

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2017-XXXX

WASTE DISCHARGE REQUIREMENTS

FOR
SHASTA COUNTY SERVICE AREA NO. 8
PALO CEDRO WASTEWATER TREATMENT PLANT
SHASTA COUNTY

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

1. On 19 August 2016, Shasta County Department of Public Works submitted a Report of Waste Discharge (ROWD) to update Waste Discharge Requirements (WDRs) for an existing wastewater treatment plant (WWTP) which serves a portion of the community of Palo Cedro in Shasta County. A revised ROWD was submitted on 28 October 2016.
2. Shasta County (hereafter "Discharger") owns and operates the Palo Cedro Wastewater Treatment Plant, also known as Shasta County Service Area No. 8, (Facility) and is responsible for compliance with these WDRs.
3. The Facility is located at 21300 Charolais Way in Palo Cedro, Shasta County (Section 24, T31N, R4W, MDB&M). The Facility occupies Assessor's Parcel Number (APN) 054-240-02, as shown on Attachment A, which is attached hereto and made part of this Order by reference.
4. WDRs Order 99-090, adopted by the Central Valley Water Board on 11 June 1999, prescribes requirements for the Facility. Order 99-090 allows an average dry-weather wastewater flow of up to 0.117 million gallons per day (mgd). The WDRs are over 16 years old and are due for an update. Therefore, Order 99-090 will be rescinded and replaced with this Order.

Background Information

5. The Facility currently serves approximately 405 residents, or 465 household equivalents (HEs), with a capacity of 500 HEs. This includes 132 residential connections, 31 commercial connections (including two public authority connections) and no industrial facilities.

6. The Facility began operation in 1986 and was upgraded in 1999. The sewer system consists of approximately 9 miles of polyvinyl chloride (PVC) gravity pipeline and 3.8 miles of force main, ranging in size from 4 to 10 inches.

Existing Facility and Discharge

7. The sewer system consists of a control building, headworks, two shotcrete-lined aeration basins subdivided into four cells, and three unlined percolation/evaporation ponds. During summer months a pump station conveys wastewater from the final pond to a 6.2-acre flood irrigation area and two land application spray field areas totaling 35.8 acres. A drainage catchment pond collects runoff from the fields and is equipped with a pump return to the percolation/evaporation ponds.
8. The Cross Creek Pump Station and Silverbridge Pump Station both consist of a wet well with two pumps, which convey wastewater through 4-inch force main, 1442 feet and 1185 feet, respectively, to the gravity collection system to the Main Pump Station. All waste collected by the Facility passes through the Main Pump Station which pumps through 17,200 feet of force main to the treatment plant. Influent flow monitoring is tracked by an ultra-sonic flow meter at the Main Pump Station. There is an air injection facility 10,000 feet from the pump station. The Main Pump Station consists of two wet wells and two submersible pumps with a capacity of 340-470 gallons per minute (gpm, 0.45 mgd).
9. All stations are equipped with high and low-level alarms with autodialers to notify the California Safety Company, which reviews the alarm and notifies the operator in charge. In case of power outage, stand-by generators are available at the Main Pump Station and the Cross Creek Station and a portable generator is available on demand for the Silverbridge Station.
10. At the treatment plant, wastewater passes through a static screen and distribution box split equally to the two aeration basins. The aeration cells are designed for an influent biological oxygen demand (BOD) concentration of 250 milligrams per liter (mg/L), or 125 pounds per day.
11. Wastewater flows from the aeration cells by gravity to the three storage reservoirs with compacted soil liners. Pond capacities are summarized in the table below.

