

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0144

NPDES NO. CA 0083488

WASTE DISCHARGE REQUIREMENTS
FOR
PARADISE IRRIGATION DISTRICT
WATER TREATMENT PLANT
BUTTE COUNTY

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

1. The Paradise Irrigation District (hereafter, Discharger) submitted an Application/Report of Waste Discharge, dated 19 December 2003, and applied to renew its permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from the Paradise Irrigation District Water Treatment Plant.
2. The Discharger owns and operates a potable water treatment plant (Facility), which provides 3 to 15 million gallons per day (mgd) of treated water from Magalia Reservoir for domestic and agricultural purposes to a population of approximately 26,000. The facility is located in Sections 25 and 36, Township 23 North, and Range 3 East of the Mt. Diablo Base Line and Meridian on Assessor's Parcel No. 065-260-008. Wastewaters generated from the operation of the Facility are treated and discharged at Discharge Point 001 latitude 39° 48' 59", longitude 121° 34' 50" to Magalia Reservoir (Paradise Lake), a man made impoundment on Little Butte Creek, both waters of the United States.
3. Wastewaters from the facility consists of clarifier wash water, filter backwash water, filter-to-waste waters, waters collected in floor and lab drains and waters collected in drains from containment areas. Wastewaters are routed to a wash water equalization tank and then pumped approximately one quarter mile to two settling basins prior to discharge to Magalia Reservoir. Annually, the water treatment plant alternates use between a "new" and an "old" two cell settling basin to allow drying and solids removal. Approximately 80 tons of solids are transported annually to a Class III landfill. Domestic waste from the facility is discharged to an on site septic tank and leach field.
4. Monitoring data from 1999 through May 2003 characterize the wastewaters discharged from the facility as follows.

	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
Flow ^a (mgd)					
Monthly Avg.	0.64	0.30	0.26	0.32	0.17
Monthly Max.	1.22	0.61	0.54	0.51	0.38
pH Range	6.7 – 8.7	6.5 – 9.2	6.3 – 9.3	5.8 – 9.5	6.7 – 8.8
Set. Solids (mL/L)					
Monthly Avg.	0.0	0.0	0.0	0.0	0.0
Monthly Max.	0.0	0.0	0.0	0.0	< 0.1
Chlorine (mg/L)					
Max.	0.0	0.0	0.0	0.0	0.0

^a Filter backwash is measured and reported as effluent flow.

5. The water treatment plant is in the Upper Butte Creek Hydrologic Unit (521.30), as depicted on interagency hydrologic maps prepared by the California Department of Water Resources (DWR) in August 1986. The mean annual rainfall in the area is approximately 30 inches, based on information from the U.S. Geological Survey and DWR.

6. The Regional Board adopted a *Water Quality Control Plan, Fourth Edition*, (Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and describes an implementation program and policies to achieve water quality objectives for all waters of the Basin. This includes plans and policies adopted by the State Water Resources Control Board (SWRCB) and incorporated by reference, such as Resolution No. 68-16, “Statement of Policy with Respect to Maintaining High Quality of Waters in California” (Resolution No. 68-16). These requirements implement the Basin Plan. The Basin Plans, as amended, designate beneficial uses, establish water quality objectives, and contain implementation plans and policies for waters of the Basins. Pursuant to the California Water Code (CWC) Section 13263(a), waste discharge requirements must implement the Basin Plans.

7. The United States Environmental Protection Agency (U.S. EPA) adopted the *National Toxics Rule* (NTR) on 22 December 1992, which was amended on 4 May 1995, and 9 November 1999, and the *California Toxics Rule* (CTR) on 18 May 2000, which was amended on 13 February 2001. These rules contain water quality criteria applicable to this discharge. The State Water Resources Control Board (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 Policy or SIP) on 2 March 2000, which contains guidance on implementation of the NTR and the CTR.

BENEFICIAL USES OF THE RECEIVING STREAM

8. 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.” The Basin Plan does not specifically identify beneficial uses for Magalia Reservoir or Little Butte Creek, but the Basin Plan does identify present and potential uses for Butte Creek (sources to Chico), to which Little Butte Creek is tributary.
9. The Basin Plan identifies the following beneficial uses for Butte Creek (sources to Chico): municipal and domestic supply; agricultural irrigation and stock watering; hydroelectric generation; body contact recreation; warm and cold freshwater aquatic habitat; cold water fish migration habitat; warm and cold water spawning, reproduction, and/or early development habitat; and wildlife habitat. In addition, State Board Resolution No. 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution No. 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

The Basin Plan on page II-1.00 states: “Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...” and with respect to disposal of wastewaters states that “...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.”

In reviewing whether the existing and/or potential uses of Butte Creek apply to Magalia Reservoir and Little Butte Creek, the Regional Board has considered the following facts:

a. Municipal Supply, Domestic Supply, and Agricultural Supply

The Regional Board is required to apply the beneficial uses of municipal and domestic supply to Little Butte Creek based on State Board Resolution No. 88-63 which was incorporated in the Basin Plan pursuant to Regional Board Resolution No. 89-056. In addition, the State Board has issued water rights to existing water users along Little Butte Creek downstream of the discharge for domestic and agricultural irrigation uses. The Discharger's water treatment plant and delivery system is a municipal use of Little Butte Creek. In addition to the existing water uses, growth in the area, downstream of the discharge, is expected to continue, which presents a potential for increased municipal, domestic, and agricultural uses of the water in Little Butte Creek.

b. Water Contact and Non-Contact Recreation and Aesthetic Enjoyment

The Regional Board finds that the discharge flows through residential areas. There is ready public access to Little Butte Creek and contact recreational activities currently

exist along Little Butte Creek and downstream waters, and these uses are likely to increase as the population in the area grows. Prior to flowing into Butte Creek, Little Butte Creek flows through areas of general public access, residential areas, and parks.

- c. **Preservation and Enhancement of Fish, Wildlife and Other Aquatic Resources**
Little Butte Creek flows to Butte Creek. The California Department of Fish and Game (DFG) has verified that the fish species present in Little Butte Creek and downstream waters are consistent with both cold and warm water fisheries, that there is a potential for anadromous fish migration necessitating a cold water designation and that Chinook salmon, a cold water species, have been found in the receiving water. The Basin Plan (Table II-1) designates the Butte Creek as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan [Table II-1, Footnote (2)], the cold designation applies to Little Butte Creek. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/L. This approach recognizes that, if the naturally occurring in-stream dissolved oxygen concentration is below 7.0 mg/L, the Discharger is not required to improve the naturally occurring level.

Upon review of the flow conditions, habitat values, and beneficial uses of Little Butte Creek, and the facts described above, the Regional Board finds that the beneficial uses identified in the Basin Plan for Butte Creek are applicable to Little Butte Creek.

GROUNDWATER

10. The beneficial uses of groundwater, as identified in the Basin Plan, are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

REASONABLE POTENTIAL ANALYSIS AND EFFLUENT LIMITATIONS

11. U.S. EPA regulations at 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard ("reasonable potential"). Besides water quality criteria contained in the CTR, applicable numerical and narrative water quality objectives are contained in the Basin Plan. The SIP contains guidance on implementation of the CTR and for determining "reasonable potential" for CTR pollutants. To determine "reasonable potential" for non-CTR pollutants, the Regional Board relies on methodology presented in U.S. EPA's *Technical Support Document for Water Quality Based Toxics Control* (TSD) (EPA/505/2-90-001, 1991). For interpretation of narrative water quality objectives, the Regional Board also uses its *Compilation of Water Quality Goals* (2000) as a resource.

12. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
13. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Board, using methodology described in Section 1.3 of the SIP and in the TSD, finds that the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above applicable water quality standards for any of the toxic, priority pollutants. However, two trihalomethanes, chloroform and dichlorobromomethane, were flagged by the reasonable potential analysis as possible pollutants of concern. This Order requires additional monitoring for trihalomethanes. This Order will be reopened and modified to include effluent limitations for trihalomethanes if the additional monitoring demonstrates that any are present in the discharge at concentrations that cause or contribute to an in-stream excursion above applicable water quality standards, as discussed above.

Chloroform

Although the CTR does not contain water quality criteria for chloroform, the Basin Plan includes a narrative water quality objective for toxicity that requires all waters to be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. For chloroform, the Regional Board interprets the narrative toxicity objective of the Basin Plan to be 1.1 ug/L, based on the Cal/EPA Cancer Potency Factor, established by the Office of Environmental Health Hazard Assessment (OEHHA) for sources of drinking water. In samples collected on 27 March 2002, the maximum observed concentration of chloroform in effluent was 12 ug/L, and no chloroform was detected in the upstream receiving water. Although the maximum observed effluent concentration exceeds the water quality objective of 1.1 ug/L, the Regional Board has determined that a single data point is insufficient to establish reasonable potential for this pollutant. Therefore, additional monitoring for chloroform and the three other common trihalomethanes (dichlorobromomethane, chlorodibromomethane, and bromoform) is required by this Order. This Order may be reopened, and an effluent limit for chloroform added, if additional monitoring shows that chloroform has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan narrative toxicity objective as described above.

Dichlorobromomethane

The CTR human health criterion for dichlorobromomethane in inland surface waters for consumption of water and organisms is 0.56 ug/L. Dichlorobromomethane was not detected in receiving water samples collected on 27 March 2002 but was present in the effluent at a concentration of 1.0 ug/L. Although the maximum observed effluent concentration exceeds the CTR water quality criterion, pursuant to Section 1.2 of the SIP, the Regional Board has determined that a single data point is insufficient to establish reasonable potential for this pollutant. Therefore, additional monitoring for

dichlorobromomethane and the three other common trihalomethanes (chloroform, chlorodibromomethane, and bromoform) is required by this Order. The Order may be reopened, and an effluent limit for dichlorobromomethane added, if additional monitoring shows that dichlorobromomethane has a reasonable potential to cause or contribute to an in-stream excursion above the CTR water quality criteria.

14. The Discharger utilizes aluminum-based coagulants in its operation. In the *Filter Backwash Recycling Rule Technical Guidance Manual* (EPA 816-R-02-014, December 2002), the U.S. EPA Office of Ground Water and Drinking Water has cited studies that report higher levels of aluminum, attributable to carryover from aluminum coagulants, in spent filter backwash than found in both raw waters and raw waters after chemical addition. The Basin Plan requires the Regional Board to consider information submitted by the Discharger and other interested parties, and numerical standards and guidelines developed by other agencies and organizations, in determining what numeric limitations will properly implement the Basin Plan's narrative toxicity objective. U.S. EPA developed National Recommended Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for aluminum as 87 ug/L as a four-day average (chronic), and 750 ug/L as a one-hour average (acute). U.S. EPA's 2002 National Recommended Water Quality Criteria summary document notes that these criteria were developed at low hardness values. It also states that aluminum is substantially less toxic at higher hardness, but the effects of hardness on the criteria are not well quantified at this time. In samples collected on 27 March 2002 by the Discharger, receiving water and source water hardness in Magalia Reservoir was relatively low at 27 mg/L as CaCO₃. Aluminum exists as aluminum silicate in suspended clay particles, which U.S. EPA acknowledges might be less toxic than other forms of aluminum. Correspondence with U.S. EPA indicates that the criterion is not intended to apply to aluminum silicate particles. Therefore, a monitoring method that excludes clay particles is likely to be more appropriate. The use of acid-soluble analysis for compliance with the aluminum criterion appears to satisfy U.S. EPA. Current monitoring data is insufficient to determine reasonable potential for aluminum. In accordance with California Water Code Section 13267, this Order establishes monitoring requirements for aluminum. If after review of the monitoring results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality standard for aluminum, this Order may be reopened and an effluent limitation added for aluminum.
15. The Discharger discharges clean or relatively pollutant free waters from well development water, construction dewatering, pump/well testing, pipeline/tank pressure testing, pipeline/tank flushing or dewatering, condensate discharges, other water supply system discharges, and other miscellaneous dewatering/low threat discharges during its normal operation and maintenance activities. These discharges occur at multiple locations and at variable quantity and duration. These discharges are currently required to be regulated by Order No. 5-00-175, General Order for Dewatering and Other Low Threat Discharges to Surface Waters. This Order includes requirements regarding such discharges, and upon adoption of this Order, the Discharger does not need to seek coverage under the General

Permit for Dewatering and Other Low Threat Discharges to Surface Waters for these discharges.

16. U.S. EPA established regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The regulations define specific categories of industrial activities that are required to seek coverage under an NPDES permit for storm water discharges associated with industrial activity. If applicable, the Discharger shall seek coverage for discharges of storm water under State Water Resources Control Board Water Quality Order No. 97-03-DWQ (NPDES General Permit No. CAS000001), Waste Discharges Requirements for Discharges of Storm Water Associated with Industrial Activities, or its revision/replacement.
17. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.
18. 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.), requiring preparation of an environmental impact report or negative declaration in accordance with Section 13389 of the California Water Code.
19. This Order requires monitoring for the purposes of assessing compliance with permit limitations and water quality standards and gathering information to evaluate the need for additional limitations.
20. Section 13267 of the California Water Code 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..., the regional board may require that any person who... discharges... waste...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.” The attached Monitoring and Reporting Program is issued pursuant to California Water Code Section 13267.
21. The Discharger is currently regulated pursuant to Waste Discharge Requirements Order No. 99-064 (NPDES No. CA0083488), adopted by the Regional Board on 11 June 1999.
22. The U.S. EPA and the Regional Board have classified this discharge as a minor discharge.

23. The Regional Board has considered the information in the attached Information Sheet in developing the findings of this Order. The attached Information Sheet, Monitoring and Reporting Program, and Attachments A and B are all parts of this Order.
24. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
25. The Regional Board, in a public meeting, has heard and considered all comments pertaining to the discharge.
26. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 10 days from the date of the final public hearing regarding this Order, provided U.S. EPA has no objections.

IT IS HEREBY ORDERED that Order No. 99-064 is rescinded and the Paradise Irrigation 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:

A. Discharge Prohibitions

1. Discharge of wastewater and low threat discharges, at locations or in a manner different from that described by this Order is prohibited.
2. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision A.13 [see attached *Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)*, February 2004].
3. The discharge of untreated wastes from water treatment operations to surface waters is prohibited.
4. The discharge of hazardous or toxic substances, which may include laboratory and water treatment chemicals, solvents, or petroleum products (including oil, grease, gasoline and diesel) to surface waters or groundwater is prohibited.
5. Discharge of hazardous waste, as defined at Title 23, Division 3, Chapter 15, Article 2, Section 2521 of the California Code of Regulations or designated waste, as defined at Section 13173 of the California Water Code, is prohibited.

