg/L	24-hour flow proportional composite	Thrice ¹²

¹ 5-day, 20°C biochemical oxygen demand

² General minerals shall include all the analytes listed in the table below.

³ MPN = most probable number

⁴ On non-consecutive days.

⁵ Weekday grab samples until 26 January 2010 concurrently with ammonia monitoring; thereafter monitor continuously by meter.

⁶ After one year of monthly monitoring for cyanide and upon written approval of the Executive Officer, the Discharger may reduce the monitoring frequency to Quarterly if it has demonstrated that all analytical results are below the Final Effluent Limitations or are non-detect.

- ⁷ After one year of quarterly monitoring for these parameters and upon written approval of the Executive Officer, the Discharger may reduce the monitoring frequency to Semi-Annually if it has demonstrated that all analytical results are below the Final Effluent Limitations or are non-detect.
- ⁸ All acute toxicity bioassays shall be performed according to *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012* (or latest edition) using *Pimephales promelas* with no pH adjustment, unless exceptions are granted to the Discharger by the Executive Officer.
- ⁹ Concurrent with ammonia monitoring.
- ¹⁰ TEQ is Toxicity Equivalent calculated as the sum of the concentration of each of the 17 congeners multiplied by its Toxic Equivalency Factor (or TEF) as listed in the table below.
- ¹¹ Reporting for priority pollutants as referred to in this program shall conform to SIP Section 2.4 et seq.
- ¹² Twice in the first year and once in the fourth year of this permit and reported as indicated herein under REPORTING.

Toxic Equivalency Factors (TEFs) for 2,3,7,8-TCDD Equivalents

<u>Congener</u>	<u>TEF</u>
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001

General Minerals Analyte List

Alkalinity (as CaCO ₃)	Carbonate (as CaCO ₃)	Manganese
Aluminum	Chloride	Phosphate
Bicarbonate (as CaCO ₃)	Hardness (as CaCO ₃)	Potassium
Boron	Iron	Sodium
Calcium	Magnesium	Sulfate

General Minerals Sample Collection and Preservation: With the exception of effluent samples, samples placed in an acid-preserved bottles must first be filtered through a 0.45 µm nominal pore size filter. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24-hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the receiving water. The testing shall be conducted as specified in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013* (or latest edition). Chronic toxicity samples shall be collected at the discharge of the wastewater treatment facility prior to its entering Miles Creek. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. Dilution and control waters shall be obtained immediately upstream of the discharge from an area unaffected by the discharge in the receiving waters. Standard dilution water can be used if the receiving water source exhibits toxicity and is approved by the Executive Officer. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days. Chronic toxicity monitoring shall include the following:

Species: *Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum*

Frequency: Quarterly

Dilution Series:

	<u>Dilutions (%)</u>					<u>Controls</u>	
	100	75	50	25	12.5	<i>Creek Water</i>	<i>Lab Water</i>
% WWTF Effluent	100	75	50	25	12.5	0	0
% Dilution Water ¹	0	25	50	75	87.5	100	0
<u>% Lab Water</u>	0	0	0	0	0	0	100

¹ Dilution water shall be receiving water from Miles Creek taken upstream from the discharge point. The dilution water and dilution series may be altered upon approval of Regional Board staff. If there is no flow in Miles Creek, use lab water.

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples collected during the waste discharge to Miles Creek. Receiving water monitoring shall include at least the following:

<u>Station</u>	<u>Description</u>			
		<u>Constituents</u>	<u>Units</u>	<u>Station</u>
R-1	Miles Creek at Gerard Avenue			
R-2	Miles Creek at Whealan Avenue			
				<u>Sampling Frequency</u>
		Flow	mgd	R-1, R-2
		EC	µmhos/cm	R-1, R-2
		Dissolved Oxygen	mg/L	R-1, R-2
		pH	standard units	R-1, R-2
		Turbidity	NTU	R-1, R-2
		Temperature	°F	R-1, R-2
		Fecal Coliform	MPN/100 mL	R-1, R-2
		Chlorine Residual	mg/L	R-1, R-2
		Cyanide	µg/L	R-1, R-2
		Carbon Tetrachloride	µg/L	R-1, R-2
		Chlorodibromomethane	µg/L	R-1, R-2
		Dichlorobromomethane	µg/L	R-1, R-2

<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Ammonia (as NH ₃ -N)	mg/L	R-1, R-2	Weekly
TKN	mg/L	R-1, R-2	Weekly ³
Nitrate-N	mg/L	R-1, R-2	Weekly ³
2,3,7,8-TCDD (TEQ)	µg/L, pg/L	R-1, R-2	Annually ³
General Minerals	mg/L	R-1, R-2	Annually ³
Priority Pollutants	mg/L	R-1, R-2	Thrice ⁵
Hardness	mg/L	R-1, R-2	Thrice ⁵

¹ Flow shall be an estimate. The methodology for obtaining the estimate must be reported with monthly self-monitoring reports.

² Frequency of monitoring for these constituents shall be the same as for Effluent Monitoring.

³ Concurrent with ammonia monitoring.

⁴ Concurrent with effluent monitoring; comply with notes 10 and 11 under Effluent Monitoring.

⁵ Comply with notes 11 and 12 under Effluent Monitoring.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-2. Attention shall be given to the presence or absence of:

- | | |
|---------------------------------|--|
| a. Floating or suspended matter | e. Visible films, sheens or coatings |
| b. Discoloration | f. Fungi, slimes, or objectionable growths |
| c. Bottom deposits | g. Potential nuisance conditions |
| d. Aquatic life | |

Notes on receiving water conditions shall be summarized in the monitoring report.

GROUNDWATER MONITORING

Prior to collecting samples and after measuring the water level, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

In the technical report submitted pursuant to **Provision G.10 task e** describing the results of the first sampling event performed pursuant to this program, the Discharger shall include a detailed description of the procedures and techniques for: (a) sample collection, including purging techniques, sampling equipment, and decontamination of sampling equipment; (b) sample preservation and shipment; (c) analytical procedures; and (d) chain of custody control. As it continues to monitor groundwater

pursuant to this program, the Discharger shall report when it deviates from these procedures and techniques.

At least quarterly and concurrently with groundwater quality sampling, the Discharger shall measure the water level in each well as groundwater depth (in feet and hundredths) and as groundwater surface elevation (in feet and hundredths above mean sea level). The horizontal geodetic location for each monitoring well shall be provided where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum.

Samples shall be collected from approved monitoring wells and analyzed for the following constituents at the following frequency:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u> ⁴
Depth to groundwater	To 0.01 foot	Measured	Quarterly ¹
Groundwater elevation	Above mean sea level, to 0.01 foot	Calculated	Quarterly ¹
pH	pH Units	Grab	Quarterly ¹
Total Coliform Organisms	MPN/100 mL	Grab	Quarterly ¹
Total Organic Carbon	mg/L	Grab	Quarterly ¹
Ammonia (as NH ₃ -N)	mg/L	Grab	Quarterly ¹
Total Kjeldahl Nitrogen (TKN)	mg/L	Grab	Quarterly ¹
Nitrate-N	mg/L	Grab	Quarterly ¹
Total Organic Nitrogen (as N)	mg/L	Calculated	Quarterly ¹
EC	µmhos/cm	Grab	Quarterly ¹
Total dissolved solids	mg/L	Grab	Quarterly ¹
Adjusted SAR ²	None	Calculated	Quarterly ¹
Title 22 MCL Inorganic Chemicals ⁵	mg/L	Grab	Quarterly ¹
<u>General Minerals</u> ³	mg/L	Grab	Quarterly ¹

¹ January, April, July and October

² Adjusted sodium adsorption ratio (SAR) shall be determined as follows:

$$\text{Sodium adsorption ratio (SAR)} = \frac{Na}{\sqrt{\frac{Ca + Mg}{2}}}, \text{ where Na, Ca, and Mg are in meq/L}$$

³ General minerals as indicated under Effluent Monitoring.

⁴ Background wells shall be monitored monthly for the first 12 months, and quarterly thereafter.

⁵ Title 22, CCR, Section 64443, Table 64443-1A Inorganic Chemicals.

POND MONITORING

Pond monitoring shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Freeboard	feet	Visual	Weekly ¹
Visual observation of weeds, scum, or solids buildup on ponds	-	Visual	Weekly ¹
Dissolved oxygen in upper 1-foot of ponds	mg/L	Grab	Weekly ¹

¹ Frequency shall be daily when in noncompliance with Pond Specifications and shall continue until at least one week after return to compliance.

WATER SUPPLY MONITORING

The Discharger's supply water for Planada shall be monitored as follows:

<u>Constituent</u>	<u>Units</u>	<u>Measurement</u>	<u>Constituent</u>
EC ¹	µmhos/cm	Grab	Quarterly ²
<u>General Minerals</u>	See footnote 3	Grab	Once Every 3 Years ⁴

¹ EC shall be representative of the water supply quality for the Discharger. Sample locations must be described in the monitoring reports.

² January, April, July and October the first year, semiannually thereafter in April and October.

³ Aluminum and Iron - µg/L; all others – mg/L.

⁴ Concurrent with Department of Health Service reporting requirement.

REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions and Reporting Requirements. All reports submitted in response to this MRP shall comply with the signatory requirements in Standard Provisions, General Reporting Requirements D.6. All monitoring data where the required monitoring frequency is monthly or more frequent than once per month shall be reported in monthly monitoring reports. Monthly monitoring reports shall be submitted to the Regional Board by the **1st day of the second month following sampling**. Quarterly monitoring reports shall be submitted by **1st day of the second month after the calendar quarter**. Semi-annual monitoring reports shall be submitted by the **1st day of the second month after the calendar half-year**. Priority pollutant and dioxin monitoring reports shall be submitted no later than the **1st day of the third month following sampling**.

Monitoring data and/or discussions submitted concerning WWTF performance must be signed and certified by the chief plant operator. Reports containing laboratory analyses must also be signed and certified by: (1) when laboratory analyses are performed by the Discharger, the chief of the laboratory and (2) when performed by a contract laboratory, the chief of laboratory or authorized signatory.

Each laboratory report shall clearly identify the following:

- analytical method
- measured value
- units
- what constituent a value is reported as
- method detection limit (MDL)
- reporting limit (RL) (i.e., a practical quantitation limit or PQL)
- documentation of cation/anion balance for general minerals analyses of supply water and effluent samples

All laboratory results shall be reported down to the MDL, as defined 40 CFR 136. Nondetected results shall be reported as less than the MDL (<MDL). Results above the MDL, but below the concentration of the lowest calibration standard for multipoint calibration methods or below the reporting limit for other methods shall be flagged as estimated.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the data, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that indicates clearly whether the discharge complies with waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall be indicated on the Discharge Monitoring Report Form.

By **1 February** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

1. The names, certificate grades, and general responsibilities of all persons employed at the WWTF (Standard Provision A.5).
2. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations.
3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).
4. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
5. The most recent annual Consumer Confidence Report for Water Quality for the Planada Community Services District.

6. A summary of groundwater monitoring in a format (both printed and electronic) selected in concurrence with Regional Board staff, including:
 - a. Hydrographs showing the groundwater elevation in approved wells from the initial monitoring to the end of the reporting period, for at least the previous five years or to the extent that such data are available, whichever is fewer. The hydrographs should show groundwater elevation with respect to the elevations of the top and bottom of the screened interval and be presented at a scale of values appropriate to show trends or variations in groundwater elevation. The scale for the background plots shall be the same as that used to plot downgradient elevation data;
 - b. Graphs of the laboratory analytical data for samples taken from approved wells from the initial sampling to the end of the reporting period, within at least the previous five calendar years (as data become available). Each such graph shall plot the concentration of one or more waste constituents specified above selected in concurrence with Regional Board staff. The graphs shall plot each datum, rather than plotting mean values, over time for a given monitoring well, at a scale appropriate to show trends or variations in water quality. For any given constituent, the scale for the background plots shall be the same as that used to plot downgradient data.
 - c. All monitoring analytical data obtained during the previous four quarterly reporting periods, presented in tabular form, as well as on 3.5" computer diskette.
7. A summary of the following monitoring data collected during the previous 12 months, presented in tabular form, as well as on 3.5" computer diskette: (1) daily coliform, (2) running 7-sample median coliform, (3) maximum daily coliform for each month, (4) average daily chlorine residual for each month, (5) highest daily maximum chlorine residual for each month, (6) average ammonia-N concentration for each month, (7) highest ammonia-N concentration for each month, (8) cyanide, (9) carbon tetrachloride, (10) chlorodibromomethane, (11) dichlorobomomethane, and (12) conductivity.
8. A summary of the following receiving water monitoring data during the previous 12 months: (1) weekly fecal coliform, (2) maximum fecal coliform for each month, (3) chlorine residual, (4) cyanide, (5) cyanide, (6) carbon tetrachloride, (7) chlorodibromomethane, (8) dichlorobomomethane, and (9) ammonia-N.
9. All monitoring data in items 6, 7 and 8 above shall be presented in both tabular and graphic forms in printed and electronic formats in concurrence with the Regional Board staff.
10. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with this Order.

The Discharger shall implement the above monitoring program on the effective date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

_____ 27 January 2005 _____
(Date)

BLH/WDH: 1/27/05 AMENDED

FACT SHEET

ORDER NO. R5-2005-0009
PLANADA COMMUNITY SERVICES DISTRICT WWTF
MERCED COUNTY

I. INTRODUCTION

The Planada Community Services District (hereafter the Discharger) owns and operates a wastewater collection, treatment, and disposal facility (WWTF) that provides sewerage service to the community of Planada. The Discharger submitted a report of waste discharge (RWD) dated 30 November 2001 and applied for renewal of its permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from its wastewater treatment facility to Miles Creek, a water of the United States. Waste Discharge Requirements (WDRs) Order No. 97-123 currently regulates the discharge.

The design monthly daily average flow rate of the WWTF is 0.53 million gallons per day (mgd). The treatment system consists of a metering manhole, an influent pumping station, a grinder to shred solids in the raw sewage, an influent distribution box, three silty-clay lined aerated lagoons, three unlined oxidation ponds, six intermittent sand filters, six pressure filter pods, a chlorination manhole, a chlorine contact pipe, and an effluent pump station. The facility does not waste sludge, but has cleaned sludge from its ponds and removes solids from its filters. In the past, the facility has disposed of solids via land application on site.

There is a seasonally operated cannery in the service area. Under restrictions imposed by the Discharger, the cannery only discharges domestic waste to the WWTF.

Discharger District Engineer Tolladay, Fremming, & Parson (now Fremming, Parson & Pecchenino) prepared a December 2002 report entitled *Preliminary Engineering Report for Wastewater Collection and Treatment Facilities for the Planada Community Services District*. The report explores the possibility of bringing the design average flow of the facility to 0.9 MGD. The 30 November 2001 Report of Waste Discharge (RWD) states that Merced County installed a storm drainage system that will significantly decrease inflow to the collection system and that groundwater is deep enough that infiltration is not a problem.

The Discharger's RWD describes the monthly average daily discharge of treated domestic wastewater between December 2001 and November 2002 as 0.39 mgd and the maximum daily flow as 0.76 mgd. Self-monitoring data going back as far as September 2000 show a maximum daily flow of 1.07 mgd. The Discharger has reported the design maximum daily flow rate of the facility as 0.69 mgd.

The Discharger's self-monitoring reports from 2000 through June 2004 indicate the effluent average concentration of BOD₅, total suspended solids (TSS), chlorine residual, and conductivity (EC) were 17 mg/L, 18 mg/L, 0.1 mg/L, and 554 µmhos/cm, respectively. The total coliform concentrations ranged from less than 2 to more than 1600 most probable number (MPN)/100 mL. The monthly average effluent EC exceeded 700 µmhos/cm during only one month for which the Discharger submitted only one result. Total coliform concentrations ranged from less than 2 to more than 1600 MPN/100 mL. Seventy-three percent of the 449 samples were less than 2 MPN/100 mL. Twenty-nine (6.5 percent) exceeded the effluent daily maximum limitation of 240 MPN/100 mL. Twenty-seven (6.1 percent) 7-sample medians exceeded the comparable effluent limitation of 23 MPN/100 mL.

The Discharger violated the total coliform and residual chlorine effluent limitations 48 times in 2000. To better comply with the effluent limitations, the Discharger installed pressure filters and dechlorination metering equipment in late 2000 and reduced the number of violations of the above effluent limitations to six in 2001, nine in 2002, and four in 2003, and 10 times in the first half of 2004 (2004 violations were of coliform limits).

On the morning of 12 January 2004, the California Department of Fish and Game (DFG) responded to a citizen's complaint of a fish kill in Miles Creek downstream of Planada WWTF's discharge. The DFG investigator, on inspection of Miles Creek, reported to Regional Board staff that minnows, carp, pollywogs, and other fish were found dead in the creek water. Miles Creek in the morning of 12 January 2004 had no flow upstream of the discharge. On 24 August 2004, Planada reported a sodium bisulfite spill and fish kill in Miles Creek. The spill was reportedly due to a valve failure. These incidents are still under investigation and no enforcement action has been taken as yet.

Unrelated to the above spills, on 2 August 2004, the Executive Officer issued Planada a Mandatory Minimum Penalty Complaint in the amount of \$250,000 for prior effluent violations. Planada has agreed to complete a compliance project in lieu of paying all or a portion of the penalty. A portion of Planada's project includes a proposal to eliminate discharges to Miles Creek. Planada has not submitted a report of waste discharge to modify its discharge. Regional Board staff are reviewing the proposal in the context of the MMP and as a potential compliance project.

II. BENEFICIAL USES OF THE RECEIVING WATER

The WWTF discharges to Miles Creek, an ephemeral tributary to the San Joaquin River. Approximately seven miles downstream of the discharge point, Miles Creek joins Owens Creek. Thereafter, Owens Creek meanders for about 16 miles to its juncture with the Eastside Canal. At this point, water from Owens Creek can be diverted to the Eastside Canal or to the Eastside Bypass, both of which form a network of natural and manmade channels for agricultural irrigation and drainage that drain to the San Joaquin River.

The Merced Irrigation District diverts water from Owens Creek approximately 7.5 miles downstream of the discharge point for use in irrigation of various crops including food crops. Order No. 97-123 indicates the California Department of Fish and Game (DFG) reported that Miles Creek and Owens Creek provide warm freshwater habitat for support of aquatic resources such as amphibians, clams, and warm water fishes; however, DFG stated that Miles Creek is not a significant fishery and that it does not have the beneficial use of spawning. DFG also reported that people collect and consume clams from Miles Creek. Order No. 97-123 indicates the Merced County Department of Public Health (MCDPH) confirmed that people have harvested clams from creeks in western Merced County and that it is possible that this practice is still occurring.

