

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0011

NPDES NO. CA0083755

WASTE DISCHARGE REQUIREMENTS
FOR

CITY OF TAFT
TAFT FEDERAL PRISON WASTEWATER TREATMENT FACILITY
KERN COUNTY

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

1. The City of Taft (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated 1 August 2000, and applied to renew a National Pollutant Discharge Elimination System (NPDES) permit to discharge waste to Sandy Creek.
2. The Discharger owns and operates a wastewater treatment and disposal facility (WWTF) with a design capacity of 0.46 million gallons per day (mgd) that provides sewerage service for about 2400 inmates and employees at the Taft Federal Prison (hereafter Prison). The Discharger also owns the ¼-mile trunk line that transports the Prison wastewater from the Prison to the WWTF. Both the Prison and the WWTF are in Midway Valley on the north side of Cadet Road about 1½ miles east of Highway 33 in Section 27, T32S, R24E, MDB&M, in Kern County, as shown on Attachment A, a part of this Order.
3. Waste Discharge Requirements (WDRs) Order No. 96-035, a NPDES permit adopted by the Regional Board on 23 February 1996, regulated the WWTF's disinfected secondary treated discharge to Sandy Creek, a water of the United States. Order No. 96-035, which was to expire on 22 February 2001, was administratively extended by Regional Board letters dated 23 January 2001 and 9 May 2002.
4. The secondary treatment system consists of headworks with bar screen and flow meter, activated sludge oxidation ditch, secondary clarifier, chlorine contact chamber, an unlined 10.4 million-gallon-capacity emergency effluent storage pond, and eight unlined sludge drying beds. The WWTF flow diagram is depicted in Attachment B, a part of this Order. The treated municipal wastewater is discharged to Sandy Creek, a water of the United States, at latitude 35° 07' 36" and longitude 119° 22' 31."
5. The Discharger's intended method of sludge disposal is to transport and dispose of it off-site. However, it has not disposed of dried sludge since beginning operation of the WWTF in 1997; instead it has stockpiled the accumulated dried sludge in an unlined area on-site. The dried sludge stockpile is currently about 250 tons (dry weight) in quantity and is of poor quality due to large amounts of trash. Title 40, Code of Federal Regulations, Part 503 (40 CFR 503), current federal regulations on use and disposal of sewage sludge (biosolids) on land, regards reasonable storage on land as less than two years. By 19 June 2002 letter, Regional Board staff requested the Discharger

to dispose of the dried sludge stockpiled on site. To date, the Discharger still has not disposed of the dried sludge. The stored sludge is residual sludge within the meaning of Finding No. 34.

6. The RWD and Discharger’s self-monitoring reports (SMRs) from 2002 characterize the discharge as follows:

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Influent</u>	<u>Effluent</u>
Monthly Average Daily Flow	mgd		0.17
Settleable Solids	mL/L	12	<0.1
BOD ₅ ¹	mg/L	303	3
TSS ²	mg/L	231	3
EC ³	µmhos/cm	579	521
Chlorine Residual	mg/L		2.6
<u>Total Coliform Organisms</u>	<u>MPN⁴ /100 mL</u>		<2

¹ 5-day, 20°C biochemical oxygen demand

² Total suspended solids

³ Conductivity at 25°C

⁴ Most probable number

7. The Prison obtains its water supply from West Kern Water District, which imports it from the Kern River Hydrologic Basin on the western edge of the Kern River Alluvial Fan. The water is of high quality with EC of 309 µmhos/cm, total dissolved solids (TDS) of 210 mg/L, sodium of 39 mg/L, chloride of 24 mg/L, and nitrate (as N) of 2 mg/L (West Kern Water District *2001 Consumer Confidence Report on Water Quality*). According to this data above and in Finding No. 6, the WWTF discharge has an EC incremental increase of about 212 µmhos/cm, well below Order No. 96-035’s limitation of an incremental increase of 500 µmhos/cm.
8. Order No. 96-035 required the Discharger to enter into an agreement with the California Department of Water Resources (DWR) to maintain the area around the California Aqueduct’s siphon structure in Sandy Creek to prevent the creation of a wetland. The Discharger signed a maintenance agreement with DWR on 7 May 1996. The terms of the agreement are valid as long as the WWTF discharges into Sandy Creek.
9. Order No. 96-035 required the Discharger to implement legal authorities, programs or measures to prevent incompatible wastes, or wastes that may inhibit or interrupt, or flow through the treatment system, from entering the sewer system in accordance with 40 CFR 403. From January 1998 through March 2000, the WWTF experienced nine upset occurrences totaling at least 263 days caused by grease and cleaning disinfectants. A Notice of Violation (NOV) dated 3 March 2000 required the Discharger to implement a source control program to prevent upset or pass-through of the WWTF treatment process. The Discharger indicated by letter dated 28 June 2002 that it has initiated development, but has not completed implementation, of such measures. The Discharger still needs to complete the implementation of the required source control measures.

10. The *Water Quality Control Plan for the Tulare Lake, Second Edition* (hereafter Basin Plan) 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 incorporates by reference plans and policies of the State Water Resources Control Board (State Board). These requirements implement the Basin Plan.
11. Water in Tulare Lake Basin is in short supply, requiring importation of surface waters from other parts of the State. The Basin Plan establishes that discharges to surface water will not be considered a permanent solution when: (a) the potential exists for wastewater reclamation or (b) if to ephemeral streams or to streams that have limited dilution capacity, it is accomplished in such a manner as to safeguard the public health and prevent nuisances, and the wastewater is of such a quality that it benefits stream flow augmentation.
12. Order No. 96-035 required the Discharger to evaluate reclamation opportunities. Regional Board records show that the Discharger made genuine attempts to recycle the effluent by advertising and negotiating with local farmers to irrigate farmland using the effluent. The efforts resulted in only one farmer proposing to use the effluent. The farmer's proposal would have required the Discharger to construct a pipe line from the WWTF to the farmer's property on the east side of the California Aqueduct, construct a 30-day storage pond on the farmer's property, maintain the pipeline and storage pond, and pay the farmer \$26.00 per acre-foot to take the effluent. The Discharger determined that recycling its relatively small volume of effluent was not economically feasible and notified the Regional Board by letter dated 3 May 1996. The Regional Board agrees that recycling at this site at the present time is impractical.
13. The United States Environmental Protection Agency (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 State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan), which contains guidance on implementation of the *National Toxics Rule* and the *California Toxics Rule*.
14. The Federal Clean Water Act goals and policy as reflected in Title 33, United States Code, Chapter 26, Subchapter I, Section 1251(a), states in part:
 - “(2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;
 - (3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited.”

RECEIVING WATER BENEFICIAL USES

15. The Basin Plan on page II-1 states: “Protection and enhancement of beneficial uses of water against quality degradation is a basic requirement of water quality planning under the Porter-Cologne Water

Quality Control Act. In setting water quality objectives, the Regional Board must consider past, present, and probable future beneficial uses of water.” Also, with respect to disposal of wastewaters the Basin Plan states that “...use of waters for disposal of wastewaters is not included as a beneficial use.” The Basin Plan at page II-2 states: “The existing and probable beneficial uses which currently apply to surface waters are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams. In some cases a beneficial use may not apply to the entire body of water. In these cases the Regional Board’s judgment will be applied. It should be noted that it is impractical to list every surface water body in the Region. For unidentified water bodies, the beneficial uses will be evaluated on a case-by-case basis.”

16. The WWTF and discharge area are in an arid climate characterized by hot dry summers and mild winters. Average annual precipitation and evapotranspiration in the discharge area are 6 inches and 51.1 inches, respectively. Land uses, which affect the beneficial uses of Sandy Creek in the WWTF vicinity are primarily extractive industrial (oil fields) and agricultural. Other land uses include undeveloped areas with native vegetation and institutional use (the Prison about one-quarter mile west of the WWTF) according to DWR land use data published in 1998. The City of Taft is about 4¼ miles to the northwest. Crops grown within one-half mile of Sandy Creek from the discharge point and its terminus include a variety of field crops, including cotton, onions and garlic. Most crops in this area are sprinkler irrigated because the topography is unsuitable for flood irrigation.
17. The WWTF and discharge area lie in the Taft Hydrological Area (HA 557.20) of the South Valley Floor Hydrological Unit (HU 557) as shown in the interagency hydrologic map prepared by the California Department of Water Resources (DWR) in August 1986. Thus Sandy Creek is a Valley Floor Water. The Basin Plan does not specifically identify beneficial uses for Sandy Creek but does designate beneficial uses for Valley Floor Waters.

The Basin Plan designates the beneficial uses of Valley Floor Waters, and thus Sandy Creek, as agricultural supply (AGR); industrial service supply (IND); industrial process supply (PRO); water contact recreation (REC-1); noncontact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); rare, threatened or endangered species (RARE); and groundwater recharge (GWR).