B. Effluent Limitations

1. Discharge 001

a. Effluent from Discharge 001 shall not exceed the following limits.

<u>Constituent</u>	<u>Units</u>	<u>AMEL (30-Day Avg)</u>	<u>MDEL (Max Daily)</u>
Settleable Solids	mL/L	0.1	0.2
Suspended Solids	mg/L	30	50
	lbs/day ^a	500	834
Chlorine	mg/L	0.01	0.02
	lbs/day ^a	0.17	0.33

^a To calculate lbs/day, multiply mg/L limit by 8.34, then multiply by 2.0 (design flow).

b. The discharge shall not have a pH less than 6.0 nor greater than 9.0.

c. Survival of aquatic organisms in 96-hour acute bioassays of undiluted waste shall be no less than:

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

d. The maximum daily discharge flow shall not exceed 2.0 million gallons.

2. Low Threat Discharges

a. Low threat discharges shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>
Flow ^a	mgd			0.25
Total Suspended Solids	mg/L	10	15	30
Settleable Solids	mL/L			0.1

^a If greater than four months in duration.

b. Low threat discharges shall not contain chlorine in excess of 0.02 mg/L (instantaneous maximum).

C. Receiving Water Limitations

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan, and as such, they are a required part of this permit.

The discharge shall not cause the following in the receiving water:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/L. The monthly median of the mean daily dissolved oxygen concentration shall not fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not fall below 75 percent of saturation. The Discharger is not required to improve background dissolved oxygen conditions in the receiving water.
2. Oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the water surface or on objects in the water, or otherwise adversely affect beneficial uses.
3. Discoloration that causes nuisance or adversely affects beneficial uses.
4. Ambient pH to be depressed below 6.5, nor raised above 8.5, nor changes in normal ambient pH levels to be exceeded by more than 0.5 units.
5. Biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
6. Floating material in amounts that cause nuisance or adversely affect beneficial uses.
7. Suspended sediment load and suspended sediment discharge rate altered in such a manner to cause nuisance or adversely affect beneficial uses.
8. Suspended sediment concentrations that cause nuisance or adversely affect beneficial uses.
9. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
10. The turbidity 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.
 - d. More than 10 percent where natural turbidity is greater than 100 NTUs
11. The ambient temperature in the receiving water to increase more than 5° F above natural receiving water temperature, nor to increase above 56° F, when such an increase will be detrimental to the fishery – whichever is more restrictive. The Discharger is not required to improve background temperature conditions in the receiving water.
 12. Deposition of material that causes nuisance or adversely affects beneficial uses.
 13. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
 14. Toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This applies regardless of whether toxicity is caused by a single substance or the interactive effect of multiple substances.
 15. Violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Board pursuant to the CWA and regulations adopted thereunder.
 16. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
 17. The fecal coliform concentration in any 30-day period to exceed a geometric mean of 200 MPN/100 mL or cause more than 10 percent of total samples to exceed 400 MPN/100 mL.
 18. Upon adoption of any applicable water quality standard for receiving waters by the Regional Board or the State Board pursuant to the CWA or regulations adopted thereunder, this permit may be reopened and receiving water limitations added.

D. Discharge Requirements for Low Threat Discharges

1. The following discharges are authorized by this Order provided they do not contain significant quantities of pollutants, and they do not exceed 0.25 mgd unless four months or less in duration.

- a. Well development water including testing or start up;
 - b. Construction dewatering;
 - c. Pump/well testing;
 - d. Pipeline/tank pressure testing;
 - e. Pipeline/tank flushing or dewatering;
 - f. Condensate discharges;
 - g. Miscellaneous water supply system discharges; and,
 - h. Other miscellaneous dewatering/low threat discharges.
2. Collected screenings and other solids removed from piping, tanks, and other equipment prior to discharge shall be disposed of in a manner consistent with Title 23 of the California Code of Regulations Chapter 15, Division 3.
 3. The Discharger shall prepare a Pollution Prevention, Monitoring, and Reporting Plan (PPMRP) for Low Threat Discharges, to address all expected discharges. The PPMRP should address or include the following:
 - a. The PPMRP shall provide a general description of the raw water supply and distribution systems, types and frequency of potential discharges, potential discharge locations, possible pollutant types, possible flow rates and duration, and receiving waters.
 - b. The Plan shall identify best management practices (BMPs) for each type of discharge that will be used to prevent or minimize the discharge of pollutants. Where appropriate, BMPs shall include, but not be limited to the following.
 - i. Prior to testing or flushing of empty tanks and pipelines, solid wastes shall be removed for proper disposal.
 - ii. Erosion and sedimentation control practices at discharge point(s) shall be implemented, if necessary. Discharges shall adhere to applicable State and local recommended procedures for erosion and sediment control.
 - iii. The discharge of waters must be controlled to the lowest possible rate to minimize potential impacts on aquatic life and to reduce erosion. Adequate dewatering structures and velocity dissipation devices shall be used when

necessary to prevent and minimize erosion, stream scouring, increases in turbidity, and any other potential damage to receiving waters. Such devices may include splash pads, straw bales, silt fences, and vegetated buffer zones. The discharge shall not cause downstream flooding conditions.

- iv. Discharges shall be conducted to avoid potential pollution to private or public water wells.
 - v. Dechlorination methods shall be used to assure that discharges to surface waters do not contain a chlorine residual in excess of 0.02 mg/L.
 - vi. The Discharger shall evaluate the need for treatment of low threat waters before discharge to meet the effluent limitations and requirements of this Order. Possible treatment technologies to evaluate include filtration, settling ponds, and/or pumping to upland areas.
- c. Develop a representative sampling and monitoring program
- i. The Pollution Prevention, Monitoring, and Reporting Plan for Low Threat Discharges shall include a monitoring schedule for low threat discharges. The plan shall include the following provisions:
 - The discharge (rate of flow and duration) shall be estimated for all discharges.
 - Sampling and analyses are not required for every dewatering water and other low threat discharge, if the Discharger can provide reasonable assurance that discharges will comply with the prohibitions and limitations of this Order. However, a sampling and analysis program shall be developed and implemented to monitor a representative selection of low threat discharges to verify that the discharges comply with this Order.
 - When reasonable assurance cannot be provided that a discharge will comply with the prohibitions and limitations of this Order, at least one sample of the discharge shall be collected per day at a location prior to its entry into a receiving body of water. The sample shall be collected to reflect the character of the discharge during the first 1,000 gallons of the discharge. This sample shall be analyzed for chlorine and settleable and suspended solids.
 - When reasonable assurance cannot be provided that a discharge will comply with the prohibitions and limitations of this Order, and the discharge will be greater than 50,000 gallons, at least two samples shall be collected per day at a location prior to its entry into a receiving body of water. Samples shall

be collected to reflect the character of the discharge during the first and last 1,000 gallons of the discharge. These samples shall be analyzed for chlorine and settleable and suspended solids.