Table 1: Pond Sizing

Pond	Average Depth at 2 feet of freeboard (feet)	Surface Area (acres)	Volumetric Capacity (million gallons)
Storage Reservoir 1	17.7	1.86	10.75
Storage Reservoir 2	14.5	2.66	12.6

Storage Reservoir 3	17.5	2.48	14.7
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12. All effluent is used to irrigate landscaping on site during dry weather months, typically May through August. Effluent is pumped from Storage Reservoir 3 through a 6-inch PVC pipeline to three land application areas (LAAs) located north of the treatment facility: the West Spray Field (21 acres), the East Spray Field (14.8 acres), and the flood irrigation area (6.2 acres divided into 5 terraces). The fields are not planted or harvested. No supplemental irrigation water is used.
13. LAAs are rotated as needed based on visual assessments of soil saturation and local weather reports. Application rates are typically 0.2 inches/hour on the spray fields and 350-400 gpm on the terraced flood irrigation area.
14. All LAAs drain to the southwest where runoff is captured in a Drainage Pond, located at the south end of the West Spray Field, immediately west of the Aeration Basins. The Drainage Pond is equipped with a pump return to Storage Reservoir 1.
15. WDR Order 99-090 permitted the discharge of untreated and chlorinated wastewater to LAAs. The WDR prohibited the discharge of storm water from the LAAs to any surface water drainage course within 30 days of the last untreated wastewater application or within 24 hours of the last treated wastewater application. The discharge of storm water from the LAAs has ceased.
16. Storm water runoff from the LAAs flows to the Drainage Pond and is pumped to Storage Reservoir 1. The treatment plant is graded to route storm water around the treatment facilities.
17. Storage Reservoir 3 is equipped with a discharge valve to allow drainage to the adjacent property located immediately to the south, which was permitted to receive reclaimed wastewater from the Facility until July 2014. Wastewater Reclamation Requirements Order 88-171 for Hawes River Acres, Inc. has been rescinded and this discharge has been disconnected. All valves to the discharge have been closed and locked out. Monthly verification of valve closure and lock-out is required by this Order and the attached Monitoring and Reporting Program R5-2017-XXXX (MRP).
18. The Facility is designed with an average dry weather flow of 0.117 mgd and an average wet weather design flow of 0.146 mgd. The design peak wet weather flow is 0.650 mgd. Annual influent flows since 2010 have ranged from 13.5 to 31.7 million gallons. Effluent irrigated is approximately 60-70% of the influent flow, or up to 22 million gallons per year (67.5 acre-feet per year) on 42 acres. Evaporation and percolation in the ponds accounts for the remainder of the water balance.

19. Limited characterization of influent and effluent water quality is available. Average influent and effluent wastewater quality is summarized in Table 2. BOD and Total Suspended Solids (TSS) data indicate over 91% removal provided by the treatment system.

Table 2: Influent and Effluent Water Quality¹

Constituent	Units	Influent	Effluent ²
Biological Oxygen Demand	mg/L	203	21.7
Total Suspended Solids	mg/L	243	33
pH	SU	6.7	7.7
Dissolved Oxygen	mg/L	--	8.1
Settleable Solids	ml/L	--	0

¹Average monthly water quality data for June 2015-May 2016 period.

²Effluent water quality measured from Storage Reservoir 1.

mg/L = milligrams per liter

SU = standard unit

ml/L = milliliters per liter

20. No chemicals are used in operations, cleaning, and other maintenance activities that come into contact with wastewater infrastructure. RootX, or 2,6-dichlorobenzonitrile, is the preferred herbicide should root intrusion problems occur in the collection system, but this product has not yet been used at the facility.
21. Headworks bar screens are cleaned daily and screenings are disposed of at a Class 2 landfill. Sludge and grit in the aeration cells is monitored every 2 to 5 years. When average depth exceeds 18 inches, the material is removed and disposed of at a certified septage disposal facility or dewatered to 50% or greater dry solids and disposed of at a Class 2 landfill. Sludge was removed in April 2013, but did not require offsite disposal; the material was moved to Storage Reservoir 1.
22. In August 2012 the Central Valley Water Board issued a Notice of Violation for failure of the south berm of Storage Reservoir 3 and slope instability at the northwest corner of Storage Reservoir 2. In 2013 the exterior berms of both ponds were lined with bentonite and the south berm of Storage Reservoir 3 was given a bentonite core.

