

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0171

NPDES NO. CA0083798

WASTE DISCHARGE REQUIREMENTS
FOR
CALIFORNIA DEPARTMENT OF FORESTRY
AND FIRE PROTECTION
MOUNTAIN HOME CONSERVATION CAMP
TULARE COUNTY

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

1. The California Department of Forestry and Fire Protection (hereafter Discharger) submitted a Report of Waste Discharge, dated 26 May 2001, and applied for a permit renewal to discharge waste from the wastewater treatment facility (WWTF) at Mountain Home Conservation Camp under the National Pollutant Discharge Elimination System (NPDES).
2. Waste discharge is currently regulated by Waste Discharge Requirements (WDRs) Order No. 96-262, adopted by the Regional Board on 25 October 1996, and administratively extended by the Executive Officer on 28 June 2002. WDRs Order No. 96-262 regulates the discharge of up to 0.016 million gallons per day to a spray field or to Bear Creek, a water of the United States.
3. The WWTF is in Sections 3 and 10, T20S, R30E, MDB&M, as shown on Attachment A, a part of this Order.
4. The camp houses on average about 108 inmates, but can accommodate up to 112. The camp has kitchen and laundry services. Grease from kitchen waste is removed through a grease trap. The monthly average daily wastewater flow from the camp is about 12,000 gallons per day (gpd).
5. The Discharger's treatment system begins with a 12,000 gallon septic tank. The septic tank then discharges to a sequential batch reactor system. In this system, one batch reactor is filled with wastewater and aerated. After aeration is complete, the sludge is allowed to settle to the bottom of the reactor and the supernatant is drained by a decant pump. This cycle is staggered between two batch reactors so that one reactor is always draining while the other is aerating, thus providing continuous treatment. The supernatant is pumped through a sand filter and then chlorinated and dechlorinated before being discharged to the first of five holding ponds. Sludge from the bottom of the batch reactors is pumped to an aerated digester and periodically hauled off site along with septic tank waste to a county approved septage site. The WWTF has the capacity to treat 0.016 mgd of wastewater. A process flow diagram of the sequential batch reactor system is shown in Attachment B.

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6. Treated wastewater is discharged to a series of unlined storage ponds, approximately five feet deep, where evaporation and percolation occur. The WWTF has five ponds providing a total storage of 2.0 million gallons with a surface area of about 69,400 square feet. During dry weather conditions, wastewater in the ponds is discharged to a spray field (Discharge 001). If the ponds are approaching their maximum storage limit, and there is sufficient flow in Bear Creek (greater than six cubic feet per second), the wastewater is discharged to Bear Creek (Discharge 002).
7. The Discharge 001 spray field has very steep slopes. The average surface slope is 43% with maximum slopes of 75%. The spray field slopes directly to Bear Creek, a tributary of the North Fork of the Tule River. Use of the spray field is limited to periods of dry weather when there are no rain events or snow to inhibit spray irrigation, however, its lack of a containment system creates the potential for discharges to the Creek. The spray field has three rainbird type sprinkler heads, each having a capacity of three gallons per minute (gpm). Two other sprinklers at the spray field were removed from service as of 9 March 2001 due to their potential to cause direct discharges to Bear Creek.
8. Discharge 002 occurs at Latitude 36° 12' 35" North and Longitude 118° 43' 52" East and follows a natural drainage course from the WWTF down to Bear Creek. Discharge to Bear Creek occurs during winter months when sufficient flows will provide a dilution ratio of at least 100:1. Discharge directly to Bear Creek did not occur during the term of Order No. 96-262.
9. Use of the storage ponds and spray field are likely to cause indirect discharges to Bear Creek. Percolation and subsurface flow from the ponds and undiluted runoff from the saturated spray field may enter the creek downstream of Discharge 002. Subsurface flow from the spray field or precipitation runoff may enter the creek downstream of Discharge 002.
10. Untreated wastewater from the camp exhibits the following characteristics:

<u>Constituent</u>	<u>Units</u>	<u>Result</u>
BOD ₅	mg/L	417
Total Suspended Solids	mg/L	217

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11. Monitoring data submitted between January 2001 through January 2003 indicate that treated wastewater discharged to the storage ponds exhibits the following characteristics:

<u>Constituent</u>	<u>Units</u>	<u>Result</u>
Flow	gpd	8320
Settleable Solids	mL/L	<0.1
pH	pH units	7.1
BOD ₅	mg/L	3.05
Suspended Solids	mg/L	1.56
Total Coliform	MPN/100 mL	33.5
Conductivity @ 25 °C (EC)	µmhos/cm	313
Chlorine Residual	mg/L	<0.1
Temperature	°C	17.2

12. Water in Bear Creek at monitoring station R-1, upstream from Discharge 002, exhibits the following characteristics:

<u>Constituent</u>	<u>Units</u>	<u>Result</u>
Dissolved Oxygen	mg/L	6.78
pH	pH units	7.1
Turbidity	NTU	1.62
Fecal Coliform	MPN/100 mL	16.8
EC	µmhos/cm	65
Chlorine Residual	mg/L	0.0
Ammonia	mg/L	2.1

13. Water in Bear Creek at monitoring station R-2, downstream from Discharge 002, exhibits the following characteristics:

<u>Constituent</u>	<u>Units</u>	<u>Result</u>
Dissolved Oxygen	mg/L	6.82
pH	pH units	7.2
Turbidity	NTU	1.82
Fecal Coliform	MPN/100 mL	15.3
EC	µmhos/cm	66
Chlorine Residual	mg/L	0.0
Ammonia	mg/L	2.1

14. Department of Water Resources records show flow in Bear Creek, based on single measurements taken near the point of discharge, as follows during dry months:
- | | |
|-----------|------------|
| July | 6 cfs |
| August | 0.45 cfs |
| September | 0.0668 cfs |
15. Source water for the camp is from an on-site domestic well and is of good quality (EC about 120 μ mhos/cm). The camp also draws water for showers and lawn irrigation from a spring that flows into Bear Creek.
16. The site lies within the Springville Hydrologic Subarea (No. 555.12) in the Southern Sierra Hydrologic Unit, as defined on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.
17. The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a minor discharge.
18. The Regional Board adopted a *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan), which designates beneficial uses, establishes narrative and numerical water quality objectives, and contains implementation plans and policies for protecting all waters of the Basin. The Basin Plan includes plans and policies of the State Water Resources Control Board (SWRCB) incorporated by reference. Pursuant to Section 13263(a) of the California Water Code (CWC), waste discharge requirements must implement the Basin Plan.
19. Bear Creek is a tributary of the North Fork of the Tule River upstream from Lake Success. The Basin Plan identifies the beneficial uses of the Tule River above Lake Success as municipal and domestic supply; agricultural supply; hydropower generation; water contact and non-contact water recreation; warm and cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species; spawning, reproduction, and/or early development; and freshwater replenishment. The designated beneficial uses of Bear Creek are not identified in the Basin Plan, however, the Basin Plan states, "The beneficial uses of any specifically identified water body generally apply to its tributary streams." Upon review of the flow conditions, habitat values, and beneficial uses of Bear Creek, the Regional Board finds that, by the tributary rule, the beneficial uses identified in the Basin Plan for the Tule River above Lake Success are applicable to Bear Creek.
20. An 8 March 1996 Memorandum of Agreement (MOA) between The Department of Health Services (DHS) and the SWRCB on the use of reclaimed 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 reclaimed water in California.

21. DHS has developed guidelines for discharges to surface waters. For streams with a designated beneficial use of municipal supply and a 20:1 to 100:1 ratio of stream flow to effluent flow, DHS recommends no discharge. Where other alternatives are not feasible, DHS recommends an adequately disinfected, oxidized, coagulated, and filtered wastewater, disinfected to a median of 2.2 MPN/100 mL total coliform organisms or less based on the last seven samples. For flow ratios greater than 100:1, DHS recommends disinfection to a median of 23 MPN/100 mL based on the last seven samples. In cases where relatively undiluted wastewater discharges are permitted to agricultural drains and creeks that been identified to have the beneficial use of water contact recreation, DHS recommends that the effluent levels of total coliform organisms not exceed 2.2 MPN/100 mL as a seven-day median or 23 MPN/100 mL as a daily maximum. Given the potential for spray field runoff to enter Bear Creek during periods of low flow and the nature of the treatment train (i.e., tertiary treatment) disinfection to 2.2 MPN/100 mL is appropriate.
22. The DHS recommends that the disinfection process be designed such that the chlorine contact time is not less than 90 minutes, and the chlorine residual times the modal chlorine contact time is not less than 300. This Order continues disinfection requirements and coliform effluent limits from the previous permit.
23. Depth to groundwater in the area varies as the subsurface consists of 17 to 94 feet of soil underlain with fractured granite bedrock. The designated beneficial uses of underlying groundwater are municipal and domestic, industrial, agricultural supply, and wildlife habitat.
24. In a memorandum dated 16 June 1995, the Discharger evaluated four potential methods to dispose of its wastewater. The disposal methods considered were a mound system, a leach field system, a pond system with a spray field, and a package treatment plant. The Discharger determined that the package treatment plant was the most feasible method to treat its wastewater. In a memorandum dated 21 August 1995, Regional Board staff agreed with the Discharger's assessment that the package treatment plant was the best alternative to treat the wastewater and that it posed a minimal risk of affecting beneficial uses of surface waters downstream of the facility.
25. 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 standards applicable to this discharge. The SWRCB, on 26 April 2000, adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (hereafter referred to as the Implementation Policy) that contains guidance on the implementation of the NTR and the CTR.
26. Federal regulations 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.

