

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0115

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF KERMAN
WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

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

1. The City of Kerman (hereafter City or Discharger) submitted a Report of Waste Discharge (RWD), in [9 May 2007](#), for a modification and expansion (hereafter Expansion Project) of its wastewater treatment facility (WWTF). The RWD proposes to expand the existing WWTF from a monthly average discharge flow of 1.2 million gallons per day (mgd) to 2.0 mgd. The WWTF provides services for about 13,500 residents and limited light industry.
2. The WWTF is along Church Avenue, approximately one-quarter mile south of the City, in Section 13, T14S, R17E, MDB&M, as shown on [Attachment A](#), which is attached hereto and made a part of this Order by reference.
3. Waste Discharge Requirements (WDRs) Order No. 5-00-050, adopted on 17 March 2000, restricts the monthly average discharge flow to 1.2 mgd. The WDRs prescribe effluent limitations on a monthly average basis for 5-day biochemical oxygen demand (BOD₅), total suspended solids (TSS) and settleable solids (SS). The City is unable to consistently comply with the above limits. An enforcement order to be considered separately requires the Discharger to complete the Expansion Project and comply with the limits.
4. The purpose of this Order is to rescind WDRs Order No. 5-00-050 and prescribe requirements that reflect the Discharger's Expansion Project.
5. The RWD presents information on site conditions, the existing wastewater treatment process and quality, and the conceptual design of the Expansion Project. [Attachment B](#), which is attached hereto and made a part of this Order by reference, depicts a plan view of the existing WWTF and Expansion Project, as depicted in the RWD.

Existing Wastewater Treatment Facility

6. The existing WWTF consists of headworks with an auger for grinding solids, a Parshall flume flowmeter, a lift station with pumps, a primary aeration pond (CM Lagoon 1), three secondary aeration ponds (PM Lagoons 1, 2, and 3), three settling ponds (Settling Ponds 1, 2 and 3), and three disposal ponds (Disposal Ponds 4, 5 and 6). [Attachment C](#) of this Order, which is attached hereto and is made part of this Order by reference, depicts a process flow diagram of the existing WWTF.

7. The WWTF's collection system is composed of about 29 miles of gravity sewer lines, which consist of a network of 6-inch and 8-inch diameter lines, which connect to larger 10-inch and 12-inch main lines and converge to two pump stations. Within the last five years, the Discharger added larger main lines in high use areas, added a new lift station, and made repairs to the existing lift station.
8. Influent enters at the headworks, which is enclosed in a concrete structure approximately 15 feet below grade. The headworks houses a screen/compactor, an open channel flow meter, three self-priming pumps, and two submersible pumps. Solids from the screen/compactor are dewatered and deposited in a trash-bin. Influent is then discharged to CM Lagoon 1, which is approximately 12 ft deep, and has a total volume of 8.8 acre-ft. Aeration is provided by two 25 horsepower (hp) and one 8 hp surface aerators. Wastewater from CM Lagoon 1 is discharged to PM Lagoons 1 through 3, which are typically operated in series. Each PM Lagoon is 10 feet deep, has a wastewater volume of 4.8 acre-ft, and is equipped with two 1.5 hp and four 1 hp surface aerators. Wastewater from PM Lagoon 3 is discharged into Settling Ponds (or Disposal Ponds) 1 and 2, which are typically operated in parallel. Each settling pond is 6 feet deep, and has a wastewater volume of about 11.8 acre-ft. The WWTF has a splitter box, which allows the Discharger to operate the treatment units in parallel or series.
9. Effluent from the Settling Ponds is discharged to Disposal Ponds 3, 5, and 6, totaling 12 acres with a total wastewater volume of 124 acre-ft. Disposal Pond 3 is 6 feet deep, with a wastewater volume of 22.3 acre-ft; and Disposal Ponds 5 and 6 are seven feet deep, with a wastewater volume of 51 acre-ft, each.
10. The Discharger collects storm water from the City and discharges it to an 11-acre retention basin at the WWTF. Storm water is kept separate from the City's effluent.
11. Self-monitoring reports from 2006 indicate that winter flows are not higher than summer flows, demonstrating insignificant inflow and infiltration to the collection system during winter months.
12. Self-monitoring data from January 2006 to December 2006 characterize the discharge as follows:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Influent</u>	<u>Effluent</u>	<u>% Removal¹</u>
Monthly Average Discharge Flow	mgd	1.13	NS ²	--
Conventional Pollutants				
pH (range)	s.u. ³	7.0 – 8.5	8.0 – 9.1	--
Settleable Solids	mL/L	4.95	0.1	98
BOD ⁴	mg/L	188	39	79
TSS ⁵	mg/L	NS	41	63
Salts				
Chloride	mg/L	NS	45 ⁶	--

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Influent</u>	<u>Effluent</u>	<u>% Removal</u> ¹
Sodium	mg/L	NS	80 ⁶	--
EC ⁷	µmhos/cm	NS	661	--
TDS ⁸	mg/L	NS	335	--
Nitrogen				
Nitrate as Nitrogen	mg/L	NS	NS	--
Total Nitrogen ⁹	mg/L	NS	29 ¹⁰	--
Metals ¹²				
Aluminum	µg/L	NS	340	--
Iron	µg/L	NS	190	--
Manganese	µg/L	NS	<20	--

¹ Percent removal (% removal)

² Not sampled (NS)

³ Standard units (s.u.)

⁴ 5-day biochemical oxygen demand (BOD)

⁵ Total suspended solids (TSS)

⁶ Based on two samples.

⁷ Electrical conductivity at 25°C (EC)

⁸ Total dissolved solids (TDS)

⁹ Calculated by summing the concentrations of nitrate as nitrogen and TKN, and assuming the concentration of nitrite is negligible.

¹⁰ Assumed to be mostly in the form of TKN.

¹¹ Concentrations based on one sampling event.

13. The EC of the WWTF influent ranges from about 350 to 450 µmhos/cm over source water.

Expansion Project

14. The design of the Expansion Project is not complete; however, the conceptual design is described below. [Attachment C](#) depicts a conceptual process flow diagram of the Expansion Project.

15. The RWD describes the City's plans to upgrade the existing headworks, as necessary. Recent changes will include replacing the existing Parshall Flume flow metering structure with a magnetic flow meter on the pump discharge line.

16. The City accepts septage at a manhole directly outside the gated area of the WWTF. The RWD describes the City's plans to install a new 5,000-gallon storage tank for septage receiving, management, and equalization. The tank will be to the west of the existing

headworks, in a newly gated area that will provide access for after-hours septic deliveries. The site will be managed on an “honor system,” with video camera monitoring.

17. The RWD describes the City’s plans to construct a Biolac System©, which is an extended aeration biological treatment process with diffused fine bubble aeration to replace the existing mechanical surface aerated pond system. The treatment process will be operated to allow for de-nitrification. The Biolac system will utilize the existing CM Lagoon 1 and will bring the treatment capacity to 2 mgd. The WWTF will consist of an aeration basin (CM Lagoon 1), two concrete clarifiers, return and waste activated sludge pumps, aerobic sludge digester, and sludge handling and storage facilities. Effluent from the clarifiers will be discharged to Storage Ponds A through C (current PM Lagoons 1 through 3).
18. Sludge from the clarifiers will be pumped to the aerobic sludge digester. The digester will utilize an existing reinforced concrete aeration basin from the previous WWTF (prior to the existing WWTF). Digested sludge, at approximately 2-6 percent solids, will be pumped to reinforced concrete sludge drying beds during the summer and mechanically dewatered in the winter. Sludge will then be hauled offsite to a permitted facility.
19. The water balance presented in the RWD indicates that the City will need approximately 31.6 acres of percolation area to dispose of 2.0 mgd, assuming a percolation rate of 2.98 inches per day. The City proposes converting Settling Ponds 1 and 2 to Disposal Ponds. In total, the City will have seven Disposal Ponds (Disposal Ponds 1 through 3 and 5 through 8) with a total storage capacity of 338 acre-feet. [Attachment B](#) depicts the locations of the existing and proposed disposal ponds.
20. The RWD indicates that the proposed discharge will achieve the following effluent quality.

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Monthly Average Discharge Flow	mgd	2.0	--
BOD	mg/L	30	60
TSS	mg/L	30	60
Total Nitrogen	mg/L	10	--

21. It is anticipated that effluent mineral and metals quality characterized in [Finding 12](#) for the existing WWTF will be similar to the effluent quality resulting from the Expansion Project.

Sanitary Sewer Overflows

22. A “sanitary sewer overflow” is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the treatment facility. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.

23. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements For Sanitary Sewer Systems, Water Quality Order No. 2006-003-DWQ (General Order). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the order. The Discharger's collection system is greater than one mile in length; therefore the General Order is applicable.

Water Recycling

24. The City is not proposing water recycling as part of its proposed project. Historically, the City recycled a portion of the discharge on nearby properties. Some of these properties contained almond orchards. Due to concerns about using undisinfected secondary effluent on orchards, the City stopped recycling. In July 2003, the City sent letters to area farmers to investigate the feasibility of again initiating water recycling, but has been unable to obtain agreements. The RWD indicates that the City is "open to reclamation of the effluent for irrigation should the opportunity become available in the future."