In reviewing whether the existing and/or potential uses of Valley Floor Waters occur in Sandy Creek, the following were considered:

a. Agricultural Supply (AGR)

Sandy Creek, an ephemeral stream that is dry except during or immediately after storm events, is not a practical source of water for agricultural supply, especially given the consistent supply of imported surface water. The WWTF discharge is a relatively small induced flow, which quickly infiltrates into the streambed along the one-mile wetted reach it creates in Sandy Creek. It does not reach areas where irrigation withdrawals would occur if there were a demand.

b. Industrial Supplies (IND and PRO)

As Sandy Creek is dry except during or immediately after storm events, it is not a viable source of water for industrial supplies. Under normal conditions, the small WWTF discharge flows for only about a mile before it completely infiltrates into the streambed. For industries that require a constant and reliable water volume and consider water quality of secondary concern, unless the volume requirement is small and withdrawals are made near the WWTF discharge point, the small available volume and the withdrawal location restrictions make Sandy Creek an undesirable source of water. For industries where water quality is of significant concern, the WWTF discharge is a relatively poor source of water compared to the abundant imported potable water supply available. These characteristics of Sandy Creek make it an undesirable and unlikely source for industrial water supplies.

c. Water Contact and Noncontact Water Recreation (REC-1 and REC-2)

There is public access to Sandy Creek and exclusion of the public is unrealistic. However, the discharge point is four miles downstream of the City of Taft and no housing is nearby. Sandy Creek downstream of the discharge point is surrounded by oil fields and privately owned farms. Because of the small volume of the discharge, the wetted section of Sandy Creek is small and is not near any facility that people frequent. It is too far from Taft for children to walk to and people driving to that area are more likely to go to the California Aqueduct for water related recreation. In brief, the reach of Sandy Creek affected by the discharge is remote and public contact in any manner (i.e., REC-1 and REC-2) is infrequent.

d. Preservation and Enhancement of Fish, Wildlife and Other Aquatic Resources (WARM, WILD and RARE)

The Basin Plan (Table II-1) designates Valley Floor Waters as a warm freshwater habitat, wildlife habitat, and habitat for rare, threatened or endangered species. Since Sandy Creek is dry except during or immediately after storm events, it will not support a warm freshwater fishery. Typical desert vegetation grows in the streambed but wetland type vegetation grows where the discharge sustains flows. The discharge normally does not reach the siphon structure area. Staff observed no fish during an inspection in June 2002 and there is no information to indicate that fish have been planted in this water. Thus, the wetted section of Sandy Creek probably supports WARM, WILD and RARE beneficial uses but is not currently, and is unlikely to become, a warm freshwater fishery.

e. Groundwater Recharge (GWR)

Water from Sandy Creek will percolate to groundwater, which is 120 to 160 feet below ground surface. Since Sandy Creek is dry except during and immediately after storm events, the WWTF discharge is the only flow in the stream most of the time and, under normal conditions, completely infiltrates into the streambed. Because of the high salinity described in Finding No. 31, the groundwater is not used for municipal and domestic supply, industrial supplies, or

agricultural supply. Groundwater is unlikely to be extracted for any use now or in the foreseeable future.

The flow conditions and habitat of Sandy Creek, as depicted above, indicate that not all beneficial uses designated for Valley Floor Waters are probable for Sandy Creek. Probable and actual beneficial uses for Sandy Creek are likely limited to warm freshwater habitat, wildlife habitat, preservation of rare and endangered species, and water contact and noncontact water recreation. However, designated beneficial uses must be protected from impacts of the discharge. Exceptions would necessitate documentation sufficient to support a formal Basin Plan amendment to dedesignate certain uses and establish beneficial uses specific to Sandy Creek.

18. Based on available information and the Discharger's application, Sandy Creek is an ephemeral stream that is effluent dominated. The ephemeral nature means that no consistent receiving water dilution is available to buffer pollutants and help protect the designated beneficial uses. The discharge itself, consequently, cannot contain pollutants in concentrations that cause harm to aquatic life and other beneficial uses.

EFFLUENT LIMITATIONS AND REASONABLE POTENTIAL

19. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA amendments thereto are applicable to the discharge.
20. 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. This Order contains provisions that:
 - a. Require the Discharger to provide effluent and receiving stream monitoring information to determine whether the levels of NTR and CTR constituents, USEPA Priority Pollutants, and dioxin in the discharge have the reasonable potential to cause or contribute to an in-stream excursion above a water quality standard, including Basin Plan numeric and narrative objectives and NTR and CTR criteria;
 - b. If the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard, require the Discharger to submit information to calculate effluent limitations for those constituents; and
 - c. Allow the Regional Board to reopen this Order and include effluent limitations for those constituents.
21. On 27 February 2001, the Executive Officer issued a letter, in conformance with California Water Code Section 13267, requiring the Discharger to submit effluent and receiving stream monitoring data for priority pollutants, including dioxins. The letter required the Discharger to complete the

two sampling events by March 2002 and to submit the test results by the first day of the second month following sampling but no later than 1 May 2002, except for the dioxin test results. By letter dated 28 June 2002, the Discharger indicated it would conduct the first sampling in July 2002 and the second sampling in October or November 2002. The Discharger submitted the July 2002 priority pollutant sampling results on 3 September 2002 and the August 2002 dioxin sampling results on 1 April 2003 but is delinquent in submitting the second set of priority pollutant monitoring data. The second round of dioxin monitoring data is due 1 March 2004. A Notice of Violation (NOV) dated 3 April 2003 notified the Discharger to submit the delinquent monitoring data or, if unable to immediately submit the data, to indicate in writing how and when it intended to comply with this requirement. The Discharger ignored the NOV. This permit reiterates the requirement to sample for the NTR, CTR, and additional constituents specified in the Section 13267 letter. Enforcement action can be initiated for the Discharger's failure to submit the pollutant data required to ensure consistency with the NTR and CTR, including an assessment of administrative civil liability calculated from the original dated specified by the Executive Officer in the Section 13267 letter. Unless the ultimatum set forth in this permit is fully satisfied, such enforcement will certainly follow.

22. The July 2002 sample priority pollutant test results indicated that six pollutants were detected above the practical quantitation levels (PQLs). The remaining pollutants were reported as "less than PQL." The August 2002 sample dioxin test results likewise were reported as less than PQL. The test results and the lowest applicable water quality criteria (WQC) of the six pollutants detected above the PQL are as follows:

<u>Priority Pollutant</u>	<u>Test Results (µg/mL)</u>	<u>Lowest WQC (µg/mL)</u>	<u>Applicable WQC</u>
Arsenic	6.1	150	CTR ¹
Selenium	1.8	5	CTR ¹
Bromodichloromethane	13	46	CTR ¹
Chloroform	49	470	NAWQ ²
Chloromethane	0.54	11,000	NAWQ ²
<u>Dibromochloromethane</u>	1.7	34	CTR ¹

1. California Toxics Rule
 2. National Ambient Water Quality

The data indicates the discharge has no reasonable potential to cause or contribute to an in-stream excursion above a water quality standard. However, the data is incomplete as the Discharger failed to submit all the data required by the Section 13267 letter and is insufficient to make an official final determination. This Order allows the Discharger more time to submit the required data. The reasonable potential analysis will be conducted after the Discharger submits the monitoring data. If the reasonable potential analysis determines that there is reasonable potential for a pollutant, or

pollutants, to cause or contribute to an in-stream excursion above a water quality standard, this Order may be reopened and an effluent limitation included for the subject pollutant(s) as indicated in Finding No. 20.

23. The Basin Plan prohibits the discharge of toxic materials in toxic concentrations and includes a water quality objective that requires all surface waters be maintained free of toxic substances in toxic concentrations. Chlorine can cause toxicity to aquatic organisms when discharged to surface waters. Untreated domestic wastewater contains ammonia. Wastewater treatment plants commonly use nitrification, a biological process that converts ammonia to nitrate, to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters.
24. USEPA recommends, in its *Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life*, a maximum chlorine concentration (1-hour average) of 0.019 mg/L and a continuous chlorine concentration (4-day average) of 0.011 mg/L. The use of chlorine as a disinfectant presents a reasonable potential that it could be discharged in toxic concentrations. The Discharger uses chlorine for disinfection of the effluent waste stream and is not presently required to, and does not, dechlorinate the effluent before discharging to Sandy Creek. The effluent chlorine residual in 2002 had an average concentration of 2.6 mg/L (see Finding No. 6). This Order includes effluent limitations for chlorine to protect receiving water aquatic life beneficial uses. The effluent limitations are water quality based limitations derived by using the procedure outlined in USEPA's *Technical Support Document for Water Quality Based Toxics Control (TSD)*. No dilution was considered (see Finding No. 18).
25. As Sandy Creek will support warm freshwater aquatic species (see Finding No. 17), an ammonia effluent limit may be necessary to protect non-fish aquatic life. USEPA's *Ambient Water Quality Criteria for Ammonia* reflects ammonia concentrations protective of fish species as ammonia is generally more toxic to wild fish than to other aquatic species. While ammonia is generally more acutely toxic to wild fish than to other aquatic species, this does not appear to be true for chronic toxicity. USEPA's ammonia criteria document identifies two invertebrates, the amphipod *Hyaella* and fingernail clam *Musculium*, as having two of the four most sensitive genus mean chronic values used to quantify the chronic toxicity criterion. It is not known at present whether Sandy Creek has or could support the two invertebrates. USEPA's acute and chronic ammonia toxicity criteria for wild fish may adequately protect aquatic life in Sandy Creek. Information is presently insufficient to find that the Prison's discharge has reasonable potential to cause ammonia toxicity to aquatic life in Sandy Creek. It is appropriate that the Discharger be required to study the impacts of ammonia on the wetted section of Sandy Creek to determine whether reasonable potential exists and, if so, to develop and recommend ammonia effluent limitations that are adequately protective of Sandy Creek's warm freshwater habitat. A time schedule for the Discharger to complete this requirement is appropriate and specified herein.
26. The Basin Plan requires that no discharge of toxic materials in toxic concentrations occur to Sandy Creek. The Discharger must ensure that specific aquatic species meet specified survival rates using USEPA test methods for estimating the toxicity of the effluent to freshwater organisms as specified herein.