Site-Specific Conditions

23. The WWTP is located on flat terrain within the Enterprise Flat hydrologic subarea as depicted on interagency hydrologic maps prepared by the Department of Water

Resources in August 1986. The WWTP's elevation ranges from 550 feet above mean sea level (ft MSL) at the northeast corner to 510 ft MSL at the southeast corner and slopes to the southwest at approximately 1.5%.

24. Several shallow swales drain to the west and south. The nearest surface water drainage course is Stillwater Creek to the west. Its 100-year flood plain is approximately 4,500 feet west of the WWTP. The WWTP is located in FEMA floodplain designation Zone X. Stillwater Creek flows south to the Sacramento River.
25. The surface soils under the 42-acre land application area are predominantly of the Redding Series with smaller areas of Red Bluff Series soils. Both Redding and Red Bluff Series soils are described by the Soil Survey of Shasta County prepared by the Soil Conservation Service as loams and clays over a shallow indurated hardpan. The depth to hard pan varies between 10 and 30 inches.
26. The climate is hot and dry in summer with temperatures exceeding 110 Fahrenheit (F) with mild winters occasionally reaching temperatures around 25 F. Mean annual precipitation for the Redding area as reported at www.usclimatedata.com is 34.61 inches and the 100-year annual precipitation as reported in the Department of Water Resources Rainfall Analysis for Drainage Design Volume 1 is 70.83 inches. Evapotranspiration data was acquired from the "Irrigation Scheduling and Design" data set at <http://itrc.org/etdata/etmain.htm>, at 47.2 inches annually.
27. Land uses to the south and west of the WWTP are agriculture and cattle grazing and the east side of the Facility is bordered by residential parcels. The agricultural land is not actively farmed or irrigated, but is equipped with individual wells. Some residential units obtain their water from the Bella Vista Water District and some have private wells.

Groundwater Conditions

28. The WWTP is underlain by the Red Bluff Formation, which the United States Geological Survey describes as Quaternary lacustrine clay and alluvial gravel deposits. The Redding and Red Bluff soil series are described as gravelly loam, clay and hardpan with a very low capacity to transmit water and a very high runoff potential.
29. A 2001 subsurface investigation involved drilling two 30-foot soil borings which showed 30 feet of clay interrupted only by a 2-foot thick hardpan layer located within five feet of ground surface. The borings were left open overnight and remained dry indicating no seepage of shallow groundwater through the uppermost 30 feet.
30. Boring logs for nearby domestic wells show shallow groundwater is first encountered at 90 to 140 feet below ground surface (bgs). According to the

Department of Water Resources Groundwater Information Center Interactive Map Application (DWR GIC), the static groundwater level below the Facility is approximately 415 feet MSL, or 115 feet bgs.

31. The DWR GIC Spring 2016 groundwater elevation data shows the groundwater gradient beneath the facility to be approximately 0.0026 feet/foot to the south-southwest.
32. No groundwater monitoring wells have been installed at the site because the 2001 subsurface investigation demonstrated the presence of a significant low permeability, unsaturated zone underlying the facility.
33. Local groundwater quality results were obtained from the DWR GIC. Groundwater quality results for two DWR wells located two miles north and two miles south of the property are summarized in Table 3. Well logs for these wells show they are both 235 feet deep with 30 and 60 foot perforated zones, respectively. The south well shows possible evidence of shallow groundwater between 55 and 90 feet bgs, with a significant tight clay layer separating this from the deeper groundwater zone. The north well log reports “sticky clay” from 65 to 80 feet bgs but very tight clay units from 30 to 65 feet bgs, from 80 to 150 feet bgs, and from 152-196 feet bgs.