Site-Specific Conditions

25. The WWTF is in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry. Average annual precipitation and evaporation in the discharge area are about 11 inches and 63 inches, respectively, according to information published by California Department of Water Resources (DWR).

26. Areal soils are Hesperia Sandy Loam, according to the USDA Natural Resources Conservation Service. These soils are well drained. The upper 11 to 15 inches consist of sandy loam followed by silt.

27. The WWTF is not within a 100-year floodplain according to Federal Emergency Management Agency maps.

28. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System general industrial storm water permit for the WWTF because all storm water runoff is retained onsite and does not discharge to a water of the United States.

29. Land use in the WWTF vicinity is agricultural and industrial with some confined animal operations south of the WWTF, and the City of Kerman one mile to the north. The primary crops grown within five miles of the WWTF include cotton, alfalfa, corn (forage), almonds, grapes, dry beans, and corn according to DWR land use data published in 1994. Irrigation water is supplied primarily by groundwater.

Groundwater Considerations

30. Regional groundwater is approximately 90 feet below ground surface and flows south-southwesterly, according to information in *Lines of Equal Elevation of Water in Wells in Unconfined Aquifer*, published by DWR in Spring 1996. An 80-foot thick modified E-clay layer occurs about 500 to 550 feet bgs.
31. Although hydraulic continuity between aquifers is restricted, some agricultural wells within the vicinity are likely screened within the upper and lower aquifers to maximize well production. This uppermost layer has the potential to have hydraulic continuity between the two aquifers resulting in lower quality water from the uppermost aquifer to migrate into the higher quality aquifers just above and below the E-clay.
32. The City obtains its source water from five deep groundwater wells. The source water is of good quality, with the exception of uranium, as indicated by the City's 2005 Annual Water Quality Report. Elevated concentrations of uranium in groundwater have resulted in the City drilling additional wells to meet drinking water standards. Excerpts of this Annual Report are presented below.

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Range</u>	<u>Average</u>
Arsenic	mg/L	6.0 – 8.0	7.25
Chloride	mg/L	4.0 - 11	6.5
EC	µmhos/cm	200 – 300	230
Nitrate (as N)	mg/L	1.7 – 2.0	1.9
TDS	mg/L	130 - 240	160
Uranium	mg/L	0.828 - 37.2	8.70

33. The Discharger's groundwater monitoring network is shown in [Attachments A and B](#). The network was constructed in 2002 and consists of three wells: one upgradient (MW-1) and two downgradient (MW-2 and MW-3). The following table characterizes groundwater from the City's monitoring wells (data from 2003, 2005, and 2006). The data for iron, manganese, sulfate, and total organic carbon (TOC) are from a one-time sampling event immediately after the groundwater wells were installed.

		<u>MW-1</u>		<u>MW-2</u>		<u>MW-3</u>	
		<u>(Upgradient)</u>		<u>(Downgradient)</u>		<u>(Downgradient)</u>	
		Mean	Range	Mean	Range	Mean	Range
Nitrate (as N)	mg/L	12	<0.2-16	1.25	<0.2-2.3	0.9	<0.2-1.0
TN ¹	mg/L	--	--	--	--	--	--
EC	µS/cm	1545	1300-2000	922	720-1000	767	710-840
TDS	mg/L	982	890-1100	585	480-650	480	380-540
Chloride	mg/L	201	156-310	58	52-65	46	10-58

		MW-1		MW-2		MW-3	
		<u>(Upgradient)</u>		<u>(Downgradient)</u>		<u>(Downgradient)</u>	
		Mean	Range	Mean	Range	Mean	Range
Arsenic	µg/L	3.9	2.5-5	5.5	4.0-9.4	19	13-31
Iron	mg/L	<0.05	--	<0.05	--	<0.05	--
Manganese	mg/L	<0.03	--	<0.03	--	<0.03	--
Sulfate	mg/L	100	--	33	--	10	--
TOC ²	mg/L	1.6	--	1.4	--	3.1	--
Chromium	µg/L	9	<10 to 18	7.6	<10 to 18	2.5	<5
Copper	µg/L	3.2	<5 to 9	2.5	<5	2.5	<5
Nickel	µg/L	11.2	10 to 28	1.3	<0.2-2.3	0.9	<0.2-1.0

¹ Total nitrogen

² Total organic carbon

34. The upgradient well (MW-1) is much higher in EC, chlorides, and metals than the downgradient wells (MW-2 and MW-3). Concentrations of nitrate exceed the drinking water primary MCL of 10 mg/L and nickel exceeds the public health goal of 12 µg/L in MW-1. The upgradient well (MW-1) does not appear to represent true background conditions. The Discharger will need to assess the existing network to determine if additional wells are necessary.

Basin Plan, Beneficial Uses, and Water Quality Objectives

35. The Water Quality Control Plan for the Tulare Lake Basin, 2nd Edition, (hereafter Basin Plan) designates beneficial uses, establishes numerical and narrative water quality objectives, contains implementation plans and policies for protecting all waters of the basin, and incorporates by reference plans and policies of the State Water Board. Pursuant to Section 13263(a) of the California Water Code (CWC), these waste discharge requirements implement the Basin Plan.

36. Water in the Tulare Lake Basin is in short supply, requiring importation of surface water from other parts of the State. The Basin Plan encourages recycling on irrigated crops wherever feasible and indicates that evaporation of recyclable wastewater is not an acceptable permanent disposal method where the opportunity exists to replace an existing uses or proposed use of fresh water with recycled water. As indicated in [Finding 24](#), the City previously recycled effluent, but due to issues regarding crop type and effluent quality has been unable to obtain agreements with area farmers. The City shall periodically investigate the possibility of recycling effluent in the future.

37. The WWTF is in Detailed Analysis Unit (DAU) No. 233 within the Kings Basin hydrologic unit. The Basin Plan designates the beneficial uses of groundwater in this DAU as municipal and domestic supply, agricultural supply, industrial process and service supply, [and contact and non-contact recreation](#).

38. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the MCLs specified in Title 22. The Basin Plan recognizes that that the Regional Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
39. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Tastes and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.
40. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:
- a. The incremental increase in salts from use and treatment must be controlled to the extent possible or limited to a maximum of 1,000 $\mu\text{mhos/cm}$. The maximum EC shall not exceed the EC of the source water plus 500 $\mu\text{mhos/cm}$. When the source water is from more than one source, the EC shall be a weighted average of all sources.
 - b. Discharges to areas that may recharge good quality groundwaters shall not exceed an EC of 1,000 $\mu\text{mhos/cm}$, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.
- These effluent limits are considered reflective of best practicable treatment or control (BPTC).
41. The list of crops in [Finding 29](#) is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but is representative. Crops sensitive to salt and boron are currently being grown in the area. The effluent characterized in [Finding 12](#) should protect the crops grown. Additional monitoring for salt-specific constituents, such as boron, is necessary, but will likely be less than the quality specified in [Finding 40](#).
42. The Basin Plan requires municipal WWTFs that discharge to land to comply with treatment performance standards for BOD₅ and TSS. WWTFs that preclude public access and are greater than 1 mgd must provide removal of 80 percent or reduction to 40 mg/L, whichever is more restrictive, of both BOD₅ and TSS.

Antidegradation

43. State Water Resources Control Board Resolution No. 68-16 (“Policy with Respect to Maintaining High Quality Waters of the State”) (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
- a. The degradation is consistent with the maximum benefit to the people of the State;
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; and
 - d. The discharger employs BPTC to minimize degradation.
44. Constitutes of concern that have the potential to degrade groundwater include, in part, salts and nutrients.
- a. For salinity, the Basin Plan contains effluent limits (EC of the source water plus 500 $\mu\text{mhos/cm}$, or a maximum of 1,000 $\mu\text{mhos/cm}$) that considered Resolution 68-16 when adopted. The discharge meets these limits and therefore should not unreasonably degrade the beneficial uses of groundwater with respect to salinity.
 - b. For nitrogen, if it could affect the beneficial uses of a high quality water, practicable measures to protect the water are: 1) treating the effluent such that it is below objectives for drinking water, or 2) storing the effluent in a manner that protects the underlying groundwater from percolation from ponds until it can be beneficially used on crops. The Discharger is planning to reduce the total nitrogen to less than 10 mg/L, as characterized in [Finding 20](#) and therefore not unreasonably degrade the beneficial uses of groundwater with respect to nitrate.

Treatment and Control Practices

45. The Expansion Project described in [Findings 14 through 21](#), once completed, provides treatment and control of the discharge that incorporates:
- a. secondary treatment;
 - b. a nitrogen reduction process;
 - c. appropriate biosolids storage and disposal practices;
 - d. an operation and maintenance (O&M) manual; and
 - e. certified operators to ensure proper operation and maintenance.

46. This Order establishes groundwater limitations for the WWTF that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. This Order contains requirements for a groundwater assessment for assuring that the highest water quality consistent with the maximum benefit to the people of the State will be achieved.