27. The 1988 Memorandum of Agreement (MOA) between California Department of Health Services (DHS) and the State Board on the use of recycled water establishes basic principles relative to the agencies and the regional boards. In addition, the MOA allocates primary areas of responsibility and authority between these agencies, and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to the use of recycled water in California.
28. The DHS's *Uniform Guidelines for Wastewater Disinfection* recommends that when discharge is to ephemeral streams with limited access and little or no natural flow during all or part of the year, the effluent have a median coliform bacteria most probable number (MPN) not exceeding 23/100 mL based on the last seven samples for which analyses have been completed and that the maximum coliform MPN not exceed 20 times that of the median. The guidelines also recommend that when a median coliform MPN of 23/100 mL is required, bacteriological samples should be collected at least twice per week. Order No. 96-035 required that the daily maximum MPN not exceed 240/100 mL.
29. The circumstances of Sandy Creek described in Finding No. 17 reflect the stream conditions for the DHS recommendations described in Finding No. 28. Although public contact with the discharge is unlikely, it is appropriate that the effluent meet the coliform limitations determined by DHS to ensure adequate public health protection, as well as conform with the anti-backsliding provisions of 40 CFR 122.44(l). This Order carries over the total coliform limitations of the previous permit.

GROUNDWATER

30. Basin Plan water quality objectives to protect the beneficial uses of groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity of groundwater, and taste and odor. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, or animals. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that groundwaters do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.
31. The Basin Plan designates the beneficial uses of groundwater where the WWTF is located, Detailed Analysis Unit (DAU) No. 260 of the Kern County Basin, as municipal and domestic supply and industrial service supply. Kern County Water Agency (KCWA), *Water Supply Report 1997*, indicates all groundwater near the WWTF and the Sandy Creek discharge point is of poor quality. A Kennedy Jenks 1992 study *Hydrological Characterization Report, Midway Valley Study Area* states that the upper aquifer is of poor water quality in the vicinity of the site and that while the groundwater quality improves toward the east, minimal flow occurs between Midway Valley and the San Joaquin Valley aquifer to the east. Due to the poor quality of the groundwater, West Kern

Water District imports and supplies water in the area except for agricultural irrigation, which is imported and supplied by Wheeler Ridge – Maricopa Water Storage District.

32. State 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 quality 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 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.
33. Domestic wastewater contains constituents such as total dissolved solids (TDS), specific conductivity, pathogens, nitrates, organics, and oxygen demanding substances (BOD). Given the poor groundwater quality, the effluent and sludge drying bed leachate are not expected to degrade it or affect its existing or future beneficial uses. Therefore, the discharge, and the treatment and storage facilities associated with the discharge, is consistent with Resolution 68-16.
34. 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, California Code of Regulations (CCR), Section 20005 et seq. (hereafter Title 27). The exemption, pursuant to Title 27 CCR Section 20090(a), is based on the following:
 - a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The waste discharge requirements are consistent with water quality objectives; and
 - c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

GENERAL

35. The USEPA and this Regional Board have classified this discharge as a minor discharge.
36. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) in accordance with CWC Section 13389.
37. Federal Emergency Management Agency maps indicate the WWTF is not within a 100-year floodplain.
38. The Discharger is not required to obtain coverage under a NPDES general industrial storm water permit because storm water runoff from the WWTF property remains on site and does not discharge to a water of the United States.

39. This Order serves 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.

40. 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.

41. The monitoring and reporting program required by this Order and the attached Monitoring and Reporting Program No. R5-2004-0011 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

42. 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.

43. All comments pertaining to the discharge were heard and considered in a public meeting.

44. All the above and the supplemental information and details in the attached Information Sheet and attachments A through B, which are incorporated by reference herein, were considered in establishing the conditions of discharge.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order No. 96-035 is rescinded and that, pursuant to CWC Sections 13263, 13267, 13377, and 13383, the City of Taft, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, and provisions of the CWA, and regulations and guidelines adopted thereunder, shall comply with the following at the above described WWTF:

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

A. Discharge Prohibitions

1. Discharge of wastes at a location or in a manner different from that described in Finding No. 4 is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited, except as allowed in Provision A.13. [See attached “Standard Provisions and Reporting Requirements for Waste Discharge requirements (NPDES)”].

B. Effluent Limitations

1. The monthly average daily dry weather discharge flow shall not exceed 0.46 mgd.
2. Effluent shall not exceed the following limitations:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u> ^{1, 8}	<u>Weekly Average</u> ⁸	<u>Daily Maximum</u>
Settleable Solids	ml/L	0.1	-	0.5
BOD ₅ ²	mg/L	30 ³	45 ³	90 ³
	lbs/day	115 ⁴	173 ⁴	345 ⁴
TSS ⁵	mg/L	30 ³	45 ³	90 ³
	lbs/day	115 ⁴	173 ⁴	345 ⁴
Total Chlorine	mg/L	0.01 ⁶	-	0.02 ^{6, 7}
Residual	lbs/day	0.038 ⁴	-	0.077 ⁴

¹ Average value for all samples collected within a calendar month.

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

³ To be ascertained by 24-hr composite.

⁴ Based on permitted discharge of 0.46 mgd.

⁵ Total suspended solids.

⁶ Effective on date indicated in Provision H.10 time schedule.

⁷ This effluent limit is below the limit of detection in standard test procedures listed for chlorine residual in 40 CFR Part 136, Table IB. Continuous on-line monitoring system(s) to measure chlorine concentration in the effluent must have a minimum level of 0.02 mg/L or lower or, if it is higher than 0.02 mg/L, continuously report “nondetect” results to comply with this limitation. Otherwise, the Discharger dosage must prove that chlorine residual exceedances are false positives. False positive chlorine residual exceedances shall not be counted as violations of this limitation.

⁸ Compliance with monthly average or weekly average limits shall be determined based on the single sample results if additional results for the limit period under review are not available.

3. The arithmetic mean of BOD₅ and of TSS in effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected

in the same manner at approximately the same times during the same period (85 percent removal) or the value specified in Effluent Limitation B.2, whichever is more restrictive.

4. The median of the most probable number (MPN) of the last seven samples for effluent total coliform bacteria shall not exceed 23 per 100 mL. The maximum effluent MPN shall not exceed 240 per 100 mL.
5. The discharge shall not have a pH less than 6.5 or greater than 8.3.
6. The monthly average EC of the discharge shall not exceed the flow-weighted average EC of the source water plus 500 $\mu\text{mhos/cm}$, or a total of 1000 $\mu\text{mhos/cm}$, whichever is less. The flow-weighted average for the source water shall be the moving average for the most recent twelve months.
7. Survival of the aquatic organisms in the 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. General Discharge Specifications

1. The Discharger shall preclude public access to the waste treatment facilities through methods such as fences and signs, or other acceptable means.
2. Objectionable odors originating at the WWTF shall not be perceivable beyond the limits of the waste treatment areas at an intensity that creates or threatens to create nuisance conditions.
3. The emergency storage pond shall be managed to prevent breeding of mosquitoes.
4. The emergency storage pond, when used, shall have adequate freeboard to prevent overtopping, overflows, or levee failures.
5. The WWTF shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year frequency.
6. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of groundwater limitations.