27. On 27 February 2001, the Discharger was directed to submit Priority Pollutant Monitoring Data to comply with the Implementation Policy. The Discharger conducted the analyses using test methods specified in the 27 February letter and submitted the results to Regional Board staff. The Priority Pollutant Monitoring Data show that copper, lead, silver, and zinc have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective. Interim and final effluent limitations for these constituents are established in this Order, in accordance with the Implementation Policy, and as shown in Attachments C and D.
28. 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 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 possible.” **Provision H.5** of this Order requires that the Discharger provide this information by **3 February 2004** or water quality based effluent limitations for CTR constituents (copper, lead, silver, and zinc) will take effect. Otherwise, the water quality based effluent limitations will take effect in the shortest time possible as approved by the Executive Officer, but in no case later than **3 December 2008**.
29. Chlorine has been shown to be toxic to aquatic organisms. USEPA has developed Ambient Water Quality Criteria for the protection of aquatic life. The recommended one-hour and four-day average concentrations for chlorine are 0.019 and 0.011 mg/L, respectively. Effluent limits for chlorine based on the Basin Plan narrative toxicity objective and calculated using the USEPA’s Technical Support Document for Water Quality Based Toxics Control are contained in this Order. Calculations are in Attachment E.
30. 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 waste, are exempt from the requirements of Title 27, CCR, Section 20005 et seq. (hereafter Title 27). The exemption, pursuant to Section 20090(a) of Title 27, is based on the following:
 - a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The waste discharge requirements are consistent with water quality objectives; and
 - c. The treatment and storage facilities described herein are associated with a domestic wastewater treatment plant.

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31. State Water Resources Control Board Resolution No. 68-16 (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 described in the water policies (i.e., quality will not exceed 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 will be maintained.
32. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and Resolution 68-16. Direct discharge of treated wastewater to Bear Creek is permitted only when creek water dilutes treated wastewater by at least 100:1. The Discharger has not shown that all wastewater is contained on the spray field. Thus, wastewater may reach Bear Creek when the dilution ratio is less than 100:1. Effluent limits are specified such that any such direct or indirect discharges to Bear Creek will have localized and insignificant impacts to the quality of water in the creek and groundwater. Wastewater is stored in unlined ponds and will percolate toward groundwater. However, assimilative capacity in the underlying soil and effluent limitations established in this Order will minimize adverse impacts on groundwater. Any such incidental groundwater degradation will be consistent with the maximum benefit to the people of the State.
33. Effluent limitations and toxic and pretreatment 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.
34. Section 13267 of the CWC states, in part, that:

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.
35. The monitoring and reporting program required by this Order and the attached Monitoring and Reporting Program No.R5-2003-0171 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the WWTF that discharges waste subject to this Order.

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36. The Discharger certified a Negative Declaration on 7 September 1996 for the proposed discharge to Bear Creek, according to the provisions of the California Environmental Quality Act (CEQA, Public Resources Code Section 21000, et seq.), and the State CEQA Guidelines. The Board considered the Negative Declaration as required by Title 14, California Code of Regulations (CCR), Section 15096. For the purposes of this Order, the project involves existing authorized discharges and as such is exempt from the provisions of CEQA in accordance with Title 14, CCR, Section 15301.
37. Information in the attached Information Sheet, a part of this Order, was considered in developing the findings, terms, and conditions of this Order.
38. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge and provided an opportunity to submit written views and recommendations and to be heard in a public meeting.
39. All comments pertaining to the discharge were heard and considered in a public meeting.
40. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided USEPA has no objections.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order No. 96-262 is rescinded and that, pursuant to CWC sections 13263, 13267, 13377, and 13383, the California Department of Forestry and Fire Protection, its agents, successors, and assigns, in Order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, shall comply with the following at Mountain Home Conservation Camp:

A. Discharge Prohibitions

1. The by-pass or overflow of pollutants 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)*].
2. Direct discharge to Bear Creek is prohibited when the ratio of flow in Bear Creek to the wastewater discharge is less than 100:1.
3. Discharge of wastewater to the spray field is prohibited during periods of runoff of wastewater, snowmelt, or precipitation from the spray field.
4. Discharge of pollutants into Bear Creek from any source other than the WWTF as set forth herein is prohibited.

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5. Discharge of waste classified as 'hazardous' as defined in Section 2521(a) of 23 CCR, Section 2510, et seq., or 'designated', as defined in Section 13173 of the California Water Code, is prohibited.

B. Effluent Limitations

1. The monthly average flow at Discharge 001, Discharge 002, or both, shall not exceed 0.016 mgd.
2. Effluent discharged to Bear Creek (002) and the spray field (001) shall not exceed the following limitations:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>7-sample Median</u>	<u>Daily Maximum</u>
BOD ₅ ¹	mg/L	10	--	20
	g/day	606 ²	--	1,211 ²
Total Suspended Solids	mg/L	10	--	20
	g/day	606 ²	--	1,211 ²
Chlorine Residual	mg/L	0.01	--	0.02
	g/day	0.61 ²	--	1.21 ²
Settleable Solids	mL/L	0.1	--	0.1
Total Coliform Organisms	mg/L	--	2.2	23
Copper ³	µg/L	0.65	--	1.30
	mg/day	39.4 ²	--	78.7 ²
Lead ³	µg/L	0.11	--	0.21
	mg/day	6.7 ²	--	12.7 ²
Silver ³	µg/L	0.027	--	0.054
	mg/day	1.64 ²	--	3.27 ²
Zinc ³	µg/L	6.97	--	13.98
	mg/day	422 ²	--	847 ²

¹ 5-day biological oxygen demand.

² Loading rate limits are calculated using the maximum flow rate of 0.016 mgd.

³ These limitations shall take effect on **3 February 2004** unless the Discharger submits the technical report pursuant to Provision H.5, Task a, and the Executive Officer establishes an alternative deadline for compliance as set forth therein.

3. The arithmetic mean of BOD 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 collected at approximately the same times during the same period (90 percent removal), or a concentration of 10 mg/L, whichever is less.

4. The effluent shall not have a pH less than 6.5 or greater than 8.3.
5. The maximum EC of the discharge shall not exceed 400 $\mu\text{mhos/cm}$ or the average EC of the source water plus 250 $\mu\text{mhos/cm}$, whichever is less.
6. Survival of aquatic organisms in 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%

C. Interim Effluent Limitations

Until the compliance date determined in accordance with Provision H.5, the effluent discharged to the ponds, the spray field, and Bear Creek shall comply with the following limits for metals through 2 December 2008:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Copper	$\mu\text{g/L}$	7.76	15.6
	mg/day	470 ¹	945 ¹
Lead	$\mu\text{g/L}$	2.24	4.51
	mg/day	136 ¹	273 ¹
Silver	$\mu\text{g/L}$	0.027	0.054
	mg/day	1.64 ¹	3.27 ¹
Zinc	$\mu\text{g/L}$	103	208
	mg/day	6,240 ¹	12,600 ¹

¹ Loading rate limits are calculated using the maximum flow rate of 0.016 mgd.

D. Sludge 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, clarifiers, 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, or 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. In most cases, this will mean General Biosolids Order (SWRCB Water Quality Order No. 2000-10-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). For a biosolids use project to be covered by the General Biosolids Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
6. Use and disposal of biosolids should comply with the self-implementing federal regulations of Title 40, Code of Federal Regulations (CFR), Part 503, which are subject to enforcement by the USEPA, not the Regional Board. If during the life of this Order the State accepts primacy for implementation of 40 CFR 503, the Regional Board may also initiate enforcement where appropriate.

E. Receiving Water Limitations:

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

The discharges, alone or in combination with other sources, shall not cause the following in Bear Creek:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/L.
2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on objects in the water.

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3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums), or suspended material to create a nuisance or adversely affect beneficial uses.
4. Chlorine to be detected in the receiving water.
5. Aesthetically undesirable discoloration.
6. Fungi, slimes, or other objectionable growths.
7. The increase in turbidity to be:
 - a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTU.
 - b. More than 20 percent where natural turbidity is between 5 and 50 NTU.
 - c. More than 10 NTU where natural turbidity is between 50 and 100 NTU.
 - d. More than 10 percent where natural turbidity is greater than 100 NTU.
8. The ambient pH to fall below 6.5, exceed 8.3, or change by more than 0.3 units.
9. The ambient temperature to increase more than 5 °F or to be altered to a degree that adversely affects beneficial uses.
10. Deposition of material that causes nuisance or adversely affect beneficial uses.
11. Chemical constituents in concentrations that adversely affect beneficial uses.
12. Taste or odor producing substances that impart undesirable tastes or odors to the water, to fish flesh or other edible products of aquatic origin, or that cause nuisance or adversely affect beneficial uses.
13. Maximum EC to exceed 450 µmhos/cm.
14. The fecal coliform concentration based on a minimum of not less than five samples for 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.
15. Radionuclides to be present in concentrations that exceed maximum contaminant levels the specified in Title 22, CCR; 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.