The existing and potential beneficial uses which currently apply surface water bodies of the basins are presented in Figure II-1 and Table II-1 in the *Water Quality Control Plan for the Sacramento River*

Basin and the San Joaquin River Basin, Fourth Edition, as amended (Basin Plan). The beneficial uses of any specifically identified water body generally apply to its tributary streams.

The Basin Plan does not specifically identify the beneficial uses of Miles Creek. Since Miles Creek is an ephemeral tributary of the San Joaquin River between Sack Dam and the mouth of the Merced River, the designated beneficial uses for that reach of the San Joaquin River apply to Miles Creek. Furthermore, State Water Resources Control Board (State Board) Resolution No. 88-63, which was incorporated in the Basin Plan by means of Regional Board Resolution 89-056 requires the Regional Board to apply the beneficial uses of municipal and domestic supply (MUN) to Miles Creek.

The beneficial uses identified in the Basin Plan for the San Joaquin River from Sack Dam to the mouth of the Merced River as identified in Table II-1 of the Basin Plan are:

- a. Municipal and domestic supply (potential) (MUN),
- b. Agricultural irrigation (AGR),
- c. Agricultural stock watering (AGR),
- d. Industrial process water supply (PRO),
- e. Body contact water recreation (REC-1),
- f. Canoeing and rafting (REC-1),
- g. Other non-body contact water recreation (REC-2),
- h. Warm freshwater aquatic habitat (WARM),
- i. Fish migration habitat (warm and cold) (MIGR),
- j. Spawning habitat (warm and potentially cold) (SPWN), and
- k. Wildlife habitat (WILD).

Order No. 97-123, Finding No. 16, describes the beneficial uses of Miles Creek downstream of Whealan Avenue as MUN, industrial supply, AGR, REC-1, REC-2, WARM, MIGR (warm water), SHELL, and WILD. These beneficial uses differ from the Basin Plan's designated beneficial uses as listed above by the elimination of MIGR (cold water) and SPWN (warm water and potential cold water) and the addition of shellfish harvesting (SHELL). The Regional Board applied the above indicated beneficial uses in Order No. 97-123, because at that time, for tributaries to water bodies identified in the Basin Plan, the Regional Board could apply judgment in cases where a beneficial use is not applicable to the entire body of water (Basin Plan, page II-2.00, Surface Waters). In applying the beneficial uses in Order No. 97-123, the Regional Board's judgment was based on available information at that time including information provided by DFG and MCDPH as previously indicated above.

The Basin Plan notes that it is impractical to list every surface water body in the Region. It also notes that a beneficial use may not be applicable to the entire body of water. In these cases, the Regional Board's judgment will be applied. The Basin Plan recognizes generally that some of the identified beneficial uses may not currently exist and may not be supported in the probable future, at least for certain portions of receiving waters. Thus the Regional Board recognizes that consideration for

removing some of the beneficial uses may be appropriate. The Regional Board, however, is not authorized to remove such uses unless it follows the public processes required by state law and federal regulations (i.e., by amending the Basin Plan).

Precedential State Board Order No. WQ2002-0015 (Vacaville Order) provides guidance on implementing the Basin Plan, particularly the protection of beneficial uses as designated in an effluent dominated water body where actual and probable uses warrant re-evaluation and the application of Regional Board judgment. Some of the issues addressed by the State Board Order may be relevant to the Planada WWTF discharge. Specifically, the beneficial uses affecting the most stringent effluent limitations of this Order are potential MUN, existing AGR, existing warm freshwater and potential cold freshwater SPWN, and REC-1. Other designated beneficial uses, whether they occur or do not occur, are unlikely to change the effluent limitations of this Order as they are less sensitive to the pollutants discharged. Of the beneficial uses controlling effluent limitations, only the cold water SPWN may not presently exist or is not likely to be realized.

If the Discharger has or wishes to acquire information that indicates the cold water SPWN does not exist and is unlikely to be realized in the future in Miles Creek regardless of the discharge itself, the Discharger may provide the information to the Regional Board so that this beneficial use can be fully evaluated through a Use Attainability Analysis (UAA) and changed if appropriate. As State Board Order No. WQ2002-0015 makes clear, the Discharger bears the responsibility for providing the information to support this evaluation. To the extent that beneficial use designation/designation issue is relevant in this case, the Discharger should consider evaluating alternatives for the discharge to determine the most cost effective course of action (e.g., increased treatment, alternative methods of disposal, studies to support redesignating beneficial uses, etc.).

The beneficial uses of the underlying ground water are MUN, industrial service supply, PRO, and AGR.

III. SUMMARY OF CHANGES TO CURRENT ORDER

This Order includes changes from the Current Order and the Monitoring and Reporting Program. A summary of the key changes is as follows:

a. Final Effluent Limitations:

Revision of maximum daily effluent limitations for BOD₅ and TSS to reflect statistical relationship between maximum daily and average monthly limitations.

Revision of mass-based limitations for BOD₅ and TSS calculated from national secondary treatment standards to reflect design flow of 0.53 mgd.

Revision of total residual chlorine limit based on the recommended water quality criteria for protection of aquatic life in USEPA's *Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life*.

Addition of effluent limits for EC based on the Basin Plan's water quality objective for EC.

Addition of effluent limitations for cyanide, carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane based on requirements from the CTR and SIP.

Addition of tertiary treatment requirements, including turbidity limitations, to protect MUN, AGR, REC-1 and SPWN beneficial uses.

b. Interim Effluent Limitations and Compliance Schedules:

Addition of interim effluent limitations and compliance schedules for final effluent limitations (pending submission of a compliance schedule justification by the Discharger) for cyanide, carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane based on the infeasibility of meeting the final limitations immediately and compliance schedule requirements in the SIP.

Addition of interim effluent limitations and compliance schedule for final effluent limitations pending completion of: WWTF upgrade to tertiary, or equivalent, treatment; or effluent disposal method other than to discharge to Miles Creek to protect MUN, AGR, REC-1, and SPWN beneficial uses. An option to re-evaluate cold water SPWN for dedesignation by the Regional Board if the Discharger conducts the prerequisite studies.

c. Pond Specifications:

Addition of Pond Specifications to minimize potential for nuisance.

d. Receiving Water Limitations:

Addition of receiving water limitations to address Basin Plan water quality objectives for molybdenum and selenium Title 22 MCLs, and lead for receiving waters with MUN beneficial use.

Revision of the dissolved oxygen requirement from 5.0 to 7.0 mg/L based on water quality objective for dissolved oxygen in the Basin Plan for the cold water SPWN beneficial use. Given previous NPDES permits for this discharge have not protected cold water SPWN, there is no evidence that cold water SPWN exists in Miles Creek, and the Discharger is evaluating alternatives to eliminate altogether discharges to Miles Creek, this permit provides a time schedule to either comply with the revised dissolved oxygen limit until the Board confirms its necessity through a UAA or its necessity is mooted either by a UAA or a commitment by the Discharger to cease discharges to Miles Creek in favor of other disposal options.

e. Groundwater Limitations:

Addition of groundwater limitations to address Basin Plan water quality objectives for groundwater and protect the beneficial uses of groundwater from potential adverse effects by waste constituents through percolation from the stabilization ponds.

f. Monitoring and Reporting Program:

Addition of Effluent Monitoring requirements to measure compliance with new effluent limitations (e.g., for indicated priority pollutants).

Addition of priority pollutant monitoring requirement, twice during the permit term, to gather data to enable the Regional Board to assess the need for water quality-based effluent limitations for priority pollutants in the next permit.

Addition of Pond Monitoring requirements in order to assess compliance with conditions in the Order.

Addition of turbidity monitoring to Receiving Water Monitoring requirements to assess compliance with turbidity objective from the Basin Plan.

Addition of five CTR priority pollutants to Receiving Water Monitoring requirements to assess effluent limitations compliance and more accurately determine receiving water background concentrations.

Addition of groundwater monitoring requirements to assess compliance with Groundwater Limitations.

Addition of water supply monitoring to obtain source water data to monitor increase of EC and minerals in the wastewater from use of the water. Such data is useful in assessing future appropriate effluent limitations.

g. Provisions:

Revision of the requirement to conduct a toxicity reduction evaluation from Executive Officer directed to Discharger self-initiated based on Basin Plan water quality objective for toxicity and Section 4 of the SIP.

Addition of time schedules for compliance with CTR pollutant effluent limitations, tertiary treatment requirements and development of the groundwater monitoring network.

Addition of requirement and time schedule to study the discharge's impact of ammonia toxicity on the receiving water and recommend ammonia effluent limitations.

Specific factors affecting the development of limitations and requirements in the proposed Order are as follows:

1. Basis for Prohibitions

- A.1 Prohibition of discharge except as described in this Order is based on California Water Code Section 13376.
- A.2 Prohibition of by-pass of wastes is based on 40 CFR 122.41(m) except as allowed therein and as described in Standard Provision A.13.

2. Basis for Effluent Limitations

Federal regulations at 40 CFR 133.102 establish the minimum level of effluent quality attainable by secondary treatment for the parameters BOD₅, TSS and pH. Basin Plans include beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving the objectives. The following effluent limitations have been derived from either 40 CFR 133.102, the Basin Plan, or the CTR and SIP. Some of these limitations are carried over from Order No. 97-123 and are specifically identified below. The WWTF's ability to comply with carried over effluent limitations is demonstrated by existing WWTF performance.