- When reasonable assurance cannot be provided that a discharge will comply with the prohibitions and limitations of this Order, observations of the discharge and of the receiving water shall be made and recorded on a daily basis and reflect the worst-case conditions observed in terms of: floating or suspended matter, discoloration and turbidity, erosion, odors, films, sheens, and other potential nuisance conditions.

d. Records and Reporting

- i. The Discharger shall make a record of each discharge event. The record shall include: the date, time, location, and duration of the discharge event; source of the water being discharged; a measurement or estimate of the total flow volume; observations as to the appearance of the discharge and erosion that resulted; best management practices that were used; and analyses performed, if any. When analytical results are received, they shall be included in the record.
 - ii. Analyses and observations shall be recorded and reported to the Regional Board in a timely manner within the monthly Discharge Monitoring Reports. Reporting shall also identify any violations of this Order, corrective action steps taken to comply with the Order, and complaints received from neighbors or other interested parties.
- e. The PPMRP shall be revised and updated as necessary to reflect applicable changes in the Discharger's practices.

4. The Discharger shall meet all other requirements and conditions of this Order.

E. Sludge Handling and Disposal

1. Screenings, sludges, and other solids collected and generated on site shall be disposed of in a manner approved by the Regional Board and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste* as set forth in Title 27, Division 2, Subdivision 1 of the California Code of Regulations.
2. Any proposed change in sludge use or disposal practices shall be reported to the Regional Board at least 90 days in advance of the change.
3. **Within 180 days** of the effective date of this Order, the Discharger shall review its existing sludge disposal plan and update it as necessary. In particular the plan shall describe:

- a. Sources and amounts of sludge generated annually.
- b. Location(s) of on site storage and a description of the containment area.
- c. Plans for ultimate disposal. For landfill disposal include the Regional Board's waste discharge requirement numbers that regulate the particular landfill; the present classification of the landfill; and the name and location of the landfill. For land application, include the location of the site; the Regional Board's waste discharge requirement numbers that regulate the site; the anticipated sludge application rate in lbs/acre/year (specify wet or dry); and the land use.
- d. Proposed frequency and time schedule for removing sludge from the site.

F. Ground Water Limitations

1. The discharge shall not cause the underlying groundwater to be degraded.

G. Provisions

1. The Discharger shall comply with *Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)* (2004 February), which are a part of this Order. This attachment and its individual provisions are referred to as "Standard Provisions."
2. The Discharger shall comply with the attached Monitoring and Reporting Program No. R5-2004-0144, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.

If requested by U.S. EPA, the Discharger shall complete and submit Discharge Monitoring Reports, as specified by U.S. EPA. The submittal date shall be not later than the submittal date specified in the Monitoring and Reporting Program for the Discharger Self Monitoring Reports specified by the Regional Board.

3. If applicable, the Discharger shall comply with the requirements of Division 20, Chapter 6.67 of the Health and Safety Code, known as the Aboveground Petroleum Storage Act. These requirements include preparation of a Spill Prevention Control and Countermeasure Plan in accordance with 40 CFR Part 112.
4. The Discharger shall conduct the monitoring specified in the attached Monitoring and Reporting Program. If sufficient information is collected and indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numerical water quality standard, then this Order may be reopened to include effluent limit(s) to achieve water quality standards. Additionally, if

pollutants are detected in discharges from the Discharger's facility, but insufficient information exists to establish an effluent limit or determine if an effluent limit is necessary, the Discharger may be required to conduct additional monitoring to provide sufficient information.

5. The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective 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 workplan 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 and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Board, this Order may be reopened and a limitation based on that objective included.
6. This Order expires on **1 October 2009** and the Discharger must file a Report of Waste Discharge/Application to Renew in accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations not later than **180 days** in advance of the expiration date, if it wishes to continue the discharge.
7. In the event of any change in control or ownership of land or waste discharge facilities, 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 the Regional Board.

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 succeeding owner or operator's full legal name; the State of incorporation if a corporation; the name, address, and the telephone number of the persons responsible for contact with the Regional Board; and a statement that the new owner or operator assumes full responsibility for compliance with this Order. The application shall comply with the signatory paragraph of Standard Provision D.6. Continued discharge without submission of a request to transfer shall be considered an unauthorized discharge in violation of the California Water Code. Transfer will be approved or disapproved in writing by the Executive Officer.

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 15 October 2004.

THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

NPDES NO. CA0083488

MONITORING AND REPORTING PROGRAM NO. R5-2004-0144
FOR
PARADISE IRRIGATION DISTRICT
WATER TREATMENT PLANT
BUTTE COUNTY

This Monitoring and Reporting Program is issued pursuant to California Water Code Section 13383 and includes: effluent monitoring of discharges to waters of the United States and waters of the State, and receiving water monitoring. All water quality samples shall be representative of the volume and nature of the discharge, or representative of the matrix of material sampled. The time, date, and location of sample collection shall be recorded on a chain of custody (COC) form. COC forms shall be completed for each sample collected and copies provided to the Regional Board with the monthly monitoring reports.

All water quality sampling and analyses shall be performed in accordance with the Monitoring and Reporting Requirements as outlined in the Standard Provisions of this Order. Water quality sample collection, storage, and analyses shall be performed according to 40 CFR Part 136, or other methods approved and specified by the Executive Officer. Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DHS), except when a certified laboratory is not reasonably available to the Discharger, in which case a non-certified laboratory operating in compliance with an approved QA-QC program may be used.

EFFLUENT MONITORING

Effluent samples shall be collected from Discharge 001 downstream from the last connection through which wastes can be admitted into the discharge line to Magalia Reservoir. Effluent monitoring shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sample Frequency</u>
Flow	mgd		continuous
pH	pH units	grab	weekly
Turbidity	NTUs	grab	weekly
Chlorine	mg/L	grab	weekly
Settleable Solids	mL/L	grab	2X per month

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sample Frequency</u>
Suspended Solids	mg/L	grab	2X per month
Aluminum	µg/L	grab	quarterly
Hardness	mg/L	grab	quarterly
Trihalomethanes ¹	µg/L	grab	quarterly
Acute Toxicity ²	TUa	grab	annually
Chronic Toxicity ³	TUc	grab	one time in permit lifecycle
CTR Priority Pollutants ⁴	µg/L	24 hr composite	one time in permit lifecycle

¹ Chloroform, dichlorobromomethane, chlorodibromomethane, and bromoform.

² Effluent shall be monitored for acute toxicity one time per year in accordance with procedures described below.

³ Effluent shall be monitored for chronic toxicity one time in the five-year permit lifecycle in accordance with procedures described below.

⁴ Samples shall be analyzed for the toxic priority pollutants identified by the California Toxics Rule at 40 CFR 131.38. Effluent samples shall be collected simultaneously with receiving water samples to be analyzed for the CTR pollutants. These samples shall be collected and analyzed at least one year in advance of the expiration date of this Order. Monitoring shall be conducted in accordance with procedures described below.

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Receiving water samples shall be taken from the following stations.

Receiving Water Sampling Stations

<u>Station</u>	<u>Station Description</u>
R-1	Little Butte Creek/Magalia Reservoir, approximately 50 feet upstream of Discharge 001
R-2	Little Butte Creek, approximately 50 feet downstream of the water treatment plant

Receiving water samples shall be analyzed according to the following schedule.

Receiving Water Monitoring Schedule

<u>Constituent</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
pH	pH units	R-1, R-2	weekly ¹
Hardness	mg/L	R-1, R-2	quarterly
Turbidity	NTUs	R-1, R-2	weekly ¹
CTR Priority Pollutants ²	µg/L	R-1	one time in permit lifecycle
Visual Observations		R-1, R-2	weekly ³

¹ When effluent turbidity exceeds 10 NTUs or when effluent pH is outside of the range of 6.5 to 8.5.