Table 3: Groundwater Quality Results

Constituent	Units	Background	Downgradient
DWR Well ID	--	31N04W12A001M	30N04W01E001M
Distance from WWTP	Miles	2.6, north	2.0, south
Sample Date	--	12/12/2006	10/10/2012
pH	SU	8.0	7.4
Specific Conductance (EC)	µmhos/cm	224	217
TDS	mg/L	162	147
Total Alkalinity	mg/L	108	90
Hardness	mg/L	56	82
Nitrate + Nitrite as N	mg/L	<0.01	2.1
Calcium	mg/L	11	13
Magnesium	mg/L	7	12
Potassium	mg/L	1	0.8
Sodium	mg/L	35	11

Boron	mg/L	0.6	<0.1
Dissolved Arsenic	µg/L	3.28	0.557
Dissolved Iron	µg/L	84.4	0.6
Dissolved Manganese	µg/L	2.42	0.27
Dissolved Zinc	µg/L	21.7	6.33

SU = Standard unit
 µmhos/cm =micromhos/cm
 mg/L = milligrams per liter
 µg/L = micrograms per liter

34. No groundwater degradation is attributed to Facility activities.

Basin Plan, Beneficial Uses, and Regulatory Considerations

35. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, revised July 2016* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
36. Local drainage is to Stillwater Creek to the west, a tributary to the Sacramento River. The beneficial uses of Stillwater Creek, as specified in the Basin Plan, are agricultural irrigation and stock watering (AGR); non-contact and body contact recreation, (REC-1 and REC-2); warm and cold freshwater aquatic habitat (WARM and COLD); cold spawning, reproduction, and/or early development habitat (SPWN); and wildlife habitat (WILD). Potential beneficial uses of Stillwater Creek include industrial power (POW).
37. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.
38. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.
39. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.

40. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley 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.
41. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.
42. 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. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
43. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700 $\mu\text{mhos/cm}$. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 $\mu\text{mhos/cm}$ if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

Antidegradation Analysis

44. State Water Resources Control Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (*Antidegradation Policy*) generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that:
 - a. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - c. The discharger employs best practicable treatment or control (BPTC) to minimize degradation; and

- d. The degradation is consistent with the maximum benefit to the people of the state.

45. Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS, sodium, and chloride), nutrients and coliform organisms, as discussed below.

Constituent	Concentrations (mg/L)		
	Background Groundwater ¹	Downgradient Groundwater ²	Potential Water Quality Objective
TDS	162	147	450 ³ to 1,500 ⁶
FDS	--	--	--
Nitrate Nitrogen	< 0.1	10	10 ⁴
Ammonia Nitrogen	< 0.1	<0.01	--
Sulfate	3	5	250 ⁵
Sodium	35	11	69 ³
Chloride	17	4	106 ³ - 600 ⁶
Manganese ⁶	0.0024	0.00024	0.050 ⁵
Iron ⁶	0.0756	0.0006	0.300 ⁵
Arsenic ⁶	0.0033	0.0006	0.010 ⁴

¹ Compiled from 2006 data for DWR well 31N04W12A001M.

² Compiled from October 2012 data for DWR Well 30N04W01E001M. Pre-1968 water quality data is similar to that observed in 2012 with the exception of lower nitrate concentrations.

³ Lowest agricultural water quality goal.

⁴ Primary Maximum Contaminant Level.

⁵ Secondary Maximum Contaminant Level.

⁶ Secondary Maximum Contaminant Level range.

- 46. For TDS, nitrate as nitrogen, and coliform, current groundwater monitoring data indicates that groundwater has not been degraded beyond background groundwater quality by the previous discharge and that the discharge does not pose a threat of degradation in the future.
- 47. This Order establishes effluent and groundwater limitations for the WWTP 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.
- 48. The Discharger provides treatment and control of the discharge that incorporates:
 - a. Optimization of aeration basin operation to maximized biological oxygen demand (BOD) removal, nitrification and denitrification.
 - b. Percolation/evaporation ponds for effluent disposal.