2.1 Flow

Flow limitation is based on the facility's certified design capacity of a monthly daily average flow of 0.53 mgd.

2.2 Rationale for Non-Priority Pollutant Effluent Limitations

The specific rationale for these limitations is as follows:

Dilution: Water quality-based effluent limitations (e.g., pH and total residual chlorine) in this Order apply at the point of discharge as, at times, the discharge is the only flow in Miles Creek and there is no dilution.

Mass-based limitations: Mass-based limitations are calculated using the applicable concentration limit and the design flow of the facility. (See examples below for BOD₅ and TSS.)

BOD₅ and TSS: Final effluent limitations for BOD₅ and TSS are explained below under *Tertiary Treatment Requirements*. Interim effluent limitations for BOD₅ and TSS are based on secondary treatment standards at 40 CFR 133.102, which require that BOD₅ and TSS not exceed a 30-day average of 30 mg/l and a 7-day average of 45 mg/l and that the average percent removal of BOD₅ and TSS be no less than 85%. The maximum daily limit is calculated based on the 30 day average limit using the standard statistical procedures in the SIP and USEPA's TSD for describing effluent concentrations using a lognormal distribution. Using these procedures, the ratio of the maximum daily limit to the average monthly limit is 2.01.

Mass-based limit calculation for BOD₅ and TSS:

Given: Conversion factor = 8.34 (lb)(L)/(mg)(million gallons)
Design flow = 0.53 mgd

Monthly Average = 30 mg/L × 8.34 × 0.53 mgd = **133 lbs/day**

Weekly Average = 45 mg/L × 8.34 × 0.53 mgd = **199 lbs/day**

Daily Max = 60 mg/L × 8.34 × 0.53 mgd = **265 lbs/day**

pH: The Basin Plan requires that the pH of receiving waters shall not be depressed below 6.5 or raised above 8.5 standard units. As the discharge is at times the only flow in Miles Creek, these limitations are applied directly to the discharge. These requirements are more stringent than the pH requirements based on the secondary treatment standards at 40 CFR 133.102.

Settleable Solids: Effluent limitations for settleable solids are based on limitations from the current Order and were developed to attain the Basin Plan narrative water quality objective for settleable material.

Conductivity (EC): The Basin Plan, Table II-1, designates MUN and AGR irrigation as beneficial uses of the San Joaquin River from Sack Dam to the Mouth of the Merced River. The Merced Irrigation District diverts water from Owens Creek approximately 7.5 miles downstream of the discharge for irrigation of various crops including food crops. The Basin Plan states on Page III-3.00, “Chemical Constituents,” “Waters shall not contain constituents in concentrations that adversely affect beneficial uses.” The Basin Plan’s “Policy for Application of Water Quality Objectives” provides that in implementing narrative water quality objectives, the Regional Board will consider numeric criteria and guidelines developed by other agencies and organizations. This application of the Basin Plan is consistent with 40 CFR 122.44(d).

The Basin Plan requires that groundwater designated for use as MUN not contain concentrations of chemical constituents in excess of Title 22 MCLs. Title 22 MCLs for EC as shown in Section 64449,

Table 64449-B (Secondary Maximum Contaminant Levels-Ranges), are 900 µmhos (recommended) and 1,600 µmhos (upper).

Ayers, R.S. and D.W. Westcott, *Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)*, reports levels above 700 µmhos/cm will reduce crop yields for sensitive plants. This Order does not consider the types of crops currently grown in the area affected by the WWTF discharge but does consider the potential for restricting the types of crops that may be grown in the area if the water quality with respect to EC were considerably degraded.

The WWTF effluent EC averages of 554 $\mu\text{mhos/cm}$ with a maximum of 789 $\mu\text{mhos/cm}$. The Discharger's SMRs for 2000 through June 2004 indicate that the average monthly EC during each of these 4.5 years never exceeded 700 during only one month for which Planada only submitted one effluent EC result.

As the Discharger is capable of consistently discharging an EC level of 700 $\mu\text{mhos/cm}$ or less, and as it has not justified through an antidegradation analysis the need for a higher limit, a monthly average EC limit of 700 $\mu\text{mhos/cm}$ is appropriate. As sometimes no dilution water is available and the Discharger needs to do nothing differently to consistently comply with this level of EC, this effluent limitation is reasonable.

Total Coliform Organisms (TCO): The final effluent limitations for total coliform organisms are based on disinfected tertiary recycled water requirements as explained below under *Tertiary Treatment Requirements*. The interim effluent limitations are continued from the current permit until the tertiary treatment limitations become effective.

Total Residual Chlorine: The Basin Plan states that, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." USEPA's recommended acute and chronic aquatic life criteria for chlorine are 19 $\mu\text{g/L}$ and 11 $\mu\text{g/L}$ respectively. The Discharger disinfects its effluent by chlorination. Self-monitoring data submitted by the Discharger demonstrates an average residual chlorine concentration in the effluent of 0.2 mg/l (200 $\mu\text{g/l}$). Chlorine is discharged from the facility at levels that have the reasonable potential to cause an in-stream excursion above the narrative water quality objective for toxicity from the Basin Plan. This Order establishes water quality-based effluent limitations for total residual chlorine using USEPA's recommended criteria for chlorine to interpret the narrative water quality objective for toxicity in the Basin Plan and the procedures in USEPA's TSD to calculate effluent limitations as follows:

Assuming:

- No dilution.
- Coefficient of Variation (CV) = 0.6 for the lognormal distribution of pollutant concentrations in effluent.

Effluent Concentration Allowance (ECA) based on acute criterion with no dilution allowance

$$ECA_a = 19 \mu\text{g/L}$$

Effluent Concentration Allowance based on chronic criterion with no dilution allowance

$$ECA_c = 11 \mu\text{g/L}$$

Long Term Average (LTA) concentration based on acute ECA

$$LTA_a = 19 \mu\text{g/L} \times 0.321 = 6.10 \mu\text{g/L}$$

(where 0.321 = acute ECA multiplier at 99% occurrence probability and 99% confidence)

Long Term Average concentration based on chronic ECA

$$LTA_c = 11 \mu\text{g/L} \times 0.527 = 5.80 \mu\text{g/L}$$

(where 0.527 = chronic ECA multiplier at 99% occurrence probability and 99% confidence)

Most Limiting LTA concentration

$$LTA = 5.80 \mu\text{g/L}$$

Average Monthly Effluent Limit (AMEL)

$$\text{AMEL} = \text{LTA} \times 1.19$$

(where 1.19 = AMEL multiplier at 95% occurrence probability, 99% confidence, and $n = 30$)

$$\text{AMEL} = 5.80 \mu\text{g/L} \times 1.19 = \mathbf{7 \mu\text{g/L}} \text{ (rounded to } \mathbf{0.01 \text{ mg/L}})$$

Maximum Daily Effluent Limit (MDEL)

$$\text{MDEL} = \text{LTA} \times 3.11$$

(where 3.11 = MDEL multiplier at 99% occurrence probability and 99% confidence)

$$\text{MDEL} = 5.80 \mu\text{g/L} \times 3.11 = \mathbf{18 \mu\text{g/L}} \text{ (rounded to } \mathbf{0.02 \text{ mg/L}})$$

A daily maximum or monthly average value for total residual chlorine shall be considered non-compliant with the effluent limitations only if it exceeds the effluent limitation and the reported minimum level for that constituent. The highest acceptable minimum level for analysis of total residual chlorine that the Discharger's laboratory may have for calibration purposes is 0.01 mg/L. The Discharger currently is able to comply consistently with this effluent limitation.

Acute and Chronic Whole Effluent Toxicity: Acute whole effluent toxicity limitations and chronic whole effluent toxicity requirements are based on interpretation of the narrative water quality objective for toxicity in the Basin Plan and requirements in Section 4 of the SIP.

2.3 Rationale for Tertiary Treatment Requirements

As previously mentioned, the beneficial uses of Miles Creek, as a tributary to the San Joaquin River include, among others, MUN, AGR, and REC-1. The Merced County Department of Public Health has confirmed that the collection of shellfish from Miles Creek for human consumption is known to have occurred in the past and may still occur. The Merced Irrigation District diverts water from Owens Creek approximately 7.5 miles downstream of the discharge for use in irrigation of various crops, including food crops. Water not diverted for irrigation flows to the San Joaquin River. To protect the above indicated beneficial uses, the wastewater must be disinfected and adequately treated to prevent disease.

The 1988 Memorandum of Agreement (MOA) between California Department of Health Services (DHS) and the State Board on the use of recycled water establishes basic principles relative to the agencies and the regional boards. In addition, the MOA allocates primary areas of responsibility and authority between these agencies, and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to the use of recycled water in California.

The Regional Board requested guidance from DHS on 24 February 1999 regarding relatively undiluted treated wastewater discharged to agricultural drains or streams where the water may be used or diverted for beneficial uses of irrigation of vegetable and fruit crops and body contact recreation. DHS letter dated 8 April 1999 provided the requested guidance. DHS recommends that the wastewater be adequately oxidized, coagulated, filtered and disinfected, i.e., tertiary level of treatment. The wastewater should be considered adequately disinfected if:

1. The chlorine disinfection process provides a CT (residual chlorine concentration times modal contact time) value of not less than 450 milligram-minutes per liter at all times, with a modal contact time of at least 90 minutes, based on peak dry weather design flow; and
2. The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 mL utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 mL in more than one sample in any 30 day period. No single sample should exceed an MPN of 240 per 100 mL for total coliform bacteria

DHS has developed reclamation criteria, California Code of Regulations (CCR), Title 22, Division 4, Chapter 3 (Title 22 RWC), for the reuse of wastewater. Title 22 RWC requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 ml as a 7-day median.