² 24-hour composite samples shall be analyzed for the toxic priority pollutants identified by the California Toxics Rule at 40 CFR 131.38. Receiving water samples shall be representative of background conditions and shall be collected simultaneously with effluent samples to be analyzed for the CTR pollutants. These samples shall be collected and analyzed at least one year prior to the expiration date of this Order. Monitoring shall be conducted in accordance with procedures described below.

³ One time per week when conducting the receiving water sampling, the Discharger shall observe receiving water conditions throughout the reach bounded by Stations R-1 and R-2 and record observations in a log pertaining to:

- Floating or suspended matter
- Discoloration
- Aquatic life
- Bottom deposits
- Films, sheens, and coatings
- Algae, fungi, and slime growth
- Potential nuisance conditions

ACUTE TOXICITY MONITORING

Acute toxicity of the effluent shall be such that (i) the average survival of rainbow trout in undiluted effluent for any three consecutive 96-hour static renewal tests shall be at least 90 percent, and (ii) no single test producing less than 70 percent survival.

If any acute toxicity bioassay test result is less than 90 percent survival, the Discharger shall conduct six additional tests over a six-week period. The Discharger shall ensure that results of a failing acute toxicity test are received within 24 hours of the completion of the test, and the additional tests shall begin within 3 business days of the receipt of the result. If the additional tests indicate compliance with acute toxicity limitation, the Discharger may resume regular testing. If the results of any two of the six accelerated tests are less than 90 percent survival,

however, then the Discharger shall begin a Toxicity Identification Evaluation (TIE). The TIE shall include all reasonable steps to identify the source(s) of toxicity. Once the source(s) of toxicity is identified, the Discharger shall take all reasonable steps to reduce the toxicity to meet the objective.

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 EPA-821-R-02-013, *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, October 2002. Effluent, collected at Discharge 001 prior to entry into the receiving water, shall be tested for chronic toxicity **one time at least 180 days prior to expiration of this Order**. If undiluted effluent exhibits toxicity, the Discharger shall sample during the next available discharge event and conduct the test using the dilution series specified below. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Time of sample collection shall be recorded. Dilution and control waters shall be provided by the laboratory or collected from the untreated potable water supply at the facility. 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. The results shall be submitted with the monitoring report and include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum

	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Lab Water
% Discharge Effluent	100	75	50	25	12.5	0	0
% Dilution Water ¹	0	25	50	75	87.5	100	0
% Lab Water	0	0	0	0	0	0	100

¹ Dilution water shall be receiving water collected at receiving water monitoring location R-1. If the receiving water exhibits toxicity, or if no receiving water is available, the Discharger may be required to use lab water as dilution water. The dilution series may be modified after the initial test upon approval of the Executive Officer.

PRIORITY POLLUTANT MONITORING

The State Implementation Policy requires periodic testing for the toxic priority pollutants established by the CTR at 40 CFR 131.38. Prior to expiration of this Order, the Discharger shall conduct one sampling event and analysis for the CTR pollutants in receiving water and effluent. The Discharger is not required to perform asbestos monitoring. Receiving water samples shall be

collected simultaneously and analyzed for the CTR pollutants plus pH and hardness. All analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each of the analytes. Laboratory methods and limits shall be as described in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2000), unless a variance has been approved by the Executive Officer. If, after a review of the monitoring results, it is determined that the discharge causes, has the reasonable potential to cause, or contributes to in-stream excursions above water quality standards, this Order will be reopened and limitations based on those standards will be included. Additionally, if pollutants are detected, but insufficient information exists to establish an effluent limit or determine if an effluent limit is necessary, then additional monitoring will be required to provide sufficient information.

All organic analyses shall be by Gas Chromatography/Mass Spectrometry (GCMS), Method 8260B for volatiles and Method 8270C for semi-volatiles. Pesticides shall be analyzed by Method 8081A. Dioxins shall be analyzed by Method 1613/8290. If organic analyses are run by Gas Chromatography (GC) methods, any detectable concentrations are to be confirmed by GCMS. Inorganics shall be analyzed by the following Methods.

Analysis for the dioxin congeners shall be performed as described in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* using High Resolution Mass Spectrometry.

Metals shall be analyzed by the U.S. EPA methods listed below. Alternative analytical procedures may be used with approval by the Regional Board if the alternative method has the same or better detection level than the method listed.

Method Description	EPA Method	Constituents
Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)	1638	Antimony, Beryllium, Cadmium, Copper, Lead, Nickel, Selenium, Silver, Thallium, Total Chromium, Zinc
Cold Vapor Atomic Absorption (CVAA)	1631	Mercury
Gaseous Hydride Atomic Absorption (HYDRIDE)	206.3	Arsenic
Flame Atomic Absorption (FAA)	218.4	Chromium VI
Colorimetric	335./ 2 or 3	Cyanide

All analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the U.S. EPA MDL determined by the procedure found in 40 CFR Part 136. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

- a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory.
- b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
- c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration." Numerical estimates of data quality may be by percent accuracy (+ or – a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- d. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

LOW THREAT DISCHARGES

The Discharger shall implement the sampling and monitoring requirements within its Pollution Prevention and Monitoring and Reporting Program, as described in this Order.

SLUDGE MONITORING

Within 180 days from the effective date of this Order and each **15 July thereafter**, the Discharger shall submit an updated sludge disposal plan, which shall include the following:

1. Estimate of average annual sludge production in dry tons and percent solids.
2. Description of sludge storage and alternative uses (if applicable) to disposal.
3. A description of disposal methods.
 - a. For **landfill disposal**, include: (1) the Board's waste discharge requirements numbers that regulate the landfill(s) used; (2) the present classifications of the landfill(s) used; and (3) the names and locations of the facilities receiving sludge.

- b. For **land application**, include: (1) the location of the site(s); (2) the Board's waste discharge requirements numbers that regulate the site(s), if applicable; (3) the application rate in lbs/acre/year (specify wet or dry); and (4) subsequent uses of the land.
 - c. For **incineration**, include: (1) the names and locations of the site(s) where sludge incineration occurs; (2) the Board's waste discharge requirements numbers that regulate the site(s); (3) the ash disposal method; and (4) the names and locations of facilities receiving ash (if applicable).
4. A representative characterization of sludge quality including sludge percent solids and quantitative results of chemical analyses for the Title 22 metals.

REPORTING

Monitoring reports shall be submitted to the Regional Board by the **1st day of the second month** following sample collection (e.g., January report is due by 1 March). Any quarterly or annual monitoring results shall be submitted by the **1st day of the second month** following each calendar quarter and year, respectively.

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

- a. The names, certificate grades, and general responsibilities of all persons employed at the water treatment plant (Standard Provision A.5).
- b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

- c. A statement certifying when the flow meter and other monitoring instruments and devices used to comply with this permit were last calibrated, including identification of the person performing the calibration (Standard Provision C.6).

The Discharger may also be requested to submit an annual report to the Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provisions D.6.

The Discharger shall implement the Monitoring and Reporting Program beginning on the effective date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

15 October 2004

BJS

INFORMATION SHEET

ORDER NO. R5-2004-0144
PARADISE IRRIGATION DISTRICT
WATER TREATMENT PLANT
BUTTE COUNTY

GENERAL INFORMATION

The Paradise Irrigation District (hereafter, the Discharger) submitted an Application/Report of Waste Discharge, dated 19 December 2003, and applied to renew its permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from the Paradise Irrigation District Water Treatment Plant. The Discharger is currently regulated under Waste Discharge Requirements Order No. 99-064 (NPDES No. CA0083488), adopted by the Regional Water Quality Control Board (Regional Board) on 11 June 1999.