Other Regulatory Considerations

47. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in Title 40, Code of Federal Regulations, Part 503, Standards for the Use or Disposal of Sewage Sludge, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to EPA. The RWD states that all biosolids will be hauled to a separate permitted facility.

48. As the discharge consists of treated municipal sewage and incidental discharges from treatment and storage facilities associated with a municipal wastewater treatment plant, and as these discharges are regulated by waste discharge requirements consistent with applicable water quality objectives, the Facility and its discharge is exempt from containment pursuant to Title 27, Section 20090(a).

CEQA

49. The Discharger, as the lead agency for purposes of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et, seq.) and the CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended), adopted in 1993 a General Plan that evaluates the potential environmental impacts resulting from the development of the City through 2013. The 1993 General Plan does not identify the wastewater discharge flow resulting from population growth or the potential environmental impacts from the discharge of wastewater. The Discharger also adopted on 6 September 2000 a negative declaration for annexation of 80 acres adjacent to the WWTF for effluent disposal, which the City later purchased. The Regional Water Board is a responsible agency pursuant to CEQA. The Regional Water Board reviewed and considered the General Plan and negative declaration prepared by the Discharger. This Order contains requirements that will mitigate or avoid environmental effects on water quality.

General Findings

50. Pursuant to CWC Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

51. The Regional Water Board will review this Order periodically and will revise requirements when necessary.

52. California Water Code Section 13267(b) states that: "In conducting an investigation specified in subdivision (a), the Regional Water 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 Water 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 Water 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."
53. The technical reports required by this Order and the attached Monitoring and Reporting Program No. [R5-2007-0115](#) are necessary to assure compliance with these waste discharge requirements. The Discharger operates the Facility that discharges the waste subject to this Order.
54. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 94-81 (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to California Water Code Section 13801, apply to all monitoring wells.

Public Notice

55. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
56. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
57. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that, Waste Discharge Requirements Order No. 5-00-050 is rescinded and that, pursuant to Sections 13263 and 13267 of the CWC, the City of Kerman and its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.

2. Bypass or overflow of untreated wastes, except as allowed by Provision E.2 of Standard Provisions and Reporting Requirements, is prohibited.
3. Discharge of waste classified as 'hazardous', as defined in Section 2521(a) of Title 23, California Code of Regulations, Section 2510 et seq., is prohibited. Discharge of waste classified as 'designated,' as defined in California Water Code Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.

B. Effluent Limitations

1. The monthly average discharge flow shall not exceed:
 - a. 1.2 mgd until the Expansion Project is complete
 - b. 2.0 mgd after the Expansion Project is complete, and Provision G.18 satisfied.
2. The effluent discharge to Storage Ponds A through C and Disposal Ponds shall not exceed the following limitations:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD ₅ ¹	mg/L	40	80
TSS ²	mg/L	40	80

¹ Five-day biochemical oxygen demand

² Total suspended solids

3. The arithmetic mean of BOD₅ and TSS in effluent samples collected over a monthly period shall not exceed 20 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (80 percent removal).
4. The annual flow-weighted average EC of the discharge shall not exceed the flow-weighted average EC of the source water plus 500 µmhos/cm or a maximum of 1,000 µmhos/cm, whichever is less. The flow-weighted average of the source water shall be a moving average for the most recent 12 months.

C. Discharge Specifications

1. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
2. Public contact with effluent shall be precluded through such means as fences, signs, or acceptable alternatives.

3. Objectionable odors shall not be perceivable beyond the limits of the WWTF property at an intensity that creates or threatens to create nuisance conditions.
4. Disposal ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
5. On or about **1 October** of each year, available disposal pond storage capacity shall at least equal the volume necessary to comply with [Discharge Specification C.4](#).
6. Ponds shall be managed to prevent breeding of mosquitoes. In particular,
 - a. An erosion control plan should assure that coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
 - c. Dead algae, vegetation and other debris shall not accumulate on the water surface.
 - d. Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but **not during**, the April 1 to **June 30** bird nesting season.
7. 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 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 undergone sufficient treatment and testing to qualify for reuse pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation.

1. Sludge and solid waste shall be removed from screens, sumps, aeration basins, ponds, clarifiers, etc. as needed to ensure optimal plant operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property.

3. Any handling and storage of residual sludge, solid waste, and biosolids on property of the WWTF shall be temporary (i.e., no longer than 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 of this Order.
4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
5. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water quality control board or State Water Board or a local (e.g., county) program authorized by a regional water quality control board. In most cases, this means the General Biosolids Order (State Water Board Water Quality Order No. 2004-12-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 authorized by the General Biosolids Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
6. Any proposed change in sludge use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

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 from other sources:
- a. Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or
 - b. Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

F. Groundwater Limitations

1. Release of waste constituents from any treatment or storage component associated with the WWTF shall not cause or contribute to groundwater:
- a. Containing constituent concentrations in excess of the concentrations specified below or natural background quality (as determined by Finding 33, or Provision G.16 and updated as appropriate as a result of ongoing monitoring), whichever is greater:
 - (i) Nitrate as nitrogen of 10 mg/L.
 - (ii) Total coliform organisms of 2.2 MPN/100 mL.
 - (iii) For constituents identified in Title 22, the MCLs quantified therein.
 - b. Containing taste or odor-producing constituents, toxic substances, or any other constituents, in concentrations that cause nuisance or adversely affect beneficial uses.

G. Provisions

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as Standard Provisions(s).
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. [R5-2007-0115](#), which is part of this Order, and any revisions thereto as adopted by the Regional Water Board or approved by the Executive Officer. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger self-monitoring reports.
3. The Discharger shall keep at the WWTF a copy of this Order, including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The Discharger shall not allow pollutant-free wastewater to be discharged into the Facility collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means storm water (i.e., inflow), groundwater (i.e., infiltration), cooling waters, and condensates that are essentially free of pollutants.
5. The Discharger must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger only when the operation is necessary to achieve compliance with the conditions of the Order.
6. All technical reports and work plans required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports and work plans must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
7. 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 Water 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 Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

8. 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 the appropriate Regional Water Board office.
9. 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 Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 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. If approved by the Executive Officer, the transfer request will be submitted to the Regional Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
10. As a means of discerning compliance with [Discharge Specification C.3](#), the dissolved oxygen content in the upper zone (1 foot) of effluent in the effluent storage ponds shall not be less than 1.0 mg/L for three consecutive sampling events. Should the DO be below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Regional Water Board and propose a remedial approach to resolve the low DO results **within 30 days**.
11. The Discharger shall maintain and operate all ponds sufficient to protect the integrity of containment levees and prevent overtopping or overflows. Unless a California civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically). As a means of management and to discern compliance with this Provision, the Discharger shall install and maintain in each pond permanent markers with calibration that indicates the water level at design capacity and enables determination of available operational freeboard.
12. The Discharger shall submit the technical reports and work plans required by this Order for Regional Water Board staff consideration and incorporate comments they may have in a timely manner, as appropriate. The Discharger shall proceed with all work required by the following provisions by the due dates specified.

13. **By 15 January 2008**, the Discharger shall submit a Work Plan evaluating the existing groundwater network and its effectiveness to investigate the areas affected and potentially affected by the WWTF and its discharge(s) to land. Based on the evaluation, the Work Plan shall propose additional groundwater monitoring wells, as appropriate. This shall include an additional upgradient well that will be representative of background groundwater and downgradient wells within the vicinity of the new ponds, as appropriate.

The Work Plan shall satisfy the information needs specified in the monitoring well installation section of [Attachment D](#), *Standard Monitoring Well Provisions for Waste Discharge Requirements*. All wells shall comply with appropriate standards as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981), and any more stringent standards adopted by the Discharger or county pursuant to CWC §13801.

The Work Plan must also include:

- A description of the area's hydrogeology, existing wells (active and otherwise), local well construction practices and standards, well restrictions, and groundwater extraction and recharge patterns.
 - A discussion of the potential horizontal and vertical extent of percolated effluent and adverse effects on receiving groundwater from the WWTF and its discharge(s) to land.
 - A proposed groundwater monitoring program to characterize groundwater for the constituents identified in the monitoring and reporting program. The program must identify the statistical methods that will be used to characterize groundwater **within two years** after groundwater well installation. Determination of groundwater quality shall be made using an appropriate statistical method [e.g., Title 27, Section 20415(e)(10)], and shall be based on representative data (typically from at least eight data points).
14. **By 15 April 2008**, complete well installation and commence groundwater monitoring of existing and any new wells in accordance with the work plan submitted pursuant to Provision G.4.
15. **By 15 May 2008**, submit a monitoring well installation report that meets the requirements of [Attachment D](#).
16. **By 15 April 2010**, the Discharger shall submit a technical report evaluating those constituents that threaten to degrade groundwater. The technical report shall also demonstrate that the treatment facilities, sludge handling and storage facilities, and effluent disposal resulting from the Expansion Project will not unreasonably degrade groundwater in accordance with Regional Water Board plans and policies and the CWC.