16. Aquatic communities and populations including vertebrate, invertebrate, and plant species to be degraded.
17. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental physiological response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
18. Violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.

F. Groundwater Limitations:

Release of waste constituents from any treatment, storage, or disposal component associated with the WWTF, shall not cause underlying groundwater to contain waste constituents in concentrations that adversely affect beneficial uses or that are greater than background water quality.

G. Pond Disposal Limitations

1. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the disposal areas or property owned by the Discharger.
2. As a means of discerning compliance with Pond Disposal Limitation G.1, the dissolved oxygen content in the upper zone (1 foot) of wastewater in the ponds shall not be less than 1.0 mg/L.
3. Ponds shall not have a pH less than 6.5 or greater than 9.0.
4. Public contact with wastewater shall be precluded through such means as fences and signs, or other alternatives acceptable to the Executive Officer.
5. 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.

6. Pond freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).

H. Provisions:

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)*, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as *Standard Provision(s)*.
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. R5-2003-0171, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.

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 in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

3. The Discharger shall conduct the toxicity testing as specified in MRP No. R5-2003-0171. If the testing indicates that the discharge causes, contributes to, or has the reasonable potential to cause or contribute to an in-stream excursion above a 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 work plan to conduct a Toxicity Reduction Evaluation (TRE) and upon Executive Officer approval conduct the TRE. If necessary, this Order will be reopened and a chronic toxicity limitation included 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 Water Resources Control Board, this Order may be opened to include an effluent limitation based on that objective.
4. If the Regional Board determines that specific pollutants in the discharge have reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order will be reopened for consideration of additional or revision of appropriate numerical effluent or receiving water limitations for the problem constituents.
5. Finding No. 27 indicates that copper, lead, silver, and zinc have a reasonable potential to cause or contribute to an in stream excursion above water quality objectives. The WWTF may be able to meet final effluent limits for these constituents with minor modifications or operational changes, but this has yet to be evaluated. The Discharger shall comply with the following:

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<u>Task</u>	<u>Description</u>	<u>Due Date</u>
a.	Either comply with Effluent Limitations B.2 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.	3 February 2004
b.	If approved, begin implementation of the items identified in Task a, above. If rejected, comply with Effluent Limitations B.2.	Within 30 days of approval or rejection of the technical report by the Executive Officer.
c.	Submit Quarterly Progress Reports	1st day of the second month following the close of each calendar quarter.
d.	Comply fully with Effluent Limitations B.2.	By the deadline approved by the Executive Officer but no later than 3 December 2008.
6. The Discharger shall comply with following time schedule to assure compliance with the monitoring requirements of Monitoring and Reporting Program No. R5-2003-0171.		

WASTE DISCHARGE REQUIREMENTS - ORDER NO. R5-2003-0171
 CALIFORNIA DEPARTMENT OF FORESTRY
 AND FIRE PROTECTION
 MOUNTAIN HOME CONSERVATION CAMP
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<u>Task No.</u>	<u>Description</u>	<u>Compliance Date</u>
a.	Submit workplan and time schedule for installation of continuous flow and chlorine residual meters and composite samplers required by this Order.	3 June 2004
b.	Begin installation of continuous flow and chlorine residual meters and composite samplers.	3 March 2005
c.	Full compliance with the terms of monitoring and reporting specified by this Order.	3 June 2005

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

7. The Discharger shall assure that pollutants are not introduced into the sewerage system that:
 - a. Inhibit or disrupt the treatment process, system operation, or the eventual use or disposal of sludge; or
 - b. Flow through the system to the receiving water untreated; and
 - c. Cause or significantly contribute to a violation of any requirement of this Order.
8. Prior to making any change in the discharge point, place of use, or purpose of the wastewater, the Discharger shall obtain approval of or clearance from the State Water Resources Control Board (Division of Water Quality and Water Rights).
9. The Discharger shall employ best practicable treatment and control (BPTC), including proper operation and maintenance, to comply with this Order.
10. This Order may be reopened, and effluent limitations may be added, deleted, or modified, if new regulations or information become available that affect the terms of this Order. The Regional Board may consider inclusion of a compliance time schedule within the bounds of the applicable regulations if the Discharger is not able to meet a new and more stringent discharge requirement immediately.
11. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and 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 sections 415 and 3065 of Title 16, CCR, 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.

12. In the event of any change in control or ownership of land or waste discharge 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, address and telephone number of the persons responsible for contact with the Regional 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.

13. Exceedances of monthly average, seven-sample median, and daily maximum effluent limitations based on results of a single sampling event may be considered violations of the requirements of this Order. The Discharger may sample more frequently than required by the attached MRP No.R5-2003-0171 to provide a more representative data base and possibly lower reported average and median constituent values to demonstrate compliance with effluent limitations.
14. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
15. A copy of this Order shall be kept at the site for reference by personnel operating the Facility. Key operating personnel shall be familiar with its contents.
16. The Regional Board will review this Order periodically and will revise requirements when necessary.
17. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State's emergency response commission within 15 days of reporting the data to the

WASTE DISCHARGE REQUIREMENTS - ORDER NO. R5-2003-0171
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commission pursuant to section 313 of the *Emergency Planning and Community Right to Know Act* of 1986.

18. This Order expires on **3 December 2008**, and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than **3 June 2008**, at least 180 days in advance of such date in application 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 5 December 2003.

THOMAS R. PINKOS, Executive Officer

GEA:fmc:12/5/03

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2003-0171

NPDES NO. CA0083798

FOR
CALIFORNIA DEPARTMENT OF FORESTRY
AND FIRE PROTECTION
MOUNTAIN HOME CONSERVATION CAMP
TULARE COUNTY

This Monitoring and Reporting Program is issued pursuant to California Water Code Sections 13383 and 13267. The Discharger shall not implement any changes to this Monitoring and Reporting Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program. Specific sample station locations shall be established under the direction of the Regional Board's staff, and a description of the stations shall be attached to this Order.

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." This Monitoring and Reporting Program required by Order No. R5-2003-0171 is necessary to assure compliance with Order No. R5-2003-0171. The Discharger operates the facility that discharges waste subject to Order No. R5-2003-0171.

All analyses shall be performed in accordance with the latest edition of *Guidelines Establishing Test Procedures for Analysis of Pollutants*, promulgated by USEPA (40 CFR 136), or other procedures approved by the Regional Board. In reporting data, the Discharger shall indicate whether any analysis was performed using a method not in conformance with USEPA's Guidelines.

INFLUENT MONITORING

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

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
BOD ₅ ¹	mg/L	Grab	Monthly
Total Suspended Solids	mg/L	Grab	Monthly

¹ 5-day, 20 °C biochemical oxygen demand.

EFFLUENT MONITORING

Discharge 001

Effluent samples shall be collected just after discharge from the WWTF and prior to discharge to the storage ponds. Effluent samples shall be representative of the volume and quality of the discharge. Time of collection of grab samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	gpd	Metered	Continuous ¹
Chlorine Residual	mg/L, g/day	Metered	Continuous ¹
BOD ₅ ²	mg/L, g/day	24-hr composite ^{1,3}	Weekly
Total Suspended Solids	mg/L, g/day	24-hr composite ^{1,3}	Weekly
EC	µmhos/cm	24-hr composite ¹	Weekly
Settleable Solids	mL/L	24-hr composite ¹	Weekly
pH	pH units	Grab	Weekly
Total Coliform Organisms	MPN/100 mL	Grab	Weekly
Ammonia (NH ₃) ^{4,5,6}	mg/L	Grab	Quarterly
Copper ⁷	µg/L, mg/day	24-hr composite	Quarterly
Lead ⁷	µg/L, mg/day	24-hr composite	Quarterly
Silver ⁷	µg/L, mg/day	24-hr composite	Quarterly
Zinc ⁷	µg/L, mg/day	24-hr composite	Quarterly
Acute Toxicity ^{8,9}	% survival	Grab	Annually

¹ The continuous flow and chlorine residual monitoring systems, and composite samplers, or functional equivalents, shall be operational by no later than the date specified in time schedule of Provision H.5. Until that time, grab samples shall be collected and analyzed at least weekly.

² 5-day, biochemical oxygen demand.

³ The BOD and TSS samples shall be flow proportional composite samples.

⁴ Concurrent with biotoxicity testing.

⁵ Report as both total and un-ionized ammonia.

⁶ Temperature and pH shall be recorded at the time of ammonia sample collection.

⁷ Temperature, pH, and hardness data shall be collected at the same time and on the same date as the metals samples.

⁸ Specify test species, pH, and temperature after consultation with Department of Fish and Game. The acute bioassay samples shall be analyzed using USEPA 600/4-90/027F Fourth Edition, or later amendment with Regional Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. There shall be no pH adjustment unless approved by the Executive Officer.

⁹ Concurrent with ammonia sampling.