Title 22 RWC is not directly applicable to surface waters. However, DHS guidance of 8 April 1999 for the use of relatively undiluted wastewater discharged to agricultural drains or streams where the water may be used or diverted for beneficial uses of irrigation of vegetable and fruit crops and body contact recreation coincide with Title 22 RWC for the reuse of wastewater for spray irrigation of food crops, parks, playgrounds, and other areas of similar public access. Therefore, it is appropriate to apply Title 22 RWC because Miles Creek is used for irrigation of food crops and is accessible to the public for body contact recreation.

The principal infectious agents (pathogens) that may be present in raw sewage may be classified into three broad groups: bacteria, parasites, and viruses. Tertiary treatment, consisting of chemical coagulation, sedimentation, and filtration, followed by disinfection, has been found to remove approximately 99.5% of viruses. Filtration is an effective means of reducing viruses and parasites from the waste stream. Filtration also reduces solids in the effluent and allows for more effective disinfection. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing pathogens. In addition to coliform testing, turbidity is used as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment.

Effluent limitations at the tertiary level of treatment, or equivalent, contained in this Order are necessary to protect the beneficial uses of the receiving water. Such limits are more stringent than those previously imposed by this Board on this WWTF discharge. Therefore, in accordance with CWC Section 13241, the following were considered:

- The Existing And Potential Future Beneficial Uses Of The Receiving Stream. The designated beneficial uses of Miles Creek include MUN, AGR, PRO, REC-1, REC-2, WARM, MIGR (warm and cold), SPWN (existing warm and potential cold), and WILD. Evidence provided by the California Department of Fish and Game and Merced County Department of Public Health

(MCDPH) indicates that SHELL is also a beneficial use. There is no evidence to support cold water SPWN, but the Discharger may request this Board complete a UAA for SPWN (cold) and amend the Basin Plan, if appropriate, to dedesignate this beneficial use.

- The Environmental Characteristics Of The Hydrographic Unit, Including The Quality Of Water Available. Water upstream of the discharge includes storm water runoff from the foothills, surrounding farmland and Planada's storm water collection system; and tail water from local farms and a dairy. Prior to October 2002, upstream flow in Miles Creek was often absent. However, receiving water monitoring data submitted with District self monitoring reports indicates upstream flow since has been almost continuous. District personnel reports that a diary and modifications to the Planada storm water collection system are likely responsible for the change in the Creek's flow regime. District personnel also report that upstream flows are typically much, much less than that discharged from the WWTF. The quality of upstream flow is largely unknown, although storm water runoff would be expected to be of high quality with respect to salts. The water downstream of the discharge is of good quality with respect to salts and when properly disinfected should be of good quality with respect to pathogens. The water downstream of the discharge is used by and benefits many people.
 - Water quality conditions that could reasonably be achieved through the coordinated control of all factors. Within certain limits, the Board has the authority and responsibility to regulate all known discharges (e.g., dairy, storm water system, WWTF) to Miles Creek and their quality. The alleged discharges from the dairy do not appear to be consistent with Board policies and are being investigated. Discharges from the Planada storm water collection system are not currently addressed under the current State or federal storm water programs, and would only be regulated by this Board if shown to have a significant adverse impact on Miles Creek. However, fishable, swimmable, and agricultural irrigation water quality
 - conditions in Miles Creek can be reasonably achieved by upgrading the WWTF to tertiary standards. The Discharger currently uses intermittent sand filters or pressure filters to polish the effluent from the oxidation ponds. Upgrading the treatment process is reasonable and necessary and technically not difficult to achieve.
- Economic considerations. The Discharger has plans to expand the capacity of the WWTF from its current 0.53 mgd to 0.9 mgd at a cost of \$460,000 to accommodate growth in the community and to consistently comply with terms in Order No. 97-123. Upgrading the treatment process will require additional expenditure of funds. The State Board, Division of Financial Assistance, estimates that the cost to add tertiary treatment to an existing secondary WWTF is approximately \$1 million per mgd. Based on the State Board's estimate, the Discharger's current estimated cost of compliance without expansion is \$500,000. The estimated cost of providing tertiary treatment with expansion of the WWTF to 0.9 mgd is \$900,000. The Discharger may be able to use some components in its current treatment process that may reduce estimated costs. The Discharger's current monthly domestic sewer user fee is \$23.00. The California average monthly domestic sewer user fee is \$20.46.

- The need for developing housing in the area. Population growth in Merced County in the Planada and City of Merced areas is increasing demand for housing. The requirement to increase the level of treatment for discharge to Miles Creek should not impede home construction in the area. Increased population density will, however, increase the potential for water related activities, such as water contact and noncontact recreation and recreational shellfish harvesting. The public has ready access to Miles Creek. These beneficial uses require high quality water; i.e., tertiary treatment. Without tertiary treatment, the downstream waters could not safely be utilized for these water uses.
- The Need To Develop And Use Recycled Water. State of California and Regional Board policy (Basin Plan, page IV-14.00, Policy 2) both encourage the reclamation and reuse of wastewater. Upgraded effluent quality increases opportunity for reuse. The Discharger need not directly reuse the treated wastewater as discharge into Miles Creek facilitates agricultural irrigation and public recreation. Since the treatment level must be upgraded to tertiary level, the Discharger has an option to adopt an alternative method for treating and disposing of the wastewater. A feasible alternative is direct reuse for agriculture without discharging to Miles Creek. In either option, the wastewater is being used for agriculture.

Tertiary, or equivalent, treatment will allow for the continued reuse of undiluted wastewater for food crop irrigation and contact recreation activities, which would be otherwise unsafe according to recommendations from DHS.

Tertiary treatment necessitates achieving lower levels for BOD₅ and TSS than the secondary standards currently prescribed. Therefore, the 30-day average BOD₅ and TSS limitations are revised to 10 mg/L, which is technically based on the capability of a tertiary system. Average weekly and maximum daily limitations also are revised to 15 mg/L and 20 mg/L, respectively, based on this 30-day average requirement.

The Discharger will be unable to comply immediately with tertiary treatment requirements. Therefore, a time schedule for achieving compliance is included in this Order. Until the compliance date becomes effective, interim effluent limitations for BOD₅ and TSS are prescribed in this Order and effluent limitations for total coliform organisms of the current Order are continued.

2.4 Rationale for Priority Pollutant Effluent Limitations

The specific rationale for these limitations is as follows:

Reasonable Potential Analysis (RPA):

The following section describes the “reasonable potential analysis” (RPA) methodology and results for priority pollutants (as identified in the NTR and CTR). The analysis is required by and based on the methodology in the SIP using effluent and receiving water data collected by the Discharger on 24 April 2001 and 8 October 2002 and reported on 12 July 2001 and 9 December 2002, respectively, as required by a Regional Board letter of 27 February 2001. According to the Discharger’s April 2001 and October 2002 monthly monitoring reports, Miles Creek had upstream flow in April 2001 but was dry on

8 October 2002. The receiving water samples were taken downstream of the discharge and, therefore, do not represent background and were not used in the RPA.

- a. *Water Quality Objectives (WQO) and Water Quality Criteria (WQC):* An RPA involves the comparison of effluent data and receiving water background data with appropriate WQC in the CTR or NTR and, as applicable, WQOs in the Basin Plan or other numeric criteria. The Discharger only collected receiving water samples downstream of the discharge (at sampling station R-2) instead of downstream and upstream (upstream at sampling station R-1 for background water quality) as directed by the 27 February 2001 letter. The effluent sampling results indicate that the maximum effluent concentrations for cyanide, carbon tetra chloride, chlorodibromomethane and dichlorobromomethane exceeded the governing WQO or WQC. The remaining priority pollutants were lower than the governing WQO or WQC. The Discharger’s downstream sampling results did indicate in one sample that 2,3,7,8-TCDD (dioxin) exceeded the governing WQC; however, there was no upstream flow at the time and it was not detected in the effluent. Additional monitoring for 2,3,7,8-TCDD is appropriate. Since the RPA did not consider the background water quality, the results with regard to the remaining priority pollutants can only be considered as preliminary. Therefore, the RPA will be completed after receiving both downstream and background receiving water priority pollutant data, along with effluent data, during the term of this Order.
- b. *RPA determination:* The RPA results are summarized in the table below.