- c. Optimization of land application procedures for effluent treatment and disposal.

For this Facility, the Board considers these measures to be best practical treatment or control (BPTC) for the treatment and disposal of wastewater at this location.

49. Limited degradation of groundwater by some of the typical waste constituents associated with discharges from a municipal wastewater utility, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from reliance on numerous, concentrated individual wastewater systems, and the impact on water quality will be substantially less. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.
50. This Order is consistent with the *Antidegradation Policy* since; (a) the limited degradation allowed by this Order will not result in water quality less than water quality objectives, or unreasonably affect present and anticipated beneficial uses, (b) the Discharger has implemented BPTC to minimize degradation, and (c) the limited degradation is of maximum benefit to people of the State.

Other Regulatory Considerations

51. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
52. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
 - a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
 - b. Category B complexity, defined as: "Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for

septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units.”

53. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage, wastewater, and reuse. Title 27, section 20090 states in part:

(a) Sewage - Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludge or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB-promulgated provisions of this division.

(b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leach fields if the following conditions are met:

- (1) The applicable Regional Water Quality Control Board (RWQCB) has issued WDRs, reclamation requirements, or waived such issuance;
- (2) The discharge is in compliance with the applicable water quality control plan; and
- (3) The wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

54. The discharge authorized herein (except for the discharge of residual sludge and solid waste), and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:

- a. Storage reservoirs 1, 2, and 3 are exempt pursuant to Title 27, section 20090(b) because they are wastewater percolation/evaporation ponds and:
 - i. The Central Valley Water Board is issuing WDRs.
 - ii. The discharge is in compliance with the Basin Plan because this order establishes effluent and groundwater limitations for the WWTP that will not unreasonably threaten present and anticipated beneficial uses or

result in groundwater pollutant concentrations that exceed water quality objectives set forth in the Basin Plan, and;

- iii. The treated effluent discharged to the ponds does not need to be managed as hazardous waste.
55. The United States Environmental Protection Agency (EPA) published *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (hereafter "Unified Guidance") in 2009. As stated in the Unified Guidance, the document:
- ...is tailored to the context of the RCRA groundwater monitoring regulations... [however, t]here are enough commonalities with other regulatory groundwater monitoring programs ... to allow for more general use of the tests and methods in the Unified Guidance... Groundwater detection monitoring involves either a comparison between different monitoring stations ... or a contrast between past and present data within a given station... The Unified Guidance also details methods to compare background data against measurements from regulatory compliance points ... [as well as] techniques for comparing datasets against fixed numerical standards ... [such as those] encountered in many regulatory programs.
56. The statistical data analysis methods in the Unified Guidance are appropriate for determining whether the discharge complies with Groundwater Limitations of this Order.
57. The State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The wastewater treatment facility has a design capacity of less than 1.0 MGD. The Discharger is therefore not required to obtain coverage under NPDES General Permit CAS000001.
58. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems General Order 2006-0003-DWQ (the 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 exceeds one mile in length and the Discharger is enrolled under the General Order.

59. Water Code section 13267(b)(1) states:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2017-XXXX (MRP) are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

60. All wastewater management systems at the facility have already been installed and are currently in use. This Order places additional requirements on the continued operation of the facility in order to ensure the protection of waters of the state. The issuance of this Order is therefore exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) in accordance with California Code of Regulations, title 14, section 15301, which exempts the “operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features” from environmental review.
61. The United States EPA has promulgated biosolids reuse regulations in 40 CFR 503, *Standard 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.
62. The Central Valley Water Board is using the Standards in 40 CFR 503 as guidelines in establishing this Order, but the Central Valley Water Board is not the implementing agency for 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to the EPA.
63. Pursuant to Water Code 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.