17. Upon completion of tasks set forth in [Provisions G.13 through G.16](#), the Regional Water Board will consider the evidence proved regarding groundwater and the discharge and reopen the WDRs to evaluate the effluent limitations and conditions of this Order to ensure consistency with water quality policies and plans and the CWC, as appropriate.
18. For authorization to discharge a monthly discharge flow of 2.0 mgd, the Discharger shall submit certification from a California registered civil engineer that the Expansion Project is complete and the WWTF can treat and dispose of these flows. Satisfaction of this provision is subject to written Executive Office approval.

I, PAMELA C. CREEDON, 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 14 September 2007.

PAMELA C. CREEDON, Executive Officer

Order Attachments:

Monitoring and Reporting Program

A Vicinity Map – WWTF

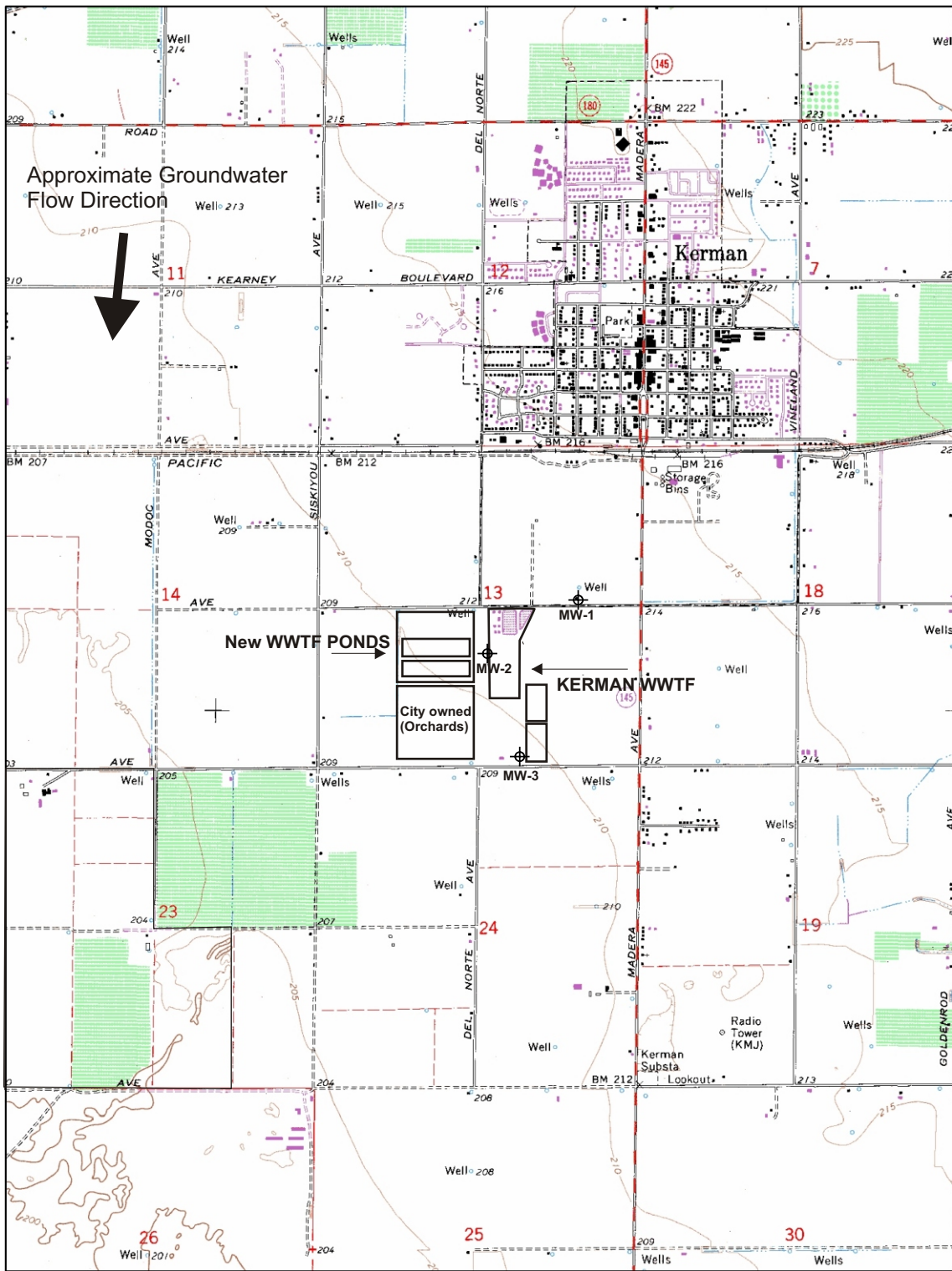
B. Plan View – Existing WWTF and Expansion Project

C. Process Flow Diagram

D. Standard Monitoring Well Provisions for Waste Discharge Requirements
Information Sheet

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

ARP/kes

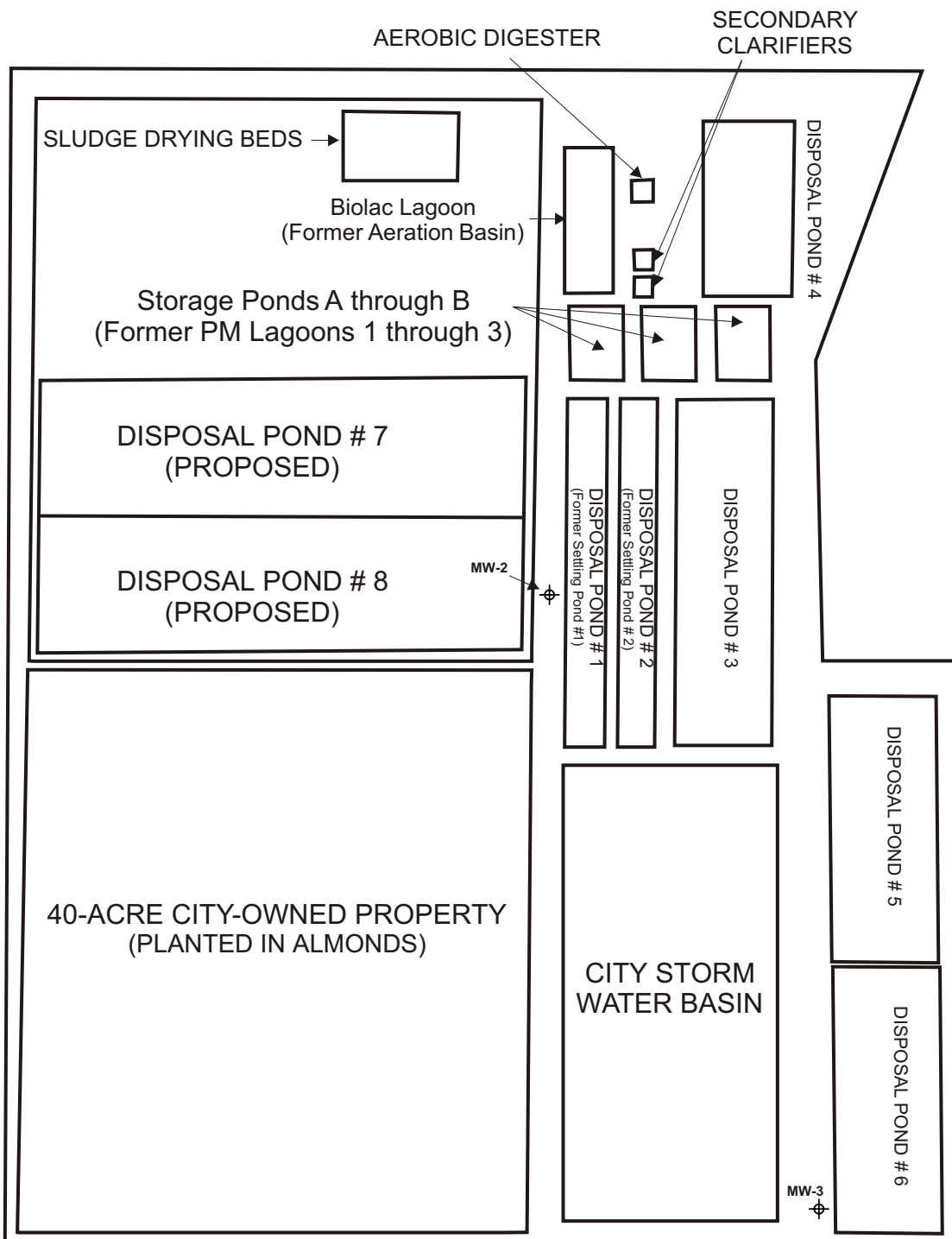


ATTACHMENT A - VICINITY MAP
WASTE DISCHARGE REQUIREMENTS R5-2007-0115
CITY OF KERMAN
WASTEWATER TREATMENT FACILITY
FRESNO COUNTY
 SECTION 13 T14S, R17E, MDB&M
 USGS 7.5 KERMAN QUADRANGLE