The Discharger owns and operates a water treatment plant (WTP), which provides 3 to 15 million gallons per day (mgd) of treated water from Magalia Reservoir for domestic and agricultural purposes to a population of approximately 26,000. The facility is located in Sections 25 and 36, Township 23 North, and Range 3 East of the Mt. Diablo Base Line and Meridian on Assessor's Parcel No. 065-260-008. Treated wastewater is discharged at latitude 39° 48' 59", longitude 121° 34' 50" to Magalia Reservoir, a man made impoundment on Little Butte Creek, both waters of the United States. The WTP lies within the Upper Butte Creek Hydrologic Unit (521.30), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

The WTP chlorinates raw water from Magalia Reservoir and then adds alum, aluminum chlorohydrate, and a polymer ahead of three upflow clarifiers. Clarified water is directed to six downflow, multi media pressure filters and then to a 650,000 gallon, baffled clearwell, which provides limited storage and contact time for proper disinfection. Zinc orthophosphate is added to treated water for corrosion control within the distribution system.

Clarifiers are flushed and cleaned at approximately 8 hour intervals using raw water at an accelerated flow. Filters are backwashed, based on head loss, turbidity of filtered water, or time in service, using finished water in reverse flow. Clarifier wash water, filter backwash water, and filter-to-waste are discharged to a wash water equalization tank and then pumped approximately one quarter mile to two settling basins prior to discharge to Magalia Reservoir. Flow from floor and lab drains and drains from containment areas are combined in a sump and are then discharged to the washwater equalization tank. Annually, the WTP alternates use between a "new" and an "old," two-cell settling basin to allow drying and solids removal from the settling basins. Approximately 80 tons of solids are transported annually to a Class III landfill. Domestic waste from the facility is discharged to an on site septic tank/leach field system.

The Discharger has documented that the WTP has a wastewater handling and treatment capacity of 2.0 mgd. This facility is classified as a minor discharge by the United States Environmental Protection Agency (U.S. EPA) and the Regional Board.

BENEFICIAL USES

Surface Water

The Regional Board adopted a *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, and describes an implementation program and policies to achieve water quality objectives for all waters of the Basin. This includes plans and policies adopted by the State Water Resources Control Board (State Board) and incorporated by reference, such as Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California. These requirements implement the Basin Plan.

The Basin Plan on page II-2.00 states that: “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.” The beneficial uses of Butte Creek, from its sources down to Chico are specifically identified in the Basin Plan. Little Butte Creek is a source of Butte Creek and is therefore attributed the beneficial uses of Butte Creek. The Basin Plan identifies the following beneficial uses for Butte Creek, from its sources down to Chico: municipal and domestic supply; agricultural irrigation and stock watering supply; hydropower generation; water contact recreation; warm and cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat. In addition, State Board Resolution No. 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

Upon review of the flow conditions, habitat values, and beneficial uses of Little Butte Creek, the Regional Board finds that the beneficial uses identified in the Basin Plan for Butte Creek, from its sources down to Chico, are applicable to Little Butte Creek. The Basin Plan defines beneficial uses and with respect to disposal of wastewaters states that “...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.” The Regional Board finds that the beneficial uses identified in the Basin Plan for Butte Creek, from its sources down to Chico, are applicable to Little Butte Creek based upon the following facts:

a. *Municipal and Domestic Supply, Agricultural Supply*

The State Board has issued water rights to existing water users along Little Butte Creek downstream of the discharge for multiple uses including municipal, domestic, and agricultural supply. In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, which presents a potential for increased municipal, domestic, and agricultural uses of the water in Little Butte Creek.

b. *Hydropower Generation*

Although no records of existing hydropower generation were found on Little Butte Creek, the Basin Plan lists this beneficial use for Butte Creek to which Little Butte Creek is tributary. The very nature of hydropower generation depends on the presence of flow from tributary streams and therefore this beneficial use is protected by including it as a beneficial use in streams tributary to Butte Creek. Furthermore, considering the likely future value of electricity generation, it is not unreasonable to expect that new technologies for small hydropower projects may make hydropower generation uses on Little Butte Creek desirable.

c. *Water Contact Recreation*

The Regional Board finds that Little Butte Creek flows through rural and residential areas and that there is ready public access. Contact and noncontact recreational activities exist and are likely to increase as the population in the area grows. Prior to discharge into Butte Creek, Little Butte Creek flows through areas of general public access.

d. *Warm and Cold Freshwater Habitat, Migration of Aquatic Organisms, Spawning, Reproduction, and/or Early Development, and Wildlife Habitat*

Little Butte Creek flows to Butte Creek. The California Department of Fish and Game has verified that the fish species present in Little Butte Creek and downstream waters are consistent with both cold and warm water fisheries, that there is a potential for anadromous fish migration necessitating a cold water designation and that Chinook salmon, a cold water species, have been found both upstream and downstream of the water treatment plant. The Basin Plan (Table II-1) designates Butte Creek as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Little Butte Creek. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/L. This approach recognizes that, if the naturally occurring in-stream dissolved oxygen concentration is below 7.0 mg/L, the Discharger is not required to improve the naturally occurring level.

Groundwater

Unless designated otherwise by the Regional Board, the beneficial uses of groundwater of the Central Valley Region are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

Anti-Degradation

Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California, requires the Regional Board, in regulating the discharge of waste, to maintain high quality in surface and groundwaters of the State unless 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 (i.e., in no circumstances can this Order allow water quality to exceed the Regional Board's water quality objectives). The Regional Board finds that the discharge, as restricted by the prohibitions, limitations, specifications, and provisions of this Order, is consistent with Resolution No. 68-16. The impact on water quality will be insignificant.

TMDLs and 303(d) Listings

Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations by point sources. For all 303(d) - listed water bodies and pollutants, the State Board is required to develop and adopt Total Maximum Daily Loads (TMDLs) that will specify wasteload allocations for point sources and load allocations for non-point sources, as appropriate. The United States Environmental Protection Agency (U.S. EPA) has approved the State Board's 2002 303(d) list of impaired water bodies. This extensive list does not include Little Butte Creek or Butte Creek; however, the Sacramento River from Red Bluff to Knights Landing is listed as impaired for unknown toxicity. Butte Creek is tributary to the Sacramento River. A TMDL has not been prepared for this segment of the Sacramento River.

GROUNDWATER MONITORING

This Order does not require the Discharger to conduct groundwater monitoring. There is no current evidence to indicate that discharges from the facility pose any unusual threat to groundwater quality. If any information becomes available indicating adverse groundwater impacts due to activities at the WTP, a groundwater investigation and subsequent monitoring may be required.

REASONABLE POTENTIAL ANALYSIS

U.S. EPA regulations at 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard ("reasonable potential"). The National Toxics Rule (NTR) establishes water quality criteria for toxic pollutants applicable to the Discharger at 40 CFR Part 131.36. On 18 May 2000 and by amendment on 13 February 2001, water quality criteria of the NTR were supplemented by criteria of the California Toxics Rule (CTR) at 40 CFR 131.38. The NTR, CTR, and the Basin Plan contain water quality standards applicable to the discharge.