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Discharge 002

A sampling station shall be established for discharge to Bear Creek and shall be located where representative samples of that effluent can be obtained whenever a discharge to point 002 occurs. The Discharger shall provide a schematic diagram and photograph of the sampling location prior to initiating Discharge 002. The time of collection of grab samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	gpd	Metered	Continuous ¹
Chlorine Residual	mg/L, g/day	Metered	Continuous ¹
Settleable Solids	mL/L	24-hr composite ¹	Daily
pH	pH units	Grab	Daily
Temperature	°F	Grab	Daily
BOD ₅ ²	mg/L, g/day	24-hr composite ^{1,3}	2/Week
Total Suspended Solids	mg/L, g/day	24-hr composite ^{1,3}	2/Week
Total Coliform Organisms	MPN/100 mL	Grab	Weekly
EC	µmhos/cm	24-hr composite ¹	Weekly
Ammonia (NH ₃) ^{4,5,6}	mg/L	Grab	Quarterly
Total Phosphorus	mg/L	Grab	Quarterly
Total Nitrogen	mg/L	Grab	Quarterly
Acute Toxicity ^{7,8}	mg/L	Grab	Quarterly
Copper ⁹	µg/L, mg/day	24-hr composite ¹	Monthly
Lead ⁹	µg/L, mg/day	24-hr composite ¹	Monthly
Silver ⁹	µg/L, mg/day	24-hr composite ¹	Monthly
Zinc ⁹	µg/L, mg/day	24-hr composite ¹	Monthly

¹ The continuous flow and chlorine residual monitoring systems, and composite samplers, or functional equivalents, shall be operational by no later than the date specified in the time schedule of Provision H.5. Until that time, grab samples shall be collected and analyzed daily.

² 5-day, 20 °C biochemical oxygen demand.

³ The BOD and TSS samples shall be flow proportional samples.

⁴ Concurrent with biotoxicity testing.

⁵ Report as both total and un-ionized ammonia.

⁶ Temperature and pH shall be recorded at the time of ammonia sample collection.

⁷ Specify test species, pH, and temperature after consultation with Department of Fish and Game. The acute bioassay samples shall be analyzed using USEPA 600/4-90/027F Fourth Edition, or later amendment with Regional Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. There shall be no pH adjustment unless approved by the Executive Officer.

⁸ Concurrent with ammonia sampling.

⁹ Temperature, pH, and hardness data shall be collected at the same time and on the same day as the metals samples.

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 above, 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 the data more often than twice the frequencies listed in the schedule.

If results of monitoring a pollutant appear to violate monthly average effluent limitations, the frequency of sampling must be increased to daily until compliance is verified. If effluent monitoring detects a pollutant at concentrations greater than a daily maximum limitation, the Discharger shall resample and reanalyze the discharge immediately after receiving knowledge of the exceedance. The frequency of sampling must be increased to daily until compliance is verified.

CALIFORNIA TOXICS RULE EFFLUENT MONITORING

The Discharger shall monitor the effluent and receiving water for Metals, Volatile Organic, and Semi-Volatile Organic priority pollutants once at least **one year prior** to the expiration of this Order. Priority pollutants are defined as USEPA priority toxic pollutants, and consist of the constituents listed in the most recent National Toxics Rule and California Toxics Rule. Volatile Organic and Semi-Volatile Organic priority pollutants are listed in Tables 2a and 2b in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Bays, and Estuaries of California* (Implementation Policy). Results of sampling shall be submitted by the **first day of the second month** following sampling. Reporting shall conform with Implementation Policy Reporting Requirements, Section 2.4 et seq. In particular, the reported Minimum Levels (MLs) shall be at least as low as the lowest ML for each priority pollutant specified in Appendix 4 of the Implementation Policy. Effluent samples must be analyzed for pH and hardness in order to calculate translators, which are needed for pollutants that are hardness and/or pH dependent. All analyses shall be performed at a laboratory certified by the California Department of Health Services.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Suggested Test Method¹</u>
Mercury	µg/L	Grab	USEPA 1631 ²
Arsenic	µg/L	Grab	USEPA 206.3 ²
Chromium VI	µg/L	Grab	USEPA 218.4 ²
Metals ³	µg/L	Grab	USEPA 1638 ²
Volatile Organics	µg/L	Grab	SM 8260B ^{2,4}
Semi-Volatile Organics	µg/L	Grab	SM 8260B ^{2,4}
	µg/L	Grab	SM 8270C ^{2,4}

¹ Alternate USEPA approved test methods may be used with approval from the Executive Officer.

² Report all detected peaks.

³ Metals includes antimony, beryllium, cadmium, copper, lead, nickel, selenium, thallium, and total chromium, and zinc.

⁴ Standard Methods, 20th Edition.

SPRAY FIELD MONITORING

The Discharger shall inspect the spray field at least once per week during the period that it is in use. In conducting the inspection, a log shall be kept of the spray field conditions. The log shall include notes on broken pipes, clogged or plugged sprinkler heads. Attention shall be given to the presence or absence of the following:

- a. Breaches of berms
- b. Erosion
- c. Overspray off of the disposal site
- d. Standing Water
- e. Runoff

Notes on the spray field shall be summarized in the monthly monitoring report. Where the operation and maintenance manual indicates remedial action is necessary, the Discharger shall briefly explain in the transmittal what action has been taken or is scheduled to be taken.

POND MONITORING

Pond water samples shall be collected at a depth of one foot from each pond, opposite the inlet. Ponds shall be monitored during periods when water is present in the ponds. Pond water monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Dissolved Oxygen ¹	mg/L	Grab	Weekly
Freeboard ²	feet	Observation	Monthly

¹ Samples shall be collected between 0800 and 0900 hours.

² Freeboard shall be measured for all ponds to the nearest tenth of a foot.

Permanent markers shall be placed in the ponds with calibration marks indicating the water level at design capacity and available operational freeboard.

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Receiving water monitoring shall include at least the following:

<u>Station</u>	<u>Description</u>
R-1	Bear Creek, less than 300 feet upstream from Discharge 002.
R-2	Bear Creek, less than 300 feet downstream from Discharge 002.

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<u>Constituent</u>	<u>Units</u>	<u>Station</u>	<u>001¹</u>	<u>002²</u>
Flow of Creek	cfs	R-1, R-2	Monthly	3/Week
Dissolved Oxygen	mg/L	R-1, R-2	Monthly	3/Week
pH	pH units	R-1, R-2	Monthly	3/Week
Temperature	°F	R-1, R-2	Monthly	3/Week
Turbidity	NTU	R-1, R-2	Quarterly	3/Week
Fecal Coliform Organisms	MPN/100 mL	R-1, R-2	Quarterly	2/Week
EC	µmhos/cm	R-1, R-2	Quarterly	Weekly
Chlorine Residual	mg/L	R-1, R-2	Quarterly	Weekly
Ammonia (NH ₃) ^{3,4}	mg/L	R-1, R-2	Quarterly	Monthly

¹ When discharging to spray fields (Discharge 001).

² When discharging directly to Bear Creek (Discharge 002).

³ Report as both total and un-ionized ammonia.

⁴ Temperature and pH shall be recorded at the same time of ammonia sample collection.

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.

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 EPA 600/4-91-002, or later amendment. Chronic toxicity samples shall be collected at the last point of discharge prior to its entering the receiving water. 24-hour composite samples shall be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. The effluent tests must be conducted with concurrent reference toxicant tests. Monthly laboratory reference toxicant tests may be substituted upon approval. Both the reference toxicant and effluent tests 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: Once per year

Dilution Series: (If applicable)

	<u>Dilutions (%)</u>					<u>Controls</u>	
	<u>100</u>	<u>50</u>	<u>25</u>	<u>12.5</u>	<u>6.25</u>	<u>Receiving Water</u>	<u>Lab Water</u>
% Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water ¹	0	50	75	87.5	93.75	100	0
% Lab Water	0	0	0	0	0	0	100

¹ Dilution water shall be receiving water from upstream in the receiving water stream, or out of the influence of the discharge. If there is not dilution water in the receiving water unaffected by the discharge, then a dilution series test is not applicable. The dilution series may be altered upon approval of Regional Board staff.

WATER SUPPLY MONITORING

The on-site domestic well shall be monitored annually for EC.

SLUDGE MONITORING

To ensure that discharges to the WWTF are not degrading sludge quality, the Discharger shall collect a composite sample of sludge at least annually in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document, August 1989*, and test for metals:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling, application and disposal activities. The frequency of entries is discretionary, however, the log should be complete enough to serve as a basis for part of the annual report. Prior to any disposal or land application of sewage sludge, or removal of sewage sludge from the WWTF, the monitoring and record keeping requirements of 40 CFR 503 shall be met.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **1st day of the second month** following sample collection. Quarterly monitoring results shall be submitted by the **1st day of the second month** following each calendar quarter. Annual monitoring results shall be submitted by **1 February** of each year.

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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 as to clearly illustrate whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly averages, medians, and removal efficiencies (%) for BOD and Total Suspended Solids, should be determined and recorded.

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 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 in charge of wastewater treatment and disposal (Standard Provision A.5).
- b. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations.
- c. A statement certifying when monitoring instruments and devices were last calibrated (for purposes of assuring compliance with this Order), including identification of who performed the calibration (Standard Provision C.6).
- d. 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.

The Discharger shall also submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. The annual report shall be submitted hardcopy and in an electronic format (e.g. Microsoft Excel) subject to the approval of the Executive Officer. 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 Provision D.6.