Not to Scale

MW-1 (not shown) ⊕

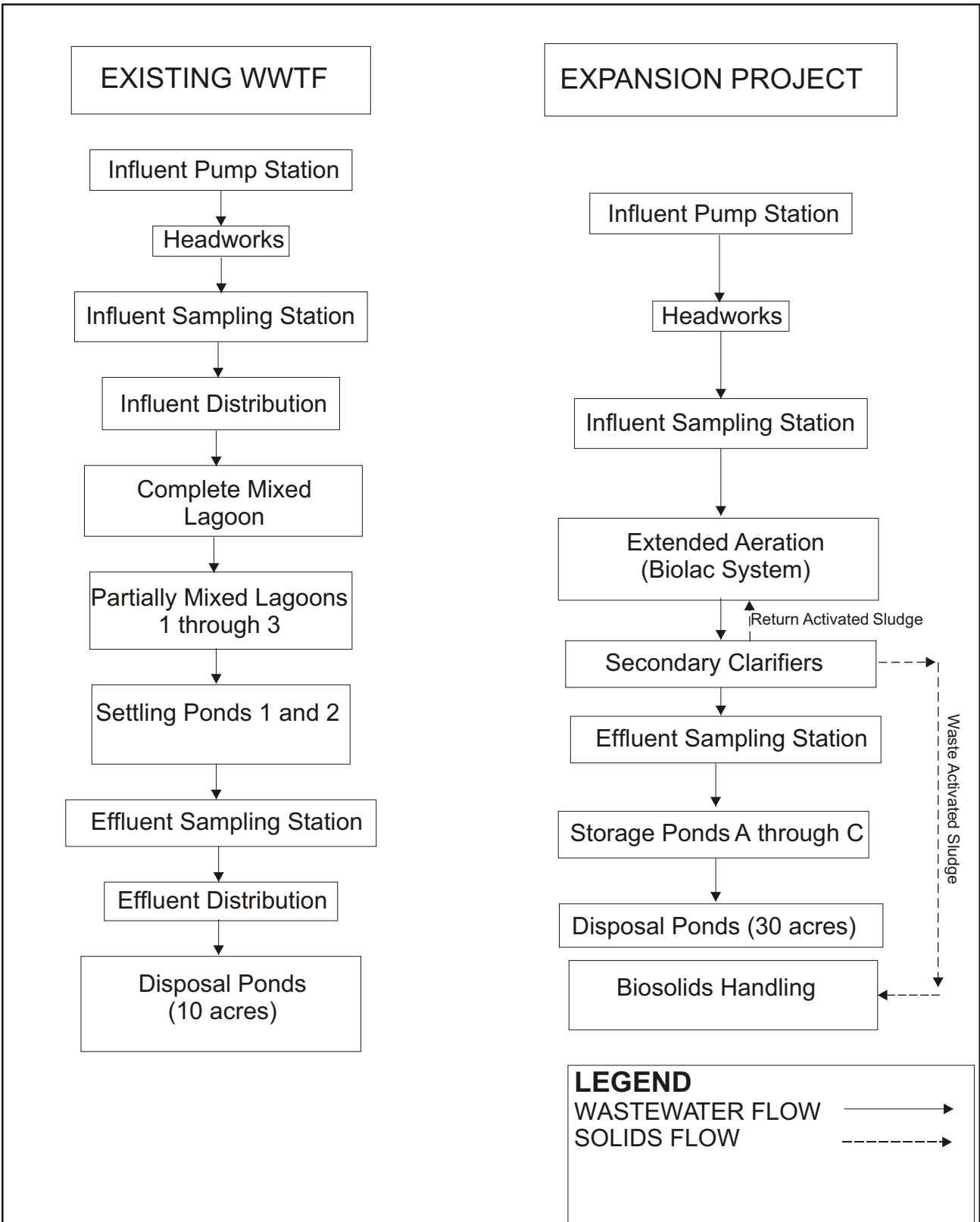


ATTACHMENT B - PLAN VIEW MAP
WASTE DISCHARGE REQUIREMENTS R5-2007-0115
CITY OF KERMAN
WASTEWATER TREATMENT FACILITY
FRESNO COUNTY



Not to Scale

Modified from Provost and Pritchard draft RWD



ATTACHMENT C - PROCESS FLOW DIAGRAM
 WASTE DISCHARGE REQUIREMENTS R5-2007-0115
 EXISTING WWTF AND EXPANSION PROJECT
 CITY OF KERMAN
 WASTEWATER TREATMENT FACILITY
 FRESNO COUNTY

WDRs ORDER NO. R5-2007-0115
ATTACHMENT D
STANDARD REQUIREMENTS FOR
MONITORING WELL INSTALLATION WORK PLANS AND
MONITORING WELL INSTALLATION REPORTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a work plan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approve the work plan. Upon installation, the Discharger shall submit a well installation report that includes the information contained in Section 2, below. All work plans and reports must be prepared under the direction of, and certified by, a California registered geologist or civil engineer.

SECTION 1 - Monitoring Well Installation Work Plan and
Groundwater Sampling and Analysis Plan

The monitoring well installation work plan shall contain, at a minimum, the following information:

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions
- Proposed monitoring well locations and rationale for well locations
- Topographic map showing facility location, roads, and surface water bodies
- Large-scaled site map showing all existing on-site wells, proposed wells, surface water bodies and drainage courses, buildings, waste handling facilities, utilities, and major physical and man-made features

B. Drilling Details:

- On-site supervision of drilling and well installation activities
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Cuttings disposal methods
- Soil sampling intervals (if appropriate); logging methods; number and location of soil samples and rationale; and sample collection, preservation, and analytical methods

C. Monitoring Well Design (in graphic form with rationale provided in narrative form):

- Diagram of proposed well construction details
 - Borehole diameter
 - Casing and screen material, diameter, and centralizer spacing (if needed)
 - Type of well caps (bottom cap either screw on or secured with stainless steel screws)
 - Anticipated depth of well, length of well casing, and length and position of perforated interval
 - Thickness, position and composition of surface seal, sanitary seal, and sand pack
 - Anticipated screen slot size and filter pack

- D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):
Method of development to be used (i.e., surge, bail, pump, etc.)
Parameters to be monitored during development and record keeping technique
Method of determining when development is complete
Disposal of development water
- E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):
Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
Datum for survey measurements
List well features to be surveyed (i.e., top of casing, horizontal and vertical coordinates, etc.)
- F. Schedule for Completion of Work
- G. Appendix: Groundwater Sampling and Analysis Plan (SAP)
The Groundwater SAP, a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities, shall contain, at a minimum, a detailed written description of standard operating procedures for:
- Equipment to be used during sampling
 - Equipment decontamination procedures
 - Water level measurement procedures
 - Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
 - Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
 - Purge water disposal
 - Analytical methods and required reporting limits
 - Sample containers and preservatives
 - Sampling
 - General sampling techniques
 - Record keeping during sampling (include copies of record keeping logs to be used)
 - QA/QC samples
 - Chain of Custody
 - Sample handling and transport

SECTION 2 - Monitoring Well Installation Report

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved work plan.

A. General Information:

- Purpose of the well installation project
- Number of monitoring wells installed and identifying label(s) for each
- Brief description of geologic and hydrogeologic conditions encountered during well installation
- Topographic map showing facility location, roads, surface water bodies
- Large-scaled site map showing all previously existing wells, newly installed wells, surface water bodies and drainage courses, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):

- On-site supervision of drilling and well installation activities
- Drilling contractor and driller's name
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Well boring log (provide for each well)
 - Well boring number and date drilled
 - Borehole diameter and total depth
 - Total depth of open hole (i.e., total depth drilled if no caving or back-grouting occurs)
 - Depth to first encountered groundwater and stabilized groundwater depth
 - Detailed description of soils encountered, using the Unified Soil Classification System

C. Well Construction Details (provide for each well):

- Well construction diagram including:
 - Monitoring well number and date constructed
 - Casing and screen material, diameter, and centralizer spacing (if needed)
 - Length of well casing
 - Length and position of slotted casing and size of perforations
 - Thickness, position and composition of surface seal, sanitary seal, and sand pack
 - Type of well caps (bottom cap either screw on or secured with stainless steel screws)

E. Well Development (provide for each well):

- Date(s) and method of development

How well development completion was determined
Volume of water purged from well and method of development water disposal

F. Well Survey (provide for each well):

Reference elevation at the top rim of the well casing with the cap removed (feet above mean sea level to within 0.01 foot)

Ground surface elevation (feet above mean sea level to within 0.01 foot)

Horizontal geodetic location, where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum, or acceptable alternative (provide rationale)

Present the well survey report data in a table

G. Water Sampling:

Date(s) of sampling

Sample identification

How well was purged

Analytical methods used

How many well volumes purged

Laboratory analytical data sheets

Levels of temperature, EC, and pH at stabilization

Water level elevation(s)

Sample collection, handling, and preservation methods

Groundwater contour map

H. Soil Sampling (if applicable):

Date(s) of sampling

Sample collection, handling, and preservation methods

Sample identification

Analytical methods used

Laboratory analytical data sheets

Present soil sampling data in a table

I. Well Completion Report(s) (as defined in California Water Code §13751). Blank forms are available from California Department of Water Resources' website www.water.ca.gov. Submit this section under separate cover.