D. Sludge Disposal Specifications

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

regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

1. Sludge and solid waste shall be removed from screens, sumps, 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 (not exceeding two years) 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, CCR, section 2005, et seq. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this requirement.
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 (State Board 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 40 CFR 503, which are subject to enforcement by the U.S. Environmental Protection Agency (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. Pretreatment Requirements

1. The Discharger shall implement the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:
 - a. Wastes that create a fire or explosion hazard in the treatment works;

- b. Wastes that will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;
 - c. Solid or viscous wastes in amounts that cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;
 - d. Any waste, including oxygen demanding pollutants (BOD₅, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;
 - e. Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the treatment works is designed to accommodate such heat;
 - f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants that result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and
 - h. Any trucked or hauled pollutants, except at points predesignated by the Discharger.
2. The Discharger shall implement the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges form other sources:
 - a. Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or
 - b. Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

F. 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 discharge, in combination with other sources, shall not cause the following in the receiving water (Sandy Creek):

1. Concentrations of dissolved oxygen to fall below 5.0 mg/L.
2. Oils, greases, waxes, or other materials that create nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

3. Chlorine to be detected in concentrations equal to or greater than 0.01 mg/L.
4. Pesticides or combinations of pesticides to be detected in concentrations that adversely affect beneficial uses.
5. Discoloration that creates nuisance or adversely affects beneficial uses.
6. Fungi, slimes, or other objectionable growths.
7. Biostimulatory substances that promote aquatic growths in concentrations that create nuisance or adversely affect beneficial uses.
8. Deposition of material that causes nuisance or adversely affects beneficial uses.
9. Radionuclides to be present in concentrations that exceed maximum contaminant levels 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.
10. Toxic substances to be present in the water column, sediments, or biota in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life, whether caused by a single substance or interactive effect of multiple substances.
11. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
12. Taste- or odor-producing substances to in concentrations that cause nuisance or otherwise adversely affect beneficial uses.
13. Floating material in amounts that cause nuisance or adversely affect beneficial uses.
14. Fecal coliform concentration in any 30-day period to exceed a geometric mean of 200 MPN/100 mL or cause more than 10 percent of total samples to exceed 400 MPN/100 mL.
15. Violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Regional Board pursuant to the CWA and regulations adopted thereunder.

G. Groundwater Limitations

Waste constituents from storage, treatment, or disposal components associated with the WWTF shall not cause groundwater within influence of the WWTF and discharge area(s) to contain waste constituents in concentrations greater than natural background quality.

H. Provisions

1. The Discharger shall comply with *Standard Provisions and Reporting Requirements for Waste Discharge Requirements (National Pollutant Discharge Elimination System)*, dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as Standard Provision(s).
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. R5-2004-0011, which is 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 Reporting Program for Discharger Self Monitoring Reports.
3. The Discharger shall keep a copy of this Order, including its attachments and Standard Provisions, at the WWTF for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. 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 Title 16, CCR, Sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
5. The Discharger shall use best practicable treatment and control, including proper operation and maintenance, to comply with terms of this Order.
6. The Discharger shall conduct the **chronic toxicity testing** specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation 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 reopened and a limitation based on that objective included.
7. By **3 May 2004**, the Discharger shall submit the results of the second sample for priority pollutants and dioxins as required by the Section 13267 letter dated 27 February 2001 described in Finding No. 21. This date does not extend or supercede the due dates in the Section 13267 letter for the purpose of calculating potential administrative civil liability

should assessment become necessary. If, after review of the test results of the two priority pollutant samples, it is determined that a pollutant in the discharge has reasonable potential to cause or contribute to an in-stream excursion above a water quality standard, this Order may be reopened and effluent limitations added for the subject pollutant(s).

8. By **1 June 2004**, the Discharger shall dispose of the accumulated residual sludge stored on site in accordance with the Sludge Disposal Specification D.4 at an appropriately permitted facility and shall provide written certification to the Executive Officer by **14 June 2004** that it has complied with this provision.
9. By **1 November 2004**, the Discharger shall submit a written report describing a work plan and implementation schedule describing measures the Discharger will implement to ensure consistent compliance with Pretreatment Requirements, particularly Pretreatment Requirement E.1.c.
10. **Dechlorination/Chlorine Residual Monitoring.** The Discharger shall submit a technical report describing a proposed method of dechlorinating the WWTF effluent and continuously monitoring the treated wastewater prior to discharge to Sandy Creek to ensure consistent compliance with the effluent chlorine residual limitations. The technical report shall include a work plan and implementation schedule. The work plan and implementation schedule are subject to Executive Officer (EO) approval. Provision H.4 requirements apply to this technical report. The following compliance schedule applies in implementing the work required for this Provision:

	<u>Task</u>	<u>Compliance Date</u>
a.	Submit technical report, including a work plan and time schedule for dechlorinating and continuously monitoring the WWTF effluent chlorine residual.	1 June 2004
b.	Begin to implement approved work plan.	60 days following EO written approval of task 9.a
c.	Submit written status report	1 March 2005
d.	Complete installation and testing of necessary equipment and accessories; begin continuous monitoring of chlorine residual in the dechlorinated effluent (Effective date of effluent limitation.)	2 January 2006
e.	Submit certification of completion.	16 January 2006

11. **Ammonia-N Evaluation.** The Discharger shall submit a work plan and implementation schedule describing a proposed study to evaluate ammonia-N toxicity to the various aquatic species currently supported by or potentially supported by Sandy Creek and the WWTF discharge thereto, and development of the ammonia-N effluent limitations. The Discharger shall submit a technical report describing the details and results of the technical evaluation and proposing the appropriate ammonia-N effluent limitations that are protective of Sandy Creek's beneficial uses. The technical report shall include the technical justifications for the proposed ammonia effluent limitations and supporting materials. The evaluation shall be conducted by experts with experience in such work and is subject to Executive Officer (EO) approval. Provision H.4 requirements apply to the work plan and technical report. The following compliance schedule applies to the work required in this Provision:

<u>Task</u>	<u>Compliance Date</u>
a. Submit work plan and implementing schedule	2 August 2004
b. Begin to implement EO approved work plan	60 days following EO written approval of task 11.a
c. Provide written status report	Every 180 days following task 11.b
d. Submit technical report	1 February 2006

12. This Order expires on **29 January 2009** and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.
13. The Discharger shall not allow pollutant-free wastewater to be discharged into the WWTF collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means stormwater (i.e., inflow), groundwater (i.e., infiltration), cooling waters, and condensates that are essentially free of pollutants.
14. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Board (Division of Water Rights).
15. If the Regional Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of a limit for the receiving waters, this Order may be enforced or, alternately, reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.
16. The Discharger must continue the agreement it made with the Department of Water Resources dated 7 May 1996 to maintain the area around the California Aqueduct siphon structure.

17. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Regional Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement actions, including Regional Board or court orders requiring corrective actions or imposing civil monetary liability, or in revision or rescission of this Order.
18. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with 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.
19. The Regional Board will review this Order periodically and will revise requirements when necessary.

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 30 January 2004.

Original signed by

THOMAS R. PINKOS, Executive Officer

Order Attachments:

Monitoring and Reporting Program

A. Vicinity Map

B. Flow Diagram

Information Sheet

Standard Provisions (1 March 1991 version) (separate attachment to Discharger only)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-0011

NPDES NO. CA0083755
FOR
CITY OF TAFT
TAFT FEDERAL PRISON WASTEWATER TREATMENT FACILITY
KERN COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code Sections 13267 and 13383 to monitor compliance with the requirements of this Order. The Discharger shall not implement any changes to this MRP unless and until the Regional Board's Executive Officer issues a revised MRP. Changes to sampling locations shall be established only with the written concurrence of the Regional Board staff. A description of the revised locations shall be submitted to the Regional Board and, following approval of the Executive Officer, shall be attached by the Discharger to its copy of this Order. All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with Standard Provisions, Provisions for Monitoring, unless otherwise noted in this MRP or revisions thereof.

Field test instruments (such as pH) may be used provided that:

1. the operator is trained in the proper use of the instrument;
2. the instruments are calibrated prior to each use (field calibration);
3. instruments are serviced and/or calibrated by the manufacturer (manufacturer's calibration) at the recommended frequency; and
4. field calibrations are reported in monitoring reports as described in the "Reporting" section of this MRP.

Sample collection, storage, and analyses shall be performed according to Title 40, Code of Federal Regulations, Part 136 (40 CFR 36) or other methods approved by the Executive Officer.

INFLUENT MONITORING

The Discharger shall collect influent samples at the headworks of the treatment facility as depicted in Attachment B prior to any treatment of waste. Time of a grab sample shall be recorded. Influent monitoring shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Maximum Daily Flow	mgd	Meter	Continuous
Average Daily Flow	mgd	Meter	Daily ¹
Monthly Average Daily Flow	mgd	Computed	Monthly
pH	pH units	Grab	Weekly
BOD ₅ ²	mg/L	24-hr Composite	Weekly
Monthly Average BOD ₅	mg/L	Calculated	Monthly

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
TSS ³	mg/L	24-hr Composite	Weekly
Monthly Average TSS	mg/L	Calculated	Monthly
Oil and Grease	mg/L	Grab	Monthly

¹ Sample frequencies referenced hereafter in this program as “Daily” shall not include weekends or holidays.

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

³ Total Suspended Solids.