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AND FIRE PROTECTION
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The Discharger shall implement the above monitoring program on the first day of the month following the effective date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

_____ 5 December 2003
(Date)

GEA:fmc:12/5/03

ATTACHMENT C
CALIFORNIA TOXICS RULE
REASONABLE POTENTIAL ANALYSIS

CALIFORNIA DEPARTMENT OF FORESTRY
AND FIRE PREVENTION
MOUNTAIN HOME CONSERVATION CAMP
TULARE COUNTY

RECEIVING WATER DATA

Constituent units CTR #	Sb µg/L #1	As µg/L #2	Be µg/L #3	Cd µg/L #4	Cr Total µg/L	Cr (III) µg/L #5a	Cr (VI) µg/L #5b	Cu µg/L #6	Pb µg/L #7	Hg µg/L #8	Ni µg/L #9	Se µg/L #10	Ag µg/L #11	Tl µg/L #12	Zn µg/L #13	CN µg/L #14	Asb MF/L #15
7/10/02	0.14	<1.1	<0.13	0.20	1.30	1.30	<0.97	1.74	0.330	0.0017	<0.63	<0.49	<0.054	<0.13	4.60	<1.0	<0.01
12/23/02	0.55	<1.1	<0.13	<0.15	2.68	2.68	<0.97	2.68	2.24	0.0102	0.66	<0.49	<0.054	<0.13	29.7	<1.0	<0.01
Observed Maximum SIP Section 1.4.3.1	0.55	<1.1	<0.13	0.20	2.68	2.68	<0.97	2.68	2.24	0.0102	0.66	<0.49	<0.054	<0.13	29.7	<1.0	<0.01

ATTACHMENT C – CTR REASONABLE POTENTIAL ANALYSIS
 CALIFORNIA DEPARTMENT OF FORESTRY
 AND FIRE PROTECTION
 MOUNTAIN HOME CONSERVATION CAMP
 TULARE COUNTY

EFFLUENT DATA

Constituent units CTR #	Sb µg/L #1	As µg/L #2	Be µg/L #3	Cd µg/L #4	Cr Total µg/L	Cr (III) µg/L #5a	Cr (VI) µg/L #5b	Cu µg/L #6	Pb µg/L #7	Hg µg/L #8	Ni µg/L #9	Se µg/L #10	Ag µg/L #11	Tl µg/L #12	Zn µg/L #13	CN µg/L #14	Asb MF/L #15
7/10/02	0.41	3.5	<0.13	0.17	1.75	1.75	<0.97	7.67	0.381	<0.0012	1.33	0.66	0.054	<0.13	27.5	<1.0	<0.01
12/23/02	0.58	4.3	<0.13	<0.15	2.75	2.75	<0.97	15.6	4.51	0.0096	1.03	<0.49	<0.054	<0.13	208	<1.0	<0.01
MEC, total (µg/L)	0.58	4.3	<0.13	0.17	2.75	2.75	<0.97	15.6	4.51	0.0096	1.33	0.66	0.054	<0.13	208	<1.0	<0.01
Max Background, Tot	0.55	<1.1	<0.13	0.20	2.68	2.68	<0.97	2.68	2.24	0.0102	0.66	<0.49	<0.054	<0.13	29.7	<1.0	<0.01
CMC (µg/L)																	
Freshwater Total																	
@ 8.1 mg/L Hardness	-	-	-	0.27		222	-	1.3	3.3	-	56	-	0.054	-	14	-	-
CCC (µg/L)																	
Freshwater Total																	
@ 8.1 mg/L Hardness	-	-	-	0.34		25	-	1.1	0.13	-	6.2	5.0 q	-	-	14	-	-
H Health (µg/L)																	
Water & Org	14	-	n	n		n	n	1300	n	0.050 a	610 a	n	-	1.7 a,s	-	700 a	7 MF/L k,s
H Health (µg/L)																	
Org Only	4300	-	n	n		n	n	-	n	0.051 a	4600 a	n	-	6.3 a,t	-	220,000 a,j	-
Numeric Basin Plan																	
Objective (µg/L)																	
(MCL, site specific)	6	10	4	5	50	-	-	1300	15	2	100	50	-	2	-	200	7 MF/L
Narrative Basin Plan																	
Objective (µg/L)																	
Resonable Potential	N	N	N	N	N	N	N	Y	Y	N	N	N	Y	N	Y	N	N

ATTACHMENT C – CTR REASONABLE POTENTIAL ANALYSIS
 CALIFORNIA DEPARTMENT OF FORESTRY
 AND FIRE PROTECTION
 MOUNTAIN HOME CONSERVATION CAMP
 TULARE COUNTY

Constituent CTR #	4,4-DDE #109	4,4-DDD #110	Dieldrin #111	alpha- Endosulfan #112	beta- Endosulfan #113	Endosulfan Sulfate #114	Endrin #115	Endrin Aldehyde #116	Heptachlor #117	Heptachlor Epoxide #118	Polychlorinated biphenyls (PCBs) #119-125	Toxaphene #126
MEC (µg/L)	<0.0039	<0.0045	<0.0050	<0.0039	<0.0098	<0.012	<0.0044	<0.013	<0.0038	<0.0039	<0.057	<0.29
Background (µg/L)	<0.0039	<0.0045	<0.0050	<0.0039	<0.0098	<0.012	<0.0044	<0.013	<0.0038	<0.0039	<0.057	<0.29
SWRCB MLs (µg/L)												
SIP Appendix 4	0.05	0.05	0.01	0.02	0.01	0.05	0.01	0.01	0.01	0.01	0.5	0.5
BP Obj (µg/L)	-	-	-	-	-	-	2	-	0.01	0.01	0.5	3
CMC (µg/L)	-	-	0.24 w	0.22 g	0.22 g	-	0.086 w	-	0.52 g	0.52 g		0.73
CCC (µg/L)	-	-	0.056 w	0.056 g	0.056 g	-	0.036 w	-	0.0038 g	0.0038 g	0.014 u	0.0002
H Health (µg/L) Water & Org Only	0.00059 a,c	0.00083 a,c	0.00014 a,c	110 a	110 a	110 a	0.76 a	0.76 a	0.00021 a,c	0.00010 a,c	0.00017 c,v	0.00073 a,c
H Health (µg/L) Org Only	0.00059 a,c	0.00084 a,c	0.00014 a,c	240 a	240 a	240 a	0.81 a,j	0.81 a,j	0.00021 a,c	0.00011 a,c	0.00017 c,v	0.00075 a,c
Reasonable Potential	N	N	N	N	N	N	N	N	N	N	N	N

**Footnotes taken from 40 CFR 131.38 (b)(1)

ATTACHMENT D
EFFLUENT LIMIT CALCULATIONS
FOR PRIORITY POLLUTANTS

CALIFORNIA DEPARTMENT OF FORESTRY
AND FIRE PROTECTION
MOUNTAIN HOME CONSERVATION CAMP
TULARE COUNTY

To determine the Average Monthly Effluent Limitations (AMEL) and Maximum Daily Effluent Limitations (MDEL), the following equations (taken from Section 1.4 of the Implementation Policy) are used:

ECA equations:

$$ECA = C + D (C - B) \quad \text{when } C > B;$$

$$ECA = C \quad \text{when } C \leq B$$

where:

- ECA* = Effluent Concentration Allowance;
- C* = The acute or chronic priority pollutant criterion/objective, adjusted if necessary for hardness, pH, and translators;
- D* = The dilution credit;
- B* = The ambient background concentration. The ambient background concentration shall be the observed maximum, except for an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects. In this case use instead the ambient background concentration as an arithmetic mean.

Two ECA values are calculated for each constituent, an acute ECA and a chronic ECA. The ECA values are then used to calculate the Long Term Averages.

LTA equations:

$$LTA_{acute} = ECA_{acute} * ECA \text{ multiplier}_{acute99}$$

$$LTA_{chronic} = ECA_{chronic} * ECA \text{ multiplier}_{chronic99}$$

where:

- LTA* = Long Term Average;
- ECA* = Effluent Concentration Allowances, calculated using the ECA equations for both chronic and acute criteria;
- ECA multiplier* = Value taken from Table 1 of the Implementation Policy. A coefficient of variation (CV) of 0.6 is assumed for all calculations done in this permit, since fewer than ten effluent data points are available. The acute multiplier is 0.321 and the chronic multiplier is 0.527.

Chronic and acute LTA values are calculated for each constituent. The two LTA values are compared and the lowest LTA is used to calculate the AMEL and MDEL.

AMEL and MDEL equations:

$$AMEL = LTA * AMEL\ multiplier_{95}$$

$$MDEL = LTA * MDEL\ multiplier_{99}$$

where:

AMEL = Average Monthly Effluent Limitation;

MDEL = Maximum Daily Effluent Limitation;

LTA = Long Term Average, calculated using the LTA equations;

AMEL multiplier = Value taken from Table 2 of the Implementation Policy. CV of 0.6 is assumed. Since monitoring specified in this Order is no more frequent than monthly, a monitoring frequency of weekly (n=4) is assumed for purposes of determining an AMEL. The multiplier is 1.55;

MDEL multiplier = Value taken from Table 2 of the Implementation Policy. CV of 0.6 is assumed. The multiplier is 3.11.

The AMEL and MDEL values calculated from these equations for each constituent are the values that are applied as effluent limitations in this Order.