The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP), which contains guidance on implementation of the CTR, including the determination of "reasonable potential" for CTR pollutants. To determine "reasonable potential" for non-CTR pollutants, the Regional Board relies on methodology presented in U.S. EPA's *Technical Support Document for Water Quality Based Toxics Control* (TSD)

(EPA/505/2-90-001, 1991). And, for interpretation of narrative water quality objectives, the Regional Board uses as a resource its *Compilation of Water Quality Goals* (2000).

On 27 March 2002, the Discharger collected effluent and receiving water samples for analysis of the CTR toxic priority pollutants. Analyses were performed for volatile substances, semi-volatile substances, metals, 2,3,7,8-TCDD dioxin, and sixteen other dioxin congeners and reported in accordance with procedures established by the SIP.

Methodology described in Section 1.3 of the SIP was used to evaluate the Discharger's monitoring data for the CTR priority toxic pollutants, and methodology of the TSD was used to evaluate the need for effluent limitations for non-CTR toxic pollutants. This analysis showed that two trihalomethanes (dichlorobromomethane and chloroform), are possible pollutants of concern; however, the Regional Board did not find that the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above applicable water quality criteria. This Order requires additional monitoring for the trihalomethanes and includes a provision to reopen this Order and add effluent limits as appropriate, based on additional monitoring data.

BASIS FOR PERMIT REQUIREMENTS

There are no technology-based, effluent limitations guidelines established for potable water treatment plants pursuant to Section 301 of the Clean Water Act.

Discharge Prohibitions

Prohibitions on bypass, discharge of hazardous and designated waste, and discharges that are not specifically described by the Permit are retained from the previous Order No. 99-064 and are consistent with objectives of the Basin Plan, as required by the California Water Code and the Clean Water Act, to protect the beneficial uses of waters of the State.

Effluent Limitations for Toxics

The Regional Board has performed a Reasonable Potential Analysis to determine what priority, toxic pollutants are discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. Two trihalomethanes, chloroform and dichlorobromomethane, were flagged by this analysis. However, due to very limited monitoring data, it is not appropriate to conclude that these pollutants are present in the discharge at concentrations that have reasonable potential to cause or contribute to excursions above applicable water quality standards.

Dichlorobromomethane and Chloroform

From the CTR, the human health criterion for dichlorobromomethane in inland surface waters for consumption of water and organisms is 0.56 µg/L. Dichlorobromomethane was not detected in receiving water samples collected on 27 March 2002 and was present at 1.0 µg/L in effluent.

Although the CTR does not include numerical water quality criteria for chloroform, there is a narrative water quality objective of the Basin Plan for toxicity, which 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. To interpret this narrative objective, the Regional Board relies on its *Compilation of Water Quality Goals* (2000), which includes the Cal/EPA Cancer Potency Factor, established by the Office of Environmental Health Hazard Assessment (OEHHA), of 1.1 µg/L for chloroform. Because the health-based criteria maintained by the OEHHA are used as a basis for California state regulatory action, in accordance with the Regional Board's policy, this criterion is given preference when interpreting narrative water quality objectives. [Central Valley Regional Water Quality Control Board, *A Compilation of Water Quality Goals*, at page 15 (2000)]. In receiving water and effluent samples collected 27 March 2002, chloroform was not detected in receiving water and was present at 12 µg/L in effluent.

The analysis, above, highlights that the trihalomethanes (chloroform, dichlorobromomethane, chlorodibromomethane, and bromoform), which form as a result of the chlorination process in water treatment plants, may be pollutants of concern in the discharge from the facility. Because very limited data is available to determine reasonable potential for these pollutants, the Regional Board is requiring additional monitoring in the Order for the trihalomethanes and a provision to reopen the permit and include effluent limitations, if this additional monitoring demonstrates that any of the trihalomethanes are present in the discharge at concentrations that cause or have the reasonable potential to cause or contribute to an in-stream excursion above applicable narrative or numerical water quality standards.

Effluent Limitations for Other Parameters

Settleable Solids

The Basin Plan includes a water quality objective that receiving waters not contain settleable material in concentrations that result in its deposition to cause nuisance or adversely affect beneficial uses. The proposed Order retains monthly average and daily maximum limitations for settleable solids of 0.1 mL/L and 0.2 mL/L, respectively. These limitations reflect removal efficiencies for properly designed, constructed and operated wastewater treatment systems.

Suspended Solids

The Basin Plan includes a water quality objective that receiving waters not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses. The proposed Order contains average monthly and daily maximum limitations for suspended solids limit of 30 and 50 mg/L, respectively. The Regional Board has determined that suspended solids are more likely to be resuspended than settleable solids in the wastewater settling ponds before discharge, and therefore, suspended solids concentrations are more likely to vary in the discharge than concentrations of settleable solids. Further, the limits for settleable solids are set at or near the lowest detectable concentration of settleable solids (0.1 mL/L), as measured by the volumetric Imhoff method. Monitoring since 1998 has consistently shown non detectable concentrations of settleable solids. Suspended solids concentrations are likely to fluctuate above the analytical detection levels so that suspended solids monitoring will be a better indicator of treatment performance.

To establish limitations for suspended solids, the Regional Board has examined several general permits, which regulate wastewater discharges from water treatment plants. A summary of these suspended solids limitations is presented in the table, below.

TSS Effluent Limitations of General Permits

	Effluent Limitation		
	30 Day Average (mg/L)	7 Day Average (mg/L)	Maximum Daily (mg/L)
Washington	Settleable solids, not TSS, is limited		
California Regional Board 2	30	45	NL
West Virginia	30	NL	60
South Carolina	30	NL	60
Arkansas	20	NL	30
Massachusetts	30	NL	50
New Hampshire	20	NL	50

NL = no limit

The Regional Board has also relied on research performed for the U.S. EPA in 1987. (SAIC, Model Permit Package for the Water Supply Industry, EPA Contract No. 68-01-7043) This study found that 76 percent of WTPs surveyed used sedimentation lagoons for wastewater treatment. In these facilities, limitations of 30 mg/L and 45 mg/L were representative of the, then, current permitting practice for average monthly and daily maximum TSS limits, respectively. Analysis of actual monitoring data from these facilities showed the 95th percent occurrence (monthly average) and 99th percent occurrence (daily maximum) levels of treatment to be 28.1 mg/L and 44.4 mg/L, respectively. The study recommended limitations of 30 and 45 mg/L as the monthly average and daily maximum suspended solids limits for a model NPDES permit.

Using best professional judgment pursuant to Section 402 (a) (1) (b) of the Clean Water Act, the Regional Board is proposing to establish average monthly and daily maximum, technology based limitations for suspended solids of 30 and 50 mg/L, respectively.

pH

This Order requires effluent pH to remain between 6.0 and 9.0 units. This requirement, in addition to receiving water pH limitations, will ensure that the pH level in the receiving water remains within the Basin Plan objective range of 6.5 to 8.5.

Chlorine

The Basin Plan includes a narrative water quality objective for toxicity that requires all receiving waters to be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. To interpret narrative criteria, the Regional Board relies on its *Compilation of Water Quality Goals* (2000), which includes USEPA recommended, chronic and acute criteria for chlorine for protection of aquatic life of 11 and 19 µg/L, respectively. Because wastewaters are chlorinated and must be dechlorinated before being discharged, the Regional Board finds that there is reasonable potential for chlorine to be present in effluent above these applicable water quality criteria. Without close attention to chlorination/dechlorination processes, such operating events as changes in chlorine application rates, increased wastewater flows, and/or exhaustion of dechlorination chemicals could result in an exceedance of the water quality criteria for chlorine. To determine effluent limits for chlorine, the Regional Board has followed methodology from the TSD because chlorine is not addressed by the CTR.