EFFLUENT MONITORING

The Discharger shall collect effluent samples at a point in the system following treatment as depicted in Attachment B and before discharge to Sandy Creek. Effluent samples shall be representative of the volume and nature of the discharge. Time of collection of a grab sample shall be recorded. Effluent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> ¹
Settleable Solids	mL/L	Grab	Weekly
pH	pH Units	Grab	Weekly
Chlorine Residual	mg/L	Grab	Weekly
Chlorine Residual	mg/L	Meter ²	Continuously ²
EC ³	µmhos/cm	Grab	Weekly
Temperature	°F	Grab	Weekly ⁴
Ammonia (as N)	mg/L	24-hr Composite	Weekly ⁵
BOD ₅			
Concentration	mg/L	24-hr Composite	Weekly
Mass	lbs/day	Calculated	Weekly
Monthly Average	mg/L	Calculated	Monthly
Percent Removal	%	Calculated	Monthly
TSS			
Concentration	mg/L	24-hr Composite	Weekly
Mass	lbs/day	Calculated	Weekly
Monthly Average	mg/L	Calculated	Monthly
Percent Removal	%	Calculated	Monthly

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> ¹
Total Coliform Organisms	MPN/100 ml	Grab	2/Week ⁶
Oil and Grease	mg/L	Grab	Monthly
Acute Toxicity	% Survival	24-hr Composite	Semiannually ^{7, 8}
General Minerals ⁹	mg/L	Grab	Annually ¹⁰
Priority Pollutants/Dioxins ¹¹	As Required	Grab	Once ^{12, 13}

¹ If results of monitoring a pollutant appear to violate discharge specifications, but monitoring frequency is not sufficient to validate violation (e.g., the monthly mean for BOD₅), or indicate a violation and potential upset of the treatment process, the frequency of sampling shall be increased to confirm the magnitude and duration of violation, if any, and aid in identification and resolution of the problem.

² Effective on effective date indicated in Provision H.10 time schedule; supercedes weekly grab sampling requirement.

³ Conductivity at 25°C.

⁴ Concurrent with pH and ammonia monitoring; after three months, frequency shall be monthly.

⁵ Concurrent with pH and temperature monitoring; after three months, frequency shall be monthly.

⁶ On non-consecutive days.

⁷ In April and October.

⁸ Concurrent with ammonia monitoring. The test shall be a 96-hour static bioassay using fathead minnow (*Pimephales promelas*) following test procedures in the latest edition of *EPA-821-R-02-012 Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Fresh Water and Marine Organisms*. Should the test results indicate toxicity, the Discharger shall report to the Regional Board the results the next working day after the Discharger becomes aware of the results.

⁹ General minerals as referred to in this program shall include the constituents in the General Minerals Analyte List presented below.

¹⁰ October.

¹¹ Concurrently sample for pH and hardness.

¹² Sampling required by Provision H.7 shall follow reporting requirements therein.

¹³ Once in the fourth year of this Order.

General Minerals Analyte List

Alkalinity (as CaCO ₃)	Chloride	Nitrate
Aluminum	Hardness (as CaCO ₃)	Phosphate
Bicarbonate (as CaCO ₃)	Iron	Potassium
Boron	Magnesium	Sodium
Calcium	Manganese	Sulfate
<u>Carbonate (as CaCO₃)</u>		

Notes:

1. With the exception of effluent samples, samples placed in an acid-preserved bottle must first be filtered through a 0.45 µm nominal pore size filter. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.
2. Perform and report cation-anion balance with the general minerals analytical results.

RECEIVING WATER MONITORING

The Discharger shall conduct sampling at the two previously established monitoring stations on Sandy Creek, Stations R-1 and R-2, when there is sufficient stream flow to mix with the effluent. When there is no stream flow, sampling at Station R-2 is required.

<u>Station</u>	<u>Description</u>
R-1	100 feet upstream from the point of discharge
R-2	100 feet downstream from the point of discharge

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

<u>Constituent</u>	<u>Unit</u>	<u>Station</u>	<u>Sampling Frequency</u>
Dissolved Oxygen	mg/L	R-1, R-2	Weekly
pH	pH Units	R-1, R-2	Weekly
Turbidity	NTU ¹	R-1, R-2	Weekly
EC	µmhos/cm	R-1, R-2	Weekly
Temperature	°F	R-1, R-2	Weekly ²
Ammonia (as N)	mg/L	R-1, R-2	Weekly ²
Chlorine Residual	mg/L	R-1, R-2	Weekly
<u>Fecal Coliform</u>	MPN/100 mL	R-1, R-2	Weekly

¹ Nephelometric Turbidity Units.

² Concurrent with pH and temperature sampling; after three months, frequency shall be monthly

The Discharger shall keep a bound log of the receiving water conditions above the discharge, at the discharge point and below the discharge point weekly, whether there is stream flow or no stream flow, for the presence or absence of:

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

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

WATER SUPPLY MONITORING

The supply water for the Taft Federal Prison shall be monitored as follows:

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

- ¹ EC shall be reported as an average from at least three taps representative of the water supply quality inside the Prison. Sample locations must be described in the monitoring reports.
- ² January, April, July and October.
- ³ Aluminum and Iron - µg/L; all others – mg/L.
- ⁴ Concurrent with Department of Health Service reporting requirement.

THREE SPECIES CHRONIC TOXICITY MONITORING

The Discharger shall conduct chronic toxicity monitoring to determine whether the effluent is contributing toxicity to the receiving stream. Since the receiving stream is ephemeral, chronic toxicity testing shall be conducted on whole effluent. Testing must be conducted as specified in the latest edition of *EPA 821-R-02-013 Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Fresh Water Organisms*. Chronic toxicity samples of the final effluent at the WWTF shall be collected at Sampling Station E-2. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Time of sample collection 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 test 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: Annually in April

Dilution Series:

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

SLUDGE MONITORING

To ensure that discharges to the WWTF are not interfering with the treatment process, the Discharger shall collect a composite sample of sludge at least annually in accordance with U.S. Environmental Protection Agency's (EPA) *POTW SLUDGE SAMPLING AND ANALYSIS GUIDANCE DOCUMENT, AUGUST 1989*, and test for metals:

Arsenic	Lead	Nickel
Cadmium	Mercury	Selenium
Chromium	Molybdenum	Zinc
Copper		

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 Discharger shall meet the monitoring and record keeping requirements of 40 CFR 503.

Within 90 days of the effective date of this Order, the Discharger shall submit a characterization of sludge quality, including sludge percent solids and quantitative results of chemical analyses for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). All sludge samples shall be a composite of a minimum of twelve (12) discrete samples taken at equal time intervals over 24 hours. EPA publications *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* and *Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* provide suggested methods for analysis of sludge. Recommended analytical holding times for sludge samples should reflect those specified in 40 CFR 136.6.3(e). Other guidance is available in EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989.

REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions and Reporting Requirements. All reports submitted in response to this MRP shall comply with the signatory requirements in Standard Provisions, General Reporting Requirements D.6. Daily, twice weekly, weekly, twice monthly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly monitoring reports shall be submitted to the Regional Board by the **1st day of the second month following sampling**. Quarterly monitoring reports shall be submitted by **1st day of the second month after the calendar quarter**. Priority pollutant and dioxin monitoring reports shall be submitted no later than the **1st day of the third month following sampling**.

Monitoring data and/or discussions submitted concerning WWTF performance must also be signed and certified by the chief plant operator. When reports contain laboratory analyses performed by the Discharger and the chief plant operator is not in the direct line of supervision of the laboratory, reports must also be signed and certified by the chief of the laboratory.

Each laboratory report shall clearly identify the following:

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

All laboratory results shall be reported down to the MDL, as defined 40 CFR 136. Nondetected results shall be reported as less than the MDL (<MDL). Results above the MDL, but below the concentration

of the lowest calibration standard for multipoint calibration methods or below the reporting limit for other methods shall be flagged as estimated.

In reporting 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 that illustrates clearly whether the Discharger complies with waste discharge requirements. If the Discharger monitors any waste constituent or parameter at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the discharge monitoring report.

The Discharger may also be requested to submit an annual report to the Regional Board with tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss any corrective actions the Discharger takes or plans to take to bring the discharge into full compliance with the waste discharge requirements.

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

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal.
2. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).
3. A statement whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment facility as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.
4. The results of an annual evaluation conducted pursuant to Standard Provision E.4 and a figure depicting monthly average discharge flow for the past five years.
5. The most recent West Kern Water District Annual Consumer Confidence Report for Water Quality.
6. A summary of sludge monitoring, including:
 - a) Annual sludge production in dry tons and percent solids;
 - b) Test results for metals;
 - c) A schematic diagram showing sludge handling facilities and solids flow diagram; and
 - d) A description of disposal methods, including the following information related to the disposal methods used at the WWTF. If more than one method is used, include the percentage of annual sludge production disposed of by each method:

- (1) For **landfill disposal**, include: (a) the Order numbers of WDRs that regulate the landfill(s) used, (b) the present classifications of the landfill(s) used, and (c) the names and locations of the facilities receiving sludge.
 - (2) For **land application**, include: (a) the locations of the site(s), and (b) the Order numbers of any WDRs that regulate the site(s).
 - (3) For **incineration**, include: (a) the names and location of the site(s) where sludge incineration occurs, (b) the Order numbers of WDRs that regulate the site(s), (c) the disposal method of ash, and (d) the names and locations of facilities receiving ash (if applicable).
 - (4) For **composting**, include: (a) the location of the site(s), and (b) the Order numbers of any WDRs that regulate the site(s).
7. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with this Order.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Original signed by

THOMAS R. PINKOS, Executive Officer

30 January 2004

INFORMATION SHEET

ORDER NO. R5-2004-0011
CITY OF TAFT
TAFT FEDERAL PRISON WWTF
KERN COUNTY

Background

The City of Taft owns and operates a wastewater collection and treatment facility (WWTF) that provides sewerage service for about 2400 inmates and employees at the Taft Federal Prison (hereafter Prison). It consists of headworks with bar screen and flow meter, an activated sludge system, chlorination system, an unlined 10.4-million-gallon capacity emergency storage pond, and eight unlined sludge drying beds. Discharge of up to 0.46 mgd is to Sandy Creek, a water of the United States about 1¼ mile north of the WWTF.