Copper

ECA calculations:

$C = 1.3\ \mu\text{g/L}$ (acute), $1.1\ \mu\text{g/L}$ (chronic)

$D = 1$, since no dilution credit was granted

$B = 2.68\ \mu\text{g/L}$ (from 23 Dec 2002 receiving water sample)

$1.3\ \mu\text{g/L}$ and $1.1\ \mu\text{g/L} \leq 2.68\ \mu\text{g/L}$, so $C \leq B$, therefore $ECA = C$

$ECA_{acute} = 1.3\ \mu\text{g/L}$

$ECA_{chronic} = 1.1\ \mu\text{g/L}$

LTA calculations:

$$LTA_{acute} = ECA_{acute} * ECA multiplier_{acute99} = 1.3 \mu\text{g/L} * 0.321 = 0.417 \mu\text{g/L}$$

$$LTA_{chronic} = ECA_{chronic} * ECA multiplier_{chronic99} = 1.1 \mu\text{g/L} * 0.527 = 0.580 \mu\text{g/L}$$

The acute LTA is the lower of the two values, so $LTA = 0.417 \mu\text{g/L}$.

AMEL and MDEL calculations:

$$AMEL = LTA * AMEL multiplier_{95} = 0.417 \mu\text{g/L} * 1.55 = \mathbf{0.647 \mu\text{g/L}}$$

$$MDEL = LTA * MDEL multiplier_{99} = 0.417 \mu\text{g/L} * 3.11 = \mathbf{1.298 \mu\text{g/L}}$$

Lead

ECA calculations:

$C = 3.3 \mu\text{g/L}$ (acute), $0.13 \mu\text{g/L}$ (chronic)

$D = 1$, since no dilution credit was granted

$B = 2.24 \mu\text{g/L}$ (from 23 Dec 2002 receiving water sample)

$$3.3 \mu\text{g/L} > 2.24 \mu\text{g/L}, \text{ so } C > B, \text{ therefore } ECA_{acute} = C + D(C - B) \\ = 3.3 \mu\text{g/L} + 1 * (3.3 \mu\text{g/L} - 2.24 \mu\text{g/L}) = 4.36 \mu\text{g/L}$$

$$0.13 \mu\text{g/L} \leq 2.24 \mu\text{g/L}, \text{ so } C \leq B, \text{ therefore } ECA_{chronic} = C = 0.13 \mu\text{g/L}$$

$$ECA_{acute} = 4.36 \mu\text{g/L}$$

$$ECA_{chronic} = 0.13 \mu\text{g/L}$$

LTA calculations:

$$LTA_{acute} = ECA_{acute} * ECA multiplier_{acute99} = 4.36 \mu\text{g/L} * 0.321 = 1.400 \mu\text{g/L}$$

$$LTA_{chronic} = ECA_{chronic} * ECA multiplier_{chronic99} = 0.13 \mu\text{g/L} * 0.527 = 0.0685 \mu\text{g/L}$$

The chronic LTA is the lower of the two values, so $LTA = 0.0685 \mu\text{g/L}$.

AMEL and MDEL calculations:

$$AMEL = LTA * AMEL multiplier_{95} = 0.0685 \mu\text{g/L} * 1.55 = \mathbf{0.106 \mu\text{g/L}}$$

$$MDEL = LTA * MDEL multiplier_{99} = 0.0685 \mu\text{g/L} * 3.11 = \mathbf{0.213 \mu\text{g/L}}$$

Silver

ECA calculations:

$$C = 0.054 \mu\text{g/L (acute)}$$

$$D = 1, \text{ since no dilution credit was granted}$$

$$B = 0.054 \mu\text{g/L (from 23 Dec 2002 receiving water sample)}$$

$$0.054 \mu\text{g/L} \leq 0.054 \mu\text{g/L}, \text{ so } C \leq B, \text{ therefore } ECA = C$$

$$ECA_{acute} = 0.054 \mu\text{g/L}$$

Silver only has an acute criterion, therefore only the acute ECA is calculated.

LTA calculations:

$$LTA_{acute} = ECA_{acute} * ECA multiplier_{acute99} = 0.054 \mu\text{g/L} * 0.321 = 0.0173 \mu\text{g/L}$$

Only one LTA can be calculated for silver, so $LTA = 0.0173 \mu\text{g/L}$.

AMEL and MDEL calculations:

$$AMEL = LTA * AMEL multiplier_{95} = 0.0173 \mu\text{g/L} * 1.55 = \mathbf{0.027 \mu\text{g/L}}$$

$$MDEL = LTA * MDEL multiplier_{99} = 0.0173 \mu\text{g/L} * 3.11 = \mathbf{0.054 \mu\text{g/L}}$$

Zinc

ECA calculations:

$C = 14 \mu\text{g/L}$ (acute), $14 \mu\text{g/L}$ (chronic)

$D = 1$, since no dilution credit was granted

$B = 29.7 \mu\text{g/L}$ (from 23 Dec 2002 receiving water sample)

$14 \mu\text{g/L} \leq 29.7 \mu\text{g/L}$, so $C \leq B$, therefore $ECA = C$

$ECA_{acute} = 14 \mu\text{g/L}$

$ECA_{chronic} = 14 \mu\text{g/L}$

LTA calculations:

$LTA_{acute} = ECA_{acute} * ECA \text{ multiplier}_{acute99} = 14 \mu\text{g/L} * 0.321 = 4.494 \mu\text{g/L}$

$LTA_{chronic} = ECA_{chronic} * ECA \text{ multiplier}_{chronic99} = 14 \mu\text{g/L} * 0.527 = 7.378 \mu\text{g/L}$

The acute LTA is the lower of the two values, so $LTA = 4.494 \mu\text{g/L}$.

AMEL and MDEL calculations:

$AMEL = LTA * AMEL \text{ multiplier}_{95} = 4.494 \mu\text{g/L} * 1.55 = \mathbf{6.966 \mu\text{g/L}}$

$MDEL = LTA * MDEL \text{ multiplier}_{99} = 4.494 \mu\text{g/L} * 3.11 = \mathbf{13.976 \mu\text{g/L}}$

ATTACHMENT E
EFFLUENT LIMIT CALCULATIONS
FOR CHLORINE RESIDUAL

CALIFORNIA DEPARTMENT OF FORESTRY
AND FIRE PROTECTION
MOUNTAIN HOME CONSERVATION CAMP
TULARE COUNTY

Effluent limitations for Chlorine Residual are derived by using the procedure outlined in Section 5 of the USEPA *Technical Support Document for Water Quality-Based Toxics Control, March 1991* (TSD). USEPA acute and chronic criteria are used as the Waste Load Allocations:

$$WLA_{acute} = 0.019 \text{ mg/L}$$

$$WLA_{chronic} = 0.011 \text{ mg/L}$$

LTA Equations

Long Term Averages (LTA) are calculated using the following equations:

$$LTA_{acute} = WLA_{acute} * WLA \text{ multiplier}_{acute99}$$

$$LTA_{chronic} = WLA_{chronic} * WLA \text{ multiplier}_{chronic99}$$

The WLA multipliers are listed in Table 5-1 of the TSD. A coefficient of variation (CV) of 0.6 is assumed due to the nature of the effluent data that has been collected to this point. Therefore, the acute multiplier is 0.321 and the chronic multiplier is 0.527.

LTA Calculations:

$$LTA_{acute} = 0.019 \text{ mg/L} * 0.321 = 0.0061 \text{ mg/L}$$

$$LTA_{chronic} = 0.011 \text{ mg/L} * 0.527 = 0.0058 \text{ mg/L}$$

The lower of the two values is used, so $LTA = 0.0058 \text{ mg/L}$

MDL and AML equations

Maximum Daily Limits (MDL) and Average Monthly Limits (AML) are calculated using the following equations:

$$MDL = LTA * LTA \text{ multiplier}_{MDL99}$$

$$AML = LTA * LTA \text{ multiplier}_{AML95}$$

The LTA multipliers are listed in Table 5-2 of the TSD. A CV of 0.6 is assumed. The Order requires continuous monitoring for chlorine residual. Daily monitoring is the closest approximation to continuous monitoring listed in Table 5-2, therefore it is assumed that $n = 30$ in order to determine the AML. The LTA multiplier for the MDL is 3.11, and for the AML is 1.19.

ATTACHMENT E – CHLORINE RESIDUAL LIMIT CALCULATIONS
CALIFORNIA DEPARTMENT OF FORESTRY
AND FIRE PROTECTION
MOUNTAIN HOME CONSERVATION CAMP
TULARE COUNTY

MDL and AML calculations:

$$MDL = 0.0058 \text{ mg/L} * 3.11 = \mathbf{0.018} \approx \mathbf{0.02}$$

$$AML = 0.0058 \text{ mg/L} * 1.19 = \mathbf{0.0069} \approx \mathbf{0.01}$$

These values of MDL and AML are applied as effluent limits for chlorine residual in this Order.