SUMMARY OF REASONABLE POTENTIAL ANALYSIS RESULTS

# in CTR	PRIORITY POLLUTANTS	Maximum Effluent Concentration or Minimum Method Detection Limit ¹ (µg/L)	Maximum Rec’g Water Concentration or Minimum Method Detection Limit ¹ (µg/L)	Governing WQO/WQC (µg/L)	RPA Result ²
1	Antimony	0.3	NA	6.00	No
2	Arsenic	6	NA	50.00	No
3	Beryllium	0.06	NA	4.00	No
4	Cadmium	0.03	NA	0.37	No
5a	Chromium (III)	1	NA	289	No
5b	Chromium (VI) or total Cr	5.0	NA	11.43	No
6	Copper	1.1	NA	13.19	No
7	Lead	0.059	NA	5.33	No
8	Mercury	0.0064	NA	0.05	No
9	Nickel	2.7	NA	73.51	No

# in CTR	<u>PRIORITY POLLUTANTS</u>	Maximum Effluent Concentration or Minimum Method Detection Limit ¹ (µg/L)	Maximum Rec'g Water Concentration or Minimum Method Detection Limit ¹ (µg/L)	Governing WQO/WQC (µg/L)	RPA Result ²
10	Selenium	2	NA	5.00	No
11	Silver	0.2	NA	8.15	No
12	Thallium	0.07	NA	1.70	No
13	Zinc	2	NA	169	No
14	Cyanide	20	NA	5.20	Yes
15	Asbestos (millions / liter)	0.51	NA	No Criteria	Uo
16	2,3,7,8-TCDD (Dioxin)	0.000000044	NA	0.000000013	No
17	Acrolein	1	NA	320	No
18	Acrylonitrile	1	NA	0.06	No
19	Benzene	0.13	NA	1.00	No
20	Bromoform	0.39	NA	4.30	No
21	Carbon Tetrachloride	0.9	NA	0.25	Yes
22	Chlorobenzene	0.09	NA	680	No
23	Chlorodibromomethane	2.1	NA	0.41	Yes
24	Chloroethane	3.3	NA	No Criteria	Uo
25	2-Chloroethylvinyl Ether	0.32	NA	No Criteria	Uo
26	Chloroform	83	NA	No Criteria	Uo
27	Dichlorobromomethane	12	NA	0.56	Yes
28	1,1-Dichloroethane	0.19	NA	5.00	No
29	1,2-Dichloroethane	0.19	NA	0.38	No
30	1,1-Dichloroethylene	0.25	NA	0.06	No
31	1,2-Dichloropropane	0.17	NA	0.52	No
32	1,3-Dichloropropylene	0.26	NA	10.00	No
33	Ethylbenzene	0.15	NA	700	No
34	Methyl Bromide	0.49	NA	48.00	No
35	Methyl Chloride	0.27	NA	No Criteria	Uo
36	Methylene Chloride	5	NA	4.70	No
37	1,1,2,2-Tetrachloroethane	0.37	NA	0.17	No

# in CTR	<u>PRIORITY POLLUTANTS</u>	Maximum Effluent Concentration or Minimum Method Detection Limit ¹ (µg/L)	Maximum Rec'g Water Concentration or Minimum Method Detection Limit ¹ (µg/L)	Governing WQO/WQC (µg/L)	RPA Result ²
38	Tetrachloroethylene	0.45	NA	0.80	No
39	Toluene	0.19	NA	150	No
40	1,2-Trans-Dichloroethylene	0.2	NA	10.00	No
41	1,1,1-Trichloroethane	0.27	NA	200	No
42	1,1,2-Trichloroethane	0.22	NA	0.60	No
43	Trichloroethylene	0.21	NA	2.70	No
44	Vinyl Chloride	0.24	NA	0.50	No
45	Chlorophenol	2.79	NA	120	No
46	2,4-Dichlorophenol	2.34	NA	93.00	No
47	2,4-Dimethylphenol	2.32	NA	540	No
48	2-Methyl-4,6-Dinitrophenol	1.34	NA	13.40	No
49	2,4-Dinitrophenol	3.7	NA	70.00	No
50	2-Nitrophenol	2.29	NA	No Criteria	Uo
51	4-Nitrophenol	3.77	NA	No Criteria	Uo
52	3-Methyl-4-Chlorophenol	2.26	NA	No Criteria	Uo
53	Pentachlorophenol	1.39	NA	0.28	No
54	Phenol	2.7	NA	21000	No
55	2,4,6-Trichlorophenol	1.47	NA	2.10	No
56	Acenaphthene	1.09	NA	1200	No
57	Acenaphthylene	1.51	NA	No Criteria	Uo
58	Anthracene	1.07	NA	9600	No
59	Benzidine	1	NA	0.00012	No
60	Benzo(a)Anthracene	1.73	NA	0.0044	No
61	Benzo(a)Pyrene	1.21	NA	0.0044	No
62	Benzo(b)Fluoranthene	2.3	NA	0.0044	No
63	Benzo(ghi)Perylene	1.89	NA	No Criteria	Uo
64	Benzo(k)Fluoranthene	2.66	NA	0.00	No
65	Bis(2-Chloroethoxy)Methane	1.87	NA	No Criteria	Uo

<u># in</u> <u>CTR</u>	<u>PRIORITY POLLUTANTS</u>	<u>Maximum</u> <u>Effluent</u> <u>Concentration</u> <u>or Minimum</u> <u>Method</u> <u>Detection</u> <u>Limit¹ (µg/L)</u>	<u>Maximum</u> <u>Rec'g Water</u> <u>Concentration</u> <u>or Minimum</u> <u>Method</u> <u>Detection</u> <u>Limit¹ (µg/L)</u>	<u>Governing</u> <u>WQO/WQC</u> <u>(µg/L)</u>	<u>RPA</u> <u>Result²</u>
66	Bis(2-Chloroethyl)Ether	2.32	NA	0.03	No
67	Bis(2-Chloroisopropyl)Ether	3.27	NA	1400	No
68	Bis(2-Ethylhexyl)Phthalate	4.04	NA	1.80	No
69	4-Bromophenyl Phenyl Ether	1.33	NA	No Criteria	Uo
70	Butylbenzyl Phthalate	1.33	NA	3000	No
71	2-Chloronaphthalene	1.76	NA	1700	No
72	4-Chlorophenyl Phenyl Ether	1.12	NA	No Criteria	Uo
73	Chrysene	1.24	NA	0.0044	No
74	Dibenzo(a,h)Anthracene	1.64	NA	0.0044	No
75	1,2-Dichlorobenzene	4.02	NA	600	No
76	1,3-Dichlorobenzene	3.98	NA	400	No
77	1,4-Dichlorobenzene	4.36	NA	5.00	No
78	3,3'-Dichlorobenzidine	2.58	NA	0.04	No
79	Diethyl Phthalate	2.16	NA	23000	No
80	Dimethyl Phthalate	2.24	NA	313000	No
81	Di-n-Butyl Phthalate	4.34	NA	2700	No
82	2,4-Dinitrotoluene	1.2	NA	0.11	No
83	2,6-Dinitrotoluene	1.24	NA	No Criteria	Uo
84	Di-n-Octyl Phthalate	0.93	NA	No Criteria	Uo
85	1,2-Diphenylhydrazine	0.6	NA	0.04	No
86	Fluoranthene	1.2	NA	300	No
87	Fluorene	0.95	NA	1300	No
88	Hexachlorobenzene	1.53	NA	0.00075	No
89	Hexachlorobutadiene	4.21	NA	0.44	No
90	Hexachlorocyclopentadiene	0.4	NA	50.00	No
91	Hexachloroethane	0.29	NA	1.90	No
92	Indeno(1,2,3-cd) Pyrene	1.5	NA	0.0044	No
93	Isophorone	1.49	NA	8.40	No

# in CTR	<u>PRIORITY POLLUTANTS</u>	Maximum Effluent Concentration or Minimum Method Detection Limit ¹ (µg/L)	Maximum Rec'g Water Concentration or Minimum Method Detection Limit ¹ (µg/L)	Governing WQO/WQC (µg/L)	RPA Result ²
94	naphthalene	30.5	NA	No Criteria	Uo
95	Nitrobenzene	15	NA	17.00	No
96	N-Nitrosodimethylamine	0.6	NA	0.00069	No
97	N-Nitrosodi-n-Propylamine	2.03	NA	0.005	No
98	N-Nitrosodiphenylamine	2.16	NA	5.00	No
99	Phenanthrene	1.52	NA	No Criteria	Uo
100	Pyrene	1.35	NA	960	No
101	1,2,4-Trichlorobenzene	3.76	NA	70.00	No
102	Aldrin	0.001	NA	0.00013	No
103	alpha-BHC	0.001	NA	0.0039	No
104	beta-BHC	0.003	NA	0.01	No
105	gamma-BHC	0.001	NA	0.019	No
106	delta-BHC	0.001	NA	No Criteria	Uo
107	Chlordane	0.061	NA	0.00057	No
108	4,4-DDT	0.001	NA	0.00059	No
109	4,4-DDE	0.001	NA	0.00059	No
110	4,4-DDD	0.001	NA	0.00083	No
111	Dieldrin	0.001	NA	0.00014	No
112	alpha-Endosulfan	0.001	NA	0.056	No
113	beta-Endosulfan	0.001	NA	0.056	No
114	Endosulfan Sulfate	0.001	NA	0.056	No
115	Endrin	0.001	NA	0.76	No
116	Endrin Aldehyde	0.016	NA	0.76	No
117	Heptachlor	0.001	NA	0.00021	No
118	Heptachlor Epoxide	0.002	NA	0.0001	No
119- 125	PCBs ³	0.12	NA	0.00017	No
126	Toxaphene	0.87	NA	0.0002	No

- ¹ Concentration in bold is the actual detected MEC concentration; otherwise the concentration shown is the minimum method detection limit. No receiving water data is available.
NA = Not Available (there is not monitoring data for this constituent).
- ² RP = Yes, if either MEC or Background > WQO/WQC.
RP = No, if (1) both MEC and background < WQO/WQC or (2) no background and all effluent data non-detect, or no background and MEC < WQO/WQC (per WQ 2001-16 Napa Sanitation Remand) or (3) all data are non-detect.
RP = Ud (undetermined due to lack data).
RP = Uo (undetermined if no objective promulgated).
- ³ Sum of PCBs 1016, 1221 1232, 1242, 1248, 1254, and 1260.