The WWTF is in Midway Valley on the north side of Cadet Road about 1½ mile east of Highway 33 and about 4½ miles southeast of the City of Taft, Kern County. The City completed the WWTF in 1996 to solely serve the Taft Federal Prison, which is owned and operated by the U.S. Department of Justice, Federal Bureau of Prisons. The WWTF is just east of the Prison and started treating wastewater in October 1997 when the Prison began operating. The City operates the WWTF by contract, using the same firm (ECO Resources, Inc.) that operates its City of Taft WWTF. The City owns the dedicated sewer trunk line that connects to the Prison-owned and -maintained sewer system. Waste Discharge Requirements (WDRs) Order No. 96-035 prescribes requirements for the monthly average discharge of 0.46-million gallons per day (mgd) of secondary treated wastewater from the WWTF to Sandy Creek.

The City has not disposed of any dried sludge since the WWTF began operating in 1997 but instead has stockpiled the accumulated dried sludge in an unlined storage area on site. The accumulated dried sludge, currently in excess of 250 tons (dry weight), is of poor quality due to large amounts of trash in it, including rags and plastics.

The Prison's water supply is from the West Kern Water District and is of high quality, based on the Water District's 2001 *Annual Consumer Confidence Report for Water Quality*, with an EC of 309 µmhos/cm. The average effluent EC in 2001 was 519 µmhos/cm, an increase of 210 µmhos/cm over source water.

The average effluent concentrations for BOD₅ and total suspended solids (TSS) in 2001 were 3 mg/L and 6 mg/L, and removal efficiencies were 99 and 98 percent, respectively.

The WWTF has been upset on occasion in the past due to poor pretreatment. The City indicated that it experienced nine upsets totaling at least 263 days in 1998, 1999, and the first three months in 2000 caused by grease and cleaning disinfectants. Order No. 96-035, Provision G.13, requires the City to implement legal authorities, programs, and controls to prevent pollutants from entering the sewer system and inhibiting or disrupting the treatment process. The City has not implemented a source control program but indicated in a letter dated 28 June 2002 that it initiated the development of the required source control measures.

The Regional Board issued a California Water Code (CWC) Section 13267 letter, dated 27 February 2001, requesting priority pollutant and dioxin congeners monitoring data. The City had until March 2002 to collect and analyze the required two priority pollutant samples and until 1 May 2002 to submit

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the results, except for the dioxin test results from one dry weather and one wet weather sample, which are due 1 March 2004. The City's 28 June 2002 letter indicated it would conduct the first priority pollutant/dioxin sampling in July 2002 and the second sampling in October or November 2002. The City submitted the priority pollutant test results of the first sample on 3 September 2002 and is delinquent in submitting the test results of the second sample. It submitted the dioxin test results of the first sample on 1 April 2003 and has until 1 March 2004 to submit the test results of the second sample.

Since the City did not follow through with implementing the source control measures and submittal of the priority pollutant second sample monitoring results, Regional Board staff issued a Notice of Violation dated 3 April 2003, again requiring implementation of the source control measures and submittal of the priority pollutant second sample monitoring results.

The WWTF and discharge area are in an arid climate characterized by hot dry summers and mild winters. Average annual precipitation and evapotranspiration in the discharge area are 6 inches and 51.1 inches, respectively, according to information published by Kern County Water Agency (KCWA) and the California Department Water Resources (DWR).

Sandy Creek originates in the Temblor Range to the west, flows southeasterly through lower Midway Valley then northeasterly, and terminates about a half-mile before reaching dry Buena Vista Lake, which is about 4½ miles downstream of the discharge point. It is normally dry and flows only during and immediately after storm events. The discharge creates an induced flow that typically fully infiltrates the streambed completely in less than one mile, as observed during a staff inspection on 6 June 2002. Typical desert vegetation grows in the Sandy Creek streambed, but wetland vegetation grows where the discharge flows. Sandy Creek has an average slope of about 1.0 percent from the discharge point to its terminus. The California Aqueduct crosses Sandy Creek about 1½ miles downstream from the discharge point above grade and does not obstruct stream flow. A roadway crosses the area where Sandy Creek ends and dry Buena Vista Lake begins. Sandy Creek flow rarely reaches the dry lake bed.

According to the California Department of Mines Geology *County Report 1, Geologic Map of California Bakersfield Sheet* and U.S. Geological Survey *Taft, Maricopa, and Mouth of the Kern, California* topographic maps, the Midway Valley is underlain by Recent alluvium consisting of interbedded sands, silts, and clays overlying the Pleistocene Tulare Formation. The Buena Vista Hills, resulting from Recent regional tectonic activity, have cut off the eastward movement of sediments and water from the Recent sediments largely derived from the west adjacent Temblor Range, according to Valley Waste Disposal Company *Hydrogeologic Characterization Report, Midway Valley Study Area* (Kennedy Jenks, 1992).

DWR monitored depth to groundwater in three wells near the WWTF (State well numbers 32S24E 24N001, 26A001, and 26N001). Hydrographs for these wells indicate depth to groundwater varied between about 210 and 300 feet below ground surface (bgs) during the monitored period (1961 to 1978). The Kennedy Jenks 1992 study indicates groundwater exists in the Recent alluvium near Sandy Creek northwest of the facility at about 120 to 160 feet bgs, but that it is separated from regional groundwater by an unsaturated zone. The data appears to indicate that discharge from WWTF would not reach the main groundwater aquifer.

Kern County Water Agency (KCWA) *Water Supply Report 1997* indicates groundwater quality in the area of the WWTF and the discharge point is poor quality with total dissolved solids (TDS) exceeding 5,000 mg/L. The Kennedy Jenks 1992 study also indicates poor water quality in the vicinity of the site, with TDS ranging from about 3,000 to 7,000 mg/L. The data indicates groundwater quality improves toward the east; however, the Kennedy Jenks study suggests that minimal flow occurs between Midway Valley and San Joaquin Valley aquifers. The water quality data indicates that the discharge would not degrade the groundwater. Because of its poor quality, areal groundwater is not used. West Kern Water District imports and supplies water for essentially all uses, except for irrigation. The Wheeler Ridge-Maricopa Water Storage District imports and supplies irrigation water for the farmlands on the east side of the California Aqueduct.

Land use in the WWTF vicinity is primarily extraction industrial (oil fields) and agricultural. Other land uses include institutional (prison) and undeveloped areas with native vegetation. Sandy Creek and the discharge point are about 1¼ mile north of the WWTF. Crops grown within a half-mile of Sandy Creek, from the discharge point to its terminus, include a variety of field crops, cotton, and onions and garlic, although creek water is not known to be used for irrigation.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

The WWTF and discharge point are in the Taft Hydrologic Area (HA 557.20) of the South Valley Hydrologic Unit (HU 557) of the Tulare Lake Basin. Sandy Creek, being in HU 557, is a valley floor water, as described in the Basin Plan, and without benefit of a separate listing. The designated beneficial uses of valley floor waters include agricultural supply; industrial service supply; industrial process supply; water contact recreation; noncontact water recreation; warm freshwater habitat; wildlife habitat; rare, threatened, or endangered species; and groundwater recharge. Not all of the designated beneficial uses are realized. Sandy Creek downstream of the discharge point is surrounded by oil fields and privately owned farms, and is not near any facility or place that people frequent. Storm runoff water only flows in Sandy Creek during and shortly after significant rainfall events. The very small discharge flows for less than a mile before disappearing completely in the streambed. Sandy Creek does not, nor is likely to, support a warm freshwater fishery; but it will support other warm freshwater species habitat. As Sandy Creek flows are low, ephemeral and unpredictable, they are not used for irrigation. Therefore, the only realized beneficial uses of Sandy Creek known to staff are warm freshwater habitat and wildlife habitat and probable beneficial uses of contact and noncontact water recreation.

The Basin Plan encourages recycling and does not consider disposal by evaporation and percolation or discharge to surface waters a permanent disposal solution when the potential exists for recycling.

Order No. 96-035 required the City to evaluate reclamation opportunities and report to the Regional Board by 3 September 1996 with either an implementation schedule or justification as to why it is not practical to recycle. Regional Board files record the City's attempts to effect recycling. The City attempted to provide the effluent to local farmers for irrigation by soliciting proposals for recycling. It

received a single proposal that would have required the City to construct a transmission pipeline to the farmer's property and a storage pond, and pay the farmer \$26.00 per acre-foot of effluent. The City determined that it was too costly and by letter dated 3 May 1996 informed this Board. Review of the data and the feasibility of the City operating its own recycling operation causes staff to concur that recycling is not practical at this site. Therefore, there is no potential for wastewater reclamation at this site and this Order finds that the Basin Plan condition is satisfied.