Public Notice

64. 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.
65. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
66. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Order 99-090 is rescinded and, pursuant to Water Code sections 13263 and 13267, the Discharger, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.
3. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.
4. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
5. The Discharger shall not allow toxic substances to be discharged into the wastewater treatment system such that biological treatment mechanisms are disrupted.
6. The discharge of offsite waste transported to the WWTP for disposal is prohibited unless approved by the Executive Officer.

B. Flow Limitations

1. Effective immediately, influent flows to the WWTP shall not exceed the following limits:

Flow Measurement	Flow Limit
Average Dry Weather Flow ¹	0.117 MGD
Peak Wet Weather Flow ²	0.650 MGD

¹ The average dry weather flow (ADWF) reported here is the design ADWF. Average daily flow over the three consecutive driest weather months (e.g., July, August, and September) for 2010-2016 is 0.042 mgd.

² The peak wet weather flow (PWWF) reported is the design peak wet weather flow. The Main Pump Station can pump up to 0.45 mgd; it is only a limiting factor during peak wet weather flows and has approximately 25,000 gallons of storage within the wet wells and system. Maximum monthly flow reported for March 2016 was 0.278 mgd.

C. Effluent Limitations and Mass Loading Limitations

1. Effluent discharged to the percolation/evaporation ponds shall not exceed the following limits:

Constituent	Units	Limit
BOD ₅ ¹	mg/L	80 (30-Day Average), 40 (7-Day Average)
Total Suspended Solids	mg/L	80 (30-Day Average), 40 (7-Day Average)

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

2. Compliance with this requirement shall be determined based on samples obtained at the sampling locations described in the MRP.

D. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

6. Public contact with wastewater at the WWTP shall be prevented through such means as fences, signs, or acceptable alternatives.
7. Objectionable odors shall not be perceivable beyond the limits of the WWTP property at an intensity that creates or threatens to create nuisance conditions.
8. As a means of discerning compliance with Discharge Specification D.7, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond shall not be less than 1.0 mg/L for three consecutive sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Regional Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
9. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered 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 from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
10. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring compliance with all requirements of this Order. 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.
11. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications D.9 and D.10.
12. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.

- b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
13. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.
 14. Wastewater contained in any unlined pond shall not have a pH less than 6.0 or greater than 9.0.
 15. The Discharger shall monitor sludge accumulation in the wastewater treatment/storage ponds at least every five years beginning in 2017, and shall periodically remove sludge as necessary to maintain adequate storage capacity. Specifically, if the estimated volume of sludge in the reservoir exceeds ten percent of the permitted reservoir capacity, the Discharger shall complete sludge cleanout within 12 months after the date of the estimate.

E. Groundwater Limitations

Release of waste constituents from any portion of the WWTP shall not cause groundwater to:

1. Contain constituents in concentrations statistically greater than current background groundwater quality or that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations, whichever is greater. Background and regional downgradient water quality for the WWTP may be based on online data for the following DWR wells: 31N04W12A001M, 30N04W01E001M. These data are available at <http://www.water.ca.gov/waterdatalibrary/index.cfm>.
2. Exceed a total coliform organism level of 2.2 MPN/100 mL over any seven-day period.
3. Exceed nitrate (as nitrogen) concentrations of 10 mg/L.
4. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

F. Land Application Area Specifications

1. Tailwater runoff and spray of wastewater shall not be discharged outside of the LAAs.
2. Vegetation (which may include pasture grasses, native grasses and trees, and/or ornamental landscaping) shall be grown in the LAAs.
3. Land application of wastewater shall be managed to minimize erosion within the LAAs.
4. The LAAs shall be managed to prevent breeding of mosquitoes or other vectors.
5. LAAs shall be designed, maintained, and operated to comply with the following setback requirements:

Setback Definition	Minimum Irrigation Setbacks (feet)
Edge of application area to property boundary	10 ^a
Edge of application area to manmade or natural surface water drainage course	100 ^a
Edge of application area to domestic water supply well	100 ^a
Property boundary to nearest residence	25 ^b
Edge of application area using spray irrigation to property boundary, public road, or similar place of potential public exposure	300 ^b

^a Shasta County Board of Supervisors adopted 2016 Shasta County Local Agency Management Program for Onsite Wastewater Treatment Systems.