- c. *Constituents with limited data:* Reasonable potential could not be determined for some of the priority pollutants due to the absence of applicable WQOs or WQC. This Order requires the Discharger to monitor priority pollutants twice during the term of this Order to provide additional data to complete the RPA. Reasonable potential will be reevaluated to determine whether there is a need to add numeric effluent limitations to the permit or to continue monitoring in the next permit.
- d. *Pollutants with no reasonable potential:* WQBELs are not included in this Order for constituents that do not have reasonable potential to cause or contribute to exceedance of applicable WQOs or WQC based on the current RPA. If concentrations or mass loads of these constituents are found to have increased significantly at any time, the Discharger may be required to investigate the source(s) of the increase(s) or undertake remedial measures if the increases pose a threat to water quality in the receiving water.
- e. *Permit Reopener:* This Order includes a reopener provision to allow numeric effluent limitations to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQC.

Priority Pollutant Effluent Limit Development:

The following constituents were found to have reasonable potential to cause or contribute to an excursion above water quality objectives or water quality criteria: **cyanide, carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane**. This Order includes final WQBELs for these pollutants.

Cyanide

Assuming:

- No dilution.
- Coefficient of Variation (CV) = 0.6 for the lognormal distribution of pollutant concentrations in effluent.

Effluent Concentration Allowance based on acute criterion for aquatic life protection with no dilution allowance

$$ECA_a = 22 \mu\text{g/L}$$

Effluent Concentration Allowance based on chronic criterion with no dilution allowance

$$ECA_c = 5.2 \mu\text{g/L}$$

Long Term Average concentration based on acute ECA

$$LTA_a = 22 \mu\text{g/L} \times 0.321 = 7.062 \mu\text{g/L}$$

(where 0.321 = acute ECA multiplier at 99% occurrence probability and 99% confidence)

Long Term Average concentration based on chronic ECA

$$LTA_c = 5.2 \mu\text{g/L} \times 0.527 = 2.7404 \mu\text{g/L}$$

(where 0.527 = chronic ECA multiplier at 99% occurrence probability and 99% confidence)

Most Limiting LTA concentration

$$LTA = 2.7404 \mu\text{g/L}$$

Average Monthly Effluent Limit

$$AMEL = LTA \times 1.55$$

(where 1.55 = AMEL multiplier at 95% occurrence probability, 99% confidence, and $n = 4$)

$$\text{AMEL} = 2.7404 \mu\text{g/L} \times 1.55 = \mathbf{4.2 \mu\text{g/L}}$$

Maximum Daily Effluent Limit

$$MDEL = LTA \times 3.11$$

(where 3.11 = MDEL multiplier at 99% occurrence probability and 99% confidence)

$$\text{MDEL} = 2.7404 \mu\text{g/L} \times 3.11 = \mathbf{8.5 \mu\text{g/L}}$$

Carbon Tetrachloride

Assuming:

- No dilution.
- Coefficient of Variation (CV) = 0.6 for the lognormal distribution of pollutant concentrations in effluent.

Effluent Concentration Allowance based on human health criterion (consumption of water and organisms) with no dilution allowance

$$ECA = 0.25 \mu\text{g/L}$$

Average Monthly Effluent Limit

$$AMEL = ECA$$

$$AMEL = 0.25 \mu\text{g/L}$$

Maximum Daily Effluent Limit

$$MDEL = ECA \times \text{MDEL/AMEL Ratio (from Table 2 of SIP)}$$

$$\text{MDEL} = 0.25 \mu\text{g/L} \times 2.01 = \mathbf{0.50 \mu\text{g/L}}$$

Chlorodibromomethane

Assuming:

- No dilution.

- Coefficient of Variation (CV) = 0.6 for the lognormal distribution of pollutant concentrations in effluent.

Effluent Concentration Allowance based on human health criterion (consumption of water and organisms) with no dilution allowance

$$\text{ECA} = 0.41 \mu\text{g/L}$$

Average Monthly Effluent Limit

$$\text{AMEL} = \text{ECA}$$

$$\text{AMEL} = \mathbf{0.41 \mu\text{g/L}}$$

Maximum Daily Effluent Limit

$$\text{MDEL} = \text{ECA} \times \text{MDEL/AMEL Ratio (from Table 2 of SIP)}$$

$$\text{MDEL} = 0.41 \mu\text{g/L} \times 2.01 = 0.82 \mu\text{g/L}$$

Dichlorobromomethane

Assuming:

- No in-stream dilution allowance.
- Coefficient of Variation (CV) = 0.6 for the lognormal distribution of pollutant concentrations in effluent.

Effluent Concentration Allowance based on human health criterion (consumption of water and organisms) with no dilution allowance

$$\text{ECA} = \mu\text{g/L}$$

Average Monthly Effluent Limit

$$\text{AMEL} = \text{ECA}$$

$$\text{AMEL} = \mathbf{0.56 \mu\text{g/L}}$$

Maximum Daily Effluent Limit

$$\text{MDEL} = \text{ECA} \times \text{MDEL/AMEL Ratio (from Table 2 of SIP)}$$

$$\text{MDEL} = 0.56 \mu\text{g/L} \times 2.01 = \mathbf{1.1 \mu\text{g/L}}$$

A daily maximum or monthly average value for a given constituent shall be considered non-compliant with the effluent limitations only if it exceeds the effluent limitation and the reported minimum level for that constituent. The table below indicates the highest acceptable minimum level that the Discharger's laboratory may have for calibration purposes.

<u>Constituent</u>	<u>Minimum Level</u>	<u>Units</u>
Cyanide	5	$\mu\text{g/L}$
Carbon Tetrachloride	0.5	$\mu\text{g/L}$
Chlorodibromomethane	0.5	$\mu\text{g/L}$
Dichlorobromomethane	0.5	$\mu\text{g/L}$

2.5 Rationale for Priority Pollutants Interim Effluent Limitations and Compliance Schedule

Comparison of the observed MEC to the lowest final WQBEL (both in µg/L) is shown below:

<u>Constituents</u>	<u>AMEL</u>	<u>MDEL</u>	<u>MEC</u>	<u>Is MEC ≥ AMEL?</u>	<u>Feasible to Comply</u>
Cyanide	4.2	8.5	20	Yes	No
Carbon Tetrachloride	0.25	0.50	0.9	Yes	No
Chlorodibromomethane	0.41	0.82	2.1	Yes	No
Dichlorobromomethane	0.56	1.1	12	Yes	No

The comparison indicates that it is infeasible for the Discharger to comply immediately with the final effluent limitations for the four constituents shown. Interim effluent limitations were derived for cyanide, carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane. The Discharger must complete and submit a compliance schedule justification for these four constituents. If a compliance schedule justification meeting the requirements of Section 2.1 of the SIP is not completed and submitted by the Discharger as prescribed in the Order, the final water quality-based effluent limitations for cyanide, carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane become effective **27 May 2005**. Otherwise the new final water quality-based effluent limitations for cyanide, carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane become effective no later than **26 January 2010**.

For, cyanide, carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane there were insufficient data to develop statistically valid analysis of past performance as a basis for performance-based interim limitations. Therefore, interim limitations are based on the MEC for each of these constituents.

3. Basis for Pond Specifications

Pond Specifications in this Order, consisting primarily of management practices, are included to ensure that beneficial uses for surface water and groundwater specified in the Basin Plan are protected, and to prevent nuisance.

4. Basis for Sludge Disposal Specifications

Sludge disposal provisions are based on the requirements of Title 27, CCR and 40 CFR 503 for the prevention of unauthorized discharge of sludge or solid wastes into waters of the United States or waters of the State and management and land disposal of sludge.

5. Basis for Receiving Water Limitations

Receiving water limitations are included to ensure protection of beneficial uses of receiving waters. A receiving water condition not in conformance with a limitation is not necessarily a violation of the

Order. The Regional Board may require an investigation to determine cause and culpability prior to asserting that a violation has occurred.

This Order would require the discharge to maintain the dissolved oxygen concentration at 7.0 mg/L as required by the Basin Plan for surface waters designated as SPWN as an existing or potential designated beneficial use. This requirement is more stringent than the current Order's requirement of 5.0 mg/L. The Discharger SMRs between December 2001 and November 2002 indicate the Discharger consistently complies with the 5.0 mg/L requirement, but would not be able to consistently comply with the 7.0 mg/L requirement. Because the Discharger may be required to make treatment process design or operational adjustments to consistently comply with this more stringent requirement, this limitation does not become effective until the date of full compliance with the tertiary treatment requirements.

This Order would require compliance with the water quality objectives for molybdenum and selenium, for the reach of the San Joaquin River between Sack Dam and the mouth of the Merced River, Title 22 MCLs and lead for surface waters with designated beneficial use of municipal and domestic water supplies, which are not in the current Order. This Order will also require the Discharger to study the impact of ammonia to Miles Creek and propose ammonia effluent limitations.

This Order would require compliance with the water quality objectives in the Basin Plan for fecal coliform organisms to protect water contact recreation (REC-1) as a beneficial use; turbidity, pH, temperature, oils, greases, waxes, floating or suspended materials, and biostimulatory substances to prevent nuisance or adversely affect the designated beneficial uses; toxic pollutants, radionuclides and pesticides to protect human health or adversely affect designated beneficial uses or degrade aquatic communities and populations.