For chlorine, waste load allocations (WLAs) are determined from the applicable water quality criteria. The WLA addresses variability in effluent quality and is expressed as a single level of receiving water quality necessary to provide protection against long term or chronic effects. When no credit is provided for dilution and background data are not available, the WLA is set equal to the applicable water quality criterion. Here, the applicable water quality criteria for chlorine are 11 and 19 µg/L, and the WLAs are equal to the criteria. The long-term average discharge conditions (LTAs) are determined by multiplying the WLA times a multiplier to account for effluent variability. From Table 5-1 of the TSD, at the 99th percentile probability basis, the acute WLA multiplier is 0.321 and the chronic WLA multiplier is 0.527. The WLAs, WLA multipliers, and the LTAs for chlorine are summarized as follows.

	WLA		WLA Multiplier		LTA (µg/L)	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Chlorine	19	11	0.321	0.527	6.1	6.0

AMELs and MDELs are calculated by multiplying the most limiting (lowest) LTA times a multiplier that accounts for averaging periods, exceedance frequencies of the effluent limitations, and the effluent monitoring frequency. Here, the CV was set equal to 0.6 and, in the case of the AMEL, the sampling frequency was set equal to 4. A 99th percentile occurrence probability was

used to determine the MDEL multiplier and a 95th percentile occurrence probability was used to determine the AMEL multiplier. From Table 5-2 of the TSD, the MDEL multiplier is 3.11, and the AMEL multiplier is 1.55. Effluent limits for chlorine are determined as follows.

	LTA	MDEL Multiplier	AMEL Multiplier	MDEL (mg/L)	AMEL (mg/L)
Chlorine	6.0	3.11	1.55	0.02	0.01

This Order adds an average monthly effluent limit for chlorine of 0.01 mg/L and a maximum daily effluent limit for chlorine of 0.02 mg/L.

Requirements for Dewatering and Other Low Threat Discharges

Currently, the Discharger is obligated to seek authorization under Regional Board Order No. 5-00-175, *General Order for Dewatering and Other Low Threat Discharges to Surface Waters*, prior to discharging water associated with construction, start up, testing, maintenance, and repair of its raw water supply and potable water distribution systems. Provisions in the proposed Order pertaining to such discharges are meant to authorize such low threat discharges so that the Discharge is no longer obligated to seek coverage under the General Permit.

Storm Water Management

U.S. EPA regulations require coverage under an NPDES permit for facilities that discharge storm water associated with industrial activity. If applicable, the Discharger must seek authorization for storm water discharges under the *General Permit for Discharges of Storm Water Associated with Industrial Activities* (SWRCB, Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001).

Sludge Handling and Disposal

This Order requires the Discharger to review and update its existing Sludge Disposal Plan within 180 days of the effective date of this Order.

Establishment of Mass-Based Effluent Limits and Effluent Flow Limit

This Order establishes concentration-based and mass-based effluent limits. In accordance with U. S. EPA requirements at 40 CFR 122.45 (b) (2), mass-based effluent limits are calculated using the concentration-based limits and “a reasonable measure of actual production of the facility.” Here, mass based limits are derived from the concentration-based limits multiplied by the effluent design flow rate of 2.0 mgd. For example, to calculate the mass-based limitation that corresponds to the maximum daily limit for suspended solids of 50 mg/L:

$$\text{Mass-based limit} = 50 \text{ mg/L} \times 2.0 \text{ mgd} \times 8.34 = 834 \text{ lbs/day}$$

Permit Reopener

This Order contains provisions that allow the Order to be reopened if, after a review of any monitoring results, it is determined that the discharge causes, has the reasonable potential to cause, or contribute to an in-stream excursion above water quality standards, and effluent limits based on those standards added. Additionally, if pollutants are detected in discharges from the Discharger's facility, but insufficient information exists to establish an effluent limit or determine if an effluent limit is necessary, then additional monitoring will be required to provide sufficient information.

The Discharger may conduct studies pertaining to Facility operations, the effluent discharge, and the receiving water. For example, such studies may include a site-specific metals translator study, or a mixing zone and dilution study. If requested, the Regional Board will review such studies and if warranted, will reopen this Order to make appropriate changes.

BASIS FOR MONITORING REQUIREMENTS

Section 308 of the CWA and U.S. EPA regulation 40 CFR 122.44 (i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality. The Permittee is responsible for conducting monitoring and for reporting the results to the U.S. EPA using Discharge Monitoring Reports. The self-monitoring program requires monitoring of receiving water and effluent, storm water, sludge, and low threat discharges.

The Monitoring and Reporting Program retains monitoring of receiving water for pH and turbidity, and it includes visual monitoring of conditions upstream and downstream of the point of discharge. One time in the five year life cycle of the permit, receiving water must also be monitored, concurrently with effluent, for the CTR priority, toxic pollutants. These receiving water samples must be collected in an upstream/background location.

Effluent monitoring of discharges through Outfall No. 001 includes flow, pH, turbidity, settleable solids, and chlorine residual. The proposed Order also adds effluent monitoring for suspended solids, aluminum, the trihalomethanes, iron and manganese, acute and chronic toxicity, and the CTR pollutants. Monitoring for suspended solids is required to determine compliance with new limitations for suspended solids. Acute toxicity monitoring is required to assure compliance with the effluent limitation for toxicity in the Order and is established based on recommendations of the Basin Plan to assure compliance with the narrative toxicity objective. Chronic toxicity monitoring is required by the SIP in addition to acute toxicity monitoring and is to assure compliance with the narrative toxicity objective of the Basin Plan and to determine the need for a chronic toxicity limitation. Because both chronic and acute toxicity monitoring is required by the SIP, and because discharges from the water treatment facility are expected to exhibit low, if any, toxicity, chronic toxicity testing is required at the minimum possible frequency (one time during the permit term), and acute toxicity testing is required on an annual basis. Monitoring for the trihalomethanes and aluminum is required to determine the need for effluent limits. Monitoring is also required of the effluent and receiving water once during the term of this Order for iron, manganese, and the CTR

pollutants. Effluent monitoring requirements for Discharge 001 are summarized by the following table:

Constituent	Units	Type of Sample	Sample Frequency
Flow	mgd		continuous
pH	pH units	grab	weekly
Turbidity	NTUs	grab	weekly
Chlorine	mg/L	grab	weekly
Settleable Solids	mL/L	grab	2X per month
Suspended Solids	mg/L	grab	2X per month
Aluminum	µg/L	grab	quarterly
Hardness	mg/L	grab	quarterly
Trihalomethanes	µg/L	grab	quarterly
Acute Toxicity	TUa	grab	annually
Chronic Toxicity	TUc	grab	one time in permit lifecycle
CTR Priority Pollutants	µg/L	24 hr composite	one time in permit lifecycle

In accordance with the Basin Plan and the State Implementation Plan, the Monitoring and Reporting Program includes considerable detail regarding acute and chronic toxicity monitoring procedures, as well as considerable detail regarding analytical procedures and reporting requirements for the CTR. New monitoring and reporting requirements for low threat discharges are included in this Order, and sludge monitoring requirements of the previous Order are retained.

BJS