INFORMATION SHEET

ORDER NO. R5-2003-0171
CALIFORNIA DEPARTMENT OF FORESTRY
AND FIRE PROTECTION
MOUNTAIN HOME CONSERVATION CAMP
TULARE COUNTY

California Department of Forestry and Fire Protection (hereafter Discharger) owns and operates a camp (hereafter Facility) about 7.5 miles northeast of Springville at an elevation of 4,500 feet. The Facility houses an average of 108 inmates with a maximum population of 112 inmates, and generates about 12,000 gallons per day (gpd) of domestic wastewater. The sources of the wastewater are laundry, kitchen, restroom and showers. During the summer fire season, flows are generally less while crews are dispatched out of camp on prolonged fire fighting duty.

Wastewater generated at the Facility is initially discharged to a 12,000 gallon septic tank and then to a sequential batch reactor (SBR) system. A process flow diagram of the SBR is shown in Attachment B of this Order. After receiving treatment in the sequential batch reactor system, the waste water is filtered, chlorinated, and dechlorinated and discharged to a series of five unlined storage ponds where evaporation and percolation occur. The ponds have a storage capacity of 2.0 million gallons. When dry weather conditions permit, wastewater in the storage ponds is applied to an adjacent spray field (Discharge 001). The slope of the spray field is very steep and creates the potential for wastewater to run off from the designated disposal area. Bear Creek, a tributary of the North Fork of the Tule River and a water of the United States, is directly downhill from the spray field. There is potential for wastewater in the storage ponds to reach Bear Creek through seepage and percolation, and for wastewater applied to the spray field to reach Bear Creek through run off.

If the ponds are approaching their maximum storage limit, and there is sufficient flow in Bear Creek, the wastewater may be discharged directly to Bear Creek (Discharge 002). The discharge would follow a natural drainage course from the Facility down to the creek. Direct discharge to Bear Creek is proposed during winter months when sufficient flows in the creek (above six cfs) provides a dilution ratio of at least 100:1. Discharge directly to Bear Creek did not occur during the term of Order No. 96-262.

Department of Water Resources records show flow in Bear Creek, based on samples taken near Discharge 002, as follows:

July	6 cfs ¹
August	0.45 cfs ¹
September	0.0668 cfs ¹

¹ Cubic feet per second

The quality of water in Bear Creek is excellent. Monitoring data submitted by the Discharger from January 2001 through January 2003 of samples collected upstream of Discharge 002, indicates an average EC of 65 μ mhos/cm. Source water for the camp is from an on-site well and is also of excellent quality (EC of 120 mmhos/cm). The camp also draws water for showers and lawn irrigation from a spring which flows into Bear Creek.

Depth to groundwater in the area varies as the subsurface consists of 17 to 94 feet of soil and is underlain with fractured granite bedrock. The beneficial uses of underlying groundwater are municipal and domestic, industrial, agricultural supply, and wildlife habitat. Groundwater monitoring has not previously been required and is not proposed at this time.

BENEFICIAL USES OF BEAR CREEK

The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition*, (Basin Plan) identifies the beneficial uses of the Tule River above Lake Success as municipal and domestic supply; agricultural supply; hydropower generation; water contact and non-contact water recreation; warm and cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species; spawning, reproduction, and/or early development; and freshwater replenishment. The Basin Plan states that, “The beneficial uses of any specifically identified water body generally apply to its tributary streams.” Bear Creek is a tributary of the Tule River above Lake Success. Therefore, by the tributary rule, the designated beneficial uses of Bear Creek are the same as the beneficial uses of the Tule River above Lake Success, stated above.

The Basin Plan states that discharges to surface waters will not be considered a permanent solution when the potential exists for wastewater reclamation. It further states that discharges to ephemeral streams or to streams that have limited dilution capacity will not be considered a permanent solution unless it is accomplished in such a manner as to safeguard the public health and prevent nuisances, and the water is of such quality that it benefits stream flow augmentation. In a memorandum dated 16 June 1995, the Discharger evaluated four potential methods to dispose of its wastewater and determined that a package treatment plant was the most feasible means to treat its wastewater. In a memorandum dated 21 August 1995, Regional Board staff agreed with the Discharger’s assessment that a package treatment plant was the best alternative to treat the wastewater and that it posed a minimal risk of affecting beneficial uses of surface waters downstream of the facility.

PRIORITY POLLUTANTS

Federal Regulations contained in 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. USEPA adopted the National Toxics Rule (NTR) on 5 February 1993 and the California Toxics Rule (CTR) on 18 May 2000. The NTR and CTR contain water quality standards applicable to this discharge. The State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the Implementation Policy), which contains guidance on implementation of the NTR and CTR. A list of priority pollutants is contained in the Implementation Policy.

In February 2001, the Regional Board required the Discharger to submit Priority Pollutant Monitoring Data to comply with the Implementation Policy. The Discharger conducted the monitoring and submitted results on 9 September 2002 and 18 February 2003. Regional Board staff analyzed the

priority pollutant data and found that copper, lead, silver, and zinc have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective. A summary of the reasonable potential analysis is shown in Attachment C of this Order.

BASIS FOR PERMIT CONDITIONS

Discharge Prohibitions

Prohibition A.1 is from Standard Provision A.13. Prohibition A.2 is from DHS guidelines dated 8 April 1999. Prohibition A.3 establishes that wastewater transport from the spray field via runoff caused by a precipitation event is unacceptable. Prohibition A.4 requires that wastewater only be discharged in a manner consistent with this Order. Wastes covered by Prohibition A.5 would necessitate more stringent discharge requirements and therefore are prohibited.

Effluent Limitations

This Order includes the same effluent limitations for most constituents as specified in Order No. 96-262 and provides for no increase in the volume or mass of pollutants discharged. In addition, effluent limits have been established for copper, lead, silver, and zinc, which were not included in Order No. 96-262, the basis of which is described elsewhere.

Dilution:

As previously described, discharge to Bear Creek is limited to times when creek flows provide a dilution ratio of creek water to wastewater of 100:1. However, the spray field is on a steep slope directly above Bear Creek and lacks a containment system. Discharges to the spray field resulting in runoff to Bear Creek during conditions of virtually no flow are a distinct possibility. For this reason, the limits for priority pollutant metals in this Order have been established without considering a credit for any dilution.

BOD₅, Total Suspended Solids, and Settleable Solids

The effluent limitations for these constituents are from performance based standards for tertiary treated effluent and are carried over from the previous permit. The Discharger has been able to consistently meet these effluent limitations with the sequential batch reactor and filtration treatment system.

EC

The Basin Plan establishes in its *Water Quality Objectives for Inland Surface Waters* that the maximum allowable EC level in the Tule River reach above Lake Success is 450 µmhos/cm. The Basin Plan also states that effluent EC shall not exceed the quality of source water plus 500 µmhos/cm, or 1000 µmhos/cm, whichever is more stringent. Discharge is only allowed when creek flows provide a dilution ratio of creek water to wastewater of 100:1, which reduces the impact the discharge will have on surface

waters. However, the Regional Board is not obligated to allocate all potential assimilative capacity and may establish a more stringent limit. An effluent EC limit of 250 $\mu\text{mhos/cm}$ over source or 400 $\mu\text{mhos/cm}$ maximum was established in the previous permit. The Discharger has been able to consistently meet this effluent limit, so it is retained in this Order.

Chlorine Residual

The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. USEPA has developed Ambient Water Quality criteria for the protection of freshwater aquatic life. The recommended maximum one-hour average and four-day concentrations for chlorine are 0.019 mg/L and 0.011 mg/L respectively. Effluent limitations were derived by using the procedure outlined in the USEPA *Technical Support Document for Water Quality-Based Toxics Control, March 1991* (TSD). The calculation of the effluent limits is shown in Attachment E of this Order. The USEPA criteria are used as the Waste Load Allocation (WLA). Previous monitoring yielded non-detect results for chlorine residual. Therefore, it was not possible to calculate a Coefficient of Variation (CV) for the concentration of residual chlorine in the effluent. Section 5.5.2 of the TSD states, in part, that, "EPA recommends a value of 0.6 as a default CV, if the regulatory authority does not have more accurate information on the CV for the pollutant or pollutant parameter." On this basis, a CV value of 0.6 was used in the effluent limit calculations. This Order requires continuous chlorine residual monitoring. To calculate the average monthly limit, it was approximated that 30 of samples will be collected per month. This is the closest approximation to continuous monitoring available in Table 5-2 and provides for some variation in concentration of residual chlorine in the effluent.

Total Coliform Organisms

The California Department of Health Services (DHS) developed guidelines in 1992 regarding the discharge of treated municipal wastewater to agricultural drains or streams where the water may be used or diverted for beneficial uses. These recommendations are reiterated in a letter from DHS to the Regional Board, dated 8 April 1999. DHS recommends that the effluent levels of total coliform organisms not exceed 2.2 MPN/100 mL as a seven-day median or 23 MPN/100 mL as a daily maximum where relatively undiluted wastewater may be discharged to creeks having a designated beneficial use of water contact recreation. For streams with a designated beneficial use of municipal supply and a 20:1 to 100:1 ratio of stream flow to effluent flow, DHS recommends no discharge. Where other alternatives are not feasible, DHS recommends an adequately disinfected, oxidized, coagulated, and filtered wastewater, disinfected to a median of 2.2 MPN/100 mL total coliform organisms or less based on the last seven samples. For flow ratios greater than 100:1, DHS recommends disinfection to a median of 23 MPN/100 mL based on the last seven samples. The Regional Board concurred with DHS. Accordingly, the previous permit included effluent coliform limits based on the DHS recommendations. This permit continues these limits.

pH

Effluent limitations for pH in Order No. 96-262 were established based on the requirements in Title 40, Code of Federal Regulations, Part 133. This Order contains effluent pH limits of 6.5 to 8.3 based on the direct application of Basin Plan water quality objectives.