^b Based on conditions stated in 28 October 2016 Report of Waste Discharge. Any decrease in minimum setbacks shall be approved by the Executive Officer.

6. Irrigation of the LAAs shall occur only when appropriately trained personnel are on duty.
7. LAAs shall be inspected periodically to determine compliance with the requirements of this Order. If an inspection reveals noncompliance or threat of noncompliance with this Order, the Discharger shall temporarily stop recycled water use immediately and implement corrective actions to ensure compliance with this Order.
8. Spray irrigation with wastewater is prohibited when wind speed (including gusts) exceeds 30 mph.

9. Sprinkler heads shall be designed, operated and maintained to create a minimum amount of mist.
10. Discharge to the LAAs shall not be performed during rainfall or when the ground is saturated.
11. Discharge of storm water runoff from the LAAs to off-site land or surface water drainage courses is prohibited.
12. All storm water runoff from the use areas shall be captured and recycled for irrigation or allowed to percolate within the use areas.
13. Public contact with wastewater at the LAAs shall be controlled using fences, signs, and other appropriate means.

G. Solids Disposal Specifications

Sludge, as used 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 screenings generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTP. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially used as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities pursuant to federal and state regulations.

1. Sludge and solid waste shall be removed from screens, sumps, and ponds as needed to ensure optimal plant operation.
2. Any handling and storage of residual sludge, solid waste, and biosolids at the WWTP shall be temporary (i.e., no longer than six months) 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 the groundwater limitations of this Order.
3. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTPs, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy this specification.
4. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water board or the State Water Board except in cases where a local (e.g., county) program has been authorized by a regional water board. In most cases, this will mean the General Biosolids

Order (State Water Resources Control Board Water Quality Order 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 covered by Order 2004-12-DWQ, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.

5. Use and disposal of biosolids shall comply with the self-implementing federal regulations of 40 Code of Federal Regulations part 503, which are subject to enforcement by the U.S. EPA, not the Central Valley Water Board. If during the life of this Order, the State accepts primacy for implementation of part 503, the Central Valley Water Board may also initiate enforcement where appropriate.
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.

H. Provisions

1. At least **180 days** prior to any sludge removal and disposal, the Discharger shall submit a *Sludge Cleanout Plan*. The plan shall include a detailed plan for sludge removal, drying, and disposal. The plan shall specifically describe the phasing of the project, measures to be used to control runoff or percolate from the sludge as it is drying, and a schedule that shows how all dried biosolids will be removed from the site prior to the onset of the rainy season (**1 October**).
2. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by **31 January**.
3. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

4. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.
5. The Discharger shall comply with Monitoring and Reporting Program R5-2017-XXXX, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
6. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
7. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
8. The Discharger shall 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 includes 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 when the operation is necessary to achieve compliance with the conditions of this Order.
9. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
10. The Discharger shall provide certified wastewater treatment plant operators in accordance with Title 23, division 3, chapter 26.

11. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
12. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
13. The Discharger shall comply with the requirements of the Statewide General Waste Discharge Requirements (General WDRs) for Sanitary Sewer Systems (Water Quality Order 2006-0003), the Revised General WDRs Monitoring and Reporting Program (Water Quality Order 2008-0002-EXEC), and any subsequent revisions thereto. Water Quality Order 2006-0003 and Order 2008-0002-EXEC require the Discharger to notify the Central Valley Water Board and take remedial action upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow.
14. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
15. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
16. In the event of any change in control or ownership of the WWTP, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
17. To assume operation as Discharger 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 name and address and telephone number of the persons responsible for contact with the Central Valley 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

Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

18. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
19. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on _____ 2017.

PAMELA C. CREEDON, Executive Officer