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. The Regional Board, by letter dated 27 February 2001 pursuant to CWC Section 13267, required the City to monitor the discharge and receiving stream for priority pollutants. It required the City to submit test results for priority pollutants from two samples each of the effluent and receiving water, one sample each during dry weather and wet weather, by 1 May 2002, except that dioxin test results are due by 1 March 2004. On 3 September 2002, the City submitted the priority pollutant test results (except for dioxins) from one effluent sample collected in July 2002. On 1 May 2003, the City submitted the dioxin test results from the first effluent sample collected in August 2002. The City has not submitted the test results for the second priority pollutant and dioxin sample; however, the second dioxin sample test results are not due until 1 March 2004. The City has exposed itself to formal enforcement action by failing to submit the required priority pollutant monitoring data. This Order provides the City additional time, by a time schedule, to complete the required monitoring and submit the data.

The priority pollutant test results from the July 2002 effluent sample indicate that arsenic, selenium, bromodichloromethane, chloroform, chloromethane, and dibromochloromethane were detected in concentrations above minimum levels (practical quantitation levels (PQLs)). All remaining pollutants, including the dioxins in the August 2002 dioxin sample, were reported "as less than PQL." The six priority pollutants detected above their PQLs had concentrations less than the lowest applicable water quality criteria. The sample results do not provide confirmation of the magnitude of the six pollutants that were detected, or the absence of the other priority pollutants. Additional samples, as originally required, are necessary to complete the reasonable potential analysis (RPA). Since there is insufficient data to conduct the RPA now, the RPA will be conducted after the City submits the required monitoring data.

The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Chlorine and ammonia are specifically discussed in this context below.

Chlorine, even in low concentrations, can cause toxicity to aquatic organisms. The City uses chlorine for disinfection of the effluent and is not required to, and does not, dechlorinate the effluent before discharging to Sandy Creek. The effluent chlorine residual in 2002 had an average concentration of 2.6 mg/L. The use of chlorine as a disinfectant presents a reasonable potential that it could be discharged in toxic concentrations. This Order includes effluent limitations for chlorine to protect the receiving stream aquatic life beneficial uses. U.S. Environmental Protection Agency (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 and 0.0011 mg/L, respectively. This Order's effluent limitations are a maximum daily concentration of 0.02 mg/L and an average monthly concentration of 0.01 mg/L, respectively, and were derived using the

procedure outlined in the USEPA *Technical Support Document for Water Quality-Based Toxics Control, March 1991* (TSD). The USEPA criteria are used as the Waste Load Allocation (WLA). The Long Term Averages (LTA) were found by multiplying the WLA by a WLA multiplier listed in Table 5-1. TSD Section 5.5.2 states, in part, that, "USEPA recommends a value of 0.6 as a default C_v , if the regulatory authority does not have more accurate information on the C_v for the pollutant or pollutant parameter." Since no effluent chlorine residual data, after dechlorination, exists, a C_v value of 0.6 was used in the effluent limit calculations. The lower LTA was multiplied by the multipliers listed in Table 5-2 of the TSD to find the Maximum Daily Effluent Limitation (MDEL) and Average Monthly Effluent Limitation (AMEL). This Order requires continuous chlorine residual monitoring. Daily reporting is required; so to calculate the AMEL, the number of samples per month is 30 ($n = 30$). 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. No dilution was considered since, absent the discharge, Sandy Creek normally does not flow except during and immediately after storm events. The calculations are as follows:

<u>Chlorine residual</u>	<u>Acute</u>	<u>Chronic</u>	
WQC = WLA	0.019	0.011	
WLA Multiplier	0.321	0.527	$C_v = 0.6$
LTA = WLA x WLA Multiplier	0.0064	0.0053	
MDEL Multiplier	3.11		$C_v = 0.6; n = 30$
AMEL Multiplier		1.19	$C_v = 0.6; n = 30$
MDEL = 0.0053 x 3.11	0.016		
AMEL = 0.0053 x 1.19		0.006	
MDEL Rounded	0.02		
AMEL Rounded		0.01	

Because the Discharger will not be able to comply with this effluent limitation immediately, this Order includes a time schedule for the Discharger to install the necessary dechlorination and monitoring equipment.

Untreated domestic wastewater contains ammonia. Wastewater treatment processes commonly use nitrification, a biological process that converts ammonia to nitrate, to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. As discussed above, Sandy Creek does not, nor is likely to, support a warm freshwater fishery but will support other warm freshwater aquatic species. USEPA has developed water quality criteria for ammonia that is protective of wild fish species. While ammonia is generally more acutely toxic to wild fish than to other aquatic species, this does not appear to be true for chronic toxicity. USEPA's ammonia water quality criteria document, in developing the chronic toxicity criterion, identified two genera invertebrates - the amphipod *Hyalella* and fingernail clam *Musculium* - as having the lowest genus mean chronic toxicity sensitivity. These two non-fish aquatic life are more susceptible to ammonia chronic toxicity than wild fish. Therefore, it is not known if USEPA's ammonia water quality criteria for wild fish are adequately protective for the non-fish aquatic species. It is not known at present if Sandy Creek does have or could support the two invertebrates identified above. Information is presently insufficient to conclude that the Prison's discharge has reasonable potential for ammonia toxicity in Sandy Creek. It is appropriate for the Discharger to study the impacts of ammonia on the wetted section of Sandy Creek to determine if

reasonable potential exists and, if so, to develop and recommend ammonia effluent limitations that are adequately protective of Sandy Creek's warm freshwater habitat. This Order includes a time schedule for the Discharger to complete this requirement.

To adequately protect public health, the discharge must be disinfected. The California Department of Health Services (DHS) *Uniform Guidelines for Wastewater Disinfection* recommends that when discharge is to ephemeral streams with limited access and little or no natural flow during all or part of the year, the effluent have a median coliform bacteria number (MPN) not exceeding 23/100 mL based on the last seven samples for which analyses have been completed. The guidelines also recommend that when a median coliform MPN of 23/100 mL is required, bacteriological samples should be collected at least twice per week. The guidelines recommend a daily maximum total coliform limitation of 20 times the median MPN, or 460/100 mL, but Order No. 96-035 requires that the daily maximum MPN not exceed 240/100 mL.

The circumstances of Sandy Creek reflect the stream conditions for the DHS uniform guidelines recommendations described above. Title 40, CFR Part 122.44(l) prohibits backsliding; therefore, this Order will carry over the effluent limitations for total coliform from the current Order of a seven-sample median of 23 MPN/100 mL and a daily maximum of 240 MPN/100 mL, respectively.

Antidegradation

The antidegradation directives of CWC Section 13000 require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policies and procedures for complying with this directive are set forth in the Basin Plan (including by reference SWRCB Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or the "Antidegradation" Policy).

Given the character of municipal wastewater, secondary treatment technology is generally sufficient to control degradation of receiving waters from decomposable organic constituents. Adding disinfection significantly reduces populations of pathogenic organisms for protection of public health. Neither organics nor total coliform, the indicator parameter for pathogenic organisms, should be found in significant concentrations in receiving waters when discharged from a well-designed, well-operated facility. Chlorine disinfection of effluent causes formation of trihalomethanes, which are toxic to some aquatic organisms in surface waters. Dechlorination significantly reduces the toxicity of the effluent.

The groundwater at the WWTF and discharge area is of poor quality with total dissolved solids at about 5000 mg/L. The groundwater is not used for any of the designated beneficial uses. The activated sludge treatment process provides the level of treatment that is not expected to degrade the groundwater quality. Therefore, the discharge and any leachate from the sludge drying beds are not expected to adversely affect any current or potential groundwater designated beneficial uses. The chlorinated effluent will be dechlorinated to mitigate chlorine toxicity prior to discharge to surface water. Therefore, the discharge is consistent with the State's antidegradation policy.

PROPOSED ORDER TERMS AND CONDITIONS

Discharge Prohibitions, Specifications and Provisions

This Order carries over from Order No. 96-035 the flow limitation of 0.46 mgd (monthly average daily flow). The WWTF creates a condition of constant flow in Sandy Creek downstream of the discharge point for about one mile at the current rate of discharge of 0.16 mgd. Since there is no flow in Sandy Creek most of the time, the discharge will provide an induced flow of 0.25 cubic feet per second (cfs) at the current discharge rate, and 0.71 cfs at the permitted discharge rate of 0.46 mgd.

This Order prescribes effluent limitations based on 40 CFR 133 and the Basin Plan, that are carried over from the current Order and consistent with the backsliding restrictions of 40 CFR 122.44(l), except as otherwise indicated:

For BOD₅ and total suspended solids (TSS), a monthly average of 30 mg/L, a weekly average of 45 mg/L, a daily maximum of 90 mg/L, and a removal efficiency of 85 percent based on 40 CFR 133; for EC, source water EC plus 500 µmhos/cm, or 1000 µmhos/cm, whichever is less; for pH, a range of 6.5 to 8.3 based on the Basin Plan; for settleable solids, a monthly average of 0.1 mg/L and daily maximum of 0.5 mg/L to be adequately protective of the aquatic life in Sandy Creek, which provides no dilution most of the time; and for total coliform, a 7-day median of 23 MPN/100 ml and maximum of 240 MPN/100 ml based on the California Department of Health Service guidelines for disinfection for protection of public health,.