J. Appendix - include, at a minimum, copies of the following:

County-issued well construction permits

Registered engineer or licensed surveyor's report and field notes

Field notes from well development

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0115
FOR
CITY OF KERMAN
WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code (CWC) section 13267. The Discharger shall not implement any changes to this MRP unless and until the Regional Board adopts or the Executive Officer issues a revised MRP. Changes to sample location shall be established with concurrence of Regional Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. 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 and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions). The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in this MRP, shall be reported to the Regional Water Board and used in determining compliance.

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;
3. Instruments are serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

In addition to details specified in Standard Provision, Provisions for Monitoring C.3, records of monitoring information shall also include the following:

1. Method detection limit (MDL);
2. Reporting limit (RL) (i.e., a practical quantitation limit or PQL); and
3. Documentation of cation/anion balance for general minerals analysis of supply water, and groundwater samples.

All laboratory results shall be reported down to the MDL. Non-detected 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.

All analyses shall be performed in accordance with the latest edition of *Guidelines Establishing Test Procedures for Analysis of Pollutants*, promulgated by EPA (40 CFR 136) or other procedures approved by the Executive Officer, provided the methods have method detection limits equal to or lower than the analytical methods specified in this MRP. In reporting data, the Discharger shall indicate whether any analysis was performed using a method not in conformance with EPA's Guidelines. Analyses may also comply with the methods and holding

times specified in: *Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020, 1983); *Methods for Determination of Inorganic Substance in Environmental Samples* (EPA/600/R-93/100, 1993); *Standard Methods for the Examination of Water and Wastewater*, 20th Edition (WEF, APHA, AWWA); and *Soil, Plant and Water Reference Methods for the Western Region*, 2003, 2nd Edition, 2003.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration after at least 12 months of monitoring, the Discharger may request the MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

INFLUENT MONITORING

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

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Continuous	Daily ¹
Monthly Average Daily Flow	mgd	Computed	Monthly
pH	s.u.	Grab	Weekly
BOD ₅ ²	mg/L	24-hour composite ³	Weekly
TSS ⁴	mg/L	24-hour composite ³	Weekly

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

² Five-day, 20°C biochemical oxygen demand (BOD₅)

³ Composite samples may consist of flow-proportioned grab samples.

⁴ Total suspended solids (TSS)

EFFLUENT MONITORING

The Discharger shall collect effluent samples at a point in the system following treatment and before discharge to the Disposal Ponds. Time of collection of a grab sample shall be recorded. Effluent monitoring shall include the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency¹</u>
pH	s.u. ²	Grab	Weekly
BOD ₅			
Concentration	mg/L	Grab	Weekly
Monthly Average	mg/L	Calculated	Monthly
Percent Removal	Percent	Calculated	Monthly

MONITORING AND REPORTING PROGRAM NO. R5-2007-0115
 CITY OF KERMAN
 WASTEWATER TREATMENT FACILITY
 FRESNO COUNTY

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> ¹
TSS			
Concentration	mg/L	Grab	Weekly
Monthly Average	mg/L	Calculated	Monthly
Percent Removal	Percent	Calculated	Monthly
Salinity			
EC ³	µmhos/cm	Grab	Monthly
TDS ⁴	mg/L	Grab	Quarterly ⁵
Nitrogen Forms			
Nitrate (as N)	mg/L	Grab	Monthly ⁶
TKN ⁷	mg/L	Grab	Monthly ⁶
Total Nitrogen	mg/L	Calculated	Monthly ⁶
Metals ⁸	varies	Grab	Annually ⁹
General Minerals ¹⁰	mg/L	Grab	Annually

¹ If results of monitoring a pollutant appear to indicate either the failure to achieve the design treatment goals of the wastewater treatment facility or potential upset of the treatment process, but monitoring frequency is not sufficient to validate the results, the frequency of sampling shall be increased to confirm the magnitude and duration of such treatment failures, if any, and aid in identification and resolution of the problem.

² pH standard units (s.u.)

³ Electrical conductivity at 25°C.

⁴ Total dissolved solids (TDS) referenced hereafter in this program shall be determined using Environmental Protection Agency (EPA) Method No. 160.1 for combined organic and inorganic TDS and EPA Method No. 160.4 for inorganic TDS or equivalent analytical procedures specified in 40 Code of Federal Regulations (CFR) Part 136.

⁵ January, April, July, and October

⁶ Monthly for the first year, quarterly thereafter.

⁷ Total Kjeldahl Nitrogen (TKN)

⁸ Metals as referred to in this program shall include the constituents in the Metals Analyte List presented below.

⁹ In October

¹⁰ General Minerals as referred to in this program shall include the constituents in the General Minerals Analyte List presented below.

Metals Analyte List¹

Aluminum	Iron	Selenium
Barium	Lead	Silver
Copper	Manganese	Zinc
Cadmium	Mercury	Nickel
Chromium	Molybdenum	

¹ With the exception of wastewater samples, samples placed in an acid-preserved bottle must first be filtered. 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.

General Minerals Analyte List¹

Alkalinity (as CaCO ₃)	Carbonate (as CaCO ₃)	pH
Arsenic	Chloride	Potassium
Bicarbonate (as CaCO ₃)	EC	Sodium
Boron	Hardness (as CaCO ₃)	Sulfate
Calcium	Magnesium	TDS

¹ General Minerals analyte lists may vary depending on the laboratory, but shall include at least the above analytes and properties. An anion cation balance shall accompany results.

DISPOSAL POND MONITORING

The disposal ponds shall be sampled systematically for the parameters specified below. Disposal pond monitoring shall include at least the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
DO ^{1,2}	mg/L	Grab ³	Weekly
Freeboard	Feet ⁴	Observation	Weekly

¹ Dissolved oxygen (DO)

² To address potential for the creation of objectionable odors, the DO content in the upper zone (one foot) of either effluent storage reservoir should not be less than 1.0 mg/L for three consecutive sampling events. If results of monitoring indicate DO concentrations less than 1.0 mg/L, but monitoring frequency is not sufficient to validate the results, the frequency of sampling shall be increased to confirm the magnitude and duration of such low concentrations of DO, if any, and aid in identification and resolution of the problem.

³ Samples shall be collected at a depth of one foot from the storage reservoirs, opposite the inlet, and analyzed for DO. Samples shall be collected between 0700 and 0900 hours.

⁴ Freeboard shall be monitored to the nearest tenth of a foot.

In addition, the Discharger shall inspect the condition of the disposal ponds once per week and write visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether dead algae, vegetation, scum, or debris are accumulating on the disposal pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.). A **summary** of the entries made in the log during each month shall be submitted along with the monitoring report the following month.

GROUNDWATER MONITORING

MONITORING AND REPORTING PROGRAM NO. R5-2007-0115
 CITY OF KERMAN
 WASTEWATER TREATMENT FACILITY
 FRESNO COUNTY

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

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

The Discharger shall include in its submittal of groundwater elevation data, a contour map based on said data showing the gradient and direction of groundwater flow under/around the facility and effluent disposal area(s). The groundwater contour map shall also include the location of the monitoring wells and active storage and land disposal areas (i.e., areas receiving treated effluent).

Samples shall be collected from the approved monitoring wells and analyzed for the following constituents. Once sampling pursuant to Provision G.4 is complete, the Discharger shall monitor groundwater for the constituents and frequencies specified below.

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Depth to groundwater	Feet ¹	Measured	Quarterly ²
Groundwater elevation	Feet above mean sea level	Calculated	Quarterly ²
Salinity			
EC	µmhos/cm	Grab	Quarterly ²
TDS	mg/L	Grab	Quarterly ²
Nitrogen compounds:			
Nitrate (as N)	mg/L	Grab	Quarterly ²
Total Nitrogen	mg/L	Calculated	Quarterly ²
Total Organic Carbon	mg/L	Grab	Quarterly ²
Iron	mg/L	Grab	Quarterly ²
Manganese	mg/L	Grab	Quarterly ²
General Minerals ⁵	mg/L	Grab	Annually ⁴
Metals ⁶			Once per three years ⁴

¹ To the nearest hundredth of a foot.

² January, April, July and October.

³ Samples must be filtered prior to preservation

⁴ In October

⁵ General Minerals shall include at least the constituents listed in General Minerals Analyte List included herein in the Effluent Monitoring section. An anion/cation balance demonstrating that analyses are complete shall accompany the results.

Footnotes continued next page

Footnotes

⁶ Metals shall include at least the constituents listed in the Metals Analyte List included herein in the Effluent Monitoring section.

SOURCE WATER MONITORING

The City's municipal source water supply shall be monitored as follows:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Measurement</u>	<u>Frequency</u>
EC ¹	µmhos/cm	Grab	Quarterly ²
12-month running average EC	µmhos/cm	Grab	Quarterly ²

¹ Report as a flow-weighted average from all supply wells and include copies of supporting calculations with monitoring reports.

² January, April, July and October.

In addition, the City shall submit annually, its most recent Consumer Confidence Report for the City's water supply.

SLUDGE MONITORING

To ensure that industrial and other discharges to the wastewater treatment facility are not interfering with treatment process, the Discharger shall collect a composite sample of sludge annually, as set forth by Title 40 Code of Federal Regulations (CFR) Part 503.16. Any Notice of Necessary Information (NANI) form prepared for submittal to the United States Environmental Protection Agency shall be forwarded to the Regional Water Board.