6. Basis for Groundwater Limitations

Groundwater limitations included in this Order implement Basin Plan water quality objectives and protect the beneficial uses of groundwater in the Basin from potential effects of waste constituents through percolation from the stabilization ponds.

7. Basis for Provisions

Provisions are included in this Order to ensure compliance to the requirements in the Order pursuant to the CWA, CWC, implementing regulations and the Basin Plan. Where the Discharger is not able to comply immediately with new and more stringent requirements, time schedules are included in the Order to allow time for necessary upgrades, and alternative treatment and disposal changes, studies, etc. to enable the Discharger to comply with these requirements. The provisions listed below require further explanation for their basis.

G.7 The establishment of CTR priority pollutant effluent limitations requires the Discharger to comply with new requirements. The Discharger may not be able to comply with these new requirements. This Order includes interim effluent limitations, which allows the Discharger time to install necessary upgrades to treatment to comply with the effluent limitations. This provision

requires the Discharger to submit a CTR priority pollutants compliance schedule justification and compliance schedule pursuant Section 2.1 of the SIP.

- G.8 The establishment of tertiary limitations for this discharge is a new more stringent requirement. This provision requires the Discharger to comply with the tertiary requirements and includes a time schedule for compliance. The Discharger may upgrade treatment to the tertiary level, dispose the effluent in a method other than discharge to Miles Creek, or develop other alternatives to comply with the requirements of this Order.
- G.9 This provision requires the Discharger to conduct a BPTC study of the existing WWTF, any proposed modifications to upgrade the treatment to tertiary treatment, or any alternative treatment and disposal option, and establishes a time schedule for the Discharger to conduct the BPTC study.
- G.10 This provision requires the Discharger to begin groundwater monitoring and includes a regular schedule of groundwater monitoring in the Monitoring and Reporting Program. Groundwater monitoring reports are necessary to assess compliance with groundwater limitations and obtain background groundwater quality data to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Regional Board plans and policies, including State Board Resolution 68-16.
- G.11 This provision requires the Discharger to study the impacts of ammonia nitrogen on Miles Creek and includes a compliance schedule. In the study, the City would be required to propose procedures, evaluation methods, and appropriate ammonia effluent limitations that would be protective of the beneficial uses of Miles Creek, considering the ammonia toxicity to the various aquatic habitat species currently supported by or potentially supported by Miles Creek.
- G.15 Chronic toxicity requirements in this provision are based on Section 4 of the SIP.
- G.22 The provision allowing the permit to be re-opened is based on 40 CFR 122.62.

8. Basis for Self-Monitoring Requirements

The monitoring and reporting program is issued pursuant to CWC Sections 13383 and 13267 and is required to assess compliance with the requirements in this Order.

Pollutants to be monitored in the influent and effluent include parameters for which effluent limitations are specified or which may affect water quality. This Order would include the Title 22 RWC requirement to continuously monitor turbidity for disinfected tertiary recycled water. To ensure chlorine residual is not discharged to Miles Creek in toxic concentrations, this Order also would include the requirement to monitor chlorine residual continuously. The Discharger also is required to conduct pond monitoring to assess compliance with conditions in this Order.

Receiving water monitoring requirements are based on the Basin Plan.

This Order would require the Discharger to begin groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary to evaluate impacts to waters of the state to assure protection of beneficial uses and compliance with Regional Board plans and policies, including

Resolution 68-16. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

Because of the additional monitoring requirements as stated above, this Order would substantially increase the monitoring requirements over the current Order. Tables 1 and 2 below summarize the monitoring requirements of the current Order and this Order.

Table 1

<u>Constituent</u>	<u>Units</u>	<u>Influent</u>		<u>Effluent</u>		<u>Receiving Water</u>	
		<u>Current</u>	<u>This Order</u>	<u>Current</u>	<u>This Order</u>	<u>Current</u>	<u>This Order</u>
Flow	mgd	Continuous ¹	Continuous ¹	Continuous ¹	Continuous ¹	-	Daily
BOD ₅	mg/L	Weekly ²	Weekly ²	Weekly ²	Weekly ²	-	-
TSS	mg/L	Weekly ²	Weekly ²	Weekly ²	Weekly ²	-	-
SS	mL/L	-	-	Week-days	Weekdays	-	-
Chlorine Residual	mg/L	-	-	Week-days	Continuous	Weekly	Weekly
Total Coliform Organisms	MPN/100 mL	-	-	2/Week	2/Week	-	-
EC	µmhos/cm	-	-	Monthly	Monthly	-	Weekly
pH	pH units	Daily	Week-days	Weekly	Weekly	Weekly	Weekly
Ammonia (as N)	mg/L	-	-	-	Weekly	-	Weekly
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	Weekly	-	Weekly
Nitrate-N	mg/L	-	-	-	Weekly	-	Weekly
Temperature	°F	-	-	Week-days	Weekdays	Weekly	Weekly
Turbidity	NTU	-	-	-	Continuous ³	-	Weekly
Cyanide	µg/L	-	Monthly	-	Monthly ⁴	-	Monthly ⁴
Carbon Tetra-Chloride	µg/L	-	Qtrly ⁵	-	Qtrly ⁵	-	Qtrly ⁵
Chlorodibromomethane	µg/L	-	Qtrly ⁵	-	Qtrly ⁵	-	Qtrly ⁵
Dichlorobromomethane	µg/L	-	Qtrly ⁵	-	Qtrly ⁵	-	Qtrly ⁵
2,3,7,8-TCDD (TEQ)	µg/L, pg/L	-	Annually	-	Annually	-	Annually
Total Dissolved Solids	mg/L	-	-	Monthly	Monthly	-	-
Dissolved Oxygen	mg/L	-	-	Weekly	-	Weekly	Weekly
Fecal Coliform	MPN/100 mL	-	-	-	-	-	Weekly
Acute Toxicity	% Survival	-	-	Qtrly	Qtrly	-	-
Chronic Toxicity	TU _C	-	-	-	Qtrly	-	-

<u>Constituent</u>	<u>Units</u>	<u>Influent</u>		<u>Effluent</u>		<u>Receiving Water</u>	
		<u>Current</u>	<u>This Order</u>	<u>Current</u>	<u>This Order</u>	<u>Current</u>	<u>This Order</u>
General Minerals ⁷	mg/L	-	-	Annually ²	Annually ²	-	Annually ² -
Priority Pollutants	µg/L	-	-	-	Thrice ⁶	-	Thrice ⁶
Hardness	mg/L	-	-	-	-	-	Thrice ⁶
Visual	None	-	-	-	-	Weekly	Weekly

Observations

- ¹ Metered; reported as daily flow and monthly daily average flow.
- ² 24-hr composite samples
- ³ Weekdays until 15 October 2009; thereafter continuous monitoring is required.
- ⁴ Monthly first year of this Order, quarterly thereafter.
- ⁵ Quarterly first year of this Order, semiannually thereafter
- ⁶ Twice in the first year and once in the fourth year of this Order

General minerals are analytes listed in the following table:

General Minerals Analyte List

Alkalinity (as CaCO ₃)	Carbonate (as CaCO ₃)	Manganese
Aluminum	Chloride	Phosphate
Bicarbonate (as CaCO ₃)	Hardness (as CaCO ₃)	Potassium
Boron	Iron	Sodium
Calcium	Magnesium	Sulfate

Table 2

<u>Constituent</u>	<u>Units</u>	<u>Ground Water</u>		<u>Pond</u>	
		<u>Current</u>	<u>This Order</u>	<u>Current</u>	<u>This Order</u>
Depth to GW	To 0.01 foot	-	Qtrly	-	-
GW Elevation	Ft Above MSL	-	Qtrly	-	-
pH	pH Units	-	Qtrly	-	-
Total Coliform Organisms	MPN/100 mL	-	Qtrly	-	-
EC	µmhos/cm	-	Qtrly	-	-
pH	pH units	-	Qtrly	-	-
Ammonia (as NH ₃ -N)	mg/L	-	Qtrly	-	-
Nitrate (as NO ₃ -N)	mg/L	-	Qtrly	-	-
Total Kjeldahl Nitrogen (TKN)	mg/L	-	Qtrly	-	-
Total Organic Nitrogen (as N)	mg/L	-	Qtrly	-	-

<u>Constituent</u>	<u>Units</u>	<u>Ground Water Current</u>	<u>Pond This Order</u>	<u>Current</u>	<u>This Order</u>
Adjusted SAR	None	-	Qtrly	-	-
General Minerals	mg/L	-	Qtrly	-	-
Title 22 MCL Inorganic Chemicals	mg/L		Qtrly		
Freeboard	Feet	-	-	-	Weekly
Visual Observations	-	-	-	-	Weekly
Dissolved Oxygen	mg/L	-	-	Weekly	Weekly

This Order also requires limited source water monitoring that was not required in Order 97-123.

REOPENER

The conditions of discharge in this Order were developed based on currently available technical information, currently available discharge and surface water quality information, applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. However, information is presently insufficient to develop all applicable final effluent limitations. Additional information must be developed and documented by the Discharger as required by schedules set forth in this Order. As this additional information is obtained, decisions will be made concerning the best means of assuring the highest water quality possible and that could involve substantial cost. It may be appropriate to reopen this Order if applicable laws and regulations change, or if new information necessitates the implementation of effluent limitations that adequately protect water quality.

CEQA

The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) in accordance with CWC section 13389.

BLH/WDH: 1/27/05 AMENDED