The City currently is not required to, and does not, dechlorinate the effluent prior to discharging to Sandy Creek. To avoid toxicity, the City must dechlorinate the effluent prior to discharging it to Sandy Creek. This Order adds a new effluent limitation for chlorine residual of 0.01 mg/L for a monthly average and 0.02 mg/L for a daily maximum as previously derived. The derivation of the effluent limitations did not consider dilution because, absent the discharge, Sandy Creek normally does not flow except during and immediately after storm events. The effluent limitations are appropriate to protect aquatic life and other plants and animals that are dependent on the discharge. The Order includes a time schedule to allow the City to install the necessary dechlorination and monitoring equipment.

This Order requires that discharge of sludge and solid wastes from the treatment of wastewater comply with the requirements of Title 27, CCR, Section 20005 et. seq. It requires that storage, use and disposal of sludge and biosolids comply with the self-implementing Federal regulations of 40 CFR 503, which are subject to enforcement by the USEPA, not the Regional Board. It also requires that, if the sludge is discharged on land for soil amendment for agriculture, silviculture, horticulture, or land reclamation, it be treated and tested to meet the requirements of 40 CFR 503 and be covered under State Board Order No. 2000-10-DWQ. This Order requires the City to dispose of its stockpiled dried sludge by 1 June 2004.

Receiving water limitations in this Order are based on the Basin Plan, carried over from the current Order, and prescribe requirements that the discharge not cause the dissolved oxygen concentration to fall below 5.0 mg/L, the ambient temperature to increase by more than 5°F, or chlorine to be detected in concentrations equal to or greater than 0.01 mg/L. It requires that the discharge not cause the receiving

water to contain oils, greases, waxes, pesticides, biostimulatory materials, toxic pollutants, floating materials, taste- or odor producing substances, or other materials that create nuisance or otherwise adversely affect beneficial uses. It assures public health protection by requiring that radionuclides and toxic pollutants are not present in the receiving water in concentrations that may be hazardous to human, plant, animal, or aquatic life. It requires that the discharge not cause the receiving water to contain fecal coliform in any 30-day period exceeding a geometric mean of 200 MPN/100 mL or cause more than 10 percent of total samples to exceed 400 MPN/100 mL.

This Order prescribes groundwater limitations that prohibit waste constituents from the WWTF to cause the groundwater concentrations of these waste constituents to exceed natural background concentrations. The WWTF when operated as prescribed herein is not expected to degrade the groundwater quality due to: 1) attenuation of the waste constituents as the discharge percolates through the soil to groundwater at 120 – 160 feet depth, and 2) the poor quality of the groundwater because of extremely high salinity (TDS of about 5000 mg/L). As the areal groundwater EC is much higher than that of the discharge, the discharge will have no adverse impact on the groundwater. The groundwater limitation specifying that an increase of EC not exceed 25 μ mhos/cm over a period of five years has been eliminated. The discharge as permitted herein is consistent with the antidegradation provisions of State Board Resolution No. 68-16.

This Order requires, as did the existing Order, that the City implement pretreatment legal authorities, programs, and controls to ensure incompatible wastes are not introduced into the treatment systems that could cause upsets, disruptions or interferences, which may result in violation of this Order. Incompatible wastes may include wastes that create a fire or explosion hazard, corrosives that cause structural damage, solids or viscous materials that may cause obstruction in the sewers, petroleum oil or oil products that may cause interference or pass-through, and pollutants that may cause toxic gases, vapors, or fumes, which may result in acute worker health and safety problems. This Order also requires wastes that might pass through the treatment system, and which may cause violation of the Order, to be excluded from the treatment system.

This Order requires the City to study the impacts of ammonia-N on Sandy Creek. In the study, the City must propose procedures, evaluation methods, and appropriate ammonia-N effluent limitations that would be protective of the beneficial uses of Sandy Creek, considering the ammonia-N toxicity to the various aquatic habitat species currently supported by or potentially supported by Sandy Creek.

This Order requires the City to specifically complete the toxics standards monitoring required by Regional Board letter dated 27 February 2001. It requires the City to collect and analyze the second sample for priority pollutants, including dioxins, and submit the test results, pursuant to the Regional Board 13267 letter dated 27 February 2001, so that the reasonable potential analysis can be completed.

Monitoring

Federal regulations 40 CFR 122.44(i) and 122.48 require monitoring to assure compliance with permit limitations and requirements. Section 13267 of the CWC authorizes the Regional Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving

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accountability of dischargers in meeting the conditions of discharge. Monitoring is required pursuant to CWC sections 13267 and 13383 and is necessary to ensure compliance with this Order and to monitor for impacts on the receiving water.

This Order increases the monitoring and reporting requirements substantially over the current Order. The increase is necessary to monitor previously unmonitored effluent limitations and receiving water limitations that may be toxic to the aquatic life in the receiving water. By letter dated 9 October 2003, the Discharger requested reductions in the proposed monitoring frequencies of several constituents to reduce costs. If granted, only single sample results would be available to determine compliance with some weekly average and monthly average effluent limits. Footnote 8 was added to Effluent Limitation No. B.2 to make it clear that single sample results will be used to determine compliance with average effluent limits where multiple results are not provided and the reduced frequency was granted.

The table below summarizes the monitoring requirements of the current Order and this Order with respect to influent, effluent, and receiving water.

<u>Constituent</u>	<u>Units</u>	<u>Influent¹</u>		<u>Effluent¹</u>		<u>Receiving Water¹</u>	
		<u>Current</u>	<u>This Order</u>	<u>Current</u>	<u>This Order</u>	<u>Current</u>	<u>This Order</u>
BOD ₅	mg/L	2/Month ²	2/Month ²	Weekly ²	Weekly ²	-	-
TSS	mg/L	2/Month ²	2/Month ²	Weekly ²	Weekly ²	-	-
SS	mL/L	-	-	Weekly	Weekly	-	-
Chlorine Residual	mg/L	-	-	Weekly	Continuously ³	-	Weekly
Total Coliform Organisms	MPN/100 mL	-	-	Weekly	2/Week	-	-
EC	µmhos/cm	-	-	Weekly	Weekly	-	Weekly
pH	pH units	-	-	Weekly	Weekly	-	Weekly
Ammonia (as N)	mg/L	-	-	-	Weekly ⁴	-	Weekly ⁴
Temperature	°F	-	-	-	Weekly ⁴	-	Weekly ⁴
Turbidity	NTU	-	-	-	-	-	Weekly
DO	mg/L	-	-	-	-	2/Month	Weekly
Fecal Coliform	MPN/100 mL	-	-	-	-	2/Month	Weekly
Oil and Grease	mg/L	-	Monthly	-	Monthly	-	-
Acute Toxicity	% Survival	-	-	-	Semi-annually	-	Semi-annually
Chronic Toxicity	TU _C	-	-	-	Annually	-	Annually
General Minerals	mg/L	-	-	-	Annually	-	Annually
Priority Pollutants	µg/L	-	-	-	Once ⁵	-	Once ⁵

<u>Constituent</u>	<u>Units</u>	<u>Influent</u> ¹		<u>Effluent</u> ¹		<u>Receiving Water</u> ¹	
		<u>Current</u>	<u>This Order</u>	<u>Current</u>	<u>This Order</u>	<u>Current</u>	<u>This Order</u>
Hardness	mg/L	-	-	-	Once ⁵	-	Once ⁵

¹ Grab samples unless otherwise indicated

² 24-hr composite samples

³ Weekly until dechlorination effective date of two years after Order adoption; thereafter continuous monitoring is required.

⁴ Weekly for three months, monthly thereafter

⁵ In the fourth year of this Order

Since the City has identified oil and grease as wastes causing occasional upsets of the treatment process, this Order requires the City to monitor oil and grease monthly to determine the effectiveness of the source control measures it is required to implement.

The current Order required monitoring of dissolved oxygen and freeboard in the emergency pond when used. The City has never used the emergency pond and is unlikely to use it in the future. There are no residences near the WWTF and no one frequents the area except the WWTF operators. This Order eliminates the emergency pond monitoring requirements, as the emergency pond is highly unlikely to cause a nuisance.

This Order carries over the current requirement to monitor the sludge at least annually, in accordance with USEPA's *POTW SLUDGE SAMPLING AND ANALYSIS GUIDANCE DOCUMENT, AUGUST 1989*, and test for arsenic, cadmium, chromium, molybdenum, copper, lead, mercury, nickel, selenium, and zinc and submit an annual summary of sludge discharge operations.

This Order requires the City to monitor source water quarterly for EC to determine whether or not the City is in compliance with the effluent limitation for EC.

Reopener

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