Composite samples shall be collected in accordance with the Environmental Protection Agency's *POTW Sludge Sampling And Analysis Guidance Document* (EPA/ 833B89100, August 1989) and test for metals:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

The control of pathogens and the reduction of vector attraction shall be achieved in accordance with the Environmental Protection Agency's *Control of Pathogens and Vectors In sewage Sludge* (EPA/625-R-92/013, July 2003).

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, a log should be complete enough to serve as a basis for part of the annual report.

REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions. Daily, weekly, semi-monthly, and monthly data shall be reported in monthly monitoring reports.

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.

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 pollutant 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.

A. Monthly Reports

Daily, weekly, 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** (i.e., the January Report is due by 1 March). At a minimum, the reports shall include:

1. Results of influent, effluent, and disposal pond monitoring;
2. Calculated Monthly Average Daily Flow;
3. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
4. Copies of laboratory analytical reports; and
5. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Quarterly Reports

Wastewater: Daily, weekly, monthly, and quarterly monitoring data shall be reported in quarterly monitoring reports. Quarterly monitoring reports shall be submitted to the Regional Water Board **by the 1st day of the second month after the calendar quarter** (i.e., the 1st Quarter Report is due by 1 May, 2nd Quarter Report is due by 1 August, and the 3rd Quarter Report is due 1 November). The monthly reports required on 1 May, 1 August, and 1 November shall be combined with the quarterly report for ease of submittal. Quarterly monitoring reports shall include all monitoring data required in the monthly monitoring schedule, and the data from quarterly effluent and water supply monitoring events.

Groundwater: Quarterly groundwater monitoring data shall be reported in quarterly monitoring reports and submitted to the Regional Water Board as detailed in the previous section. Quarterly monitoring reports shall include all monitoring data required from quarterly groundwater monitoring events. The quarterly groundwater monitoring reports shall contain:

1. Quarterly groundwater contour maps;
2. Graphs of the laboratory analytical data for all samples taken from each well within at least the previous five calendar years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents; and
3. All monitoring analytical data obtained during the quarter presented in tabular form and included with previous data obtained for the given well.

C. Annual Reports

Wastewater: An Annual Report shall be prepared as a fourth quarter monitoring report. The Annual Report will include all monitoring data required in the monthly/quarterly schedule plus the results of any annually sampled constituents (general minerals, selected metals, etc). The Annual Report shall be submitted to the Regional Board **by 1 February of the year following the year the samples were collected.** In addition to the data normally presented, the Annual Report shall include the following:

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal;
2. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations;
3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (standard Provision C.4);
4. A statement whether the current operation and maintenance manual, and contingency plan, reflect the WWTF as currently constructed and operated, and the dates when these documents were last reviewed for adequacy;

5. The results of an annual evaluation conducted pursuant to Standard Provisions E.4 and a figure depicting monthly average discharge flow for the previous five calendar years;
6. The most recent annual water supply report for the City;
7. A summary of sludge monitoring, including:
 - a. Annual sludge production in dry tons and percent solids;
 - b. A schematic diagram showing sludge handling facilities and solids flow diagram; and
 - c. 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 sludge production disposed of by each method.
 - i. For **landfill disposal**, include (a) the Order numbers 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 the sludge.
 - ii. For **land application**, include: (a) the locations of the site(s), and (b) the Order number of any WDRs that regulates the site(s).
 - iii. 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); and
 - iv. For **composting**, include: (a) the location of the site(s), and (b) the order numbers of any WDRs that regulate the site(s).
8. 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.

Groundwater: An Annual Groundwater Monitoring Report shall be prepared as a fourth quarter groundwater monitoring report. The Annual Groundwater Monitoring Report will include all groundwater monitoring data required in the monthly/quarterly groundwater monitoring schedule plus the results of any annually sampled groundwater constituents (general minerals, selected metals, etc). The Annual Groundwater Monitoring Report shall be submitted to the Regional Board **by 1 February of the year following the year the samples were collected.** In addition to the data normally presented in the quarterly groundwater monitoring reports, the Annual Report shall include the following:

1. Quarterly groundwater contour maps from the previous four quarters;
2. Graphs of the analytical data for all samples collected from each monitoring well for at least five calendar years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents specified herein and selected in concurrence with Regional Water Board staff. Graphs shall be

plotted at a scale appropriate to show trends or variations in water quality, and shall plot each datum, rather than plotting mean values.

3. All monitoring data obtained during the previous monitoring events for at least the last five calendar years.

Septage: The Discharger shall keep daily logs of septage received that includes, at a minimum, company name, septage origin, and estimated quantity. A summary of this information shall be reported in the annual reports monitoring reports. Daily logs shall be kept onsite for at least five years and available for Regional Water Board's staff review during an inspection.

All technical reports required herein must be overseen and certified by a California registered civil engineer, certified engineering geologist, or certified hydrogeologist in accordance with California Business and Professions Code, sections 6735, 7835, and 7835.1.

All reports submitted in response to this Order shall comply with the signatory requirements in Standard Provision B.3.

A transmittal letter shall accompany each self-monitoring report. The letter shall discuss any violations during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory.

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

Ordered by: _____

PAMELA C. CREEDON, Executive Officer

(Date)

ARP/kes

INFORMATION SHEET

ORDER NO. R5-2007-0115
CITY OF KERMAN
WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

Background

The City of Kerman (Discharger or City) operates a wastewater collection, treatment, and disposal facility (WWTF) for the residents and small industry of the City of Kerman. The WWTF has an average daily flow of 1.2 million gallons per day (mgd).

The Discharger submitted a report of waste discharge (RWD) dated [9 May 2007](#) in support of a modification and expansion (hereafter Expansion Project) of the City WWTF. The existing WWTF provides secondary treatment of the wastewater stream. Treatment includes screening to remove large solids, aeration, and sedimentation. Effluent is discharged to approximately 5 acres of unlined settling ponds, followed by 9.5 acres of unlined evaporation/percolation ponds (Disposal Ponds).

Waste Discharge Requirements (WDRs) Order No. 5-00-050, adopted by the Regional Water Board on 17 March 2000, limits the discharge flow to 1.2 million gallons per day (mgd). The WDRs also establish monthly average and daily maximum limits for settleable solids (SS) of 0.2 mL/L and 0.5 mL/L, biochemical oxygen demand (BOD) of 40 mg/L and 80 mg/L, and total suspended solids (TSS) of 40 mg/L and 80 mg/L, respectively. WDRs Order No. 5-00-050 does not reflect the configuration of the Expansion Project.

The Expansion Project consists of a new Biolac System©, which is an extended aeration treatment process that incorporates nitrogen removal. The Expansion Project will also include modification to the headworks, new sludge handling and storage facilities, modification of existing aeration lagoons and ponds, and construction of new disposal ponds.

Solids and Biosolids Disposal

Screenings from the headworks are placed in a dumpster prior to disposal at an offsite landfill. Previously, the City did not remove accumulated solids from the disposal ponds, but instead occasionally drained and dried the ponds and disked the accumulated sludge in the pond bottom soils. The City has ceased this method due to the potential for oxygen demanding substances, metals and nitrogen to leach and unreasonably degrade groundwater. The City now drains the ponds and removes the sludge for offsite disposal.

In February 2001, the City was issued a Notice of Intent for the application of approximately 700 cubic feet of biosolids on City-owned property planted in almonds to the west of the WWTF. The City still has approximately 1,000 cubic feet of biosolids that are being stockpiled onsite.

The City has not completed the design of the sludge handling and storage facilities for the Expansion Project, but intends to construct reinforced concrete sludge drying beds for drying sludge in the summer, and a mechanical dewatering system for during the winter.

Groundwater Conditions

Regional groundwater flows south-southwesterly and the depth of water occurs about 90 feet below ground surface (bgs), according to information in *Lines of Equal Elevation of Water in Wells in Unconfined Aquifer*, published by DWR in Spring 2004. An 80-foot thick modified E-clay layer occurs about 500 to 550 feet bgs. Generally, water quality is better in the confined aquifer below the E-clay. However, elevated uranium concentrations have resulted in the City drilling additional drinking water wells to meet the primary maximum contaminant levels (MCL) specified in Title 22 of California Code of Regulations (CCR). Most domestic wells in the area are perforated below the E-clay, but some irrigation wells within the immediate vicinity of the WWTF are likely perforated above and below the E-clay to maximize well production.

In 2002, the City began monitoring groundwater in three wells (MW-1 through MW-3) at the WWTF. Groundwater is not characterized in the area of the new Disposal Ponds to the west of the WWTF. The upgradient well (MW-1) is much higher in EC, chlorides, and metals than the downgradient wells (MW- 2 and MW-3). The upgradient well (MW-1) may not represent true background conditions.