Metals

The freshwater aquatic life criteria for priority pollutant metals are hardness dependent and must be calculated depending upon the hardness of the receiving water. The Discharger collected two receiving water samples. One was collected on 10 July 2002 and the other on 23 December 2002. The hardness of the July receiving water sample was 8.1 mg/L as CaCO₃ and the hardness of the December sample was 24.4 mg/L as CaCO₃. For purposes of calculating the freshwater aquatic criteria, the July hardness of 8.1 mg/L was used since it yielded the more stringent criteria for reasonable potential analyses. Due to the small volume of wastewater generated by the Discharger and the infrequency of direct discharge to Bear Creek, monitoring for priority pollutant metals is not required more than once per month in the Order. However, average monthly effluent limitations have been calculated in accordance with Federal regulations.

Copper

The maximum effluent concentration (MEC) of copper was 15.6 µg/L reported on 23 December 2002. The criterion continuous concentration (CCC) to protect aquatic life at 8.1 mg/L hardness is 1.1 µg/L copper, as shown in Attachment C of this Order. Since the MEC was greater than the lowest water quality criterion, copper was found to have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective and an effluent limit was established. Using the procedure in the Implementation Policy, a maximum daily effluent limitation (MDEL) of 1.30 µg/L and an average monthly effluent limitation (AMEL) of 0.65 µg/L are established for copper. The calculation of the MDEL and AMEL are shown in Attachment D of this Order.

Lead

The MEC of lead was 4.51 µg/L reported on 23 December 2002. The CCC to protect aquatic life at 8.1 mg/L hardness is 0.13 µg/L lead, as shown in Attachment C. Since the MEC was greater than the lowest water quality criterion, lead was found to have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective and an effluent limit was established. Using the procedure in the Implementation Policy, an MDEL of 0.21 µg/L and an AMEL of 0.11 µg/L were established for lead. The calculation of the MDEL and AMEL are shown in Attachment D of this Order.

Silver

The MEC of silver was 0.054 µg/L reported on 10 July 2002. The criterion maximum concentration (CMC) to protect aquatic life at 8.1 mg/L hardness is 0.054 µg/L silver, as shown in Attachment C. According to the Implementation Policy, if the MEC is greater than or equal to the lowest criterion, then there is reasonable potential for the pollutant to cause or contribute to an in-stream excursion above a water quality objective. Therefore, silver was found to have reasonable potential and an effluent limit was established. Using the procedure in the Implementation Policy, an MDEL of 0.054 µg/L and an AMEL of 0.027 µg/L were established for silver. The calculation of the MDEL and AMEL are shown in Attachment D of this Order.

Zinc

The MEC of zinc was 208 µg/L reported on 23 December 2002. The CCC to protect aquatic life at 8.1 mg/L hardness is 14 µg/L zinc, as shown in Attachment C. Since the MEC was greater than the lowest water quality criterion, zinc was found to have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective and an effluent limit was established. Using the procedure in the Implementation Policy, an MDEL of 13.98 µg/L and an AMEL of 6.97 were established for zinc. The calculation of the MDEL and AMEL are shown in Attachment D of this Order.

Other Metals and Inorganics

Several other metals were detected in the effluent but found not to have reasonable potential. Antimony, arsenic, cadmium, chromium (III), mercury, nickel, and selenium were detected in the effluent; however, the MEC for each of these constituents was below the lowest respective water quality criterion, as shown in Attachment C of this Order. Therefore, these constituents were found not to have reasonable potential to cause or contribute to an in-stream excursion above a water quality objective and effluent limits were not established.

Chloroform

Chloroform was the only organic constituent detected in the effluent. The MEC for chloroform was below the lowest water quality criterion for chloroform. The lowest water quality criterion for chloroform was the primary MCL implemented by the Basin Plan of 100 µg/L, as shown in Attachment C of this Order. Therefore, chloroform was found not to have reasonable potential to cause or contribute to an in-stream excursion above a water quality objective and an effluent limit was not established.

Other Volatile and Semi-Volatile Organics

All organic constituents, other than chloroform, were non-detect in the effluent. However, the minimum detection levels for several volatile and semi-volatile organic constituents were higher than the lowest water quality criteria for those respective constituents. This creates the possibility that the priority pollutant is present in the effluent at a concentration that could cause or contribute to an in-stream excursion above a water quality objective even though it remains undetected. Appendix 4 of the Implementation Policy lists minimum levels (MLs) for reporting and compliance determination purposes for each priority pollutant. For six constituents, the Discharger did not achieve the lowest ML listed in the Implementation Policy, and the minimum detection level was higher than the lowest water quality criteria, as shown in Attachment C. These constituents were acrylonitrile, pentachlorophenol, benzidine, benzo(ghi)perylene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Due to the volume and type of discharge, and the inconclusiveness of the data, effluent limits were not established for these constituents; however, the Discharger is required to monitor the effluent once prior to the expiration of the Order for volatile and semi-volatile organic priority pollutants to determine their presence or absence in the effluent more conclusively.

Flow Limitations:

The monthly average flow limits are based on the limits established by Order No. 96-262. Monthly average flows found in historic data have remained within the previously established limits and indicate no threat of future exceedance.

Toxicity Limitations:

The Basin Plan requires that all water be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This Order contains an acute toxicity effluent limitation which states, “Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

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

The monitoring and reporting program requires annual monitoring for acute toxicity and chronic toxicity. Chronic toxicity testing is required to determine whether chemicals in the wastewater are toxic. Results of the toxicity reduction evaluation, if one is required, will then allow Regional Board staff to establish effluent limitations for pollutants that may cause or may have reasonable potential to cause toxicity in the wastewater.

Groundwater Limitations:

The Basin Plan provides that all ground waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use and management of water resources. Antidegradation provisions of Resolution 68-16 state that changes in water quality may be allowed only if the change is consistent with maximum benefit to the people of the State. The discharge contains higher concentrations of dissolved matter than underlying groundwater. Assimilative capacity in the underlying soil and groundwater inflow should minimize degradation of groundwater from incidental infiltration of waste constituents. Incidental degradation is considered consistent with the maximum benefit to the people of the State.

Interim Effluent Limitations:

Interim effluent limitations for priority pollutant metals are derived by using the maximum effluent concentrations (MEC) already observed and assuming that this is level of treatment that WWTF is currently able to provide for each of the constituents. In accordance with the Implementation Policy, the MEC is used as the interim effluent limitation for each metal constituent. Monthly average limitations for each of the metals are derived by dividing the MEC by an MDEL/AMEL multiplier found in Table 2 of the Implementation Policy. The Discharger has five years from the date of adoption of this Order to achieve compliance with the permanent effluent limitations for metals, as allowed by the Implementation Policy. A time schedule is included in this Order that requires the Discharger to evaluate whether the WWTF will be able to meet the final effluent limits as currently operated. The Discharger is required to propose a corrective action plan detailing possible operational and facility changes that will be made if the WWTF cannot meet final effluent limitations as currently operated. The time schedule requires the Discharger to submit quarterly progress reports and achieve full compliance with final effluent limits within five years following adoption of this Order.

Monitoring:

The previous Order required the Discharger to monitor for total nitrogen and total phosphorus when discharging directly to Bear Creek (Discharge 002) in order to evaluate impacts of the discharge on the creek due to biostimulation. Since direct discharge to Bear Creek from Discharge 002 did not occur during the term of the last permit, this requirement remains in place for the Order.

Effluent monitoring requirements are divided between discharge to the spray field (Discharge 001) and discharge to Bear Creek (Discharge 002). More stringent monitoring requirements are imposed on Discharge 002 because it is a direct discharge to the surface water and, therefore, represents a greater threat to water quality. Monitoring is also required for Discharge 001 since the discharge to the spray fields is not completely contained and there is possibility of indirect discharge to the surface water.

This Order requires continuous flow metering and chlorine residual monitoring as well as composite sampling of certain constituents. These changes from the previous Order are being required as means to

provide effluent samples that more accurately represent what is actually being discharged from the WWTF. A time schedule is included in this Order to implement these changes in the current monitoring and reporting procedures.

ANTIDEGRADATION AND CEQA CONSIDERATIONS

The permitted discharge is consistent with the Antidegradation provisions of State Water Resources Control Board Resolution 68-16. This Order provides for no increase in the volume and mass of pollutants discharged from what the Regional Board previously approved. Effluent limits are specified such that any direct or indirect discharge will have insignificant impacts on the quality of water in Bear Creek. Direct discharge of treated wastewater to Bear Creek is permitted only when creek water dilutes wastewater by at least 100:1. Based on the information available thus far on the discharge and discharge area, the discharge of treated wastewater to Bear Creek or the spray field described in this Order will not adversely affect the water quality of the underlying aquifer.

The Department of Forestry certified a Negative Declaration on 7 September 1996 for the proposed discharge to Bear Creek, as per the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.), and the State CEQA Guidelines.

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