One of the downgradient wells (MW-3) exhibits higher concentrations of total organic carbon (TOC) compared to MW-1, based on results from one sampling round. Also, nitrate and sulfate in downgradient wells (MW-2 and MW-3) were lower than the upgradient well (MW-1). Further, arsenic in one downgradient well (MW-3) exceeded the primary MCL of 10 µg/L, but arsenic in the upgradient well (MW-1) was only about 3.9 µg/L. The amount of data is too limited to draw definitive conclusions but the groundwater downgradient of the effluent disposal ponds may be in reduced conditions.

Compliance History

The Discharger consistently exceeds the effluent limitations for BOD₅, and TSS specified in WDRs Order No. 5-00-050. Discharger self monitoring reports (SMRs) from April 2006 through March 2007 show the City exceeded the monthly average BOD and TSS effluent limit of 40 mg/L each 9 months of the months reviewed. Table 1 summarizes the effluent BOD and TSS concentrations from those months.

TABLE 1. Effluent Quality

<u>Month</u>	<u>BOD</u> <u>(mg/L)</u>	<u>TSS</u> <u>(mg/L)</u>	<u>Month</u>	<u>BOD</u> <u>(mg/L)</u>	<u>TSS</u> <u>(mg/L)</u>	<u>Month</u>	<u>BOD</u> <u>(mg/L)</u>	<u>TSS</u> <u>(mg/L)</u>
Apr-06	29	18	Aug-06	32	49	Dec-06	51	51
May-06	33	30	Sep-06	26	49	Jan-07	66	70
Jun-06	22	39	Oct-06	59	54	Feb-07	45	49
Jul-06	42	65	Nov-06	63	56	Mar-07	41	51

Bolded values note violations of the effluent limit

In addition, the City exceeded the settleable solids monthly average limit of 0.2 mL/L in July 2006, and the BOD daily maximum limit of 80 mg/L in May and June 2006, and the TSS daily maximum limit of 40 mg/L in May, June, August and October 2006. A Notice of Violation (NOV) was issued 8 May 2007 for the above violations. The upgrade and expansion of the WWTF should address violations of the effluent limits.

The Discharger also did not submit a technical report characterizing background groundwater quality as required by Provision E.6 of WDRs Order No. 5-00-050. The proposed WDRs include a provision to complete this requirement.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The Basin Plan indicates the greatest long-term problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated by man's activities and particularly affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. The Regional Water Board encourages proactive management of waste streams by dischargers to control addition of salt through use, and has established an incremental EC limitation of 500 $\mu\text{mhos/cm}$ as a measure of the maximum permissible addition of salt constituents through use.

Discharges to areas that may recharge good quality groundwaters shall not exceed an EC of 1,000 $\mu\text{mhos/cm}$, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.

Antidegradation

The antidegradation directives of State Water Board Resolution No. 68-16 (Resolution 68-16), "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation Policy" 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. Policy and procedures for complying with this directive are set forth in the basin plan.

Constituents typically elevated in domestic wastewater threaten the beneficial uses of groundwater if not adequately controlled by a treatment process or attenuated in the soil profile prior to discharge to first encountered groundwater. Discharges that rely on percolation for disposal may result in the percolation of excess organic carbon, and the mobilization of other constituents.

The discharge from the Expansion Project will likely not degrade the beneficial uses of groundwater because:

- a. For salinity, the Basin Plan contains effluent limits (EC of the source water plus 500 $\mu\text{mhos/cm}$, or a maximum of 1,000 $\mu\text{mhos/cm}$) that considered Resolution 68-16. The discharge meets these limits and therefore consistent with Resolution 68-16.
- b. For nitrogen, if it could affect the beneficial uses of a high quality water, practicable measures to protect the high quality water are: 1) treating the effluent such that it is below objectives for drinking water, or 2) storing the effluent in a manner that protects the underlying groundwater from percolation from ponds until it can be beneficially used on crops. The Discharger proposes implementing treatment technology that will result in an effluent total nitrogen concentration of less than 10 mg/L, which should preclude unreasonable degradation of groundwater for nitrate.

Treatment Technology and Control

The Expansion Project will provide treatment and control of the discharge that incorporates:

- a. Secondary treatment of the wastewater;
- b. A nitrogen reduction process;
- c. Appropriate biosolids storage and disposal practices;
- d. An Operation and Maintenance (O&M) manual; and
- e. Certified operators to ensure proper operation and maintenance.

Title 27

Title 27, CCR, section 20005 et seq. (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Discharges of domestic sewage and treated effluent can be treated and controlled to a degree that will not result in unreasonable degradation of groundwater. For this reason, they have been conditionally exempted from Title 27. Treatment and storage facilities for sludge that are part of the WWTF are considered exempt from Title 27 under section 20090(a), provided that the facilities not result in a violation of any water quality objective. However, residual sludge (for the purposes of the proposed Order, sludge that will not be subjected to further treatment by the WWTF) is not exempt from Title 27. Solid waste (e.g., grit and screenings) that results from treatment of domestic sewage and industrial waste also is not exempt from Title 27. This residual sludge and solid waste are subject to the provisions of Title 27.

Accordingly, the municipal discharge of effluent and the operation of treatment or storage facilities associated with a municipal wastewater treatment plant can be allowed without requiring compliance with Title 27, but only if resulting degradation of groundwater is in accordance with the Basin Plan.

CEQA

The Discharger certified in 1993 a General Plan that evaluates the potential environmental impacts resulting from the development of the City through 2013. The 1993 General Plan does not identify the wastewater discharge flow resulting from population growth or the potential environmental impacts from the discharge of wastewater. The Discharger certified on 6 September 2000 a negative declaration for annexation of 80 acres adjacent to the WWTF for effluent disposal, which the City later purchased. The Regional Water Board, as a responsible agency under CEQA, has reviewed the General Plan and negative declaration. To mitigate the Expansion Project's groundwater quality impacts to less than significant levels, the terms and conditions of this proposed Order and accompanying enforcement order are appropriate and necessary.

Proposed Order Terms and Conditions

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The proposed Order prohibits discharge to surface waters and water drainage courses.

The proposed Order would carry over the current Order's monthly average daily discharge flow limitation until the City completes the Expansion Project. The proposed Order would carry over the previous Order's effluent limits for 5-day biological oxygen demand (BOD₅) of 40 mg/L (monthly average), and 80 mg/L (daily maximum). These limitations are based on Basin Plan minimum performance standards for municipal facilities. The advanced secondary treatment technology being implemented, as part of the Expansion Project will result in an effluent of much higher quality than that reflected in the effluent limitations set forth in the WDRs.

The proposed Order would establish an effluent limitation for EC that reflects the Regional Water Board policy for managing the salts within the Tulare Lake Basin.

The discharge requirements regarding dissolved oxygen and freeboard are consistent with Regional Water Board policy for the prevention of nuisance conditions, and are applied to all such facilities.

The proposed WDRs would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedances of these objectives or natural background water quality, whichever is greater.

The WDRs would require the City assess the existing groundwater monitoring well network and propose the installation of additional wells (e.g., background, within the influence of the new evaporation/percolation ponds, etc.), as appropriate. The WDRs would also carry over the provision from the existing WDRs that requires the City to submit a report characterizing background groundwater quality and determine compliance with groundwater limitations. The

WDRs would also require the Discharger assess its discharge on a constituent-by-constituent basis for consistency with Regional Water Board plans and policies, including Resolution No. 68-16. This assessment would identify those constituents that threaten the beneficial uses of groundwater. This may result in the WDRs being reopened and additional or modified effluent limitations imposed.

Monitoring Requirements

Section 13267 of the CWC authorizes the Regional Water 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 an increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment of civil administrative liability where appropriate.

The proposed Order includes influent and effluent monitoring requirements, pond monitoring, groundwater monitoring, sludge monitoring, water supply monitoring, and septage monitoring. The monitoring is necessary to evaluate groundwater quality and the extent of the degradation from the discharge.

The Discharger must monitor groundwater for constituents present in the discharge that are capable of reaching groundwater and violating groundwater limitations if its treatment and control, and any dependency of the process on sustained environmental attenuation, proves inadequate. For constituents listed in [Section F](#), Groundwater Limitations, of the WDRs, the Discharger must, as a part of each monitoring event, compare concentrations of constituents found in each monitoring well (or similar type of groundwater monitoring device) to the background concentrations or to prescribed numerical limitations to determine compliance.

The proposed Order does not require the Discharger to monitor total coliform organisms (TCO) in the effluent and groundwater. Given the existing site-specific conditions, it is unlikely that the presence of pathogens resulting from groundwater monitoring is a result of the percolation of wastewater. The presence of pathogens in groundwater would likely occur from compromises in the monitoring well's construction. The proposed Order may be re-opened or additional groundwater monitoring required if site conditions warrant.

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The proposed Order would set limitations based on the information provided thus far. If applicable laws and regulations change, or once new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.

Proposed Enforcement Order

The Discharger cannot comply with the effluent limitations of the existing Order and proposed Order due to lack of treatment and disposal capacity. Once the Expansion Project is complete, the Discharger should be able to comply with the terms and conditions of the proposed Order. An accompanying draft Cease and Desist Order would require the Discharger to perform a series of tasks according to a time schedule to complete the Expansion Project. It would also require the City to remove the existing stockpiles of biosolids.

ARP/kes